

Troubled Times



Information



Click on the icons above to go to your area of interest.



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TOPIC: Book List

Suggested reading for those wishing to be prepared for the changes that will be presented by the millennium are:

- Books on [Communications](#)
- Books on [Disaster Preparedness](#)
- Books on [Electrical Energy](#)
- Books on [Gardening](#)
- Books on [Hand Crafts](#)
- Books on [Herbs](#)
- Books on [Housing](#)
- Books on [Medical Treatment](#)
- Books on [Nutrition](#)
- Books on [Pole Shift](#) theory
- Books on [Social Adjustments](#)
- Books on [Wilderness Living](#)

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TOPIC: Access

A portion of Troubled Times has been translated into the [Slovenian](#), [French](#), [Swedish](#), [Dutch](#), [Spanish](#), [German](#), [Yugolavian](#), [Russian](#), [Norwegian](#), [Japanese](#), and [Danish](#) languages by dedicated Troubled Times team members, some of whom maintain Troubled Times mirror sites. Hard Copy, i.e. paper printouts, of Troubled Times content is available from an Access [TEAM](#). Original Troubled Times material is owned by the contributors and as such is under copyright laws, but fair use copyright laws allow readers to download a personal copy for their own use. [Web Whacker](#), [Web Buddy](#), [Web Reaper](#), [Web Stripper](#), [Netrieve](#), [IE4](#), [IE5](#), and [Teleport Pro](#) are all software packages that support this.

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TOPIC: Frequently Asked Questions

A Troubled Times FAQ list was compiled. The following were typical Questions with brief answers and or links to the pertinent areas of ZetaTalk.

- Who are the [Zetas](#)?
- Who is [Nancy](#)?
- What is [Troubled Times](#)?
- Is Zetataalk or Troubled Times a sect, religion, or [Cult](#)?
- Why do the Zetas [Care](#)?
- What is [Service](#) to Other and Service to Self?
- What is the [Call](#)?
- What is the [12th Planet](#)? Is it the same Planet some call Nibiru?
- Why haven't I [Heard About](#) this Planet before?
- What is the 12th Planet's [Path](#)?
- When will I be able to [See](#) the 12th Planet?
- What is a [Pole Shift](#)?
- Is my [Location](#) safe?
- Where is the [Best Place](#) to go?
- When do the cataclysms [Start](#)?
- How should I [Prepare](#)?
- How do I search for [Information](#)?
- Can I [Talk](#) with other people preparing?

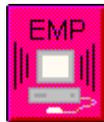
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TOPIC: Radio

Information on [Getting Started](#) in short wave radio can be secured from [ARRL](#), a [Highly Recommended](#) organization, and the rules are now more [Relaxed](#). Information on [Antennas](#), [Home-Made Antennas](#), [Inexpensive](#) setups, using [Old Dishes](#), and a [Beginner's Guide](#) is available. Short wave radio is an [International](#) communications vehicle, and the [Best Bet](#) to survive the shift. [Long Distance](#) communication is possible by bouncing off the [Ionosphere](#) or using [Moon Bounce](#) or even [Meteor Trails](#), a [Recommended](#) method, and [Ground Wave](#) techniques work for short distances. [Hams](#) set up for communication via their own satellite could adapt, when satellite disruptions occur due to [Meteor Storms](#) or [Solar Flares](#). Via [Radio Relay](#), a [VHF Internet](#), via [Packet Radio](#) and using [TNC](#) could even exist, but would need to be [Scheduled](#) and there are [Repeater Issues](#) and [Alternatives](#). Moving packets is even possible with [Ham Radio](#). Alternatives would be [Wireless Radio](#) via [Microwave](#) or via [Radar Transmissions](#), but this would not be as [Cost Effective](#), or [GWEN](#), but [Common Use](#) radio such as [CB](#) will most likely be the vehicle. Knowing the primary [Radio Frequencies](#) are essential in communicating with others, and following the [Wilderness Protocol](#) helps. Many websites exist with information on [Emergency Communications](#). A Troubled Times [TEAM](#) has been formed to develop solutions around short wave radio.

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TOPIC: **Electro-Magnetic Pulse**

During the pole shift, [Possible EMP](#) may occur from [Magnetic Fields](#) generated by the churning and shifting core, as the [Defense Dept.](#) is aware. A [Self Test](#) can be done to verify effectiveness. EMP is explained by the [Magnetic Shield Corp.](#), [Viatch](#), the [Army Corps](#) of Engineers, and books on Engineering [Fundamentals](#). [Grounding](#) as protection from [Lightning](#) is not necessary for idle equipment during the pole shift hour. [Shielding](#) using Iron or various metals such as [Copper Mesh](#) or other [Non-Magnetic](#) metals is used in order to protect sensitive technology such as computers. [Other Steps](#) can be taken to safeguard computers, too. Solid state circuitry benefits most from [Mumetal Shields](#), which can be purchased from a number of [Mumetal Sources](#), but to shield from strong magnetic fields, [Iron is Best](#). Iron shielding such as can be achieved using [Ammo Boxes](#).

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TOPIC: Linux

Linux and Amateur Radio go hand in hand, per [Bruce Perens](#). The argument over [Linux vs Windows](#) focuses on issues such as [Ease of Use](#), [Radio Interface](#), and whether [Simple is Best](#). As Linux is [Free](#), and the [Red Hat](#) version inexpensive, one can keep the [Options Open](#), and Linux users report many [Linux Advantages](#), superlative [Features](#), and [Installation](#) ease. [Linux on CD](#) is now available, and supports an [MS Office Clone](#), but [Applications](#) are limited.

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TOPIC: Morse Code

As simple [Code Patterns](#) that can be transmitted when voice or video transmissions cannot be supported, communication in the Aftertime by [Morse Code](#) may be essential. With explicit instructions on [How to Learn](#), listing to the sound of the dots and dashes, rather than remembering how they look, it is not that difficult to [Master the Morse](#). There are various Morse Code [License Types](#), but one starts by getting a license in the [Novice Class](#).

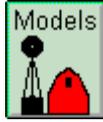
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TOPIC: Bearings

The pole shift will disturb every known bearing humans rely upon. A [Stable Anchor](#) will be [Appreciated](#), as the [Sun](#) will rise in a different place, the earth's new tilt will create a [New Latitude](#) for almost all locations, a 24 hour day may not be the result, and [Magnetic North](#) and South will slowly firm up as the swirling core settles down. With a [Team Effort](#), new bearings could be [Established](#). Use of a home made [Sextant](#) or a [Compass](#) and taking note of [Fixed Positions](#) both prior to and after the pole shift will help. [Radio Frequencies](#) can be used as a guide, and short wave radio buffs already have a technique for [Locating the Moon](#). Watches will require [Battery Changing](#) as [Motion Charged](#) watches may be unstable. Synchronizing a [Wind-Up Watch](#) may help survivors stay in sync, and [Carrier Pigeons](#) are an option for communications between groups. The *US Armed Forces Survival Manual* suggests maintaining [Direction](#) or [Time of Day](#) by shadow tip or [Equal Shadow](#) from the Sun, [Dead Reckoning](#) or [Steering Marks](#), but take into consideration [Earth Changes](#)! Subtle differences in [Skylight](#), enhanced by using a [Blue Filter](#), can determine relation to the Sun.

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TOPIC: Models

[Celistine Properties](#) is patterned after the nine insights from the book. Other planned communities include the [Venus Project](#), and [Intentional Communities](#). This concept of [Sustainable Living](#) is echoed in **Earthship** in New Mexico, [Walton's](#), in Idaho, [Survival School](#) tools and courses, [Eco-Villages](#), and [The Farm](#) in Tennessee. Life in the Aftertime will be [Gloomy](#) and damp, and the [Reality](#) of survival grim, so prepare the family for [Adjustments](#) and take [Start Steps](#). An indoor [Biosphere Community](#) or [Community Gardens](#) would be sustainable. [Grow World](#) is an example, as is the [Sergyenko homestead](#) in Kiev. In planning a site, a [Question](#) and [Answer](#) exercise can help. There are various possible social [Scenarios](#) that could present. The [Silent Treatment](#) by the government is due to the fear of panic, beyond what the movie [Deep Impact](#) dramatized. Consider cash crops from a [Commercial Site](#), which then pays for itself. Actual survival sites or planned sites that serve as models are:

- [Mr. Hoag's Bunker](#)
- on the east coast of [Australia](#)
- as a [West Coast Nomad](#) in the US
- a [Utilities Sufficient](#) site
- Incorporating the [Old Ways](#) site

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TOPIC: Solution Sets

The Troubled Times TOPICs provide detail about individual solutions, but as the time of the passage approaches, Solution Sets, where individual solutions are meshed together in ways that work, evolve. Solution Sets are formulating for:

Settlements:Survive the Shift

[Survival Home](#), [Fish Tanks](#), [MRE Storage](#)

Settlements:Aftertime

[Indoor Gardening](#), [Garden Requirements](#), [Seed Required](#), [Acquaponics](#), [Efficient Foods](#),
[Hydro or Wind?](#), [Power Required](#), [Being Inventive](#), [Dome Uses](#), [Go Figure](#), [Worm-Water](#)

Finances

[Liquidate Early](#)

Overview

[Local Disaster View](#), [Priority List](#)

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TOPIC: On Foot

[Walking](#) will be the primary means of transportation in the Aftertime, as bridges will be down, roads torn up, and fuel such as gasoline hard to find. Prepare to be temporarily on foot by taking [Family Classes](#) and learning to [Be Alert](#). Groups will be roving about, in desperate search of better circumstances. [Tips](#) on [How to Pack](#) the [Stuff Needed](#) in today's world stands in [Contrast](#) to the pole shift reality. What are the [Minimum](#) items to pack, and how to prioritize [What to Carry](#)? Of key importance are [Boots](#) and care of the [Feet](#), [Balance](#), a low profile [Appearance](#), a [Night Light](#), wearing a [Poncho](#) for the rain and [Wool](#) in preference to [Synthetics](#), with [Fire Retarding](#) properties in mind. The emphasis changes if one is on foot [Pre Pole Shift](#), [Post Pole Shift](#), or while [Surviving](#) the pole shift. [Starting a Fire](#) without [Dry Wood](#) requires planning, but one could [Carry Embers](#) and [Rekindle](#) a fire. A dedicated Troubled Times member offers some hiking tips from the books the [Complete Walker](#), the [Survival Handbook](#), the [Good Earth Almanac Survival Handbook](#), and the [Complete Wilderness Training Book](#), and many web sites [Teaching](#) how to survive while on foot or offering supplies abound.

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TOPIC: Pole Shift

[Numerous Prophecies](#), such as by [Edgar Cayce](#), point to [Cataclysms](#) around the millennium. Troubled Times has prepared [Animated Graphic](#) clips to represent what the Zetas assert is close at hand, a [Slowing Rotation](#), a [Pole Shift](#), [New Geography](#), [Volcanic Gloom](#). The [Passage](#) has been visually depicted and a [Movie Short](#) of the shift developed. A Troubled Times [TEAM](#) has been formed to analyze such a shift, diagraming the [Passage](#) and depicting a [Shortened Pacific](#), and [New Poles](#).

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TOPIC: Crust Shift

Evidence of a [Crust Shift](#) in the past has emerged, [Eons Ago](#), without an explanation other than Hapgood's [Sliding Crust](#) theory, lauded by [Einstein](#) and relating [Ice Ages](#) to prior pole positions. The Earth's Mantle has a low [Viscosity Zone](#), supporting this. Such a crust shift caused [Climate Flip-Flops](#) or climate changes in [China](#), [India](#), [Australia](#), and [Greece](#), which can be [Measured](#) and are recorded on ancient maps such as the [Piri Reis Map](#). Ice Ages are simply shifting poles, the [Glacier Theory](#) failing, as [Methane Ice](#) and [Twin-Pole](#) changes demonstrate. [Continental Drift](#) and [Wandering Poles](#) likewise imply crust shifts. Dramatic evidence of submerged civilizations in the [Bahamas](#), where [Buffalo Roamed](#), in the [Indian Ocean](#), in the [Mediterranean](#), and off [Japan](#) speak to cataclysmic changes. [Technology](#) is lost during such times. Evidence of a [Radical Shift](#) in the Earth's past, as well as [Pole Shifts](#), is abundant, recorded in lava at [Steens Mountain](#) and [Atlantic Rifts](#), [Greenland](#) ice, New England [SeaMounts](#), the extinction of the [Mammoth](#) found in a [Flash Frozen](#) state, [Buried Forests](#), [Ocean Bacteria](#), and [Antarctic Topics](#). A time when [East/West](#) reversed is recorded in folklore. Reversing polarity on the crust of Mars is evidenced by [Mars Magnetism](#). Recent evidence shows the [Long Reach](#) of magnetic influences.

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TOPIC: 3,600 Shift

Velikovsky recorded the [Geological Evidence](#) of [Cataclysms](#) such as [Floods](#) every 3-4,000 years. Climate changes in [Switzerland](#), [North Africa](#), [Central Europe](#), [China](#), [India](#), and the [Sahara](#) also occurred 3-4,000 years ago. Sitchen correlated this to the ancient Summerians Shar, [Every 3,600 Years](#), and [Scientific Analysis](#) supports this. A historical record of occurrences [3,600 Years Ago](#), [7,200 Years Ago](#), and at [Other Cycles](#) confirm this hypothesis. [Tsunami Signatures](#), the [Thera Eruption](#) and [Jewish Exodus](#), [Chieh Dynasty](#) and [Egyptian](#) records, [Mediterranean](#) and [Michigan](#) sediment, the [Black Sea](#) flood recording a [Buried Civilization](#), [Scottish Oceanside](#) waves and slides, [Swedish Trees](#), [Methuselah Trees](#), [Marine Sediments](#), dropping [Sea Level](#) or [Sudden Rise](#) in sea level, and [Extinction](#) records reflecting sudden death, and an [Antarctic Meltdown](#) also reflect these cycles. The [Atacama Desert](#) and [Ocean Bottom](#) shows periodic cycles. Troubled Times believes another pole shift is at hand. [Magnetic Decay](#) fits the 3,600 year cycle and the low is *now*. [Moses' Comet](#) appeared 3,600 years ago. The [Nation Seismic](#) database shows that the incidence of [Deep Quakes](#) has increased dramatically, and can be seen by comparing maps of quake ratios [Since 1946](#), [Since 1976](#), [Since 1986](#), and [Since 1996](#).

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TOPIC: Check Lists

In anticipation of the [Crisis](#) that a pole shift would bring, Troubled Times members have compiled the generic checklists below.

- [Day One](#), the week leading up to the shift and the actual trauma the shift
- [Recovery](#), the weeks immediately following when rapid adjustments to disrupted services will be required
- [Long Term](#), the years and decades following.

Personal lists, such as [John's](#) list or Clipper's [Little Box](#) and the lists inspired by that thought such as [Mike's](#), [Shekina's](#), and [Nick's](#) list are also shared as a guide. A Usenet group dedicated to survival skills, misc.survivalism, offers a compilation of mini lists done by David Lee (davelee@visi.net), who recommends [Frugal's Home Page](#) on the web. The misc.survivalism list includes mini lists from [SAS Survival Handbook](#), [Urban Survival Handbook](#), [Save Your Life](#), [Food for Thought](#), [Camping and Woodcraft](#), [Common Sense](#), [Ten Essentials](#), [US Army](#), [Kit Sources](#), [Gear Sources](#), [Richard's List](#), [Camping List](#), and [Pack Items](#). A [FEMA](#) list and a NASA list for [Antartica](#) are also available, and [Surplus Sites](#) can provide the items. Quick purchase or last minute items are available from [Ebay](#), [Home Depot](#), [Target](#), [WalMart](#), [Dollar Stores](#), [Big Lots](#), but more items are available at [Harbor Freight](#).

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TOPIC: Quake Tips

[Earthquakes Magnitude](#) is measured by the degree of movement along the fault lines, by the amplitude of the shock waves that can be seen rippling along the ground, and by the reverberation speed and intensity that the adjustment causes. The pole shift will include a variable [Shift Speed](#) resulting in a [Sudden Stop](#) or [Gradual Stop](#), with the debate on scenarios including considering a [Jolt or Dash](#) and the [Horizontal Motion](#) that can be viewed as a [Car Crash](#) equivalent, with [Pivot Points](#) or an [80%/20%](#) approach offering hope. Red Cross advice on surviving earthquakes is available. Troubled Times members have begun thinking about techniques that would help both man and his technology survive.

- Creating a [Water Cushion](#), or snug in a [Houseboat on Land](#) that can move as a whole during earthquakes
- Making a [Culvert Torus](#)
- Using a car as a [Car Shelter](#), [Reinforced](#) as there are [Crumple Cautions](#), and [Dual-Use](#) options
- Taking refuge in [Limestone Caves](#)
- Protecting fragile technology in a [Silicon Jell](#) or a [Giant Spring](#) or a suspended [Bungee Rack](#).
- Personal protection in a [Hammock Net](#), or [Safety Seat](#)

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TOPIC: Survival Tips

Tornado strength is measured by the [Fujita Scale](#). Help with [Survival Equipment](#) and [Planning](#), survival [Shelters](#), or Red Cross advice on surviving hurricanes, tornadoes, and floods is available. [Tidal Waves](#) along coastlines are a concern. Troubled Times members have begun thinking about techniques that would help both man and his technology survive.

- Avoiding hurricane winds, hail and firestorms in a [Survival Trench](#), [Buried Bug](#), or [Sand Bag](#) shelter
- Bracing the sides of a house against hurricane winds with [Tire/Mud Bracing](#)
- [Laying Low](#) to survive tornadoes
- Enclosed in a metal [Pipe Shelter](#), a [Propane Tank](#), a series of [Water Tanks](#), or under a cast iron [Cauldron](#) for firestorm protection, or using a [Metal Roof](#)
- Using [Storm Pipes](#) for a personal enclosure
- Creating a [Safe Room](#) in the home, or having a [No-Window Dome](#)
- Personal protection in [Protective Clothing](#), or a [Shallow Trench](#)
- Keeping away from [Fuel Supplies](#)

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TOPIC: **Safe Locations**

A key consideration in setting up a survival camp is safety, as a description of the [Ultimate Catastrophy](#) explains. Securing the [Ultimate Map](#) from the Smithsonian, browsing the [Dynamic Earth](#) web site, checking the [Altitude](#) and securing [Topo Maps](#), or seeing quakes and volcanism in [Real Time](#) can help in deliberations. There is greater safety in high altitude [Deep Valleys](#) and less safety in flood areas, noted here for [Europe](#). There is greater risk along [Plate Borders](#), the edges of plates, and greater stability at plate centers such as the centers of the [South American Plate](#), [North American Plate](#), the [Eurasian Plate](#), or the [African Plate](#). A [Safe Location](#) is determined by many factors, such as [USA Risk](#) or [Worldwide Risk](#) of earthquakes, [Quake Severity](#) along with [Plate Logistics](#), [Local Geography](#), and [Liquifaction](#) risk. A [Safe Room](#) in the home will not be sufficient.

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TOPIC: Zeta Advice on Locations

The following advice on safe locations has been given by the Zetas upon request from various questioners. The location may be a city, a country, or a state or province, as indicated, and are arranged as links in an alphabetical order. Also check the categories at the bottom of the list. This information is also in PDF format. The [Original 2004 PDF](#) is available, as well as an [Updated 2011 PDF](#) version with information through September 5, 2011.

Countries:

[Abu Dhabi](#), [Afghanistan](#), [Africa](#), [Algeria](#), [Angola](#), [Arabia](#), [Argentina](#), [Australia](#), [Austria](#), [Bangladesh](#), [Belarus](#), [Bermuda](#), [Bolivia](#), [Botswana](#), [Brazil](#), [Burma](#), [Cambodia](#), [Canada](#), [Chad](#), [Chile](#), [China](#), [Colombia](#), [Congo](#), [Costa Rica](#), [Crimea](#), [Croatia](#), [Czech Republic](#), [Denmark](#), [Ecuador](#), [Egypt](#), [El Salvador](#), [England](#), [Estonia](#), [Ethiopia](#), [Finland](#), [France](#), [Georgia](#), [Germany](#), [Ghana](#), [Greece](#), [Greenland](#), [Guatemala](#), [Guyana](#), [Honduras](#), [Hungary](#), [Iceland](#), [India](#), [Indonesia](#), [Iran](#), [Iraq](#), [Ireland](#), [Israel](#), [Italy](#), [Ivory Coast](#), [Japan](#), [Jordan](#), [Kazakhstan](#), [Kenya](#), [Korea](#), [Latvia](#), [Lithuania](#), [Libya](#), [Madagascar](#), [Malaysia](#), [Mali](#), [Mauritania](#), [Mexico](#), [Mongolia](#), [Morocco](#), [Mozambique](#), [Nepal](#), [Netherlands](#), [New Guinea](#), [New Zealand](#), [Nicaragua](#), [Niger](#), [Nigeria](#), [Norway](#), [Oman](#), [Paraguay](#), [Pakistan](#), [Panama](#), [Peru](#), [Philippines](#), [Poland](#), [Portugal](#), [Rhodesia](#), [Romania](#), [Russia](#), [Scotland](#), [Serbia](#), [Sierra Leone](#), [Slovakia](#), [Somalia](#), [South Africa](#), [SW Africa](#), [Spain](#), [Sudan](#), [Swaziland](#), [Sweden](#), [Switzerland](#), [Syria](#), [Taiwan](#), [Tajikistan](#), [Tanzania](#), [Thailand](#), [Tibet](#), [Turkey](#), [Turkmenistan](#), [Uganda](#), [Ukraine](#), [Uruguay](#), [Uzbekistan](#), [Venezuela](#), [Vietnam](#), [Wales](#), [Yugoslavia](#), [Zambia](#)

Cities:

[Adelaide](#), [Anchorage](#), [Athens](#), [Atlanta](#), [Auckland](#), [Austin](#), [Baku](#), [Banglore](#), [Barnaul](#), [Baton Rouge](#), [Beijing](#), [Beirut](#), [Belgrade](#), [Berlin](#), [Billings](#), [Bogota](#), [Bonn](#), [Boston](#), [Boulder](#), [Brandenburg](#), [Brisbane](#), [Brittany](#), [Buenos Aires](#), [Budapest](#), [Buffalo](#), [Cairo](#), [Calgary](#), [Cape Town](#), [Caracas](#), [Champaign](#), [Changchun City](#), [Charleston](#), [Charlotte](#), [Chelyabinsk](#), [Chicago](#), [Chongqing](#), [Christchurch](#), [Cincinnati](#), [Cleveland](#), [Dallas](#), [Denver](#), [Detroit](#), [Duluth](#), [Edmonton](#), [Fairbanks](#), [Fort Worth](#), [Fulsom Lake](#), [Greers Ferry](#), [Guadalajara](#), [Hamilton](#), [Hangzhou](#), [Hong Kong](#), [Indianapolis](#), [Irkusk](#), [Istanbul](#), [Jackson](#), [Jakarta](#), [Kansas City](#), [Karachi](#), [Kelowna](#), [Knoxville](#), [La Paz](#), [Lima](#), [London](#), [Los Angeles](#), [Louisville](#), [Lubbock](#), [Madison](#), [Madrid](#), [Melbourne](#), [Mexico City](#), [Minneapolis](#), [Montreal](#), [Montevideo](#), [Moscow](#), [Mumbai](#), [Munich](#), [Murmansk](#), [New York](#), [Nizhni](#), [North Bay](#), [Novgorod](#), [Novosibirsk](#), [Omsk](#), [Orenburg](#), [Ottawa](#), [Paris](#), [Perth](#), [Phoenix](#), [Philadelphia](#), [Pittsburg](#), [Port Moresby](#), [Portland](#), [Prague](#), [Prince George](#), [Quebec City](#), [Quinto](#), [Regina](#), [Reno](#), [Richmond](#), [Rome](#), [Saint Petersburg](#), [Salt Lake](#), [San Antonio](#), [San Diego](#), [San Francisco](#), [Santa Barbara](#), [Santa Fe](#), [Santiago](#), [Sarajevo](#), [Saratov](#), [Saskatoon](#), [Seattle](#), [Seoul](#), [Singapore](#), [Spokane](#), [Stockton](#), [Sudbury](#), [Sydney](#), [Tashkent](#), [Tbilisi](#), [Tokyo](#), [Toledo](#), [Toronto](#), [Tucson](#), [Vancouver](#), [Victoria](#), [Vladivostok](#), [Volgograd](#), [Washington DC](#), [Winnipeg](#), [Wroclaw](#)

Provinces and States:

[Alabama](#), [Alaska](#), [Alberta](#), [Anhui](#), [Arizona](#), [Arkansas](#), [Baja](#), [British Columbia](#), [California](#), [Chihuahua](#), [Chongqing](#), [Colorado](#), [Connecticut](#), [Dakotas](#), [Delaware](#), [Espirito Santo](#), [Florida](#), [Fujian](#), [Gansu](#), [Georgia](#), [Goias](#), [Guangdong](#), [Guangzi](#), [Hawaii](#), [Hebei](#), [Heilongjiang](#), [Henan](#), [Hubei](#), [Hunan](#), [Idaho](#), [Illinois](#), [Indiana](#), [Iowa](#), [Jiangxi](#), [Jiarigsu](#), [Jilin](#), [Kansas](#), [Kentucky](#), [Liaoning](#), [Louisiana](#), [Maryland](#), [Michigan](#), [Minas Gerais](#), [Minnesota](#), [Mississippi](#), [Missouri](#), [Montana](#), [Nebraska](#), [Neimongol](#), [Nevada](#), [New Brunswick](#), [New England](#), [Newfoundland](#),

[New Jersey](#), [New Mexico](#), [New York](#), [Ningzia](#), [North Carolina](#), [Northwest Territory](#), [Nova Scotia](#), [Ohio](#), [Oklahoma](#), [Ontario](#), [Oregon](#), [Parana](#), [Pennsylvania](#), [Pernambuco](#), [Qinghai](#), [Quebec](#), [Queensland](#), [Quizhou](#), [Rio de Janeiro](#), [Rio Grande do Sul](#), [Sao Paulo](#), [Saskatchewan](#), [Shaanxi](#), [Shandong](#), [Shanxi](#), [Sichuan](#), [South Carolina](#), [Tennessee](#), [Texas](#), [Tibet](#), [Utah](#), [Vermont](#), [Victoria](#), [Virginia](#), [Washington](#), [West Virginia](#), [Wisconsin](#), [Wyoming](#), [Xinjiang](#), [Yucatan](#), [Yukon](#), [Yunnan](#), [Zhejiang](#)

Rivers and Lakes:

[Baikal](#), [Black Sea](#), [Great Lakes](#), [Mississippi](#), [Niagara Falls](#), [Ottawa](#), [St. Lawrence Seaway](#), [Tahoe](#)

Coast Lines:

[East Coast](#), [Mediterranean](#), [West Coast](#)

Bays and Peninsulas

[Bay of Biscay](#), [Cape York](#), [Kola](#), [Puget Sound](#), [Eurasian Seaway](#)

Fault Lines:

[African Rift](#), [New Madrid](#), [San Andreas](#)

Deserts:

[Salt Flats](#)

Mountain Ranges:

[Alps](#), [Altai](#), [Andes](#), [Appalachian](#), [Ardennes](#), [Balcans](#), [Canadian Rockies](#), [Cordoba](#), [Himalayas](#), [Ozarks](#), [Rockies](#), [Sierras](#), [Urals](#)

Islands

[Aleutian](#), [Antartica](#), [Azores](#), [Bermuda](#), [Bonin](#), [Borneo](#), [Canary](#), [Caribbean](#) (see [List](#)), [Crete](#), [Cuba](#), [Diaoyu](#), [Fiji](#), [Guam](#), [Hawaii](#), [Java](#), [Madeira](#), [Mariana](#), [Marquesas](#), [Mediterranean](#), [Mentawai](#), [New Guinea](#), [Pacific Islands](#), [Reunion](#), [Sandwich](#), [Solomon](#), [Sumatra](#), [Tasmania](#), [Vancouver](#)

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TOPIC: Nuclear Dangers

[Radiation Hazards](#) can often be faced by a [Common Sense](#) approach in the face of differing opinions, and [Precautions](#) can be taken. There can be [Plutonium](#) pollution from a [Reactor Meltdown](#), as [Chernobyl](#) attests. Clusters of [US Reactors](#) (by [State](#)), [European Reactors](#), and [Reactors Worldwide](#) exist, but most countries are free of this danger. [Closing Down](#) reactors is problematic, causing delays. The location of nuclear waste storage sites, nuclear facilities such as [Oak Ridge](#), should also be considered. [Underground](#) containment can spread. The location of [Nuclear Warheads](#), and being a [Safe Distance](#) from them, is a primary consideration as these warheads are not likely to be disabled prior to the shift. A [Home Made](#) radiation detector can be constructed. Taking Iodine guards against radiation poisoning, and [Miso Soup](#) made from kelp proved itself [during WWII in Japan](#), eliminating [radiation poisoning](#) in those taking it during the bombing.

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TOPIC: Self Defense

The best defense is a [Low Profile](#), such as having [No Windows](#) to conceal your location. Having a good location and being discrete about where your survival group is going to locate is of primary importance. But in the event that a survival group finds itself under attack by those determined to rape, kill, cannibalize, or enslave, self defense is a must. [Silent Weapons](#) allow a defense that won't alert others to the groups location. The [Long Bow](#) has advantages over a cross bow or short bow. Knowing the [Lay of the Land](#) gives the survival group the upper hand. [Non-Lethal](#) defenses have [Infinite](#) possibilities, however, the Aftertime may require [Vigilante](#) justice. Arguments for [Guns](#) or [No Guns](#) can be made, [Expertise](#) is required and the [Alternatives](#) are many, plus guns can [Backfire](#). A secure area allows the group to [Sleep Safe](#), but [Honking Geese](#) or a motion detecting [Tachometer](#) can alert those who are sleeping. [Dog Attacks](#) from hungry dogs can be deflected.

Troubled Times



TOPIC: Hazards

A key consideration in setting up a survival camp is the location in relationship to potential hazards such as [Tidal Bore](#), [Tsunamis](#), [Sloshing](#), [Flash Floods](#), [Earthquakes](#), [Tornadoes](#), or the drift of [Volcanic Ash](#) clouds. Proximity to man-made hazards such as [Chemicals](#) or nerve gas near [Seattle/Portland](#) or [Utah](#) or other chemical weapons stored in US [Military Depots](#), a leftover from the Cold War, or a toxic waste dump could pose dangers. Rupturing [Dams](#) are another likely hazard, as well as the local [Hydrology](#), which may alter due to the massive earthquakes. [Mud Slides](#) are caused by water logged unstable soil, and will increase in torrential downpours. NOAA provides safety steps for severe weather hazards.

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TOPIC: Oxygen

Firestorms during a pole shift can temporarily deplete Oxygen in the locale, creating suffocation problems for those in the open air. There is some evidence that some of the Mastodons flash frozen in Siberia died of suffocation. The Zetas have stated that those in shelters [Need Not Worry](#). To be on the safe side, there are various [Sources](#) of oxygen replenishment. Indoor [Algae Ponds](#) are more than an excellent protein rich source of food, they are oxygen generators. [Spare-Air](#) is inexpensive.

Troubled Times



TOPIC: Quake Prediction

[Radio Interference](#) is a predictor, so your car radio can act as your [Personal Predictor](#), a self-help point [Geo-Monitor](#) stresses. Signals between [3.8 to 4.0 Hz](#) were registered before the Northridge and Landers quakes, and many Electro-Magnetic [Pulse Papers](#) attest to the reality of this detection technique. A *Scientific American* article describes how to build a [Detector Device](#) or a [Lehman's](#) or [Back Yard](#) seismograph. A Troubled Times [TEAM](#) has been formed to experiment with quake prediction.

Troubled Times



TOPIC: Pest Control

After a pole shift, pests that live on garbage such as cockroaches, [Flies](#) and their [Maggots](#), and rats will proliferate. [UltraSound](#) drives insects away, and works on [Cats and Coons](#) too. Gardens are plagued by [Snails](#) and [Locusts](#), and indoor gardens by [Aphids](#), but some are [Helpful Insects](#). [Substitutes](#) or [Alternatives](#) for chemical pesticides no longer on the shelves are available. There are many natural and/or mechanical means for getting rid of [Ants](#), [Fleas](#), [Moths](#), [Roaches](#), [Moles](#), [Mice](#), [Weevils](#), and [Lice](#). Many plants such as the herb [Pennyroyal](#) or [Lemon Grass](#) or others mentioned in the book [Wilderness Way](#) are natural [Insect Repellants](#). [Staying Clean](#) is also a means of avoiding insects such as fleas and [Mosquitoes](#) or the [Insect Swarms](#) that occur in the wilderness, but many [Natural Products](#) repel mosquitoes. Using natural enemies of pests, such as [Lizards](#) or [Nematodes](#) for roaches, [Snakes](#) such as [Pythons](#) for rodents, or plant [Derivatives](#) such as [Pyrethrums](#) for insects may be the answer. Such an answer was found for controlling [Cockroaches](#). Diseases can be carried by [Mice](#). Much can also be said for [Boric Acid](#). [Carbon Dioxide](#) can be used to lure termites away. [Coca-Cola](#) poisons rats. Stay dry to avoid [Mildew](#), and milk is an [Anti-Fungal](#) agent.

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TOPIC: Schools

Educating children and continuing education for adults need not be set aside after the [Cataclysms](#) so that [Knowledge is Lost](#), although this is what normally happens after major wide-spread disasters. Where there may not be facilities for formal schools, [Children](#) can learn while doing, [At the Knee](#) of the adults in a surviving group, or in a [Home School](#) arrangement. [One-on-One](#) instruction benefits children, as does the proper [Environment](#) and [Devoting Time](#) to the process. [Books on Basics](#) can be collected, and [Self Teaching](#) principles applied so that the [Natural Child](#) can develop. Knowledge can be learned [By Heart](#) and shared, or [Preserved](#) in [Many Forms](#) such as [Paper and Ink](#), [CD-ROM](#), [HD-Rosetta](#), [Floppies](#), [Hard Drives](#) or [Slates](#). One can even make [Homemade Paper](#), the steps are to [Find the Fibers](#), [Sort the Scraps](#), [Make a Pulp](#), and [Press and Dry](#). The ability to [Write CD](#) requires extra cost. A Troubled Times [TEAM](#) has been formed to address these concerns. Educational books can be preserved by [Shrink Wrap](#), and there are vast [Resources on CD](#) along with [Online Books](#). [Duplicate Copies](#) should be kept, including multiple [Computer Backups](#).

Troubled Times

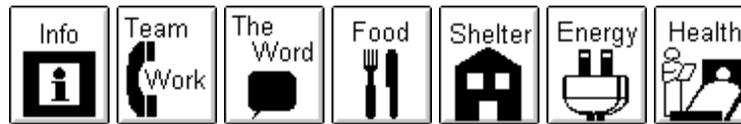


TOPIC: **Pollution**

Pollution concentrates in the food we eat by [Biomagnification](#). Increasingly, natural ingredients such as [Citric Acid](#) are discovered that clean up pollution, among them hard working weeds and trees, [Cleansing Plants](#), which break down pollution in the soil and the air around them as they grow. [Corn Waste](#) as a filter removes heavy metals and weed killer residue. [Hair](#) soaks up oil spills. Soil can be analyzed for its safety with [Lead Detection](#) methods used by the EPA. [Microbes](#) remove heavy metals and radioactive elements from industrial sludge. [Charcoal](#) can absorb Lead and Mercury, [Algae](#) can clear up methane pollutants, and [UV](#) or [Super Heated Water](#) can break down PCB's, per Japanese research.

Troubled Times

The Hub



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[Troubled Times](#) is icon driven. To explore the contents, just click on the icon above representing your area of interest. Troubled Times content can also be viewed from a [Frames](#) version, or a simple [Table of Contents](#) version.

Troubled Times content is also organized into several views. Surviving the pole shift and Aftertime lifestyles are cumulative views, so that [Surviving the Shift](#) would apply to all, [Homeless](#) would apply to all some time, and [High Tech](#) solutions assume that [Settlement](#) solutions are already in place. [Science Data](#) is a view into those parts of Troubled Times that detail the millennium in scientific terms.

A [Nonprofit](#) arm supports educating the public and developing solution sets and has developed a handy [Booklet](#) toward this end.



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Books on Communications

ARRL Handbook

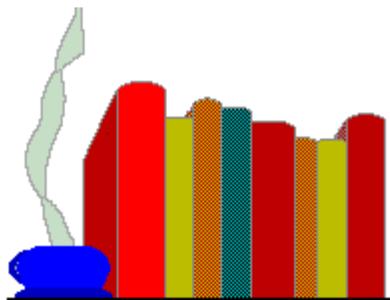
Available from [ARRL](#), the American Radio Relay League. Get the latest handbook.

Now You're Talking

Available from [ARRL](#), the American Radio Relay League. Get this book at a minimum to learn about short wave and other radio communication avenues.

Technician No-Code Plus

By Gordon West WB6NOA, published by Master Publishing, Inc. and available at Radio Shack for FCC license preparation for Novice and Technician classes, contains all the test questions in an easy to study format



Troubled Times



Books on Disaster Preparedness

American Survival Guide

This informative magazine that covers blacksmithing; making your own disaster shelter (May 95); rigging emergency antennas (May 96); primitive fishing techniques, building your own straw bale home, and lightning: avoiding/surviving the strike (April 97); non lethal self-defense options, security with Shiloh Shepherds, improvised rappelling, and curing headaches: try G-Jo Accupressure (May 97); land navigation, rice: feeding the world, best available gas masks, and dangerous American snakes (July 97); basic three survival tools, and dome homes (Aug. 97); indigestion first aid, Amazon jungle survival (Sept. 97); aquatic wild edibles, search and rescue guard dogs (Oct. 97). The magazine sells for \$3.95 U.S. & \$4.95 in Canada. It is insightful and informative and covers a broad range of topics some including weapons, first-aid shelters Survival over all.

Earthquake

An excellent booklet on earthquake preparedness. Write for a copy to: Newcastle City Council, P.O. Box 489, Newcastle, N.S.W.2300, Australia.

Elementary Seismology

Published by W.H. Freeman, New York City, 1958, by Charles Richter. Covers earthquake dynamics, animal and weather relationship. Published before the theory of plate tectonics.

Emergency Planning for Family, Home, Workplace and School

By Fryar Calhoun . Cost is \$2.95 32 pages, 8.5 x 11, ISBN 0-9625335-1-3. Much of what is written applies not only to earthquakes, but afterwards. Describes what to do when you're at home after a major incident. Addresses the basic issues of sanitation, water, food, etc. Recommended by decastro@netcom.com (Richard A. De Castro), on [misc.survivalism](http://misc.survivalism.com).

FEMA

To find out more about disasters and steps you can take to prepare, [FEMA](http://www.fema.gov) has information on natural disasters, technological disasters, earthquake preparedness, fires, floods, hurricanes, tornadoes and winter storms.

Making the Best of the Basics

By James Talmage Stevens. A family preparedness handbook.

No Such Thing As Doomsday

By Phillip Hoag, includes in-depth coverage of underground shelter options, long-term food storage, remote power systems, air filtration, and psychological and medical considerations. Based on the author's personal experience in building and operating a large group shelter.

Peace of Mind in Earthquake Country

By Peter Yanev. Detailed descriptions with drawing of what happens during earthquakes, and how to brace for them. For a California audience but applicable everywhere. ISBN 0-87701-216-4. Chronical Books, 275 Fifth Street, San Francisco, CA 94103.

Perils of a Restless Planet

By Ernest Zebrowski, published by Cambridge University Press, \$24.95. Draws upon actual events from ancient to present times. Focusing on basic scientific inquiry, technological innovation, and public policy about natural

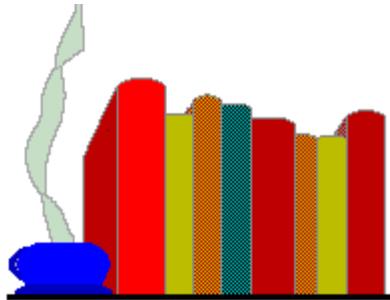
events.

SAS Survival Handbook

By John Wiseman, which includes information on how to operate after such disasters as earthquakes and nuclear attacks. Collins Publishers San Francisco, 1160 Battery Street, San Francisco, CA 94111, (415) 788- 4111.

Survival: A Manual That Could Save Your Life

By Chris & Gretchin Janowsky (Paladin Press). This book is geared toward long-term survival in typical North American environments. Chris runs the World Survival Institute in Tok, Alaska and is a regular contributor to the American Survival Guide. The WSI can be reached at (907) 883-4243 or by writing to Box 394C, Tok, Alaska, 99780. He also produces videotapes, including a set of 5 combat martial arts tapes, and 5 emergency response tapes.



Troubled Times



Books on Electrical Energy

[The] The 12 volt Bible and The 12 volt Doctor

How to operate on 12 Volts.

Alternator Secrets

\$4.50 How to modify car alternators to work with windmills.

Back to Basics

by Reader's Digest, shows a methane digester and a storage tank for methane.

Battery Book for Your PV Home

By Fowler Solar Electric for about \$8.00. It's short, concise and well worth the money. There is a really good discussion on batteries in the book.

Brakedrum Windmill Plans 2000

by Hugh Piggott. \$14.95

[The] Complete Battery Book

By Richard A Perez. Published by Tab Books Inc., Blue Ridge Summit, PA 17214. ISBN 0-8306-1757-4 (paperback). 185 pages, illustrated. Written for the layman. Talks about what is a battery, lead acid, ni-cad, edison cells, primary cells, methods and machines to charge, using batteries effectively, inverters, energy management, and new battery technologies (the book was written in 1985), formulae and conversion factors. Will teach you the basics of batteries. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Die Technik

A German book containing 290 diagrams explaining how everything from an iron to a nuclear reactor works. Where this book is in German and the 608 pages of text may require some translation, it is highly recommended for those who may have to make it work, with or without instruction. Distributed by Langenscheidt Publishers, Inc., 46- 35 54th Rd., Maspeth, NY 11378, \$35, (800) 432-6277.

Direct Current Fundamentals

By Orla E. Loper and Edgar Tdsen. Publisher Delmar Publishers Inc., 2 Computer Drive West, PO Box 15-015, Albany, New York 12212. ISBN #0-8273-4146-6. More of a text book but very needed information. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

[The] Electricians Toolbox Manual

By Rex Miller, 1989, published by ARCOS/Simon and Schuster, distributed by Prentice Hall. ISBN 0-13-247701- 7. A small sized book full of good information on electrical wiring. Seems especially good for do-it-yourselfers who are unsure about the specifics of wiring. Section on tools, NEC, etc. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

From the Fryer to the Fuel Tank, How to Make Cheap, Clean Fuel from Free Vegetable Oil

By Joshua Tickell, from Greanteach publishing of Sarasota, Florida. Step by step instructions. If you are serious about learning all the ins and outs of this alternative energy source, it is very cheap at 19.95, and very well

written for details.

The Homebuilt Dynamo

\$50, from England. A [Diary](#) with photographs, detailed working drawings, and text of how to build a direct current generator.

Home Power Magazine

Magazine and catalogs from renewable energy dealers for energy needs.

How Electronic things work ... and What to do When They Don't

By Robert Goodman. It covers very basic electronics, but also things like TVs, VCRs, radios etc.

How to Build and Operate Your Own Small Hydroelectric Plant

By George Butler. Covers obtaining material, building the dam and laying the pipe, building the powerhouse, the economics of small scale micro-hydro, and examples of small hydros. Appendix of DOE reports and guide to hydropower equipment manufacturers and hardware suppliers.

Hydraulic Ram Pumps - How and Where They Work

(ISBN 0-9631526-2-9). It describes how to design, build, and install a simple, efficient hydraulic ram pump. ...

Independent Energy Guild

Order from *Backwoods Home Magazine* (800) 835-2418, 280 pages, \$22.95. A guide to planning the ideal independent power system for your home, boat, or RV. Covers the basic theory, as well as the nuts and bolts of AC and DC, photovoltaics, wind, water, generators, energy storage, system operation, and more.

Living on 12 Volts with Ample Power

By David Smead and Ruth Ishihaha. Published by RIDES publishing company, 2442 NW Market Street #43, Seattle, Washington 98107, USA. ISBN 87-92194. Recommended by decastro@netcom.com (Richard A. De Castro), on [misc.survivalism](#).

More Power To You

How to operate on 12 Volts.

Motors as Generators for Micro-Hydro Power

By Nigel Smith. Available from [Pico Turbine](#) for \$14.95, shipping included. How to convert a 3 phase AC motor to work as a generator. Very informative and easily read, and full of information for home brew hydro power. Illustrated step by step plans for building a 300 to 500 watt wind turbine using junked car and truck. These plans have been used all over the world to build simple but reliable wind machines that stand the test of time and weather extremes.

Pumps as Turbines, a User's Guide

\$13.95 How to take a water pump and turn it into a hydro-electric generator.

Real Goods

Environmentally friendly products and alternative energy. 966 Mazzoni Street, Ukiah, CA 95482-3471, (800) 762-7325, Fax: (707) 468-9486.

[The] Solar Boat Book

How to operate on 12 Volts.

Survival Scrapbook #3 ENERGY

By Stefan A. Szczelkun. ISBN 0-8052-0449-0. This is a good book on basic ways to use/make energy from a variety of sources including sections on solar, wind, fires, water, heat, electricity generation, animal power, and meditation. This book has a very good section on bio-fuels, especially the extraction of methane from wastes.

Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Wind Energy Basics

\$17.95 How to choose and place your windmill. How to build windmills in general.

Wind Energy for Sustainable Development

Published in 1992 by the American Wind Energy Association, Washington D.C.

Wind Power Workshop

By Hugh Piggot. Has information about the construction of horizontal axis wind generators, along with blade construction, hub construction, pitch mechanisms, and much more. Mr. Piggot is a tried and true expert on the construction of home made wind generators.

Windspinners

By M. Hackleman. Mr. Hackleman's Wind and WindSpinners is full of the pertinent information one is most likely to need. There are chapters which explain how to construct a rotor from 50 gallon drums cut in half, from top to bottom. This chapter also shows how to place them in a stacked array for better performance and ease in starting. Another chapter shows how to put together a charging system and battery bank for domestic consumption. Highly regarded in the windmill field.

Wiring 12 Volts For Ample Power

How to operate on 12 Volts.

Whole Earth Catalog

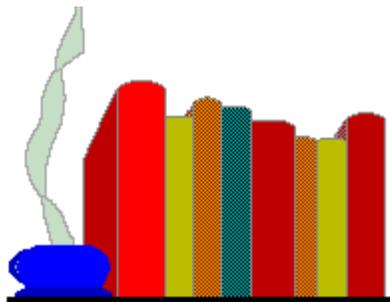
Offers a Catalog full of environmentally friendly tools and supplies. One can order the Catalog in paper form, also.

Wind Power for Home and Business

Order from *Backwoods Home Magazine* (800) 835-2418, 414 pages, \$38. A comprehensive guide to modern wind machines, featuring rugged, low-cost designs suitable for homes, businesses, and ranches, both on and off the grid. It shows how to measure the wind and how to choose, install, and operate your system.

Wind Power Workshop

by Hugh Piggot. \$22.95



Troubled Times



Books on Gardening

Beginning Hydroponics Soiless Gardening,

A Beginner's Guide to Growing Vegetables, House Plants, Flowers, and Herbs Without Soil

By Richard E. Nicholls, gets the beginner started by filling in the blanks and providing a path from the beginning of the book to the depth desired, \$8.95 paperback. Guide to growing vegetables, flowers, and herbs without soil.

Build Your Ark!

Information on how a family can grow their own self-sufficient food garden. Written by Geri Guidetti, a biologist, science writer and educator with advanced degrees who does research and teaches microbiology and plant/yeast molecular biology. Published by The [Ark Institute](#), P.O. Box 364, Monkton, Maryland 21111, ISBN 0-938928-01-5, 8 1/2 inches by 11 inches, 235 pages, for \$21.95 including shipping and handling.

Commercial Hydroponics

By John Mason, easy to understand and execute in the home environment as well as the commercial environment.

Complete Garden Problem Solver

Edited by Delilah Smittle. Available from [Rodale Press](#) (publisher of Organic Gardener magazine).

Earth Food Spirulina

4th Edition 1997, by Robert Henrikson, who pioneered algae as a world resource for 20 years, and is the President of a major algae company and a director of the world's largest Spirulina farm. This easy-to-read book has over 160 charts, tables and photographs. Published by Ronore Enterprises, Inc. PO Box 1188, Kenwood, CA 95452 USA. Clean water, bubbling CO2 up through the water; using mineral nutrients like nitrogen, potassium, iron and essential trace elements rather than manure; avoiding chemical weed treatment by controlling and balancing the pond ecology; large paddle wheels in each pond.

Encyclopedia of Organic Gardening

(c) 1992 Edited by Fern Marshall Bradley. Available from Rodale press or Barnes and Noble.

Field Guide to North American Mushrooms

By the National Audubon Society is a great picture reference guide, with lots of info. about each mushroom.

Great Garden Formulas

(c)1998 Edited by Joan Benjamin and Deborah L. Martin. Available from Rodale Press.

[The] Holistic Garden

By Clinton R. Kraft. Aristera Publications, P.O. Box 3764, Redwood City, CA 94064-3764, \$5.00. Additional contact: ckraft@crl.com, ckraft@rahul.net, clintkraft@aol.com, and (650) 364-2075 FAX. This is a delightful little book, describing in simple detail the way that even city-bound people can grow food holistically and organically, while making good use of those edible plants that grow naturally. The author describes a very small plot of land, and how to grow various vegetables using a rotation system that doesn't require chemical fertilizers, doesn't deplete the soil, and produces good quality food. Once one begins to collect and grow open pollinated varieties of vegetables, an appreciation soon develops for gardening methods as ancient as the seeds themselves.

Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Home Hydroponics and How to Do It!

By Lem Jones et al, paperback, \$10.80.

How to Grow More Vegetables

By John Jeavons. Published by Ten Speed Press. \$16.95

[The] Hydroponic Hot House

By James DeKorne. An illustrated guide to alternative-energy greenhouse gardening. Directions for building several different greenhouses, practical advice on harnessing solar energy, and many hard-earned suggestions for increasing plant yield. 178 pages. \$17.00

Humanure: A Guide to Composting Human Manure

Available from Amazon.com. Worth checking out if you're planning on recycling your food back into your hydroponic or gardening system.

Hunger Signs in Crops

A symposium, prepared by Firman E. Bear et al, published by American Society of Agronomy and National Fertilizer Association, 1949. Describes deficiency diseases in plants and plant nutrition.

Hydroponic Food Production, A Definitive Guidebook of Soilless Food-Growing Methods

by Howard M. Resh. Technical and definitive, but nonetheless easy to understand and in depth, and excellent resource.

Hydroponic Gardening: The Magic of Modern Hydroponics for the Home Gardener

By Raymond Bridwell, \$11.65 paperback.

Michigan Field Crop Ecology

By Richard Harwood, a professor of crop and soil sciences at Michigan State University, holds a special faculty position in sustainable agriculture created through an endowment by Flint's C.S. Mott Foundation. \$12. Tells farmers about raising healthy plants and animals by attending to healthy bacteria, fungi and nematodes in the dirt of farm fields. Takes a scientific look at practices that were common in the years before farming was revolutionized by agrochemical, powerful tractors and genetically improved plants.

[The] Natural Way of Farming, The Theory and Practice of Green Philosophy

By Mansanobu Fukuoka, based upon doing as little as possible to grow crops. Radical techniques include: growing rice and clover at the same time; encasing seeds in clay pellets; never pruning his citrus trees. He also found that he could double crop the same ground. Although his methods have been criticized, he consistently manages to achieve the best yields in the Japan.

Organic Gardening

Magazine. Seed saving, earthworms, composting, companion planting, attracting beneficial insects, all are covered in great depth here.

Organic Gardener's Handbook of Natural Insect and Disease Control

Edited by Barbara Ellis and Fern Marshall Bradley, published by Rodale Press, Book Reader's Service, 33 East Minor Street, Emmaus, PA 18098. Recommended by Geri Guidetti of The Arc Institute.

Permaculture, A Designer's Manual

By Bill Mollison, 500 pages that covers such subjects as underground housing, indoor gardening issues such as soil and water, aquaculture, natural air conditioning, natural toilets, and composting. A complete survival blueprint. ublished by Targari Publications, PO Box 1, Tyalgum NSW, Australia, PH61 66 793442, e-mail perminst@peg.apc.org.

[The] Secret Life of Plants and **[The] Secret Life of Soil**

By Peter Thompkins and Christopher Bird, books which address many of the theories of Steiner, the originator of biodynamics, a practice that increases plant and animal crop yields dramatically.

Seed to Seed

By Suzanne Ashworth, published by Seed Savers Publications, has information on seed saving techniques for over 150 varieties of vegetables and culinary herbs. These have been researched and tested especially for the home gardens. From Seed Savers Exchange, Kent Healy, Director, RT 3 Box Decorah, 52101. Send \$1 for a brochure describing publications or \$25 for annual membership.

Small Scale Crayfish Farming for Food and Profit

Order from *Backwoods Home Magazine* (800) 835-2418, 47 pages, \$9.95. How to start and maintain your own crayfish farm.

Spirulina. Production and Potential

1996, illustrated, 232 pages, by Ripley Fox. Published by [Koeltz Scientific Books](#), P.O.Box 1360, Herrnwaldstr, 6 D-61462 Koenigstein, Germany. Fax: (+49) 6174 937240, phone: (+49) 6174 93720.

Square Foot Gardening

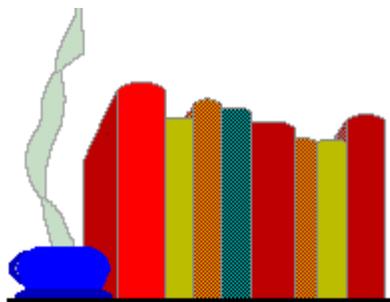
By Mel Bartholomew. Published by Dodale Press, Emmaus, PA. Dividing up garden space so that harvests are continuous, producing fresh produce the entire growing season in amounts that can be used at one time.

Stocking Up: How to prepare the foods you grow, naturally

By the staff of Organic Gardening and Farming. Edited by Carol Huppig. Published by Stoner Rodale Press, Emmaus, PA. ISBN 0-87857-167-1 (Hardcover) ISBN 0-87857-221-X (Deluxe). If you like growing and preserving your own food, or if you want or need to be able to do it without electricity, this book is for you. Recommended by decastro@netcom.com (Richard A. De Castro), on [misc.survivalism](#).

Walton's Dry Goods

A catalog of everything Walton's sells, including seeds and bulk food items such as beans and grains. Walton Feed, INC, 135 North 10th, P.O. Box 307, Montpelier, ID 83254, (800) 269-8563, Fax (208) 847-0467.



Troubled Times



Books on Hand Crafts

Back to Basics

Published in 1981 by the Reader's Digest Association, Inc. in Pleasantville, New York. Covers everything from buying land and building on it and raising your own food to recreation at home and in the wild. This book has valuable information about learning and enjoying traditional Early American skills, from forging a tool to making a corn-husk doll to making dies from plants and braiding your own rugs.

Ceramic Formulas, the Complete Compendium

By Conrad. A popular compilation of recipes for glaze, clay, slip, stains, enamels, glass, and more. \$22.95 paperback. Order from The Potter's Shop, 31 Thorp Road, Needham Heights, MA 02194, (617) 449-7687.

[The] Complete Library of Metal Working, Blacksmithing, and Soldering

By Oscar Almeida.

Cumberland General Store

A catalog filled with survival items such as spinning wheels, gardening tools, the complete Foxfire book series, butter making, and windmills. Phone (800) 334-4640 or fax (615) 456-1211 to order the \$4.00 catalog.

Dirt for Making Things

By Stoepelman. Apprenticeship with Maricopa potters. The definitive work on this rapidly vanishing style of ware. \$14.95 paperback. Order from The Potter's Shop, 31 Thorp Road, Needham Heights, MA 02194, (617) 449-7687.

Drake's Modern Blacksmithing and Horseshoeing

By J.G. Holstrom.

Foxfire

Edited by Eliot Wigginton, which contains practical knowledge on how to survive as our ancestors did as the turn of the century, complete with diagrams and detailed instructions. Anchor Press/Doubleday, 1540 Broadway, New York, NY 10036, (212) 354-6500.

From This Earth, the Ancient Art of Pueblo Pottery

Steward Peckham, a scholar and expert in southwestern pottery, steps through ancient works with insight, interest, and beautiful photos. \$39.95 paperback. Order from The Potter's Shop, 31 Thorp Road, Needham Heights, MA 02194, (617) 449-7687.

[The] Handyman's Book, Tools, Materials & Processes Employed in Woodworking

By Paul N. Hasluck. 760 pages with 2,545 illustrations and working drawings. ISBN 0-89815-203-8 Published by 10-Speed Press, PO Box 7123, Berkeley, CA 94707. 1987. Originally published in 1903. \$11.95. Aside from being a true bargain in book prices, this is a remarkable book in hand crafting almost anything from wood, using only hand tools. Includes drawings for various items such as furniture, outbuildings, homes, tool boxes, etc. and a detailed description of the selection, use, maintenance and care of hand tools. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Handy Farm Devices

By Rolfe Cobleigh. Published by The Lyons Press for \$12.95. Homemade devices, products and tools that was brought about by good old ingenuity by farmers of the day. A few examples of what's in the book, and how to build them: a pedal power washing machine, homemade food smoker, making concrete blocks for buildings, a dam for a farm pond, building a corn crib, build a bridge to ford a small stream, a portable chicken coop. It also has house and barn building plans, and even several ways to best layout a small farm. It also contains recipes for various glues, fireproof wash for shingles, and even making furniture polish.

How to Make Primitive Pottery

By Gibby. 60 page handbook covering all the basics of primitive pottery making. Black and White photos and drawings, glossary. Good instructions for novices. \$8.95 paperback. Order from The Potter's Shop, 31 Thorp Road, Needham Heights, MA 02194, (617) 449-7687.

Knitting with Dog Hair - A Woof to Warp Guide to Making Hats, Sweaters, Mittens & Much More

By Kendall Croluis and Anne Montgomery. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Lindsay's Technical Books

A catalog of technical books from back in the 1920's and 1930's or even earlier. Topics include how to build sawmills, windmills, construction, etc. PO Box 538, Bradley, IL 60915-0538 (815) 935-5353.

Making North American Pottery

By Simpson. Respectfully written on native American hand building and open firing methods. \$7.95 paperback. Order from The Potter's Shop, 31 Thorp Road, Needham Heights, MA 02194, (617) 449-7687.

Practical Blacksmithing

By M.T. Richardson. This is a classic from the turn of the century. If you are interested in old methods, this is a must read. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Self Reliant Potter Series

Four handbooks primarily for potter in developing countries where a degree of self reliance is necessary. Order from The Potter's Shop, 31 Thorp Road, Needham Heights, MA 02194, (617) 449-7687. Paperbacks at \$19.50 each for Clay Materials book and Refractories & Kilns book, \$24.50 each for Forming Techniques book and Glazes book.

Soap Recipes: 70 Tried-and-True Ways to Make Modern Soap

By Elaine C. White. Published by Valley Hills Press, 1864 Ridgeland Dr., Starkville, MS 39759. Phone 800-323-7102. 224 pages. \$23.95 paperback US, \$28.95 to other countries. 224 pages. Recipes for classic Castile soaps, Lye soaps, herbal soaps and soaps made from goat fat, beeswax, and milk are accompanied by detailed instructions and explanations. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Soldering and Welding

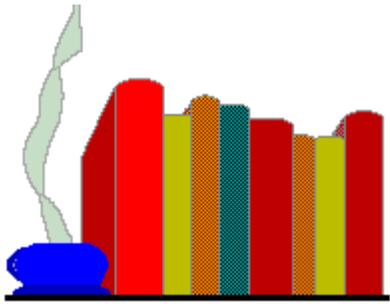
By B.M. Allen

Turners and Burners

History, technique, and culture of the folk potters of North Carolina, a \$29.95 paperback. Order from The Potter's Shop, 31 Thorp Road, Needham Heights, MA 02194, (617) 449-7687.

[The] Yankee Magazine Book of Forgotten Arts

By Bacon, Richard M. Published by Simon & Schuster, 1978. Hard cover, 217 pages. Covers such topics as cooking on a wood stove, building a smokehouse, using root cellars, keeping a family cow, working with a draft horse, creating dyes from common plants, making soap, wooden toys, paint, numerous others. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.



Troubled Times



Books on Herbs

Ancient Healing Secrets

By Dian Dincin Buchman, Ph.D. Easy A-Z guide of ancient home remedies. The renowned medicine expert and author writes to us from a long lineage of herbalists, starting with her Rumanian grandfather, who gathered information from the Gypsies. Hardcover, 192 pages. \$12.00

[The] Complete Medicinal Herbal

By Penelope Ody. A comprehensive guide to the healing properties of herbs, with more than 250 remedies for common ailments. Profusely illustrated with super crisp photos. Hardcover. 192 pages. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Eyewitness Handbook of Herbs

By Lesley Bremness. A guide to more than 700 herb species from around the world. Reinforced softback. 304 pages. Gorgeous crisp photographs throughout. Published by Buchman, Dian Dincin. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

From the Shepherd's Purse

By Max G. Barlow. Covers the identification, preparation, and use of medicinal plants, using the plant taxonomy approach. Profuse color illustrations and line drawings. An excellent general reference for anyone interested in herbal medicine. Includes details on 108 plants commonly found in North America. Hardcover. 189 pages. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

[The] Herb Book

By John B. Lust, John B. 1974. ISBN 0-87904-007-6 Extensive compilation of hundreds of herbs, with line drawings, descriptions, growth ranges, parts used and uses. Techniques of herbal medicine, appendices of cross references of common to Latin botanical names, and an extensive index. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Herbal Medicine: The Natural Way to Get Well and Stay Well

Published by Buchman, Dian Dincin in Gramercy, New York. 1980. Hard cover with DJ, 310 pages, index, drawings, list of resources. \$12 Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Herbally Yours

by Penny C. Royal. Herbally Yours is the first comprehensive herbal handbook. A complete list of herbs and herbal combinations and how to use them. 127 pages \$10.00

The Herbal Medicine Cabinet

By Debra St. Claire Descriptions with actual pictures of the plants mentioned.

Indian Herbalogy of North America

By Alma R. Hutchens. An illustrated encyclopedic guide to more than two hundred medicinal plants found in North America, with descriptions of each plant's appearance and uses, and directions for methods of use and dosage. Native American traditions are compared with traditional uses of the same plants among other cultures where the science of herbs has flourished, particularly in Russia and China. 382 \$19.00

Is the Medicine Making You Ill?

By David M Jackson and Rayner Soothill of the Australian Consumers' Association

Medical Botany

By W. H. Lewis and M. P. F. Elvin-Lewis, published by John Wiley & Sons, New York, 1977. 515 pages. Hardback ISBN: 0-471- 53320-3 Paperback ISBN: 0-471-86134-0. This book contains a careful examination of the pharmacological basis for medicinal properties attributed to many plants. In combination with a field guide to the plants in the area in which you are operating, this book would be invaluable in determining whether to use plants as a supplement to your pharmaceutical supplies, which plants to use, and how to use them. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Native American Ethnobotany

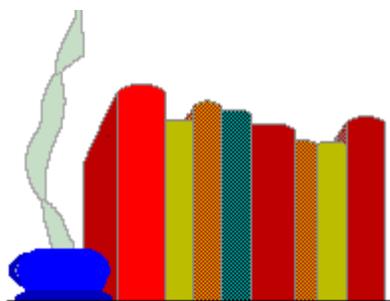
A new book by Daniel Moerman, is 927 pages of North American plants and their medicinal uses by Native Americans. It's first publication was August 1998 through Timber Press of Portland, Oregon. He spent the last 30 years compiling it.

Nutrition Almanac

From Nutrition Search, Inc., John D.Kirschmann director

School of Natural Healing

By Dr. John R. Christopher, copyright 1976, purchased from his son's herb shop - 1-800-453-1406



Troubled Times



Books on Housing

[The] \$50 and Up Underground House Book

4th edition by Mike Oehler. Illustrations by Chris Royer, Mole Publishing Company/Van Nostrand Reinhold Company, New York. 1981 ISBN: 0-442-27311-8. 116 pages. How to build an underground house using a shovel, polyethylene, and a chainsaw with a milling attachment. The author recommends a no concrete concept of underground house building. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Adobe Build it Yourself

By Paul Graham McHenry, Jr. 1985, Univ. of Arizona Press, ISBN 0-8165-0984-4. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Build a Yurt: The Low-Cost Mongolian Round House

By Len Charney. 1974, Collier Books (a division of Macmillan Publishing), ISBN 0-02-079320-0. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

PVC Projects For The Outdoorsman

By Tom Forbes. ISBN #1-58160-021-6 Building shelters, camping gear, and how to use plastic pipe.

[The] Owner Built Home

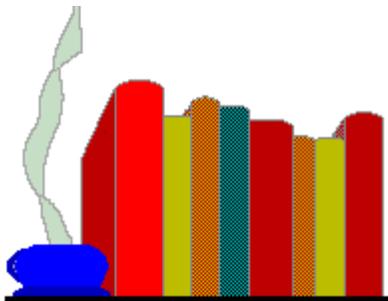
By Ken Kern, published by Charles Scribner's Sons, New York in 1975. Cheap housing was built in India using a method of coating burlap with cement, for instance. This book presents ways to build inexpensive buildings or outbuildings.

[The] Rammed Earth House

By David Easton. Details constructions specifications for using earth combined with concrete to create pleasing, natural structure that are as durable as concrete. Inexpensive and extends the available concrete mix. \$30 Chelsea Green Publishing Company, PO Box 428, White River Junction, VT 05001.

[The] Straw Bale House

By Athena and Bill Steen, David Bainbridge, and David Eisenberg. Details inexpensive construction using bales of straw as a component of the walls. Chelsea Green Publishing Company, PO Box 428, White River Junction, VT 05001.





Troubled Times



Books on Medical Treatment

Book for Midwives: A Manual for Traditional Birth Attendants and Midwives

By Klein. Hesperian Foundation. ISBN 0942364228 Best book of its kind. Safe childbirth in a low tech environment with minimal backup.

[The] The Complete Book of Dental Remedies

By Flora Parsa Stay, DDS. In addition to traditional dental remedies it includes homeopathic remedies, herbs, and nutritional supplements, dental first aid and mouthwash recipes. The book is published by Avery Publishing Group: 120 Old Broadway, Garden City Park, NY 11040, 1-800-548-5757, ISBN 0-89529-657-8, \$11.98 at Vitamin World, or \$15.95 Publisher.

Ditch Medicine

By Richard L. Coffee. Published by Paladin Press, Boulder, Co. 1993 ISBN 0-873464-717-3. \$25 An excellent guide for pre-hospital care givers in treatment of trauma associated with conflict, especially penetrating trauma and burns. Covers wound closure, infection control, chest injuries, pain control during operative procedures, burns, etc. Not a first-aid book, and presupposes a fairly broad medical exposure. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Do-It-Yourself Medicine

By Ragnar Benson. How to find and use antibiotics, painkillers, anesthetics, and other drugs without costly Prescriptions or Hospitals. How to secure the latest antibiotics, painkillers, anesthetics and other drugs - as well as needles, IV kits, splints and equipment - from animal health centers, foreign pharmacies, military dispensaries, mail order houses, dentists and other unconventional sources. Instructions for using these supplies to treat cuts, burns, gunshot wounds, fevers, broken bones, infections and other maladies. 128 pages. \$20.00

Emergency Care and Transportation of the Sick and Injured

By the American Academy of Orthopedic Surgeons. The classic textbook for Emergency Medical Technicians, sometimes called the "Orange Book". Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Emergency War Surgery

Bowen. 1994 ISBN 0788102915 \$60 Excellent book but very technical.

Emergency War Surgery : US revision of NATO Handbook

G.P.O 1988 \$50 ISBN 9999814328. The do-it-yourself surgery guide. Designed for junior doctors with minimal trauma experience going into a war zone. Starting to be a little dated, but the basics don't change.

Gray's anatomy

A very good text on human anatomy and physiology, highly recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Home Chiropractic Handbook

By Dr. Karl V. Holmquist. An understanding of how to attain and maintain better health through the principle of Chiropractics in a way that can be applied in their home. 194 pages. \$22.00

How To Go On Living When Someone You Love Dies

By Therese A. Rando Ph.D., Bantam Books. Includes topics on loss of a child, helping children cope and sudden versus anticipated loss. Offered at Amazon.COM.

Hypothermia: Killer of the Unprepared

By Theodore G. Lathrop, M.D. A thin pamphlet published by The Mazamas, a climbing group. Case studies, warning signs and prevention advice. Quick, effective way to become clued about this lethal problem. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

[The] Joy Book

Effective step-by-step instructions on how to reprogram the subconscious to heal yourself and control the psychosomatic part of any physical illness. For when traditional medical treatment may not be available. Prem Raja Raba, PO Box 100, McCloud, CA 96057.

Management of Wilderness and Environmental Emergencies

By Ed Auerbach \$175.

Mosbys Medical Dictionary

By Anderson 1993 \$30, a good medical dictionary.

Mosbys Paramedic Textbook

By Sanders \$50, an emergency medicine reference, textbook of paramedic care.

[The] Official Pocket Medicinal Plant Survival Manual

By Robert W. Pelton. Compact and profusely illustrated. 250+ pages. \$12.00

[The] Official Pocket Medical Survival Manual

By Robert W. Pelton. A compact, practical, quick reference guide. Profusely illustrated. 280 pages. \$12.00

Oxford Handbook of Clinical Specialties

By Collier. Oxford University Press. 1993 \$25 as above except covers the specialties including OBGYN, pediatrics, orthopedics and anesthetics.

Oxford Handbook of Clinical Medicine

By Hope. Oxford University Press. 1995. \$25 excellent coverage of basic medical principles aimed at the junior doctor level.

Oxford Handbook of Emergency Medicine in General Practice

By Lawrence. Oxford University Press. 96. \$30 good coverage of the basics of emergency medicine in easy to read format.

Ships Captains Medical Guide

Her Majesty's Stationary Office. 1983 Covers the management of most common problems in an excellent format, designed for ships isolated at sea. Also good description of drugs and when to use them.

Special Forces Medical Handbook

This is a reprint of a US Army training handbook, and covers many medical techniques as they apply to unconventional operations. Chapters on sterilizing under field conditions, and field dentistry and obstetrics are especially good. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

US Special Forces Medical Handbook

Paladin Press. 1987 A little dated but still an excellent book. Even the new edition is still not completely up to date. But its strengths overcome this. Good coverage all areas including surgery, dentistry and preventive medicine.

Where There is No Dentist

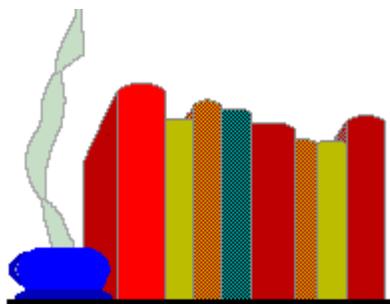
By Murray Dickson. Published by The Hesperian Foundation, Palo Alto, CA, 1983. 188 pages. Paperback ISBN: 0- 942364-05-8. \$9 A companion book to *Where There is No Doctor*. It contains information on basic dental procedures for non-dentists. Recommended by decastro@netcom.com (Richard A. De Castro), on [misc.survivalism](http://misc.survivalism.com). An [Online Book](#) is also available, to be printed out.

Where There is No Doctor

A village health care handbook by David Werner, revised English edition, may 1992. Published by The Hesperian Foundation, PO Box 1692, Palo Alto, CA 94302. Intended to assist those in third world countries, the book is comprehensive and assumes no doctor's assistance is possible. An [Online Book](#) is also available, to be printed out.

Your Own Perfect Medicine

By Ms. Martha Christy. Colloidal Silver. Ms. Christy compiled her research and experiences into a 250 page book called which can be ordered for \$21.90 by sending check or money order to FutureMed, Inc. Box 14161, Scottsdale, AZ 85267 or by calling (800) 800-8849.



Troubled Times



Books on Nutrition

[The] Art and Science of Eating Insects

By F.S. Bodenheimer, a Material World Book, published by Ten Speed Press, California. 192 pages.

[The] Book of Whole Grains

By Marlene Anne Bumgarner, *The Grain-by-Grain Guide to Cooking, Growing, and Grinding Whole Cereals, Nuts, Peas, and Beans*. Compares essential Amino Acid Contents of all the grains, beans, nuts, and peas in chart form. Discusses grinders. 1976. ISBN: 0-312-09420-7. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Botany in a Day

By Thomas J. Elpel. An orderly approach to understanding edible and medicinal wild plants, which allows the reader to avoid having to memorize thousands of plants. User friendly and easy to read.

Cookin' with Home Storage

Order from *Backwoods Home Magazine* (800) 835-2418, 228 pages, \$17.95. How to incorporate stored food into everyday life.

Dead Doctors Don't Lie

By Doctor Joel Wallach, a free tape on nutrition. Enter the title into a web search engine to locate the current distributor and request your free copies.

Diet for a Small Planet

By Frances Moore Lappe. A million sold by 1975, and still selling well. ISBN 0-345-27429-6. Includes a good set of recipes and guidance in balancing needed amino acids when avoiding meat or forced into a vegetarian diet during tough times. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Eat Right 4 Your Blood Type

By Dr. Peter D'Adamo, which includes specialized diets for each blood type to bolster the immune system, avoid self imposed problems caused by diet, and reduce allergies.

Edible Wild Plants

By Oliver Perry Medsger. Covers all of North America, describing over 150 of the most promising species and their habitats. This is an old-style plant book; so you will need a dictionary to decode the botanical jargon. There are ample pen-and-ink illustrations and a few photos. Plants recommended are often eaten by Canadian hunters and Indians when food is scarce. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Encyclopedia for Country Living

By Carla Emery. Many recipes for whole grains, breakfast foods, breads, and growing tips, animal care, primitive living, how to buy country land, back-to-basics life-style. Borders or Walden book stores. Publisher: Sasquatch Books, 1008 Western Avenue, Seattle, WA 98104, (206) 467-4300, ISBN 0-912365-95-1.

Food Insects Newsletter

Available for only \$5 from the following address: Florence V. Dunkel, Ph.D, Associate Professor, Editor, Dept.

of Entomology, Room 324, Leon Johnson Hall, Montana State University, Bozeman, MT 59717-0302, USA. or University of Wisconsin, Dept. of Entomology, 1630 Linden Drive, Madison, WI 93706

Insects as Human Food

by Dr W. Junk, 1951, published by The Hague. 352 pages.

Making the Best of the Basics

By James Talmage Stevens, published by Pelton Corporation, PO Box 11925, Salt Lake City, UT 84111. Topics include home storage of food, making yogurt, drying fruits and vegetables, preparing game fish and fowl, and household cleaning.

Man Eating Bugs: The Art and Science of Eating Insects

By Peter Menzel and Faith D'Aluisio (A Material World Book, Ten Speed Press, Berkley, 1998)

More-with-Less Cookbook

By Doris Janzen Longacre. Suggestions by Mennonites on how to eat better and consume less of the world's limited food resources. 1976 Simple recipes. Lots of information on substitutions for ingredients you don't have. Breads, cereals, meat, soup, veggies, complementary protein, allowances for energy and protein, garden, costs. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Natures Life

a book on natural healing and vitamin suppliments.

Old-Fashioned Dutch Oven Cookbook

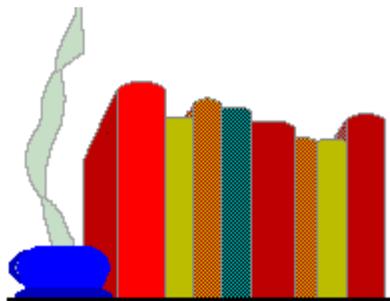
By Don Holm. Caldwell, Ohio. Published by Caxton, 1989, c1969. ISBN 87004-133-9. Also covers basic Dutch oven care and use, and lots of Dutch oven recipes. Emphasizes wild game. Includes information on gutting, skinning, and boning game, sourdough cooking, and drying and/or smoking meat. Also has a chapter on the eating habits of the Lewis and Clark expedition. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Passport to Survival

By Esther Dickey. Published by Bookcraft Publishers, 1848 west 2300 south, Salt Lake City, Utah. predominantly concerned with food preparation, preservation and storage. Over 100 recipes showing how a survival diet of wheat, powdered milk, honey and salt - may be used to supply the family with nourishing and appetizing meals. Example: Wild yeast: 2 cups flour, 2 cups warm water, 2 tsp. honey; mix well and place in bottle or crock, uncovered. Allow mixture to ferment five days in a warm room. Stir it several times a day.

Vitamins and Minerals for Health

By the editors of *Prevention* magazine, 1988, includes a nutritional analysis of over 500 foods and specific instructions on how to maximize nutrition from foods. Rondale Press, Emmaus, Pennsylvania.



Troubled Times



Books on Pole Shift

[The] 12th Planet

By Zecharia Sitchin, \$6.99 ISBN: 038039362X Published by Avon September 1996. Sitchin's theories have a wealth of leads originating across the sciences of archeology and astronomy, demonstrating over and over again that the ancient Summerians were aware of an additional planet in our Solar System.

5/5/2000: Ice: The Ultimate Disaster

By Richard W. Noone, List: \$16.00 ISBN: 0609800671, Published by Crown Pub May 1997 Wealth of factual evidence, including 223 illustrations and interviews with geologists, archaeologists, and climatologists. Theorizes that the alignment of the Sun, Mercury, Venus, Mars, Jupiter, and Saturn with the Earth and her Moon on May 5, 2000 will cause a shift in the Earth's axis and great flooding.

Beyond Prophecies and Predictions: Everyone's Guide to the Coming Changes

By Moira Timms includes prophecies of the Hopi, Mayans, Babylonians, the Bible, Nostradamus, Edgar Cayce, and the Great Pyramid all documented scientifically and seismologically. \$11.00 paperback.

Coming Earth Changes: The Latest Evidence

By William Hutton. \$14.95 paperback. Published by Are Press. ISBN: 0876043619 American psychic Edgar Cayce predicted an acceleration in physical changes in the Earth beginning in the period 1958-1998 which would lead to a shift of the Earth's poles at the end of the century. Geologist William Hutton compares predictions in the Cayce psychic readings with the latest geophysical research findings and points to patterns of change described by Cayce as long ago as the 1930s that appear to be coming true - with enormous implications for the next few years.

Earth's Catastrophic Past and Future: Scientific Analysis of Information Channeled by Edgar Cayce

By William Hutton and Jonathan Eagle. 598 pages, 2004. <http://www.universal-publishers.com/book.php?method=ISBN&book=1581125178>

Earth Changes Update

By Hugh Lynn Cayce, the son of Edgar Cayce \$8.95 paperback.

Earth in Upheaval

By Immanuel Velikovsky. Published by Doubleday & Company, Inc, New York, and Buccaneer Books, Inc., PO Box 168, Cutchogue, New York 11935. Scientific reports compiled to show that the Earth herself is the best witness to periodic cataclysms occurring approximately every 3,600 years. From flash frozen mastodons in the Arctic circle to a universal drop in sea level to whales on mountain tops, the evidence is undeniable.

[The] End Times, Prophecies of Coming Changes

By John Van Auken which covers prophecies from the Bible, Edgar Cayce Nostradamus and messages from Marian apparitions. \$12.95 paperback. Published by ARE Press, 1-888-ARE-0050, Virginia Beach, Virginia.

Genesis Revisited

By Zecharia Sitchin, \$6.99 ISBN: 0380761599 Published by Avon September 1996. Sitchin's theories have a wealth of leads originating across the sciences; from archeology and astronomy through genetics and geology to zoology and zoomorphism, demonstrating that the ancient Summerians were aware of an additional, inhabited,

planet in our Solar System.

Mass Dreams of the Future

By Chet B. Snow. Documents that relationship between future dreams of many people about a future pole shift and the current earth changes, and where this is leading. Popular book, a favorite of and highly recommended by many.

Pole Shift

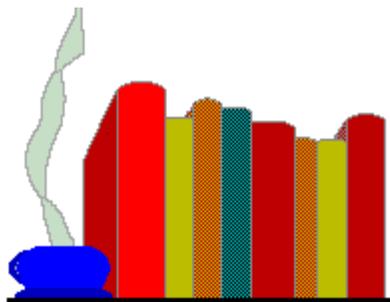
By John White, presents the debate about pole shift, with scientific evidence that pole shifts occur on Earth and countering arguments. Published by A.R.E. Press, 1-888-ARE-0050, Virginia Beach, Virginia. \$9.95 ISBN: 0876041624

When the Comet Runs: Prophecies for the New Millennium

By Tom Kay. Examines millennial prophecies from Nostradamus, Ezekiel, Hildegard of Bingen, Edgar Cayce, Mary Summer Rain, Gordon- Michael Scallion and others. \$12.95 paperback published by ARE Press, 1-888-ARE-0050.

Worlds in Collision

By Immanuel Velikovsky. Published by Doubleday & Company, Inc, New York, and Buccaneer Books, Inc., PO Box 168, , New York 11935. Documents written and oral history of the peoples of the world, describing what they experienced during prior pole shifts and the aftermath, showing consistent patterns reported by isolated people never in contact with one other. Also translated into Dutch as Werelden in Botsing, Ankh-Hermes by, Deventer, ISBN: 90-202-3258-4



Troubled Times



Books on Social Adjustments

Salamonie Farm

By Noah Hersberger, ISBN: 1-879863-53-7 Published by Goosefoot Acres Press, PO Box 18016, Cleveland, OH 44118-0016, (216) 932-2145. Autobiography of one Amish farm family over an entire year, through the eyes of a six-year-old child. Author is Amish. Helpful in orienting young children to a simpler lifestyle.

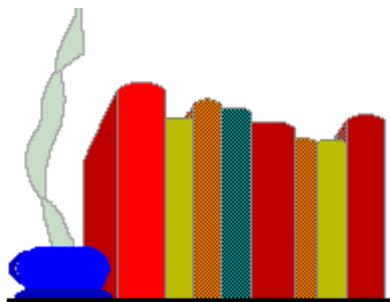
The Adventures Of Little E The Friendly Alien

By Paul Handler, published as e-books and Kindle books and available at Amazon, Barnes & Noble, [FastPencil](#). ISBN for the series are:

The Adventures of Little E The Friendly Alien: Show & Tell (E-BOOK) ISBN: 978-1-60-746024-4

The Adventures Of Little E The Friendly Alien: Dude, I'm Bored (E-BOOK) ISBN: 978-1-60-746523-2

The Adventures Of Little E The Friendly Alien: Trick Or Treat (E-BOOK) ISBN: 978-1-60-746438-9



Troubled Times



Books on Wilderness Living

B&A Products

A catalog of survival kits. P.O. Box 11249, Carrollton, TX 75011-11249, (214) 418-9771.

Backpacker, Wilderness 911

By Eric A. Weiss, M.D. ISBN #0-89886-597-2 A step-by-step guide for medical emergencies and improvised care in the back country.

Basic Bows

By A.S. Clarke, a 2-part article published in the July/August and September/October 1986 issues of the Australian archery magazine *Archery Action*.

[The] Book of the Longbow

By R. Elmer and C.A. Smart, published by Doubleday

[The] Book of Outdoor Lore

By Clyde Ormond. A great book full of survival skills, equipment needed (nothing high-tech: this book is from the 1950's), edible plants and animals and how to gather/hunt/prepare them, etc. Even includes making and using primitive weapons (e.g., a hunting sling). Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Building Robin Hood's Longbow

By Jelen Maciek, a 2-part article from the US magazine *Traditional Archery*, 1985.

Bushcraft

By R. Graves. Written by a trainer of the Australian SAS, survival manual Australian style, with a superb array of improvised traps and snares, including fish traps. Limited amount of plant information, and that mainly useful to Australians, but some universally applicable good things to know, like identifying cyanide and oxalates by flavor. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Camping and Woodcraft

By Horace Kephart (1917). Reprinted in 1988 by the University of Tennessee Press. This book contains over 800 pages of outdoor skills, from different types of fires for different purposes to diet and cooking to how to build temporary and permanent shelters and furniture. The hardcover costs \$29.00. While outdoor technology has improved in the past 75 years, most of the skills the author teaches have not changed in 1000 years.

[The] Complete Outdoorsman's Guide to Edible Wild Plants

By James A. Duke. New York: Charles Scribner's Sons, 1977.

[The] Essential Wild Food Survival Guide

By Linda Runyon. Introduction to living off the land. Field guide to plants including descriptions, uses, nutritional analysis, collection and storage. Recipes. How to cultivate them in a home garden. 707-459-6410 Fax: 707-459-1925 <http://www.bountifulgardens.org> 323 pages. \$20.00

God's Free Harvest

By Ken Larson. An amazing guide for anyone who appreciates and enjoys nature. It will teach you how to garden with wild foods, learn to pick trailside. Wild foods are free and nutritious. 239 pages. \$13.00

Handbok Overlevnad

By Armen. 1988. 228 pages. Well illustrated, pedagogic. Swedish military survival handbook. Rather low initial level required. Particularly strong on plants. Well researched. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Handbook of Edible Weeds

By Thomas S. Elias and Peter A. Elias. Boca Raton: CRC Press, 1992.

How to Stay Alive in the Woods

By Bradford Angier, 1956. Among other things, discusses insect swarms and how to deal with them. Considered an excellent book by the experts.

Longbow - A social and military history

By Robert Hardy

Naked into the Wilderness, Primitive Wilderness Living & Survival Skills

By John and Geri McPherson. ISBN #0-89745-997-0 Exactly what the title implies - into the wilderness with nothing and living well and good.

Naked into the Wilderness, Primitive Wilderness Skills, Applied & Advanced

By John and Geri McPherson. ISBN #0-89745-984-9 Exactly what the title implies - into the wilderness with nothing and living well and good. Building on the lessons taught in book 1 in the series.

Native American Bows

By T.M. Hamilton, edited by Nancy Bagby, published by George Shumway, York, Pennsylvania, 1972.

Official Pocket Edible Plant Survival Manual

By Robert W. Pelton. Did you know, for example, that the inner bark of some trees can be eaten raw, cooked, or pounded into flour, or that the sap of many trees other than Maple can be made into delicious syrup? All of this and much more is included in this unique book. 275 pages. \$12.00

Primitive Wilderness Living and Survival Skills

By John and Geri McPherson. Covers friction fire, shelters, trapping, hide tanning, primitive tools, containers, food preparation, sinew backed bow and arrow and lots more - an excellent how-to book. Prairie Wolf, PO Box 96, Randolph, KA 66554. The book tells you how to live, not just how to survive. Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

Sling Braiding of the Andes

By Adele Cahlander, ISBN: 0-937452-03-3, softbound, 96 pages, profusely illustrated, purchase at: Unicorn Books and Crafts, 1338 Ross St., Petaluma, Ca. 94954 - 6502. (707) 762-3362 or (800) 289 9276. \$12.95 each and \$4.00 for shipping and \$.60 for each additional copy.

Survival

By Xavier Maniguet.

Survival: A Manual That Could Save Your Life

By Chris & Gretchin Janowsky (Paladin Press). This book is geared toward long-term survival in typical North American environments. Chris runs the World Survival Institute in Tok, Alaska and is a regular contributor to the American Survival Guide. The WSI can be reached at (907) 883-4243 or by writing to Box 394C, Tok, Alaska, 99780. He also produces videotapes, including a set of 4 wilderness survival tapes.

Tracking, a Blueprint for learning how

By Jack Kearney. How to follow people's and animals tracks, and by exclusion, how to avoid being tracked.
Recommended by decastro@netcom.com (Richard A. De Castro), on misc.survivalism.

[The] Traditional Bowyers Bible

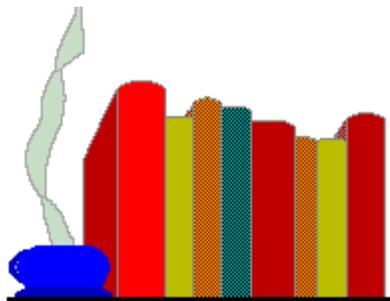
Bois d'Arc Press, P.O.Box 233, Azle, Texas 76098 tel.: (817)237-0829. about \$25-\$29 each

Wilderness Living & Survival Skills

By John & Geri McPherson. For surviving by starting with nothing.

Wildwood Wisdom

By E. Jaeger, 1947. Among other issues, discusses insect swarms and how to deal with them. Many recipes for insect repellent using natural or attainable ingredients.



Troubled Times



Who are the Zetas?

The Zetas are a group of Service-to-Other Beings who are assisting this planet and it's people in the transformation from 3rd to 4th density. This Transformation is happening now, and will be completed sometime after the passage of the 12th Planet, and the resulting Pole Shift that this passage will cause. See:

ZetaTalk: [Zeta Reticuli](#)

ZetaTalk: [Many Greys](#)



Troubled Times



Who is Nancy?

Nancy is the Zetan Emissary, and has been aware of her contactee status since 1993. She started Zetatalk in 1995 in what was then known as ISCNI (an AOL chat group). She has also composed Zetatalk in book form for those that prefer the written page, and those that do not have access to the Web. These books are sold through mail order, but the entire contents of Zetatalk is available for free on the website. The point is: she is not in this for money fame or power; she is simply delivering the message that the Zetas provide to the best of her ability.

Nancy is not a Channel or Medium. Channeling implies that the messenger is being controlled by and giving information directly from the entity being channeled. Nancy on the other hand has enhanced telepathic communication with the Zetas and is not controlled or given over to the channelee. Nancy receives a message in the form of emotions, thoughts, pictures, etc. and then tries to put the right words to them. That is why she sometimes misinterprets and is corrected by the Zetas. We are hearing what words Nancy has put to a message that she is conveying for someone else. So Nancy is much more involved in the message than a channeler would be. See:

ZetaTalk: [Language Barriers](#)



Troubled Times



What is Troubled Times?

Troubled Times is a group of volunteers helping each other prepare for the passage of the 12th Planet in 2003, and the resulting Pole Shift of the Earth. There are people here from all walks of life, and many countries, all learning from the vast information provided by other members, and contributing in what areas they can. There are several [Mail Groups](#) available to join. You may join as many as you like, and they are all free of charge. The only restricted group is TT-Inc. This is the [Nonprofit](#) corporation mail group, and is restricted to members and officers of the corporation.



Troubled Times



Sect, Religion, or Cult?

None of the above. People clinging to a religion or a cult are seeking a sense of belonging, a sense of identity, a voice of authority, and answer to questions, and the hope of rescue. Religions ask of their followers to believe without questioning. They are *told* what to believe, and often punished or threatened if they question the message. Cults seek to make their followers emotionally dependent, removing them from their families so they cannot escape. ZetaTalk and Troubled Times empower, rather than restrict, independent thought and living. See:

ZetaTalk: [Independent Thinking](#)

Most adult humans, grownup on the outside only, are still children on the inside, clinging to whomever acts like a self-proclaimed god by either claiming to take care of the adult child or claiming to have the answers.

ZetaTalk: [Next 3 1/2 Years](#), written Sep 15, 1999

Look at what is actually happening - the food, the weather, the safety, the honesty in the messages that are being put forth. The populace should start exploring the site that our emissary, Nancy, and so very many of her friends have put together to help every man help themselves.

Troubled Times is devoted to helping the common man to self help. In The Word section of Troubled Times, *both* sides of arguments or *alternate* views are frequently presented. See:

[Sitchin & Velikovsky TOPIC](#) vs [Cambridge Conference TOPIC](#)
[Geo Change TOPIC](#) vs [Global Warming TOPIC](#)

In addition, all of the people associated with Zetataalk and Troubled Times are volunteers, donating their time and energy to this cause. Everything you see on the websites, from the ongoing translations of Zetataalk into other languages, to the numerous contributions of information are all done voluntarily. Even the nonprofit organization, Troubled Times, Inc., it's members, Board of Directors, and Officers are volunteers. None receive monetary compensation for their duties.





[Mail this Page](#) to a Friend.

ZetaTalk: Why They Care

Note: written by Jul 15, 1995

People are where it's at, here on Earth. Issues of the coming pole shift, of the ecology, of nuclear disarmament or how many years the Sun has until it burns itself out - all these are meaningless unless one considers mankind. Pole shifts and ecological disasters and nuclear disasters and dying suns occur often in this Universe, and no one notices because it affects no one. Why do we care, other than because we are living in your Solar System today and tomorrow, and because our hybrids are both your cousins and ours, and because your souls will be our future neighbors in the world we are both building? We care because we empathize with your situation, having been there ourselves, and have the rare opportunity, because of your call to us, to become directly involved with you - with the people of Earth.

We, the Zetas, cannot go back, as there have been adjustments to our physiology that would kill us if we returned. We are referring to what happens to physical bodies when their environment changes. You have some sense of this because of reports from your astronauts. After a brief space sojourn, they find their bones decalcified. Imagine what happens after decades away from the pull of a heavier gravity. Another point of comparison is what happens to deep sea divers when they return to the surface. If rising too quickly, after only a few hours at most, they get the bends and die horrible deaths. The body adapts, and must be given its allowance if the return trip is to be made. For us, the return trip is virtually impossible. It is much easier to lighten up than to strengthen. In many cases, to strengthen is impossible. As an example, some oldsters may wish to get into physical fitness, but find the changes they wish to impose on their bodies are no longer possible. Some journeys, undertaken, do not have a return route. For us, this was understood at the beginning.

We are all volunteers here on your Earth, as operating in the Service-to-Others mode we are not commanded. All work is voluntary. Do we miss our home planet? Of course we do, as you might imagine. Imagine yourselves, on another planet, in another galaxy, not ever seeing the flora and fauna familiar to you, not ever seeing the regular rising and setting of your beloved Sun and Moon, not hearing the chirping and singing of birds, the rustle of the leaves in the trees, or the taste of good wine and fresh fruit. Imagine living off rations, sleeping in cramped quarters with no view, with a task that will consume your entire lifetime. We are not only volunteers, we are extremely dedicated volunteers, as we all went in with our eyes open.

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Troubled Times



Service to Other / Service to Self?

The life force is the same throughout the Universe. The lessons to be learned during incarnations are similar, during the various stages. In the stage, or density as some know it, that humans are in, the lessons focus around self. Should one be focused entirely upon self, be in Service-to-Self, or should one be focused upon others as well, be in Service-to-Others. In the stage we, the Zetas are in, we have made that determination.

We are Service-to-Other Zetas. Our ambitions, therefore, relate to how we can be of Service. Our careers are self chosen, where each chooses that career he feels would best allow him to be of Service. Our society's rules are a whole other question, which would be extensive to answer. Suffice it to say that our society takes care of the minimal needs of all Zetas. We are free to concentrate on our chosen Service. Any gaps in the support structure is observed by any Zetas in the vicinity, who fill in with service as needed. We utterly trust each other. At times this trust proves misplaced, but this is part of the lessons we are learning during this stage, or density, that we are in.

ZetaTalk: [Service to Other](#)



Troubled Times



What is the Call?

The concept of The Call is but an extension of concepts humans are familiar with. One goes to the porch to call the family into dinner. One picks up the phone to call another in order to converse. When giving The Call to aliens, humans are issuing a request for contact, without a voice, without words, but the meaning is sent and understood nonetheless, by telepathic and other such wordless and wireless means. The Call is made, received, and understood, and a conference is subsequently arranged. There are times of loneliness, despair, wrenching concern for a loved one injured or in trouble, times the individual wants to offer themselves in the loved one's stead, times when the path to follow is not clear and there is indecision and hesitation at the gateway, times when another is viewed as a blockage to be removed by physical and potentially violent and harmful means - these sorts of times occur, not daily, but many times in a lifetime. These are times of The Call.

The individual is in control of alien interactions affecting him or her self. This is in fact intuitively understood by most humans, even those who are unaware of alien influences over their lives. The reason this is intuitively understood is because of interactions not consciously remembered. All humans give The Call, and do so frequently during any given lifetime.

ZetaTalk: [The Call](#)

See also:

ZetaTalk: [Who Takes the Call](#)

ZetaTalk: [Service to Self Call](#)

ZetaTalk: [Just say No](#)



Troubled Times



12th Planet / Nibiru?

There is a great deal of information in both Zetataalk and Troubled Times regarding the passage of the 12th Planet. It is indeed the fabled “Nibiru” described in ancient texts, and the same planet described by both Sitchin and Velikovsky. Try the links below for further information.

[12th Planet](#)

[Rogue Planet](#) **TEAM**

[Rogue Planet](#) **TOPIC**

[Rogue Sighting](#) **TOPIC**

[Sitchin & Velikovsky](#) **TOPIC**

[2003 Pointers](#) **TOPIC**

ZetaTalk: [Sitchin](#)

ZetaTalk: [Velikovsky](#)



Troubled Times



Why haven't I heard about this Planet before?

There is an entire section of ZetaTalk that covers this subject. At the ZetaTalk home page, click on the hot linked word [Government](#). See also:

ZetaTalk: [Suppressing the Word](#)

ZetaTalk: [Planet X](#)



Troubled Times



What is the 12th Planet's path?

The 12th Planet is in a Retrograde Orbit about our solar system, and takes about 3,657 years to make a full orbit. For more detailed information see:

ZetaTalk: [Retrograde Orbit](#)

ZetaTalk: [12th Planet Orbit](#)

ZetaTalk: [Second Foci](#)

ZetaTalk: [Distance from Earth](#)

ZetaTalk: [Entry Angle](#)

ZetaTalk: [Second Pass](#)



Troubled Times



When will I be able to see the 12th Planet?

The Zetas state that technically it is now visible to the human eye, though only an educated eye would see it. See:

ZetaTalk: [Comet Visible](#)

Just prior to the Pole Shift, *The comet will be visible to the eye for approximately 7.3 weeks, certainly no less than 43 days, prior to the great gravitational and magnetic disruption we have described.* From:

ZetaTalk: [Time Frame](#)



Troubled Times



What is a Pole Shift?

The ancient's called this monster the 12th Planet, and as this magnetic giant passes by, it will force our North and South Poles to rotate 90 degrees. The shifting poles will drag the Earth's crust with them, ultimately producing a new global map in a matter of hours in a massive cataclysm affecting all life on earth. These events have occurred before, as ancient legends and Prophecies fortell, creating what man interprets to be ice ages, wandering poles and the flood, and have resulted in the extinction of the Mastodon and the sinking of Atlantis.

Quoted from the [Troubled Times](#) main page.



Troubled Times



Is my location safe?

Many locations worldwide are listed with descriptions of how safe they will or won't be. It's a good page to bookmark for future reference.

[Zeta Advice](#) **TOPIC**



Troubled Times



Where is the best place to go?

That entirely depends on your location in the world, and how the Pole Shift will effect that location. After reviewing the Zeta advice on your local area from the link above, you must decide for yourself, and then prepare accordingly.



Troubled Times



When do the cataclysms start?

The Zetas say that the passage/Pole Shift will happen in mid May 2003, thus the counter on the Troubled Times home page. Some people have been unsure of the date, receiving information from other sources that the pole shift isn't due to happen until between 2010 and 2012. This is discussed at:

[Mayan Calendar](#)

ZetaTalk: [Precision](#)

Listed below are the discrepancies between the Gregorian calendar, and the Mayan calendar.

Gregorian	Mayan
1991	2000
1992	2001
1993	2002
1994	2003
1995	2004
1996	2005
1997	2006
1998	2007
1999	2008
2000	2009
2001	2010
2002	2011
2003	2012



Troubled Times



How should I prepare?

Your circumstances are as varied and unique as each member of this group. Search the site for information that relates to your situation. If you don't find it, or are unsure, simply post your questions to the group on one of the [mailing lists](#), and other members with similar circumstances will offer their thoughts and suggestions.



Troubled Times



How do I search for Information?

In the left hand column of the ZetaTalk home page and the Troubled Times main page is a hot link to our search engine. Just click on that, and then type in the word or phrase you are looking for. The Search Engine covers subjects in both ZetaTalk and Troubled Times.



Troubled Times



Can I talk with other people preparing?

Most certainly! On our lists and perpetual [IRC](#) channel you will find people that have been preparing for many years, and those that have just begun. Before joining any of the lists, please read and understand the purpose for each one to avoid confusion, and the wrath of the list monitors! Also, if you are uncomfortable with posing questions before a group in the beginning (we have many lurkers out there!) you may send questions to the [FAQ Queue](#). One of the members of Troubled Times will be happy to help, or at least point you in the right direction!

Please remember that you should *never* reveal, publically, where your survival site is located or give personal information on the lists or IRC chat. Keep this close, and use private e-mail for any such information exchange. In making preparations, friends and family members you have known for a long time are the individuals you can count on. Giving personal information out to those casually met via the Internet is *never* a good idea. Keep discussions on personal preparations or your locale *general*, to protect yourself.



Troubled Times



Getting Started

From the [ARRL's Web](#) page

How to Get Started in Amateur Radio

The ARRL Educational Activities Department (EAD) distributes a **New Ham Package** that is sent at no cost to you. The material describes **Amateur Radio**, popular ARRL study guides, and includes a list of your local ham radio clubs, ham radio classes and volunteer examiners in your area. To serve you best, we'd like to know the following when you request an New Ham Package:

- Your First Name, Middle Initial, Last Name
- Call Sign (optional)
- Date of Birth, MM/DD/YY
- Street Address
- City, State, Zip, Country
- Phone 1 (day), Phone 2 (evening)

Contact ARRL today for an New Ham Package by any of the following methods:

Telephone Toll-Free: 1-800-32-NEW HAM (our New Ham "Hot Line")
1-800-326-3942

Mail: ARRL EAD, 225 Main St,
Newington, CT 06111-1494 USA

Telephone: (860) 594-0301

FAX: (860) 594-0259

ARRL BBS: (860) 594-0306

e-mail: newham@arrl.org

CompuServe 70007,3373

Prodigy PTYS02A

America Online HQARRL1

GENIE ARRL

WWWeb <http://www.arrl.org/>

(Make sure to include a specific request for the New Ham Package and include your postal address because there is too much material to send via e-mail or fax.)



Troubled Times



ARRL

The American Radio Relay League (ARRL) addresses such subjects as

- amateur, ham, and short wave radio
- emergency communication, and telecommunication
- repeaters, microwave, and radio design
- DXCC, HF, NCJ, QEX, QSL, QST, SAREX, UHF, VHF, W1AW
- regulations and the FCC

The ARRL home page on the web at <http://www.arrl.org/> states:

Ham radio spoken here: Welcome to ARRLWeb, the American Radio Relay League's home on the World Wide Web! The League (email hq@arrl.org, telephone 860-594-0200, fax 860-594-0259), a membership service organization headquartered at 225 Main St, Newington, CT 06111, USA, serves the over 600,000 Amateur Radio operators, enthusiasts, experimenters and hobbyists in the United States, its territories and possessions.



Troubled Times



Highly Recommended

As a lifetime member of the ARRL and having participated in almost 100 emergency and disaster relief operations, I highly recommend and encourage everyone to spend some time looking at this site. In addition, it would seem highly appropriate to include a topic within Troubled Times devoted to specific ham radio related topics as this will become the foundation of any pole shift inter-community communications, including implementation of a new Internet post pole shift.

Offered by [Ron](#).

[WB5KAN](#) - General Class



Troubled Times



Relaxed

I just learned of extensive and exciting changes to the FCC Laws relating to Ham Radio in the US. In summary, the current 6 classes of licenses are being reduced to 3; and the requirements to send and receive Morse Code are being reduced from 20 and 13 to 5 words per minute across the board. This means that the vast majority of Troubled Times members will be able to obtain a Ham Radio license with a minimum of effort - especially with the most difficult part, Morse Code.

Offered by [Ron](#).



Troubled Times



Antennas

If you want to try a wire line, use a coil and a specific length for your specific frequency. The best and most annoying transmitting antennas for your neighbor's TV reception is the wire square running around the house rooftop as the ground-plane and four wires running down from the center of the roof-tip but lifted up above the square. This is one of the most omnidirectional antennas you can make. It can also be made internal to the roofing. You may cause interference to others or you may not, but you can do some serious Dxing.

Steven, [3328-5642](tel:3328-5642) or [015579751](tel:015579751)

Write to The **CBC (Canadian Broadcasting Corporation)**, They will send you a free **Antenna Handbook**. It's an 18 page, 14 chapter book. Describes many antennas and how to construct them. Discusses Whip antennas, Vertical, Marconi Inverted "L" antennas, Windom, Half-wave dipole, folded dipole, triple dipole, vertical dipole, fan vertical antenna, long wire, "V" beam, rhombic antenna and antenna accessories. Very complete book. Available free in english and french versions. Write:

Radio Canada International

C.P. 6000

Montreal, Canada

H3C 3A8



Troubled Times



Home-Made Antennas

Since I just built an electric fence to control my escape artist goats, I have a roll of wire that is actually like string with braided wire in it. It is very convenient. It is no harder to work with than a roll of string. The reason I bring this up is maybe we can do some experiments with it for ham radio antennas. 600 meters per roll is one big antenna. Maybe it could be strung between trees or on posts some how. I'm not that knowledgeable about radios and antennas yet, but I have two rolls of this wire already. My electric fence charger is also 12 volt powered. Very effective. Ask my goats.

Offered by [Clipper](#).

Since I grew up in a home with my dad always on the Ham radio as opposed to playing catch with me, I can tell you that the conventional way is a tall, tall tower. But just as that is the conventional way, I also know you can use your house wiring to make an antenna. I'm guessing that if you strung that wire in a circle with a 100 foot circumference, you'd do all right.

Offered by [John](#).



Troubled Times



Inexpensive

There's a web site that tells you how to **Build Your Own** short wave radio. Another place, **Tweak & Peak**, states they sell the world's most advanced communications equipment.

We carry a complete line of Ham Radios & Accessories, C.B. Radios & Accessories, Computers & Peripherals, Car Audio Systems, and other Electronics. Here at Tweak & Peek quality is first and profit is last. We sell quality equipment at pennies above cost. Call us for price info. We will be happy to serve you! We are dedicated to providing the best value for our customers. If we wouldn't own it ourselves, we won't sell it. Give us a call today!

Tweak & Peak

RR 4 Box 1912 Rt. 7 South
Middlebury, Vermont 05753
General Email: Info@TweakNPeek.com
Support Email: Support@TweakNPeek.com

Phone: 802-388-0635
Fax: 802-388-8984
Pager: 802-290-0860

General information

Grundig, Sony, and Sangean (from Taiwan) make the most popular brands. Look for a radio with digital, phase-lock-loop, direct-access tuning; full-spectrum, continuous-frequency coverage; at least 40 station presets; and LCD display panel. The Grundig Yacht Boy 400 sells for under \$200 and is the size of a VCR cassette. If you prefer news in smaller bites, try the Sony ICF-SW100S for about \$475. It's the size of an audio cassette.

Offered by [Peter](#).



Troubled Times



Old Dishes

Is there any use my Primestar receiver and dish? I upgraded to DSS and Primestar left the receiver and dish at my house.

Offered by [Ted](#).

Yes, use it for accurate navigational location of your site after the pole shift. I am not familiar with the exactness of this particular unit. However, in general one would:

- Save the Low noise amp (LNB) and the dish.
- Purchase an approximately \$40 in line signal finder or use the receiver if it has a signal strength meter or indicator.
- Use a 12-Volt gel cell for the powering the Low nose amp if needed. If using the receiver it will supply the power for the low nose amp.
- Rig up an equatorial mount (like a telescope) out of pipefittings or an old telescope.

After the pole shift you can use this to find the sun behind clouds to a high degree of precision usually less than one degree. When aimed directly at the sun you get a strong nose signal. By lining up the equatorial axis (over several days) with the earth's rotation one will find no motion in declination. Measurements will be needed though out the day to find the sun. This means you only move the time axis to find the sun. This will give you the direction of north rotational pole very accurately. The angle this makes with a perpendicular to the surface of the earth will give your current latitude. By measuring declination over a 6-month period you can determine your seasons accurately. You will also be able to determine accurately your latitude, which is related to average expected temperatures.

I made such a unit over a year ago and have taken lots of readings. At times of the year I can see the sun through the house ceiling and in cloudy conditions. At other times there is too many reflections in the parts of the ceiling of the house. If I take it outside, there has never been a time I couldn't see though a cloud cover.

Offered by [Mike](#).

I am collecting these various sized dishes, largest is 12 feet, to use for moon bounce Ham Radio communications.

Offered by [Ron](#).



Troubled Times



International

There are international agreements that regulate the radio frequencies and modes of operation (voice, digital, Morse code, etc.) that may be utilized by different classes of license holders; although there are some differences in different countries. For the most part, one must hold a class of license that includes the ability to transmit and receive Morse code at a certain speed before being allowed to operate at frequencies less than 30 MHz. It is these lower (or HF, i.e. short wave) frequencies that are able to be propagated around the world (because they bounce off the upper layers of the atmosphere).

The code less license is usually limited to above 30 MHz (VHF & UHF). These frequencies are usually limited in range to just beyond the horizon. To extend the range, repeaters are often placed into operation by local hams. In addition, there are many satellites used by hams at VHF and UHF frequencies that allow for global communications; but schedules must be coordinated so that communications between any two locations can occur; and the time that these communications can take place is quite short due to the movement of the satellite.

So, given the proper license, equipment (HF), antenna system (usually tower with large antenna atop it), and propagation (affected by ionization of the upper atmosphere), you and I could chit chat for hours. We can even do that now, using Internet phone or IRC software.

Offered by [Ron](#).

WB5KAN - General Class



Troubled Times



Best Bet

I think it is significant, that the means of communications offered to the National Guard, for ALL emergencies, is of course H.F. radio, something I have advocated from the beginning as the best frequency area for comms in the worst case situations. Of all the frequencies available, if I had to choose only one after any major EMP disturbance it would be in the low HF, i.e. ham short-wave area.

1. Because these frequencies are not dependent only on skip from the ionosphere, in fact they have an excellent ground wave ability, which should remain in place even during ionosphere disturbances.
2. There is by far the best chance of finding others to talk to on ham frequencies due to hams having the ability to jury rig an antenna, or fire up a transmitter from raided parts from an old TV set. I once made a series of transmissions around the world with a H.F. transmitter connected to a tree, certain trees are better than others, but most will do it! Almost anyone can do it. I can provide a full article if need be.
3. A lot of hams still know Morse code. A Morse transmitter is even easier to build from an old TV set than a voice modulated transmitter. A one valve A.M. transmitter operating in the low end of HF, say 80 meters, should be built now. As I have done, it will transmit around the world, and needs no shielding from EMP as valves are not particularly sensitive to EMP. That is why all soviet and Chinese fighter aircraft had valve devices instead of solid state. Plus if you are worried about EMP then you can easily unplug a valve, and store that in protection (or store a spare) rather than the whole radio.
4. Contact with the ham fraternity in your area would be a good idea, these people are usually very resourceful, and in the main will freely give time to helping others and helping in emergencies.

Offered by [Darryl](#).



Troubled Times



Long Distance

HF radio may well be useful, using either voice, cw, or digital in the last year or months before the pole shift if there is disruption of the Internet. Post pole shift HF radio will probably be useless for long distance communication due to the changes caused by changes to the upper atmosphere by the 12th's passing. Who knows how long it will take before things up there settle down to the extent that HF propagation as we know it will be able to again exist. Along the same line, our satellites will no longer exist, so no long distance VHF/UHF communication that way either.

Offered by [Ron](#).

WB5KAN - General Class



Troubled Times



Ionosphere

The upper atmosphere and most probably the Ionosphere will be disrupted and swept away at the time of the passage of the 12th planet. However, the Ionosphere will be rebuilt in a matter of days to weeks. To the best of my knowledge X-rays and other ionizing radiation from the sun are constantly rebuilding the ionosphere. After the pole shift the ionosphere may be closer to the ground than it is now but I see no indication that it will not come back. Even if it is disrupted for a month or two I don't consider this a problem to the use of conventional short wave. Since this is a critical assumption we may want to confirm this with the Zeta's.

Offered by [Mike](#).

Disruption of *all* communications occurs for some weeks shortly after the pole shift, due to the turmoil the Earth has undergone on all levels. By the time radios are working again, and by this we mean are not just delivering static, the ionosphere will indeed be rebuilt.

ZetaTalk

I have no idea of how long it would take to rebuild the ionosphere, although I would expect that it would be rebuilt. As you state, it would probably be closer to ground level and thus would not support as long a distance communication path as it does now; although there is such a thing as multi-skip where the signal travels from the transmitter, is refracted back to earth by the ionosphere (1st), is bounced from the earth back to the ionosphere, and is refracted back to earth again where it could be received at a much further distance than any single skip. In fact, during the peak of an 11 year sunspot (storms on the sun surface) cycle, it is not unknown to be able to transmit a signal, and then after a short wait, be able to hear that same signal after it has traveled completely around the globe in this manner.

Offered by [Ron](#).

WB5KAN - General Class



Troubled Times



Moon Bounce

The only long distance communication mode that I see possible post pole shift that is currently practiced by a few well equipped hams is moon bounce. It works exactly like it sounds. You transmit your signal at high power (2000 watts) using a very high gain and narrow beam width antenna system at the moon. The signal travels to the moon, bounces back, and is received by anyone else that can also see the moon. Of course, the receiving station requires the same sort of equipment as described before. This is pretty exotic stuff compared to your normal, everyday ham setup; but it can and is being done every day by the few that are into it.

You can get a good idea of the [State of the Art](#) in moon bounce, but note that this web site isn't quite up to par as the initial links that are inside the main page don't seem to work, but just keep scrolling and you'll find some really interesting stuff, including pictures of the required antenna systems and recordings of actual moon bounce signals. All the signals I've listened to so far use CW (Morse code) and are very weak compared to the noise level, but the time domain signal analysis photos indicate that the signals are quite strong enough for digital modes.



You will also find that there are a tremendous number of hams actually using moon bounce on a regular basis. They seem to be sticking to the mode of CW, which is, by the way, the *best* mode for any type of weak signal work. The mind is still the best computer.

Offered by [Ron](#).

[WB5KAN](#) - General Class



Troubled Times



Meteor Trails

Meteor Trails Are Being Used As Cheap Alternative To Satellite Systems

From *New Scientist*, by Barry Fox, 15th August 98, page 17

A communications system developed to keep the US military talking after a nuclear war is now helping a private ambulance company monitor the movements of its vehicles. During the Cold War, the US military developed a method of sending data by bouncing radio signals off meteor trails. Every day more than a million specks of dust enter the Earth's atmosphere from deep space and burn up, leaving trails of particles. Amateur radio operators had noticed in the 1920s that they could bounce signals off these trails. Although the trails last only a few tenths of a second, there are so many that at any given time there are usually enough for a ground-based transmitter to work with.

The high cost of developing the "Meteor Burst" system meant that the project was cancelled when the Cold War ended. The scientists who worked on the system left to set up a Seattle-based company called **StarCom Technologies**, which has developed a civilian version as a cheap alternative to satellite systems. StarCom transmitters continually send probe signals to test for reliable reflections. When a return signal is sensed, the transmitter sends out a rapid burst of digital data at frequencies between 40 and 50 megahertz that can be picked up over a wide area. The data transfer rates are low, up to 20 kilobits per second, and transmission time is limited to a few hundred milliseconds per meteor, but this is sufficient for uses such as monitoring vehicles' positions.

This is the purpose for which the system has been tested by a private ambulance company, **American Medical Response** (AMR), which ferries patients all over Washington State and Oregon. After successful tests of prototypes over the past six months, the company this week began fitting StarCom transceivers to a quarter of the 80 vehicles it uses to serve Seattle and the surrounding area. All the ambulances are fitted with a global positioning satellite receiver as well as a StarCom transceiver, allowing them to continually report their position back to AMR's Seattle control room. The system enables the company to keep track of where an ambulance is and whether it has a patient on board. "We crosschecked the StarCom data with our own computer mapping and feel pretty confident that it is hitting the mark," says Greg Sim of AMR.

StarCom now wants to hide transmitters in vehicles that will automatically send out a signal if the vehicle is stolen. The system could also be used to interrogate measuring instruments in remote areas. "We are using the satellites which nature provides for free," says Guy Rosbrook, StarCom's chief executive and a former Meteor Burst scientist. "There are so many meteors that you can regard the sky as a wide-area cracked mirror."



Troubled Times



Recommended

As far as meteor trail propagation goes, I personally have a good bit of experience. Yes, they work *great*; especially around 50MHz (6 mtrs). This mode of propagation has been utilized by Hams for many many years. The only problem in a survival situation is: *when will you know the meteors will be there?* Without them there is only background noise. Today, we know because major meteor showers are known well in advance and even announced on WWV; but in the Aftertime it would be an effort in frustration.

However, it does occur to me that during the time period of the 12th's passing, when most other propagation will probably be disrupted, the debris (meteors) that tag along with the 12th planet will probably be bombarding the earth's atmosphere at a never before recorded rate. Meteor scatter propagation would then be fantastic! The thing to remember is that this mode works best from 50Mhz through around 146MHz. With the intensity that I would anticipate, one could probably even use the 10 meter band (~28MHz) and even the CB channels - 11 meter band.

From a broader context, the system made by StarCom has *not* been explored extensively by HAM radio; although *all* the components of such a system are in common use every day. A 6 mtr (50MHz) transceiver connected to a packet system and computer could very easily mimic the system marketed by StarCom. The computer could be set up to key the transmitter, say once a second, then listen for an echo. When the echo is heard, the computer would cause a packet to be transmitted and then listen for an acknowledgement from other systems. This would continue until all systems on the network had received the packet correctly. Then the next packet in the queue would be up for the next opportunity. Such a system would be EXTREMELY slow; but for high priority messages could be very reliable and have an extremely large range of coverage, even around the world! I consider this to be a fantastic concept!

I think that this is a good example of you good people continuing to plug away at the problems and suddenly a solution pops forth. Great work! Check out the Amateur Radio Handbook for a most comprehensive discussion of this mode of propagation. Hams have undoubtedly made hundreds of times more radio contacts via this mode of propagation than all other entities combined.

Offered by [Ron](#)
WB5KAN



Troubled Times



Ground Wave

So far, we have talked about using packet, VHF/UHF frequencies and utilizing repeaters to communicate between communities that are relatively close to one another. There is a simpler and less expensive alternative that would not require elaborate antenna systems and repeater systems that could be utilized for communities, say, two or three times the distance of the horizon (horizon distance is about 20 miles).

That is to use HF transceivers at low frequencies of 1.5 to 4 MHz. At these frequencies there is almost always a secondary propagation called ground wave. That is, the signal follows the curvature of the earth for some distance. These signals could also be voice, CW, or digital.

The primary disadvantage of this mode is that interference and noise is frequently caused by lightening from thunderstorms. Today, pre pole shift, this noise can be extreme because a thunderstorm hundreds of miles away causes noise signals that are propagated via the upper atmosphere. Post pole shift, that mode of propagation would probably be gone, at least for quite a while, and we would only be interfered with by local thunderstorms (lightening). In any case, using modern radios with DSP (digital signal processing) to filter out the noise, and by using digital (Internet-like) communication modes that keep repeating the packet until it is received properly and acknowledged, this relatively close intercommunication would be quite reliable.

Offered by [Ron](#).

[WB5KAN](#) - General Class



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Hams

This is a web sight that we were refered to from the class I recently attended. Tons of info on communications and Ham radio. [AC6V](#): *Amateur Radio and DX Reference Guide*, Communications World Wide, featuring 88 pages and over 3,000 links to DX and Ham Radio.

Offered by [Clipper](#).



Troubled Times



Meteor Storms

Satellites to be "Sandblasted" by Leonid Storm

The Aerospace Corporation, El Segundo, California

June 8, 1998

Dr. William H. "Bill" Ailor of The Aerospace Corporation told a congressional subcommittee in Washington May 21 that the estimated 500 satellites on orbit "will be sandblasted" by the Leonid meteoroid storm due November 17. But he said the effects on spacecraft are expected to be minimal, despite the fact the storm "will be the largest such threat ever experienced by our critical orbiting satellite constellations." Ailor, director of the Center for Orbital and Reentry Debris Studies established last year at The Aerospace Corporation, presented his testimony during a hearing titled "Asteroids: Perils and Opportunities." He was invited to appear before the Subcommittee on Space and Aeronautics, a panel of the House Committee on Science, by U.S. Rep. Dana Rohrabacher (R-Calif.), subcommittee chair.

"It is possible," Ailor told the subcommittee, "that some satellites will be damaged, but the most likely source of damage will not be from a rock blasting a hole in a satellite, but rather, from the creation of a plasma, or free electric charge on the spacecraft. The charge could cause damage to computers and other sensitive electronic circuits on board the spacecraft, and ultimately cause the spacecraft to fail. For example," Ailor said, "during the 1993 Perseid meteor shower, it was determined that the Olympus communications satellite was damaged by a meteor strike and went off the air shortly thereafter as a result of an electrical failure." Ailor pointed out that, "The latest information on the coming Leonid meteoroid storm was presented at the Leonid Meteoroid Storm and Satellite Threat Conference sponsored by Aerospace and the American Institute of Aeronautics and Astronautics in Manhattan Beach, California, on April 27 and 28.

"The primary recommendations from the conference," Ailor reported, "were that, while it is very unlikely that the storm will have any major effect on satellites, the 'A-team' of controllers should be on duty during the ... storm, and operators should check the state of health of their satellites frequently, looking primarily for electrical anomalies and glitches. It was also recommended that, if possible, satellites be oriented so that sensitive components are shielded from the oncoming stream of particles, and that recovery plans be in place should there be a spacecraft system failure during the storm." Ailor said Aerospace collected information on spacecraft anomalies experienced during the 1997 Leonid shower and will be collecting similar information for the 1998 and 1999 events. "This information will help us plan for the 1999 Leonid and future meteoroid storms. It may also help us to understand whether additional safeguards against the meteoroid impact threat should be included in future spacecraft designs," Ailor said.



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Solar Flares

Loss of Contact with the SOHO Spacecraft

(adapted from *SOHO-News*), 26 June 1998.

During routine maintenance operations, ground controllers lost contact with the SOHO (Solar and Heliospheric Observatory) spacecraft and the satellite went into Emergency Sun Reacquisition (ESR) mode. The ESR mode is activated when an anomaly occurs and the spacecraft loses its orientation towards the Sun. When this happens, the spacecraft automatically tries to point itself towards the Sun again by firing its attitude control thrusters under the guidance of an onboard Sun sensor. Efforts to re-establish nominal operations did not succeed and telemetry was lost. Subsequent attempts using the full NASA Deep Space Network capabilities have so far been unsuccessful.

ESA and NASA engineers are continuing with the task of re-establishing contact with the spacecraft. The SOHO mission is a joint undertaking of ESA and NASA. The spacecraft was launched aboard an Atlas II rocket from Florida on 2 December 1995 from the Cape Canaveral Air Station. Mission operations are directed from the control center at NASA Goddard Space Flight Center in Maryland, USA. In April 1998 SOHO successfully completed its nominal two-year mission to study the Sun's atmosphere, surface and interior. Major science highlights include:

- the detection of rivers of plasma beneath the surface of the Sun;
- the discovery of a magnetic 'carpet' on the solar surface that seems to account for a substantial part of the energy that is needed to cause the very high temperatures of the corona, the Sun's outermost layer;
- the first detection of flare-induced solar quakes;
- the discovery of more than 50 sungrazing comets;
- the most detailed view to date of the solar atmosphere;
- spectacular images and movies of Coronal Mass Ejections, which are being used to improve the ability to forecast space weather.

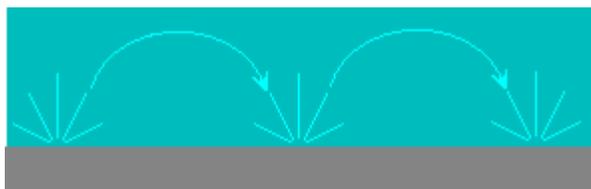


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Radio Relay

By utilizing such a setup, *both* communities relatively close, and those too far separated for use of other modes could communicate. We could actually construct a *real* Internet, web pages and all, using this mode if strategic sites are set up to mirror one another. They would exchange web updates, e-mail, etc. with other far distant sites (when the moon is just above the horizon for both sites for a short period of time). They could then forward this information to closer sites that couldn't make contact with the original station.



This sort of thing is from which the ARRL originally was named - **American Radio Relay League**. Stations that cannot communicate directly communicate via one or more relaying stations, where only two stations along the path can communicate at any given time.

This has been done (for messages like telegrams) on a formal basis every day since WWII by the NTS (**National Traffic System**) within the US, and similar organizations of volunteers in practically every other country. This existing system of hams relay messages around the world completing two cycles each day of the year. The NTS and it's cousins in other countries is able to accomplish this today because of the number of participating hams, and the current ability to communicate across the oceans using propagation that now exists so there is no need to resort to something like satellites or moon bounce.

Post pole shift, none of these essential factors will exist - not many hams and no long distance propagation. But the moon will still be there, and with that resource I think it can be done.

Offered by [Ron](#).
WB5KAN - General Class



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VHF Internet

There is no doubt the ham community can set up internet type links especially via VHF, packet radio and repeaters, ie *no* satellites, *no* land lines, *no* cable and in very short time. The infrastructure is in place in Australia, known as WICEN, and this organisation regularly provides emergency communications when everything else is down. A link with this community is a must for Troubled Times, and with the purpose fully explained expect real support and some amazing knowhow, especially with the "Heath Robinson" emergency makeshift gear.

It is possible to build a packet radio to patch into a VHF transmitter and computer. Via ham repeaters "free" computer links and bulletin boards were in regular use long before anyone had heard of the internet. Today hams have taken this to an art form worthy of better understanding. A survival site should have a tower and a good VHF antenna that can work many stations simplex and many more via repeater. Web sites such as [Iphone](#) are available with pertinent information.

The way radio frequency propagation works is that with HF (high frequency, i.e. from 1 meg to 30 meg) most long distance short wave ham radio takes advantage of bouncing such radio frequencies off the Ionosphere. This is used for best long distance results, and a great favorite of hams, but these frequencies would not be useful with upper atmosphere interference. But VHF and UHF are much higher frequencies and do not bounce off the ionosphere - they go straight through it! Thus they are not so affected by disturbances in the upper atmosphere. My best guess is there might be some problems, but VHF would get through and UHF is even better.

A packet terminal node connector sits between the transmitter and the computer, and does not know what frequencies the operator is using any way. It is being used right now world wide with great results by tens of thousands of hams.

Authored by [Darryl](#).



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Packet Radio

Packet radio is easy to use as a means to communicate from computer to computer via VHF (a very popular ham radio medium, with low cost readily available transmitters of considerable power ie 100 watts).



Legally you need a ham ticket in all countries to own and operate a packet station, but that is not too hard to get especially as a limited ticket with out morse code will allow you to operate VHF ham radio. In the Aftertime there will not be too many radio inspectors running around. It is all plug and play stuff, i.e. a 2 metre VHF (or UHF or HF) radio transmitter, a TNC interface between the transmitter and the computer, some simple software readily available, your computer, and you are on the air.

As ham radio VHF repeaters are able to link packet stations, range is way beyond typical line of sight and distances of thousands of kilometres are available with absolute reliability. Plus of course with this medium it is all free, i.e. no service provider needed, no one controlling the transmission, and the way the software works is that each station is in fact a repeater and can function as a repeater for others. While you are in communication with other parties all that is needed is to know a path, type in the call signs and the soft ware makes all the connections.

I built up a packet TNC in 1984. Even then we were using computers to communicate all over Australia via ham VHF. It is a much more sophisticated network now and completely independent of satellites and telephone lines or cable. Visit a local ham for a demo or check it out at a ham radio store and you will find "packets" of info flying over the radio waves in a big way.

Authored by [Darryl](#).



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TNC

I communicate digitally using short wave and Windows 95 quite regularly. The ability to communicate digitally by radio transmission is *not* linked to the particular operating system used by the computer. It *is* linked to the possession on a device called a TNC (terminal node controller), which is a relatively inexpensive addition to the radio itself which connects the PC to the radio. One can even use a dumb terminal connected to the TNC to communicate digitally. What *is* relevant to the operating system is software that makes it easy to utilize the TNC and format/store the digital communication. Every manufacturer of modern TNCs has software available for the PC and usually the MAC. I'm not familiar with any manufacturer offered software for UNIX. There are, however, many software packages, either free or shareware, for *all* operating systems, including UNIX.

TNC stands for Terminal Node Controller. They are sold wherever Amateur Radio equipment is sold. There are hundreds of retail outlets across the country and many different companies that manufacture them. Here is an example; there are several other manufactures:

MFJ-1276 - HF/VHF TNC - 139.95

MFJ-1278B - DSP, 10 digital modes, GPS compatible - \$379.95

from

MFJ Enterprises, Inc.

Box 494

Miss. State, MS 39762

The largest retail outlet for all Ham Radio equipment is:

Ham Radio Outlet (with 12 locations, all of which do mail order)

933 N. Euclid St.

Anaheim, CA 92801

(800) 854-6046

Offered by [Ron](#).



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Scheduled

Schedules would have to be a necessary part of any moon bounce system, especially for very distant contacts; both parties have to have line-of-sight to the moon. It's also just plain convenient, you don't have to be listening all the time; although when using digital modes, most TNCs (Terminal Node Controller, the interface between the radio and the computer) have an e-mail box feature so you can connect to that station, give it e-mail, and disconnect. In addition, while a station could listen all the time, transmission would impose a very large drain on the site's power system so you don't want to be transmitting much.

An encryption scheme may also be useful as the government types will probably be using the same mode for their own intercommunication. Any practice prior to the pole shift would have to be tested off line as encryption is now illegal for ham radio operations.

Offered by [Ron](#).

[WB5KAN](#) - General Class



Troubled Times



Repeater Issues

Repeater nodes using VHF have several drawbacks:

1. Their associated towers must be built and will be easily detected by undesirables; accept in the case where one is close to the mountains where short towers would work just fine.
2. The repeater equipment must be maintained, thus necessitating trips from the settlement to the repeater site - another opportunity for running into undesirables.
3. The repeater must be powered by some means. Of course, it will run directly from batteries; but there must also be some means for recharging the batteries. That means either another wind generator, hydroelectric generator, or photovoltaic arrangement, if there is enough light energy.

For VHF communications, it may be much better to set up a very good antenna system that can be rotated to point to the desired receiving settlement, and transceivers at the settlements so that direct settlement to settlement communications would take place. Add to that a message relay protocol (manual) and longer distance communications could be effected. No matter how you look at it though, any settlement is limited to radio communications with other relatively closely located settlements. At this point, in my mind, only moon bounce still holds out something of a promise for really long range (and short range) communications.

Offered by [Ron](#).

[WB5KAN](#) - General Class



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Alternatives

Short wave communication using digital techniques is *not* necessary for simple communication; voice and CW (Morse code) work just fine. Where digital communications becomes the best (or only practical) solution is when one site has in it's possession, say, a medical textbook. Large amounts of text or graphics cannot be transmitted in any other way. I could list many more examples. In my opinion, attempting to reconstruct something like the internet isn't necessary, nor is it practical for many years after the post office.

I think communities will form a system something like the old telegraph office, where an individual wishing to communicate with, say, a loved one in another community will go to the "telegraph (radio)" office and fill out a form indicating what they wish to say. If voice communications can be established between the sites, a system could be worked out much like the current MARS (Military Affiliate Radio System) system that allows service personnel to talk on a radio at their end while a ham radio operator stateside connects his radio to a telephone (using a device called a "phone patch") and calls the stateside phone number collect. This allows individuals to schedule a time when they can actually speak to someone at another site.

PC to PC communications using HF radio is *slow* (digital HF communication is limited to 300 baud, VHF to 9600 baud, UHF can have very high baud rates, all constrained by bandwidth considerations) compared to what we are used to on the internet. As I stated above, I do not envision this as an internet substitute where everyone has a PC and radio; but as a community resource just like the power generation station.

Offered by [Ron](#).



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Ham Gateway

Internet/Packet Radio BBS Gateway
from the **Ham Radio Club** under Lifestyles on **America Online**

Q: Are there any gateways for mail or news between Internet and Amateur Packet radio?

A: **Jim Durham, W2XO**, maintains a gateway between Internet and the Packet radio BBS system.

TO MAIL FROM INTERNET TO A PACKET STATION:

1. Get the complete packet address of the station to which you wish to mail.
2. Replace the "@" in the packet address with "%".
3. Mail to the resulting address, adding "@w2xo.pgh.pa.us"

For Example:

Packet address to be mailed to:
W2XXX@W2YYY.LI.USA.NOAM

Mail to:
W2XXX%W2YYY.LI.USA.NOAM@w2xo.pgh.pa.us

TO MAIL FROM PACKET TO INTERNET

1. I have to have a callsign or alias in my database for this to work.
2. Mail to that callsign or alias at the internet host "w2xo.pgh.pa.us"

For Example:

If W3AAA is in my database as "bromley@fudd.com".
Mail to: W3AAA@W2XO.#SWPA.PA.USA.NOAM

(The mail will be forwarded to "bromley@fudd.com".)

(NON-HAMS get "3rd Party Aliases" like "3PTY01", which will fit in the 6 character space of a ham packet header. These are used just like calls. If you are a non-ham, please ask for a 3rd party alias and I'll give you one.)

NOTE: ***VERY IMPORTANT*****!**

E-mail from non-hams to hams, or E-mail from ham to ham through the gateway, where the message enters the packet radio network at W2XO, from a country that does not have a 3RD PARTY TRAFFIC AGREEMENT with the US is illegal and could put my amateur radio license in jeopardy. A list of countries with 3rd party agreements with the US follows. Please don't ask to use the gateway if you are not either in the US or on this list. I regret this policy, but it is US Radio law.

Countries that share third-party traffic agreements:

V2	Antigu/Barbuda	V6	Federated States	HP	Panama
LU	Argentina of			ZP	Paraguay
VK	Australia	C5	Gambia	OA	Peru
V3	Belize	9G	Ghana	DU	Philippines
CP	Bolivia	J3	Grenada	V4	St. Christopher/Nevis
PY	Brazil	TG	Guatemala	J6	St. Lucia
VE	Canada	8R	Guyana	J8	St. Vincent
CE	Chile	HH	Haiti	9L	Sierra Leone
HK	Colombia	HR	Honduras	3DA	Swaziland
D6	Comoros	4X	Israel	9Y	Trinidad/Tobago
TI	Costa Rica	6Y	Jamaica	GB	United Kingdom *
CO	Cuba	JY	Jordan	CX	Uruguay
HI	Dominican Republic	EL	Liberia	YV	Venezuela
J7	Dominica	V7	Marshall Islands**	4U1ITU	- ITU Geneva
HC	Ecuador	XE	Mexico	4U1VIC	- VIC Vienna
YS	El Salvador	YN	Nicaragua		

*

Limited to special-event stations with callsign prefix GB (GB3 excluded) and informally to stations number on Pitcairn Island (VR6).

**

The Marshall Islands are independent, but the FCC currently honors the previous agreement until a formal agreement can be made.

The gateway can't be used to or from a country not on the above list.

Happy Gatewaying!

Jim, W2XO

Transmitted: 5/1/96 3:15 PM (HRC0066)



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Wireless Modems

Wireless plug and play modems that can be used up to 20-30 miles (30-50 KM) now exist on the market. These will only get better and cheaper as we approach the pole shift. There may even be better ways that show up before the pole shift. Operation is in the 900 MHz and 2.4 GHz ISM Band. Data rates of 56-2048 kbps. Cost is \$2-\$6,000 / modem. Higher speeds up to 10 Mb at 7 Miles with a cost of \$17,000 are possible. Modem names include - BreeseLINK, LATNET-Radio Data Links, AirLink Wireless Modems, and Open Minds. But it would take a lot of us to make an Internet world wide. I don't know how these things will hold up under the EMP (electro-magnetic pulses) and other noises during and after the pole shift.

Some interesting components are available now and will be evolving in the next few years that could be used to put together a private wireless network whether it be only for local communities or possibly to connect larger areas. Time will tell the extent of the usefulness of these components.

Offered by [Mike](#).

The Faster Web

PC Magazine (Vol. 18 No. 8 April 20 1999)

Terrestrial microwave, will hit its stride in the next few years. Companies such as Teligent and WavePath already use microwave transmissions from small antennas to provide local Internet access, but the availability of this technology is very limited. These companies aim primarily at small and growing businesses that need flexibility and low investment costs. Many offer packages that include remote access, virtual private networks, and telephone service.

Service providers include Advanced Radio Telecom, NextLink Communications, Teligen, WavePath Communications. Installation cost negotiated according to services used. Speeds vary up to 4 Mbps, generally up to 1.555 Mbps. Requires no phone line or any other wires. Voice phone service can be chosen while the line is in use with data communications. Requires an out-side antenna.

Broadband Wireless - The Dawn of a New Era

Factors affecting a system's performance include rain fading, line-of-sight requirements, and free-space path loss. Fading due to rain and snow in the so-called millimeter-wave frequencies dictates that the cell radius is a maximum of three to five kilometers. A second factor affecting performance is the line-of-sight requirement for broadband wireless systems. Note: This technology will not replace the need for Ham radios only supplement it with additional possibilities.



Troubled Times



Microwave

Wireless [Microwave Internet](#) Access Coming Soon

Boston Globe, Dec 2, 1999

Microwaves, best known for their use in the kitchen, are poised to become the latest wireless technology for beaming Internet and phone service into homes and small businesses. In a briefing for reporters yesterday, **Cisco Systems Inc.** of San Jose outlined what it says will be the next generation in Internet and phone access, which it will debut next year. Using low-frequency microwaves, Cisco executives say their equipment can deliver high-speed Internet connection, teleconferencing, or telephone service - without wires or cables. All that is needed by the user is a special antenna and a box the size of a large notebook with multiple jacks to plug in computers and phones. The services would be transmitted via base stations installed throughout a city or neighborhood.

Such access offers several advantages over current options, such as cable modems, telephone dial-up access, or digital subscriber lines, or DSL, analysts say. It moves consumers away from cumbersome wires, and it's less expensive to install than cable or fiber. "It's cheap, and it's fast," said Howard Anderson, chairman of the Yankee Group in Boston. "I don't have to dig up your street to lay down cables. All I need are a couple of transmission towers. That's why this technology is being used." In addition, wireless broadband access has two to 10 times the range of DSL, which can only be installed within three or so miles of a central station. With wireless broadband frequencies, service can be provided as far as away as 30 miles if the line of sight between the user's antenna and the base station is unobstructed.

If obstructed by objects such as trees or buildings, the range drops to six miles, according to Greg Raleigh, a director of engineering at Cisco, and the scientist who helped develop the technology through a company called Clarity Wireless of Belmont, Calif. Cisco purchased Clarity in 1998 for \$157 million. Because of its reach, broadband wireless technology can beam high-speed connections via microwave bands to places where wires would be difficult or uneconomical to install, such as across rivers or canyons. That potentially opens the Internet gates to millions of new users, said Donald Listwin, executive vice president of Cisco. As of July, 37.4 percent of the US population had Internet access, according to Nielsen Net Ratings, leaving more than 160 million Americans who have yet to sign up for Internet access. Of those who have Internet access, few have high-speed "live" connections that are always on, like telephone dial tones. That leaves the vast majority of Americans as potential subscribers to Cisco's nimbler wireless alternative. "Wireless is hot this year," said Chris Stix, managing director of SG Cowen Securities Corp. in Boston.

Cisco, generally known as a supplier of Internet equipment, will not be in the business of selling Internet or phone access. Instead, starting next week, Cisco will sell the technology to companies that want to provide the service, from large telecommunications firms to niche entrepreneurs. Because the use of these microwave bands does not currently require licenses from the Federal Communications Commission, small companies can more easily jump into the business of providing Internet access by simply purchasing and installing Cisco equipment, which starts at \$150,000 for a base unit that can support up to 3,000 simultaneous, active Net users. Though it has yet to receive orders for its new product, Cisco is predicting it will sell more than \$3 billion in wireless equipment next year. Though that amount is just a fraction of Cisco's annual revenue of \$12.2 billion in fiscal 1999, sales of its broadband wireless equipment are expected to grow rapidly, topping \$7 billion in 2003, said Steve Smith, a director of marketing for Cisco.



Troubled Times



Radar Transmission

There are some promising possibilities using moon bounce that are not widely practiced today by ham operators. I'm thinking of a system I thought of almost 30 years ago that makes use of radar equipment for transmission/ reception/ antenna; but allows much more radiated power than conventional CW equipment. I ran across one internet site operated by a university that was doing experimentation with just such a system, but haven't had a chance to do much more than recognize what they were working on - more on that to come.

Offered by [Ron](#).

WB5KAN - General Class



Troubled Times



Cost Effective

In my opinion, use of wireless modems would be very much too expensive and much less effective than what has already been proposed. The equivalent VHF/UHF total setup can be produced for less than \$1000 and be *much* more effective because the transmission power for wireless modems is very low and there is virtually no antenna or antenna height; whereas the ham radio setup could use from 100 to 1000 watts transmission power, and a high gain antenna system placed atop a tower - all of which would increase the distance for communication.

The VHF/UHF solution, however, is still limited to communities in close proximity and is useless for distant communities; except for the case of moon bounce.

To produce a complete station for around \$1000, would involve the use of used equipment that can be picked up at any of the many hundreds of ham fests that occurs around the country every year, most in the summer months. The most important component of any moon bounce system, the antenna, would be built by hand.

Offered by [Ron](#).

[WB5KAN](#) - General Class



Troubled Times



GWEN

The military starting in about 1985 implementing a low frequency (approximately 174kHz) ground wave emergency network (GWEN). This is currently managed by TG-2 Minimum Essential Emergency Communications (MEECN) with about 58 towers completed to date (240 planned). The initial stated purpose was to be used in case of high-altitude detonation of a nuclear device. About \$500 million has been currently spent. "Airforce I" is reported to have an antenna for use of GWEN. A 180 page study was completed in 1993 at the request of US Air Force, and Congress, that sells for \$33.00. This is an assessment of the potential [Health Effects](#), or lack of effects, associated with the deployment of the GWEN system. The public began to strongly resist and construction stopped for a while in the early 1990s. The following is some Internet references.

Summary: With the military considering GWEN as minimum essential communications what does that tell you. What do you bet GWEN is not used during and after the pole shift by some one. I suspect an emergency ham network could be developed along these lines using a more optimum (for us) frequency. Not quite so low.

Offered by [Mike](#).



Troubled Times



Common Use

The Zetas were asked their opinion:

Certainly in the Aftertime there won't be any satellites in the sky, and even with the occasional satellite that a determined leftover from the great powers might put up into the sky, this will *not* be enough to support communications as today. Many satellites, with a network on Earth working in concert, is needed.

Short wave has the advantage of being much in use and in the common man's hands, inexpensive, and easy to understand. Thus, a network based on this technique would have a head start in that there would be no weak links, but rather more than enough links. Short wave, used as extensively as it is worldwide, is a vehicle that will win the race over the next 5 years in preparing for global communications during and after the cataclysms. It is well known that during disasters *now* that those using short wave frequently locate the distressed, get the message to the authorities, and keep communications open *more* than the avenues officially espoused. The reason for this is thus:

1. short wave is open to be used by amateurs,
2. the equipment is not expensive,
3. the know-how to use the equipment is not beyond the reach of the common man,
4. short wave, by whatever name called, has propagated worldwide.

The Moon has not left your skies during past severe pole shifts, nor will it leave this time. A well orchestrated Moon Bounce will leave the world pulling in transmission in an Internet fashion during certain hours, rather than on a 24 hour availability mode. This is workable, but beyond this, this is what will win the race.

Technology such as VLF, where just as feasible, has drawbacks on all these fronts, and this situation is not likely to change over the next few precious years. Nor is there any other technology that mankind currently has in their possession that would rival short wave for scope, familiarity, and workability. Microsoft's satellite system or VLF or whatever other mechanism is planned or offered up will *not* replace a working system that is used by tens of thousands and is quite frankly held in affection by those who have come to realize its vast reach and reliability.

ZetaTalk



Troubled Times



CB

Instead of complicated stuff, what about the ol' citizen's band radio or CB? Everybody has one of those. I have three. Good for local anyway. And 12 volt. Very inexpensive.

Offered by [Clip](#).

I think it would be a very good thing to have. Although they only pick up stuff at relatively close range, any roving groups will surely be using scavenged radio equipment. CB and police equipment would be the most commonly used by such groups I would expect.

Offered by [Ron](#).

WB5KAN - General Class



Troubled Times



Radio Frequencies

After a pole shift radio could be the only method of communication. Knowing what frequencies to use becomes vital. If one listens or calls on a frequency that other are not using then no contact will result. It becomes desirable to predict what frequencies to use after a PS. The frequencies in most use today could be the best to use after a Pole Shift. So the question becomes what are the emergency and most commonly used calling frequencies today? This report details the primary frequencies on all bands that could be usefully after a Pole Shift.

Frequency MHz Commonly used and Emergency Calling Frequencies

1.8100	Ham HF QRP CW Calling (QRP = Low Power Transmitter 5 watts or less output)
1.9100	Ham HF QRP SSB Calling (HF = High Frequency)
2.1820	Ham HF International Maritime Distress Frequency
3.5600	Ham HF QRP CW Calling
3.5800	Ham HF QRP CW Calling
3.8850	Ham HF AM Calling
3.9850	Ham HF QRP SSB Calling
7.0300	Ham HF QRP DX CW Calling
7.0400	Ham HF QRP CW Calling
7.2850	Ham HF QRP SSB Calling
7.2900	Ham HF AM Calling
10.1060	Ham HF QRP CW Calling
14.0250	Ham HF CW DX Calling
14.0600	Ham HF QRP CW Calling
14.1950	Ham HF DX Calling
14.2850	Ham HF QRP SSB Calling
14.2860	Ham HF AM Calling
21.0600	Ham HF QRP CW Calling
21.2950	Ham HF DX Calling
21.3850	Ham HF QRP SSB Calling
27.0650	CB AM Ch-9 Emergency Channel
27.1850	CB AM Ch-19 Unofficial Highway Channel
27.3850	CB AM Ch-38 LSB, National calling frequency
28.0600	Ham HF QRP CW Calling
28.3850	Ham HF QRP SSB Calling
28.4000	Ham HF CW Calling
29.0000	Ham HF AM Calling
29.6000	Ham HF FM simplex
34.9000	Used nationwide by the National Guard during emergencies.
39.4600	Used for inter-department emergency communications by local and state police forces.

47.4200	Used across the United States by the Red Cross for relief operations.
50.1100	Ham 6 Meter DX Calling
50.1250	Ham 6 Meter SSB Calling
50.4000	Ham 6 Meter AM Calling
52.5250	Ham 6 Meter FM Calling
121.5000	International Aviation Emergency Frequency
138.2250	Prime disaster relief operations channel used by the Federal Emergency Management Agency
144.0500	Ham 2 Meter DX CW (Europe)
144.2000	Ham 2 Meter CW and SSB common Calling
144.3000	Ham 2 Meter DX CW/SSB (Europe)
144.5000	Ham 2 Meter FM Calling (Europe)
146.5200	Ham 2 Meter Ham FM General calling and emergency and wilderness protocol
146.5500	Ham 2 Meter Ham FM Simplex National Emergency Frequency
151.6250	Used by "itinerant" businesses, or those that travel about the country.
154.2800	Used for inter-department emergency communications by local fire departments; 154.265 and 154.295 also used.
154.5700	Used itinerant business channel. Circuses, exhibitions, trade shows, sports teams. 154.600 also used.
155.1600	Used for inter-department emergency communications by local and state agencies during search and rescue operations.
155.4750	Used for inter-department emergency communications by local and state police forces.
156.4500	Ch-9 The boater calling channel.
156.8000	Ch-16 International maritime distress, calling, and safety channel. Heavily used on rivers, lakes also.
162.4000	Used for NOAA weather broadcasts and bulletins.
162.4250	Used for NOAA weather broadcasts and bulletins.
162.4500	Used for NOAA weather broadcasts and bulletins.
162.4750	Used for NOAA weather broadcasts and bulletins.
162.5000	Used for NOAA weather broadcasts and bulletins.
162.5250	Used for NOAA weather broadcasts and bulletins.
162.5500	Used for NOAA weather broadcasts and bulletins.
163.2750	Used for NOAA weather broadcasts and bulletins.
163.4875	Used nationwide by the National Guard during emergencies.
163.5125	The national disaster preparedness frequency used jointly by the armed forces.
168.5500	The national channel used by civilian agencies of the federal government for communications during emergencies and disasters.
222.1000	Ham CW and SSB USA Calling
223.5000	Ham FM USA Calling
243.0000	Used during military aviation emergencies.
259.7000	Used by the Space Shuttle during re-entry and landing.
296.8000	Used by the Space Shuttle during re-entry and landing.
311.0000	An active in-flight channel used by the U.S. Air Force.
317.7000	An active channel used by U.S. Coast Guard aviation.
317.8000	An active channel used by U.S. Coast Guard aviation.
319.4000	An active in-flight channel used by the U.S. Air Force.

340.2000	An active channel used by U.S. Navy aviators.
409.6250	National communications channel for the Department of State.
432.1000	Ham CW and SSB USA Calling
446.0000	Ham FM Simplex USA Calling
462.5625	Citizens FRS/GMRS Ch-1 commonly used Calling Frequency
462.6750	Citizens GMRS Ch-20 Emergency Communications and Traveler Assistance
902.1000	Ham SSB USA Calling (weak-signal)
1294.5000	Ham FM USA Calling
1296.1000	Ham SSB USA Calling
2304.1000	Ham USA calling
2305.2000	Ham FM Simplex USA calling

Some of these frequencies will be more valuable before a Pole Shift and would be dead after a Pole Shift. Some you might listen to but not want to transmit on. The lower the frequency the longer the distance it can be heard. Use whatever frequencies your radio equipment is capable of. A low cost, low-power radio-scanner can be programmed with these frequencies to do the monitoring. It also may be prudent to scan other frequencies once one knows what the locals are using. Program a scanner, test, and get familiar with your equipment before the Pole Shift. Before the Pole Shift once the call is established, a good operating practice is to move off keeping the calling channel clear. After the Pole Shift with very scarce contacts one may wish to stay on the calling frequency so that others have the possibility of hearing and joining in. One other suggestion for an emergency frequency is to have the person monitoring key the mic and say so every 10 minutes - "This is station XXX listening".

Offered by [Mike](#).



Troubled Times



Wilderness Protocol

The Wilderness protocol (see page 101, August 1995 QST) calls for wilderness hams to announce their presence on, and to monitor, the national calling frequencies for five minutes beginning at the top of the hour, every three hours from 7 AM to 7 PM while in the back country. A ham in a remote location may be able to relay emergency information through another wilderness ham who has better access to a repeater. Calling Frequencies: 52.525, 146.52, 223.50, 446.00, 1294.50 MHz.

Some scaled down version of this may work after the Pole Shift. Say include HF Calling frequencies and call only during mid day.

Offered by [Mike](#).



Troubled Times



Emergency Communications

References for further information on emergency communication:

Nat. EMERGENCY Frequency needed

<http://www.eham.net/articles/868>

Two meters from **Wikipedia**, the free encyclopedia

http://en.wikipedia.org/wiki/2_meters

National Frequencies Commonly used

<http://www.smlec.com/scanner/national.htm>

ARRL Band Plans

<http://www.arrl.org/FandES/field/regulations/bandplan.html>

Amateur Radio Band Plan Layout (Good to print. Print this Frequency List out and keep it with your radio equipment to use as a reference.)

<http://www.dxzone.com:80/cgi-bin/dir/jump2.cgi?ID=11733>

Amateur Radio Emergency Service ARES Field Resources Manual

<http://www.arrl.org/FandES/field/aresman.pdf>

The Town of Babylon Amateur Radio Emergency Services

<http://www.tobares.org/>

<http://www.tobares.org/training.html>

Offered by [Mike](#).



Troubled Times



TEAM: Radio

A Troubled Time TEAM has been formed to foster support for an Internet supported by short wave radio and other uses of short wave radio.

- [Frequencies](#)
- [Ham Classes](#)
- [Coordination](#)
- [Call Signs](#)

For information on developing TEAM activities, contact [Jan](#) or [Helena](#) or [Mike](#).

Troubled Times



Possible EMP

Somehow I don't expect the passing of the 12th's magnetic field's impact on the earth's core and the core's abrupt movement will have much if any impact as it will be *relatively* slow; but EMP is another matter. EMP, should it occur, would do a number on all matter of electronics inside the computer and, I expect, magnetic media as EMP is very strong and is a *short* burst. Where did all the talk about EMP come from anyway? I suspect from expectations of detonation of nuclear warheads during the pole shift; however, a ground burst *does not* produce EMP (at least over a wide area). It is produced by high altitude bursts.

Offered by [Ron](#).

One thing to keep in mind if the pole shift happens quickly enough or a strong electromagnetic pulse from the sun occurs (Gordon Michael Scallion), any electrical object with an inductive load, among other things, could be destroyed by the magnetic pulse creating strong electrical current. Depending upon how well computers survive, it would not take much to at least wipe out your hard drive, diskettes, *and* any backups you might have.

Offered by [Steve](#).



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Magnetic Fields

Magnetic fields either emanate out from a permanent magnetic source, such as a permanent magnet or they are momentarily created by raising or falling electric fields. The 60 Hz A/C electricity coming into your house on wires or the 600 Kilo Hz radio signal coming into your AM radio through the atmosphere, are being propagated as electromagnetic waves. Waves penetrate things that they are able to pass through and are deflected or absorbed from things that they can't pass through. Here shielding can be useful.

Offered by [Ed](#)



Troubled Times



Defense Dept.

If you think the Government isn't preparing for the pole shift, then check this out.

Offered by [Clipper](#).

Technology to Counter ElectroMagnetic Threats to the Civilian Infrastructure

July 7, 1999

The Defense Threat Reduction Agency (DTRA) proposes to acquire through full and open competition, services (a) to evaluate and apply network modeling tools to specific infrastructure sectors supporting critical DOD functions, to determine the operational impact when exposed to various nuclear and non-nuclear electromagnetic (EM) environments, and (b) to develop a methodology for mitigating or reducing the impact and a plan for restoring and reconstituting the civilian infrastructure. The specific objectives of this two phase effort are to apply the network modeling tools, functional models, threat-relatable EM scenarios, EM effects models, impact methodology and restoration plan developed in Phases 1 and 2 to a case study on a specific city, metropolitan region, or geographical area in the US, selected by the government. It is expected that the security standard will be Secret. The contract will be for a base period of three years, with three additional options (presently not funded) to run for a total of two additional years.



Troubled Times



Self Test

Here are two experiments you could try out for yourself, one with a permeant magnet and a floppy the other with a bulk cassette tape eraser. Not everyone will have a bulk cassette tape eraser.

- The easiest test is to use a readable formatted floppy with some files copied to it. Find a large strong enough permeant magnet, so as to make the floppy un-readable when doing a preliminary air test. Place a piece of cardboard the same thickness as your steel, or copper plate (or best conductor being tested) between the floppy, and the magnet. This will insure a constant distance. Move the magnet around at between 1-10 cycles/second. Check for readability, if you can still read it, go find a stronger magnet. Once you have a strong enough magnet, then, test each shielding material checking the readability of the floppy after each test. This test can be done by anyone wanting to test the effectiveness of their shielding.
- The bulk tape eraser test gives a shielding comparison of different materials at one test ELF of 60 cycles/sec. This indicates a trend that says Iron-steel is many times better than Aluminum at this frequency. A Fourier series analysis of any given "asymmetric pulse" to find the amplitude and frequency of all of the harmonic components that make up the pulse would give the fact that: The lowest frequency component would have the highest amplitude. If we shield for that low frequency, then the other higher frequency components with the much lower amplitudes will not be an issue, being easily shielded using the same material.

Offered by [Mike](#).



Troubled Times



Magnetic Shield

The following has been quoted from *Frequently Asked Questions about Magnetic Shielding*

Provided by: **Magnetic Shield Corporation**

740 North Thomas Drive
Bensenville, Illinois 60106
Telephone: 630-766-7800

What is ELF?

ELF stands for Extremely Low Frequency and usually refers to magnetic fields at 0.5 to 100 Hertz. This range includes the 60 Hertz power line frequency commonly used in the United States. In other countries, the power line frequency might be 50 Hertz.

What is the difference between RF and Magnetic shielding?

Radio frequency (or RF) shielding is required when it is necessary to block high frequency - 100 kilohertz and above - interference fields. These shields typically use copper, aluminum, galvanized steel, or conductive rubber, plastic or paints. These materials work at high frequencies by means of their high conductivity, and little or no magnetic permeability. Magnetic shields use their high permeability to attract magnetic fields and divert them through themselves. Magnetic shielding alloys have the ability to become broadband shields, performing shielding of both frequency ranges, when properly constructed." Note well, this last sentence answers your request for confirmation.

Offered by [Mike](#).



Troubled Times



Viatech

For basic considerations and formulas about shielding at low intensity field levels can be studied at: **EMF Fundamentals** Copyright (c)1995 VitaTech Engineering, Inc. Written by Lou Vitale, President & Chief Engineer. Lou has an interesting statement:

After assembling a prototype, the design engineer measures the shielding factor (SF) and modifies the design (adds materials, additional layers, anneals bends, etc.) to achieve the maximum shielding requirements. This is a very iterative design process, from concept to final product. Shielding is more of an art than a science, especially when shielding very large areas and rooms from multiple, high-level, magnetic field sources. At this time there are no reliable design formulas or EMF simulation programs that offer design engineers practical guidelines for shielding large exposed areas from multiple, high-level, magnetic field sources.

Offered by [Mike](#).



Troubled Times



Army Corps

From *Chapter 9 EMP and Tempest Protection Concepts* of Pamphlet No. 1110-3-2 31 December 1990

U.S. [Army Corps](#) of Engineers, Publication Department,
2803 52nd Avenue, Hyattsville, MD 20781-1102.

For free copy of 469-page paper pamphlet, fax request to: (301) 394-0084

1. Purpose. This pamphlet provides unclassified engineering and design information about protecting fixed ground facilities against the effects of an electromagnetic pulse (EMP) produced by a nuclear explosion. It also provides unclassified engineering and design information about satisfying TEMPEST requirements.

b. Facility shielding. This method is by far the most common for high-level HEMP and TEMPEST protection. It maximizes flexibility since any standard equipment can be used inside the shielded facility. Facility shielding may be low-level or high-level (50- or 100-decibel) attenuation. HEMP shielding (100-decibel) consists of at least 3/16-inch welded steel (12-gauge walls and 10-gauge floors are recommended). TEMPEST shielding (50-decibel) consists of at least 22 to 26 gauge steel walls, floors, and ceiling with clamped joints.

Note: The lower the gauge number, the thicker the plate. The Ammo can is thicker yet at 21 gauge (.033"). 22 gauge is (.030") and 26 gauge is (.018"). So according to this we should achieve TEMPEST level of protection. They also have more information on how to build a [Shielded Room](#).

Offered by [Mike](#).



Troubled Times



Fundamentals

The following is taken from page 9-26 of *Handbook of Engineering Fundamentals* by Eshbach second edition.

Ferromagnetic substances including iron, steel, nickel, cobalt, and magnetic alloys, have relative permeabilities greatly in excess of unity. Under certain conditions the relative permeability of steel may exceed 2000.

All the other elements air included are close to a permeability of 1. Thus, at frequency of zero the comparison of the magnetic conductivity is over 2000 times that of other elements. What this means is the lines of magnetic force will try and stay within the ferromagnetic substance and not go back into the air unless it can help it. Thus, the easiest magnetic path from one side of box to the other is through the outer shell. This reduces the internal field strength thus the shielding effect. This does not happen with non-ferromagnetic substances like copper, brass, aluminum, lead and etc.

As the frequency rises eddy currents start gradually to take effect and the electrical conductivity properties begins to take over. By using a ferromagnetic substance that is a good conductor you have the best of both worlds some shielding at both high and low frequencies ELF.

Offered by [Mike](#).



Troubled Times



Grounding

For static discharge, the usually mode of protection is to connect together and ground all the electronic equipment, so that there's no opportunity or place for static voltages to build up. Anyways, to summarize: Use shielding to protect against wave generated magnetic fields and use grounding to protect from static discharge magnetic fields.

Offered by [Ed](#)

Grounding is used when you want to keep the unit in operation. If you store it in a magnetic conductive and electrical conductive box then you have shielding for both electrical and magnetic damage to its contents.

Offered by [Mike](#).



Troubled Times



Lightning

The static discharges of lightning produce static interference on a AM radio that will overwhelm the reception of a station on a simple radio receiver. This is propagated electromagnetic waves from the lightning, stronger at the lower frequencies. Less amplitude at the higher frequencies. For big discharges near by - a low frequency electromagnetic pulse (EMP) is generated that could produce some large changing magnetic fields - this induces a strong current in any conductor present (the longer the conductor the higher the voltage) and in the past could potentially harm sensitive receivers and electronics equipment. This is not so much the case these days with the tougher hardened electronics available. However, to be safe some shielding could be used. So if sensitive equipment is hidden away in a highly magnetic and electrical conductive box then no current will be induced - thus the protection. This is just a bonus not the main thing we are trying to shield for.

Offered by [Mike](#).



Troubled Times



Shielding

At high frequencies "best conductors" are "best shielding". However, **Iron and steel** should not be underestimated they are not that bad a conductor compared to air. The electrical conductivity of iron is much much closer to Copper than air. So the shielding at high frequencies is not that bad for Iron. If you look into your TV or Radio you will often see iron or steel used as shielding for the RF frequencies. Note the tin plated iron box around the RF tuner section. Why, because it's cheaper and easier to use and works almost as well at high frequencies for the same thickness.

Note: **Copper and brass** screens are used in laboratories to build **Faraday's cages** to shield for electromagnetic noise. Why is this used? Usually the main interest is in shielding the higher frequencies and budget and availability are not an issue. Why use a screen over a solid plate - this is so the room can be made small and the lab technician doesn't get claustrophobia inside it. A thicker iron screen or plate would work just as well. Any conductor would work at higher frequencies as long as you adjusted the thickness to simulate what a good conductor like gold, silver, and copper can do.

Shielding results of testing **Aluminum compared to Iron** at 60 Hz:

I used a "bulk cassette tape eraser" that puts out a strong 60 cycle/sec electromagnetic field as a source transmitter. I took a coil from a transformer and hooked it to a volt meter as a receiver. Cardboard and several .2" thick plastic sheets were used as spacers on both sides of the test sample (centered) so that the distance from the source to receiver was the same (.5") for all tests. The voltage was measured for each test shielding material. The positioning of the receiver was adjusted for maximum voltage for each test. This turned out to be the centered on the source.

Measured voltage for each sample:

Air (cardboard) - measured 19.4 Volts AC

Aluminum (.100" thick) - measured 16.5 Volts AC

Iron ammo box (.032" thick) - measured 6.5 Volts AC

Note: The higher the voltage the more the amount of electromagnetic field that got through the sample.

Analysis of results: The **Aluminum** being 3 times thicker than iron only dropped the electromagnetic field by 2.9 volts as compared to iron dropping it 12.9 volts. This gives a net result of $(12.9/2.9) * 3 = 13.3$ times thicker aluminum would be needed to shield the same amount as the Iron (or steel) ammo box material. I didn't have any copper or brass available to test, however the result should be somewhat similar. Summary: Conservatively speaking, **Iron** is more than 10 times more effective shielding than Aluminum at 60 cycles/sec. This will get even better at lower frequencies.

The point is, the lower the frequency the better the shielding properties of **Iron** as compared to other non-ferrous conductors. At low frequencies magnetic shielding is more effective. At high frequencies electrical conductive shielding is more effective. The audio industry for years used iron shielding over tubes when needed. A further test will confirm this for you if you take a permeant magnet and wave it (1-10 cycles/sec) close to a iron plate with a floppy on the other side. Then do the same test with **Gold, Silver, Copper, Brass, or Aluminum** plate of the same thickness using another floppy. Then try and read each floppy. During core movement, possibly generating strong localized magnetic fields, I believe the lower frequencies are what needs to be shielded against. I believe the bigger the event, the stronger the field, and the lower the frequency. We should experience lots of random noise spikes getting stronger and stronger as one goes below 10 and even 1 cycle/sec.

Now with all factors taken into account a good solution needs to be cost effective, available to all, and technologically sound. I believe **Iron or steel** satisfies all these conditions much better than the alternatives. Annealed cold rolled Iron plate would work slightly better than steel but not enough to worry about. The only thing I don't know for sure is how thick does it need to be to effectively work for us in all cases. I suspect one box thickness of .032" will be enough to knock the edge off any strong electromagnetic bursts, however, if you really want to be safe use one box within another for those really critical magnetic medium. If one has a Iron or steel safe or lock box that would work also. Just make sure it is fully covered with Iron or steel the thicker the better.

Offered by [Mike](#).



Troubled Times



Copper Mesh

Usenet posting from **Weird Science** by cipher@mindspring.com

In the late 60's/early 70's I did a little radar work for the USAF. Mode 4 IFF on F-4 aircraft among other things. Next door in the radio shop they had a special room within in a room that blocked out all EM. They did this to test equipment and had a need for *zero* non-nuclear radiation entering the test area. EMP is non-nuclear.

The room was amazingly simple, constructed of wood, 2x4s and such. The entire thing was latticed with thick copper screen, triple thick. Air could just barely get in through the screen. The exterior shell of the room was essentially a huge diffuser, anything hitting it was spread out and attenuated over the grid, the grid was tied to ground. I, on the other hand, worked in a special steel reinforced concrete bunker designed to be blast proof. Blast proof from the inside - the mode 4 boxes had an explosive device inside, if Charlie tried to open the box, from a downed Phantom, without special tools and key equipment, boom!

There are hyperlinks to industrial suppliers that have such a copper mesh product. For example:

Sale Offer: CLOTH, GRILL & NET OF COPPER WIRE

An internet search using the keywords "copper cloth" produced several suppliers that have such in various materials. This is the first I've heard of such a project to shield from EMP.

Offered by [Al](#).



Troubled Times



Non-Magnetic

The best way of protecting electronic equipment from electromagnetic impact is to use brass or some other non-magnetic metal, as this will prevent the radiation to get to the sensitive chips. Make a brass box and put the PC inside. (Fill your brother's trumpet or tuba with your floppy diskettes and seal it off, hehe!)

Offered by [Oystein](#).



Troubled Times



Other Steps

For any computer data, along with EMF shielded containers, other alternatives should be considered. Off-site as well as on-site backup facilities should be examined. I advise that onsite backups and offsite backups, as well as storing backups in a shielded safe be employed. Also making CD-ROMs of data, particularly any imaging data, is good protection, so that if the magnetic media ever gets corrupt there will be one form of a non-erasable copy of the data. CD-ROM recorder / rewriteable drives can be purchased for less than \$300. Media to store 650MB is about 1.50 a piece. EMP can cause power surges which can bypass any shielding you have in place if plugged into the wall. Battery backups are vital. Hardware problems can be cut in half all components (except for printers) have battery backups. They are much cheaper to replace, if blown, than the computers they keep up.

Offered by [Steve](#).



Troubled Times



Mumetal Shields

The best way for delicate electronic equipment, such as computers and transmitters to survive expected heavy electromagnetic pulses from a pole shift, would be.

- First of all not be connected at such times to any form of power supply.
- To be turned off.
- To be in a box made of Mumetal

Mumetal is an unusual alloy that provides the only known method of shielding from electromagnetic radiation. [Mumetal](#) is the only truly mechanical shield from electromagnetic radiation, and has an usually a high Nickel content alloy. Mumetal is used in industry today for this purpose to form shielding for components, instruments, and in some instances to protect people from electromagnetic radiation Even a single sheet placed between the instrument or person to be protected and the source/direction of the radiation will greatly reduce the effect. It is especially good in 50/60hz type applications where all else fails. Mumetal can be used to eliminate radiation from the back and side of a monitor in work stations. Two bands made from Mumetal curved around the back of the cathode tube on your monitor will knock out almost all electromagnetic radiation. Mumetal works, unlike the fake monitor screens that do zero with electromagnetic radiation. Try a Milligauss meter in front of those screens and you will soon discover that they do nothing despite their claims.

Of course lead shields protect from ionizing radiation sources such as Gamma and Beta types but only Mumetal can work effectively on the lower non ionizing frequencies that may present by far the greatest threat to electronic equipment in any violent electromagnetic storms. One might protect a computer by building a Faraday cage, but even better is a lead-lined Mumetal box to slip the computer into in times of high electromagnetic radiation.

Authored by [Darryl](#).



Troubled Times



Mumetal Sources

Another idea to protect computers or any sensitive electronic equipment you may want to EMF protect is mumetal shielding. It is a metal compound composed of 80% nickel, 20% iron. Companies such as:

[MuShield](#)

5 Springfield Rd.
P.O. Box 439
Goffstown, New Hampshire 03045
888-669-3539 (toll-free)

[VitaTech Engineering](#)

15414 Beachview Dr.
Montclair, VA 22026
Office: (703)670-8981
FAX: (703)670-4974

[Ad-Vance Magnetics](#)

625 Monroe Street
Rochester, Indiana 46975
219-223-3158 (tel)
219-223-2524 (fax)

[Less EMF, Inc](#)

809 Madison Ave
Albany NY 12208
tel: 518-432-1550

are a couple of sources for shielding products you might want to consider. They each have done work for the US government and military. They also carry standard enclosures for CRT monitors etc. Advance in particular has some pre-made enclosures for tape backup storage. Both companies can and do manufacture custom enclosures to customer specifications. For increased shielding, two or more concentric shields separated by at least the thickness of the material can be used. In such cases, medium permeability material should be used for one layer and a high permeability material for the other layer. The lower permeability material should be located closest to the field source. Thus the medium permeability shielding acts as a buffer that sufficiently diverts the magnetic field to enable the lower reluctance (high permeability) material to attain the required attenuation.

They also sell low and high permeability foils that you can cut and shape yourself. On the large side, Advance and Mushield can outfit an entire room to be shielded. Obviously, nuclear power plants are heavily radiation shielded with lead and lead compounds, but that offers little EMP protection. Radiation shielding is not the same as EMP shielding, though I wouldn't be surprised if it was taken into account in the design of the plant. Obviously, checking with the onsite engineers as to which areas offer what protection is important. There are a lot of websites that have basic info on EMP and EMF shielding. I have found most of them to be fluff. Get the manufacturers catalogs, which contain some pretty useful articles and discussions, as well as talk to their engineers.

Offered by [Steve](#).

And from Clipper's correspondence:

Hello Clipper, thanks for your E-Mail of 21 May 97

In response to your question. We want to shield our computers from the magnetic variances that a pole shift would bring.

[Clip](#).

We have Mumetal cans 72 x 55 x45 mm which we sell at UKL 35 each. This is our largest so if you need something larger suggest you try [Mushield](#). Generally Mumetal is good for shielding in low intensity fields. It will "suck" away any magnetic field from the air because it is 50,000 times more "permeable" to

magnetic fields. It does however saturate in high ambient fields so if you have very strong fields you will be better off with an outer shield of soft (annealed) iron which is also much cheaper. Hope this helps.

Best regards

[Brian Sowter](#)

[SOWTER Audio Transformers](#) (E A Sowter Ltd)

Winchester, England

Tel: +44(0)1962 620135



Troubled Times



Iron is Best

Mumetal when compared to iron at low magnetic field strengths can be up to 3-4 times more effective for the same thickness. However, at 3 times stronger fields then iron is 3-4 times more effective in shielding. Mumetal cost is high and availability is low. Mumetal is usually used where field strength is low, weight is a factor and the size is small. Since we wish to shield for strong magnetic fields then I recommend use of soft (annealed) iron instead of Mumetal. Our application does not warrant the cost of Mumetal.

Offered by [Mike](#).



Troubled Times



Ammo Boxes

I recommend the use of only iron shielding such as is found in surplus used ammunition sealed containers. Iron or steel works for low and high frequency electromagnetic fields and for static magnetic fields. EMP from lightning would also be shielded. Conductors like copper, aluminum, Brass, etc. do not magnetically shield well at low electromagnetic frequencies and not at all for static magnetic fields.

Of prime importance floppies, hard disks, backup tapes, and other magnetic medium to include music, training, cassette tapes, etc. would be best kept in one of these water tight iron-steel ammunition boxes. These boxes are made in different sizes some big enough to put a PC CPU in along with other sensitive electronics. A typical small ammunition box is 7" high by 11" wide by 5.5" deep with a hinged top, weight of 6 lb. and typically sells for \$2.50 to \$5.00. The **Northern Pro** catalogue has across ammo boxes, offering 4 different types. Prices range from \$ 5.00,6.00,9.00 and 22.00 for a large 25"lx6 in height. Their number is 800-533-5545.

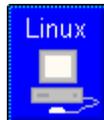
Offered by [Mike](#).

I already bought some of these at a property disposal (Army) the small ones were \$5 each, the next size up were \$10 each (about 2 feet long, 1 1/2 feet high, about a foot wide). I bought mine for 22 shells (for hunting and protection). But a darn good idea for the other stuff on technology.

Offered by [Clipper](#).



Troubled Times



Bruce Perens

Some excerpts about *Linux and Amateur Radio* by Bruce Perens AB6YM

Linus Torvalds, a Finnish graduate student, wrote a clone of the 25-year-old Unix operating system "kernel" a few years ago. Linus and others combined the kernel with utility programs that had been written at U.C. Berkeley and others that had been contributed to the Free Software Foundation's GNU project, and the result was an entire operating system, compatible with Unix, that could be distributed for free, with all of the source code included.

Unix and Linux are the most comfortable platforms for the development of sophisticated software that communicates, controls hardware, does complicated math. What I'm trying to say is that it's the best platform for developing the kinds of software that Radio Amateurs need.

If you're an applications programmer, or a hardware engineer, you might want to learn how to become an operating systems programmer. Linux is very good for that, because you can turn a cheap PC into a full-fledged Unix workstation and make all of your mistakes on it at home where your boss can't see.

Well, on most systems you run a Packet program to communicate via packet. Under Linux, packet radio is part of the "kernel", which is the central part of the operating system. In fact, the packet radio functionality uses the same software interface as the Internet communications component of the system. The result of this is that any program on the system that can communicate on the Internet is also a packet radio program.

If you want to write software, there are compilers for C, C++, Objective C, SmallTalk, and Fortran. All of these come with Linux - they aren't expensive extras as they would be on a Microsoft system. There are interpreters for the languages Python, Perl and AWK.

You can download Linux from the net. I'd only suggest this if you have a way to download hundreds of megabytes without going broke - otherwise, you can get Linux on an inexpensive CD-ROM. If you'd like to download the entire system, start with the World Wide Web site www.debian.org . That site is the home of the Debian Linux Distribution, which I recommend because I helped write it. You can also buy a CD-ROM containing Slackware or Debian for as little as \$15 - you'll find one of those at the "Computer Nut" table out in the hall.



Troubled Times



Linux vs Windows

I recently read that around 80% of all current web servers are still running some form of UNIX; and that is because it is cheap. RedHat Linux comes with X-Windows already integrated, installed, and working which makes the user interface icon driven and presents a friendly interface for the casual user. Last, RedHat Linux out benchmarks Windows NT 4.0 by a margin of 4 to 1 if I remember correctly.

Offered by [Ron.](#)
WB5KAN



Troubled Times



Ease of Use

Linux is for *programmers*; with lots of time on their hands. Yes, there is tons of software available for Linux; but it is usually very buggy, poorly documented, and takes lots of expertise and time to make work. The web page by Bruce Perens says:

Linux gives you something that you simply can't get from Microsoft, Apple, SGI, etc.

Well, yes and no. The part about cost and source code is sure true; but the use of UNIX or Linux or any of the many other UNIX spinoffs for software development, I very strongly disagree with. You can develop unlimited complexity applications on a Windows 95 or NT platform using any programming language with practically no knowledge of the operating system. That stuff is provided with the language implementation on these platforms (MFC - Microsoft Foundation Classes), etc. With UNIX or Linux you have to use someone else's buggy code or be smart enough to do it yourself. To use UNIX, you have to be a UNIX Programmer; to use Windows 95 or NT you can limit yourself to being an applications programmer.

Offered by [Ron](#).
WB5KAN



Troubled Times



Radio Interface

Linux of course has full radio modem support (AX.25 its called) so after the pole shift we can get an internet working again without having to run hundreds of miles of new fiber. Great!

Offered by [Rob](#).

To quote from the web page by Bruce Perens:

But, why use an operating system that only a nerd could love? ... it's the best platform for developing the kinds of software that Radio Amateurs need.

I certainly agree, but I disagree with the statement: "it's the best platform for developing the kinds of software that Radio Amateurs need." The two main things going for it are that it's cheap (or free) and there is all sorts of software for it, especially for various aspects of the internet.

As far as ham radio goes, everything the article says about Linux is also true for any other software platform for the internet. The key is that ham radio uses virtually the same packet communications protocol as does the internet (ham radio's AX2.5, commercial X2.5, and TCP/IP are virtually the same thing). In other words, I believe that a Windows NT WWW server can be configured to use the AX.25 protocol (and has probably already been so modified and those modifications are available free from ham web sites). The internet is already available over the air and has been for several years. You just have to find it with some web surfing.

Offered by [Ron](#).
WB5KAN



Troubled Times



Simple is Best

It used to be like this when I was a kid: They used to make home computers cheap. Our parents could afford us a computer because you could go to K-Mart and buy a [Commodore-64](#) for \$150. This particular computer was a mean machine at the time. It ran at 1 mhz, had 16 colors, and had many cool graphics modes to play with. It came with Basic. The computer didn't have to boot, you just turned it on and it was there. We used to write our own programs, it was easy, educational, and fun.

The Commodore-64 outperformed a \$2000 IBM PC in many ways including bang for buck and graphics performance. The C64's sound system was incredible for the time. In short, there was very little advantage in the hardware of a IBM to that of a C64. People laughed because of the small footprint and TV. connectivity, but when the incredible games started coming out showing off the capabilities, you can see why Commodore peaked out at manufacturing 9000 units a day. That's a *lot*, even by today's standards. They cranked out about 9 million C64's total.

Commodore later came out with the [Amiga](#), a computer that pretty much smoked everything. The Amiga in 1985 did what PC's didn't really do until 1995:

- true multitasking
- very good graphics/sound
- multiple, simultaneous resolutions on the same monitor (something PC's still can't do.)
- very efficient use of hardware and memory. Can smoothly multitask programs on a measly 7 mhz machine with 256k of memory.

Now, there are no more cool computers like the C64 or Amiga, you have to pay \$2000 for a computer of decent power, when it entirely possible to make them very cheap yet powerful just like in the early 80's. Even worse, with the home computer operating systems being developed by [Microsoft](#) almost exclusively, people don't understand how the computers work whatsoever and therefore are buying Microsoft's temporary solutions time after time. They design their products to be difficult to work with so they can sell new fixes and features under the guise of future operating systems. All the problems with Windows could have been eliminated before now, had they intended to do anything right in the first place. They seem to care nothing about improving the quality of life. Microsoft's goal is to make as many people rely on them for software as possible. This includes:

- Developing the OS based on closed-standards, or standards that Microsoft has access to first. This means Microsoft can make programs that run better or faster before anyone else, since they design the stuff in the first place.
- Modifying their products to be incompatible with rival solutions. For example, they put code into Windows 3.1 that won't let it run under anything but MS-DOS, even though there were 100% compatible DOS's being sold by other companies at the time as a cheaper alternative. They are being sued for this right now.
- They purport to release software and never doing it, to keep companies from buying rival products and wait for the Microsoft one.

Offered by [Joe](#).



Troubled Times



Free

There is a page at the **LinuxBerg** site on where to download small versions of linux.

Offered by [Gerard](#).



Troubled Times



Red Hat

As far as I know there is a good version of Linux, with x-windows etc. Linux **Redhat**. I thought about buying it sometime ago. The price in US dollars is \$49.95. That's cheaper than windows in my eyes.

Offered by [Gerard](#).

RedHat 6.0, issued mid-1999, has a number of improvements on functions that had to be manually added/replaced to the 5.x distribution, now making it really workable and easy to use.

Offered by [John](#).

I had the opportunity to install and play with a modern version of Linux (**RedHat**) and was very impressed. The only problem I ran into is that I have a WINModem and it couldn't work with it. But the release notes said so, so I didn't have to spend a lot of time finding that out the hard way.

Offered by [Ron](#).



Troubled Times



Options Open

I do think we need to keep track of how the Linux-radio software develops for ham radio use. If a lot of hams pick it up and use it then we may want to have a copy of the source code just in case. If after the pole shift and we have time on our hands and need flexibility for special operating systems - applications we may want to keep a copy of this around for modification or to be compatible with some other hams. Like you said this can all be done in NT without getting into programming the operating system. NT will be my preference anyway. However a lot depends on which way the majority of the Hams go in the next few years with respect to using or not using this software. If it gets used a lot then we may want a copy just in case a backup alternative method is needed.

Offered by [Mike](#).



Troubled Times



Linux Advantages

Linux has a great OS that I use daily for non-programming tasks, although I do program a little. It's not that hard to setup or use, it's just not Microsoft making you believe you have to buy everything to do anything. Most of the normal software, including the OS itself has been very stable for me. Netscape 4 blows away the Win95 version in the stability department, and is only lacking in Java speed. (No JIT as far as I can tell.) It *rarely* dumps out on me, whereas the Win95 version always crashes. Linux itself has *never* crashed a *single* time since I installed it.

As time goes on, Linux is becoming increasingly more user-friendly and the performance is top-notch. Linux will win out over Microsoft in the long run because of good design and a more mature attitude of working together to make something without the money factor being mandatory. And letting you do whatever you want with it. I really admire the people who make Linux and all the GNU stuff. Of course since most computers are unfortunately DOS-based, one would need software written for DOS. But there are programs made on Linux then ported to DOS, it doesn't really matter. A few off hand:

- [UAE](#) (Amiga computer emulator), developed on Linux, ported very nicely to Win32, DOS, BeBox, and even Amiga
- [XaoS](#) (real time fractal zoomer), made on Linux, ported nicely to many platforms.
- [Quake](#) (game) Made with GCC for DOS, ported back to Linux because it's using the exact same compiler.
- [Stella](#) (atari emulator), made on Linux, ported to others.

Other more useful programs I use much, that blow away the Win95 counterparts:

- [xterm](#) (so much better than the 80x25 dos-box)
- [tp](#) - yes the command-line ftp is just as good as having all the buttons.
- [telnet](#) - you just can't find a telnet program that works right on Win95.
- [Netscape](#) (yeah)
- [GCC](#) (The other people in my C programming class bought \$200 compilers. Did I? No! And I can port straight to DOS, or use some free DOS graphics/sound libs. Once the graphics library I use gets ported to Linux, I'll basically be able to write programs that run on either with hardly any modification. It's already being ported to Win32-DirectX.
- A [command-line](#) that makes *sense*! Not DOS, limited to 120 or so characters, with backward path slashes \\ \
- [printer support](#) is poor on Linux though.

What is the mentality that Linux is so hard? Or buggy? I don't see it at all. I think it's a lot easier to deal with than Win95. It's not as big or complicated as you think. Linux seems to be developed with a mentality that you can do something right, for the sake of doing so. NT seems to be developed with the attitude of making money. It's not feature-rich, stable or anything else. OS wars aside, I think it would be important to write code with some sort of portability in mind, because not everyone wants to run NT. This means don't *require* Microsoft foundation API's to port code, leave that as a front end option, similar to how those emulators I previously mentioned are all straight C or C++, with the graphics drivers and GUI extra. Radio software should be as generic and portable as possible, I would think, although I don't know much about it.

I trust more in the things people make with the intention of doing it right. It might seem hard or bad right now, but in the long run it's going to pay off in a *big* way. It's already paying off on my own computer, and many others I know as

well. I get one of the most technologically advanced OS's as a price for being alive - because some nice people made it so.

Offered by [Joe](#).



Troubled Times



Features

Linux is a free operating system anyone can use or modify, with free high-performance compilers and development kits available for just about any language for free. Features:

- true **multitasking**, multiuser (unlike Win95 or NT) People can log into your computer from over the internet and run programs on your computer, or do other things.
- virtual consoles, run many **video modes** simultaneously and flip between them.
- memory / **crash protection** that actually works. Linux only crashes under extremely rare instances.
- very **fast file system**, networking, etc.
- full set of standard **internet tools** - telnet, ftp, etc.
- very **high performance**. You don't get faster than Linux on a PC.
- ultra-**configurable**. With a little effort, you can make Linux look however you want, and work how you want to work. That little effort pays off in big ways.
- **secure**. Linux is pretty secure, meaning your kids or neighbors can't log on to your computer and look at all your stuff if you don't want them too.
- **easy** to use, once you force yourself to think differently about what a home computer is all about. Is it about paying out a lot of money for an overly complex system, or about enjoying the freedom of doing whatever you want to your own computer? You decide.

Just like when I was a kid, the days of power computing are coming back. People are ditching Microsoft and building and improving a better, faster, free mass of computer software. I use Linux everyday and love it. Take the time to learn this stuff and it will pay off in big ways. You'll get a personal satisfaction of figuring out how to do something yourself, and using something people made as a improvement to society. You can even buy inexpensive Linux packages from the stores now, which are easy to set up and get started on. If you learn how to use free, standardized, publicly available operating systems and software you will be more likely to really understand computers better and be able to use them when today's software companies go under. Since Linux is not developed by one software company there is no risk involved with using it. It won't go away, and it will always be supported since the public supports it.

Here are some good Linux links, or use the net search engines.

<http://www.redhat.com>

<http://www.sco.com/>

Offered by [Joe](#).



Troubled Times



Installation

Linux is the fastest OS, and easy to install.

- DOS 6.22 overwrites the Master Boot Record and will only install on drive C:. No OS should care what drive it is being installed on. This is a monopolistic act in itself, and while Microsoft might think it's k001 to play stupid tricks, I find it extremely annoying.
- Win95 is similar, but worse because re-installing Windows means re-installing most of your programs too.

Linux tells you exactly what's going on all the time, and will [install on any kind of drive](#). You can put it on:

- CD
- Zip disk
- hard drive
- floppy disk
- anything your computer thinks is a drive.

This is a *real* OS. For \$0 I can:

- Use hundreds of [consistent commands](#), that can do all kinds of stuff. You won't use all of it, but its *there* if you need it, and directions if you need it. You type "man command" for a manual page on a command.
- [Telnet](#)
- [IRC](#), either graphical or text.
- [Netscape](#), they even make the new one for Linux, mail, page composer, etc. also.
- Run 132x60 [text mode](#) on text screens, something DOS doesn't allow without problems. This helps you maximize your screen's ability, and you can pick other modes, like 132x25 or 80x60 depending on your gfx card.
- Color-highlighted directories and files, you can pick the colors it uses too.
- [Windowing](#) interface that can look and work exactly like you want it too.
- Lots of other stuff like [Photoshop clone](#), programming languages and tools, etc., that you don't have to pay for.

You get all the source code too, so if you want to change it to your liking and know how to program you can. You can also run web servers and almost any other internet app for free. It won't crash whatsoever under normal circumstances. It's not *perfect*, but it's more perfect than Win95, especially if you don't need to run Win95-only programs. Usually to install a program you type:

```
make all  
make install
```

and to uninstall you type:

```
make uninstall
```

This is ideal, but it's *not* usually hard to get things working if you read the directions.

Offered by [Joe](#).



Troubled Times



Linux on CD

The cheapest place to buy Linux distribution CD's is [CheapBytes](#).

Offered by [John](#).



Troubled Times



MS Office Clone

There is a program called StarOffice 5.0 for Linux which is #1- 100% *free* (A 60 meg download though) and it is a complete *clone* of MS Office, with Word, Powerpoint, Excel and Access clones. You can even open and convert Office documents. There are a bunch of other Office clones in the works out there in the Linux world. I highly recommend you get a version of linux and install it alongside your windows system, then you have the choice to dual boot the computer if you trash linux or don't like it you can just reboot back into windows. I found however that after 2 or 3 months I don't even boot the windows system anymore.

Offered by [Rob](#).



Troubled Times



Applications

Most of your windows software will not run in Linux. Depending on what you need to do you may be able to use different software to accomplish the same things. If you have enough hard drive space try using both OS with dual boot, or you may be able to run Win95 from within Linux using VMware. Right now I dual boot because my machine isn't beefy enough to run both OS's at the same time. I haven't actually used VMware, but I've heard lots of good things about it. In any case, I think you should check it out, but get ready for a formidable learning curve. I would recommend joining a user group so you have someone of whom to ask questions.

I would recommend going to [Cheap Bytes](#) as they have Linux distributions cheap.

Offered by [John](#).



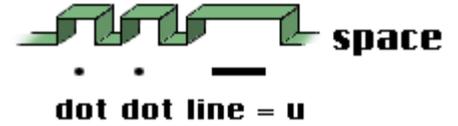
Troubled Times



Code Patterns

With the help of Morse code you will be able to send messages in the shape of short and long signals- dots and stripes. These represent characters, numbers and signs. Below you will find the morse-alphabet.

Morse code			
	Start _ . . . _	End . _ . . . _	Error
a _ .	m _ _	y _ . _ _	/ _
b _ . . .	n _ .	z _ _
c _ . . .	o _ _ _	1 . _ _ _ _	, _ _ . . . _
d _ . .	p . _ . .	2 . . _ _ _	(_
e .	q _ _ . .	3) _
f	r _ . .	4 _	?
g _ _ .	s . . .	5	' . _
h	t _	6 _	"
i . .	u . . _	7 _	: _
j . _ . .	v . . . _	8 _	= _
k _ . _	w . _ _	9 _	- _
l . _ . .	x _ . . . _	0 _	



Offered by [Michel](#).



Troubled Times



Morse Code

It appears that CW (Morse code) will be the choice, or only choice, of communication modes. Instead of computers providing internet like capabilities, I see something more like the old days of the telegraph office, where individuals are able to have relatively short "telegrams" sent and received from other settlements. The up side is that these settlements can be world wide! CW is as simple as it gets, especially in the area of building high power transmission equipment and efficiency of use of available power at the settlement. In addition, no computer hardware is required, the human brain does it all, along with a good receiver and *very* good antenna system.

Offered by [Ron](#).

[WB5KAN](#) - General Class



Troubled Times



How to Learn

Learning of the Morse code has long been a major stumbling block for individuals wishing to get into the wonderful hobby of ham radio. Although one must master the appropriate **FCC regulations** and a measure of **electronic theory**, learning to copy CW at the required rates just doesn't come easy to most people. Long ago it was realized that one of the primary problems in learning the code was that people were learning it by learning the relationship of letters and numbers to dots and dashes. When trying to copy, their mind had to do a translation from the sounds they heard to the visual dots and dashes, then to the characters and numbers.

Based upon this realization, over 30 years ago, Morse code began to be taught, from the beginning, with actual sound; **no visual dots and dashes**, but the actual sounds of them.

When I got my first license, a novice class, almost 30 years ago, I was able to learn (after many false starts using dots and dashes) after I purchased a LP record course that taught character groups with similar characteristics, one group at a time, using **sound only**. I was absolutely amazed when after only a couple of weeks I was able to copy the required 5 words per minute (really slow) and was thus able to pass the novice exam. Using the same technique, I was able to pass the general class exam requiring 15 wpm. Although I still hold a general class license, I can easily copy, in my head, over the 20 wpm required for the extra (highest) class exam. I still can't write as fast as my mind can interpret it. I need to practice that!

Offered by [Ron](#).
WB5KAN - General Class



Troubled Times



Master the Morse

I strongly suggest that interested parties learn the code using the current practice of learning the code by sound. Luckily, there are literally thousands of programs written by hams for all sorts of things, among them are programs designed to help master the Morse code. There are several such programs. Start out with a code speed of 5 words per minute, and a weight of about 13 words per minute. Weight is how fast the dots and dashes in a character sound. The individual letters are spaced apart further thus providing a lower wpm rate. That way, the brain tends to memorize the complete character sound, instead of the individual dots and dashes. By using the groups of characters in the individual lessons, one learns to differentiate between similar character sounds such as: e - dot, i - dot dot, s - dot dot dot, h - dot dot dot dot, etc.

Offered by [Ron](#).

[WB5KAN](#) - General Class



Troubled Times



License Types

The following is a list of amateur operator licenses including requirements and privileges. As you can see, the only no code license is the Technician. All others require at least 5 wpm.

Novice

code test at 5 wpm. written novice theory and regulations (Element 2). Telegraphy on 3675 - 3725KHz, 7100-7150KHz, and 21100-21200KHz with 200 watts PEP output maximum; telegraphy,RTTY and data on 28100-28300KHz and telegraphy and SSB voice on 28300-28500KHz with 200 watts PEP max; all amateur modes authorized on 220- 225 MHz, 25W PEP max; all amateur modes authorized on 1270 - 1295 MHz, 5 w PEP max.

Technician

no code test. Novice theory and regulations; Technician-level theory and regulations (Elements 2 and 3A). All amateur privileges above 50 MHz.

Technician Plus

code test at 5 wpm. Novice theory and regulations; Technician level theory and regulations (Elements 2 and 3A). All Novice HF privileges in addition to all Technician privileges.

General

13 wpm code test. Novice theory and regulations; Technician and General theory and regulations (Elements 2, 3A and 3B). All amateur privileges except those reserved for Advanced and Amateur Extra class. See below.

Advanced

13 wpm code test. All lower exam elements, plus Advanced theory (Elements 2, 3A, 3B and 4A) All amateur privileges except those reserved for Amateur Extra Class. See below.

Amateur Extra

20 wpm code test. All lower exam elements, plus Extra class theory (Elements 2, 3A, 3B, 4A and 4B). All amateur privileges.

Note:

 Frequencies reserved for Extra class:

3500-3525KHz CW,RTTY and data only
7000-7025KHz CW,RTTY and data only
1400-14025KHz CW,RTTY and data only
21000-21025 CW,RTTY and data only
2800-28100KHZ CW,RTTY and data only
3750-3775KHz CW, phone and image
14150-14175KHz CW, phone and image
21200-21225KHz CW, phone and image

Note:

 Frequencies reserved for Extra and Advanced:

3775-3850 KHZ CW, phone and image
7150-7227 KHZ CW, phone and image
14175-14225 KHZ CW, phone and image
21225-21300 KHZ CW, phone and image

All amateur bands above 10 meters allow all modes and license classes except for 50.0-50.1 MHz and 144.0-144.1 MHz allow CW only.

Offered by [Ron](#).

WB5KAN - General Class



Troubled Times



Novice Class

A word about the **novice class license**: In the old days, really only a few years ago, there was *no* class license that didn't require the ability to copy at least 5 words per minute. As VHF repeaters, Packet, and computers became just a common in the ham shack as the radio itself, the FCC recognized a need for a class of license that allowed operation on these frequencies and modes that didn't require a working ability to send and receive Morse code. From that came the **codeless license**, or Technician (which requires much more knowledge of electronics). The introduction of this license class practically doubled the number of amateur operators in the US and many of these new operators contributed greatly to the advancement of the state of the art of repeater networks and digital networks.

In those old days there were very many novice class operators, as this was the entry, so to speak, into full blown ham radio. There is no better way to increase your ability to copy and send CW at faster speeds than actual on-the-air contacts, as you are totally focused on not missing a word. Now days, Tech. + operators who want to upgrade their license to be able to use the HF frequencies generally rely on software to attain a speed of 15 wpm so as to get the **general class license**. Many of them then never use CW again as they can use voice (SSB) and digital modes on the HF bands.

For us, however, CW takes on a very special importance, as it is the very best mode when it comes to being able to communicate under weak signal/high noise conditions. As I've said before, the human brain is remarkable at being able to detect and understand CW signals under these conditions. I fervently encourage those who are interested to download the above programs, choose which one you are the most comfortable with, and learn CW. 5 wpm is easy as pie to learn, and 15 to 20 is just a matter of spending time with the program. Get a novice class license; it's easy, then go on from there.

Offered by [Ron](#).

[WB5KAN](#) - General Class



Troubled Times



Stable Anchor

The most accurate watches to use are the non-mechanical LCD type. For accuracy of time keeping through the pole shift and for the near term after, I believe the LCD sports watches to be the best. The mechanical (moving hands) quartz watches are less accurate than the LCD. This is due to variations of friction with time and temperature. The LCD have no moving parts and will last much longer. Stock up on enough appropriate watch batteries to last 10-20 years. Use a water proof sports watch if you plan to use it after pole shift with all the rain going on.

Some people will use these as a stable anchor point through all the confusion of planet stopping and starting. Just as current calendars will most likely continue to be used. Some watches will be used to synchronize wide spread events. Some will be used to determine location and distance. For example some one tells you to walk for 10.5 hr. north and 5 hr. north west 16 degrees to get to your destination. With it being dark most of the time, how are you going to measure this without a watch you can trust.

Offered by [Mike](#).



Troubled Times



Appreciated

Many will not need bearings, such as watches, after the pole shift. Some will use watches for orientation. After a pole shift I expect everyone will be disorientated and dazed. I see evidence that time was not kept well during the last pole shift, because one could not see the sun or the moon and survival became tough. I think some will gain comfort from knowing how much time passes as they see that, for year, every day is the same. If someone keeps track of time until the sun and moon come back into view, then maybe our history will record when to look for the next close passage of the 12th Planet some 3657 years later. There are some navigational uses of clocks that become quite useful, keeping track of time while moving in a particular direction.

If after the pole shift one measures the length of daylight in the day and uses a table one can determine Latitude. The longest days are when one is closest to the equator. One would measure first light to last light. Knowing ones Latitude one can determine average temperature from another table. If the days are getting longer then one is headed for warmer times. If days are getting shorter then one is headed for colder times. If one were to measure the length of daylight once a week over 6-8 months, then one could determine the new angle the Earth's rotational axis makes with the Earth's orbital plane. This angle is at present 23.4 degrees. This should be different after the pole shift and is expected to be less this time around. I plan to make or find the above two simple tables.

Offered by [Mike](#).



Troubled Times



Sun

It seems to me there would be some level of [Radio Emissions](#) due to solar activity at all times. It might be possible to build or find a directional antenna and use existing available radio equipment (microwave or possibly old AM-FM tuners) to locate the sun behind the thick clouds after the pole shift. If we can locate the sun fairly accurately say within one to several degrees at different times of the day then we can determine many things. Where the new rotational axis of earth is. What latitude we are at. From latitude we can determine estimated seasonal temperature range. Over time 6 months to a year we can determine the new precession value or what the 23.4 degrees has now become. We can determine when the seasons (summer and winter) occur.

Possibly short wave moon bounce equipment would work in reception mode. One would find the noisiest spot in the sky and measure it's angle several times/day for several days. If this followed a sun rise sun set pattern over several days, then one would track it for 6 months to a year, say once a week or once every several weeks. From a pre-built excel spread sheet one would calculate the above needed information from the angles and time of day found.

The following is some quotes on some preliminary research on this subject.

1942 : J.S. Hey Detects Solar Radio Waves

One of the pleasures of radio science is its ability to reveal just what modest additions to the human sensory apparatus are needed to extend perception into entirely new realms of experience. As discussed in part 1, serious research can be conducted with a length of wire, a crystal earpiece or headphones, a tent pole, a hammer, a patch of earth, your ears, and a notebook. Similarly, given enough luck or patience, it's possible to detect some form of radio emission from the sun with virtually any radio receiver.

In 1942 British Army physicist James (Stanley) Hey was asked to investigate huge rushing noises thought to be hostile jamming of British radar stations. Hey sourced these mysterious signals not from the German Army, but from the sun, observing a strong correlation between radio emission and sunspot activity. In March my first attempt to renew the search, prompted by the highly scientific observation that it was a nice sunny day, was immediately rewarded by a huge swathe of solar noise roaring into the Lafayette at 13.8MHz: accompanied by the parallel 2nd harmonic - characteristic of a Type II emission [4] [8] - at 7.29MHz.

Offered by [Mike](#).



Troubled Times



New Latitude

The following table is the kind of data I think will be useful to have after the pole shift. So far I can think of 4 ways that one can measure approximate latitude after the pole shift under thick cloud cover. These are dip needle, average temperature, use of an amateur radio telescope to track the sun, and length of daylight (twilight to twilight). The most useful is to find average expected temperature by measuring latitude first by using one of the other three approaches. Information on weather and average temperature that one can expect at different Latitudes is available.

I plan to present this sort of data graphically, that is if we can not find it already done. To do a good job I think we need more data points. If anyone has a good reference that might help please share it. I found the concept of latitude versus temperature to be popular for 5-12 grade school projects. There is a lot of description on what to do but not much on what has been done or found as a result. So for me the bottom line is, it's back to a 5th grade project to learn what I didn't learn when I went through school.

Offered by [Mike](#).



Troubled Times



Magnetic North

Does anyone in this forum know how to navigate after the pole shift? I have several questions, perhaps anybody who knows can explain this to me. Questions:

1. Does anybody know the difference between the True North and the Magnetic North?
2. Will our compass still work after the pole shift?
3. Where is this Magnetic North located?
4. Will the coordinate of this Magnetic North change after the pole shift?
5. After the pole shift, in what direction will our compass point, relative to the Sun?

Offered by [Tian](#).

With no satellites still working then no GPS global positioning will work. With dense clouds the direction of the sun will be difficult to determine and the stars will never shine. If one doesn't know where one is after the pole shift then it becomes difficult. Using maps and most likely position one should identify stable references in the landscape to the map. This is to say hopefully the mountain tops or large features are still there and recognizable. Next lay a compass down on the map where you are. Mark the north pointing direction on the map.

From this position if one wants to travel to another location on the map, then head in that direction stopping from time to time to identify land marks with the map. If you don't have a map then make one as you go indicating distance and direction. Distance can be related to time of travel hours or days etc. This is assuming the rate of travel is about the same speed each unit of time. Direction can be related to current compass readings. The bottom line. There will be primitive navigation with no accurate measure of distance, direction etc. Where there are no maps they will need to be made.

The difference or deviation between True North and Magnetic North is called declination or the angle between where a compass needle points and the true north (geographic pole). This can be off by as much as 90 degrees depending on local magnetic deposits. Your compass will still work after the pole shift, it will just point in a different direction, the new north, which ZetaTalk™ says will end up off the coast of Brazil (South America). The coordinates of the new Magnetic North may take a number of days to settle down after the pole shift, but should remain constant for 7 years when the 12th makes a more distant pass by the earth. A small probably unmeasurable shift in the poles positions may occur at that time.

My understanding is that North will be in the same relative position to the Sun as it is today. The mechanics of rotation and forces that cause the magnetic field to form in the first place will still be present in the same orientation to the sun as today. Thus our rotation of earth and magnetic north will point in approximately the same direction as the north star is to day.

Offered by [Mike](#).



Troubled Times



Team Effort

The new latitude should be easy if we can determine the polar star and measure its angle. If the ham radio system is up and can broadcast a time hack at its local solar noon, the rest of us could then back into our own relative longitude by measuring that portion of a days rotation to our local solar noon. Obviously we'll also need to check to see if we still have 24 'hours' in a day after we resume rotation. I think we have to assume *everything* will be perturbed.

Probably wouldn't hurt to make a startup scenario for redefining our world after the pole switch. How could we get a digitized map of the new world assembled? The ham radio net could be very helpful in determining data points and centralizing them. A good supply of cheap plastic sextants would help in determining local solar noon and maybe the pole star elevation.

We may also abruptly switch seasons. Tracking the sun's path will allow determination of the new equinoxes and solstices. Critical for planting and growing.

Offered by [Jack](#).



Troubled Times



Established

After the pole shift it would be desirable to easily determine with common items your Latitude, predict average seasonal temperatures, and measure the cloud density-clearing rate. It may be that one has lost track of days and now wishes to know what the earth is telling us the seasons are. Assume for now there are no dip needles available and one does not know how to make one (a subject for another time). All of this can be determined by measuring the length of daylight for the longest and/or shortest day or any two days of the year. The longest days will occur when the earth is tilted such that you are closest to the equator and will tell you the first day of summer 21 Jun. The shortest days occur when the earth is tilted away from the equator and give the first day of winter 21 Dec. The readings can be taken with a normal watch, or clock (described later) or can be taken semi-automatically by building a simple circuit. Once the readings are taken one need only use some simple graphs to calculate Latitude, predict seasonal temperatures, and if needed determine what season of the year one is currently at. I have been working this project for a number years and it will take seven separate posting to fully explain it. I have attempted to make it as simple to use as I can. Print it out and use it as an after pole shift reference document. You may want to build the circuit below before the pole shift and test it out.

The following future posts on Light Measurement (LM) will make up this subject:

LM-1: Introduction

LM-2: Photocell measurements

LM-3: Results of measurements part1

LM-4: Results of measurements part2 Graphs to use

LM-5: Results of measurements part3 Formula to use

LM-6: Light meter construction and use

LM-7: Temperature, precipitation versus latitude

Offered by [Mike](#).



Troubled Times



Sextant

I think one can make a serviceable sextant based upon the common grade school protractor.

- Glue one of those "bubble" things, that contractors connect to a string to make sure the string is level, to the bottom straight edge.
- Mount the protractor on a tripod or perpendicular post in the ground. That way you don't need any optics that allow you to see both the bubble and elevation indicator at the same time.
- Under the clear base of the protractor glue a compass so the azimuth can be determined as you turn the protractor on it's axis.
- At the junction of the two straight sides of the protractor, drill a small hole, through which you insert the end of a straight wire, bent 90 degrees such that the long part of the wire lays along the side of the protractor.
- To use the device, swivel the whole device and sight along the wire to point to the landmark of interest. Read the azimuth from the compass and elevation from where the wire crosses the protractor angle marks.

What have I missed? What improvements should be made? This we can construct/perfect today.

Offered by [Ron](#).



Troubled Times



Compass

You will find a number of compasses at any sporting goods store. I like the type that is liquid damped and mounted on clear plastic so it can be laid on a map and you can still see the map through it. That way, you can take the bearing of a landmark that won't change during the pole shift, then after the pole shift record the new bearing. Then you will be able to re-orient your map post pole shift and still be able to use your compass and map as a guide.

Offered by [Ron](#).



Troubled Times



Fixed Positions

Another method may be to use surveyors instruments before the pole shift to note the relative position of many landmarks from some fixed position, and then, if possible, note them after they again become measurable and determine the new geography in that way.

Offered by [Ron](#).



Troubled Times



Radio Frequency

Here in the Great Lakes we have lighthouses, some of which, besides emitting light, also transmit a radio signal with a certain dedicated frequency, and when one has a radio receiver and tunes to this frequency, one can use it for a homing device in a foggy situation. Would this be a practical homing device after the pole shift, as all these lighthouses might not be in service anymore?

Offered by [Tian](#).

Good question and a good idea that may have limited use at times. My current thoughts on this subject are: light, sound and radio signals all can be used to make a homing device. Of the three possibilities, radio signals use less power and travel a longer distance and thus in general are more practical. I currently believe any radio transmitter and tuned receiver could work. Perhaps the higher frequency would work better due to antenna being more sensitive to direction. Including the possible use of otherwise useless AM-FM radios. One caution: People who use this will be possibly exposing their position to uninvited guests.

Offered by [Mike](#).



Troubled Times



Locating the Moon

First, there is software readily available for tracking the moon, even control the two rotors to control azimuth and elevation of the antenna array based upon known moon orbital parameters. Problem is to find those new parameters. It turns out not to be all that hard.

A system designed for moon bounce is working with such small signals that when working with signal to noise ratio, noise is measured in degrees kelvin instead of the usual micro volts. The noise comes from a number of sources, among them the receiver itself, feed line, antenna generated noise, noise originating with the sun and reflected off water vapor in the air, etc. When calibrating such a system, one points the antenna at the cool earth and notes the noise, then the sun, noting the noise, then clear sky, noting the noise, etc. When the antenna points at the moon there is a clearly detectable noise (all this being white noise). Some of these tracking software actually use algorithms similar to military aircraft weapon search patterns, there are a number of them. Anyway, using a search pattern, the moon can be readily found, even on an overcast evening. By plotting a number of points found in this way, the new orbital parameters of the moon can be calculated.

It also occurs to me that we should be able to use the difference between the current orbit parameters of the moon and the new ones we get by finding its new ones, we could calculate the actual change that occurs during the pole shift. That is, if the moon's orbit isn't perturbed by the 12th's passing, which it seems that it would.

Offered by [Ron](#).



Troubled Times



Battery Changing

You need to have a small **Philips** and/or small flat head screw driver to get into most watches to change the battery. If you buy in the future you probably will get the 4 screws on the back type. **Lithium** battery (3 volts) lasts 3-5 years typically but on some watches say 7-10 years. silver oxide battery - (1.55 V) - 1 year mercury battery - 1 year - no longer sold in some areas because of hazardous chemicals used. The more the light and alarm is used the shorter the battery life. The above assumes alarm operation for 20 sec/day and one light operation for 1 sec/day. The longer batteries sit on the shelf the shorter the useful life. Save more batteries than you need for say 20-30 years. Plan for others that have not saved. Generalized **Digital Watch Battery** changing notes: (requirements steady hands, some mechanical experience, and good eyesight)

1. Use plenty of light and a magnifying glass from time to time to see how the components come apart. Don't force anything over its designed strength.
2. Unscrew the 4 screws in the back being careful not to round over the heads of the screws. Usually, the screws are designed to be able to use a Philips or flat head screw driver. The flat head works better for me. Some backs screw on and take a special wrench. A needle nose pliers sometimes fits these slots and can assist in loosening it. Some snap-on type backs pry off by use of a strong knife or small flat head screw driver.
3. Carefully remove the back - for the 4 screw type, note well the orientation of the writing on the back with respect to case or the bands. Reason - there are electrical contacts that touch the alarm crystal and the back case that needs to be put back into proper contact when you put the "back of the watch" back on.
4. Gently remove the rubber seal noting the orientation of how it was installed. This could look like a special formed gasket or be just a O-ring.
5. Study with a magnifying glass (if needed) how the battery is held down. Most of the time it is held in with one screw and clip. In some instances it is necessary to remove the electronics from the case. In this case gently pry it out. Note: don't take the electronics out of the case unless you really need to do so. Care must be taken to not bend the spring switches when it goes back in.
6. Battery removal - Take the screw or screws out that holds the battery down or in the case of no screws compress the clip with a finger nail and pry up a spring end that extends over the side on all 4 corners. This is a metal spring loaded clip that fits over a plastic hook. Do this carefully so as to not break the plastic hook. Note which side of the battery is + and - and how it is orientated as it comes out.
7. Put in the new battery in the same orientation as the one you just took out. This means + and - in the right direction. If this is done within a given number of seconds then the watch will not loose any time. If you take longer than needed or if the watch is stopped then no problem you will be setting the time anyway.
8. Install the battery holder clip making sure it is securely clipped on all 4 corners or install the screw that holds the clip down. Check that the watch electronics is working. If not check the battery holder connections. If still don't work then look for a AC terminal (AC=all clear). If you can find this short + side of the battery to AC terminal with a metal tweezers for 2 sec to reset the watch. Note: on some models pushing the light button will turn on the display for the first time.
9. If you did not take the electronics out of the case then skip to step "9)" otherwise do the following. Push each switch button in the case out as far as each will go. This is to make room to install the watch electronics.
10. Orient the watch electronics with the case. Check by looking at the other side to see that the electronics is going to be put in right side up. Next Line up the watch electronics with the case inserting it part way. Do not force it, this will bend the switch contacts. Now with a small flat head screw driver gently push each spring contact "in" slightly (so as to make contact with the switch) and gently push down on the watch electronics sliding it into the case. Do this for each switch, until the watch electronics is fully into the case.
11. Put the rubber water seal in the same orientation as it came out. To maintain the same amount of water

resistance, this should be replaced the same time the battery is replaced. If you use an old gasket and you feel it needs it use a small amount of silicon grease to help seal it. Stocking up on rubber gasket may be necessary for some watches.

12. Install the back in the proper orientation. Writing on the back is usually the same orientation as the numbers on the front of the watch. Screw in the screws. Snap the back on with pressure or a clamp making sure the outer edges of the front are supported.
13. Check each of the switches functions properly and then set the time.
14. Note the date the battery was changed this will help you estimate the life time for this type of battery. When you change the battery during the next 5 years - note how long it last from the time you bought it and stock up on enough for 10-30 years.

In a pinch any battery will work just match the voltage and wire it in from outside. The watch then becomes bulky to wear on the arm as a watch but can still be used as a time reference. A watch with a questionable water seal put in a clear plastic bag will still work fine with the button able to be pushed and the time able to be read. From time to time a small amount of silicon lube applied to the push buttons from the outside could help for sticky buttons and to make the rubber seal more alive. If you own a [Timex](#) watch there are instructions for download in PDF of instructions, look under help.

Offered by [Mike](#).



Troubled Times



Motion Charged

Seems like a professor of mine mentioned that they work on induced charge. They have an internal magnetic field and movement within the earth's magnetic field induces a current. Wonder if they'd work while the core is shifting?

Offered by [Roger](#).

This professor is wrong. The kinetics mechanism works by putting motion into energy.

Offered by [Michel](#).

An advertisement for the watch, explaining a little of how it works, from **Seiko**

Seiko has spent over two decades of research and development (along the way generating more than 50 patent applications world-wide!) to bring to the world the Seiko Kinetic watch. This is the first quartz watch that never needs a battery because it's powered by human movement! What makes this work? It can be summed up in five steps:

First, simple everyday movements of your wrist rotate an oscillating weight inside the watch.

Each movement of that oscillating weight rotates a rotor, converting the movement into a magnetic charge. Mind you, the rotor is no bigger than the head of a pin, and can spin up to 100,000 RPM!

An extremely high density coil then transforms the magnetic charge into the electricity that will power the watch.

Hang on, we're not done yet! The electrical energy is stored in a tiny capacitor, awaiting instructions from the brain of the watch.

The integrated circuit determines how much energy to store and release, ensuring precise quartz timekeeping. Precise, as in nearly 100 times more accurate than a mechanical watch.

Offered by [George](#).



Troubled Times



Wind-up Watch

Most watches today are powered by batteries. The alternative are mechanical watches. You can still [Buy Them](#) at for around \$30. For advanced technology you can go with a Seiko Kinetic watch. It converts kinetic energy into electricity (no battery needed). The best price I have seen is \$200. Just in case you need to be on time for a meeting after the pole shift.

Offered by [Chris](#).



Troubled Times



Carrier Pigeons

The pigeons have been used through the ages to carry messages. A friend of mine breeds them. I was quite impressed by speed and accuracy of these little pilots. After release one bird arrived home faster than we did though we were traveling at 60 mph in a car. Nobody knows how pigeons do it, however there are few theories. They could be an ideal messengers between camps. The only question is will they know how to do it after a pole shift.

Offered by [Chris](#).



Troubled Times



Shadow Tip

Excerpts from [Finding Directions without a Map or a Compass](#), from the *U.S. Armed Forces Survival Manual*, Edited by John Boswell, published by Rawson, Wade Publishers, Inc., New York, 1980.

Finding Direction During the Day by The Sun

Remember that the sun rises in the east (but rarely due east) and sets in the west (but rarely due west). The sun rises slightly to the south of east and sets slightly to the north of west, and the declination or angle of variance is different with different seasons. Remember, however, that direction is relative to one's purpose. If you must reach a specific point or location, you must align your direction with true or magnetic north or south. But if your purpose is simply to maintain a direction, the sun's arc is the best constant point of reference. Try to check your direction at least once a day using one of the following methods.

The Shadow Tip Method for Determining Direction

1. Place a stick or twigless branch into the ground at a fairly level spot where a distinct shadow will be cast. Mark the spot where the shadow will be cast. Mark the spot where the shadow tip strikes the ground with a stone, twig, or pebble.
2. Wait until the shadow tip moves a few inches. If you are using a 3-foot stick, about 15 minutes should be sufficient. The longer the stick, the faster the shadow will move. Mark the new position of the shadow tip in the same way as the first.
3. Draw a straight line through the two marks to obtain an approximate east-west line. The first shadow tip is always towards the west; the second shadow tip mark is always toward the east - *any time of day and anywhere on Earth*.
4. A line drawn at right angles to the east-west line at any point is the approximate north-south line, which will help orient you to any desired direction of travel.

Inclining the stick to obtain a more convenient shadow, in size or direction, does not impair the accuracy of the shadow-tip method. Thus, a traveler on sloping ground or in a highly vegetated terrain need not waste valuable time looking for a sizable level area. A flat dirt spot the size of your hand is all that is necessary for shadow-tip markings, and the base of the stick can either be above, below, or to one side of it. Also, any stationary object (the end of a tree limb, or the notch where the branches join) serves just as well as an implanted stick, because only the shadow *tip* is marked.



Troubled Times



Time of Day

Excerpts from [Finding Directions without a Map or a Compass](#), from the *U.S. Armed Forces Survival Manual*, Edited by John Boswell, published by Rawson, Wade Publishers, Inc., New York, 1980.

Time of Day Using the Shadow Tip Method

Being able to establish time of day is important for such purposes as keeping a rendezvous, carrying out prearranged concerted action by separated persons or groups, estimating the remaining duration of daylight, and so forth. Shadow-clock time is closest to conventional clock time at midday, and the spacing of the other hours, compared to conventional time, varies somewhat with the locality and the date.

To find the time of day, move the stick to the intersection of the east-west line and the north-south line, and set it vertically in the ground. The west part of the east-west line indicates 6 a.m., and the east part is 6 p.m., *anywhere on earth*.

The north-south line now becomes the noon line. The shadow of the stick is an hour hand in the shadow-clock, and with it you can estimate time using the noon line and the 6 o'clock line as your guides. Depending on your location and the season, the shadow may move clockwise or counterclockwise, but this does not alter your manner of reading the shadow-clock.

The shadow-clock is not a timepiece in the ordinary sense. It makes every day twelve unequal "hours" long, and always reads 6 a.m. at sunrise and 6 p.m. at sunset. However, it does provide a satisfactory means of telling time in the absence of properly set watches.

If you have a watch, the shadow-clock can be used to "store up" the direction you obtained by using the shadow-tip method. Merely set your watch to shadow-clock time and then use the "watch method" described below. This avoids the ten to fifteen minute wait required to complete a shadow-tip reading for true direction, and thereby permits you to take as many instantaneous readings as are necessary to avoid "circling." After traveling for an hour or so, take a check shadow-clock reading and reset your watch if necessary. The direction obtained by this modified watch method is the same as that obtained by the regular shadow-tip method using a stick. That is, the degree of accuracy of each method is identical.

Direction, Using a Watch

A watch can be used to determine approximate true north or south. In the north temperate zone only, the hour hand is pointed toward the sun. A south line can be found midway between the hour hand and 12 o'clock. If on daylight saving time, the north-south line is found midway between the hour hand and one o'clock. If there is any doubt as to which end of the line is north, remember that the sun is in the east before noon and in the west in the afternoon.

The watch may also be used to determine direction in the south temperate zone; however, the method is different. The 12 o'clock hour dial is pointed toward the sun, and halfway between the "12" and the hour hand will be a north line. If on daylight saving time, the north line lies midway

between the hour hand and "1." The temperate zones extend from latitudes 23.5 degrees to 66.5 degrees in both hemispheres.

The watch method can be in error, especially in the lower latitudes, and may cause "circling." To avoid this, make a shadow-clock and set your watch to the time indicated. After traveling for an hour take another shadow-clock reading. Reset your watch if necessary.



Troubled Times



Equal Shadow

Excerpts from [Finding Directions without a Map or a Compass](#), from the *U.S. Armed Forces Survival Manual*, Edited by John Boswell, published by Rawson, Wade Publishers, Inc., New York, 1980.

Equal Shadow method for Determining Direction

This variation of the shadow-tip method is more accurate and can be used in all latitudes less than 66 degrees at all times of the year.

1. Place a stick or branch into the ground vertically at a fairly level spot where a distinct shadow at least 12 inches long will be cast. Mark the shadow tip with a stone, twig, or other means. This must be done 5 to 10 minutes before noon (sun time).
2. Trace an arc using the shadow as the radius and the base of the stick as the center. A piece of string, a shoelace, or a second stick may be used to do this.
3. As noon approaches the shadow becomes shorter. After noon the shadow lengthens until it crosses the arc. Mark the spot as soon as the shadow tip touches the arc a second time.
4. Draw a straight line through the two marks to obtain an east-west line.

Although this is the most accurate version of the shadow tip method:

- It *must* be performed around noon.
- In order to complete the procedure, the observer must watch the shadow and complete step 3 at the exact time the shadow tip touches the arc.



Troubled Times



Dead Reckoning

Excerpts from [Finding Directions without a Map or a Compass](#), from the *U.S. Armed Forces Survival Manual*, Edited by John Boswell, published by Rawson, Wade Publishers, Inc., New York, 1980.

Before moving from where you are in a survival situation, remember that keeping a record of your time underway is as important as maintaining a given direction. A log or detailed diary is essential not only to successful dead reckoning navigation, but to survival in general. For many centuries, mariners have used dead reckoning to navigate their ships when they are out of sight of land or during bad weather, and it is just as applicable to navigation on land.

Movement on land must be carefully planned. One's starting location and destination should be known or approximated, and -- if a map is available - carefully plotted, along with any known intermediary features along the route. These intermediate features, if clearly recognizable on the ground, serve as invaluable checkpoints. If a map is not available, the plotting is done on a blank sheet of paper. A scale is selected so that the entire route will fit on one sheet. A north direction is clearly established. The starting point and destination then are plotted in accurate relationship to each other.

If the terrain permits, the ideal course is a straight line from starting point to destination. This is seldom possible or practicable. The route of travel usually consists of several courses, with an azimuth, or angle stated in degrees, established at the starting point for the first course to be followed. Distance measurement begins with the departure, and continues through the first course until a change of direction is made. A new azimuth is established for the second course and the distance is measured until a second change of direction is made, and so on. Records of all data are kept and all positions are plotted.

For determining distance over land, a "pace" is the best unit of measure. A pace is equal to one natural step, approximately 30 inches. Usually, paces are counted in hundreds, and hundreds can be kept track of in many ways: make notes in a record book; count on your fingers; place small objects such as pebbles into an empty pocket; tie knots in a string; or use a mechanical hand counter. Distances measured this way are only approximate, but with practice can become very accurate. It is important that any person who might find himself in a survival situation predetermine the length of his average pace. This is done by measuring the length of ten average paces (in feet, inches, etc.) and dividing the length by ten. In the field, an average pace must often be adjusted because of the following conditions:

Slopes

The pace lengthens on a downgrade and shortens on an upgrade.

Winds

A headwind shortens the pace, a tailwind increases it.

Surfaces

Sand, gravel, mud, or similar surface materials tends to shorten the pace.

Elements

Snow, rain, or ice cause the pace to be shortened.

Clothing

Heavy clothing shortens the pace; the type of shoe affects traction and therefore the pace length.

Stamina

Fatigue affects the length of the pace.



Troubled Times



Steering Marks

Excerpts from [Finding Directions without a Map or a Compass](#), from the *U.S. Armed Forces Survival Manual*, Edited by John Boswell, published by Rawson, Wade Publishers, Inc., New York, 1980.

A steering mark is any well-defined object on the ground in the direction of travel, toward which a navigator may steer. It is easier to follow these than to steer continuously by compass.

Steering Marks by Day - Naturally, steering marks are easier to find during daytime marches. Such objects as lone trees or buildings, timber corners, and shapes on the horizon are good examples. Even a cloud formation or wind direction may be used if checked periodically by any of the celestial direction-finding methods discussed.



Troubled Times



Earth Changes

All well and good but after the pole shift my understanding is as follows:

- No sun
- No east or new east
- No west or new west
- No north or new north
- No south or new south
- If the stars are visible through all the clouds and rain fine
- Dead reckoning is fine until massive up heaves distort the mountainous terrain or you find yourself in an area that has snow or open dessert after the pole shift
- Steering markers are fine till earth quakes take them away

Direction with your watch is fine but remember when the pole shift happens the time zone will change, EMP's will render a battery operated watch useless, so find and buy a wind up watch now, but you will need to know what the time is in your area. Figure out what your pace count is now and then after you are hungry and weak check it out again practice line of site distancing: Pace an object (or pick out an object) now that you know is a certain distance away say 1/8 mi. or km then 1/4 then 1/2. Practice this so that you are proficient then you can after the pole shift use the same method to set up your pace area and re do your pace count.

Ultimately you should be as familiar with the area as humanly possible and remember Hanzel and Gretal: leave a visible trail if and only if you think it is safe. Get maps now study them real good now then after all is done walk the area if possible to orient them, edit them to the new surroundings.

The rest of the book is great I have seen it before.

Offered by [Lou](#).



Troubled Times



Skylight

Legend has it that the Vikings navigated in cloudy northern seas by using a crystal of cordierite (aka iolite). Even though the sun is obscured, the skylight is polarized. The polarization is maximum at right angles to the direction of the sun. One could use a transit or theodolite with a high-quality linear polarizer to find the direction of maximum polarization. However, you would probably need a photoelectric amplifying system to detect the min and max polarization since the eye isn't sensitive enough to locate the null position to within 1 degree.

Clyde

Testing results, using a digital light meter with one and/or two 55mm camera polarizes. Measuring the light intensity in LUX I found in light cloud cover where one could feel the heat of the infrared and barely see a shadow that if one used two polarizes adjusted at an angle to let a little light through that one could get about 10-15% change in light intensity from max to min (rotated 90 degrees). I tested various angles made with a tangent to the earth's surface. If there is no shadow at all and no blue sky then the effect is below the random fluctuation of light intensity of the sun below 1% to 2% and I was unable to measure it. I think this might work if there is a blue sky but definitely not in heavy rain cloud conditions, but then one won't need it if one can see a shadow.

If one wants to look into this more. I would recommend using a differential amplifier and measuring the light level using two identical sensors both rotated 90 degrees (polarization filter) with each other. The circuit would be set up to filter out the overall light fluctuation due to thickness changes of cloud cover. It would be designed to measure differences in intensity between the two sensors. Such a circuit could be built based on modifying one of the two circuits found in *Radio Shacks Engineer's Mini-Notebook* (Cat No. 62-5019), page 48 *Electronic Sunshine Recorder*, or (cat No. 62-5012) page 23 *Ultra-Sensitive* light meter.

Bottom line Summary: I currently don't believe this concept of measurement could be developed to become a viable method for determining the direction of the sun, under heavy cloud cover, after a pole shift. From what I can measure a simple compass would be more reliable and more accurate. As the cloud cover gets more dense as one would expect after the pole shift, I think it will be even harder to measure. I note my findings done over several weeks, so others do not repeat the same research efforts.

Offered by [Mike](#).



Troubled Times



Blue Filter

Bees are reputed to be able to navigate on cloudy days. I don't know whether they are seeing the sun directly through the clouds, or whether it is because the blue end of the spectrum (incidentally, one of the dichroic colors of corderite is blue) is more strongly scattered and polarized. In any event, bees are able to see UV. So, I would suggest that you put a blue filter on your apparatus and repeat the experiment and if that doesn't help, then move into the UV region and experiment.

Clyde

Used a digital light intensity meter (Lux) with two 55mm camera linear light polarizes (one would have worked), a Blue cobalt glass filter, and different lengths of cardboard tubes to limit the field of view and amount of side light interference.

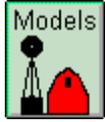
Test result analysis. Under ideal clear skies when one samples the sky at about 30-130 degrees from the sun's position, one can get an average of about 18% light intensity change using a polarizer and a blue cobalt glass filter, while shielding of side light, using a tube length of 2.5 times diameter. For a tube length of about 1.1 times diameter, using a polarizer and no blue filter I was able to measure an average of about 12% light intensity change when the polarizer was rotated 90 degrees. I estimate, one could measure the sun's direction as a projection on the earth's surface, to within 10-15 degrees using this method on a clear day.

Light level results were measured during relatively thin white uniform cloudy conditions with different rotations of the polarizer. The difference in light intensity due to polarization was measured to be below the noise level of about 1% to 2% with occasional fluctuation up to as much as 4%. The intensity of light from clouds is constantly changing due to the clouds becoming thicker and thinner as they move. This causes a constant fluctuation of overall light intensity of about 1% to 5% over a short time interval making it difficult to measure small changes when the polarizer is rotated 90 degrees. Filtering for blue and ultraviolet does help but not enough to make a difference. It was observed the direction of maximum polarization is random with a slightly higher frequency of occurrence of polarization being perpendicular or parallel to the direction of the sun. However, the effect is small, well below reliable measurements with the current setup.

Offered by [Mike](#).



Troubled Times



Celistine Properties

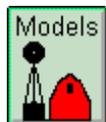
Celistine Properties is a concept for New-Age disaster proof communities patterned after the nine insights from the Celistine Prophecies. This is a list of tasks or steps which need to be taken to make this concept happen and be reproducible in many world locations. The objective is to heal the soil from which springs and sustains all life on the earth. All systems are interrelated in the web of life. Healthy top soils contain millions of organism per handful. Pesticides and artificial fertilizers (and lack of compost and organic matter) kill these necessary microbes. The soil will still bear crops but does not have natural resistance to pests and disease. It also lacks the vital life force necessary for the human immune system to function at maximum efficiency. Marginal crops result in poor health for humans. We are what we eat.

- 60 to 400 acre sites for these organic farms and communities.
- Recycling arrangement with local waste management company for recycling, processing, composting, fuel making, earth worm farming, chickens, turkey's, EMU's, (free range).
- Recycling equipment, alcohol and methane production equipment. Tractors, spreaders of compost, farming equipment, barns, houses, domes, green houses, shrimp ponds, catfish ponds, crawfish, alligators, (buffalo maybe). Electric tractors, trucks and farm machinery using MHD generators (currently being developed and patented soon).
- Starglow home energy systems (MHD), solar powered (grid backup), Skywell Water supply for off the grid existence, if necessary or desired.
- Model for solution to homeless problem, take off of old county poor farm of the 19th century. Dome residence, both dormitories and townhouse residences for more permanent farm hands. Should help with welfare and unemployment situation. Job training and computer skills will be offered as well as training for special Super Kid Academy pre-school program (teaches kids from 1 to 6 how to read, do math and remember encyclopedic knowledge with functional IQ's of 200 in the form of parent child games and interaction) as well as continuing adult education programs.
- Possible associate with Ronald MacDonald House (Ranch) and or Sheriff's Ranch or something related, where psychological counseling of troubled kids, abused or even battered mothers and children can find shelter, work with animals around the farm for therapy and self worth identification. The animals give an unconditional love and acceptance of the teenager which he may have never have had from his parents or anyone in his life. This is often the first break through the child receives in his recovery and has been successfully used in many, many situations. They benefit therapeutically and also help run the farm (Earth-4-U).
- I would like to create many of these small organic farm/dome communities in safe areas all over the US and then the world. Sales of inventions manufactured such as our Skywell water machines that condense water directly from the air in high volume and at lost cost (1/2 cent per 1,000 gallons) and the large size which can produce 280,000 gallons of almost 100% pure water a day at 70% humidity (up to 100,000 gallons a day even in deserts) will revolutionize the agricultural industry and free mankind to expand in currently almost uninhabited areas of our planet. This is a project we plan to began within 8 months if all goes well.

Want to be a part of this movement? If interested contact [Celistine Properties](#).



Troubled Times



Venus Project

The Redesign of a Culture

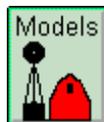
It is common in our mass media to read and to hear commentators addressing the number of social problems that face us today, such as global warming, destruction of the Earth's environment, unemployment, crime, violence, poverty, hunger, and the population explosion. Yet, how often do we hear of workable plans for alleviating these social problems? It is relatively simple for people to criticize society, however it's much more difficult to identify and implement plans to resolve the problems.

Futurist, inventor, industrial designer and human-factors engineer **Jacque Fresco** and his associate, **Roxanne Meadows**, have been working diligently for many years to create comprehensive plans for solving these social ills. Using their own resources and ingenuity, they have devised a bold new approach that calls for no less than the total redesign of our culture. The Venus Project is a veritable blueprint for the genesis of a new world civilization - one based on human values and environmental reclamation.

The plans for The Venus Project offer society a broader spectrum of choices based on the scientific possibilities inherent in current technology and direct that knowledge toward a new era of peace and sustainability for all. Through the implementation of a resource-based economy, and a multitude of innovative and environmentally friendly technologies directly applied to the social system, The Venus Project proposals will dramatically reduce crime, poverty, hunger, homelessness, and many other pressing problems that are common throughout the world today.



Troubled Times



Intentional Communities

From the [Intentional Communities](#) web site

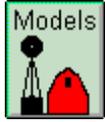
Intentional Community is an inclusive term for ecovillages, cohousing, residential land trusts, communes, student co-ops, urban housing cooperatives and other related projects and dreams... This Web site serves the growing communities movement. We provide important information and access to crucial resources for seekers of community, existing and forming communities, and other friends of community.

What is intentional community, you ask? First you may want to see [What's True About Intentional Communities: Dispelling the Myths](#). Then perhaps a bit of historical context with **Geoph Kozeny's**, [Intentional Communities: Lifestyles Based on Ideals](#). Followed finally with [Who We Are: An Exploration of What "Intentional Community" Means](#), by **Dan Questenberry**. Further questions? Contact the [FIC](#) at fic@ic.org.

You can order the Communities Directory or subscribe to the Communities magazine via our online ordering forms. We don't recommend these items lightly - we consider them to be the premier source of information on intentional communities.



Troubled Times



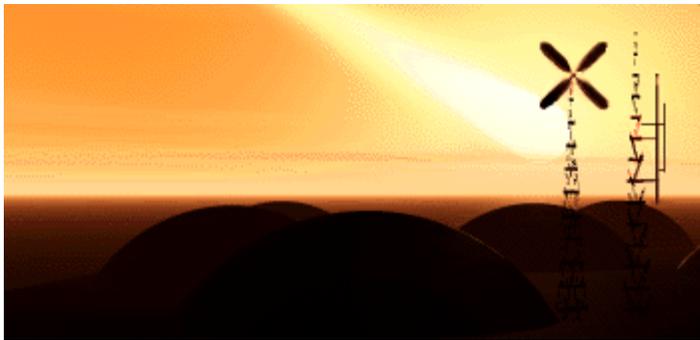
Sustainable Living

[Eco-Home](#) Network - everything you need to know to build an eco-home. Extensive bookstore with info on sustainable living.

[Natural Life](#) Magazine - news, resources and how-to about sustainable living, the environment, voluntary simplicity, personal and community self-reliance.

[Sustainable Culture Info](#) - from the Context Institute International Institute for Sustainable Development Sustainable Communities Network.

[Communities and Rural Living](#) - Tammy Day and Heather Mauch built their own Earthship in Camp Verde, Arizona. Roadtrip America paid them a visit, and their report includes construction pics and lots more. Earthships are passive solar dwellings built from old tires.



Graphics by [Michel](#).





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Walton Feed, Inc.

135 North 10th Street
Montpelier, ID 83254
208-847-0465 or 800-847-0465
Fax: 208-847-0467
Email: info@waltonfeed.com
or rainydayfoods@yahoo.com

Walton Feed has been in business 54 years and has been providing dehydrated foods and supplies for immediate use and long term food storage for over 20 years.

Considered a leader in the market, Walton Feed has been instrumental in moving forward the technology of preserving dried foods to facilitate long storage life.

Moving into the area of preparing foods for immediate use, Walton Feed's products can now be found in some grocery stores through Utah and Idaho as it's foods break into mainstream use.

We at Walton Feed are pleased to offer you this alternative to the high cost of groceries and feel we can give you a real service in lowering your monthly grocery bill as well as helping you set up your food storage needs.

CHECK OUT OUR NEW SPECIALS

Business Hours M-F 8:00a.m. -5:00p.m.

[Download our latest catalog here!](#)



Rainy Day Foods

Dehydrated Foods and Food Storage

- finally at affordable prices. Open them for immediate use or pack them away in your food storage or year supply for long storage life. These dried foods are great tasting. With dehydrated or dry foods reconstituting to several times their dry weight, these foods are often much cheaper than grocery store prices. We have it all - wheat and the other grains, beans, powdered milks, cheese and eggs - dehydrated textured vegetable proteins, vegetables and dried fruits... Many of them are close in quality to freeze dried foods but at a small fraction of the cost. We at Walton Feed feel confident you'll appreciate this cost effective answer to your shopping needs.



Nutrition: A large chunk of our dehydrated foods come in the form of whole seeds - grains and legumes. It seems the more we process our foods, the less nutrition remains in them. One of the more interesting things about seeds is they contain, in general, the necessary nutrients to make them digestible and healthy for our bodies. For just one example, our Essential Fatty Acids Section discusses at length how refined vegetable oils (from whole seeds) have the vitamins and minerals

removed that otherwise would have made these oils much more healthy. This same idea can be repeated over and over again with the refined foods we eat. Our bodies need many nutrients to metabolize food correctly. And they are almost in every case found in whole foods before processing.

Expense: Whether we are talking about everyday eating or long term food storage for a rainy day, we can eat for a very small fraction of the cost if we are using whole foods. Instead of spending dollars for every meal, we need only spend pennies.

Storage Life: Whole grains, legumes and dehydrated foods, if properly stored, they can last for many years, making them ideal for food storage. Compare this to the short life for perishable goods at the grocery store or the 1 or 2 years of life of wet canned goods. Limited pantry space? You probably can't find a more compressed source of nutrition than dehydrated food.

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Survival Schools & Courses

[Go To
Wilderness Medical Training Schools & Courses](#)

Nothing beats hands-on training. Good survival training significantly increases the odds in your favor. It's also a lot of fun and can be a character building experience as well.

Except where otherwise indicated, most of these companies offer general wilderness survival education, as well as a myriad of other related courses. Some offer these courses at multiple locations, not just at the address listed. Most can accommodate groups or organizations and many will custom tailor a course to your requirements and hold it at a location convenient to your group.

Note also that many civic, outdoor and wilderness sports oriented and aviation organizations, community colleges, universities and the like offer survival courses. A call to area outdoor sports specialty shops will often turn up a number of local options. While the quality varies, most are pretty good, reasonably priced and even the worst one could imagine would still be much better than just relying on book knowledge.

There are many "outdoors" schools and courses that are aimed more at developing character than teaching survival skills. Organizations like Outward Bound and others do an excellent job, and most of us could benefit from such an experience, but if survival knowledge is your goal, aim for a school or course that is geared towards survival. Some may also be designed to help you develop and grow in the same way as do these others, but the emphasis is on survival and survival skills.

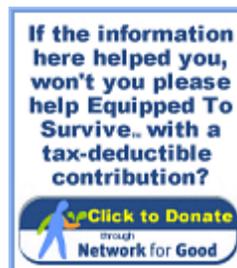
Investigate the course and schools you are interested in thoroughly. Ask for references from prior students and check them out. When assessing references, take into account their experience level vis-a-vis how they rate the experience. Ensure the curriculum and instructional philosophy matches your needs, interests and physical condition. Find out who, exactly, will provide instruction and what is their background and experience.

 **Inclusion in this listing does not imply any endorsement of the company or its courses unless otherwise noted. SELECT AND PARTICIPATE IN SURVIVAL SCHOOLS AND COURSES AT YOUR OWN RISK. Instruction in survival skills and techniques can be dangerous and could result in injury, maiming, or death.**

If you would like to have your school or courses listed on ETS,
[please fill out a submittal form.](#)

ABILITY

5725 E. Beck Lane
Scottsdale, AZ 85254
602-485-8687



FAX: 602-529-1675

Contact: Bruce Beck

[Primitive and modern survival skills]

[Aboriginal Living Skills School](#)

P.O. Box 3064

Prescott, AZ 86302

520-636-8384

Cody Lundin

[Specializing in primitive and modern wilderness living and survival skills in desert and mountain terrain. Lundin is the author of [98.6 Degrees - The Art of Keeping Your Ass Alive!](#)]

[Advanced Response Training](#)

3619 Molly Ave.

Mississauga, Ontario L5A 3G2

Canada

800-556-0660

905-949-6105

Shannon Koppenhoefer

[Wilderness, urban, and aquatic rescue training programs including wilderness first aid, first responder, and survival training.]

[Adventure Guides](#)

PO BOX 403

Katoomba 2780

Australia

61 2 47827722

FAX: 61 2 47823383

William Proctor

[Survival, Navigation, Adventure Racing Skills and Tracking Courses]

[Ancient Pathways](#)

P.O. Box 2068

Flagstaff, AZ 86003-2068

928-526-2552

Tony Nester

[1-7 day courses on desert survival and bushcraft skills. Provides desert survival and safety training courses for corporate groups, the military, and companies who have workers operating in remote desert regions. Nester is the author of "[Practical Survival - Tips, Tricks, & Skills](#)"]

[AlpenQuest](#)

P.O. Box 64350

Colorado Springs, CO 80962-4350

800-366-4831

719-635-4741

Greg Wiggins

[Year-round training, specializing in winter survival and avalanche survival, also team building/leadership.]

[Aviation Egress Systems, Ltd.](#)

200 Hart Rd.

Victoria, B.C., Canada

V9C 1A1

250-704-6401

FAX: 250-478-2678 Bryan Webster

[General Aviation oriented ditching and underwater egress courses with unique GA simulator.]

Arizona Outdoor Institute

4733 Gloria Dr.

Prescott, AZ 86301

520-445-9617

Dave Ganci

[Wilderness survival, specializes in desert survival. Ganci is the author of "[The Basic Essentials of Desert Survival](#)"]

[Bearclaw Survival, Ltd.](#)

72 Heath Rd.

Chadwell Heath

Romford

Essex

RM6 6LH

England

Phone: 07761089155

Gary Wale

[Wilderness survival, bushcraft]

Bailey Mountain Wilderness Survival School

P.O. Box 31

Wynantskill, New York 12198

518-283-2870

[Email: jojo@mybizz.net](mailto:jojo@mybizz.net)

Joe Reilly

[Modern and primitive survival instruction, geared for hikers, hunters and the outdoor enthusiast.]

[Black Lodge Survival Course](#)

P.O. Box 12397

Scottsdale, AZ 85267-2397

480-443-3851

FAX: 480-998-2569

Harley Swift/Deer Reagan/Bruce Beck

[Wilderness Survival, urban survival, preparedness, personal protection, self defense, firearms training.]

Bob Cooper Outdoor Education Pty Ltd

P.O. Box 8486

Perth Business Centre

Perth, Western Australia 6849

Australia

+61 (08) 9377 1767

FAX: +61 (08) 9377 1217

Contact: Bob Cooper

[Wilderness survival training from basic to advanced]

[Boreal Wilderness Institute](#)

P.O. Box 76090

Edmonton, AB. T6H 5Y7

Canada

780-914-4410

Bruce Zawalsky

[Modern wilderness survival].

Boulder Outdoor Survival School (BOSS)

P.O. Box 1590

Boulder, Colorado 80306

800-335-7404

303-444-9779

FAX: 303-442-7425

Josh Bernstein

[Wilderness survival in a high desert setting of Boulder, Utah or winter survival in the Rocky Mountains with emphasis on primitive skills and tools, as well as the added benefit of personal challenge in the "Field" courses. Based on Larry Dean Olsen's (author of [Outdoor Survival Skills](#)) original primitive skills wilderness programs.

7 day "Skills" courses in a wide variety of survival skills from beginning to advanced levels and 7, 14 and 28 day "Field" courses. A recent addition are separate women's and mens only courses, Sonoran Coastline Skills and Boreal (Canadian Forests) Winter Skills Courses.]

Center for Occupational Swimming

102 Harrison Dr.

Hinesville, GA 31313

912-368-4878

FAX: 912-368-4878

Bruce Lanctot or Laurie Padgett

[Swim training for people who work in open water or offshore industries, survival swimming.]

Conniry's Native Skills & Wilderness School

12061 Wildcat Canyon Rd.

Lakeside, CA 92040

619-443-2399

Susan and Tom Conniry

[With a background based on extensive experience at [Tom Brown, Tracker](#) this school emphasizes primitive survival techniques utilizing the Tracker philosophy. The *New Women Warrior Outdoor Training Adventure* provides an opportunity for women "to reach their highest potential not only physically and mentally but with a direct emphasis on spiritual growth."]

Corporate Air Parts - Life Support & Survival Training

7641 Densmore Ave

Van Nuys, CA 91406

818-997-0512

Contact: Earl Marchesi

[CAP specializes in aviation related emergency procedures and survival training, primarily oriented towards Part 135 and corporate aviation. They also offer Hypoxia Recognition and Recovery training utilizing the hypoxia simulation Reduced Oxygen Breathing Device 2.]

Deep Woods Training Services

48 Baffin Crescent

Thompson, Manitoba R8N 1H4

Canada

204-679-0361

FAX: 204-778-7820

Contact: Greg Szocs

[Cold Weather Survival, Aviation Survival, and general outdoor safety and skills programs]

[Desert Unique Survival Training \(D.U.S.T\)](#)

P.O. Box 326
Overland Trail Camp, Main St.
Fort Davis, TX 79734
888-478-5267
915-284-2025
FAX: 915-426-2418
Contact: William E. Box
[Specializing in survival skills in desert and arid mountain terrain]

[Earth Star Survival](#)

224 Trinity Ave.
Ambler, PA 19002
215-654-9164
FAX: 215-654-9164
Contact: Bob Collins
[Wilderness survival training. Evening, day and weekend courses in Eastern Pennsylvania]

[EarthWalk Northwest](#)

P.O. Box 461
Issaquah, WA 98027
206-746-7267
FAX: 206-746-7757
Frank and Karen Sherwood
[Former head instructors with [Tom Brown, Tracker](#) for 15 years, the Sherwoods started their own primitive survival school in 1995. Emphasis is on primitive survival techniques utilizing the Tracker philosophy.]

[Educational Training Company](#)

305 Moller
Sitka, AK 99835
907 747-5454
Contact: Dug Jensen
[Cold weather, cold water, egress training, survival instructor courses, small boat operator, commercial fisherman drill courses, hoods in woods programs, kayak expeditions courses, how to live of the grid, snow schools, wild edibles and custom training for USCG ,NOAA, US Forest Service, Fire Departments, Airlift Northwest and more.]

[Emergency Response Institute, Inc.](#)

4537 Foxhall Drive, N.E.
Olympia, WA 98506
360-491-7785
FAX: 360-459-7538
Patrick LaValla
[Offers Search and Rescue and Disaster management courses, for both wilderness and urban environments. The also offer aviation survival courses. LaValla is co-author of a number of disaster, search and rescue and survival texts including " [Survival Sense for Pilots and Passengers.](#)"]

[Emergency Response International](#)

319 Olive St.
Cashmere, WA 98815
866-671-1214
509-782-4832
FAX: 509-293-6725
Robert (Skip) Stoffel
[Offers comprehensive disaster and survival training for government, business and individuals. They have a variety of

wilderness and aviation survival courses, including underwater egress training with portable trainers and Search and Rescue training and management courses. Stoffel is co-author of a number of disaster, search and rescue and survival texts including "[Survival Sense for Pilots and Passengers](#)" and "[The Handbook for Aviation Survival Sense](#)"]

[Enviro-Tech International](#)

P.O. Box 2135
Montrose, CO 81402
800-994-2434
970-249-7590

[Wilderness survival programs including specialized programs for pilots and aeromedical personnel]

[FACTS Training International / Aircare International Ltd.](#)

3633 - 81st Ave SW
Olympia, WA 98512
360-754-9805
FAX: 360-754-1011
Doug Mykol

[FACTS specializes in aviation related emergency procedures and survival training, primarily oriented towards corporate aviation. They utilize sophisticated mobile simulators to train crews and executives in emergency procedures. Their AirCare International division provides related emergency medical training and services.]

[Global Principles Survival School](#)

653 West 23rd St. #294
Panama City, FL 32405
850-722-7870
FAX: 850-722-7870
Eric Metzger

[Primitive and modern wilderness survival skills. All instructors are certified US Air Force Survival Instructors. Wilderness survival skills, navigation, tracking, primitive weapons, sustenance and defensive tactics.]

[J. Hare Safety & Survival Systems, Inc.](#)

P.O. Box 300528
J.F.K. Airport Station
Jamaica, NY 11430-0528
718-457-3579
Jeff Hare

[Hare specializes in aviation survival training, especially corporate aircrew training. He holds an annual series of Winter Survival Courses on Mt. Washinton in New Hampshire.]

[Hollowtop Outdoor Primitive School \(HOPS\)](#)

Box 691
Pony, MT 59747-0691
406-685-3222
Tom & Renee Elpel

[Wilderness survival. Elpel's "primitive and contemporary living skills." classes emphasize wilderness lifestyle skills more than survival, "providing an integrated experience with nature."]

[Hoods Woods](#)

P.O. Box 549
Garden Valley, ID 83622
888-257-2847 (toll free)
208-462-1916

[Email: diogenes@survival.com](mailto:diogenes@survival.com)

Ron Hood

[Wilderness survival is Hood's specialty. Survival courses range from one day of basics for beginners up to eight days for those with more experience. Courses are conducted in the Sierra Nevada Mountains of California. Hood is the producer of the "[Woodsmaster](#)" survival video series.]

[HSRS \(Helicopter Survival Rescue Services\)](#)

81 Ilseley Ave, Unit 7
Dartmouth, Nova Scotia B3B 1L5
800-565-8677 (toll free)
FAX: 902-468-3083
Bob Ireland

[Helicopter ditching and egress training and water survival is HSRS' specialty. HSRS utilizes a proprietary portable *Underwater Escape Trainer* to give students practical egress training.]

Humboldt State University - Wilderness Survival, Center Activities

Center Activities
Humboldt State University
Arcata, CA 95521
707-826-3357
Mark Condes

[Mostly modern with a few primitive techniques, geared mostly towards local forests, classroom and field work plus a three-day, two-night trip.]

[IFAP \(Industrial Foundation for Accident Prevention\) Western Australia](#)

128 Farrington Road
Leeming
Western Australia 6149
61-8-9430-6611
FAX: 61-8-9430-6093
Chris Ryrie

[An Australian occupational safety and health training and consulting organization, IFAP offers a variety of public and customized courses including a range of survival courses. It operates a Helicopter Underwater Escape Training center with a large indoor pool and a Survival Systems (Canada) METS helicopter simulator.]

[Jack Mountain Bushcraft](#)

P.O. Box 61
Wolfeboro Falls, NH 03896-0061
603-569-6150
FAX: 603-569-6150
Contact: Tim Smith

[Wilderness survival, primitive skills]

[Joe's Wilderness Survival Skills](#)

2025 County Road 2105
Kemp, TX 75143
903-498-3399
Contact: Joe Musselwhite

[Modern and primitive survival skills, focusing on the basics.]

[Karamat Wilderness Ways](#)

12137-85 St.
Edmonton, Alberta, Canada T5B 3G5
780-474-5405
FAX: 780-474-4520
Mors Kochanski & Randy Breeuwisma

[Primitive and wilderness survival, specializing in wilderness survival in the northern boreal forests.]

KSK Industries, Inc.

444 Bracewood Crescent S.W.
Calgary, Alberta Canada T2W 3B8
403-281-9338
FAX: 403-281-9338

[Email to: ksk@cwmaster.com](mailto:ksk@cwmaster.com)

Tim Kelly

[Aviation survival training, specializing in the Canadian type environment.]

[Lifesong Wilderness Adventures](#)

73569 HWY 101
North Bend, OR 97459
530-859-0539
FAX: 541-759-4852

Mark Weinert, Jr

[A long time [Tom Brown, Tracker](#) student, emphasis is on primitive survival techniques and Nature Awareness utilizing the Tracker philosophy. Offers "Wild Child," a special nature program for youth.]

[LTR \(Learn To Return\) Training Systems, Inc.](#)

230 E. Potter Dr.
Anchorage, AK 99518
907-563-4463
FAX: 907-563-9185

Brian Horner

[LTR specializes in aviation oriented survival, but also has considerable expertise in arctic survival, water survival and international travel survival - well designed courses, skilled professional staff. Portable simulators are used for underwater egress training.]

[Marine Survival Training Center, University of Louisiana at Lafayette](#)

P.O. Box 42890
Lafayette, LA 70504-2890
337-262-5929
FAX: 337-262-5926

Terry Crownover

[MSTC specializes in marine survival for the offshore oil industry and aviation water survival. Very affordable underwater egress training using the advanced Survival Systems (Canada) METS helicopter ditching simulator.]

[Mountain Shepherd Wilderness Survival School](#)

435 Fancy Hill Rd.
Amherst, VA 24521
434-238-3718

Reggie Bennett

[Weekend wilderness survival courses.]

[Nature Knowledge](#)

1825 Linden Street
Grand Junction, CO 81503
970-242-8507

Mel Deweese

[Primitive and wilderness survival.]

[Northwest School of Survival](#)

2870 NE Hogan Rd, Suite E, #461
Gresham, OR 97030
503-668-8264
800 W. 5th Ave., Suite 103-B
Naperville, IL 60563
630-548-2037
FAX: 630-305-9717
Brian Wheeler

[Wilderness and primitive survival, all environments, avalanche survival, executive, team building/leadership training, international training]

[Nunavik Arctic Survival Training Center](#)

PO Box 285 Puvirnituk
Quebec JOM 1PO
Canada
819-732-2197 FAX: 819-732-0766
Mario Aubin

[Arctic Winter and Summer Survival courses taught by native Inuit instructors. Taught in Nunavik, Quebec's arctic region north of the 55th parallel.]

[OutdoorSafe](#)

6612 Fredrick Drive
Colorado Springs, CO 80918
719-593-5852
FAX: 719-533-0152 (call first) Peter Kummerfeldt

[Specializing in providing practical (not primitive) outdoor safety training to those who recreate in the backcountry with special emphasis on children and single female heads-of-households.]

[Primitive Skills Network](#)

[A group of primitive skills and wilderness survival enthusiasts and instructors. A central location for finding out about a variety of survival courses and primitive skills workshops put on by members.]

[Pro Aviation Safety Training](#)

3696 - 156 Street
Surrey, B.C., Canada, V3S 0H4
Canada
604-575-8689
FAX: 604-575-8601
Contact: Jackie Heiler

[Aircraft ditching, underwater egress and sea survival training for aircrew and passengers. Portable multi-crew dunker.]

[Randall's Adventure & Training \(RAT\)](#)

60 Randall Road
Gallant, AL 35972
Phone: 256-570-0175
Jeff Randall

[Randall specializes in primitive and jungle survival in the jungles of Central and South America. They "do not guarantee you'll have fun," but they advertise that you will learn a lot. Randall is co-author of "[Adventure Travel In The Third World](#)."]]

[Reevis Mountain School of Self Reliance](#)

HCO2 Box 1534
Roosevelt, AZ 85545
520-467-2675 (message only)

Peter "Bigfoot" Busnack

[Peter's ranch is in the Superstition mountains just east of Phoenix, Arizona and the only way to reach him is by U.S. mail (no phones, no plumbing, no roads). A variety of Wilderness Survival and related courses are available, including a trek. He lives what he teaches 365 days a year. Peter is featured in the ["StayAlive" series of survival videos](#) by Preston Westmoreland.]

Rimachi Expeditions

2417 Appleridge Dr.

Columbus, OH 43223

614-274-4635

FAX: 614-274-4635

Mark Sexton

[Jungle Survival Expeditions, Tracking, and Navigation Courses. Located in the jungles of Peru.]

Safe Return Wilderness & Urban Survival Training

1310 Brown's Store Rd.

Heathsville, VA 22473

804-580-4456

804-313-0932

Mike Marcon

[Wilderness survival training for pilots and outdoor enthusiasts]

School of Wilderness Arts & Technology

RR#1 Box 79

Palmer Rapids, Ontario

Canada

613-758-1092

FAX: 613-758-1092

Mike Desrochers

[Professional level training such as Wilderness First Aid, Moving Water Rescue, Vertical Rescue and Aviator's First Aid & Rescue (AFAR) program.]

Simply Survival

P.O. Box 882

Stevenson, WA 98648

FAX: 509-427-4155

Gregory J. Davenport

[More than just "simply surviving." "The Art of Adapting" is the focus of Simply Survival's leadership, backpacking and seven day wilderness survival courses. Davenport is the author of a wilderness survival manual, simply titled, "[Wilderness Survival](#)."]]

Snowdonia Survival School Ltd.

1 Maenan Terrace

Penmaenmawr

Conwy. LL34 6NH. North Wales

United Kingdom

+44 1492 642196 / +44 1492 640490

FAX: +44 1492 640490

[Jungle, Mountain and Snow Survival courses. The company is run by and employs ex-British service personnel]

SPECOPS

P.O. Box 5694

Woodland Park, CO 80866-5694

800-713-2135

719-686-9388

FAX: 719-687-1988

Contact

[Jungle survival program with U.S. Special Forces vets, held in Costa Rica]

STARK Survival

6227 E. Hwy 98

Panama City FL 32404

850-871-4730

Ken Burton

[STARK specializes in aviation related emergency procedures and survival training, especially for corporate aviation crews and executives. Trains in the company's aircraft on location. All water survival training includes in-water training with the aircraft's life raft. Annual three day water survival equipment evaluation and training in Panama City on the Bay and out in the Gulf of Mexico. Portable helicopter egress training equipment.]

Survival Adventure Course

Octagon Farm House

Bungay Road

Bixley

Norwich

Norfolk NR14 8SJ

England

Phone: 01508 493141

[Email to: djackson1@tesco.net](mailto:djackson1@tesco.net)

David Jackson I.S.T.C.

[Wilderness survival courses in the Thetford Forest, East Anglia, England. All age groups throughout the year and in all conditions.]

SARTAC International/

P.O. Box, 317

Sherburne, NY 13460-0317

413-530-2736

Contact: Paul Marsters

[Wilderness survival and Search and Rescue training]

Survival in the Bush, Inc.

R.R. 3, Hanover, Ontario

Canada, N4N 3B9

FAX: 519-364-4829

Dr. Gino F. Ferri

[Wilderness survival training. Ferri is the author of "The Psychology of Wilderness Survival."]

Survival of the Fittest

223 Canada Dr.

St. John's Newfoundland, A1E 4A2

Canada

709-749-2165, 709-368-0200

FAX: 801-761-3332

[Wilderness survival training]

Survival Systems Training Inc.

144 Tower Avenue

Groton, CT 06340

888-386-5371

860-405-0002

FAX: 860-405-0006

[Aviation safety and survival training including helicopter underwater egress training. Facility includes a training pool and Modular Egress Training Simulator (METS).]

[Survival Systems Training Limited](#)

40 Mount Hope Avenue

Dartmouth, Nova Scotia

Canada

800-788-3888

902-465-3888

FAX: 902-466-2929

Peter Gibbs

[Providing safety and survival training for the offshore/marine industry including helicopter underwater egress training. Facility includes a training pool and Modular Egress Training Simulator (METS).]

[Survivors Edge Instructional Services](#)

3127 Robinson Rd.

Sooke BC VOS 1N0

Canada

250-642-0628

Jackson Wagner

[Wilderness survival, outdoors adventure, self-defense]

[Timberwolf Wilderness Adventures](#) (FKA Ranger Wilderness Survival School)

13127 Whitefish Point Rd.

Paradise, MI 49768

906-492-3905

Len McDougall/Cheanne Chellis

[Wilderness survival, all season, tracking, outdoors skills. McDougall's philosophy is that hardship and pain are always counterproductive to maintaining life under actual survival conditions. To that end, he emphasizes practicality and ingenuity rather than toughness and strength. McDougall is the author of a number of survival texts including [Practical Outdoor Survival](#).]

Timonda Emergency Services

1241 Cherry Point Road, RR#3

Cobble Hill, B.C. Canada V0R 1L0

250-746-4572

Email to: mitchelt@brentwood.bc.ca

Tim Mitchell

[Wilderness survival and wilderness medicine courses.]

[Tom Brown, Tracker](#)

P.O. Box 173

Asbury, NJ 08802-0173

908-479-4681

FAX: 908-479-6867 Tom Brown, Jr.

[Wilderness survival with a primitive bent. Brown is the author and co-author of several classic survival texts including ""[Tom Brown's Guide to Wilderness Survival](#)"]

Touch the Wild

9 Roy Street, Thorneside

Brisbane, 4158

Australia

(07) 3822 8119

Contact: William Marshall

[Weekend and week long courses in bushcraft and survival. Coastal and Arid region courses]

[UK Survival School Ltd.](#)

Seymour House

24 East St.

Hereford

England

01432 376751

FAX: 01432 357113

Contact: Ged Lawless

[Survival, expedition and navigation training, team development and leadership courses]

[Utan Bara Adventure Team \(UBAT\)](#)

284-14-03

Jalan Pahang 53000

Kuala Lumpur, MALAYSIA

Phone: 40225124

FAX: 40226125

[UBAT teaches practical jungle survival courses in private 1000 plus hectares of multi-terrained jungles. Emphasis on "Doing what you have to do at Where you are with What you have with/around you and Expecting the Unexpected." Organized at-your-own-pace.]

[Wilderness Survival Institute](#)

8415 Coyote Run

Loveland, CO 80537-9665

970-669-9016

FAX: 970-669-8072

Don Davis

[W.I.S.E. teaches a "common sense approach" to wilderness survival.]

[Wilderness Learning Center](#)

435 Sandy Knoll Rd.

Chateaugay, NY 12920

518-497-3179

Marty Simon

[Outdoor survival and skills]

[Wild Food Adventures](#)

4125 N Colonial Ave.

Portland, OR 97217-3338

503-775-3828

Contact: John Kallas, Ph.D.

[Outdoor education, training, and recreation in edible wild plants. North American focus.]

[Woodfolks](#)

PO Box 35

Plattsburgh, NY 12901

518-578-4124

John Gibbons

[Wilderness and primitive survival. John is the grandson of wild foods advocate and author, Euell Gibbons.]

World Survival Institute (WSI)

No longer in business due to death of Chris Janowsky

[Wilderness survival. Janowsky was the producer of the "[Wilderness Survival](#)" video series and co-author of "[Survival - A Manual That Could Save Your Life.](#)"]

[Woodcraft](#)

PO Box 64

Midhurst

West Sussex GU29 9WL

UK

01730 816299

John Rhyder

[Bushcraft, survival and related outdoor skills training]

[WSC Wilderness Survival School](#)

112 Courtland Avenue East

Kitchener, Ontario

Canada

519-570-2021

FAX: 519-570-2021

David Arama

[Survival Preparedness Training]

[Woodsmoke - The Art of Survival](#)

PO Box 45

Cockermouth

CA15 9WB

UK

+44 1900 821733

FAX: +44 1900 821733

B. McNutt & L.Fenton

[Bushcraft and Wilderness Survival courses taught in the heart of the English Lake District.]

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Email: [Doug Ritter](#)

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IN CONTEXT

A Quarterly Of Humane Sustainable Culture

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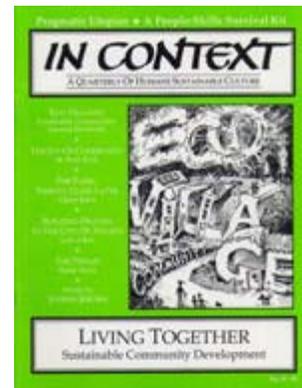
Living Together

Sustainable Community Development

Adapted from *IN CONTEXT* #29, Summer 1991,
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Borneo's most peaceful - and most threatened - tribal peoples have been living in harmony with each other and the forest for millenia. Plus [A Message From The Penan](#)

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This "people skills survival kit" will help you better understand yourself, others, and how to get where you all want to go - together. Plus a sidebar on [Living Together or Living Apart?](#)

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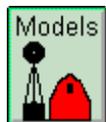
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Troubled Times



Gloomy

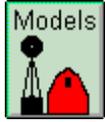


A picture tells a thousand words. The Aftertime will be a time when the gloom will hang heavy, the darkness and humidity oppressive. This image is a reality check of what survivors can expect in the Aftertime. Life inside these protective domes can be bright and cheery, however, if one prepares.

Offered by [Michel](#).



Troubled Times



Reality

Portions of *Realities of Being a Survivalist*

Written by Benjamin T. Moore

Those of us who've figured things out to various and lesser degrees, realize the need to prepare for a time in the not too distant future when the society we've become accustomed to will no longer be functional. Let's pause a moment and savor the meaning of what I just said. Some people who have not really paused to consider the true ramifications of a societal collapse, look forward to these times with an almost naive glee. Visions of "Red Dawn," fire fights with well armed but incompetent troops, camping out and feasting on venison seem to figure heavily in these ill conceived fantasies.

Let's explore some of these myths. Anyone who has spent anytime in the bush or in actual combat knows that running and gunning is the option of *last resort!!!* When things get down to running and gunning your prospects for long term survival have just become tragically thin. Even elite forces such as the Navy Seals, try to avoid "running and gunning." They operate from a base. They are inserted, do their jobs and are extracted back to the safety of their base. In the scenario so often fantasized, it would be like being permanently behind enemy lines with no support, no hope of extraction and no supplies. Could you survive? Some could, but they are few and far between. Even they could not survive for long.

Let's explore the notion of living off the land. The reality is, there isn't enough game except in a few places out west, to support a group of any size for any length of time. By the way, you've got to figure you're not going to be the *only* person or group out there fighting for the limited resources. Small game? How many rabbits will you have to kill to feed your self per day? Per week? How about your family? You're going to run out of rabbits pretty quick in whatever area you happen to be in. Fishing? That's a good plan if you're near a body of water. But again, you're not going to be the only one with that idea. Suppose you have a good day and harvest a deer, or twenty or thirty fish, how are you going to preserve the meat? You're probably aren't going to be lugging around a refrigerator or a freezer.

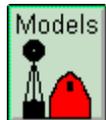
What about items you take for granted, like toilet paper? How much are you going to carry with you on a bug-out? There are many things to consider. The closest description of the bug-out experience is the Mountain Man life style. However, it's important to note, even the "Mountain Men" had to come back to society for supplies every so often. When you begin to consider all the ramifications of "bugging-out," the magnitude of what you're attempting begins to become clear. Of course all this becomes a moot point if you become stuck in a traffic jam trying to leave the city, or if you get rounded up at an unexpected road block. A simple rule for survival in these circumstances is, look at what everybody else is doing, and don't do it!

Let's be smart. The best place to be at in a survival situation is your home. Your home should be your survival retreat! If it's not, make it into your survival retreat. If it's not suitably located, buy one or build one that is. Even a well conceived and located apartment or condominium can become a survival retreat with some work and planning. The two most powerful assets you can have are storage and concealment. If you want to understand survival, study the masters. The animal kingdom is without exception the best place to learn survival. Almost all animals, as a first line of defense use concealment or camouflage. Even predators such as tigers, cheetahs and leopards use camouflage to assist in their survival. How can we profit from this strategy? The most important thing we can do as survivalist is to *not* draw attention to

ourselves.



Troubled Times



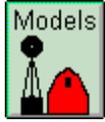
Adjustments

We are fortunate in the States to have a wide variety of activities that are somewhat main stream and can also help us in our preparation. We have Chemtrails and Contrails, but we also have survival classes, community farms and access to a lot of new technologies. We in the States have the opportunity to move forward while still staying somewhat in the main stream. My approach has been to look for ways we can keep moving forward without a total disruption of our family life. It is sort of ironic that the changes we have made like camping, going to a family survival camp, change in diet and joining a community farm are activities the kids love. So we are cutting down on the TV and finding activities that help the whole family grow physically and spiritually, and which will also give us much needed survival skills. My wife and I have looked at the whole issue of a possible pole shift as a kick in the butt, to stop accepting the fact that everything main stream does is correct. It is much easier to go with the tide than against it. We have known for a long time that society is heading in the wrong direction, but it takes a lot of courage and strength to go the other way.

Offered by [David](#).



Troubled Times



Start Steps

Simple solutions to start preparing for the pole shift are easy things we all can do day-to-day to help us if a pole shift occurs. Here are a few of the things I have done.

1. My wife bought me a 64 ounce water bottle with a shoulder strap. For the past 9 months I have filled it every morning with the intent of drinking 64 ounces of clean water every day. It forces me to drink water throughout the day and I have virtually eliminated drinking any other fluid. A few people gave me a hard time when they saw me carrying the bottle around with me, but I told them one of the worst problems in America is people are dehydrated. I keep the bottle in the car when I am driving and on my night stand when I go to bed.
2. I have cut down on the number of showers I take per week. I have a set schedule of working out a minimum of 5 times a week. On Monday and Friday I swim a little over 3/4 miles per session. The only time I shower is to wash the Chlorine off. I generate a pretty good sweat playing racquetball, basketball or running but I never shower afterwards. As amazing as it seems my body has adjusted pretty well and my wife has not kicked me out of bed yet and she has a pretty sensitive nose. *Warning:* if your spouse does not believe in the pole shift I would go into this solution slowly.
3. I have not used antibiotics for years. This year my wife and I are attempting to stop using antibiotics on the children. We are trying natural forms of medication like GSE, colloidal silver and Echinacea. When a sickness occurs we talk to individuals who are knowledgeable about natural cures and proceed slowly with our children. When my 5 year old boy had an ear infection our doctor told us we were crazy not using antibiotics. We told him we wanted to look at other options first and use antibiotics as a last resort. We put drops of GSE in his ear and between that and the natural healing process of his body he was cured. By using antibiotics only as a last resort it is forcing my wife and I to learn about alternative medication.

I look at it this way, if the pole shift occurs:

1. The main fluid available to us to drink will be water.
2. Showering every day is not an efficient usage of water and is not very healthy on the skin.
3. There will be little or no antibiotics available after the pole shift.

Now is the time to start making adjustments to conditions that will be present after the pole shift.

Offered by [David](#).

We have:

- Moved 600 miles to a safer location.
- Stocked a 33 gal container with medical supplies (Band-Aids, vitamins, topical ointments, etc. - replaced periodically).
- Stockpiled (and rotate) food stuffs.
- Developed an underground storage building to be built this summer.
- Looked into culverts for purchase, and scooped out our area for existing road culverts for riding out the shift.
- Started the gardening process, both hydroponics and container gardens.
- Begun to learn soap making, candle making, plant identification in our area.
- Listed and gathered hand tools, nails, screws, wire, etc. to go into the underground storage unit at a later date.

- Collected various eye glasses with higher powered lenses for replacement as we age.
- Listed the resource books we will take. At this time there are about 10 of them.

Many more things to accomplish before the summer of 2002.

Offered by [Mary](#).

One thing that I have started doing is *collecting small things* to get ready for the pole shift. I'm not really going to shift into high gear with my preparations for a little while yet, so for me, it feels really good to start preparations, albeit in a small way. It gives a sense of power to be actually doing something (anything!) instead of just sitting around waiting. For example:

- I'm putting together my medical supplies, gauzes and stuff, that has a long shelf life. One less thing to do later!
- Also, I'm collecting sewing supplies, especially needles and lots of 'em in different sizes and strengths (because I expect they will be important and hard to obtain after the pole shift).

Doing these simple and easy things now helps my sanity, and will make the going smoother later when I'll be busy with larger projects!

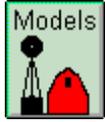
Offered by [Craig](#).

Put on some weight. Around 10 percent over your ideal body weight, as a hedge against shortages in food.

Offered by [Antony](#).



Troubled Times



Biosphere Community

Ideally, in terms of most long term workability, a community of 300 individuals is about right - practically to start out, or before pole shift I don't see this many individuals being able to get together and agree on what to do. What is it going to be like to try and get 300 people to work together during the last months? I think you are right to think big. I have been thinking much smaller with a group size of about 10-30. If we can build the solutions scaleable then we solve both. Now after the pole shift, I see smaller groups working together to form bigger communities. But I perceive preparations before the pole shift being done, on the average, with much distrust of big groups. Maybe I am wrong.

Offered by [Mike](#).

I consider 300 a good minimum for a community size and skill base.

Caloric Intake

The USRDA for caloric intake for the average adult is 2500 Calories a day. This converts to 2.9 Kilowatt-hours, over a 24 hour day that is 121 Watts of power required for each person, not too bad, but then it gets hairy when you start factoring in the conversion efficiencies. If the conversion of electrical power to light energy is say 25% and photosynthesis is 1% efficient that requirement jumps to a continuous power requirement for each person of almost 50 kW! *Unacceptable*, unless you have access to a small nuclear reactor. The theoretical limit to photosynthetic efficiency is about 30%, lets say with the photobioreactor we can get that up to 10%, the requirement then becomes about 5 kW, large but a lot more manageable.

Heat Exchange

Inefficiencies will literally kill you. Heat is not going to be a problem, getting rid of heat is going to be a problem, I want it to be cold outside, this will give us the opportunity to reclaim your waste heat in the form of useable energy, maybe 25% with a good system, this further reduces power generation requirements to 3.6 kW per person. I am hoping this can be achieved through wind power generation, if it can not then we are faced with having to increase efficiencies, reduce caloric intake, supplementing with storage in biomass, or a combination of all three. For a community of about 300 plan on being able to generate about a megawatt. The bulk of power is going to be chewed up by the photobioreactors, it will only require a small fraction by comparison to run task lighting, pumps, communications equipment etc.

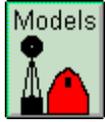
Recycling Sewage

I am including recycled waste, where it does not introduce new energy into the system, a finite amount of biomass would eventually all be converted to tailings. You can use the worm tailings as fertilizer.

Offered by [Steve](#)



Troubled Times



Community Garden

My wife, children and I have just joined a **Community Supported Agriculture** movement. We are very optimistic that this will benefit us in many ways. I wanted to tell you all about it. CSA is a mutually beneficial relationship where the support of a community of members enables farmers to devote their energies to sustainable farming practices which in turn provide members with *safe, nutritious, fresh produce*. Thousands of families in the US pledge their support for local CSA farms in exchange for a weekly portion of the farm's harvest. By providing most of the financial support before the season begins, members express their commitment to share the risk of poor harvests and enjoy the surplus of abundant harvests. This consumer support frees farmers from the burden of debt while providing the nourishing food we all need. CSA is fast becoming an alternative to factory farming, over-reliance on chemicals and pesticides, the loss of fertile agricultural land, and the pollution and waste that come when our food is shipped thousands of miles to reach us.

For a cost of \$380 and a minimum of 5 hours of our time we will receive the following:

- Supporting local agriculture
- Keeping our farmland open and productive
- A working demonstration farm and education center
- Delicious organic produce, most of which is harvested and distributed the same day. We have at least 22 weeks of produce pick up. As you all know organic produce is a fortune so this will easily cover the cost.
- Forging a connection with the land where your food is grown, and the people who grow it.
- Newsletters with tips and timely recipes
- Leading and participating in workshops on cooking, canning, composting, etc.
- Good, old-fashioned fun: hayrides, planting and harvest days, seasonal celebrations

Our local CSA is called **Earthome**. I am sure CSA's are located throughout the country. Now is the time to find out and join. It is a solution that will be beneficial to all of us and get us more in touch with the land. If the drought occurs this summer, small local community farms have a much better chance of yielding crops. My wife and I feel much more secure knowing we have our garden and a local farm to work with this summer. We also feel the kids will have a great time this summer being around a farm.

Offered by [David](#).





Earth Changes and the Pole Shift

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Victor Sergyenko's ("Koshasty") Method

Posted by Andrew Veresay on July 3, 2011 at 5:30pm

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Victor Sergyenko, 35, is a former "IT" specialist in Kiev. At the peak of his career, working for a large company, he began to think about changing his life. In 2003 he bought an old house with a piece of land in a village in Kiev region, Ukraine, and in 2004 quit his job and moved in with his wife. That spring he planted his first garden, bought farm animals and took to establishing the household.

Victor Sergiyenko relates to his 7-year experience of autonomous self-sustainable living off the land in this voluminous piece of writing (in Russian): <http://vicsrg.ho.com.ua/stat/ogorod2007.htm>



Victor's main goal, which as we shall see, he successfully achieved, was to gain maximum autonomy in basic aspects of life support – food and household.

Victor Sergyenko predicts that the world is on the eve of major resource crisis, unprecedented in human history, which is due to neverbeforeseen tremendous levels of resource extraction and consumption, and general unsustainability of current economic system. The depletion of available resources, according to Sergyenko, will in short time from now, wreak all-encompassing global and termless financial and economic crisis, leading to wars and unrest. Crucial infrastructure will be irreversibly damaged, and life support systems broken down, making life in cities as we know it today virtually impossible.

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Therefore, one has to achieve maximum autonomy from these life supporting systems. And this is possible only via individual and manual work on the land.

Victor Sergyenko has almost a hectare (7500 sq.meters) of land, with a vegetable garden, the house, other farm buildings for animals and maintenance. His plot of land is adjoining large forest.



They grow all the food they eat during the season, and also store food for winter. Of their 600 sq.meter vegetable garden, 400 sq.meters is planted with potatoes, and 200 sq. meters is for everything else, that is cabbage, carrots, garlic, beets, tomatoes, cucumbers, beans, squash, pumpkins and melons.



In keeping with the self-sustainability principle, Victor relies only on his own manual and also on animal power to do all the work on his land. He says it is a popular false idea that living off the land must be necessarily a work to death. In most cases this is indeed so because villagers grow a lot more than they really need – to sell their produce for money (to buy a TV, or an old and ruined car or some such), or to feed farm animals. In the end, having beaten themselves to death on their 2000-3000 square meters of potatoes, most of their (villagers') crop goes either to feed pigs or to waste, because they don't manage to eat that much over winter. Now, asks Victor Sergyenko, does it need to be so?



His small garden's produce is just enough to feed two people, with 10-15% excess.

"Koshasty", as he calls himself, keeps couple of goats, chicken and 4 horses. He doesn't feed them corn or vegetables which take a lot of work to grow, - his farm animals eat what grows on the land - grass, and in winter - hay collected for this purpose. Victor discards the idea of keeping pigs, as they require a lot of food which humans could eat instead, and he doesn't keep cows - as they require a lot of food too, and fall sick often. Goats, instead, give him enough milk and meat, they can graze the field themselves, and are easy to manage. Chicken can roam freely on the territory, and one doesn't even need to bring them food - they find it themselves. Horses are needed for transportation (firewood, construction, hay etc).





Jerusalem artichoke (*Helianthus tuberosus*) is not even considered a crop by Victor, as it grows completely on its own, as he says "artichoke is grown by God". But, in case of widespread famine, it would be an excellent supply.



The house is heated with firewood which Victor collects in the neighbouring forest – there's always plenty of dead/windfall, one has only to go and pick it. He has a water well made of concrete "rings" which gives a sufficient supply of water.



As for materials, tools, clothes and other issues – here sustainability is the main guideline to follow too.

Victor uses hand tools only, which do not require constant electric power supply. He has made large supplies of those items which are irretreivable and cannot be made with what is at hand, without industrial production available, that is: all kinds of nails and screws of different sizes, ropes, salt, candles, and all types of hand tools. Victor also has a strong disposition for items

made from stainless steel (that type with high chromium content, which will NEVER rust).

His "homestead" is situated at 70 kilometers from the nearby big city, and 7 kilometers from the closest "dirt" road. That is, when marauding gangs will start to make "hunting" trips outside the city, they will be barely able to reach him – the distance and isolation of his property would make such trip nearly impossible.

However, this doesn't mean that Victor and his wife keep a distance from other people: they maintain contacts with local villagers, have many acquaintances and couple good friends who visit them from time to time.



And in March 2009 they had a baby born to them, a little daughter Zhenya, who lives with them in the village.



Victor is "fed up" with the existing schooling system and mass media, so he doesn't plan for his daughter to attend school. He has collected a vast library on all possible subjects – from natural sciences to child and medical care and intends to teach his child at home.

This was a brief story of a man in a Kievan village who shows all of us how insane and unhealthy our way of life is, and that it is fully within the range of our possibility to provide a more inviting living arrangement for ourselves and our children.



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Comment by [Kari S](#) on July 4, 2011 at 12:32pm

yes, I'm preparing for the island's shift - thank you for pointing that out! the info I was reading on selenium said this: Vegetables -- garlic, onions, broccoli, asparagus, tomatoes and others -- as well as whole grains and seeds can also be good sources of selenium. It's an important co-factor for your kidneys and liver, to eliminate toxins, so I want a little supply of that, that's for sure!

Does anyone have any suggestions for preserving fresh broccoli? I've never seen it pickled or dried . . .



Comment by [Kari S](#) on July 4, 2011 at 5:32am

@ Wm Conrad: North Dakota is one of the 3 state's whose soil is rich in selenium, an important nutrient that many people dont get enough of. Do you kn0w if Brazil nuts grow there? I was just researching this last night but didnt get a chance to check.

Great idea about the new crops too!



Comment by [KM](#) on July 4, 2011 at 2:51am

Andrew, thank you! Very inspiring and welcome...



Comment by [Jerry Keith & Linda Lee](#) on July 3, 2011 at 5:28pm

Andrew... can't thank you enough for this incredible heart warming and inspirational story. We are slowly evolving into this life style. We have our garden, chickens, tools, hand pump, grain mill, peddle sewing machine, and are gathering seeds. Not real sure yet on what type of seeds we Northern Michigan folk will require. We need to do more research on that. Might make a great blog for someone who already has done this research. Would be so valuable to so many. We are currently studying up on goats, and hope to add two young and future milkers later. It is so encouraging to read everyone's story here. This is a great article, and can't express how much it means to us... Thank You so much!



Comment by [Rick Rickster](#) on July 3, 2011 at 9:47am

Super Andrew! Adding this to my fav blog! <http://poleshift.ning.com/profiles/blogs/rugged-aftertime-living>



Comment by [Artu](#) on July 3, 2011 at 5:36am

This guy is a total badass. He is living by example. If all of us follow, Mother Earth will benefit greatly.



Comment by [Kate David](#) on July 3, 2011 at 1:13am

Great post Andrew, thanks. Lothar, we will also be in the tropics so I've been collecting seeds from tropical plants I buy at the supermarket - coconut, mango, pappayas (which fruit in 9 months of planting). But I can't plant anything now as it will die in winter.



Comment by [K Tonkin](#) on July 2, 2011 at 8:45pm

So exciting to read about folks like this. We are now less than 4 weeks away from moving into our safe place... and i can't wait to convert the walkout basement tunnel into a greenhouse, and get our windmill up and running!

Best to all!



Comment by [Kari S](#) on July 2, 2011 at 7:51pm

Great post Victor! How inspiring! I found a book (in English) called How to live on almost nothing and have plenty (A Practical Introduction to Small-Scale Sufficient Country Living) by Janet Chadwick, Which is a step by step guide to gardening, preserving, keeping various livestock & even how to smoke a ham! I'm always on the look-out for helpful books like this, and hopefully we can get off the grid while there's still time!



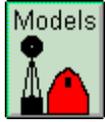
Comment by [Andrew Veresay](#) on July 2, 2011 at 5:33pm

Been, Lothar

most plants of temperate zone will not die out when finding themselves in tropics, but will flourish, finding more stimulating conditions.



Troubled Times



Question

Things to consider.

Purchase property: Before you even go to look at property to purchase, take some time and sit down with a paper and pen. Write out everything that you would like your property to have. Ask yourself all the pertinent questions and list your answers.

- Do we want a south-facing slope or flatland?
- Do we want year-round running water or are we just going to drill a well?
- Where are the water tables?
- Does the piece of land have high and dry places or is it going to flood out during a spring thaw or heavy showers?
- What kind of soil requirements are we looking for?
- Are we going to buy bare land or do we want some structures already there?
- What are the possibilities for natural power to the land?
- Is there good exposure for year round sun, which can be used for solar power?
- Are there winds enough to make use of a windmill?
- Where are the flood plains nearest the piece of land?
- What is the accessibility during bad weather?
- What kinds of trees and plants grow there naturally and is there any condition that might hinder the growth of plants you want for survival?

Once you have your list, you can call any real estate company and ask for some listings that include (or come close to) everything you want. When you go to look at the properties from the list, make sure that you look at and consider *at least* three different lots. Once you have found three that you think might suit you, then wait a day or two and go back to each one and spend a bit of time there. Find out how the property feels to you and whether or not you are comfortable there. Maybe even call the realty office and get permission to camp out on the property for a weekend. Please remember that when you buy a piece of land, you are committing to spend a good portion of your life there.

Establish utilities (water source, solar power, etc.): When you are considering a piece of property for purchase, check to see how you would lay it out for the best benefit to you and your family. Look around at some of the neighboring land sites.

- What kind of power are the neighbor's using?
- How close or far are you from grid power and how hard would it be to install hydro, solar, or wind power?
- What areas are there on the piece of land for your home and outbuildings?
- Where would be the most logical and accessible place for you to dig or drill a well for your water?
- How much of the land is woodland or plains?
- How much of it is hills or steep slopes that cannot be utilized? What kinds of foliage do you see?
- Do the trees and plants look healthy?
- Is there wildlife on or near the land?
- How far would you need to go for shopping or emergency medical care?
- If you have children, how far will the have to go to school?
- Or are you planning on homeschooling?
- Has the land been perk tested and what are the county and state regulations on the land?

How will those regulations affect your power supply decisions and your water supply decisions?

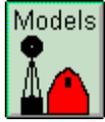
- What is the zoning code on the piece of land and how flexible is it?

These are all things you will want to consider before you begin excavation to install your utility services.

Offered by [Lyn](#).



Troubled Times



Answers

A comprehensive plan would probably be:

1. Purchase property
2. Establish utilities (water source, solar power, etc)
3. Start gardens
4. Build shelter
5. Store goods such as medical supplies, clothing, etc.

The last three items are nearly impossible to discuss, one without the other two, as most of us will be planning and implementing all three at the same time. Once you have decided on a piece of land and the inborn sources of power and water, you will then be ready to consider where and how you want to build your personal home shelter. You will also be looking at the lay of the land and what areas are best suited for home, gardens, and your personal storage areas. When considering your home, you will want to spend some time reading, drawing, and talking with others who have built for themselves. There will be many variables and you will want to be sure you have considered as many as possible. In the first place, there are many ways to build a home.

- Do you want a solid foundation or will a rubble trench and/or footings suit your purpose?
- Are you planning to build with wood? straw? bricks and mortar? rammed earth? lodge poles and logs? or some other method?
- Are you going to do all the labor yourself, or are you planning to hire contractors to help you?
- How is the excavation going to be done and who is going to do it?
- What source of power will you use and do you have the knowledge of how to build and/or install the necessary equipment to make full use of the power source you have chosen?
- What kind of recycling system are you going to implement to make full use of your water and power?
- Are you planning to house only people, or is livestock to be a consideration?
- How many out buildings will you need to accommodate your plans?
- Where is the home to be placed, in relation to barns and other out building?
- Where are you planning to store your survival supplies and equipment?

These are all questions that you will want to answer for yourself at the very beginning of your endeavor. You are going to want your garden areas in an easily accessible place.

- What kinds of things are you planning to grow?

If you plan on potatoes and other root crops, you will want to choose an area with more sand, for ease in harvesting. If you plan on planting mostly leafy greens, then the area you choose could have more clay in the soil.

- What areas of the land are most suited to full growth of garden vegetables?
- What kind of irrigation system are you planning to use?
- Will you need additional equipment to implement your irrigation?
- Are there places on your land that would be suitable for drip irrigation and/or overflow watering, or will you have to do a great deal of ground work to make these viable options?
- How easy or hard will it be to control natural pests in the area?

If there are a lot of deer and rabbits, you may find that they will complete your harvest before you had planned. It is a

good idea at this point in your planning to include things like a deer fence and gopher purge. Your gardens are to be your survival. You want to make sure that you have covered all topics before you choose the areas for your gardens, so that your labors will result in a wholesome and delicious harvest for you and your family. Your own personal plans for storage of survival goods will help you decide how and where to store those goods. If you want to choose several locations for storage of these things, then consider this at the beginning of your planning.

- Do you want to have a built-in root cellar under the floor of your house?
- Are you planning on storing things in and/or under any of the outbuildings?
- Have you thought of and looked for places that would *not* be considered ideal storage locations?

Chances are that if you do not consider a specific location to be a good place for storing survival goods, then others who may come to take from you would not, either.

- Are there alternative places on the piece of land to put these goods into holding?

You may want to build a tree-house for your survival storage, or part of it. You may want to dig deep holes and place your own containers in them and then bury them.

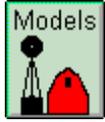
- How will you mark these areas?
- Will you have a code within your family for finding the stored items if something should happen to some members of the family?
- Have you looked at and considered all of your viable options?
- Have you made a map of your land?
- Have you included home, gardens, out buildings, storage of survival goods, and areas for livestock and all other necessary equipment?

I hope that these questions will prompt you to think your plans through thoroughly before you begin. that is the best time to know exactly what you want and how you want to do it. Please don't put this off, as the days are ticking by. It is imperative that you begin now to get where you are going and to be prepared for whatever is in store for this planet and her inhabitants!

Offered by [Shekhina](#).



Troubled Times

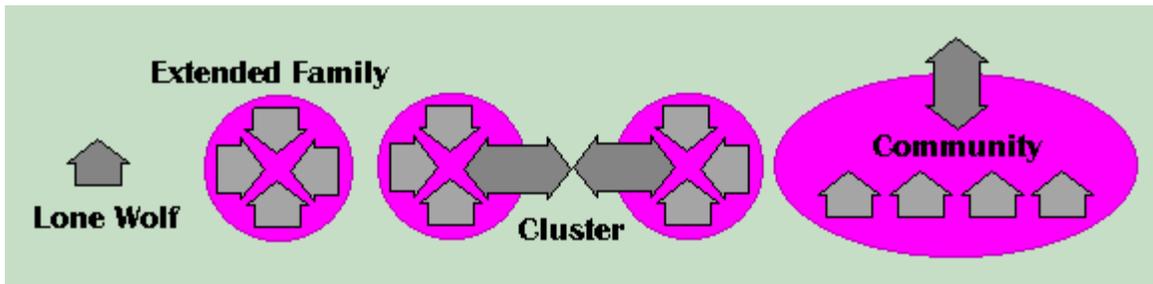


Scenarios

Size and Social Structure

Lone Wolf: Single individual determined to go it alone if necessary. He has survival training and confidence in this area. He expects to locate things to eat, to stay warm, and defend himself, and has gathered the tools to facilitate all this.

Extended Family: Family member, neighbors, and close friends may begin cooperative effort at survival as a natural outgrowth of their close interaction. The Extended Family groups would in all likelihood be the most common during the Aftertime. The Extended Family would tend to have the skill set that exists only within the group, and thus would be inclined to form a Cluster when the opportunity arose.



Cluster: A natural outgrowth of many Extended Family groups would be the Cluster - small groups that meet centrally, either formally or informally, to exchange ideas and products and share tools. The groups live and function separately, but know about each other and are highly supportive of each other, sharing seed or medicine, lending tools, and training each other in techniques. Each group in the cluster is autonomous, however, and under their own leadership. The Cluster might exist because individual family or extended family groups learn of each other, and begin to interact. This interaction might occur well before the cataclysms, and the Cluster thus forming well ahead of the cataclysms.

Community: A group of 100 to 1,000 individuals would have overtones of a Community, having formal social organization such as a Mayor or Council and elections. Vocational specialization could exist, and food production and manufacturing would most likely be managed. The Community might exist because many in a rural or even urban area became concerned about the coming changes and worked together, learning about each other. These communities might also evolve due to people moving to what they feel might be safe areas, and encountering each other. Clusters might also evolve into Communities, if strong leadership existed and the benefits outweighed the independence each Extended Family currently enjoyed.

Technology Characteristics

Primitive: Lose of power and damage to all electrical appliances throws the group into an immediate primitive situation. Life turns back a full century, with the oldsters in the group dredging up memories to help the youngsters reconstruct the lifestyle. Sewage is buried or dumped. The seriously ill are simply wept over. Whatever is edible is cooked over a fire, if one can be started, or eaten raw.

Interim: If there is lose of power and technology but knowledge exists, an interim existence could develop. Electricity

is gained through harnessing water wheels or bike rack generators powered by churning legs, with lights out shortly and lots of sleeping done to pass the time. Food may not be all that tasty, but it is cooked and free of parasites, though is predominantly what can grow in the gloom such as mushroom and worms.. Some members of the group are exploring the area to find others who have survived, to share knowledge or whatever else might be available.

High Tech: Having planned well, some groups might find their computers surviving the jolts and the lights on due to windmills and water wheels. Spare parts are available as this was part of the plan, and even the manufacture of parts was taken into consideration and the technology chosen included simple and replaceable parts. Hydroponics and fish tanks, as well as produce that does not require light had been in production long before the actual cataclysms, and is a smoothly running operation. Education is available in books as well as on the computer, and classes for all continue as a diversion from the gloom and lack of communication with the outside world.

Networked: High Tech groups who have planned to stay in contact with each other, through communication dishes places in high spots and linking one to another, will be networked. Conceivable, this network could span the world, and pass messages between family members separated physically. Most definitely information would be shared, and medical procedures could be assisted via video. Eventually, when physical travel is possible, networked groups would be contacting each other, knowing ahead of time where each other are located.

Self Defense

Lawlessness: After the Pole Shift, lawlessness may well prevail. How could one call the police when the phones are dead, and how could the long arm of the law reach when travel is nearly impossible. The good hearted will proceed with the sense of fairness and concern for others that had always guided their lives, and those who were merely held in check by the laws or are basically lazy or self-focused will attempt to make their own laws to suit themselves. Those who have prepared may find themselves faced with those who wish only to plunder.

Inundations: Those who prepare for the coming cataclysms, who have the very young and sick among them as well as the hale and strong, should anticipate their slender edge on survival to be potentially threatened by inundations from those who did *not* prepare. Where one should be concerned with helping others, like the life boat which would sink when taking on one passenger too many, groups who planned for survival should maintain a core of strength and health if they are to be able to help others. Those who can hand out seed stock and relay survival techniques will do those who did not prepare the greatest service, but if they allow themselves to be devastated or overrun, this service could not be performed. Self defense, therefore, is in order.

A Good Location: The best defense is a good location, and the location is best not advertised. Extended families known to be preparing might find themselves inundated at the last minute by uninvited and unwanted guests. A bit of bait and switch might be in order, where it appears that one site is the location but another, secret, site is in fact where the group plans to gather. Another option is to gather up portable equipment and supplies and setup at the secret site at the last minute. So much will be destroyed during the Pole Shift that permanent buildings might best be erected during the Aftertime, with the group living in tents or under metal roofs banked by earth during the actual shift. Small farms or sites in rural settings may find they are secret just by the nature of their setting.

Low-Key Lifestyle: The second line of defense is remaining low key both in lifestyle and daily affairs during the early days of the Aftertime. Living low key will probably come naturally, as confusion will be rampant. Transportation will be nearly impossible due to downed bridges, cracked roads, and a lack of petrol. Roving bands looking to raid will therefore be on foot. Compasses will confuse those trying to follow maps due to the change in poles and extreme magnetic diffusion lingering for some time after the Pole Shift. A foggy gloom equivalent to dawn or dusk will be present during the day, with rainfall almost constant. Visibility will be poor. Telephone lines will be down, and government services nonexistent. Thus, locating survivors in their camps will not be assisted by seeing where the mail is delivered, or tracing phone calls, or noting the address on tax payments. Survivors will be essentially invisible. Those who communicate with each other long distance via dishes placed on high points should do so at prearranged times, so as not to alert others to their presence by constant electronic traffic.

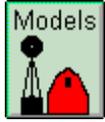
Stragglers and Bands: Stragglers who do come upon a thriving site will be either the good hearted willing to work

and be of service, the harmless but lazy or self-focused, or those looking to control the resources and take advantage of others. Those in the first category would make a good addition to the group. Those in the second category should be required to work and share, and if this is a constant struggle, sent on their way. Those in the third category should be promptly sent on their way. Thriving sites anticipating these encounters should plan seeding packets, so that those sent on their way would be leaving with the means to start their *own* sites. All they need do is put in the effort, and their life is thus in their *own* hands. Roving bands looking to raid can be expected to head first for the well stocked enclaves of the rich, or to shopping centers and grocery stores. Loath to leave a place of plenty and not being the type to prepare or plan ahead, those inclined to raid rather than work will find themselves setting out into the gloom, eventually, with their few remaining supplies. They will be *unlikely* to find a site kept secret going into the Pole Shift and remaining low key during the first months and years of the Aftertime.

Authored by [Nancy](#).



Troubled Times



Silent Treatment

What if President Clinton and other world leaders were to go in front of the TV cameras and say

- We've got bad news and good news.
- A monster comet is going to roar through the solar system in last spring 2003, rearranging the continents;
- moving the poles to the equator so they will melt;
- making all real estate under 675 feet worthless;
- casting the world into a volcanic dust gloom that will last for decades;
- running tidal waves a hundred feet high over the coast lines; and
- reducing the cities to rubble with 15 Richter Point earthquakes.
- There's no escape.
- We can't stop it.
- There will be food shortages for 3 years running going into this. (Sorry, Africa, no more bags of grain and blocks of cheese, you'll just have to starve.)
- Insurance companies will be out of business, and FEMA won't be able to reach you as:
 - phone lines will be down;
 - power grids will be dead;
 - and medical facilities will run out of supplies in a hurry, if they're staffed at all.
- The good news is that odds are you won't live long.

Now, given that announcement, what would happen to the Stock Market or the desire of the populace to pay taxes, or normal daily activities such as going to work? How much loyalty would the populace give to their government or military?

Stock Market

The idea of money or property being "worth" something is ingrained due to the way governments insure stability. The whole structure is based upon the public's confidence that stability will be maintained. Since the 1929 Stock Market crash and the subsequent world wide depression, controls were supposedly put into place to keep this from happening again. The Fed imposes higher interest rates to keep inflation from roaring too high. The US loans money to countries in trouble with too much debt to prevent a crash that would ripple throughout the world. Disaster areas get infusions of funds from the federal government or insurance. All this is to give folks the feeling that if they buy a house or stocks, they will *have* something in the end. Prices may fluctuate, but the thing will still have value. Sure, someone might buy speculative stock or fail to get fire insurance on their home, but their loss is viewed as due to their stupidity.

With a forthcoming pole shift well known, the value of stocks and bonds would drop to zero. Activity on the stock market would be nil, except that everyone would be trying to *sell* so as to convert to cash and buy something of worth, like shovels and seed. Beyond putting the stock brokers out of business, this would wrap back to shareholders, who are more than just the rich as many insurance companies and now even the social security fund is going to own stock. Corporations routinely put their stash money into portfolios too, as this makes the best interest for this idle money. Where the voice of individual stock holders might be ignored, large corporations and insurance companies might claim bankruptcy immediately.

Bottom line, undeniable news of a forthcoming pole shift would be viewed as leading to another depression.

Going to Work

People go to work primarily for bread and butter money, subsistence, and also for personal satisfaction due to the role they are playing. Imagine if one were *not* to get paid. How many people would continue in a job that could not meet its payroll? If payment were in vouchers of some sort, due to money losing its value, some continuance might occur, but only if the barter system could be put into place in a locale. Not likely on a worldwide or national level. Roles most valued would be those of the savior, leading to survival during and after the pole shift. Cults would spring up, with leaders promising to care for the members. Militant groups would experience and upsurge, the shelves in gun stores emptied. Anything but local barter and local leadership would not exist, as corporations run as much by the faithful attendance of their employees as they do on the worth of their stock.

Bottom line, roads would not be repaired, TV stations and power grids would close down, and local fiefdoms would proliferate.

Military Control

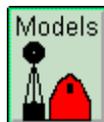
The military may have stock supplies, but are forgetting the following.

1. Their own reaction to loss - many of them will go mad or become depressed.
2. Petty dictatorship setting in - generals or folks like Newt Gingrich, power hungry. Internal battles will consume all their time. Remember Haig saying "I'm in charge" on public TV, when the successions following a President's temporary disability did *not* put him there?
3. Constant erosion of the ranks - troops and guards just leaving with equipment or food stores, thus leaving entryways open for gangs to come in. What's the motivation for troops on the lower level to stay and be a small fish in a small pond when they can be a big fish, in their own small pond?

Offered by [Nancy](#).



Troubled Times



Deep Impact

The Social Vision of Deep Impact

Michael Gerrard, 14 May 1998, *CC Digest*

All the main characters in *Deep Impact* proved themselves to be altruistic, wise, or both. Mimi Leder is to be congratulated for bringing such an uplifting vision to the screen. However, an only slightly darker vision yields a more downbeat image of how society would react to a year's warning of a catastrophic impact.

If one million of the 275 million Americans are to be saved by the federal government, the remaining 274 million surely will include more than a few who will not accept certain death for themselves and their families with quiet resignation. The very rich will decide to build their own shelters, and since other construction projects are likely to stop anyway (who wants to execute or finance a building that may be swept away before it's finished?), the nation's construction industry will quickly be diverted to building private shelters for those who can afford space -- and for the construction workers and their families, who will rightly demand berths in what they have built. Some or all states may also build their own shelters. (The State of Missouri may have particular objections to hosting a national Ark to which very few of its citizens are admitted.)

Because far more than one million people are likely to find shelter under this scenario, it will be important to begin, immediately upon warning, to shift as much of the nation's agricultural and food processing capability as possible to foods that can be grown quickly and that can be preserved for the long underground siege (powdered milk, canned or dried fruits and vegetables, etc.). Because of the long lead time involved in this, it would be irresponsible (as well as impossible) to delay very long the announcement of confirmation of likely impact.

The nature of wealth will also be tested. Many of the richest people have their money in stocks and in real estate - two items whose value will plummet. Those with construction equipment and materials; fuel; and agricultural production capabilities will have the upper hand; a billion dollars in computer stock won't go very far.

The *Deep Impact* scenario raises a host of other philosophical, ethical and practical issues:

- How many people should be sacrificed to accommodate two years' food supply for mating pairs of all of the world's elephant species?
- Will a religious group view the comet as the will of God, so that efforts to intercept it must be stopped? What are the military consequences if members of this religion control a country?
- For those who win admission to the shelters, for themselves and their families, what is the definition of a "family"? What about unmarried, or same sex, or very underaged (and very newly married) couples? What about second cousins?
- At what point in the course of events do we unlock the doors to all prisons in coastal states, to give the inmates at least a chance of a way to safety?
- Will the population admitted to the shelters resemble the ethnic diversity of the population as a whole? If not, will there be attempts under the equal protection and civil rights laws to redress the imbalance? As an attorney who has studied the legal issues in NEO defense, I can say it's not at all clear that imposition of martial law suspends indefinitely all constitutional rights of civilians.

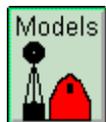
Moreover, there is no predicting what ruling might be issued by a judge who himself or herself was not among those admitted to a shelter - or how that judge would enforce his or her ruling.

- Even before the place of impact is known, it will be apparent that the greatest risks are to those along coastlines. Thus there is likely to be a massive migration inland. How will the inland states cope with this huge flux of refugees? Will some of them try to erect barriers?
- If the surviving population of the U.S. is now mostly west of the Mississippi, does it make sense to rebuild Washington as the nation's capital? More fundamentally - who would decide? Would totally drowned states still each have two Senators?

These are all U.S.-centered thoughts, but comparable questions will arise in other countries. Obviously no two-hour entertainment film can deal with these issues, some large and some small, but I am grateful to *Deep Impact* for provoking these thoughts.



Troubled Times



Commercial Sites

We had a big feast of yabbies this trip harvested from one of the two dams I installed at my cabin. I am putting in some bush tucker plants both for interest and commercial reasons. Its a good project and will pay its way as well. The lemon myrtle will be first to produce dollars (under 12 months). It's a hardy permanent green leaf tree that can be harvested for the leaves when ever you want the dollars! We are also putting in a wattle that produces a seed that when roasted gives a brew better than coffee and is now gaining great popularity in Australia.

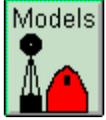
Now while a lot of others talk about survival on their computers I am not hearing much about practical things being done in the present, i.e. setting up such sites. The attitude seems to be that being aware is enough. If we talk about how to negotiate, say via vendor financing which can even be nothing down, and then add practical suggestions on how to grow a cash crop on the site to pay for it, we might get doing than just talking.

In Indonesia even the sides of the road and rail tracks are cultivated yet in America and Australia most land is wasted with lazy agriculture such as cattle, wheat, sheep, or cotton. With the right crops 30 acres can be exceedingly profitable, or as I have done with Earthworms on this site of only 5 acres I have a million dollar plus income (pays for all the toys too). Maybe we could float "cash crops to pay for your site".

Offered by [Darryl](#).



Troubled Times



Mr. Hoag's Bunker

I just saw a *Strange Universe* episode on Mr. Hoag, an engineer, who could not build his “dream survival bunker”. Since he could not afford to build and equip such a facility, he enlisted the help of 150 investors (\$1,000,000 total cost) and has built in the wilderness a three story underground facility complete with water supply, electricity, food supply and communications. He has built it to survive nuclear war (complete with decontamination facilities on site) flood, and earthquake.

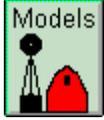
Members have specialized skills - like a resident ham operator versed in Morse Code and other forms of communications. His wife is a teacher for their 5 children and will serve in that capacity for the other resident children. Medical and survival skills are also delegated to other members as there are several medical doctors in the group.

He did this because he believes that something, possibly nuclear, will occur before the year 2000. The 150 “investors + families” are to be allowed entrance to facility via secret entrance known only to them. I must say the facility looked rather impressive to me. He has gone public with this because he believes that other such groups must form if they are to survive.

Report by [Pat](#).



Troubled Times



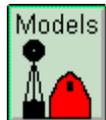
Australia

This survival site, intended for a family, is located along the eastern coast of Australia in a remote farming area. Particulars:

- Site that is planted with commercial crop to pay for itself going into the pole shift
- Site that is well above 200' altitude and much farther inland than 100 miles
- Site that is on old rock, no signs of mountain building
- Site in a valley between rolling hills
- 20' shipping container for lockable storage, which will be secured with earth berming around the sides
- Existing cabin outfitted for self sufficiency
- Temporary shelter to protect from earthquake and firestorm and wind assault during pole shift within walking distance of the cabin
- Solar panels for energy today pole shift
- 12 Volt deep cycle batteries to run the lights and pumps
- Coal seam nearby to use for alternative fuel, i.e. coal and the gas that can be produced from it, if sunlight is dim after the pole shift
- Dammed stream with local varieties of crayfish, eels, and turtles seeded into the pond, which can be caught with a hooped net which has a soft net funnel
- Considering a worm bed for backup protein
- Well as backup to surface water should it be polluted
- Underground hydroponics or potted plant gardens, fed via computer with drip feed
- Herbs to flavor freeze dried food stored as emergency supply



Troubled Times



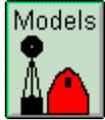
West Coast Nomads

This survival option, intended for a family, is located on the West Coast of the US. The family members are familiar with backwoods living such as living without electricity, pumping water with a hand pump, gardening and hunting for meat, preserving foods, and using local plants for medicines and dyes. Particulars are:

- All material goods not deemed important for cataclysm survival were sold and the money used to purchase tools and equipment needed for a nomadic life style.
- A converted bus is used as a mobile home
- A 2-ton flat-bed truck is used to carry extra generators or other heavy equipment, acting as a mobile storage unit.
- A 3/4 ton 4X4 Dodge pickup pulls a tool trailer which carries tools and items such as water purifiers.
- A hydroponic tent of opaque, UV treated vinyl to be lighted by direct current for vegetables and fruits



Troubled Times



Utilities Sufficient

I'm putting up a post and beam one story house on reinforced concrete sono-tubes. One story houses without a solid foundation are least susceptible to cracking of the foundation, and to movement moment between stories. My significant other would not agree to an underground house.

Power is the first item:

Right now I can be connected to the grid, but when the brownouts and blackouts start in 1-1-2000, I need protection and back up. I'm using a 2300 watt diesel generator(\$1300--runs for 30,000 hours between overhauls), to power a Trace DR 1212 1500 watt inverter/charger(\$800--85-95% efficient, with 1/2 watt idling mode), and a set of 6 Trojan T-105 6 volt batteries to give 700 amp hours of service(\$450). I will be using one PV array but only to power a 75 watt separate fan or heating coil as an option for the toilet composter.

Heat is the second item:

I'll be using a used wood stove(about \$300, assorted pipe). I have plenty of wood on the property, but my gas for the chain saw will only last so long before I have to do it by hand.

Water is the third Item:

My property appears to have a viable spring on it within 300 feet of the house. Using 2 steel galvanized garbage cans I will be developing a mini-spring house. The spring is above the house in elevation. This allows me to use a small 100 watt Shurflo P-SF AC 120 volt 2088 pump and also the same to pump the water into a pressure tank. I'll be using a cistern from the spring, with the addition of water from the roof. (Total \$600)

Hot Water: At the moment I'm planning on using a Paloma Propane gas tankless heater which puts out 2 gallons per minute(\$755). However, with the abundant wood on the property I could go for a Pronto combination wood/diesel 15 gallon fired water heater at a much reduced price of \$230.

Sanitation: I plan to use a Sun Mar Centrex AF-NE non electric composting toilet (\$1400). I'll also be using a 60 foot lined trench for gray water(about \$200). This will be gravity feed and drop.

Additional appliances:

Either a wood cookstove or a Peerless Propane Stove(\$400-660)

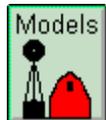
For washing:

A Staber 200 watt washing machine(\$1000), and for back-up a small Staber two gallon manual non-electric model for \$49.

Offered by [Glenna](#).



Troubled Times



Old Ways

I'm trying to learn as many of the old ways as I can myself. I know the basics of things like knitting, crocheting, sewing, canning, gardening, wood stove cookery, several craft type arts and leatherworking. I'm making hard copies of things I don't know off of the computer. Farm catalogs are very helpful. I use **Lehmans** non-electric supplies; **Cumberland** store; **American Livestock Supply**, **New England Cheesemaking Supply Co.**, **The Sausage Maker, Inc.**, **KV Vet Supply**, and **Industrial Safety Co.** My family is looking for the right land for us so that we can build a underground/earthberm home.

Offered by [Teresa](#).



Troubled Times



Survival Home

Plan 1: Ranch Family Home for 10 People, on Moraine Ground

Plan two buildings, one underground storage area (potentially with some smaller buildings on top) and one building for residency and indoor gardening. The residence should be a two-story building, using the basement for gardening and ground floor as a living area. Both should be made earthquake resistant by using reinforced concrete with 3 times the normal amount of iron bars. The iron bars of the storage area will be bound as a Faradays Cage to avoid any EMP. The base will be 1 meter thick, but no base isolation is necessary since the moraine ground will probably provide the same isolating effect.

Offered by [Jan](#).

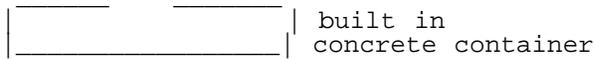


Troubled Times



Fish Tanks

I was once told one can not pick up a half gallon of mercury and run with it, but that one can pick up a full gallon and run with it. What does this point out? Sloshing liquids have lots of force of inertia. I recommend whether it be a fish tank or source water tank or a fuel tank, come pole shift time, the tank needs to be either empty or completely full. For a fish tank to be full and to not slosh out it needs to have a very strong water tight top to it. This can take many forms.



As an example the following reservoir could be made out of reinforced concrete with a steel or reinforced concrete lid that seals and bolts down to keep the water and fish in it during the shaking of the pole shift. One must make provisions for fish needing a constant air source bubbling through the water. A small stand pipe (.5 to 1 inch) many feet high built into the top's highest point should allow for air to escape and keep the majority of the water in under the expected extreme shaking. See the picture.

For best results the container should be built in as part of the building foundation with reinforced steel concrete. A slight taper in the top to the highest point would prevent air getting trapped in the corners. Once the pole shift is over the water level could then be lowered to give the fish a larger water-air surface. A number of these containers could be built. The uses could include fish growth, fresh water supply, algae growth, hydroponics nutrients, Gray water storage, and sewage digestion. Materials to repair cracks should be keep in stock.

Offered by [Mike](#).



Troubled Times



MRE Storage

In order to get the longest life out of your MREs they are best stored at around 60 degrees. So you may have to plan a cooling system for your storage area. Here is an Estimated Life table of most MREs (in F).

Degrees	Life
120	1 month
100	18 months
90	30 months
80	48 months
70	55 months
60	84 months

As you can see, 10 degrees of difference between 60 and 70 degrees can mean 29 months! Some MRE sellers *say* their products last for 7 to 10 years, but that's providing constant proper storing.

Offered by [Jon](#).



Troubled Times



Indoor Gardening

Opinions are mixed about having indoor gardens in one room or several small rooms. An idea is to plan to rotate lighting through several rooms thereby providing cyclic periods of light and dark without shutting down the lights. This would work but may be impractical as power generation and usage would remain relatively constant and the lights would burn out sooner from constant usage. An advantage to this approach is that fewer light fixtures will be needed.

It has been suggested that you need 170 sq. feet of growing space to feed one person year-round. That's assuming ideal growing conditions, a limited growing season, and storage of harvested food for later consumption. Indoor growing has no seasonal limitations, though you will need to emulate seasons to a certain extent to force blooming and reproduction in some plants. You could grow food pretty much continuously, so less space will be needed per person. I'm not aware of any concrete studies of space requirements per person considering constant production. I personally plan to have at least 400 sq. feet of space to feed a group of 6 to 8 people. We will also be planning on harvesting what food is available outdoors in the post pole shift environment (animal, plant, whatever).

If you're planning on using container type indoor gardening you will need a room with enough height for your tallest plants plus the space needed for your lighting system. Normal room height should be enough for most plants, but what if you decide to grow a dwarf fruit tree? 2.4 meters won't be enough. Of course a tree will require far more space than will be practical. A few of us have been discussing the use of a parabolic ceiling design to help reduce the amount of lighting necessary. This ceiling would be covered with mylar and a light source would be placed in the center. This idea is still under development, but you get the picture. If you're planning on building a dome structure, the easiest solution is to plan on growing in the top level under the parabolic ceiling. You will need to be certain of the strength of the floor in this top level as the container garden will be quite heavy.

Humidity concerns haven't been addressed as of yet. My greenhouse dome is quite humid and I would imagine that an indoor growing area would also be. This humidity can be vented, but if you're using the top level for your growing area, you could circulate the heat and humidity throughout the lower levels. Humid air holds more heat (and cools faster) than dry air.

Offered by [Roger](#).



Troubled Times



Garden Requirements

I've been looking into ways of making a self contained hydroponic system for a dome that would be completely shielded from outside light I have a few questions on the feasibility of this.

1. Would it be possible to generate enough electricity through a stationary bike to run the lamps and pumps? Could we create a battery array large enough to store at least 12 hours worth of power for the lamps and pumps necessary to run this system?
2. All the literature on hydroponics I've come across talks of using store-bought fertilizer. My concern here is that this will eventually run out. I would like to recycle human waste and compost it in order to complete the food cycle. Is it possible to sufficiently break down human waste into a water soluble form that would be usable in a hydroponic system? Would this composting process need additional organic materials such as grass, or leaves which would have to be grown separately to support the process?
3. Let me preface this question by saying I am not by any stretch of the word a botanist. Would running the lamps and pump system 24 hours a day reduce the amount of time it takes to produce crops without any detrimental effects on the crops? Or do plants need rest?

Offered by [Ryan](#).

For Question 1, see the [Bike Gen](#) TOPIC.

For Question 2, see the [Fertilizer](#) TOPIC.

For Question 3, see the [Illumination](#) TOPIC.

Offered by [Roger](#).



Troubled Times



Seed Required

Which vegetables? That is mostly for you to decide. The source of the table in the file is Extension Bulletin 422 from the Cooperative Extension Service of the College of Agriculture at Washington State University, Pullman, WA. This bulletin was reprinted in 1970 from an earlier document and utilizes the row crop methodology. One can easily reduce the space requirements by the use of raised beds/intensive interspacing. There was one unit of measure I am not sure of and that is the abbreviated unit "bu" used for the potatoes. Bu stands for bushel, but it is not an easy unit to grasp so - for 150 feet of potatoes planted at 12 inch spacing, one needs 150 potato "eyes" or about 50 potatoes.

Offered by [Roger](#).

Crop	Length of Row (feet)	Plants or Seed Needed	Space Between Rows (inches)
Asparagus	60	40 plants	18
Beans, green (bush)	150	1 1/2 lb	2-4
Beans, lima (bush)	100	1/2 lb	4-6
Beans, wax (bush)	150	1 1/2 lb	2-4
Beets	100	1 oz	2-4
Broccoli	50	25 plants	18-24
Brussels sprouts	50	25 plants	24
Cabbage, early	150	30 plants	18-24
Cabbage, late	150	30 plants	24-30
Carrots	100	1/2 oz	2-4
Cauliflower	50	35 plants	18
Celery	25	40 plants	6-8
Chard	25	1/2 oz	6
Corn	350	1/2 lb	12-24
Cucumbers (pickling)	25	1/4 oz	12
Cucumbers (slicing)	25	1/4 oz	12
Eggplant	25	15 plants	18
Kohlrabi	50	1/4 oz	4
Lettuce, Bibb type	25	1/8 oz	3-6
Lettuce, head	50	1/4 oz	10-15
Lettuce, leaf	50	1/8 oz	3-6
Muskmellon	50	1/2 oz	18-24
Onions	100	1 oz	2-4
Onions, green	25	1/4 oz	1
Parsnips	50	1/4 oz	3
Peas	200	2 lbs	2

Pepper, hot	25	15 plants	18
Pepper, sweet	25	15 plants	18
Potatoes, early	150	1/4 bu	10-14
Potatoes, late	600	1 bu	10-14
Pumpkin	50	1/2 oz	48
Radishes	50	1/2 oz	1
Rhubarb	12	5 crowns	24-36
Spinach	100	1 oz	3-4
Squash, summer	25	1/8 oz	30
Squash, winter	50	1/2 oz	48
Tomatoes	150	50 plants	24-36
Turnips	50	1/4 oz	3
Watermellon	50	1/2 oz	48



Troubled Times



Aquaponics

[Acquaponics](#): Combining Hydroponics and Fish Farming

Water can be used in a greenhouse for supplemental heating and cooling. It's cheap and readily available, and it stores more heat in less space than any other commonly available heat-storage material. Greenhouse water can be recycled to raise edible fish or to do hydroponics gardening. Fish supply the fertilizer for the plants in the form of uneaten food and nitrogen-rich waste by-products and the plants help keep the water clean by absorbing nutrients from the fish water. A shallow stream of nutrient water is circulated through a dense mat of plant roots. The upper roots in the mat are exposed to moist air. This provides both abundant nutrients and oxygen to the plants roots.

I believe this could be tried using only a very small fish tank and adapting the recirculating filter to pump the water through 1" diameter PVC pipe in which plants, especially vine type plants that can do well without soil support, are grown. The plants would be grown above the tank with proper lighting.

Offered by [Mary](#).



Troubled Times



Efficient Foods

listmgr@quest.arc.nasa.gov wrote:

QUESTION:

If we were to set up a Mars colony what kind of food would we grow, or raise or what?

ANSWER from Andrew Petro on November 2, 1999:

I'm not an expert on food production on Mars but I think we could raise most kinds of plants and animals if there were enclosed, airtight areas in a Mars base. Fish might be a good option and maybe algae and seaweed-type things that could be artificially processed into food for people or for animals. It will have to be an efficient food production method because water will probably always be in limited supply on Mars. The Biosphere II project in Arizona is looking at growing plants in an enclosed area. You might look for more information on that.



Troubled Times



Hydro or Wind?

Hydroelectric systems are underwater (like ship propellers but just generating energy in a static system) in a river or stream and thus are protected from many sudden weather changes. These seem to have the advantage of some level of underwater protection. I'm not sure if these systems are as efficient as windmills, but that would seem to be a big advantage at a time when the weather may be so unpredictable. As long as one's hydroelectric installation can be situated to withstand any possible destruction from flooding.

Offered by [Craig](#).

Yes, hydroelectric has some advantages. More constant power, less susceptible to wind damage. Disadvantages - propellers can get damaged due to floating objects (like trees) washing down stream after storms, The stream may change course after the pole shift and you have no water near you for miles. I think the wise community will be prepared to use both.

Offered by [Mike](#).

Hydroelectric is an excellent alternative. One thought occurs to me. You could use some of the rotational energy directly to turn fans, pump water, grind grain, etc. Generation of electricity is necessary for lights, but most of the other power requirements could run directly off of the rotating axle of the hydro-paddles.

Offered by [Roger](#).

If you collect the water from the almost constant drizzle and rain in the Aftertime, you can direct this down a simple piping system, perhaps down several different pipes of different widths, and direct it in this way on several generators for simple lighting. When you want to increase the power then make the water flow harder, you need more water, too. As I expect the rain not to be able to provide such quantities (a drizzle is not a downpour) you can use the hydrowheels to produce enough electricity for lighting. Equipment that require more power could better be powered by batteries or, when the wind provides such speeds, by windpower.

Offered by [Michel](#).

Besides maybe having multiple wind generators, hydro may be a good backup source since there will be plenty of rain. Debris in a stream can be a problem, though many hydro-electric systems have the water fed to them via a pipe, as opposed to some that have a blade directly in a stream.

Offered by [Steve](#).

I would definitely go for both hydro and wind power. In fact rotational energy was used for a number of purposes before electricity came about - saw mills, grain mills etc. After the pole shift, you may find that the rivers and streams no longer run in the same places as before. Strange, what a little Richter 9 may do. Furthermore, with constant rain, the stream may grow much larger than anticipated, relocating your mill or hydro power to places you didn't know existed. You should also expect your stream to be filled with debris just after the pole shift. Just as with wind power, you would have to remove your hydroelectric and/or mechanical hydropowered equipment before the pole shift, putting it in place again when conditions allow.

Offered by [Jan](#).



Troubled Times



Power Required

Looking more into the electrical power question, I found a good Calculator for determining your power requirements and a good reference for alternate power components. To help in the planning.

Offered by [Gino](#).

IN THE HOME				OUR EXAMPLE				YOUR FIGURES			
ITEM	TYPICAL VOLTAGE	TYPICAL WATTS	TYPICAL HOURS USED Per Day	ITEM	WATTS	HOURS USED	DAILY AV. WATT HOURS	ITEM	WATTS	HOURS USED	DAILY AV. WATT HOURS
Lights:				Bedroom lights	120	1	120				
7 watt fluoro	12/240	7	4	Living lights	80	6	480				
11 watt fluoro	12/240	11	4	Outside lights	40	1	40				
15 watt fluoro	12/240	15	3	Television	100	5	500				
20 watt fluoro	12/240	20	4	Radio	50	6	300				
40 watt fluoro	12/240	40	3	Sewing machine	100	.25	25				
Appliances:				Iron	1000	.25	250				
Blender	240	200	.5	Vacuum cleaner	600	.25	150				
Computer	240	50-100	.5	Toaster	1000	.25	250				
Dryer	240	1800-2400	.25	Washing machine	600	1	600				
Food Mixer	240	200	.25								
Freezer	240	300-500	6								
Hair Dryer	240	300-500	.25								
Iron	240	1000-1200	.25								
Microwave	240	800-1200	.25								
Power Tools	240		.25								
Radio	12/240	10-50	2								
Refrigerator	12/240	300	6								
Sewing Machine	240	50-75	.25								
Stereo	240	50-100	1								
Television	12/240	50-200	3								
Toaster	240	600-1200	.25								
Washing Machine	240	500 (2000 start)	.5								
Vacuum Cleaner	240	500-1000	.25								
Video	240	50-100	2								
						Total	2715			Total	

With all your individual calculations complete, total your daily average column to reveal your daily power requirements.



Troubled Times



Being Inventive

To be prepared for the Troubled Times - we need low tech devices that can be up as long as they are workable, buildable and/or obtainable. We will need lots of reliable power to grow plants indoors for food. This could be from many sources, water, wind, bio-gas, geothermal, nuclear, and/or whatever anyone else comes up with.

Offered by [Mike](#).

I want to make you aware of an inventor I know who has some very good products that should be listed on Troubled Times. His name is Billy Dean and his company is called

Air Jammer

Rt. 23

Davenprt, NY 13570

(607) 278-6102

(607) 278-5563 Fax

I will try to name some of his products from memory. He has Gell Cell batteries at a good price - but a limited supply. I bought some and have been testing them for my applications. Recently he developed (at the request of myself and others) a 12 Volt pump capable of being lowered into a deep well without removing the pump that is there - or beside it - and pumping water out. I think it pumps something like 3 gpm or so, so you can fill a larger tank and use a 12 Volt RV pump for pressurized water to your house from the larger supply tank maybe in your basement.

He has a large model airplane motor coupled to a PM generator with a gear and it is all sitting on a Gell Cell battery. Push button starting and it fits in a pocket or campers backpack, can you believe it? I think this is the item popular with people climbing Everest. It runs on alcohol and caster oil. It can charge batteries in minutes, say 10 minutes. A good thing about Gel Cells is they handle quick charges at high amps well, compared to more common batteries.

He has AC-DC LP gas refrigerators, small types. He has units that attach to a lawn mower to convert it to a generator to charge 12 Volt batteries. He has a similiar unit to convert a gas weed wacker to a generator, also. He has a hand cranked generator which you can clamp to a table or chair, etc. and crank out 12 volts for power or to charge batteries. He has a system of adapters to convert your existing house wiring to 12 volts usage fiber-optic lighting for underground shelters. He has water filters, wind generators, water generators, invertors too.

Offered by [Darrell](#).



Troubled Times



Dome Uses

Why build many large concrete domes when just a few, hardened for the shift, could store the occupants, some supplies for a few months, and materials for less complex setups that would house food production, etc.

Offered by [Ted](#).

A viable option could be to construct a concrete dome structure with 4-5 foot octagon shaped walls covered with dirt and sealed adequately to get a family through the pole shift. The construction can be such that the interior structure is somewhat honey-combed to prevent post-pole shift survival goods from sliding around. After the pole shift, the concrete structure could be used as the foundation to construct a metal roofed structure above ground.

Offered by [Michael](#).

My current thoughts on this to minimize the storage of heavy supplies within the same dome where the people will be living. This minimizes damage to occupants in case something breaks loose and slides around. Recommend use a separate dome or underground storage container (or could be just as simple as, buried with a tarp around it) for the building materials.

Two types of structure come to mind for construction after the pole shift. A metal building for housing of the people. This would not take as much storage space compared to conventional building materials, goes up fast (like an erector set) and would be durable, easy to repair for many years. Insulation for those in the north, minimal insulation for those in the south. The second type of building would be more like a clear plastic tent, with the bottom of the sides turned to the inside to catch water. This would essentially be one or more large clear still tents for distilling water with plants growing in the ground so as to not touch the insides. Could have fish pond inside along the edges. What little light there will be plus LED light would be used to grow plants fed mostly from recycled distilled water. Plants would be kept away from the polluted rain by the plastic tent cover.

Becomes a potential source of distilled water for human, plant and fish consumption. A small battery operated fan pumping air in could help keep the tent taught against the supports, also giving air (CO2) for the plants. The natural heat from the ground at night with the cooler air cooling the tent surface allows for distillation process. Polluted water running through metal tubing or a heat exchanger buried in the ground (assuming the ground is warmer than the air) flows through a small evaporator cooler type pad (filter). The fan pulls moisture from the pad and air from the outside to put moisture into the tent. The water distills out on the sides runs down and is collected at the bottom of each side. This then runs into a reservoir at one end to be used for watering plants fish or humans. Most of it could possibly be made out of 5-10 mill clear plastic and PVC tubing. One would need to store extra plastic for periodic replacement. These grow tents could be dome shaped or typical (A) tent shaped.

Offered by [Mike](#).



Troubled Times



Go Figure

We need something that summarizes what the engineer minded individual needs-to-know to properly build a survival site. If you have the answer to "xx" or "yy" below or have other useful items to add to the list, please let me know.

Water Needs:

- Distilled (to make colloidal silver, occasional DeTox of the sick (lead or mineral posing), replenish battery water): .5 gal/month (yy liter/month) per person minimum 2 gal/month (yy liter/month) per person optimum average. If used as drinking water then add about 1 gal/day.
- Reverse osmosis water (drinking, sponge baths, cooking, final rinses for vegetables and hands) 2.5 gal/day (yy liter/day) per person minimum 3.5 gal/day (yy liter/day) per person optimum average.
- Particle filtered, Ozone added, and Carbon filtered (source for reverse osmosis, washing vegetables, hands, showers, baths, clean up, laundry, hydroponics, fish, worms, and possible indoor gardening): xx gal/day (yy liter/day) per person minimum with xx gal/day (yy liter/day) optimum average.
- Unfiltered water (washing boots, prewashing clothing, gardening, and possibly hydroponics(?)): xx gal/day (yy liter/day) per person minimum with xx gal/day (yy liter/day) optimum average.

Electrical Power:

- Average Electrical power (food production lighting, task lighting, refrigerator-freezer, distiller, dehumidifier, electric water heater, and water pumps): xx Kwatts/hour per each person minimum with xx Kwatts/hr per each person average optimum.
- If wind and water are used to produce the power the minimum estimated size of the plant capability should be x times the minimum hourly needs.

Food Production:

- Minimum surface area for food growth is xx Sq fT (yy sq M) per person.
- Maximum rates of Photosynthesis are attained at 25-35% of full sunlight intensity or between 3.7 Lwatts(all light energy)/sq. meter (2,500 Lux) to 10.3 Lwatts/sq. meter (7,000 Lux) and in some shade species at even lower intensities.

Type of light EWatts/Sq Meter

LED (white) xx

LED (red & blue) xx

Tungsten Filament xx

Halogen flood xx

Florescent xx

Mercury vapor xx

Sodium vapor xx

Note: In the EWatts/sq meter column, EWatts refers to electrical watts or bulb input watts used to produce 1,000 Lux of light output at ground level). If one decides that it will take 4,000 Lux for the plants one decides to use then xx times 4 times the square area needed would give the electrical watts needed to power it and indicate the number of bulbs needed.

- **xx** cubic ft (**yy** cubic meters) of worm production or **xx** number of worms can support **xx** sq ft (**yy** sq M) of plant growth.
- **xx** lb or (**yy** KG) of fish production can support **xx** sq ft (**yy** sq Meter) of plant growth.

Survival Shelter:

- Withstand Hurricane force winds: estimate to be 300-400 MPH which result in a **xx** lbs/sq inch (**yy** KGm/sq meter) on the surface of a shelter.
- Withstand Fire: Forrest fires and flash meteor showers burning the atmosphere.
- Strong shaking forces lasting less than one hour: Magnitude 9-10 Richter scale.
- Average maximum expected amplitude of motion vertical (up and down) of bedrock to be 100 ft to 200 ft with a maximum of 5 G acceleration. Maximum expected amplitude of the motion of bedrock in a horizontal direction to be 200 ft to 300 ft with a maximum of 9 to 10 G acceleration.
- Possible liquefaction of all soils except hard clays and rock.

Communications: (by ham radios) (voice, data, CW)

- HF (1.8-30 MHz) for long distance
- VHF(144-148 MHz) and higher frequencies for short distance (local)

Offered by [Mike](#).



Troubled Times



Worm-Water

In 1999 there was a discussion on the Forum mailing list regarding hydroponic nutrient solution. Intensive hydroponic gardening, which delivers several times the produce per garden space that conventional soil based gardening does, requires nutrients in the water. If one cannot go to the store and purchase the nutrient solution, how would one go about making this at home? Since earthworm beds produce a liquid fertilizer, collected from the drainage when the beds are watered, this was explored by the Troubled Times, Inc. nonprofit in the fall of 2,000 as a possible solution. This proved successful beyond anyone's expectations, 100% comparable to the store-bought nutrient solution and in some ways superior. The TDS (total dissolved solids) in the worm water kept increasing, over the four month period the [Experiment](#) was run. This was due to suspended particles being broken down by bacteria, a type of timed-release of nutrient. The store-bought nutrient solution, however, needed to be replenished.

Offered by [Nancy](#).



Troubled Times



Liquidate Early

I hope you have materials, money etc. available to you outside of stocks and your bank, before hand. Information from Sean David Morton and many others suggests that, on a global scale, you get out of the stock markets at least by July of 2,000. Their information is that by then, all financial bets are off, as financial markets get increasingly unstable.

Offered by [Steve](#).



Following a family - dad, mom, couple young kids - as they struggle with a disaster and no help from the government because it was too wide spread, would be a venue the public could follow. No need to explain what the disaster was, ala the movie Postman where it was never explained why civilization collapsed. Earthquake is implied because the houses and cars are tossed about, roadways ripped up. The points on what a family should plan for are made by what the family struggles with, but at certain points the screen has bullet points reviewing what has been learned and what a family should do to prepare, as least mentally, is shown, voice over of the host.

First order of the day is taking stock. The family stands dazed looking around, in a drizzling rain. The water is coming out of the broken pipes as mud and the pressure drops to nothing right off. No electricity. Phone and cell phone are not working, the towers down. House is knocked off its foundation by an extreme quake, and looking around the neighborhood everyone else is in the same boat. Can't sleep in the bedrooms as they are open to the air, and the mattresses are already getting wet. What to do!

[A] Rig a temporary tent with a tarp and some rope from the garage, putting tarp over a car, opening the doors of the car for sleeping or sitting areas. Tie tarp to the bumpers and to nearby tree branch of fallen tree. Dad asks the kids to pull some mattresses and pillows and blankets from the open bedrooms under the tarp, laying plastic sheeting on the ground first. When all settled, Mom says 'at least we're out of the rain'.

[screen displays plastic items such as sheeting, tarps, paracord, 5 gallon pails, and their many uses - bullet points with voice over]

30. Rope and String. MINIMUM: Stock up on lots of various kinds of rope and thread, including marine rope which is waterproof and paracord, common items at stores.

32. Plastic Supplies. MINIMUM: Plastic sheeting uses include shelter, a rain-proof roof, water gathering, and greenhouse construction. 5 gallon buckets are an inexpensive common item in stores. Always handy for storage and transporting things. Keeps food stuffs dry, the vermin and mold out, liquids from spilling. Tarps are a relatively inexpensive item. They can make a rain proof roof somewhere in the junk from a collapsed or blown apart home, or can make an emergency tent to keep the family out of the rain.

[B] Mon and dad and kids are all huddled under the tarp. Girl says 'mom, I gotta go!' Mom sighs, and points to a sheet hung up between trees at the periphery, saying 'over there'. The girl says 'but the toilet paper is all gone!'

[screen display about outhouses, which can be moved about in the garden for automatic fertilizer, and toilet paper options including using what is at hand such as dried grass or washcloth and soap. Be clean!]

50. Toilets. MINIMUM: the old fashioned outhouse will return. Composting toilets make soil, but must be vented to get rid of the methane.

51. Toilet Paper. MINIMUM: soap and water and a wash rag when toilet paper runs out. Natural products such as Corn Cobs, Leaves, Moss, Moss Diapers, Pine.

[C] Dad is determined to start a fire, has charcoal from a bag from the garage, and lighter fluid. Dad finds his matches wet, but sees a neighbor kneeling over something and voom, a fire starts up. Dad hails the neighbor to come over and help, to show him how. The neighbor is using the Halcon Fire Wizard method. The neighbor suggests keeping some dry kindling around, saying the lighter fluid will only last so long.

[screen displays list including Halcon web site and other means of starting fires, like flint \$5 purchase in stores, best kindling - bullet points with voice over]

3. Fire Starting: MINIMUM: Flint for fire starting. Simple hardware store purchase. Matches and lighters will only last so long. \$8.50 ebook and free tips at <http://www.wwmag.net/handrill.htm> and <http://thehanddrill.com/halconstove.htm>

[D] Kids have dug out soda bottles and food from the tipped over refrig, but this is going fast. No shopping as the bridge is down, per reports from neighbors. Dad dips a glass into a pool of water in the rain, holds it up to the light, and the glass is not clear. Camera pans to where gasoline is leaking into the pool too. Yuck. Dad goes over to the fire, where Mom has a pot boiling, making soup. He lifts the lid off the soup pot and holds it sideways, noting the condensing steam dripping off the lid. Humm.

[screen bullets boiling to kill parasites, distilling to remove heavy metals. Filtering to clear, drop of chlorine bleach. Show pot-on-pot technique to gain gallons from simple household pots.]

1. Drinking Water. MINIMUM: Boil drinking water. Boiling for 5 minutes kills microbes and parasites but will not get rid of heavy metals. A drop of chlorine bleach also kills microbes and parasites. Let the chlorinated water air for an hour or more to get rid of the chlorine.

2. Distill Drinking Water. MINIMUM: Does what boiling does and also eliminates heavy metals like lead. Condensation of steam concept.

[E] Dad and the neighbors are running their car or truck headlights at night, so they can see each other. One by one the batteries wear out! They sit in the dark. Couple guys say to each other 'is there no way to charge these things'? One guy says he saw a rig once, using bikes and the permanent magnet in an electric drill to incite a current. They turn to one neighbor and say 'you're an electrician, will that work?' After a nod, they all jump up and go for parts, bringing them back and assembling a bike gen. The electrician has opened the electric drill and is explaining the concept to another as he rigs it up. Car batteries (12V) are lined up. A series of light bulbs from the wrecks of houses are wired up in series, but show search that most are broken. The electrician says they last longer if the voltage is low, can even last 100 years. They step back to see the entire rig. One say to teenage boys standing nearby, 'OK kids, lets give it a try'. Boys peddaling away while the light bulbs glow, and Mom settles in front of the light to mend clothes, another to read to small children. Dad lighting a cigarette and smiling at the other men, smug.

[screen display of steps to rig this, what's required, including a permanent magnet from a drill or car part.]

[screen display of crank products like radio, flashlight]

[screen display of comparison on how long a bulb will last if on low voltage, 100 years vs months]

15. Bike Gen. MINIMUM: Old bikes, tires worn out, can be used to generate electricity.

16. Crank Electricity. MINIMUM: purchase these items, as they are affordable. Crank or swing to charge flashlights, crank to charge short wave radio units the military uses, crank to charge portable radios.

17. Light Bulbs. MINIMUM: Protect them from breakage during the shift. Tungsten filament light bulbs in series at very low voltage/wattage will last a long time. Give statistics, months vs 100 years, etc. Also, durable light bulbs that resist impact http://www.me-dtc.com/product_line/incandescent_page_mouseover.htm are available and should be purchased. These resist voltage surge also.

[F] Kids are digging out the last of the peanut butter, eating this off their fingers. The parents and neighbors can be seen clustered over a few cans and a box or two of food, remaining. One of the men mentions that when he served in the Pacific, the islanders ate bugs, fried them up, and considered them a good meal. Parents make this a game for the kids, who can find the most grubs, catch the most grasshoppers, and the like. Bugs are put into a hot pan over the fire and Mom stirs quickly, dumping the lot onto a plate. Dad heaves a sign and grabs and eats one, surprised it does not taste bad. Everyone follows suit. One child brings up a handfull of earthworms, which have come to the surface because of the rain. He says 'what about these?'

[screen display of types of bugs eaten by various cultures, listed. Earthworm qualities in protein and oil, can be raised in compost, red wrigglers can be purchased off the Internet]

43. Bugfood. MINIMUM: Cultures around the world eat bugs and grubs, as they are high in protein and fat. Fried or roasted, usually. They are often considered gourmet.

44. Earthworm Food. MINIMUM: Earthworms are 82% protein and have Omega3 oils, as ocean going fish do. Good for the heart. They eat vegetable trash and make soil as a byproduct. Can be raised indoors in compost bins.

[G] Mom is doling out the last of the vitamins from the vitamin bottle, is looking concerned. She says to dad, 'Now what? No orange juice. We're all going to get sick!' Dad is twirling a sprig of a weed between his fingers, running it under his nose, and takes a bite.

[screen display listing common weeds and their vitamin content, A and C. Mention stocking up on vitamins, especially C, a good idea.]

21. Vitamin Sources: MINIMUM: Get lots of Vitamin in pill form, a common item in stores. Vitamin C, especially. List common and relatively unknown sources in nature, such as Scurvy Grass, Sheep Sorel, Pine needle tips, Plantain, Squash for Vitamin C and A, fish for Vitamin D.

45. Weeds as Food. MINIMUM: Wild edibles are much under-rated. High in vitamins too.

[H] Kid walks up to dad, proud, holding up a clutch of rabbits. Dad, unshaven and looking depressed, is astonished, asks how he caught and killed them. Kid has a slingshot shoved, handle down, into his hip pocket. He explains to his dad that he used an inner tube from one of the tires discarded to make the bike gen. Dad has been working on a bow and arrows, laid out in front of him. He is carving on a piece of tree limb, trying to shape it, has strips of natural fiber, and has been sharpening sticks. He picks one of the sticks up and says to the kid 'get me a bird next time, I need some feathers'.

[screen display of slingshot assembly, bow and arrow assembly, finding fiber for string or rope in nature.]

23. Sling Shot. MINIMUM: Slings are very effective and children can catch small game this way.

24. Bow and Arrow. MINIMUM: Bow and arrow can be made from natural materials.

31. Making Rope in Nature: MINIMUM: Mention that rope can be made from fibrous material in the Aftertime

[I] Excited group of adults around clutch of boys displaying fish in a net. The net is lace from a wedding dress, white. One boy says 'don't tell mom where I got this!'. They explain their technique, putting the net in a narrow part of the river where the fish could not swim back out. Dad says 'this won't last, but I have some screen that will work.'

[screen display of fishing and trapping techniques]

22. Fishing. MINIMUM: fish hooks and line and rods and nets, cheap items to buy.

25. Traps: MINIMUM: Explain some trapping methods.

[J] Mom is by a pan of warm water, a washcloth in her hand, rubbing the last of a sliver of soap on it. She turns it over in her hand, looking at the sliver. Then she is seen talking to a neighbor woman, at her campfire. She says 'didn't you say you had a book that explained how to make soap?'. The neighbor woman takes a worm paperback book out from under her pillow and flips through it, saying 'this was one of the books I could salvage. Good thing too. The rest were wet and ended up moldering away.'

[screen display listing book preservation techniques.

[screen display of top recommended books, as 'examples', from herbal meds to windmill building to seed saving to ditch medicine to wild edibles to bow and arrow construction]

37. Book Preservation. MINIMUM: keep dry during the shift and afterwards from rain and mold. Shrink wrap or seal in plastic if possible for the shift. Laminate key instruction guides such as First-Aid steps. Purchase water-proof

notebooks.

36. Books. MINIMUM: Buy what you can afford on how-to books on such things as windmill and shelter construction and guides such as wild edibles.

[K] Mom is seen putting ashes into a piece of gutter with a cloth filter at the drain end. She pours hot water over the ashes, collecting the water draining out in a pot, then moves the pot over the stove and adds animal fat collected in a can, from frying bacon. Her neighbor woman is there, and mom says 'good thing I didn't throw this out, now we need this fat'. They sit at the fire and stir. Mom says 'first thing I'm going to do when I get some strong soap is wash our clothes, they just reek!'.

[screen display of soap making technique.]

33. Soap Making: MINIMUM: Buy a good stock of soap, Fels Naptha to wash away poison ivy to the mild kind for baby. Mention that soap can be made using water drained through wood ashes then boiled with animal fat. Ashes and water makes a crude basic lye solution. Mixed with animal fat can be used to make soap. Soap is alkaline water garnered from water drained through wood ashes. Boil the alkaline water with animal fat until thick, then pour into a pan. After it hardens, brush off the white power on the top as this is very alkaline. Don't touch this powder. Cut the pan into bars, wrap and store!

[L] Hanging laundry up on a line, pinning the items, mom says to her friend 'this works great, but the dishes have a film on them. I sure miss that dishwasher rinse that made them squeaky clean.' The friend says she discovered some juice in one of the refrigerators, they finally got the door pried open, and it had turned to vinegar. Works great as a final rinse on the dishes.

[screen display of vinegar making steps, also, that mold for rising bread is naturally in the air too.]

34. Vinegar Making. MINIMUM: Vinegar is produced naturally from spore in the air. Vinegar has many uses, beyond a food stuff. Is a good cleaning compound.

[M] Dad and a couple other men are hunched over a roaring fire, banked on three sides by stones that almost cover the top. They have some pieces of metal stuck into the fire, and barbecue tongs used gingerly to move the metal pieces around as they are red hot at the ends. Dad takes a piece out, holding it with hot gloves, and hammers it. Dad says 'I've seen this in the movies often enough. If we don't get some machetes we'll never clear that brush for a garden.' A dismantled car is seen at the side, the leaf spring removed and at the side of the fire.

[screen display of smithing techniques.]

4. Black Smith: MINIMUM: Back yard forge can soften metal to shape into knives or hooks, etc. VIDEO: show backyard forge with roaring fire and bellows, melting a piece of metal.

[N] Some of the men and women, and a couple teenagers, are slinging machetes to clear brush that has grown up on the lawns near the topped homes. A pick is being used to uproot small trees, afterwards, the brush being piled at the side, and a spade being used to turn the soil. One of the men pauses to rest on the handle of his spade, saying to the man next to him 'Good thing Minny gardens and saves seed, else we'd be chewing weeds forever.' Minny is seen in the background, planting and staking out rows for seed, with the help of others eager to help. She can be heard saying things like 'beans need the soil to be warm, so we'll wait on those. But peas and spinach will do well now.'

[screen display on gardening tools to have at hand and simple gardening techniques.]

[screen display of seed saving techniques, viability charts, where to buy.]

19. Saving Seed: MINIMUM: If you don't have it in hand at the shift, where will you get them? Start today! Every a trip to the grocery store can garner seed to be saved. A squash or pumpkin, tomato seed to molder in a dish, peppers to ripen in the sun so the seeds mature, carrots and onions can be planted and will go to seed, potatoes and garlic can be

planted and will propagate, Indian Corn used in decorations is viable seed. Tomatoes and bean plants self pollinate. Tomato seed needs to mold in a dish or will not germinate. Onions and cabbage and carrots need two years, are biennial, so keep in root cellar in cold climates. Corn is wind pollinated. More than bees pollinate, as all insects flying or crawling do so.

20. Gardening. MINIMUM: simple gardening tools such as spade and hoe and poles. Describe simple gardening techniques such as cold frame for tender seedlings and mulching and fertilizing the soil and fencing against wildlife.

[O] One of the men is tinkering with the torn apart car parts, turning the alternator back and forth in his hand, has the radiator fan and fan belt nearby. He is musing as he does so, talking to the other men about putting up a windmill to pull water from the stream to irrigate the garden. He mentions that while they are at it, they should also figure out a way to charge the batteries and light the lights other than pumping on a bike, saying 'its getting tiring'.

[screen display describing how to make a windmill, critical parts needed and sources for these in cars or workshops.]

[screen display showing water wheels, similar but turning point is water, not wind.]

[screen display on battery bank considerations, having dry batteries on hand, battery monitoring.]

7. Wind/Water Mills. MINIMUM: the grid will be down, oil and gas and coal unlikely. Wind and water will be available to all. Can be made from scrap parts. Base components: blades or sheets for wind or cups for water; permanent magnet wrapped in wires as in electric drills or cars to incite electric current; battery bank to capture and modulate output.

8. Wind/Water Mechanical Assist. MINIMUM: windmills can be used for simple mechanical life of water from a well. Ram pumps work to push water into a storage tank, uphill, using the mechanics of flowing water in a stream. No electronics involved.

9. Cars as Parts. Minimum: List of the parts and how they can be used.

12. Battery Banks: MINIMUM: Battery series needed to store electricity from wind/water mill and allow down time. Batteries from a car or truck in a series for a windmill. Golf cart batteries are deep cycle, fewer required. Dry batteries can be purchased and stored.

[P] Water pouring into garden trench, backing up to take in windmill blades cut from housing studs, mechanical pump. Backing up further, another windmill, focus on the turning parts which include generator to incite electricity and battery bank. Men are now building housing for these parts, to keep them dry in the rain, talking excitedly. One is waving his hand toward the camp, saying 'we need to be 50 feet or closer for DC. Wish we had a converter for AC. Do you suppose I could get my radio working again?'

[screen display DC and AC differences, function of converters. Surge control, key elements of an electrical system.]

10. Electrical System: MINIMUM: Camping and boating equipment are 12V, as are cars and trucks, and use DC. Windmills 50 feet from 12V batteries can keep them charged, via DC. Home appliances will be useless. Chores should be done by hand. Make music and stories as TV and video games and CD's a thing of the past.

[Q] The men have several radios on a wooden table, the windmills and battery bank boxes seen behind them. They have an electric plug from one of the wrecked houses secured on the table, a current converter beside it, and are trying out appliances. Some run, erratically, until the voltage regulator is adjusted. Comments are made that radio contact is most important, and electricity should not be wasted on this other stuff. A blender and hair dryer are put aside, the radios brought forward. Most do not work, and the men are taking them apart to try to repair, have one working. One man says 'short wave should be tried first, it's the emergency system.'

[screen display on importance of short wave, emergency frequencies, ionosphere bounce.]

[screen display on how to pack electronics to survive anticipated quakes.]

11. Packing Electronics. MINIMUM. Anticipate a lot of jostling during earthquakes. Pack light bulbs and electronics with this in mind. Computers, should be disassembled and wrapped in anti-static wrap or aluminum foil. It will be important to keep the insides of electronics as dust and moisture free as possible. Humidity will cause corrosion. Dust buildup can cause shorts (especially when combined with humidity).

41. Short Wave. MINIMUM: Is the emergency operating frequency, around the worlds. Used by emergency management personnel when other radio goes out. Be aware that short wave can operate by bouncing off the ionosphere, or Moon bounce, not necessarily needing towers.

[R] Dad is leading a young bull, rope around it's neck, into the camp. They have made contact with neighbors, and learned what bridges are intact and what route to take. Dad is holding up a compass and grins at the rest, saying 'found them! But I took bearings along the way. They were as happy to see me as I was to see them.' There are two cages on either side of the bull, with chickens in them, squaking, and a couple goats bringing up the rear behind the young bull.

[screen display on bearings issues, compass, how to take bearings and realize N/S from moss on trees, etc.]
[screen display on domestic animals, chickens free range, goats eat anything, etc.]

42. Compass/Bearings. MINIMUM: Compasses will be erratic after the pole shift, with a new magnetic North. Nevertheless, have a compass or several handy as a guide when traveling. The many ways to keep your bearings with or without a compass.

46. Domestic Animals. MINIMUM: Chickens eat bugs and give you eggs and chicken soup and only ask for a safe place to roost. Goats eat anything and give you milk, and will follow you anywhere. Sheep are docile and give you wool and milk for cheese also. Rabbits can be kept in a hutch, eat vegetable trash, and rabbit soup is great for young children.

[S] The young bull is to be butchered, for meat the group has long been without. The men have the bull staked in a clearing away from the camp. One has a gun, but the others tell him to save his ammo for the wild dogs that have been coming around threatening to take the chickens. They plan to use a knife, slid under the throat to bleed the bull. One mentions they need to tan the hide, not waste it, and must use the brain of the bull during the process.

[screen display on butchering techniques.]
[screen display on tanning methods, braining.]

26. Butchering. MINIMUM: Touch on the basics of how to begin will make it easier for those without experience. How and where to make the initial cuts on fish, chickens, rabbits, snakes, squirrels and deer may be good examples. Removing the guts first to prevent contamination of the meat on the carcass. Some tips on skinning so the hide can later be tanned.

27. Tanning Hides. MINIMUM: The brains of the animal are used for tanning the hide. Sinew should be saved. It can be used as thread and cordage to tie arrow heads to arrows, stones to handles etc and it has built in glue.

35. Guns. MIMIMUM. Dog packs and rats invading the survival camp may be a reality, as well as unwelcome visitors. Statistics, most shootings are by a family member, and this danger exists as insanity and rage will increase as a result of the pole shift. Keep guns safe.

[T] The hide has been stretched out and scraped, and is being taken down to soak in the braining solution. Mom is mending a very worn shirt at the side, wondering where they will get a needle that will go through the hide. She looks at her scant sewing box, saying 'thank goodness I had these, I should have had more in hand, they're priceless.' The group is discussing clothing needs, one holding up a shoe worn so the sole hangs loose, another bringing up a child that has outgrown his jacket. One woman says 'Jane has a spinning wheel and loom for her hobby, I wonder if these can be put into use?'

[screen display of clothing and supplies to have on hand, wool vs cotton, needles and thread, treadle sewing machine.]

[screen display listing methods of making clothings, knitting, spin and weave, sandals from old tires.]

5. Clothing. MINIMUM: wool keeps the body warm even when wet, unlike cotton. Good boots and socks prime importance if will be walking, as if the feet go, you are not moving at all. Army surplus stores highly recommended!

6. Clothing Replacement and Repair: MINIMUM: needle and scissors and thread. Priceless for repair of clothing. Have lots of needles and thread, a cheap purchase. In nature, horse tail hair as thread, or animal sinew, using fish bones as sewing needles.

[U] A wagon piled high with furniture and dishes tied together into a stack is being hauled to the nearby farm, for barter. Nearby a man is tinkering with the engine of a VW, engine at the rear, with an apparatus nearby. He says 'if I get this wood gas generator working, we won't have to haul it by hand anymore'.

[screen display of transportation possibilities, bikes, wagons, etc.]

[screen display about wood gas generation, image of internals showing how the gas is captured and compressed for the car motor.]

39. Transportation. MINIMUM: Keep you bike in good repair. Sturdy wagons will come in handy when having to migrate or transport the injured or very young or old.

40. Wood Gas. MINIMUM: Be aware that wood gas was used during WWII in Europe and Australia, to offset gas shortages. Existing cars can be outfitted to use. Download and print off the specs from the Troubled Times website.

[V] The team that had set off with a wagon full of furniture and dishes returns, but one of the men is limping. He's cut his leg open, and they have bound it but it still needs stitches. All eyes turn to an older woman, who sighs and says, 'lets get out the last of that alcohol and the first aid kit. I'll do the stitching if none of you'all have the stomach for it. Bring me some of that fresh comfrey leaf too!'

[screen display of first aid kit components.]

[screen display of herbal meds, most respected and used, their uses.]

52. First Aid. MINIMUM. Get a kit. Learn CPR. Take a class, often offered for free. Books to be purchased cover many subjects, are designed for troops in the trenches, where severe injuries are experienced but no doctor is available.

53. Herbal Meds. MINIMUM. Get a book, so as to be aware of what herbs grow wild in your area and their application. Time honored before modern pharma available.

[W] Injured man is sitting, let up, with the old woman checking the wound. She says 'yup, closing up nicely' and walks off. He is working with some hand tools and wood from the broken houses, shaping furniture from a pattern, drawing onto the broken boards. Another comes up to help him, sawing with a hand saw along the lines drawn. Numerous hand tools are laid out on the bench beside them. The one sawing takes a break and says 'what are you going to use for glue?'

[screen display of hand tools and their uses. Include nails and screws and nuts and bolts, having a supply, and sharpeners]

[screen display of home made glue techniques and ingredients.]

38. Hand Tools. MINIMUM: Purchase or secure at yard sales as many as affordable. Old barns and garages may have cross-cut saws and hand drills no longer available.

29. Homemade Glue and Cement: MINIMUM: as with soap, there are recipes. Natural Glue can be made from Milk, Blood, Fish Skin, Hides, Sinew, Resins, but these are not necessarily Water Proof.

[X] One of the men is seated, his legs spawled on either side of the battery bank. He has a meter in his hand. He says

to another coming up behind him 'they're shot, worn out, and I've tried every trick to keep them going.' The other says 'we need parts, and everybody else in these parts is looking for the same thing.' The first says 'you know that ball park in town, it's built over an old land fill. Bet there's metal galore in there! And while you're at it, get some old battery cores. We're running out of light bulbs some day, and I want to try carbon arc for a few hours each night. Keep those wild dogs at bay and can't hurt the garden either, it's like sunlight.

[screen display on battery maintenance tips.]

[screen display on batteries from scratch, ingredients, battery basis on how they work.]

[screen display on carbon arc, how it works, battery cores from new and old batteries.]

13. Battery Maintenance: MINIMUM: Mention that batteries can be maintained and refurbished for longer life. How to flush, reverse charge, or whatever. Parts that can be reused with new acid, parts that must be discarded when battery dead. New battery construction. Basics, like fill, poles and types of metals to use.

14. Batteries from Scratch. MINIMUM: mention this is possible, and the likely components. NOTE: Primitive batteries of very low power can be made from almost any liquid that is basic, acid, or salt solution and two dissimilar metals as electrodes. Common battery materials like lead for electrodes and sulfuric acid for the electrolyte will produce much more power over the long run.

18. Carbon Arc. MINIMUM: arc explanation and using old battery cores as rods. Batteries today with cores, what to buy and not discard. Requires strong electrical push, but is daylight, must wear sunglasses.

28. Land Fills for Material: MINIMUM: Be aware that refined metals, old battery carbon arc cores, permanent magnets, lead plates, and other useful items are buried in land fills. After many years, toxins drain away, garbage rots, and the older land fills will be safe to dig around in.

[Y] The camp at night is shown, some new construction evident, reusing wood recovered from the trashed houses, but mostly the camp is living in thrown together tents and in their cars. At dusk, the garden area is suddenly brightly lit with a hissing noise, as one of the men looks up at the tree tops and says 'good breeze tonight, we should be able to keep this going for a few hours.' They gather at the periphery, shielded by some of the tents, old maps spread out on the ground between them as they sit on stools or broken chairs. Gossiping about what they have heard from the neighboring sites. One says, pointing to the map 'they were living in shipping containers, made pretty neat homes but they tend to rust after awhile.' Another says, pointing also to the map 'over here, houseboats, and they move where the fish are too!'

[screen display on housing suggestions, from junk or what is at hand.]

47. Shipping Containers. MINIMUM: Sturdy enough to resist quakes and won't blow away. Can hold supplies before the shift. Can become a home afterwards. Can purchase for about \$2,000, moved to site.

48. Houseboats. MINIMUM: Houseboats can move along the waters edge as the waters rise, moving inland with the new coast. Used extensively in Asia or along coastlines worldwide.

49. Earthen Houses. MINIMUM: Adobe, rammed Earth, cob housing all use dirt as the main ingredient. Best for dry climates else need to be water proofed on exterior.

[Z] Camp is shown at supper time, fresh veg from the garden, corn on the cob, salad, roasted chicken. Some home made clothes in evidence, a knitted sweater, crude, rough pants hand sewn but sturdy, sandals from car tires, and lights. The kids are putting on a play they have compiled themselves, costumes from whatever at hand, singing songs during the play. Lots of laughter and adults grinning. They made it!

Basic Survival Steps

This list is being compiled to assist in the preparation of a video on basic survival, perhaps to be a documentary for TV or released at cost to the public. Please review the guidelines on [structure and constraints](#) before making a contribution on the tt-forum. Each item includes a MINIMUM step, and an TIME AND MONEY step. The first is speaking to those who are learning of the coming pole shift with little time or opportunity to prepare, the second for those who can plan and have the resources.

- 1. Drinking Water.** MINIMUM: Boil drinking water. Boiling for 5 minutes kills microbes and parasites but will not get rid of heavy metals. A drop of chlorine bleach also kills microbes and parasites. Let the chlorinated water air for an hour or more to get rid of the chlorine. VIDEO: show film of what can be found in pond water. TIME AND MONEY: commercial filters are available. NOTE: In a pinch ground charcoal can be used in conjunction with sand or fine weave cloth to filter water. The slower the flow the better it works. Charcoal can remove heavy metals, and hydro carbons from water. Fine weave cloth packed into a small pipe can be used as a particle filter and to slow the flow at the outlet to this filter. The water could still have pathogens in it. So boiling, adding Chlorine, Iodine, Colloidal Silver, or a few drops of Grapefruit seed extract would be needed. NOTE: Charcoal can be made by heating wood (at wood fire temperatures) in a nearly closed container. For example a 30 gallon oil drum (small hole in bottom) held up inside a 55 gallon drum full of wood fire held by several rebar supports would work.
- 2. Distill Drinking Water.** MINIMUM: Does what boiling does and also eliminates heavy metals like lead. Condensation of steam concept. VIDEO: show boiling pot with dripping water on pot lid. TIME AND MONEY: Simple 2 pot and pie pan stacked distillation technique (demo with Mike's setup for video) produces gallon every 2.5 hours, and a pot of hot water for washing to boot. VIDEO: show this setup in production, on a stove presumed to be a wood burning stove. NOTE: Distillation of water can be done any place a temperature gradient (a hot and a cold) can be made or found in close proximity to each other. The greater the difference in temperature the faster the distillation. Hot earth and cold flowing water or air are conditions that can be used.
- 3. Fire Starting:** MINIMUM: Flint for fire starting. Simple hardware store purchase. Matches and lighters will only last so long. EXPERT: James, available, in Texas. \$8.50 Handbook and free tips at <http://www.wvmag.net/handrill.htm> and <http://thehanddrill.com/halconstove.htm> VIDEO: show kindling being lit with flint or better yet, get Halcon to demo!!!. TIME AND MONEY: Other fire starting techniques such as stick on board. Best kindling. NOTE: Fires burning with wet wood or materials will spit, sputter and pop a lot of hot burning material in all directions. Use a screen to cover the fire and use leather, Nomax, welding blankets, or other materials to avoid catching clothes on fire. NOTE: The trick to fire starting, is knowing materials enough to put together the proper gradient of highly flammable at the intended fire starting point to less burnable materials on the outside. Fires can be started using, a flammable liquid, or dry highly flammable materials by using, a match, flint and steel to produce a spark, magnesium chips and flint spark, spark from electrical source, a glowing wire (example: car cigarette lighter), spark from a piezoelectric crystal (some gas stove, and baroque start this way or from one of those hand click on utility lighters). NOTE: Protect the dry left over burnable material (charcoal, dry wood etc) from previous fire to help start the next fire. While a fire is burning put future wet burnable material close to the fire to dry it for future fires.
- 4. Black Smith:** MINIMUM: Back yard forge can soften metal to shape into knives or hooks, etc. VIDEO: show backyard forge with roaring fire and bellows, melting a piece of metal. SEE: [shelter/tshlt21c.htm](#) TIME AND MONEY: magazines for this skill published today. VIDEO: hold up a recent publication for the camera. NOTE: Blacksmithing Basics: Fire can be made hot enough by pumping air at the base of burning charcoal and laying the metal on top of the coals. When the steel is just hot enough that a magnet will no longer stick to it then it is the right temperature to work. Remember this color and you don't need the magnet test each time. Starting with good steel as in car leaf springs and axels will produce high quality knives or tools that do not easily dull or break. Final test for a knife blade is to bend it and see it spring back and to pound the knife into a ¼ iron rod to show the blade does not dent but the rod is nearly cut in two.
- 5. Clothing.** MINIMUM: wool keeps the body warm even when wet, unlike cotton. Good boots and socks prime importance if will be walking, as if the feet go, you are not moving at all. Army surplus stores highly

- recommended! VIDEO: someone sitting at the side of the trail, tennis shoe off, rubbing foot, wet and shivering. TIME AND MONEY: Outdoor clothing can be purchased from specialty stores. Water resistant, insulated.
6. **Clothing Replacement and Repair:** MINIMUM: needle and scissors and thread. Priceless for repair of clothing. Have lots of needles and thread, a cheap purchase. In nature, horse tail hair as thread, or animal sinew, using fish bones as sewing needles. VIDEO: show hands stitching a needle through cloth. TIME AND MONEY: foot pedal sewing machine, can be purchased today, new. Patterns for various sizes for cutting new cloth for clothings or can take apart a garment and use this as a pattern. Spinning wheel and hand loom and knitting needles, making new garments. VIDEO: of foot pedal in action, sewing machine in action, patterns laid out on cloth. Spinning wheel in action, hand loom passing shuttle back and forth, in action. Can find wheels and looms in museums, some working demos available in these museums. Show sheep wool being drop spun to make thread. SEE: shelter/tshlt11j.htm and shelter/tshlt11k.htm
 7. **Wind/Water Mills.** MINIMUM: the grid will be down, oil and gas and coal unlikely. Wind and water will be available to all. Can be made from scrap parts. Base components: blades or sheets for wind or cups for water; permanent magnet wrapped in wires as in electric drills or cars to incite electric current; battery bank to capture and modulate output. EXPERT: Darrell Dr1946olson@aol.com, has been located, in Ohio. SEE: energy/tengy022.htm for the many suggestions on how to use car parts to build a windmill! Cars will be everywhere! VIDEO: of windmill made from car parts. BOOK: ebook about building small wind generators from inexpensive parts/junk. <http://www.poormansguides.com/> plus hard copy LeJay and Piggott. TIME AND MONEY: Lots of books on how to build wind and water power units. Hold up and mention the best of the best. Windmills and Pelton water wheels. VIDEO: commercial websites or brochures or products in action. Visit Wisconsin <http://www.otherpower.com/wisc06.html> for from scratch demos and seminars offered. NOTE: Blades can be made from old PVC piping or something as simple as a 1x4. A drawknife or hand plane are valuable tools for making blades from wood.
 8. **Wind/Water Mechanical Assist.** MINIMUM: windmills can be used for simple mechanical life of water from a well. Ram pumps work to push water into a storage tank, uphill, using the mechanics of flowing water in a stream. No electronics involved. SEE: <http://virtual.clemson.edu/groups/irrig/Equip/ram.htm> NOTE: windmills can be used to provide rotational or linear power to things other than a generator. The old windmills ran water pumps. They could be power the pump portion of an air compressor to aerate a pond or run tools.
 9. **Cars as Parts.** Minimum: List of the parts and how they can be used. EXPERT: Mike, available, in California. QUOTE: *Use of car or vehicle parts: The alternator and in some cases the radiator fan motor can be used with run off water and a water wheel (made from wood and car wheels) with a belt speed changing rig to generate power. They can also be made into a windmill with a bit more effort and parts to make a tower and the proper speed. Axel-spindle and break drum or disk can be made into an alternator for wind or water power given a bit of magnet wire and some permanent magnets. The radiator can be used as a heat exchanger to condense water after it has been vaporized. The steel leaf springs and axel and steering parts can be blacksmithed into quality steel knives and gardening tools. All of the metal parts become a blacksmith resource. Given lots of available water power the engine can be made into a compressor and used to drive air powered tools. A standard transmission (hand cranking point) and rear end can be made into a winch (cable or rope around the wheel without tire) to pull a load up a hill. With a bit more effort they can be made into wind driven grain grinder. A bit of steel brake or gas line in the hands of a skilled fire starter can apply the right amount of well directed air to change a smoldering coal in contact with some readily burnable material into a flame and get a fire back going again. Rubber heater hoses could be used with water filtering. The gas tank once cleaned of its gasoline could be used to collect the resulting water. Rubber from the tires cut up into shoe soles along with wires for straps from under the hood could be used to make sandals. The rear end, springs and wheels could be used as is with a light wagon type bed build on top to make a push or pull cart. The horn can be temporarily hooked to the battery to call all back to base in case of emergency. The battery power lights can be used for light. The head lights used to spot at distance. The tail lights and interior for general task lighting. The seat covers and floor mats can be used for shelter or tough clothing or shoes or to hold water. The spring wire in the seats along with some of the under dash wiring can be used to make animal trap snares. The glass windows even if broken can be melted down and blown into other objects. Use some steel break or gas line to assist with the blowing of glass. Melt a blob on the end and blow. The windshield washer plastic container makes a small container for water. The hub caps if metal can be used over a fire to cook in. This is not a comprehensive list it is only to get one started to thinking on the subject.* VIDEO: while rattling off this list, focus video on these various car parts, perhaps dismantled to some degree to show the parts, else just panning the car while the use of the car is

- detailed, listed off.
10. **Electrical System:** MINIMUM: Camping and boating equipment are 12V, as are cars and trucks, and use DC. Windmills 50 feet from 12V batteries can keep them charged, via DC. Home appliances will be useless. Chores should be done by hand. Make music and stories as TV and video games and CD's a thing of the past. VIDEO: of campground with camp lights running on 12V DC. TIME AND MONEY: More power needed for AC but then, if converted, greater distance. Types of appliances that can run on AC, but not DC. NOTE: In a primitive environment the most damage one will see to vital electrical items will occur due to voltage surges. Lighting and electronics are partially sensitive to over voltage surges. Assign someone in the group to monitor and periodically watch for this condition. If over voltage is measured at any time the engine governor and(or) voltage regulator will need to be adjusted low enough that the voltage never gets above a given limit. For the USA this would be 120 V AC and 14.4 V for 12 DC sources.
 11. **Packing Electronics.** MINIMUM. Anticipate a lot of jostling during earthquakes. Pack light bulbs and electronics with this in mind. NOTE: Computers, should be disassembled and wrapped in anti-static wrap or aluminum foil. A computer with accessory cards in the slots can be jarred severely enough using current transportation services so the cards should be removed at a minimum. Essentially any circuit board that isn't mounted solidly may be a candidate for being removed and packed better. Dust and humidity can cause serious damage to electronics. It will be important to keep the insides of electronics as dust and moisture free as possible. Humidity will cause corrosion. Dust buildup can cause shorts (especially when combined with humidity).
 12. **Battery Banks:** MINIMUM: Battery series needed to store electricity from wind/water mill and allow down time. XX batteries from a car or truck in a series for a windmill. Golf cart batteries are deep cycle, fewer required. TIME AND MONEY: Dry batteries can be purchased and stored. NOTE: Hook cells or batteries of the same current capability in series (end to end or positive of one battery to the negative of the next battery) to get the sum of there voltages. Hook cells or batteries of the same voltage in parallel (side by side or positive to positive and negative to negative) to gain more power or current with the same resulting voltage.NOTE: Too many batteries in parallel can be troublesome in the long run. Typically one cell in one battery will go bad (leaks down to 0volts) and can potently cause all the rest of the batteries to go bad if not soon spotted. One rotten apple in the basket will make all the rest go bad applies to batteries wired in parallel also. When hooking batteries in parallel only use equal ages or better equal tested condition of batteries.NOTE: Constantly monitor and remove leaky batteries from any battery bank as quick as they are suspected or found. Take one battery off line from a parallel combination for a while (days to a week). Look for weak cells by measuring the cell voltage at start and end of the time and determine overall condition by how well it holds a charge on all cells. Give it a condition rating.
 13. **Battery Maintenance:** MINIMUM: Mention that batteries can be maintained and refurbished for longer life. TIME AND MONEY: How to flush, reverse charge, or whatever. Parts that can be reused with new acid, parts that must be discarded when battery dead. New battery construction. Basics, like fill, poles and types of metals to use. VIDEO: parts laid out, unassembled. Wood ash water as battery fluid. Components of an Aftertime assembled battery as replacement for those present at the shift. NOTE: Lead-Acid Batteries should not be discharged below 12 volts DC (nearly discharged). Full charge is about 12.8 or higher. Voltage is measured in resting state of no flow in or out. Lead-Acid batteries will sulfate and will not fully charge if left discharged for too long a time (several weeks to months). Over charging from time to time at or near 15 volts at a slow charge can sometimes help to recover from sulfation and will help to equalize charge on all cells.
 14. **Batteries from Scratch.** MINIMUM: mention this is possible, and the likely components. NOTE: Primitive batteries of very low power can be made from almost any liquid that is basic, acid, or salt solution and two dissimilar metals as electrodes. Common battery materials like lead for electrodes and sulfuric acid for the electrolyte will produce much more power over the long run. NOTE: Sulfuric acid can be made from earth venting of sulfur gas (found near volcanic activity) by passing it through water. Use distilled water if possible.
 15. **Bike Gen.** MINIMUM: Old bikes, tires worn out, can be used to generate electricity. VIDEO: Show the rig Mike photographed. SEE: energy/tengy052.htm and energy/tengy05q.htm and energy/tengy05s.htm and energy/tengy05t.htm EXPERT: Mike, available, in California. NOTE: Many types of self standing exercise bicycles and supported regular bicycles can be converted to generate power. One way is to use two battery powered electric drills facing each other with a lawn mower wheel on a shaft between them mounted in each chuck. The lawn mower wheel is spring loaded to rest on the tire of the bicycle that has the drive chain.
 16. **Crank Electricity.** MINIMUM: purchase these items, as they are affordable. Crank or swing to charge

- flashlights, crank to charge short wave radio units the military uses, crank to charge portable radios. VIDEO: scan past some of these items, laid out for display. NOTE: Many types of battery powered electric drills can be used as a hand generator to charge small rechargeable batteries. A hand crank is made and mounted in the chuck of the drill and cranked by hand. The trigger is held down and power is generated on the terminals that would normally connect to the battery. The voltage at hand crank speeds is usually enough to change one or sometimes 2 cells at a time. SEE: energy/tengy042.htm
17. **Light Bulbs.** MINIMUM: Protect them from breakage during the shift. Tungsten filament light bulbs in series at very low voltage/wattage will last a long time. Give statistics, months vs 100 years, etc. Also, durable light bulbs that resist impact http://www.me-dtc.com/product_line/incandescent_page_mouseover.htm are available and should be purchased. These resist voltage surge also. QUOTE: *The Guinness Book of World Records states that a fire station in Livermore, California has a light bulb that is said to have been burning continuously for over a century since 1901. However, the bulb is powered by only 4 watts. A similar story can be told of a 40-watt bulb in Texas which has been illuminated since September 21, 1908. It once resided in an opera house where notable celebrities stopped to take in its glow, but is now in an area museum.* VIDEO: show normal 100 W bulb, then a series under low volt/wattage and the relative light from them. TIME AND MONEY: can buy grow lights, LEDs for an array, bulbs for replacement to last 25 years. SEE: energy/tengx097.htm NOTE: Run Tungsten filament bulbs at reduced voltage to get longer lifetime. A typical 40 watt and 60 watt wired in series running off 120 Volts will last 22 years running full time. Using a tungsten filament bulb and lowering voltage to 94, 89, 82, 78, 68, 64, 56, or 50 percent increases life time respectively 2, 4, 10, 20, 100, 200, 1000, or 4000 times for the typical 1000 to 2000 hour lifetime. NOTE: Run LEDs at reduced current to get longer lifetime. One can control the current of an LED by use of a series resistor, a simple LM317 constant current circuit, or number of series connected mini-x-mass tree bulbs. Run typical 20 ma max rated white LEDs at 10 ma and solid color LEDs at 15 ma to get longer life. NOTE: X-mass tree bulbs can be used for light when little power is available. X-mass tree bulbs, both tungsten filament and LEDs can be chopped up and rewired to run at many different lower voltages. Adding extra bulbs in series for a given voltage will lower voltage on each bulb to make the result last longer. To determine typical run voltage for a given bulb, take the overall voltage and divide it by the number of bulbs in the series string. As an example use 6 or 7 (longer life) of the 50 bulbs/string-type in series for 12 Volt operation.
18. **Carbon Arc.** MINIMUM: arc explanation and using old battery cores as rods. Batteries today with cores, what to buy and not discard. Requires strong electrical push, but is daylight, must wear sunglasses. VIDEO: barn lit by incandescent bulbs. Turn off the lights. Barn with search light pointed to the ceiling where there are reflectors. The whole barn is like daylight. Point made. TIME AND MONEY: carbon rods can be purchased. Older equipment for sale of eBay. Construction with solenoids, diagrams, websites.
19. **Saving Seed:** MINIMUM: If you don't have it in hand at the shift, where will you get them? Start today! Every a trip to the grocery store can garner seed to be saved. A squash or pumpkin, tomato seed to mold in a dish, peppers to ripen in the sun so the seeds mature, carrots and onions can be planted and will go to seed, potatoes and garlic can be planted and will propagate, Indian Corn used in decorations is viable seed. Tomatoes and bean plants self pollinate. Tomato seed needs to mold in a dish or will not germinate. Onions and cabbage and carrots need two years, are biennial, so keep in root cellar in cold climates. Corn is wind pollinated. More than bees pollinate, as all insects flying or crawling do so. BOOK: Seed to Seed. VIDEO: of these grocery items and molding tomato seed in a dish. TIME AND MONEY: books on how to save seed, such as Seed to Seed. Practice saving seed. Get seed for target climate anticipated after the shift. Get bulk seed and get fresh periodically. SEE: food/tfood092.htm
20. **Gardening.** MINIMUM: simple gardening tools such as spade and hoe and poles. Describe simple gardening techniques such as cold frame for tender seedlings and mulching and fertilizing the soil and fencing against wildlife. SEE: food/tfood142.htm TIME AND MONEY: plant fruit and nut trees, herb gardens.
21. **Vitamin Sources:** MINIMUM: Get lots of Vitamin in pill form, a common item in stores. Vitamin C, especially. List common and relatively unknown sources in nature, such as Scurvy Grass, Sheep Sorel, Pine needle tips, Plantain, Squash for Vitamin C and A, fish for Vitamin D. VIDEO: Have still photos to go through quickly to show what these look like. TIME AND MONEY: books on wild edibles. VIDEO: hold up book covers to the video, so many on the market, should buy for their locale. SEE: food/tfood072.htm
22. **Fishing.** MINIMUM: fish hooks and line and rods and nets, cheap items to buy. TIME AND MONEY: Explain trolling. SEE: food/tfood282.htm NOTE: Gill nets are invaluable for fishing in a survival situation. They are small so can be carried easily and can be left unattended and checked later to retrieve the catch. A fishing spear

- can be fashioned from sticks to spear a fish. Video of ice fishing would be a good example.
23. **Sling Shot.** MINIMUM: Slings are very effective and children can catch small game this way. NOTE: Slingshots will also make very cheap and effective tools for hunting small game. They are inexpensive at most outdoor/camping places or big-box stores with sporting sections. No need to worry about running out of ammunition as there are always small rocks or stones and they are very portable. By attaching(or holding) a "y" stick to the slingshot grip, it could be used to launch arrows. Growing up, we used to make our own slingshots by using a portion of a branch (3/4" or larger) with a "y" in it. For the stretchy portion, we would cut a 3/4" or 1" strip about 12" or longer from an inner-tube.
 24. **Bow and Arrow.** MINIMUM: Bow and arrow can be made from natural materials. TIME AND MONEY: Purchase cross bow or bow and arrow and practice. Buy books explaining how to make bow and arrow and use them effectively. SEE: [food/tfood412.htm](http://www.m4040.com/Survival/Skills/Hunting%20and%20Snaring/Hunting%20and%20Snaring.htm) NOTE: Bow and arrow could be made. Osage is ideal for a bow, but ash, oak and others will also work but may now last as long. The string can be made from animal sinew or other cordage. Arrows can be made from cattail stalks.
 25. **Traps:** MINIMUM: Explain some trapping methods. SEE: <http://www.m4040.com/Survival/Skills/Hunting%20and%20Snaring/Hunting%20and%20Snaring.htm>. SEE: [food/tfood282.htm](http://www.m4040.com/Survival/Skills/Hunting%20and%20Snaring/Hunting%20and%20Snaring.htm) NOTE: How to make a deadfall trap with sticks and a heavy rock. Trapping birds with old cans by cutting the side of a can so a bird foot will be caught when stepped on. Using small cans buried with the tops even with ground level will catch small birds if some grain or other food is in it. If narrow and deep, the bird will be unable to escape because it can't fly or jump out. Throwing sticks, caveman throwing star or spear can be fashioned out of sharpen sticks to throw at small game and birds. Snares can be used to catch small game to something as large as a deer. Wire will work for small animal snares.
 26. **Butchering.** MINIMUM: Touch on the basics of how to begin will make it easier for those without experience. How and where to make the initial cuts on fish, chickens, rabbits, snakes, squirrels and deer may be good examples. Removing the guts first to prevent contamination of the meat on the carcass. Some tips on skinning so the hide can later be tanned. VIDEO: of deer hung up and being gutted or being skinned.
 27. **Tanning Hides.** MINIMUM: The brains of the animal are used for tanning the hide. Sinew should be saved. It can be used as thread and cordage to tie arrow heads to arrows, stones to handles etc and it has built in glue. NOTE: salting the hide initially (if salt is available) to remove the excess fluids from the hide. Then scrape the flesh off the inside. Soaking the hide makes it easier to remove the hair. After a hide is fleshed, it can be saved for tanning later. Mixing the brains of the animal in water and soaking the hide is the first step before working the hide to make it soft.
 28. **Land Fills for Material:** MINIMUM: Be aware that refined metals, old battery carbon arc cores, permanent magnets, lead plates, and other useful items are buried in land fills. After many years, toxins drain away, garbage rots, and the older land fills will be safe to dig around in.
 29. **Homemade Glue and Cement:** MINIMUM: as with soap, there are recipes. Natural Glue can be made from Milk, Blood, Fish Skin, Hides, Sinew, Resins, but these are not necessarily Water Proof. SEE: [shelter/tshlx016.htm](http://www.m4040.com/Survival/Skills/Hunting%20and%20Snaring/Hunting%20and%20Snaring.htm) and [shelter/tshlt212.htm](http://www.m4040.com/Survival/Skills/Hunting%20and%20Snaring/Hunting%20and%20Snaring.htm)
 30. **Rope and String.** MINIMUM: Stock up on lots of various kinds of rope and thread, including marine rope which is waterproof, common items at stores. EXAMPLES: Paracord or 550 Cord. You can pull the center cords out for fishline and for sewing. A roll about 1000' long costs around \$40. Bale twine is another good item to have. 9000 feet or twine should cost around \$35. VIDEO: quick scan of a row of such items. NOTE: Paracord for those who don't know, is the cord that attaches parachutes to their packs. It is thin enough to be useful for small tasks and strong enough for even very heavy work.
 31. **Making Rope in Nature:** MINIMUM: Mention that rope can be made from fibrous material in the Aftertime (see below). VIDEO: fibrous material being combed preparatory to braiding, then braiding. TIME AND MONEY: learn what fibrous materials make rope, how to locate them in nature or junk yards, and how to weave a rope. Try your hand at this to reduce the learning curve. A good website for information on making cordage from natural fiber is: <http://www.nativetech.org/cordage/> Some examples of natural sources for cordage are; basswood bark,cedar bark, dogbane stalks, and milkweed stalks. These examples and more can be found at the first website. When properly made this natural cordage can be extremely strong, and is not difficult to make.
 32. **Plastic Supplies.** MINIMUM: Plastic sheeting uses include shelter, a rain-proof roof, water gathering, and greenhouse construction. 5 gallon buckets are an inexpensive common item in stores. Always handy for storage and transporting things. Keeps food stuffs dry, the vermin and mold out, liquids from spilling. Tarps are a relatively inexpensive item. They can make a rain proof roof somewhere in the junk from a collapsed or blown

- apart home, or can make an emergency tent to keep the family out of the rain. Can be tied down with rope from the holes along the tarp. Drizzle will be around almost continuously during the first years after the pole shift. VIDEO: Pool of water forming in center of suspended sheeting. Quick scan of supplies in a pile or row. Edge of tarp being tied and tightened over some blown down trees, making an emergency rain-proof hut. Driving rain in this scene if possible.
33. **Soap Making: MINIMUM:** Buy a good stock of soap, Fels Naptha to wash away poison ivy to the mild kind for baby. Mention that soap can be using water drained through wood ashes then boiled with animal fat. VIDEO: quick scan of a row or such items. TIME AND MONEY: Ashes and water makes a crude basic lye solution. Mixed with animal fat can be used to make soap. Soap is alkaline water garnered from water drained through wood ashes. Make a V shaped catch per this web page image (below). Boil the alkaline water with animal fat until thick, then pour into a pan. After it hardens, brush off the white powder on the top as this is very alkaline. Don't touch this powder. Cut the pan into bars, wrap and store! This soap is harsh, not mild, but works. SEE shelter/tshlt05a.htm
34. **Vinegar Making.** MINIMUM: Vinegar is produced naturally from spore in the air. Vinegar has many uses, beyond a food stuff. Is a good cleaning compound. SEE: shelter/tshlt05s.htm and shelter/tshlt05t.htm
35. **Guns.** MIMIMUM. Dog packs and rats invading the survival camp may be a reality, as well as unwelcome visitors. Statistics, most shootings are by a family member, and this danger exists as insanity and rage will increase as a result of the pole shift. Keep guns safe. EXAMPLE: Pellet or BB guns for rats and hunting small game. 2 guns plus 5,000 pellets and 24,000 BBs cost around \$150. Good for marksmanship training and teaching safety.
36. **Books.** MINIMUM: Buy what you can afford on how-to books on such things as windmill and shelter construction and guides such as wild edibles. VIDEO: quick scan past lineup of examples. SEE: info/tinfo032.htm
37. **Book Preservation.** MINIMUM: keep dry during the shift and afterwards from rain and mold. Shrink wrap or seal in plastic if possible for the shift. Laminate key instruction guides such as First-Aid steps. Purchase water-proof notebooks, available from REI and other outfitters. VIDEO: scan of laminated First Aid charts. Many are already commercially available.
38. **Hand Tools.** MINIMUM: Purchase or secure at yard sales as many as affordable. Old barns and garages may have cross-cut saws and hand drills no longer available. VIDEO: Show examples. Hand drill and cross cut saw here at Nancy's. NOTE: Metal cutters can make scrap metal or cans into useful items. Plenty of nails and screws and nuts and bolts should be purchased. Hand garden trowels and shovels have a variety of uses, such as waste removal. SEE: shelter/tshlt182.htm NOTE: Knife, hammer, hatchet/ax, saw, pliers, hack saw and metal cutting snips should be on a minimum required list. A drawknife would also rank very high. Replacement handles can be made for many tools. Tools such as an ax, hammer or chisels can be easier to transport without bulky handles. A bit and brace (hand drill) can make holes in logs to allow pinning them together with smaller twigs or branches. Think timber framing and log cabins. Watching "Alone in the Wilderness" is great example for this and making a door hinge from wood. SEE <http://www.dickproenneke.com/> NOTE: Sharpening: Knives, hatchets, axes, drawknives, etc will need their cutting edges maintained. If available, one would use a whetstone of different grits to maintain the sharpness. For severely damaged edges, a file may be needed. Files are also great for keeping the edges of shovels moderately sharp. This reduces the energy needed when digging in hard soil. If a whetstone is not available, rocks or varying roughness can also be used. Saws will become dull and need to be sharpened with a triangle file. The teeth may also need adjusting. The best tool for this is a saw set, but could probably be done with a needle-nose pliers if you are careful not to damaged the cutting surface. See this link for sharpening details and how to set the teeth. <http://www.vintagesaws.com>
39. **Transportation.** MINIMUM: Keep you bike in good repair. Sturdy wagons will come in handy when having to migrate or transport the injured or very young or old. SEE: shelter/tshlt222.htm
40. **Wood Gas.** MINIMUM: Be aware that wood gas was used during WWII in Europe and Australia, to offset gas shortages. Existing cars can be outfitted to use. Download and print off the specs from the Troubled Times website. VIDEO: still shots of Oli's car in Finland, available from the Troubled Times website or get Olli to take fresh photos. Or go to a museum for an example, if possible. SEE: energy/tengy212.htm and energy/tengx046.gif
41. **Short Wave.** MINIMUM: Is the emergency operating frequency, around the worlds. Used by emergency management personnel when other radio goes out. Be aware that short wave can operate by bouncing off the ionosphere, or Moon bounce, not necessarily needing towers. TIME AND MONEY: Get a short wave radio, AARP manuals and training, and start using your unit. SEE: info/tinfo142.htm NOTE: To establish Radio

- communications use the basic agreed upon emergency calling frequencies to establish first contact. Each band has one primary calling frequency. Keep a list at hand with your equipment.
42. **Compass/Bearings.** MINIMUM: Compasses will be erratic after the pole shift, with a new magnetic North. Nevertheless, have a compass or several handy as a guide when traveling. SEE: info/tinfo172.htm for the many ways to keep your bearings with or without a compass. NOTE: A crude compass can be made from a steel sewing needle rubbed on one end of a magnet or laded in a north-south direction and gently taped with a rock for a while. A few drops of candle wax is then melted over the needle near the center. If enough wax has been added it will float in a small cup of water and work as a compass.
 43. **Bugfood.** MINIMUM: Cultures around the world eat bugs and grubs, as they are high in protein and fat. Fried or roasted, usually. They are often considered gourmet. SEE: food/tfood122.htm TIME AND MONEY: Collect recipes and don't be shy about trying them out!
 44. **Earthworm Food.** MINIMUM: Earthworms are 82% protein and have Omega3 oils, as ocean going fish do. Good for the heart. They eat vegetable trash and make soil as a byproduct. Can be raised indoors in compost bins. SEE: food/tfood042.htm TIME AND MONEY: Red wigglers are the worms of choice for domestic production, and can be purchased off the Internet. Get yours now!
 45. **Weeds as Food.** MINIMUM: Wild edibles are much under-rated. High in vitamins too. SEE: food/tfood172.htm TIME AND MONEY: Buy books on wild edibles in your locale.
 46. **Domestic Animals.** MINIMUM: Chickens eat bugs and give you eggs and chicken soup and only ask for a safe place to roost. Goats eat anything and give you milk, and will follow you anywhere. Sheep are docile and give you wool and milk for cheese also. Rabbits can be kept in a hutch, eat vegetable trash, and rabbit soup is great for young children. SEE: food/tfood162.htm and food/tfood192.htm and food/tfood222.htm and food/tfood202.htm
 47. **Shipping Containers.** MINIMUM: Sturdy enough to resist quakes and won't blow away. Can hold supplies before the shift. Can become a home afterwards. Can purchase for about \$2,000, moved to site. VIDEO: Shot of a container, on docks. SEE: shelter/tshlt172.htm
 48. **Houseboats.** MINIMUM: Houseboats can move along the waters edge as the waters rise, moving inland with the new coast. Used extensively in Asia or along coastlines worldwide. VIDEO: shot of houseboat living today.
 49. **Earthen Houses.** MINIMUM: Adobe, rammed Earth, cob housing all use dirt as the main ingredient. Best for dry climates else need to be water proofed on exterior. SEE: shelter/tshlt042.htm
 50. **Toilets.** MINIMUM: the old fashioned outhouse will return. Composting toilets make soil, but must be vented to get rid of the methane. SEE: shelter/tshlt072.htm VIDEO: Old fashioned outhouse (one here at Nancy's house).
 51. **Toilet Paper.** MINIMUM: soap and water and a wash rag when toilet paper runs out. Natural products such as Corn Cobs, Leaves, Moss, Moss Diapers, Pine. SEE: health/theal242.htm
 52. **First Aid.** MINIMUM. Get a kit. Learn CPR. Take a class, often offered for free. Books to be purchased cover many subjects, are designed for troops in the trenches, where severe injuries are experienced but no doctor is available. SEE: info/tinfo03c.htm
 53. **Herbal Meds.** MINIMUM. Get a book, so as to be aware of what herbs grow wild in your area and their application. Time honored before modern phrama available. SEE: health/theal052.htm

Troubled Times



Walking

Here's some information for all you hikers in the higher elevations - I thought I'd pass it on. It may be something to take into account for the "on foot" days some of us see in our futures. (The trails the writer refers to are at the Philmont Scout Ranch in Cimmaron, New Mexico. A Philmont hiking "Crew" consists of about 15 people)

Offered by [Laura](#).

For what it's worth, my "trail profiling" values are 1 hour for each 3 miles of trail, add 1 hour for each 1000 feet of elevation gain (uphill), and add 30 minutes for each 1000 feet of elevation LOSS (downhill). You have to do an actual trail profile in order to get accurate total elevation and total loss values. For most of my Crews, this has turned out to be reasonably accurate. By the way, any deviations for us usually reflect a Crew that is faster than the estimate; in my experience, it has been rare that a Crew was significantly slower than the estimate.

[Dr. Bob Klein](#)



Troubled Times



Family Classes

In order to prepare for the pole shift I feel some of the programs offered by Tom Brown are invaluable. Last year I went to his **Standard** and **Coyote** class (with my 9 year old). The information I obtained was incredible and will help me prepare for the future. My son had the most wonderful time in his life. Among a few things he did were making fire, building a debris hut and sleeping in it, getting a great experience with nature. This year my wife and I are planning to take a wild edibles course, pioneering class and one of the family camps.

Tracker School

E-mail: www.trackerschool.com

Phone: 908-479-4681

The Coyote camp for young children is worth weight in gold for parent and child.

Woods Wisdom

E-mail: www.woodswisdom.com

Phone: 717-352-8499

He offers a pioneering course where you spend a week in the woods with just basic out door gear.

Offered by [David](#).



Troubled Times



Be Alert

After taking some of the survival classes I have realized how inefficiently we use our senses. I came across this article in Tom Brown's **True Tracks** news letter and thought I would share it with the group. This was written by one of his instructors.

In the Standard class, Tom compares modern people's senses to someone who has been strapped into a hospital bed for 5 years. Due to lack of use, certain aspects of our senses have atrophied so much that we don't know what is possible. I'm starting to realize that with practice all of our senses can paint just as vivid a mental picture as our sight. One example of this is a blind man who, once a year, tunes my parents piano. The first time he walked into the house, he played one key on the piano and was able to tell what type of piano it was along with the year it was made. After tuning he said, "don't worry about that vibrating sound (which, by the way, no one else could hear), it's not from the piano, it's from the 3 picture frames you have hanging on that wall behind the piano". This man was able to see the room with his ears. If this is possible, just imagine what kind of picture a wolf can draw with its sense of smell. I've heard of people who have developed their sense of touch so strongly that they can read type off of a page as if it were Braille. So what do all these people have in common? Need and practice. Let's face it, in today's modern world our lives do not depend on using all of our senses to their limit.

Under a pole shift condition we will have the *need* to use all our senses efficiently if we want to survive. When I have been placed in very difficult situations, like the awareness class I took a month ago, I find my mind and body moving to a higher level to adapt to the environment. I believe we all have to realize that each one of us can survive under more difficult situations if we keep a positive outlook and learn to work with our minds and bodies so we can realize their full potential.

Offered by [David](#).



Troubled Times



Tips

This posting from alt.survival, by Noodle, is posted primarily to show the contrast between back packing in today's world, where shopping for granola bars and meeting fellows who are not desperate and starving, is the norm. Where good advice, it does not address the pole shift environment, which will be a different world.

Here are some tips that will keep you warm on that winter camping/survival night:

Make sure you have a sleeping bag that can handle the temperatures you are likely to encounter.

Always change out of the clothes you have been in all day ~ particularly your socks, which are damp with full-day's sweat. The moisture in the clothes will wick away your warmth if you don't bother to change.

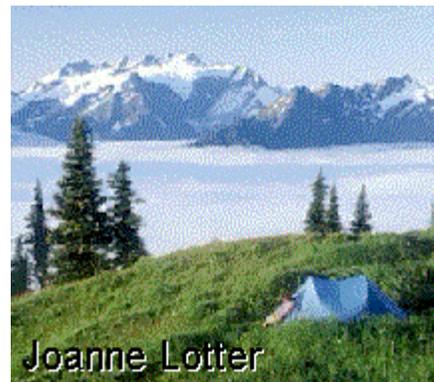
Get warm before you get into the sleeping bag. A warm drink or some exercise will help boost your body's internal temperature. Remember ~ a sleeping bag doesn't warm you, it just traps your heat, so the warmer you are before you enter the bag, the warmer you'll stay while inside.

Drink plenty of fluids and eat a little something, such as an energy bar, before climbing into your bag.

Wear a hat or balaclava to sleep.

Bring a water bottle to bed with hot water in it.

Always use a sleeping pad under your bag. Most of the year, a single three-quarters length pad will suffice, but for hard-core winter hikes, stacking two full-length pads is suggested.



If you wake up cold in the night, do some isometric (muscle-tensing) exercises in your sleeping bag to get your blood flowing and your temperature up.

Keep your nose and mouth out of the bag, because the air you exhale will dampen the inside of the bag, greatly reducing its insulating properties.

The key to warm feet isn't in your socks, at least not entirely. If your dogs are barking because they're frigid, try these toasty tricks.

Make sure your boots are big enough for you. If they're too small in the first place, you'll never improve the situation.

Properly waterproof your boots before you head out. Wet socks spell cold, pruny feet.

Layer, layer, layer: Wear a thin synthetic liner sock underneath a wool or synthetic hiking sock.

Put on a hat and gloves. Your body losing heat very quickly through the extremities, so by reducing the heat you lose from your head and hands will help keep your feet warmer.

Steer clear of alcohol and caffeine. Both dilate your blood vessels, making it harder to stay warm. Caffeine is also a diuretic (which means it'll make you pee more often) that will contribute to dehydration.

Drink fluids. A hot cup o' tea (herbal ~ remember, no caffeine) will warm you up, but the liquid will also rehydrate you ~ because dehydration impairs your ability to stay warm.

If your feet are wet and very cold and you have no replacement socks, then slide a plastic bag over your liner sock and put your hiking sock over the plastic bag. This very crudely simulates the effect of a Vapor Barrier Liner. Your feet will be wet, but warm.



Troubled Times



How to Pack

This posting from alt.survival, by Noodle, is posted to show the contrast between back packing in today's world, where shopping for granola bars and meeting fellows who are not desperate and starving, is the norm. Where good advice, it does not address the pole shift environment, which will be a different world.

How do I pack my backpack?

When packing a backpack, keep in mind weight distribution, comfort and organization. Most important is to keep weight evenly distributed from left to right. An off-kilter pack will throw your balance, your stride ~ and eventually your spine ~ out of whack.

When hiking on well-established trails, pack your heaviest gear at the top of the pack and close to your back. This centers the weight high over your body where it's easier to carry on easy terrain.

On rugged trails, pack heavy gear lower in the pack to lower your center of gravity and improve your balance for tricky sections.

Women have a naturally lower center of gravity, so shift weightier items a little lower in the pack.

Pack hard or sharp items, including cookset and tent stakes, toward the front of your pack (away from your back). Put softer gear like clothes next to your back for a more comfortable feel. Don't pad too much, though ~ remember, you want the heaviest items as close to your back as possible.

Keep rain gear, water bottle, camera, trail snack and other quick-access items at the top of the pack or in a side pocket.

For an especially well-organized pack, make or buy stuff-sacks in a variety of colors. Always keep certain items in a particular color of bag ~ toiletries in green and socks in blue, for example ~ to make it easier to find what you're looking for without tearing your pack apart.

If you anticipate a stream crossing or particularly wet weather, use stuff-sacks that are waterproof. That way, even if water gets into your pack, all of your gear won't get soaked.

The 3 primary reasons a person does not survive in a survival situation. The order in which you do things in a survival situation is most important. First is shelter, then water, then fire, and food. So it stands to reason that most people perish in a survival situation from lack of shelter. More people will die of exposure in a survival situation than from any other means, other than injury. Remember that exposure is not only to cold, but also to heat. Injury is another problem in survival. When in a survival situation one must become overcautious. A slight injury, like a cut hand, which would only be an inconvenience in civilization, could be a cause of death in the wilderness. Water, or lack thereof, is another cause of death. Either the person can not find water or drinks bad water. So, injury, lack of shelter, and lack of water are the three biggest killers in a survival situation.



Troubled Times



Stuff Needed

This posting from alt.survival, by Noodle, is posted to show the contrast between back packing in today's world, where shopping for granola bars and meeting fellows who are not desperate and starving, is the norm. Where good advice, it does not address the pole shift environment, which will be a different world.

What stuff do I need in order to go backpacking?

A backpacker's basic gear includes a backpack, hiking boots, sleeping bag, tent and a cookstove. Each item should be selected based on what type of hiking you plan to do and what time of year you will be hiking. The following overview will help you narrow the seemingly endless choices on the market:

Mandatory items:

Backpack ~ The major decision you should face here is whether you want an internal or external frame pack. External frame packs are great for big loads and established trails. Internal frame packs excel for bushwhacking and high-motion sports like mountaineering or cross-country skiing.

Hiking boots ~ Select your boots based on the terrain you will hike on and the loads you expect to carry. With tougher terrain and heavier loads, you will need a beefier boot to protect your feet. Wear high-cut boots for anything longer than a day hike, because low-cut boots are strictly for light loads on established trail. The most important thing in buying boots is to get a good fit, with a snug fit at the heel and toe wiggling room in front. A knowledgeable boot fitter can help with fit.

Sleeping bag ~ For most 3-season use, a sleeping bag with a temperature rating of around 20 degrees F is the best choice. Winter campers will need a bag from -10 degrees F to 0 degrees F, while a 40 degrees F bag will work for strictly summer use. When shopping for a sleeping bag, try it on by sliding into the bag in the store to ensure a comfortable fit.

Tent ~ While some trails offer shelters (and some nights are perfect for sleeping out under the stars), carrying a tent (or tarp) is necessary insurance against crowded lean-tos, wild weather and bugs. If you want to bring your gear inside for the night, you'll need a 2-person tent for a solo hiker or a 3-person tent for two hikers.

Stove ~ While some folks don't mind munching granola, raisins and crackers their entire trip, most people want at least one hot meal a day. And a stove is absolutely essential in cold weather. Campfires can be used to cook meals, but they are time-consuming, dirty, and create an unfriendly impact on the backcountry environment. Essential

Food ~ Along with the meals you've planned for your trip, carry along a few extra snacks that can be consumed in case of an emergency. Chocolate, bouillon cubes, energy bars, dried fruit and nuts are among the ideal non-perishable foods that you can keep in your pack.

Water containers ~ A liter bottle or two to hold drinking water and a collapsible jug or sack for cooking-and-cleaning water will suffice for most trips.

Water purifier ~ As romantic as it sounds to drink straight from a stream like Bambi, you're playing Russian Roulette with nasty intestinal bugs like giardia. Always carry some method of water purification, such as iodine tablets or a water filter.

First aid kit ~ Accidents happen. Pack a small waterproof kit with such things as plastic bandages, antibiotic ointment, gauze tape, moleskin, a painkiller (aspirin), prescription medicines and a first aid guide.

Pocket knife ~ The Swiss Army had a great idea. Carry a knife with multiple blades and gadgets ~ including a can opener and tweezers, both of which come in handy in any number of situations.

Map and compass You may not be bushwhacking across the wilderness, but you should always know where you are and how to get back.

Sun protection ~ This includes sunscreen and sunglasses, especially important at higher altitudes. Both should block UVA and UVB rays.

Insect repellent ~ A DEET-based repellent at approximately 35 percent DEET seems to work the best at holding off pesky mosquitoes, black flies, and other no-see-ums. Apply it to your clothing, too (though not nylon, which melts in contact with the chemical) in especially infested areas.

Matches/firestarter ~ You can buy waterproof matches, but store them in a waterproof container anyway (such as a zipper lock plastic bag) just in case. A chemical firestarter (solid or gel) is great insurance for soggy days.

Cooking supplies ~ A cup (plastic or metal), nesting cook pots, and a spoon are the bare essentials for cooking on the trail. If you're hiking with other people, add a bowl or plate per person, unless you're all comfortable dipping out of the same pot. Finally, carry a scouring pad in a zipper-lock plastic bag.

Toilet paper and trowel ~ When you gotta go, you gotta go. Remove the cardboard from the center of the roll so that the paper will flatten better and carry it in a plastic bag. Use the trowel to dig yourself a cat hole. You may want to carry it in a separate plastic bag. Learn how to do your business in the woods with as little muss and fuss as possible.

Clothing ~ Even nude hikers need to cover up now and then. Other than apparel appropriate to the season, always carry something extra in case the temperature drops. This "extra" should consist of a synthetic base layer for top and bottom, topped off with a breathable/waterproof shell for top and bottom. Also have on hand an extra pair of liner socks and trail socks, and a wool or synthetic hat. For the cooler temperatures of early spring or fall, you'll also need a synthetic insulating layer for top and bottom.

Flashlight ~ A small, sturdy waterproof flashlight with long-lasting alkaline batteries is all you need for general usage. For reading or journal writing after nightfall, you might want to invest in a low-power head-mounted lamp.

Gear repair kit ~ Just as human injuries are bound to happen, so are injuries to your gear. A travel-size sewing kit with several sturdy needles, heavy threads and replacement buttons, a tent repair kit, a stove repair kit and with your Swiss Army knife will handle most repair emergencies.

Bandanna and whistle ~ A bandanna is a multi-use accessory for everything from straining water to keeping the sweat from dripping into your eyes to cooling your neck on a hot day. A whistle is especially good for children who have a tendency to wander off trail. Every child should carry one.



Troubled Times



Contrast

The series of forwards from alt.survival are all very good and can be found in any good backpacking book. The posts, though, seem to me to be quite inappropriate for a forum like alt.survival. The best appropriate information of this nature that I have ever seen was in a 4 week course taught by the **Fish and Game Commission** in New Hampshire, completion of which was a necessary condition to obtain a hunting license. The reason for this mandatory course was the number of lives lost each year during hunting season in the state, because of hunters getting lost.

The focus of the course dealt first with panic, then things one should always have on their body should one get lost. Absolutely everything included on the "survival pack" would fit into a common pocket plastic first aid kit case measuring about 4x6 inches. A few of the things which are included related to being rescued if lost or disabled under today's conditions, and thus could be replaced by items more appropriate to a post pole shift scenario. This is the sort of thing I would expect to see on alt.survival.

The second thing that I feel is absolutely necessary to keep foremost in one's mind about the advice offered by these posts is that they really aren't talking about a survival situation at all; but a normal hiking trip in the context of *today*. In many places they simply aren't applicable when talking about travel post pole shift. An example is the emphasis they place on a camping stove - where are you going to get the fuel? Another thing you will find in all hiking or backpacking books is a very liberal spicing of "don't disturb Mother Nature". That's very important for a recreational hike *today*; but post pole shift, Mother Nature isn't going to even notice you as she will be in the midst of a nervous breakdown!

Offered by [Ron](#).



Troubled Times



Minimum

If you were to prepare a basic survival backpack to use for after the pole shift what would it minimally contain? List the contents in priority order, so that those who can't carry as much weight can cut from the bottom of the list. Indicate how to use the items. Most of us have been raised in the city and need much information on basic survival. The purpose for the pack may be anything from wandering primitive survival to hunting food, scrounging, or visiting a distant neighbor. I think many of us not only need the education on what is important to take, but we need to prepare this backpack well before the pole shift. It goes without saying - it is desirable to minimize the weight carried. In the old west days some of the hearty pioneers use to brag that they made it across the united states with little more than a frying pan and a blanket. Seems like with a bit of pre-planning, we could be a bit smarter today.

Offered by [Mike](#).

This is a question I have been working on for a long time and continuously revise. I have not listed items in priority order as I am assuming a trip of more than 1 day and all items are considered essential. I deal with the weight problem by limiting the ability to carry an extremely heavy load. In addition, the pack contents are only a part of the overall strategy. Before getting to it's contents I'll say something about the backpack itself. The style I chose is a small mountaineering pack that includes a very good hip belt which eases the load on the shoulders tremendously letting the hips carry some of the weight. The color is important, and my choice is as close to brown/black as I can get - no bright colors. The pack should have straps on the outside for attaching bulky items which include:

1. Kayaking "wet bag" into which goes one or more wool blankets, depending on the weather, how cold it is. A change of clothes preferably limited to underwear and socks - one could even go without underwear as it is sure to get wet, and carry extra pairs of socks. (In the jungles of Viet Nam where one was always wet, the only clothing provided along with re-supply food was socks). All outer clothing should be wool which will drain water and remain warm even when wet. Often overlooked in this regard is a quality man's winter wool suit, including jacket. In cold weather wear two or even three, one over the other. Note: I would not carry a sleeping bag as the probability is very high that it will get wet at some point or another. In an almost constant or very frequent rain environment you need something that will keep you just as warm when wet as when dry and can also be dried when hung under the tarp in front of a fire. Wool blankets can be dried this way, while a sleeping bag most likely could not. *Never* wear cotton as it retains water next to the body.
2. Rolled 8'x12' lightweight tarp with camouflage color for shelter from the rain.
3. "Home" ax. This type of ax is about 2/3 the length and weight of a full size ax. Forget a silly "hatchet" as it will work you to death and get little done and is virtually useless for "splitting" fire wood. One could add a small folding camp saw if desired. The ax is the heaviest single item except for water. However, it is one of the very most important. After a long day of walking with a pack there is very little strength left to build that most important camp fire. The ability to cut, and more importantly, split wood (it's dry inside) is paramount.
4. Well seasoned wok for cooking and boiling water. The Chinese wok is the single most versatile cooking device I have ever used and is relatively light weight. Carry a spoon and eat directly from the wok.

The inside of the pack is very much dependent upon the purpose and length of the trip. If traveling to a site that is frequented (such as another community or scrounging area) the key to such travel is to establish a "cache" for each day of the trip. The cache should contain good water and food for two days walk (one for going and one for returning), along with an entire replacement backpack all "stocked". These precautions will aid you in the event your backpack is stolen or taken by force. Consider a permanent water still for each cache so that before leaving the water supply can be replenished. Once a trip is made, additional trips must be made to each of the caches to replenish them.

The inside of the pack is for water and food including a small container of cooking oil, fire starter and dry tender, first aid, cording (heavy string and small rope), 1 pound of salt for trading; with enough room left to bring back whatever you're making the trip for (for instance a car generator which implies tools to remove the generator).

On your person carry a large knife and a small utility knife, like the Swiss Army Knife. Include your compass and any map.

The basic principals are:

1. choose a pack that is small so it can't be made too heavy and is easier to travel with
2. establish and maintain enough caches to replenish supplies, especially water and dry tender
3. wear clothing and use sleeping gear that will retain warmth when wet
4. everything that some one could see should be camouflaged to the extent possible
5. reserve enough space inside the pack for the purpose of the trip

Offered by [Ron](#).



Troubled Times



What to Carry

Carry inside the pack a high quality "meat cleaver". Carry a means to keep it extremely sharp, such as a fine 2 X 4 inch "Arkansas stone", as this is key to its effectiveness. You will find that you use this single device almost constantly for all sorts of chores. This item has served the Orientals for thousands of years in some of the following ways:

1. weapon
2. hatchet or ax ... you won't likely be chopping any huge trees, but very small ones. It is sturdy enough so that it can be hit on top with a 2 or 3 inch diameter section of tree limb so can be used to split relatively small sections of wood. It can be most easily used to "chop" small slivers of wood from the outside, working your way to the dry inside to produce dry tinder for starting a fire. It is also an excellent kitchen implement second only to the wok.
3. it makes an excellent wood working tool in the form of a "draw knife"

Carry in your backpack a good pair of pliers or "vice grips" which will have many uses.

Carry in your backpack heavy duty sheet metal shears.

Carry in your backpack two spools of wire. One should be of the variety with which one hangs pictures. The second should be # 14 solid brass (which is difficult to find, but is available usually in hobby shops. You will need about 100 feet of the twisted steel kind and no more than 25 feet of the brass. These are for building and setting snares for small game.

Carry your wool or synthetic wool blankets (forget the sleeping bag) wrapped in several layers of heavy black garbage sacks with the ends tied, one inside the other. Pre pole shift, strap to the top of your pack, post pole shift strap to the bottom of your pack, due to rain.

Pre pole shift, strap your poncho and tarp rolled as tightly as possible to the back of your pack. Post pole shift you are likely to be wearing the poncho most of the time.

Pre pole shift carry whatever money you have hidden as best your ingenuity can provide. Just prior to the pole shift and post pole shift carry as much *salt* in the bottom of your pack as you can fit. A tiny portion of this salt will be for your own use; its primary purpose is for barter starting a few weeks post pole shift. Salt is a barter item that will be overlooked in the immediate aftermath looting and you have a good chance of finding it. Don't overlook "ice cream salt". Carry in sturdy small zip lock bags. Salt will be an excellent barter item post pole shift because food, "eaten off the land" is extremely bland. This includes both vegetables and insects. The cave man used ashes from his fire to enhance the flavor of his food. Carry a very small packet of salt in the top of your pack with the rest at the bottom. Think of your salt as gold dust and strike a hard bargain.

Pre pole shift, cover your wok in a dark heavy cloth bag. Post pole shift it is likely to be covered by your poncho.

The next item to be strapped to your pack should be a military surplus "entrenching tool", that is, a small shovel. Do not buy one from some place like KMart as my experience with them is that they break one way or another within a very short while. Its purpose is to dig your shelter trench to ride out the pole shift. Why does the soldier always carry an entrenching tool on his pack? Because the military has long learned the extreme effectiveness of a 3 foot deep "fox hole" when artillery shells are exploding only yards away.

The last item to be strapped to the pack is your water distillation "kit" in a heavy dark cloth bag. I've been working on a portable, practical design that can be constructed for only a few dollars before the pole shift and a similar version built from scavenged material post pole shift. Without going into the design here, it is constructed from two 1 gallon "paint" cans and a few feet of copper tubing. When empty, as when traveling, it is very light and apparently of no real value. It can, however distill water a gallon at a time using your campfire and available water from any source.

Inside your pack include a large supply of zip lock plastic bags.

Inside your pack include a book or two on edible wild plants, look for especially good descriptions and pictures of mushrooms and mosses and shade loving plants. This can be particularly life saving. For example, at the Troubled Times, Inc. headquarters, there is a large continuously flooded area thickly grown to face height with various plants. Practically anywhere in this area, if one parts the tall plants, down in the deep shade one will find a plant every boy scout knows about, commonly called "arrowhead". This plant has a large tuber underground. When cleaned and cooked this tuber can hardly be distinguished from potato and is very nourishing, providing much needed carbohydrates. I expect an abundance of these along with mushrooms in the aftertime.

Offered by [Ron](#).

For space constraints a [Pocket Saw](#) for cutting wood is a necessity. Compact but very useful. Also for fire, a [Flint Style](#) fire starter is very durable and long lasting.

Offered by [Steve](#).



Troubled Times



Boots

The very best boots I have ever used (I even spent \$800 on a pair), and even wear today while working in the woods, are surplus Army boots. Can anyone even imagine the research that has gone into footwear for the infantry? Of value post pole shift would be the "jungle boots" issued in Viet Nam, although they are not nearly as heavy and sturdy as normal infantry boots, so you would need to stockpile more of them. Actually, I'm rather torn as to whether to recommend them or not, as they provide only a fraction of the support of the normal boot, and wouldn't be of any additional value if the rain were continuous.

Offered by [Ron](#).



Troubled Times

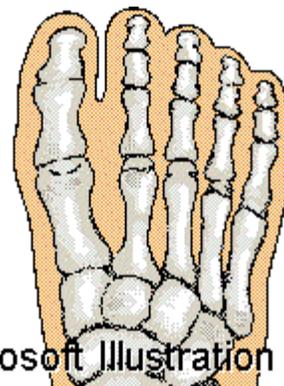


Feet

Socks are extremely important. You need to wear two kinds. First, against the skin, you need a synthetic "wicking" sock (ask for it at a sporting goods store or contact Eastern Mountain Sports). Over that wear a heavy wool sock. I know of no synthetic substitute. More important than *any* other item of clothing, carry at least one extra pair of these two socks. Two pair is even better.

Pour a box of regular cooking corn starch into a zip lock bag and include in your pack to use as foot powder, and powder all over when changing into dry cloths. This works much better than even commercial "corn starch" powder. Whether in wet weather or dry, change your socks at least twice a day. Attach the ones you just replaced to your pack to dry and air out, even if they only "drain".

Pamper your feet and be aware of any problem that develops and attend to it as quickly as possible. The first few days of walking, cut your walking time by as much as half of what you think you can do. Give your feet a chance to adjust. If you aren't used to hiking with your pack, be sure to include a couple packages of "mole skins" from the drug store and apply immediately to any area where your feet feel "tender" or start to blister. Army boots are much less inclined to cause this sort of problem than even the most expensive "hiking boots", in my experience.



Microsoft Illustration

Offered by [Ron](#).



Troubled Times



Balance

Woods will not be standing, and one will have to be making one's way through downed trees and rubble in the rain. Here, one needs the center of gravity as low as possible and also needs absolutely free use of arms and shoulders. The normal back pack, whether internal or external frame is simply too big and one must pack gear too high to maintain a low enough center of gravity. One thing that was also not mentioned in the alt.survival posts, that I consider absolutely essential for post pole shift travel/survival is a hiking staff. I can't number the times I would have stumbled, most likely causing injury, had I not had that "third leg" to catch myself or stabilize myself on tricky footing. Luckily, one can obtain a suitable hiking staff anywhere along the way.

Offered by [Ron](#).



Troubled Times



Appearance

By far, the most important thing to consider, especially post pole shift, is to avoid "standing out from the crowd". By that, I mean that nothing about you or what you are carrying should look like you have in your possession something that someone else might want. The reason is obvious. At best, it's the quickest way to loose what you have, and at worst, the quickest way to get killed.

- That translates into a few specifics that help you to appear of no particular value. Avoid anything that looks new and fancy including your clothes and backpack:
- Wear a wool business suit if a man or woman (pants suit). The color should be dark and it should be dirty. This also gives the impression that you are *not* the outdoorsman/woman and probably have nothing in your possession but another suit and shoes.
- Wear surplus army boots, man or woman, which should be in as good a shape as possible but make a point of taking the shine off by both lightly abrading them, stepping in mud so they are dirty, and covering the top part with your pant legs.
- Use a "mountaineering back pack". It should be of the highest quality you can buy, but make it look old by dirtying it. In this context it has the added advantage that its small carrying capacity will not look appealing because people will be considering the largest capacity backpack to be what is most valuable.
- If you choose to carry a firearm, made sure that it cannot be seen. Walk with a heavy "staff" and learn to use it. It is one of the most effective weapons for "close in" fighting that exists in capable hands and is effective against any other "close in" weapon except a firearm.

Offered by [Ron](#).



Troubled Times



Night Light

For a red flashlight use a high brightness red LED and a 22 ohm to 44 ohm or higher 1/4 watt resistor in series with 2 Alkaline Energizer D cells. The LED and resistor can be purchased from Radio Shack. Use a jumbo Super-bright Red LED Cat. No. 276-066 (5000 mcd) or Orange Cat. No. 276-206. (12000 mcd). This combination would give about 1.5 to 3 months of 24 hr/day on-time of useful light. Variation on useful light would come from which resistor was used, the original age of the cells and what level of light is still considered useful. The amount of useful light goes down almost linearly with time.

Some times LED task lights are called head lamps, because they are worn on the head. If you were to take one of the LED's below, say the Orange Cat. No. 276-206 (\$3.99) or Red Cat. No. 276-086 (\$2.49) and attach it to a hat or headband so that it would point to the most useful forward, slightly down, direction, then run a thin flexible wire down to a 2 D cell battery holder Cat. No. 270-386 (\$1.59). Add a push button switch cat. no. 275-617 (\$1.89) in series. Use black electrical tape and attach the battery holder and the switch and the 22 ohm resistor to your belt or a separate belt. Wire all components in series.

The result is a task light that takes no hands to point and which will give about 3 years of useful light if one averages about one hour/day of use. If one uses less time the life goes up proportionally. Could be used in your shelter to repair or inspect dark areas or for backpacking on foot. Could keep one from stepping where one shouldn't at night. This concept of using LED's in a head lamp will sooner or later be sold as a commercial product. Right now I know of no such product you will need to make it. Of course one would look like a red eyed Cyclops monster to some. Other color LED's are also available if one likes yellow, green, blue or white instead. Most other colors do not put out as much light as the orange one. Total cost to make this is about \$8 not including battery and wire. A good science project for your kids to make between now and the pole shift time.

Offered by [Mike](#).



Troubled Times



Poncho

Another thing that I forgot to mention is rain gear. In normal hiking rain gear is a "just in case" item. Post pole shift, it is an essential and most important item. I know of nothing now manufactured that I would consider adequate. My personal plan is to make my own. It will be patterned after the common "poncho" but will be much more durable and also longer. I plan to make it from common fiberglass reinforced "tarp" material so as to stand up to the abuse it would take hiking through post pole shift terrain. It will be a couple feet longer, even reach the top of my boots as a "normal poncho" only reaches about my knees so below that gets a soaking.

Particular attention will be paid to two areas. The first being to add a "pocket" to allow the back pack to remain under the poncho without the back of the poncho riding up higher than the front. The second area of attention is the "hood". It will include a closed area for the neck fitted so that it covers the entire neck and chin area with a "cinch" to draw it tight against the exposed eyes, nose and mouth. Such a poncho can actually be used as shelter for the night in a soaking down pour, by just sitting and leaning against some support, drawing the boots up under the long poncho length provided.

Offered by [Ron](#).



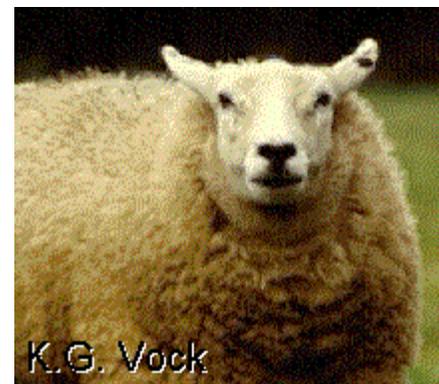
Troubled Times



Wool

I place tremendous emphasis on "wool". Today one can get wonderful clothes and even blankets (I have them myself) that are made of synthetic materials that have all the good properties of wool (stay warm even when wet) without the drawbacks (feel "scratchy"). In fact I have two *wonderful* blankets of this material that are softer than anything I've ever felt. I have a set of "long john" underwear made of a synthetic that actually wicks moisture away from the body to the outer clothing where it can either dry or drain. *However*, unless one can spend well over \$1000 just for clothing to last 20 or more years of hiking, wool can always be scrounged or is already in your home, and may even be produced in the settlement.

Offered by [Ron](#).



Troubled Times



Synthetics

I have found some of the cheaper sleeping bags to be made without cotton. They are made with nylon with polyester fill or some times other synthetic non-water absorbable fiber. They are extremely light and cheap. Typically, they have a list price of \$20/each. The ones I found were on sale for \$10/each and weighed 3.2 lb. If you are in extremely cold area you may need two of these sleeping bags, one inside the other. I too believe cotton is not appropriate after the pole shift. Never drying out, it will rot off your back so to speak.

I believe wool to be an excellent choice if available and you can afford or find it. I believe wool to be a bit heavy in weight dry or wet. I consider the synthetics to have an advantage in this regard. The durability of wool I expect to be less than for the same thickness of synthetic cloth. This could be argued based on the fact that most synthetics are much thinner than wool. I have found garage sales to be a cheap source of synthetic material (not cotton) and wool items. If the price is right one may buy it for the material or in case it might fit another at a later time. So size and looks are not that important when shopping in this way. Just look for anything non-cotton at a low price.



Offered by [Mike](#).

My experience with *any* form of sleeping bag, including a \$300 one I had which was supposed to dry rapidly and retain heat when wet, simply take too long to drain and to dry. This is especially so in humid weather where the sleeping bag is hung under a tarp with a campfire to help it dry. On the other hand, I have two synthetic wool blankets that drain just as fast as wool, retain warmth when wet like wool, and will dry under a tarp in very humid weather from the heat of a camp fire. I've spent an awful lot of money on various sleeping bags and have never found one that is as reliable as 2 or 3 wool or appropriate (expensive) synthetics. This experience comes from extensive kayak touring where everything somehow gets wet one way or another no matter what precautions are taken. There is nothing worse than a soaking sleeping bag. They just don't drain like a blanket can.

Not just any synthetic will do, however. The best that I have used came from Eastern Mountain Sports and have all the advantages of wool without it's disadvantages. The problem here is cost. A light blanket of this material costs about \$60, where as you can buy the same size wool blanket from an army surplus store for \$15 or less.

Offered by [Ron](#).



Troubled Times



Fire Retarding

During WWII a lot of lifepreservers for the Navy were made from cattail fluff - the stuff that dries out on the end of the stem. The fluff is very water repellent and makes a very warm vest or blanket filler, but is not as light as goose down which is also good in cold weather. If used over wool, even when wet, it is very light but not as flammable as the synthetics. Most synthetics contain and give off very deadly gases if burnt, also. Please remember that nearly all synthetic wools, polyesters, etc. will melt or burn extremely easily, especially near an open fire. If they are on your body in 200 degrees F. or more they can cause a severe body burn. I've seen it many times as a professional firefighter or even by the regular campfire with novices, as most survivors will be. Please consider these factors before recommending any synthetic fabrics, especially for children. Most inexperienced people are very careless around candles and campfires and pant legs, shirt-tails, etc. can ignite very quickly if synthetic.

Offered by [Woodie](#).

I think your warning would apply to almost all types of fabric whether natural or synthetic being close to fire. Cotton would certainly burn. Remember most clothing will be wet from the day. Fires will not be often made. It will take much effort to make them by chopping wood to find a dry center chunk. Many times it will not be worth the trouble. However, your warning about fire in general as being dangerous is appropriate. As far as using synthetics or not, I think the advantage of water draining out quickly that synthetics and wool offer along with the rot resistance more than outweighs the dangers associated with fire. One should always be prepared in case of fire. Have some water or a wet rag around in case of hot fire spitting out on a person. Another way would be to have a screen covering around the fire to stop this sort of spitting. As best I can recall fire fighters use a type of synthetic material that resists fire. Possibly we could consider this for some of the personnel that would be close to fires, whether these be children or grown ups.

Offered by [Mike](#).

Have you considered kapok? I don't know the Latin name for this silky fiber and it came from a ceiba tree, the fiber (kapok) cloth from the seeds of this tree. In the olden days, kapok was used for life jackets, but since it is too expensive in comparison with foam rubber it is no longer in use for life jackets. Kapok is non flammable, and waterproof and also very buoyant. When I was a kid we tried to roll this fiber with a piece of paper and tried to light it like a cigarette and to smoke it, but it didn't matter how we tried to burn it, the kapok would never burn, to some extent it became black and that was it. In Southeast Asia this kapok is still being used as a filling for mattresses and it is also used to fill sleeping bags, because of its properties - non-flammable and waterproof. I believe kapok is much better than synthetic or wool, if we still can get it. I am not too sure if one still can get it here in North America or Europe.

Offered by [Tian](#).



Troubled Times



Pre Pole Shift

Travel pre pole shift:

- In the last few months many countries may be under a state of martial law and travel restricted. This could happen sooner than later depending upon the state of civil unrest due to crop shortages and hunger.
- If you must travel from an unsafe area , such as a city or coast or geologically active location, when travel is restricted.
- Travel at night whenever possible.
- Pad everything on your body so as to make no sound, such as the things strapped to your pack.
- Even at night, be camouflaged in either camouflage clothing or dark clothing. Be sure to include your pack and exposed areas of skin. You can use ground charcoal mixed into a paste to break up the outlines of face, etc. It works particularly well when mixed with a grease base such as Vaseline or even motor oil.
- If you must use a flashlight, use a red lens so your night vision isn't blinded, and use for only a couple seconds at a time.
- Travel slowly and away from roads if possible. Never show yourself to the military and preferably anyone else.
- You should only use a campfire in deep woods and only at night. During this period a small backpack stove would be most useful.
- Carry a set of every day clothes so you can sneak into town under the cover of darkness and just "be there" during the day when you must purchase food, etc.
- If you smoke, try to stop ... eventually you won't be able to get tobacco anyway; else only do so during the day. If you must at night realize that a cigarette tip can be seen from a couple of miles at night in the countryside.
- If travel is unrestricted, simply get to where you are going as quickly as possible, with as many supplies as can be carried. Then find a place to cache your supplies.

Offered by [Ron](#).



Troubled Times



Post Pole Shift

Post Pole Shift:

- Stay well away from the main streams of people-flow. That implies roads.
- When intending to approach people, for a good while stay hidden. Look at the group dynamics. Is there a leader who intimidates the rest with a firearm? Do the same when you wish to approach an encampment or community. Do they shoot people on sight? Be on your guard at all times.
- Take your time and conserve your strength. Living "off the land" requires at least half the day in looking for and gathering food. Be extremely careful of your footing, especially in rocks and in the woods, where most trees will be laying on the ground and slippery from the rain and mud. Be sure you have a "third leg" in the form of a staff or "walking stick". It only takes one slip to produce a compound fracture, immobilizing you and opening the skin to infection. Your chances for survival have been cut many fold.
- Be prepared to eat insects. Do this *before* your life depends upon it. You accomplish two things in practicing this *before* the pole shift. You get over the psychological element (for the most part), which in your confused, depressed, and hopeless state of mind post pole shift could "out shout" your logical mind and prevent you from taking the only nourishment available. The second thing is that you allow your body to gradually build defenses to the various pathogens you may encounter. Do this while there are still medical services available, should you encounter something particularly virile. Use your wok when possible to cook insects that appear particularly non-palatable or may contain virile pathogens. In general, earth worms when purged can be safely eaten raw, as well as such things as grass hoppers or locusts. (Grass hoppers and locusts taste like eating a blade of grass of a leaf. The only thing that personally bothers me is legs caught in my teeth, so I just pull off the legs and wings). As time goes on and you must depend upon grubs, particularly for their fat, cooking helps both psychologically and from a health standpoint. If you coat them with pounded arrow head root and steam, they are very good and you haven't lost any of the precious fat.
- Frequently set up a camp site in an unlikely to be found location. Plan on spending a week or so there. Rest, set snares, explore the immediate surroundings, sing even when you don't want to. Take time to cry, grieve for what is lost. Give yourself some time to start adjusting. Make your campsite particularly comfortable and especially dry with your large tarp. Clean yourself and your clothes and give everything a chance to dry out. This is particularly important psychologically, as one is able to experience having survived, enduring the harsh and exhausting travel and eventually being able to feel better, more comfortable, and *in control*. Practice making a bow and arrows using the meat cleaver as a draw knife. Small items of sheet metal found along the way can be cut into arrow heads using your metal shears. Dig small roots, some of which are like cable inside to use for cording. Make and practice using a sling, etc.
- Keep in mind that with every day that passes, the danger from other groups of people desperate for what little you have decreases. Within a couple of months there will be very few that have survived. Of those who have survived to this point, be particularly careful as they have most likely survived by cannibalism.

Offered by [Ron](#).



Troubled Times



Surviving

Surviving the pole shift:

- Start looking for your pole shift survival location as soon as the final signs start. I'm making the assumption that you left an "un-safe" location so you are now in a "safe" location.
- Choose a site that meets as many of the criteria that are already stated within Troubled Times as possible.
- Be sure you are not in or very close to woods
- Find an automobile and using your pliers or vice-grips, remove the engine hood and move it to your site, preferably under the cover of darkness.
- Using your entrenching tool, dig into the earth a minimum of 4 feet in an area large enough to protect yourself and pack.
- Cover the entire thing with the auto hood.
- Use your ingenuity to secure the hood to the ground, given the particular circumstances of your location. Cover the hood with as much dirt and turf as possible, creating a small "hill".
- Ride out the pole shift inside your trench.
- If possible, do not roam very far as long as there is the likelihood of fire storms during the hour of the shift.

Offered by [Ron](#).

A hood of a car is an ingenious cover for a trench. I consider any cover for a hole or trench a challenge to tie or anchor down. I think the chances of it blowing away to be great. A lot would depend on what is shielding the wind on all sides. I think even then there is a great chance of it being sucked up when the pressure drops suddenly as the eye of a hurricane goes over head. If the pressure drops 5-10 lb/sq. inch (it may be greater than this I am not sure at this time) this would translate to 72 to 144 lb./sq. ft (for every sq. ft of internal area) internal force trying to lift it up. This I think would suck almost any covering up into the sky no matter how well it is secured. If one had a way to rapidly relieve the pressure without letting in the high winds then this approach may work better.

If one plans to use this approach. I recommend wearing a heavy duty padded jacket and clothing along with a helmet and visor. If the roof blows off and you can still hold on and stay in the hole you will undoubtedly get pelted with rocks and sand blasted with small particles of dirt. If you are lucky a tree tumbling along or a big rock being blown along the surface of the earth will not flatten or puncture you or your car hood cover. I consider the "cover a ditch" approach to be highly risky. I haven't been able to lower the risk much, so haven't posted anything on it in the past.

Offered by [Mike](#).



Troubled Times



Starting a Fire

When traveling on foot and with wet clothes from either rain or sweat, it is most important to try to make camp early and build a fire. It will greatly help one's psyche, not to mention greatly helping to provide dry clothing to start the next day. It will also be necessary to distill the next day's water for drinking. In two of the survival field trips I attended, I was able to start a fire using the "bow drill" technique with *only* charcoal powder for "starting tinder". This is also a good reason to carry some amount of cotton material in your pack inside a zip lock bag. Charred cotton is the very best "starting tinder" I've ever used or heard about. On many occasions I've been able to start a fire using a small piece of charred cotton cloth as the "starting tinder" with a single spark.

The dry tinder is only necessary to get a fire going well, at which point wet wood can be slowly added which the fire will quickly dry out. The main problem I see with starting and maintaining a fire in the aftertime is the soaked muddy ground. A solution could be to carry a metal garbage can lid, and then build your fire on it when inverted. One reason for using a tarp instead of a tent is so that it can be set up with the top extending out from the "floor" section and high enough that a small fire can be build under the tarp, protecting it from rain. One can also easily make a stove from an empty paint can, providing ventilation to the inside using sheet metal shears. If one is carrying a section of corrugated metal for use in the event of a fire storm, this can also be used as a dry base for the camp fire.

Offered by [Ron](#).

So far, the best way I have seen to start a fire, is to take some wet leaves or wet wood chips and sprinkle some magnesium-aluminum alloy powder on them and use the spark of a flint to start it. It often takes only one spark. It makes a very hot reaction and instantly bursts into flames. The water actually helps make the flame hotter. This type of fire starter is sold at most camping stores. One takes a knife and scrapes off a small pile of magnesium-aluminum chips and then uses a knife blade to scrape on the attached flint to start the fire. As soon as a spark from the flint hits the Magnesium-aluminum the thing instantly starts burning. A match is not hot enough to start the reaction but a flint spark is. This has the advantage of bypassing the wet-match problem. Cost is about \$5-\$6 and is very light weight. Size measures about 3-4" long by 1" by about .5".

Offered by [Mike](#).



Troubled Times



Dry Wood

I believe the so called dry wood laying around on the ground in the continuous rain, will most probably be soaked completely through to the center, after say the first week to month or so. I have been thinking to use the current fire to dry wood for the next fire by piling it around the fire you built. In general keeping it close but not close enough to burn. This would help the spitting and sputtering of the fire by keeping it contained. This dry wood would then be carried to the next encampment to help start the next fire. The rule would be don't burn all your dry wood at one place and time. I think wood chopped into slivers will dry faster than a log with the bark still protecting it.

Offered by [Mike](#).

I would expect to be able to find plenty of wood for many years on downed tree branches being held above the ground so that they will just have been rained on. Most wood, even when immersed, takes several years to become "water logged". If it floats, there is still dry wood. After 20 years I would agree; but by this time I would hope there to be some vegetation, maybe even some trees that have adapted to the low light level. One would certainly want to always carry some absolutely dry material to initially start a fire; but remember, you are already pretty much loaded with the other things you are carrying. If all one needs to do is put out the current fire, just overturn the metal base so the remains are laying in the mud and use your entrenching tool to cover what's left with mud.

Offered by [Ron](#).



Troubled Times



Carry Embers

The movie "In search of Fire" Illustrated a method of caring fire from one place to another. I think with some trial and error one could make something that might work, made out of a paint bucket. The trick would be to allow in just enough air to keep it burning but not so much as to consume all the dry wood you carry. A small slot near the bottom and top that can be bent open or closed to adjust the air flow may work. The technology of taking a glowing ember and making a fire out of it will need to be relearned well by all. You may need to carry a set of lightweight but long tongs, or figure out a way to move logs that are burning. This would be used to help adjust the fire to keep it going and to put out the fire as described above.

Offered by [Mike](#).

If the amount of material is enough I think this concept would work and an extra gallon paint can full of these burning embers wouldn't be heavy, as the water in the wood would have already boiled away. I've never had a problem lifting burning embers, and do this by just using a stick. If an actual "holding" capability is required, one can use a stick in each hand or even make tongs by loosely tying the "hand" end of two sticks together. This is how "cooking rocks" are moved to and from a fire.

Offered by [Ron](#).



Troubled Times



Rekindled

The so called dry wood that was close to the fire may not be all that dry but this wood and charcoal that was close to the fire should be easier to rekindle. Remember we have no dry leaves or news paper to help start the next fire. Put small burning pieces and hot coals into a 1 to 5 gallon steel paint can and close the lid. Any other steel container would also work. The fire will go out almost instantly (say within 30 seconds) once the container is closed, with no oxygen to feed the fire. Carry this to the next encampment to help start the next fire. If the lid is completely air tight, the tin can could collapse when the hot gases cool. A small hole punched on the side near the top will keep a vacuum from forming. The can could have charcoal dust, sand or a bit of dry dirt in the bottom to help keep the metal from getting too hot.

Offered by [Mike](#).

I think that if you can fill your two empty paint cans which are part of the portable water still with the appropriate material from the fire that this would be all that is necessary to get the next one going. In fact, in two of the survival field trips I attended, I was able to start a fire using the bow drill technique with only charcoal powder for a starting tinder.

Offered by [Ron](#).



Troubled Times



Complete Walker

Highlights from *The Complete Walker*, by Colin Fletcher. (New York: Knopf, 1970)

- Your opinions on equipment and technique must never fossilize into dogma.
- Don't put wet boots close to a fire. The soles may curl up and the leather may lose some of its life.
- Dirty socks can cause abrasions faster.
- Walking sticks are good for checking bushes for snakes.
- Of course, avoid drinking still water, and be cautious about springs that have no insect life.
- Flint sticks are easy to carry.
- The hottest fire comes from small sticks.
- Once you get a fire going, dry up some tinder for future fires. It's going to be a wet world.
- Newspaper is a good insulator.
- The neck creates a weak point in almost any clothing system, hence the usefulness of scarves.
- If you're on the move, binoculars can save you hours of wasted effort. They help you choose the best route.
- Despite the magnetic chaos, a compass may still be useful. Get one that's shielded from interference, and get one that's not liquid-filled.
- A mirror may come in useful for signaling. So may a whistle, if someone in your party gets lost.
- In trout country, the best rod is a switch cut from a riverbank.
- A thermometer can help you avoid surfaces that are too hot or water that is too cold.
- Adhesive medical tape is good for repairs.
- Nylon cord, of course, is an essential. How else can you get water out of a well?
- Rubber bands are God-sends.
- Burning your feces will discourage flies.
- Most caves are not safe during lightning, unless very deep and high roofed.

Offered by [Mike](#).



Troubled Times



Survival Handbook

Highlights from *The Survival Handbook* by Bill Merrill (New York: Winchester Press, 1972)

- Building a fire near a rock slab will magnify the amount of heat generated - a good idea for cold days.
- If you use the flint & steel method for starting a fire, the tinder must be very dry.
- Testing food: Test a small amount of food first. Don't swallow. Chew it, then spit it out. See if there's any effect on your mouth or tongue. If not, eat a small portion and see if you get a reaction. If not, eat a bigger portion. It's probably safe if no illness occurs in 6 to 8 hours. If you start to get sick, drink lots of water, then stick your finger down your throat and vomit.
- You can eat cambium (the inner bark of trees).
- The best time to hunt is very early in the morning, or toward dusk. Be downwind from the animal so it can't smell you.
- Roast grasshoppers and lizards aren't bad to eat. For grasshoppers, roast first then break off the wings and legs. For lizards, remove the head.
- An ax is crucial. In cold weather, warm the blade first so it doesn't chip. Knots in wood can chip an ax - avoid knots.
- In lightning, get into heavy timber, but away from single tall trees.
- Don't get wet in cold weather - not even from perspiration. Slow down if necessary.
- Anyone who walks away from a plane crash is probably in a state of shock, so treat for shock first.

Offered by [Mike](#).



Troubled Times



Good Earth Almanac

Highlights from *The Good Earth Almanac Survival Handbook* by Mark Gregory
(New York: Sheed & Ward, 1973)

- Finding water: Watch where birds and animals go.
- Don't put wet rocks in a fire - they can easily explode.
- A good fire can be built without matches, even in the pouring rain. You can produce sparks by striking a rock against steel.
- Caves are often snake dens.
- If the ground is too cold for sleeping, burn a fire for a few hours, then move it and sleep on the heated ground.
- Animal activity tends to stop just before a storm begins.
- Wet clothing causes excessive body heat loss.
- Don't travel in blizzards.
- If you're lost, get to high ground and survey the area.

Offered by [Mike](#).



Troubled Times



Complete Wilderness

I've just read *The Complete Wilderness Training Book* by Hugh McManners. I cannot recommend this book enough - it is so good. I can't predict what conditions I'll be in after a pole shift, and this book discusses how to survive in a variety of conditions. McManners was a survival instructor in the British army. It would not do justice to the book to just present the highlights here, but I'll do that anyway. I do recommend buying this book. (Trust me, I have no stake in the matter.) The graphics and photos are some of the best I've ever seen, and they make the text so much more understandable. It is published by Dorling Kindersley (London & New York, 1994). I picked up a hard-cover at the library that retailed at \$29.95. Maybe they have a less-expensive paperback now. The publisher's U.S. address is 95 Madison Ave., New York, NY 10016. The book didn't give a London address.

Important points and highlights in the book:

- The importance of layering clothing - even gloves. Even tents.
- The importance of gaiters for keeping your feet dry -- even while crossing a stream.
- The need for jungle boots if the conditions require them.
- A wire saw takes up little space, and it may survive a PS. If you keep it covered with a film of grease it will last longer.
- A strong pocketknife is second only in importance to your teeth.
- When you sharpen a knife, wet the stone first.
- Dome tents are ideal for extreme conditions.
- An igloo must have at least one airhole so carbon monoxide doesn't build up.
- Tree fungus has a waterproof outer skin. The inside can be used as tinder.
- Many pine needles are rich in vitamins A & C and can be used to make nutritious tea.
- Insects have a higher dietary value than vegetables, but don't eat spiders, wasps, or brightly-colored insects.
- It is easier to gather insects than to catch fish, and it requires less energy.
- Insects provide the best nutrition if eaten raw, but can be made more palatable by being boiled or roasted.
- Keep snails and slugs alive for 24 hours, on a diet of green leaves, before boiling them.
- Slugs are better when roasted.
- Insects may be ground between two stones and added to stews.
- Soak worms in salty water for 24 hours, then squeeze out their guts before adding them to stews or drying them.
- Don't eat fish unless you caught it yourself. They are breeding grounds for bacteria.
- Fishing depends less upon good equipment than upon knowledge of the prey.
- If you don't have a compass you can magnetize a needle, then lay it on a blade of grass in a bowl of water.
- If you run away from wild animals, you can trigger their instinctive chase response.

Offered by [Mike](#).



Troubled Times



Teaching

In Arizona, there is a school named [Aboriginal Living Skills](#) School. This newsworthy school teaches basic survival skills, and self-reliance.

Offered by [Charles](#).

[Wilderness Survival](#): Could You Survive the Wild? - An ebook covering all aspects.



Troubled Times



Numerous Prophecies

Numerous prophecies point to a pole shift around the time of the millennium.

- Revelations warns that the rivers will run with blood.
- Mother Shipton warns of tidal waves and mankind hoarding food.
- Edgar Cayce foresaw land going under the sea.
- Per written and oral history, the last such cataclysm occurred during the time of the exodus from Egypt, approximately 3,600 years ago.
- Velikovsky reports on this history, and ZetaTalk has expanded on what he learned.



Troubled Times



Edgar Cayce

From *Return of the Phoenix*

My original intent has been accomplished. The primary subject in this volume are the predictions of Edgar Cayce, especially his famous *Earth Changes* and his nearly as famous *Hall Of Records* predictions. And I examine Cayce thoroughly to determine what sense can be made of Cayce's famous "Pole Shift" prediction, especially in the light of Charles Hapgood's work, which lays out the past history of some 229 movements of the earth's crust.



Troubled Times



Cataclysms

I am amazed at the number of people that don't get it. A pole shift is a *very very bad thing*. To think you will be able to survive by holing up in your bunker for a couple of years and then come out to plant your crops tells me that one does not appreciate the gravity of the situation. A pole shift will cause *permanent* climactic change for any part of the globe. The upset to the global ecology will be *long term*. This is why many species don't make it through. Its not a matter of surviving the shift itself, that, by comparison, is the easy part. For those counting on the lift, be prepared to be thrown from the frying pan into the fire. A primitive existence may be possible in some parts of the world if you are lucky. By primitive I mean you have breathable air, you have water that won't kill you, and you can scrounge for the little bit of protein that wanders your way, that's it.

If Velikovsky is right, there is little hope of having useable sunlight for a long long time. Volcanoes are prolific producers of noxious gasses and dust. Expect CO₂, H₂S, NOX, Arsenic, Lead, and many other nasties to climb to toxic levels just about anywhere. Microorganisms will be tossed into the air our immune systems haven't seen for thousands of years. If that is not enough, dust will linger in the upper atmosphere for many years to come, blocking our life giving sun.

This shift is unique for us, the difference is population, we have available to us more knowledge, resources, economies of scale only achievable by many brains with the ability to communicate with one another. We do not have to settle for a 90% or 99% mortality rate. The fittest among us may be able to survive to propagate with primitive preparations, but we do not have to settle for that. We have know how called technology, some of it appropriate, some not, which can help us to improve our odds if we are willing to shift from being consumers of the fruits of technology and towards claiming it as our own. This may mean that instead of knowing how to use a water filter you may take the trouble to understand its composition and how it works. It may mean that you will have to take the responsibility to learn the fundamentals of ecology so you can rebuild it where nature can't or won't for your benefit. We do not have to be at the mercy of nature where we can command nature.

For those of you who get it, more power to ya.
For those of you who don't, food for thought.

Offered by [Steve](#)



Troubled Times



Animated Graphics

Each animation clip is accompanied by text so you will have something to read while the clip downloads. Please note that animated graphics run well under later versions of **Netscape** or the **Microsoft Internet Explorer** browser, but refuse to play with some other browsers.

Slowing Rotation

The Earth slows in its rotations and stops within a day or so, while a fine red dust appears.

Pole Shift

The Earth turns to align north pole to the 12th Planet's south pole, and when this shift stops there are earthquakes, volcanic eruptions, and tidal waves.

New Geography

After the shift the old poles gradually melt over a few years, while new ice forms over the new poles, so that in the interim there is a rise in the sea level and vegetation grows in old polar land and new land that has emerged from the sea.

Volcanic Gloom

After the shift the Earth's rotation starts again with the old poles now at the equator, and a gloom from volcanic dust develops that lasts for decades.

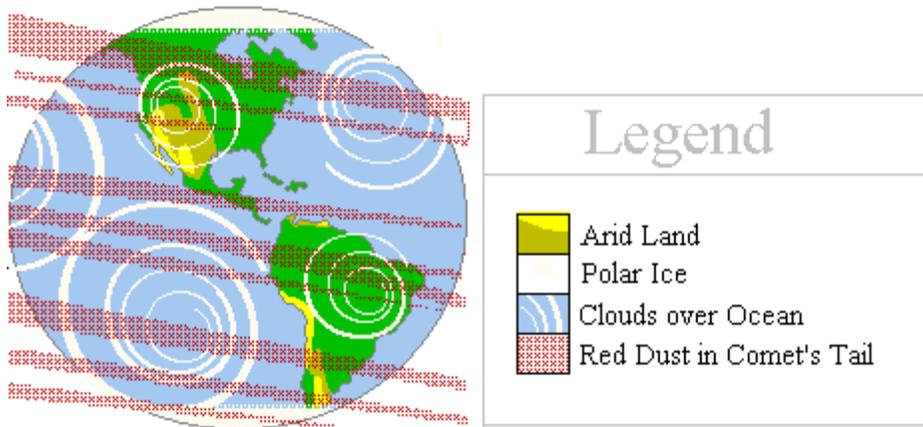
Offered by [Nancy](#).



Troubled Times



Slowing Rotation



Excerpts from ZetaTalk on Stop Rotation

The Earth slows in its rotation, and actually stops. This is recorded in written history and spoken folklore, worldwide, as a long day or night. The period of time, due to the lack of mechanical clocks, was not measurable, but the humans who experienced this described this as anywhere from a few hours to several days. The latter is more correct. Rotation stops with a predictable part of the Earth facing the approaching 12th Planet - the mid-Atlantic Ocean off the eastern seaboard of the United States. This part of the globe lines up over former lava flows from the renting apart of the continents, the mid-Atlantic rift. Thus, the Atlantic lava beds are gripped, facing the Sun, facing the approaching 12th Planet coming up from the South along the rift, and causing both Europe, the Americas, and Africa to be on the long day side of the Earth. This slowing of rotation occurs with little trauma.

Excerpts from Worlds in Collision, The Most Incredible Story

by Velikovsky, page 39

[A] story is told about Joshua ben Num who, when pursuing the Canaanite kings at Beth-horon, implored the sun and the moon to stand still. Joshua (10:12-13):

And the sun stood still, and the moon stayed, until the people had avenged themselves upon their enemies. Is it not written in the book of Jasher? So the sun stood still in the midst of heaven, and hasted not to go down about a whole day.

Excerpts from Worlds in Collision, On the Other Side of the Ocean

by Velikovsky, pp 45-46

The Book of Joshua, compiled from the more ancient Book of Jasher, states that the sun stood still over Gibeon and the moon over the valley of Ajalon. This description of the position of the luminaries implies that the sun was in the forenoon position. The Book of Joshua says that the luminaries stood in the midst of the sky. Allowing for the difference in longitude, it must have been early morning or night in the Western Hemisphere.

We go to the shelf where stand books with the historical traditions of the aborigines of Central America. The sailors of Columbus and Cortes, arriving in America, found there literate peoples who had books of their own. In the Mexican Annals of Cuauhtitlan, written in Nahuatl-Indian, it is related that during a cosmic catastrophe that occurred in the remote past, the night did not end for a long time.

Sahagun, the Spanish savant who came to America a generation after Columbus and gathered the traditions of the aborigines, wrote that at the time of one cosmic catastrophe the sun rose only a little way over the horizon and remained there without moving. The moon also stood still. The biblical stories were not known to the aborigines. Also, the tradition preserved by Sahagun bears no trace of having been introduced by the missionaries.

Excerpts from Strangers Among Us, The Shift

by Ruth Montgomery, p 228-230

If the Guides are correct .. the survivors of the axial shift .. will number in the millions, rather than the billions. ... The shift will have its warnings. The weather will become increasingly violent. Eruptions of ancient volcanoes, earth tremors of major proportions, and tidal waves of monumental scope. ... Some will recognize this as the time to remove themselves from the seacoasts. Some will remain, disbelieving that a shift will occur, and some will refuse to leave their homes.

Excerpts from ZetaTalk on Countdown Signs

When one wakes up in the morning, finding it to be dark outside rather than a breaking dawn, yet the clocks in the house and the entire neighborhood confirm that it is indeed the morning hour - this is a countdown sign. Rotation will completely stop in a day or so, with such a dawn followed by an evening where the Sun seems reluctant to set, setting *hours* later than usual, and then rotation stops completely.

A second countdown sign is a fine red dust, unmistakable as it cannot be confused with any other natural occurrence. Ponds and rivers turn red, the blood color mentioned in the Bible's book of Revelations, with this iron ore dust that gives the water a brackish taste. This countdown sign comes almost in step with the rapid slowing in rotation, as the 12th Planet must be between the Earth and the Sun for the trash in its tail to be sweeping the Earth. Again, this occurs a day or so before rotation stops, and travel will become difficult if not impossible once it does.

When coming late, for primitive peoples without mechanical clocks there is a third countdown sign that can be scarcely ignored. The Earth moans, during her rotation slowing and stoppage, a sound not heard by humans except during earthquakes. Here, the moaning is chronic, essentially continuous, as though under a stress it cannot relieve with an earthquake, yet cannot bear in silence.

Excerpts from Worlds in Collision, The Red World

by Velikovsky, pp 48-49

In the middle of the second millennium before the present era [approximately 3,500 years ago], the earth underwent one of the greatest catastrophes in its history. A celestial body ... came very close to the earth. The account of this catastrophe can be reconstructed from evidence supplied by a large number of documents. The comet .. touched the earth first with its gaseous tail. .. Servius wrote, "It was not of a flaming but of a bloody redness."

One of the first visible signs of this encounter was the reddening of the earth's surface by a fine dust of rusty pigment. In sea, lake, and river this pigment gave a bloody coloring to the water. Because of these particles of ferruginous or other soluble pigment, the world turned red.

The Manuscript Quiche of the Mayas tells that in the Western Hemisphere, in the days of a great

cataclysm, when the earth quaked and the sun's motion was interrupted, the water in the rivers turned to blood.

Ipuwer, the Egyptian eyewitness to the catastrophe, wrote his lament on papyrus, "The river is blood", and this corresponds with the Book of Exodus 7:20: "All the waters that were in the river were turned to blood".

Excerpts from ZetaTalk on Comet's Trail

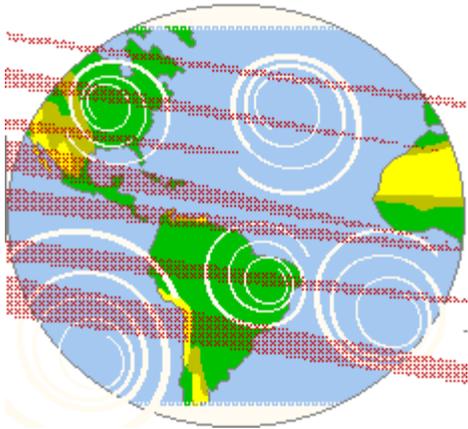
The tail of the comet is composed of lighter material toward the tip, as any heavier substances that far from the great comet's gravitational influence are drawn in other directions at one point or another. Thus, the gases and dust curl toward the Earth, and are first noticeable as a fine red iron dust, turning the water a bitter blood red. Does this dust not burn in the available oxygen, and end as so many tiny flying star specs? This dust, already oxygenated, does not burn. Its passage is swift, a matter of days, and the ending abrupt.



Troubled Times



Pole Shift



Legend	
	Arid Land
	Polar Ice
	Clouds over Ocean
	Red Dust in Comet's Tail
	Grit in Comet's Tail
	Rifts under Water
	New Land
	Ripping or Hot Land
	Subducting Land

Excerpts from ZetaTalk on Violent Winds

At the shift, the surface of the Earth will move, in just under an hour, more than a quarter turn. Where massive earthquakes and tidal waves occur when this motion *stops*, hurricane force winds, world wide, occur *during* this shift. During the shift, the atmosphere of the Earth does several things, all at once. It drags along with the Earth, to which it is attracted, being primarily more involved with gravity attraction straight down. Do not the waters in your oceans move with the Earth as it turns? The atmosphere is an ocean too, just lighter and therefore more mobile. It moves as a mass, pushing on air in other places and likewise, itself being pushed. Thus, even in those places on the Earth which are *not* moving, during the shift, being pivot points, the air is turbulent. It swirls, as circular motion in air masses is the response to conflicting forces, as seen in the circular motion of tornadoes and hurricanes.

Excerpts from Worlds in Collision, The Hurricane

by Velikovsky, page 67-69

Manuscript Troano and other documents of the Mayas describe a cosmic catastrophe during which the ocean fell on the continent, and a terrible hurricane swept the earth. The hurricane broke up and carried away all towns and all forests. A wild tornado moved through the debris descending from the sky. The end of the world was brought by Hurakan. From this name is derived hurricane, the word we use for a strong wind.

The theme of the cosmic hurricane is reiterated time and again in the Hindu Vedas and in the Persian Avesta. The 11th tablet of the Epic of Gilgamesh says that 6 days and a night the hurricane, deluge, and tempest continued sweeping the land and mankind perished almost altogether. The Maoris narrate that amid a stupendous catastrophe the mighty winds, the fierce squalls, the clouds, dense, dark, fiery, wildly drifting, wildly bursting, rushed on creation, ... and swept away giant forests and lashed the waters into billows whose crests rose high like mountains.

The Polynesians celebrate a god, Taafanua. In Arabic, Tyfoon is a whirlwind and Tufan is the Deluge; and the same word occurs in Chinese as Ty-fong. It appears as though the noise of the hurricane was .. not unlike the name Typhon.

Excerpts from Worlds in Collision, The Hail of Stones by Velikovsky, pp 51-53

Following the red dust, a small dust, like ashes of the furnace fell in all the land of Egypt (Exodus 9:18), and then a shower of meteorites flew toward the earth. We are informed by Midrashic and Talmudic sources that the stones which fell on Egypt were hot. Ipuwer wrote: "Trees are destroyed. No fruits, no herbs are found. Grain has perished on every side". In the Book of Exodus (9:25) it is written: "And the hail smote every herb of the field, and brake every tree of the field".

The description of such a catastrophe is found in the Visuddhi-Magga, a Buddhist text on the world cycles. "When a world cycle is destroyed by wind .. there arises .. a wind. First it raises a fine dust, then coarse dust, then fine sand, then coarse sand, then grit, stones, up to boulders as large as trees. The Mexican Annals of Cuauhtitlan describe how a cosmic catastrophe was accompanied by a hail of stones.

Excerpts from ZetaTalk on Firestorms

These fire storms are caused by reactions of atmospheric gasses to the turmoil going on. Petrocarbons are in essence created, due to the flashes of lightning and intense heat due to passage over open volcanoes, and these petrocarbons rain down, afire, at times.

Excerptps from Worlds in Collision, Naptha by Velikovsky, pp 53- 55

Crude petroleum is composed of two elements, carbon and hydrogen. The inorganic theory (of the origin of petroleum states that) hydrogen and carbon were brought together in the rock formations of the earth under great heat and pressure. The tails of comets are composed mainly of carbon and hydrogen gases. Lacking oxygen, they do not burn in flight, but the inflammable gases, passing through an atmosphere containing oxygen, will be set on fire, binding all the oxygen available at the moment. The descent of a sticky fluid which came earthward and blazed with heavy smoke is recalled in the oral and written traditions of the inhabitants of both hemispheres.

Popol-Vuh, the sacred book of the Mayas, narrates "People were drowned in a sticky substance raining from the sky .. and then there was a great din of fire above their heads". The entire population of the land was annihilated. A similar account is preserved in the Annals of Cuauhtitlan. The age which ended in the rain of fire was called "the sun of fire-rain"

In Siberia, the Voguls carried down through the centuries and millennia this memory. "God sent a sea of fire upon the earth. In the East Indies, the aboriginal tribes relate that in the remote past "water of fire" rained from the sky. With very few exceptions, all men died. The (Egyptian) papyrus Ipuwer describes this consuming fire. "Gates, columns, and walls are consumed by fire. The sky is in confusion". The papyrus says that this fire almost exterminated mankind.

Excerptps from Worlds in Collision, Boiling Earth and Sea by Velikovsky, pp 91-92

The Mexican sacred book, Popol-Vuh, the Manuscript Cakchiquel, the Manuscript Troano all record how the mountains in every part of the Western Hemisphere simultaneously gushed lava. .. The rivers steamed, and even the bottom of the sea boiled here and there. The Zend-Avesta says "The sea boiled, all the shores of the ocean boiled, all the middle of it boiled".

The traditions of the Indians (also) retain the memory of this boiling of the water in river and sea. The tribes of British Columbia tell: "Great clouds appeared .. and such a great heat came, that finally the water boiled. People jumped into the streams and lakes to cool themselves, and died". On the North Pacific coast of America the tribes insist that the ocean boiled: "It grew very hot .. many animals jumped into the water to save themselves, but the water began to boil". The Indians of the Southern Ute tribe in Colorado record in their legends that the rivers boiled.

Jewish tradition, as preserved in the rabbinical sources, declares that the mire at the bottom of the Sea of Passage was heated. Hesiod in his Theogony, relating the upheaval caused by a celestial collision, says: "The huge earth groaned .. A great part of the huge earth was scorched by the terrible vapor and melted as tin melts when heated by man's art .. or as iron, which is hardest of all things, is softened by glowing fire in mountain glens".

Excerpts from ZetaTalk on Tidal Wave

Where the Earth, dragged by its core, is shifting into a new, albeit temporary, alignment with the giant comet, its waters resist greatly. Thus the waters slosh over the nearby land, in the direction opposite to the shift. This is lessened by a tendency of the waters directly under the giant comet to rise up to meet the comet. The waters heap up, in what appear to be giant waves. This tends to lessen the sloshing over a shoreline on the comet side, but has no effect on the water's movement on the dark side of the Earth.

Excerptps from Worlds in Collision, The Tide

by Velikovsky, pp 70- 75

The slowing down or stasis of the earth in its rotation would cause a tidal recession of water toward the poles, but the celestial body near by would disturb this poleward recession, drawing the water toward itself. The traditions of many peoples persist that seas were torn apart and their water heaped high and thrown upon the continents.

The traditions of the people of Peru tell that for a period of time the sun was not in the sky, and then the ocean left the shore and with a terrible din broke over the continent. The Choctaw Indians of Oklahoma relate: "The earth was plunged in darkness for a long time". Finally a dark light appeared in the north, "but it was mountain-high waves, rapidly coming nearer". According to the Lapland epic, after the sea-wall fell on the continent, gigantic waves continued to roll and dead bodies were dashed about in the dark waters.

The Hebrew story of the passage of the sea (relates that) the bottom of the sea was uncovered, the waters were driven apart and heaped up like walls in a double tide. The Sepuagint translation of the Bible says that the water stood "as a wall", and the Koran, referring to this event, says "like mountains". In the old rabbinical literature it is said that the water was suspended as if it were "Glass, solid and massive".

Excerptps from Strangers Among Us, The Shift

by Ruth Montgomery, pp 228-230

The event itself will occur in the twinkling of an eye, as the earth slurps onto its side. In daylight areas, the sun will seem to stand still overhead. Those who are capable of reaching safety will see the earth's surface tremble, shudder, and in some places become a sea of boiling water as the oceans pour upon the land. ... Picture a giant wave, higher than a ten story building, racing toward shore. Ferocious winds will howl across the land. The stars will seem to swing giddily in the heavens. As dawn breaks the sun will seemingly rise from the wrong place on the horizon.

Excerptps from Mary's Message to the World, The Coming Changes

by Annie Kirkwood, pp 2-3

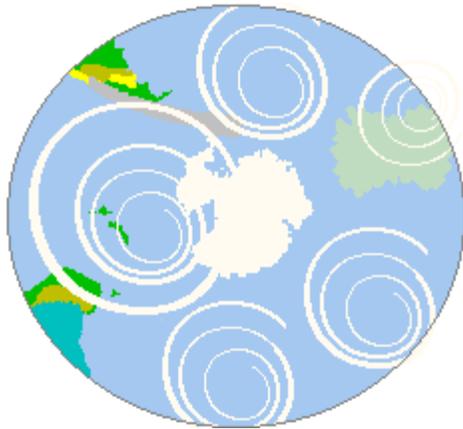
As the world turns and changes direction, many natural occurrences will be deemed disasters. Mountains will move, seas will be upturned; new lands will come out of the ocean, some of the land which is now inhabited will be inundated and returned to the ocean floor to be allowed to renew. These natural disasters have already started, but in the future they will occur more often and with increasing violence.



Troubled Times



New Geography



Legend	
	Arid Land
	Polar Ice
	Clouds over Ocean
	New Land
	Subducted Land
	Volcanic Dust

Excerpts from ZetaTalk on New Geography

After the Pole Shift the Earth begins rotating again, with its new poles in the same relative position to the Solar System as today. In other words, whatever part of the Earth is North, magnetically, after the shift, will become the new North Pole. The Pole Shift, with consequent realignment of the poles, will place the new equator over formerly frozen lands. Greenland, Canada, Alaska, Siberia, and Europe will be affected by the new equator. This will not mean that these areas will be lush, right away. The temperate zones, not all that lush to begin with, will find themselves after the cataclysms in a warm state, but with little vegetation. Past cataclysms have regularly rearranged the Earth's geography and climate zones, as the Earth attests. The continents, once one large land mass, were torn apart, temperate or tropical areas suddenly freezing up and covering over with ice and snow that never melts, and frozen wastelands gradually melting and warming to sustain life once again. Mountains in mountain building areas were pushed higher and subducting plates were suddenly slid under the overplate.

Excerpts from Earth in Upheaval, The Ivory Islands

by Velikovsky, page 4-6

Fossil tusks of the mammoth - an extinct elephant - were found in northern Siberia and brought southward to markets at a very early time. Northern Siberia provided more than half the world's supply of ivory, many piano keys and many billiard balls being made from the fossil tusks of mammoths.

In 1797 the body of a mammoth, with flesh, skin, and hair, was found in northeastern Siberia. The flesh had the appearance of freshly frozen beef; it was edible, and wolves and sled dogs fed on it without harm. The ground must have been frozen ever since the day of their entombment; had it not been frozen, the bodies of the mammoths would have putrefied in a single summer, but they remained unspoiled for some thousands of years. In some mammoths, when discovered, even the eyeballs were still preserved.

(All) this shows that the cold became suddenly extreme .. and knew no relenting afterward. In the stomachs and between the teeth of the mammoths were found plants and grasses that do not grow now in northern Siberia .. (but are) .. now found in southern Siberia. Microscopic examination of the skin showed

red blood corpuscles, which was proof not only of a sudden death, but that the death was due to suffocation either by gases or water.

Excerpts from ZetaTalk on Sinking Atlantic

As we have stated, the Atlantic will widen and the Pacific will shorten. Where the Pacific effect will cause sudden and violent subduction of several plates, which are already subducting, in the Atlantic the effect will be the opposite. A gulf will appear, with plates torn apart and the softer magma under the plates exposed to the cold Atlantic water. Where this will harden the magma, and establish new plate surface, there will be less support for the abridging plates, those that attach however remotely to the shorelines of the Americas, Europe, and Africa. These non-supported plates will sink, somewhat, bringing their formerly above-water land masses down under the water in many places. As an instance, Europe and in particular the western islands of Britain and Ireland will find itself more affected than some other parts of the globe.

Excerpts from Earth in Upheaval, Whales in the Mountains

by Velikovsky, pp 46-49

Bones of whale have been found 440 feet above sea level, north of Lake Ontario; a skeleton of another whale was discovered in Vermont, more than 500 feet above sea level; and still another in the Montreal-Quebec area, about 600 feet above sea level. Although the Humphrey whale and beluga occasionally enter the mouth of the St. Lawrence, they do not climb hills.

To account for the presence of whales in the hills of Vermont and Montreal, at elevations of 500 and 600 feet, requires the lowering of the land to that extent. The accepted theory is that the land in the region of Montreal and Vermont was depressed more than 600 feet by the weight of ice and kept in this position for a while after the ice melted. Another solution would be for an ocean tide, carrying the whales, to have trespassed upon the land.

But along the coast of Nova Scotia and New England stumps of trees stand in water, telling of once forested country that (has since become) submerged. And opposite the mouths of the St. Lawrence and the Hudson rivers are deep (land) canyons stretching for hundreds of miles into the ocean. These indicate that the land (has become) sea, being depressed in post-glacial times. Then did both processes go on simultaneously, in neighboring areas, here up, there down?

Excerpts from ZetaTalk on Endangered Species

Regarding saving DNA from animal species, so that these species will continue after the cataclysms. This is not a human endeavor we would recommend. In the first place, humans are not adept at regenerating a creature from DNA, nor would you be able to store this DNA effectively, given the nature of the cataclysms. The DNA would be spoiled due to neglect, as humans would have so many greater concerns during the Aftertime. In the second place, animals in one form or another have survived repeated cataclysms. Natural evolution takes place, in any case, and the cataclysms only trip the balance this way or that. Without the cataclysms your Earth's animal species would be different, a different mix, and with some species now long extinct still present. But because these extinct species had survived, others would not have thrived, due to competition. Therefore, beyond protecting nature preserves, do not concern yourself over animal survival. Nature looks after her own.

Excerpts from Earth in Upheaval, Tidal Wave

by Velikovsky, pp 51- 54

Fissures in the rocks .. all over western Europe, are choked with bones of animals, some of extinct races, others, though of the same age, of races still surviving. The bones .. are mostly broken and splintered into

innumerable sharp fragments and are evidently not those of animals devoured by beasts of prey. The Rock of Gibraltar is intersected by numerous crevices filled with bones. The bones are broken and splintered. The remains of panther, lynx, caffir-cat, hyena, wolf, bear, rhinoceros, horse, wild boar, red deer, fallow deer, ibex, ox, hare, rabbit, have been found in these ossiferous fissures. On Corsica, Sardinia, and Sicily the broken bones of animals choke the fissures in the rocks.

The state of preservation of the bones indicates that the animals, all of them, perished in the same period of time. No hardened animal feces were found, indicating that the dead beasts had not lived in these hollows or fissures. No teeth marks of hyena or of any other animal are found in the osseous mass. The bones are those of animals of all ages down to the fetus, nor do they show traces of weathering or exposure.

The extremely fresh condition of the bones, proved by the retention of so large a proportion of animal matter, shows that the event was, geologically, comparatively recent. The fact that animals of all ages were involved in the catastrophe shows it to have been sudden.

Excerptps from Worlds in Collision, East and West

by Velikovsky, pp 105-114

Our planet rotates from west to east. Has it always done so? There is testimony from all parts of the world that the side which is now turned toward the evening once faced the morning. The Egyptians pride themselves on being the most ancient people in the world. In their authentic annals .. one may read that .. the course of the stars has changed direction .. and that the sun has set in that part of the sky where it rises today. In the Papyrus Ipuwer it is similarly stated that "the land turns round as does a potter's wheel" and "the Earth turns over".

Plato wrote in his dialogue: "At certain periods the universe has its present circular motion, and at other periods it revolves in the reverse direction." Plato wrote in *Politicus*: "There is at that time great destruction of animals in general, and only a small part of the human race survives". The Chinese say that it is only since a new order of things has come about that the stars move from east to west. The signs of the Chinese zodiac have the strange peculiarity of proceeding in a retrograde direction, that is, against the course of the sun. The Eskimos of Greenland told missionaries that in an ancient time the earth turned over.

Excerptps from Worlds in Collision, Reversed Polarity of the Earth

by Velikovsky, pp 105-114

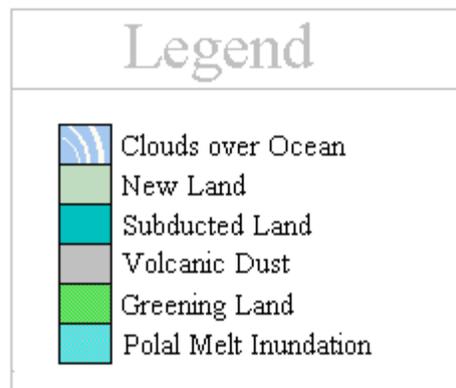
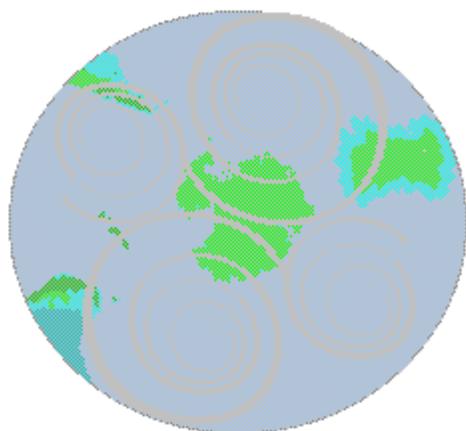
It is possible to detect in the geological records of the earth the orientation of the terrestrial magnetic field in past ages. When lava cools and freezes following a volcanic outburst, it takes up a permanent magnetization dependent upon the orientation of the Earth's magnetic field at the time. The reversed polarity of lava indicates that in recent geological times the magnetic poles of the globe were reversed.



Troubled Times



Volcanic Gloom



Excerptps from *Worlds in Collision, The Shadow of Death*

by Velikovsky, pp 127-128

If the eruption of a single volcano can darken the atmosphere over the entire globe, a simultaneous and prolonged eruption of thousands of volcanoes would blacken the sky. Volcanoes vomit water vapor as well as cinders. Following the cataclysm, the author of *Codex Chimalpopoca*, in his history of the suns, shows us terrifying celestial phenomena .. followed by darkness that covered the face of the earth, in one instance for a period of 25 years.

In the Ermitage Papyrus in Leningrad .. there are lamantations about a terrible catastrophe, when heaven and earth turned upside down. After this catastrophe darkness covered the earth. The "shadow of death" is related to the time of the wandering in the desert after the Exodus from Egypt. The sinister meaning of the words "shadow of death" corresponds with the description of the Ermitage Papyrus: "None can live when the sun is veiled by clouds."

The phenomenon of gloom enduring for years impressed itself on the memory of the Twelve Tribes and is mentioned in many passages in the Bible. Psalms 44:19 - "The people that walked in darkness .. in the land of the shadow of death."

Excerpts from ZetaTalk on New Geography

After a Pole Shift the former poles invariably melt and soften while the new poles take on layer after layer of ice and snow. This pace is not matched, as polar cap building only stabilizes at a point where evaporation and melting at glacial edges equals the arrival of newly fallen snow after some centuries. In the meantime the waters rise worldwide, several hundred feet, and then recede again. This pace is gradual, so that coastal settlements have plenty of time to relocate, an exercise they find they must do repeatedly.

Excerptps from *Worlds in Collision, Ambrosia & Milk and Honey*

by Velikovsky, pp 134-138

In what way did this veil of gloom dissolve itself? Has any testimony been preserved that during the many years of gloom carbohydrate precipitated? After the nightly cooling, the carbohydrates precipitated and fell with the morning dew. It had an oily taste like honeycomb, and was ground between stones and baked in pans. The clouds brought the heavenly bread, it is also said in the Talmud.

There was a world fire, says the Icelandic tradition, followed by the Fimbul-winter, and only one human pair remained alive in the north. They fed on morning dew, and from (this pair) come the folk who people the renewed earth.

The Maoris of New Zealand tell of fiery winds and fierce clouds that lashed the waters into tidal waves that touched the sky and were accompanied by furious hailstorms. The ocean fled. The progeny of the storm and hail were "Mist, the Heavy dew and Light dew".

The Greeks called the heavenly bread ambrosia. It is described by the Greek poets in identical terms with manna: it had the taste of honey and a fragrance. The *Atharva-Veda* hymns say that honey-lash came down from fire and wind; ambrosia fell, and streams of honey flowed upon the earth. The grains also fell upon the water, and the rivers became milky in appearance (i.e. lands of milk and honey).



Troubled Times



Movie Short

I basically took everything in zeta talk - which I have read several times completely - and then tried to improve upon the animations here in the Pole Shift TOPIC. Here is the [Real Player](#) format for the video I did.

Offered by [Kota Batu](#).

Note: You can choose the real video streaming or download the file. It can be viewed with the [Realone Player](#) or the older version called Real Player.



Troubled Times



TEAM: Pole Shift

Pole Shift analysis includes:

- Mike's [Modified Globe](#), with [Pre Pole Shift](#) photos of [Step 1](#), [Step 2](#), [Step 3](#), [Step 4](#), [Step 5](#), [Step 6](#), [Step 7](#), [Step 8](#) and [Post Pole Shift](#) photos of [Step 9](#), [Step 10](#), [Step 11](#), [Step 12](#), [Step 13](#), [Step 14](#), [Step 15](#), [Step 16](#).
- [Film Adaptation](#) possibilities, and [Animations](#).
- Michel's [Animation](#) of new geography globe.
- [Nancy's Map](#) source.
- Mike's [Print/Paste](#) of Nancy's map, with photos of the [Top](#) and [Bottom](#).
- Mike's analysis and diagrams of what-we-surmise on [Orbit](#) and orbit [Diagram](#), [Angle](#) and angle [Diagram](#), [Size](#) and size [Diagram](#), and outstanding [Questions](#) and Zeta [Answers](#).
- Bruce's [Sloshing Water](#) guide.

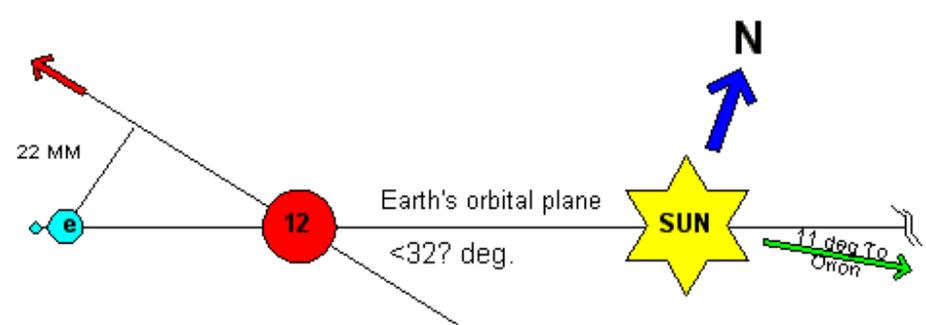
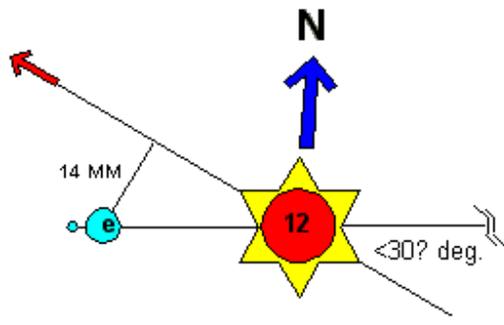
Contact [Mike](#) or [Michel](#) for more info on TEAM activities.

Troubled Times



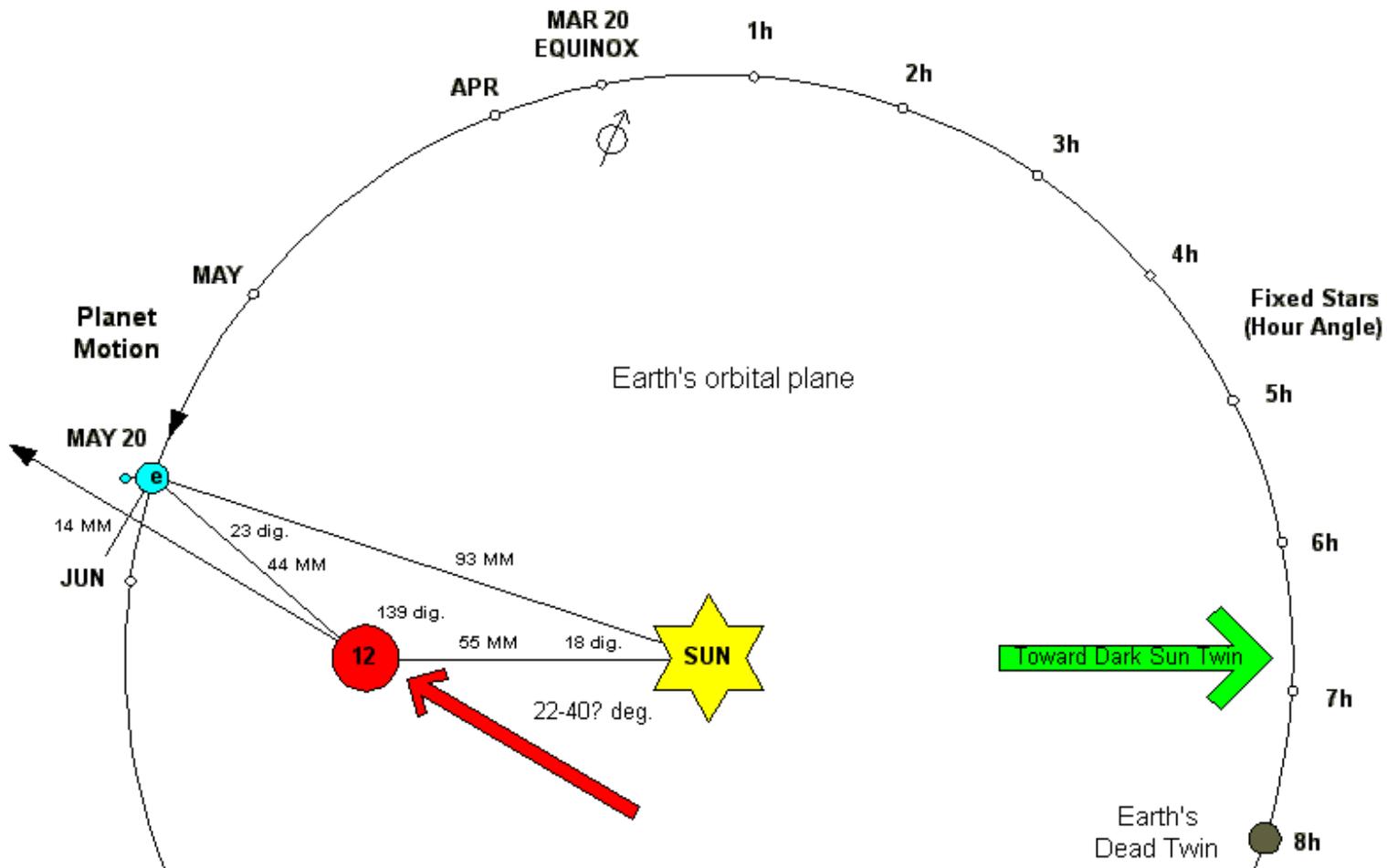
Figure 2

12th's Key Passing Angles



Front view toward incoming 12th looking at back side of earth

Side view



JUL

Top View Looking Toward South

Scale: .03 Inch per Million Mile (MM)

Note: Distance and Angles
are to Scale, The Size of the
Planets and Sun are Not to
Scale

10h

9h

Figure 2



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Step 16



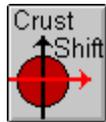
Troubled Times



Bottom



Troubled Times



Crust Shift

As reported by *Reuters*, *USA Today*, *CNN Online*, and *Science News*, 7/25/97

500 million years ago, an unprecedented evolutionary explosion occurred that resulted in the sudden appearance of a multitude of new life forms around the world. What caused the spurt has long perplexed scientists. Now California Institute of Technology geologists Joseph Kirschvink, David Evans and Robert Ripperdan have determined that the sudden diversification of life forms took place at the same time as **Earth's supercontinents took a 90-degree turn, shifting the polar masses to the equator and putting equatorial points at the poles.**

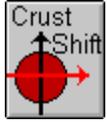
Both events occurred during the so-called Cambrian period when, according to Kirschvink, "Life diversified like crazy. About 15 million years later life's diversity had stabilized at much higher levels." Geophysical evidence collected from rocks deposited before, during and after the evolutionary speedup, "demonstrate that all of the major continents experienced a burst of motion during the same interval of time."

Kirschvink said the "evolutionary big bang" took place when life forms existing in cold temperatures were thrust into warmer regions, and vice versa. The ensuing environmental changes created the chaotic conditions needed for rapid evolution. Before the Cambrian period, almost all life was microscopic; at the start of the Cambrian, animals burst forth in a rash of evolutionary activity never since equaled - some 20 times more intense than anything seen before or since. "Something like 40 different major groups of animals make their first appearance during this time," says Kirschvink. "It's an incredible bloom." It was during this "Cambrian explosion." that many multi-celled organisms emerged whose descendants, including human beings, populate the Earth today.

In order to change their positions so radically, the supercontinents that existed at the time would have traveled several feet per year over a 10 million to 15 million year period, compared to continental migration rates today of only a few inches a year. **The phenomenon is known as "true polar wander," in which the entire solid part of the planet moves together.** Gondwanaland, which consisted of modern-day Africa, Antarctica, Australia, India, and South America, for example, traveled clear across the Southern Hemisphere, and North America shifted its position from the North Pole to the equator. It is thought that the continents shifted as a means of redistributing weight. Such an event might occur when polar land masses become top and bottom heavy relative to the Earth's axis and spin.



Troubled Times



Eons Ago

Earth May Have Wobbled Long Ago

Associated Press, Jan. 20, 2000

Scientists studying underwater volcanoes have found evidence the Earth may have wobbled like an out-of-balance ball 84 million years ago, relocating the poles and shifting the location of Washington to the tropics. Something - they're not yet sure what - appears to have changed the distribution of weight in the Earth, causing it to begin shifting to get back in balance. "What it appears that happened, was a rapid shift," at 84 million years ago followed by a "slow recovery to where things are today," explained William W. Sager of Texas A&M University. That shift of between 16 degrees and 21 degrees, occurring over two million years or so, was rapid in geological terms, he said. It would have moved Washington, D.C., south to about the latitude now occupied by Cuba and the Hispaniola.

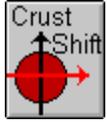
The findings are included in a paper by Sager and Anthony K. P. Koppers of the Scripps Institution of Oceanography, appearing in Thursday's edition of the journal *Science*. "They are suggesting something quite challenging," commented John Tarduno of the University of Rochester, who said the report will surely generate controversy. "Personally, I think there is a possibility that they have underestimated the errors in producing the data set," added Tarduno, who was not part of the research team. The period the researchers focused on was a time of great changes on Earth, Sager noted, with three supervolcanoes erupting and widespread changes in the plates that make up the surface of the Earth.

When these massive plates meet, one gets pulled beneath the other in a process called subduction. This may help account for the shift in the weight distribution, Sager said. Another potential cause is hotspots producing gigantic volcanic flows. During this period, volcanoes produced three massive plateaus, one around the Kerguelen Islands near Antarctica, another in the region of Java, Indonesia and the third in the Caribbean-Colombian area. Sager and Koppers calculated the shift in the pole by studying seamounts in the Pacific Ocean. Seamounts are ancient volcanoes that rise from the ocean floor but are not tall enough to break the surface and become an island. Researchers can determine when they were formed and analyze their magnetic orientation. When molten rock solidifies its magnetic orientation - indicating the direction of the poles - freezes. By studying that orientation now, and how it varies from seamount to seamount, scientists can calculate shifts in the location of the pole over time.

And what Sager found was a relatively rapid shift of the pole beginning about 84 million years ago and lasting about two million years before starting back. There were no people around at the time, and Sager said that while this change is speedy to a geologist, it would not have been noticed by the dinosaurs who populated the planet then. Indeed, he added, "I'm not sure, if we were living in it now, that we would know if it were occurring because of the time frame."



Troubled Times



Sliding Crust

On the Possibility of Very [Rapid Shift](#) of the Poles

Excerpts from article by Flavio Barbiero

In his book *The Path of the Pole* (Chilton Book, Philadelphia, 1970) **Charles Hapgood** expresses the hypothesis that the poles have changed their position three times during the recent past. From the Greenland Sea, where it shifted about seventy thousand years ago, the north pole moved to Hudson Bay fifty thousand years ago, and finally to its presents position 11.600 years ago, at the end of Pleistocene.

To support his hypothesis, Hapgood presents an impressive quantity of evidence which can be summarised as follows:

1. the presence of ice caps in North America and Northern Europe, highly eccentric compared to the present north pole.
2. The contemporaneous absence of ice caps from Siberia which was actually populated to its northernmost regions by an impressive zoological community.
3. The arctic Sea was warmer than it is today, and there were human beings living in the New Siberia Islands.
4. Antarctica was partially free of ice.
5. The general climatic situation of the Earth was coherent with a different position of the poles.

The hypothesis that the inclination of the terrestrial axis in relation to the ecliptic and that the position of the poles might change has been taken into consideration since last century. Some of the greatest geologists of the time, including **J.C.Maxwell** and **Sir George Darwin** (son of the famous Charles Darwin), considered this problem and decided that the stabilising effect of the equatorial bulge was so great that no conceivable force originating within the Earth could make it shifting on its axis, except for the collision with another planet. They therefore dismissed the idea of any shift of the poles as impossible and, in fact, not worth discussing. Their influence has been so highly felt that to this day no one has seriously considered such an hypothesis.

Hapgood too accepts un-critically the assumption that only a “planetary collision” is capable of displacing the axis of rotation. Therefore he proposes a theory that explains the shift of the poles as the result of the shift of the whole Earth’s crust. Based on the research of the Russian scientist **V.V. Belousov**, he assumes that at a depth of approximately hundred miles in the upper mantle there is a layer of liquid rock which behaves as a bearing allowing the whole crust to “shift” when subjected to a displacing force. In Hapgood’s opinion this force is provided by the centrifugal momentum of ice caps eccentric to the poles. In this way the Earth would keep its axis of rotation unchanged, but the poles and the whole Earth’s surface would shift and change latitude.

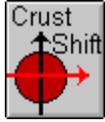
The evidence proving that the poles where in different positions during the Pleistocene era is quite impressive, and this explains why Hapgood’s theory was approved by scientists such as **Einstein** and **K.F. Mather**. But it meets with so many difficulties that it appears highly controversial. Above all, it is not compatible with other geological theories which are widely accepted today, such as the drift of the continents and related theories.

Furthermore the theory does not explain some of the most significant peculiarities of Pleistocene's climate changes, first of all the speed with which these changes appear to have taken place. According to Hapgood it took the north pole at least two thousand years to move from its previous position to the present. The evidence we have, however, are in favour of a definitely much faster climatic change. It was Hapgood himself who underlined the enormous amount of evidence proving the high speed at which the shift of the poles appears to have happened; speed which the mechanism he proposes is unable to explain.

The only way to completely and coherently explain what took place at the end of Pleistocene appears to be that of admitting the possibility of a shift of the poles of the same magnitude Hapgood hypothesizes, but in a much shorter time: not more than a few days. This possibility is openly refused, only because no convincing explanation has been forwarded so far.



Troubled Times



Einstein

From *Earth's Shifting Crust*

The late **Charles Hapgood** taught the history of science at Keene College, New Hampshire, USA. He wasn't a geologist, or an ancient historian. It is possible, however, that future generations will remember him as the man whose work undermined the foundations of world history - and a large chunk of world geology as well. **Albert Einstein** was amongst the first to realise this when he took the unprecedented step of contributing the forward to a book that Hapgood wrote in 1953, some years before he began his investigation of the Piri Reis Map:

"I frequently receive communications from people who wish to consult me concerning their unpublished ideas," Einstein observed. "It goes without saying that these ideas are very seldom possessed of scientific validity. The very first communication, however, that I received from Mr Hapgood electrified me. His idea is original, of great simplicity, and - if it continues to prove itself - of great importance to everything that is related to the history of the earth's surface." (From Einstein's foreword (written in 1953) to C. H. Hapgood, *Earth's Shifting Crust: A key to some basic problems of Earth Science*, Pantheon Books, New York 1958, pp. 1-2)

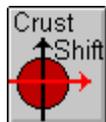
The "idea" expressed in Hapgood's 1953 book is a global geological theory which, together with many other anomalies of earth science, elegantly explains how and why large parts of Antarctica could have remained ice-free until 4000 BC. In brief the argument is as follows:

Antarctica was not always covered with ice and was, at one time, much warmer than it is today. It was warm because it was not physically located at the South Pole in that period. Instead it stood approximately 2,000 miles further to the north. This "would have put it outside the Antarctic Circle in a temperate or cold temperate climate". The continent moved to its present position inside the Antarctic Circle as a result of a mechanism known as "earth-crust-displacement". This mechanism, in no sense to be confused with plate-tectonics or so-called "continental drift", is one whereby the lithosphere, the whole outer crust of the earth: "may be displaced at times, moving over the soft inner body, much as the skin of an orange, if it were loose, might shift over the inner part of the orange all in one piece." (*Maps of the Ancient Sea Kings* Chilton Books, New York, 1966, p. 189.)

"During the envisaged southwards movement of Antarctica brought about by earth-crust displacement, the continent would gradually have grown colder, an ice-cap forming and remorselessly expanding over several thousands of years until it at last attained its present dimensions." (Ibid. p. 187) Orthodox geologists, however, remain reluctant to accept Hapgood's theory (although none have succeeded in proving it incorrect), and it raises many questions. Of these by far the most important is the following: what conceivable mechanism would be able to exert sufficient thrust on the lithosphere to precipitate a phenomenon of such magnitude as a crustal displacement?



Troubled Times



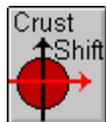
Ice Ages

These [Charts/Graphics](#) based on Hapgood's work might throw some light on pole locations over the years. Hapgood doesn't suggest an incoming planet, but has done the research on poleshift.

Offered by [William](#).



Troubled Times



Viscosity Zone

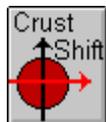
An interesting study [Supporting](#) the concept of the Earth's crust being able to slip over it's core.

Since the discovery of plate tectonics, it has been widely conjectured but only recently demonstrated that this peculiar style of convection may be facilitated by an upper mantle low viscosity zone (LVZ) over which the plates glide easily.

Offered by [Gino](#).



Troubled Times



China

Lake Yiema

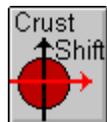
Institute for Scientific Information Inc.

Journal of Paleolimnology, 1999, Vol 22

In this study, a 6 m long core (16,000 BP) at the center of the dry Lake Yiema, a closed lake of Shiyang River drainage in Minqin Basin of the arid northwestern China, was retrieved to recover the history of climate changes and lake evolution in the area. Five radiocarbon dates on organic matter were obtained. A chronological sequence is established based on these five dates and other dates from nearby sites. Magnetic susceptibility, particle size and chemical composition were analyzed for climate proxies. The proxies indicate that a drier climate prevailed in the Shiyang River drainage during the last glacial. Lake Yiema was dry and eolian sand covered most part of the lake basin. During the early and middle Holocene, a moister climate prevailed in the drainage. Climate became dry stepwise with **an abrupt transition from one stage to another during the entire Holocene and became driest since about 4,200 BP**. Maximum dry climate spells occurred at about 12,000-10,000 BP and after about 4,200 BP. A dry climate event also existed at about 7,600 BP.



Troubled Times



India

Shorelines in India

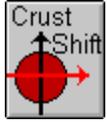
Current Science, 1999, Vol 77

Institute for Scientific Information, Inc

Changes in the shoreline at any point could be due to various reasons such as tectonic disturbance or shift in sedimentological regime causing erosion or deposition. Many scientific investigations, focusing on the palaeo-shoreline vis-a-vis sea level fluctuations in India based on numerous geological techniques, have indicated that at about 6000 BP, the sea level was approximately 6 m higher than at present and about 4000 years BP it stabilized at the present one with minor fluctuations.



Troubled Times



Australia

Cave Fossils expose New Mysteries of a Paradise Lost

by Graeme Leech, Dec 4, 1999

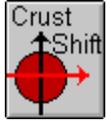
Fossil evidence found on cliffs near several Sydney beaches has revealed a tropical paradise existed in NSW as recently as 6000 years ago – a virtual blink of an eye in geological terms. The findings by University of New England scientists also suggest answers to a number of historical mysteries. Bob Haworth said the dramatic change in sea levels and in climate could help explain why the ancient Egyptians stopped building the pyramids, why the Bronze Age came to an abrupt halt, why the Dark Ages began and why social collapse seemed to take place wherever civilisations were beginning to emerge. "There were winners and losers. It was a disaster for Egypt but lower sea levels made it easier for people to make trans-ocean journeys in parts of the Pacific," Dr Haworth said. Dr Haworth and colleague Bob Baker first noticed in 1997 fossils of tropical coral worms preserved and encrusted beneath a rock fall below cliffs near Cronulla, in Sydney's south.

The fossils have since been dated to show they were deposited 6000 years ago. The creatures can only survive in tropical conditions similar to coral reefs off the Queensland coast. Further studies south at Bundeena, and north on Broken Bay and the Hawkesbury show that the scientists have also found an accurate record of changes in sea levels that, in turn, shed light on climate change. Around Sydney between 4300BC and 3400BC, the district was a "Garden of Eden", Dr Haworth said. The Homebush site for the Olympics would have been under water and waves would have lapped the edges of what is now the Sydney Cricket Ground. The sea would have been home to dugongs and other tropical marine animals. There was an explosion in the Aboriginal population. The Murray Valley was "buzzing" with activity – until the climate changed and a long period of population decline began.

In an article to be published in the journal *Marine Geology*, Peter Flood, Dr Baker and Dr Haworth challenge assumption that sea levels have been stable for the past 6000 years. They say their evidence means greenhouse models will have to be rethought. Why did the climate change? Dr Baker said one "purely speculative" explanation was sunspot activity, but he felt it was more likely to be due to a change in the pattern of ocean currents worldwide. "Whatever, it (the article) is going to be very controversial," Dr Baker said.



Troubled Times



Greece

Greece may once have been tropical refuge for African animals

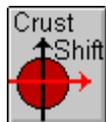
Associated Press, July 20, 2000

Geology teams conducting excavations in northern Greece have uncovered 5 to 7 million year-old rhinoceros and giraffe fossils, indicating the region was once a tropical refuge to animals found in present-day Africa, geologists said Thursday. “A paleontological treasure was found” in the excavations near the northern towns of Grevena and Serres, about 415 kilometers (260 miles) north of Athens, said Professor Evangelia Tsoukala, who headed the geology team conducting the digs. In Serres, “impressive remains of a fossilized rhinoceros were discovered in addition to fossils of small-sized horses, antelopes and gazelles that date back 5 to 7 million years,” Tsoukala said. The dig in Grevena uncovered a large fossil of the ancestor of the present-day elephant. The 3 million-year-old fossil was found to be that of a male which stood 4.5 meters (15 feet) tall and weighed more than 12 tons. “They have discovered the biggest skeleton of a Mammut Borsoni that has ever been found in Greece, and the best completed jaw ever found in Europe,” Tsoukala explained. The Serres excavations began last year when a railway employee discovered fossilized skeleton parts of a giraffe, and the findings indicate that Greece once had a tropical climate and terrain.

“There is no evidence of cold weather in any part of the country at that time, which means that Greece, with its tropical climate, was actually a refuge for certain animals that had disappeared in the colder regions of northern Europe,” Tsoukala says. Heavy snowfalls and frequent rain are now common during the winter months in Greece, particularly in the northern, mountainous regions, where bears and wolves still roam the forests. But the prehistoric animals, which are believed to have come to Greece from Africa, vanished suddenly around 5 - 7 million years ago. “Due to our finding the skeletons of these animals in bunches, we suspect that there was a prolonged period of dry, arid weather that killed these animals,” Tsoukala said. Excavations in the Serres and Grevena areas have yielded so many finds that the digs could continue for another five years, she added. Less complete remains of similar animals dating back 9 million years have also reportedly been found in an area near the port city of Thessaloniki, as well as in Slovenia, Moldova, France, Hungary and Siberia.



Troubled Times



Measured

Observatory: Unearthing History

by Henry Fountain, *The New York Times*, 12/8/98

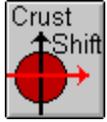
Seeking new clues to changes in vegetation and climate that occurred thousands of years ago, scientists have gone underground. Eighty feet underground, in fact, in a cave in Missouri. The scientists, from the University of Minnesota and the University of Iowa, analyzed stalagmites from Crevice Cave, in the southeastern part of the state, for evidence of what things were like topside 75,000 to 25,000 years ago. They reported their results in the current issue of *Science*.

A stalagmite tells a tale through time, growing on the floor of a cave through the constant drip of mineral-laden liquid from above. That liquid, of course, began as rain, and filtered through decaying plant matter in the soil like water through coffee grounds. Analysis of carbon isotopes in sections of the stalagmite can reveal what kinds of plant matter the water dripped through. And the sections can be dated by measuring the amount of a radioactive thorium isotope they contain. All that analysis showed that the region around Crevice Cave was mostly forest from 75,000 to 71,000 years ago, shifting to savannah and then prairie for about 15,000 years before returning to forest.

A similar analysis of oxygen isotopes in the stalagmites showed average annual atmospheric temperatures varied by about 7 degrees Fahrenheit, peaking around 57,000 years ago and reaching a low point about 46,000 years ago.



Troubled Times



Piri Reis Map

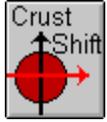
Have just re-read *Charriots of the Gods*. It deals with the **Piri Reis Map** on pages 29/30/31. Research that was done by USA Navy cartographers seemed to indicate that the map is drawn as seen high up from space. It also depicts the interior, which navigators could not have been aware of and depicts mountain ranges in the Antarctica hidden for thousands of years under ice.

Offered by [Stephen](#).

The Piri Reis Map, which is a genuine document, not a hoax of any kind, was made at Constantinople in 1513 CE. It focuses on the western coast of Africa, the eastern coast of South America, and the northern coast of Antarctica. Piri Reis could not have acquired his information on this latter region from contemporary explorers because Antarctica remained undiscovered until 1818 CE, more than 300 years after he drew the map. The ice-free coast of Queen Maud Land shown in the map is a colossal puzzle because the geological evidence confirms that the very latest date that it could have been surveyed and charted in an ice-free condition is 4000 BCE. It is not possible to pinpoint the earliest date that such a task could have been accomplished, but it seems that the Queen Maud Land littoral may have remained in a stable, unglaciated condition for at least 9,000 years before the spreading ice-cap swallowed it entirely. There is no civilization known to history that had the capacity or need to survey that coastline in the relevant period, i.e. between 13,000 BCE and 4000 BCE.



Troubled Times



Glacier Theory

Difficulties in the [Glacial Theory](#)

The layer of drift is the main body of evidence for the glacial theory. When one considers how this material is distributed, considerable difficulties arise in the notion that it has been caused by glaciers. It is not present in many areas where one would expect to find it, and it is present where one would least expect it. Thus in the northernmost parts of Greenland, and in some of the islands of northern Canada, no drift is present. But it is found in tropical areas such as the Amazon jungles. Regarding the tropics, right at the equator, no less an authority than Louis Agassiz reported:

There were drift accumulations, and scratched rocks, and erratic boulders, and fluted valleys, and the smooth surface of tillite ...

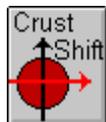
The presence of drift has been reported from such places as British Guinea, equatorial Africa, Madagascar, and India. Wherever the characteristic features of the drift are found, it seems necessary to postulate former glaciers to explain it. The theory of continental drift is partly an attempt to explain how the ice-sheets could have existed in these areas at various periods in the past.

The glaciers of mountain regions and the ice-sheets of the Antarctic and Greenland do not seem to be forming any deposits similar to the layer of drift that has been attributed to ice-sheets of the past. Present glacial moraines contain fragments of angular rocks unlike the boulders in the drift, which are rounded; and the glacial deposits of the present have none of the features of the structure of the drift, but are more aptly described as a heterogeneous muck. The postulated ice-sheets of North America and Europe are also somewhat lop-sided, and do not conform to the polar regions as one would perhaps expect they should; and accounting for this has been a brain twister for the glacial theorists.

Charles H. Hapgood proposed that the continents were dislocated from time to time from their present relationship with the poles, as the earth's crust shifted over its interior. Hapgood's idea was that the north pole was located in the Yukon 80,000 years ago, shifted to a point northwest of Norway, from there migrated to Hudson Bay, and moved to its present location at the end of the last Ice Age. One reason why this idea has not been afforded very great favor amongst Quaternary geologists is that the structures composed of drift around the world are all very well preserved, and there does not seem to be good reason for attributing some to a much earlier period than others. All of the drift landforms actually must be quite recent, and of similar age, if the degree of erosion is considered as an indicator of age.



Troubled Times



Methane Ice

Excerpts from **A Possible Mechanism for Ice Age and Global Warming Cycles**

By Stephen Dwyer

Recent discoveries about the existence of a vast band of Methane Ice along the world's continental Slopes, at approx. 800 meters depth, have revolutionized the theories of the Ice Age and Global Warming Cycles. The accumulation of Methane Ice leads to Ice Ages and the rapid melting and effervescence of this ice and gas leads to and equally rapid Global Warming.

The last series of Ice Ages all follow a similar pattern of gradual cooling for many centuries and the formation of vast Ice Caps in the Northern Hemisphere, and in the Southern Hemisphere to a much lesser extent due probably to much less land mass. Then the **Ice Ages end very rapidly, in fact in less than 50 years!** This Global Warming is so rapid that the graphs of all the available paleotemperature indicators show the same rapid warming of up to 10 degrees Centigrade in a very short time. This rapid warming causes catastrophic melting of the Ice Caps and flooding across the Continents. **It also raised sea level 300 feet after the last Ice Age ended from 14,000 years ago in North America and 10,500 years ago in Europe.** This difference is probably due to the differences between the Pacific and Atlantic Ocean temperature and pressure gradients and the influence of the Gulf Stream on European weather.



Troubled Times



Twin-Pole Changes

Associated Press, October 1, 1998

Ice cores suggest global climate change 12,500 years ago

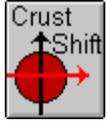
The Earth's climate abruptly warmed by 20 degrees or more to end an ice age 12,500 years ago, according to researchers whose findings may force a re-evaluation of the history of dramatic swings in the planet's climate. James White, a climatologist at the University of Colorado, Boulder, said that an analysis of new ice cores from the Antarctica show that the south polar area went through a rapid temperature increase at the same time that the north polar region was also warming. White, co-author of a study to be published Friday in the journal *Science*, said that the Antarctica ice cores show a temperature increase of about 20 degrees F within a very short time.

Ice cores from Greenland, near the Arctic, show that at the same time there was a temperature increase of almost 59 degrees in the north polar region within a 50-year period, White said. "What we see in Antarctica looks very, very similar to what we see in Greenland," said White. "We used to suspect that some of these big changes that occurred naturally in the past were only local. Since we see the same thing at opposite ends of the Earth, it does imply that the warming was a global phenomena." He said the findings "throw a monkey wrench into paleo-climate research and rearrange our thinking about climate change at that time."

White said researchers need to look more closely at how the Earth's climate slipped from an ice age that ended about 12,500 years ago and shifted into the current, more temperate climate. The findings, he said, also increases the urgency for researchers to understand climate shifts because it appears they could be abrupt and happen all over the Earth at the roughly the same time. "The challenge is to determine if a climate change will be a nice and gradual thing that we can adapt to or will it be a mode shift that happens suddenly," said White. The warming 12,500 years ago came within a typical human lifetime. Such rapid shifts in the climate on a global basis would make it very difficult for humans to adjust, he said. Climate affects agriculture, energy use, transportation and population shifts, and rapid changes would make adjustment in these things more difficult.



Troubled Times



Continental Drift

This [Link](#) like many others talks about a slow but normal process of new land being formed in the centers of oceans and moving toward the shores. My question is why? Does anyone know the mechanics behind how and why this works this way?

Offered by [Mike](#).

Continental crust, mostly silica (quartz-like), has formed mainly from volcanic eruptions. The fact that the magma rises to the surface and spews out indicates that it is composed of lighter minerals. The continental crust is not easily subducted. So it stays around for millions of years longer than the oceanic crust, which *is* easily subducted. When 2 continental plates collide, they usually form huge mountains (like the Himalayas), instead of one subducting under another.

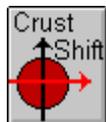
Of course, there are many sedimentary rocks also, which are exposed when a hot spot makes an entire section of oceanic sediment rise above sea level. (This in and of itself is catastrophic in nature). The mechanism of the current movement of these plates is so easily explained by a pole shift every so often. The plates are still in motion from the last time they were flung around, continuing with the existing momentum. The fact that things are speeding up also indicates that some new catalyst is in the mix, adding new momentum.

The oceanic crust is extruded at places like the oceanic rifts, below the ocean. First and foremost, this oceanic crust is composed of heavier and more brittle minerals than continental crust. I can speculate that it is thinner due to the weight of the ocean, and the fact that it spreads out under the push from the newly forming extruded crust, which in turn is the mechanism behind its subduction under the continental crust at the continental crust boundary. It is probably in the center due to being symmetrical. In other words, when the rift formed, the two continental plates were one, and over time, they spread apart about equally on either side of the rift.

Offered by [Leila](#).



Troubled Times



Wandering Poles

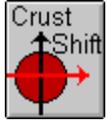
Earth Rolls on its Side, Continents Seem to Move

Jan 26, 2000

While long-held theories of plate tectonics have accounted for movement of Earth's continents over eons, a new study suggests the wandering of the planet's magnetic poles might account for some of what scientists observe in the geologic records. The new idea does not rule out theory of plate tectonics, but adds to it.



Troubled Times



Bahamas

Atlantis Mystery Stirred by Undersea Discovery

By Howard Van Smith, 8/25/68 Sunday, Miami, Florida

Has an outpost of Atlantis been discovered just 80 miles east by slightly south of Ft. Lauderdale? A Yale professor of archaeology says this could very possibly be true. A spokesman in the same department at Florida Atlantic University, asking his name not be used as a matter of political consideration, says absolutely no - that there never has been scientific verity to the "myth" of Atlantis. What started this - and excited a lot of prominent people Friday - was announcement of discovery of the top of a large stone building off the coast of an unannounced Bahamas Island. It was also said there was another building a half mile away. It was further said this probably was part of an ancient city.

Dr. Manson Valentine, former archaeology and zoology was one of three people who flew out after the outline was spotted in the water by an airline pilot. He said: "Whether or not we have here an Atlantean or post-cataclysmic artifact or upwards of 10,000 years is too early to even conjure upon. But what seems certain is that the ruin is surely pre-Columbian as established by its position relative to present water level. Also, it might conceivably be as ancient as the days before the last cataclysm, some 11,500 years ago, which destroyed the remnants of the legendary land of Atlantis."

Valentine, whose connection with the find came because he is a member of the faculty of the Rebikoff Institute of Underwater Technology in Ft. Lauderdale which coincidentally graduated its first three members Friday, is listed as a member of the Explorers' Club and discoverer of many important Mayan relics in the Yucatan Peninsula. He also linked the find to the Yucatan area: "In plan, both as to orientation and size, it bears reasonable resemblance to the Temple of the Turtles, a famous ceremonial complex in the Puuc (Grecian-like) style to be seen in the archaeological complex at Uxmal, Yucatan." Both structures are partitioned off with one or more elongated chambers at the east end; both exhibit one or more cubical-like rooms incorporated in the west corners. ...

The mystery building - and no one seems to argue whether there is a building under sea water - was first discovered by Robert Brush, 25, a Miami cargo pilot, who reported it to Demetri Rebikoff, president of the Rebikoff Underwater Products of this city and also head of the new oceanographic institute. Dr. Rebikoff, Dr. Valentine and Dr. Richard Evans, chief scientist of the institute, flew to the site - which in one photograph appears less than a half mile from one of the Bahamas islands. The trip was made last week. Dr. Rebikoff said the reason for the delay was due to finances and other complications.

The three scientists dove around the walls, which, they reported, were only two feet from the surface at low tide. But uncovered by sand are only another two feet. They said the overall dimension of the walls was 50 by 90 feet. Shape and sizing of the stone indicate plainly it was man-made, they said. They also said there were designs on the stones. A second building, somewhat smaller, was reported about a half mile away. Reason for the exposure and not being seen by a pilot before, as have many of the treasure wrecks, was some shifting of the sand by hurricane or other force had disclosed it.

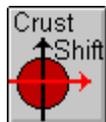
Negotiations with the Bahamian government are now under way to excavate the entire building and perhaps more of the area, Rebikoff. Vacuum pumping of the sand is being considered. Dr. Valentine said preliminary observations of pieces of the stones places it possibly between 500 and 1000 years of age. There is also evidence of some kind of plaster being used and this will be subject to the conventional

carbon tests to ascertain age. Still, it could be much older and part of the Atlantis legend, Dr. Valentine said. "A five hundred year upper limit is not unconservative but a possible extension into remote antiquity might well multiply such a figure several times."

On this is based the possibility that it might be an outpost of Atlantis, the continent and civilization that, according to as venerable a source as Plato, slipped below the sea. Valentine says the structure could have been built when the land was 500 feet higher - it might have been a temple on a hill.



Troubled Times



Buffalo Roamed

Where Buffalo Roamed

Environmental News Network, August 27, 1998

More than 14,000 years ago, enormous bison, camels and mastodons could be found roaming the Georgia coastline. At the time, the coastline extended 60 miles beyond the current Georgia shoreline, and is therefore now completely underwater. Some 60 feet below the ocean's surface, scientists with Gray's Reef National Marine Sanctuary are uncovering remnants of prehistoric animal life and hoping to find clues to climate change as well.

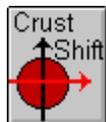
These underwater discoveries of fossils and ancient plant life give clues to the climate of the past and may provide insight to the effects of future climate change and global warming. Sanctuary divers, using only their hands to brush away sand covering the limestone outcropping, have uncovered mastodon and bison bones, the tooth of a Pleistocene horse and marine worm burrow cast (radiocarbon date of 18,000-plus years old).

In other areas of the reef, divers have drilled thin corings in the reef and recovered pine pollen and alder and grass seeds. Dr. Erv Garrison, a University of Georgia marine archeologist, hopes one day to find the tools used by Paleo-Indian hunters, who followed the animal herds.

Plant fossils give scientists important information about ancient shorelines and the rise of sea levels, according to Gray's Reef's education coordinator Sarah Mitchell. Learning more about the historic patterns of changing sea levels and ancient distribution of plants and animals will help scientists predict future effects of ocean rise in our coastal areas.



Troubled Times



Indian Ocean

[Lost Continent](#) Discovered

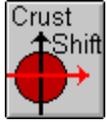
From the *BBC Online Network*, May 27, 1999

http://news.bbc.co.uk/hi/english/sci/tech/newsid_353000/353277.stm

Scientists have discovered the remains of a "lost continent" beneath the waves of the Indian Ocean. Drilling by the Joides Resolution research vessel, which traverses the east extracting samples from beneath the sea floor, suggests that the continent, about a third the size of present day Australia, sank from sight only 20 million years ago.



Troubled Times



Mediterranean

Lost Pharaonic Cities of the Deep

Associated Press, June 3, 2000

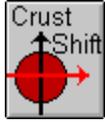
Archaeologists scouring the Mediterranean seabed announced Saturday that they have found the 2,500-year-old ruins of submerged Pharaonic cities that until now were known only through Greek tragedies, travelogues and legends. Among the stunning discoveries at the sites where the cities of Herakleion, Canopus and Menouthis once stood are remarkably preserved houses, temples, port infrastructure and colossal statues that stand testimony to the citizens' luxuriant lifestyle, which some travelers had described as decadent. This is the first time that historians have found physical evidence of the existence of the lost cities, which were famous not only for their riches and arts, but also for numerous temples dedicated to the gods Isis, Serapis and Osiris, making the region an important pilgrimage destination for various cults. Herakleion, once a customs port where commerce flourished until the founding of Alexandria by Alexander the Great in 331 B.C., was found in its entirety. "We have an intact city, frozen in time," French archaeologist Franck Goddio, who led the international team in the search, told *The Associated Press*.

The team worked for two years off this city on Egypt's northern coast in waters 20 to 30 feet deep, using modern technology including the use of magnetic waves to map the area. "It is the most exciting find in the history of marine archaeology. It has shown that land is not enough for Egyptian antiquities," said Gaballa Ali Gaballa, secretary-general of the Supreme Council of Antiquities, Egypt's top archaeology body. At a news conference, underwater television footage of the site was shown to reporters. Some of the treasure was also on display a basalt head of a pharaoh, a bust of the curly-haired and bearded god Serapis and a life-size headless black granite statue of the goddess Isis, sculpted as if wearing a diaphanous cloth held together by knots at her breast. "At long last, these lost cities of Menouthis and Herakleion have been located," Gaballa said. He said that the cities probably built during the waning days of the pharaohs in the 7th or 6th centuries B.C. will be left as they are in the sea and that only smaller pieces will be retrieved for museums.

Numerous ancient texts speak of the importance of the region and the cities, before they were covered over by the sea, probably after an earthquake. Greek historian Herodotus, who visited Egypt in 450 B.C., wrote about Herakleion and its temple dedicated to Hercules. The sites were also named in Greek tragedies. Greek mythology tells the story of Menelaos, king of Spartans, who stopped in Herakleion during his return from Troy with Helena. His helmsman, Canopus, was bitten by a viper and was subsequently transformed into a god. Canopus and his wife, Menouthis, were immortalized by two cities that bore their names. Authors such as Strabo describe the location of the cities and their rich lifestyle, while others, such as Seneca, condemn their moral corruption. Herakleion lost its economic importance after the building of Alexandria. It was probably destroyed by an earthquake, indicated by the position of collapsed columns and walls. They had all fallen systematically in one direction, said Amos Nur, a geophysicist at Stanford University who did the magnetic mapping of the area. The sea encroached on the land after the quake, and ruins of Herakleion are now about four miles from land in the Bay of Abu Qir. The sea also engulfed Canopus and Menouthis. The destruction most likely happened in the 7th or 8th centuries. Divers found Islamic and Byzantine coins and jewelry from that period, but none more recent.



Troubled Times



Japan

Japan's Mysterious [Submerged Stone Structures](#)

by Laura Lee

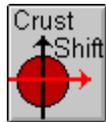
Man-made, made by Nature, or did humankind finish what Nature started? These enigmatic, sunken stone structures off Okinawa, Japan, located 60 to 100 feet beneath the ocean surface, have the Japanese wondering if their homeland was once part of the lost continent of Mu. Stone terraces, right angled block and walls, and stone circles encompassing hexagonal columns look intriguingly, if not conclusively, man made. A few more clues: an encircling road, what might be post holes supported long-gone wooden structures, what look like cut steps, and castles with similar architecture located nearby and still on land. The two sites that are getting the most attention: near the city of Naha is Okinawa is what looks like a wall, with a coral encrusted right angled block. Another, just off the southern end of the tiny island of Yonaguni, the southernmost island of Japan, is an extensive site, with five irregular layers that look like ceremonial, terraced platforms. There are eight anomalous, underwater sites found to date.

Two of Japan's leading researchers on the sites are Kihachiro Aratake, who first discovered the Yonaguni site, and Prof. Masaaki Kimura, a marine geologist with the University of the Ryukyus in Okinawa. Prof. Kimura has spent several years studying all eight sites, especially Yonaguni, which was found 13 years ago, in 1985. Kimura believes these are monuments made by man, left by an unknown civilization, perhaps from the Asian mainland, home of our oldest civilizations. He reasons that if the five layers on the Yonaguni site had been carved by nature, you would find debris from the erosion to have collected around the site, but no rock fragments have yet been found. He adds that there is what look like a road encircling the site as further indication it was used by man. He believes building this monument necessitated a high degree of technology, and some sort of machinery.

How to date these sites? A few possible scenarios have been suggested. The sites may have been submerged when sea levels rose at the end of the last Ice Age as the continental ice sheets melted. Or, as Japan sits on the Ring of Fire, tectonic activity might have caused subsidence of the land. Or perhaps a combination of subsidence and inundation from rising sea levels, or some catastrophic event, dropped it, intact and upright, into the ocean. Teruaki Ishii, a professor of geology at Tokyo University, believes the site is partly man-made, partly natural, and suggests a date of 8,000 B.C., contemporary to the ancient civilizations of Mesopotamia and the Indus Valley. Others have suggested a date of 12,000 years.



Troubled Times



Technology

Did Ice Age Cultures Lose [Technological Skills](#)?

Feb 1, 2000

Archaeologists have discovered what the well-dressed Ice Age woman wore on ritual occasions. Her outfit, however, including accessories, doesn't resemble anything Wilma Flintstone ever wore, or, for that matter, any of our carved-in-stone conceptions of "paleofashion." Instead, the threads of at least some Ice Age women included caps or snoods, belts and skirts, bandeaux (banding over the breasts) and bracelets and necklaces - all constructed of plant fibers in a great variety of cloth, from twined and basket wear to plain weaves. While styling varied across Eurasia, the finest weaves are "comparable to not only Neolithic but even later Bronze and Iron Age products, or, in fact, to thin cotton and linenwear worn today," Olga Soffer, James Adovasio and David Hyland wrote in an article to be published in *Current Anthropology*.

The evidence for Ice Age summer fashions comes in part from 80 textile impressions Soffer found on tiny clay fragments in the Czech Republic. The impressions are "the earliest evidence for cordage and textile production in the world and reflect technologies heretofore associated with much later periods," the archaeologists wrote. Soffer, a professor of anthropology at the University of Illinois and a pioneer in the study of Upper Paleolithic life ways, compared the impressions to the representation of clothing on the so-called "Venus" figurines, which also date to the Gravettian period, roughly 25,000 years ago. "It suddenly struck us that what we were looking at under the microscope on these little fragments was precisely what was being shown as clothing on some of these 'naked ladies,' " she said, noting that in all likelihood the Ice Age seamstresses also carved the figurines that showed off their "exquisitely detailed" weaving, plaiting and coiling skills.



Troubled Times



Radical Shift

Reuters 24-JUL-97 By Michael Miller

A 90-degree shift of the Earth's early continents - in which the North and South Poles wound up at the equator -- may have played a major role in the evolutionary "big bang" that speeded up the development of life, scientists said. A report to be published on Friday in the journal *Science* said the "big bang," a sudden spurt in the evolutionary process, began about 530 million years ago and proceeded at a rate 20 times faster than anything that has happened since.

What caused that spurt has long been a mystery perplexing scientists; now experts at the **California Institute of Technology** (Caltech) say they may have part of the answer. Caltech geologists Joseph Kirschvink and David Evans and Robert Ripperdan of the **Oak Ridge National Laboratories** in Tennessee said the relatively sudden diversification of life forms took place at the same time as Earth's then-super continents took a 90-degree turn, shifting the polar masses to the equator and putting equatorial points at the poles.

Both events occurred during the so-called Cambrian period when a major reorganization of the Earth's crust took place. They said in *Science* that all the data "indicate that rapid continental drift occurred during the same time interval as the Cambrian evolutionary diversification and, therefore, the two events may be related." Kirschvink said, "Life diversified like crazy about a half a billion years ago, and about 15 million years later life's diversity had stabilised at much higher levels. What actually happened is one of the outstanding mysteries of the biosphere." He added that the geophysical evidence collected from rocks deposited before, during and after the evolutionary speedup, "demonstrate that all of the major continents experienced a burst of motion during the same interval of time."

Evans told *Reuters* the study indicated that in order to change their positions so radically, the super continents - which broke up about 150 million years ago to form today's continents - would have travelled several feet (metres) per year over a 10 million to 15 million year period. The phenomenon is known as "true polar wander," in which the entire solid part of the planet moves together. Typical continental migration rates today, which are caused by heat convection in the Earth's crust, are only a few inches (centimetres) a year, Evans said. Kirschvink said the climatic changes, in which life forms existing in cold temperatures were thrust into warmer regions, and vice versa, forced their diversification as they adapted to their new environments. It also produced a survival of the fittest pattern of evolution in which certain groups died off and others became stronger through survival.

Of particular significance to the scientists was the once super continent of Gondwanaland, probably made up of what is now Australia, Antarctica, India, Africa, South America and perhaps parts of East Asia. Studies of rocks found in Australia and dating back to the Cambrian period "demonstrate that Australia rotated counter- clockwise during this time. Other parts of the Gondwanaland super continent must have been involved in this ... rotation," the report in *Science* said.



Troubled Times



Pole Shifts

As reported by *Future Fate: Scientific Evidence supporting a Pole Shift*

From **Richard Noone's book** 5/5/2000

In December of 1985 the discovery of volcanic ash twenty feet underground in the Nile delta was found to be identical to the ash from **an enormous eruption approximately 3,500 years ago on the Greek island of Santorini**. This discovery proves that the effects of the eruption (22,000 times greater than the effect of the atomic bomb dropped on Hiroshima) reached as far as Egypt and supports a theory (presented in chapters two and eight of Noone's book) linking the eruption to the seemingly miraculous events associated with the biblical Exodus of the Israelites from Egypt.

From **Wire Reports: Researchers Find Evidence of Polar Waffling**

Earth's magnetic poles change location slightly from decade to decade, but so slowly that navigation is unaffected, and compass-toting Boy Scout troops are not lost in the pines. But under certain circumstances the planet's magnetic field can become so deranged that it **moves as much as 6 degrees per day**, wobbling around for a week or so before stabilizing, scientists report in the April 20 issue of Nature.

Such drastic changes are beyond the limits of conventional geological opinion. But R.S. Coe of the University of California at Santa Cruz and colleagues from the University of Montpellier in France contend they took place 16.2 million years ago, during one of Earth's occasional field reversals in which **magnetic north becomes south, and vice versa**. No one knows why, just as no one understands exactly what produces the field in the first place. But the reversals are permanently documented in the rock record from volcanic activity.

Ten years ago, after examining lava flows at Steens Mountain, Ore., researchers found evidence the field had shifted as much as 3 degrees per day. That was an unthinkable large amount for most experts, who dismissed the findings. Undeterred, two members of the team set out to study another flow a mile away, which is the subject of the new report. Not only did they discern a field change twice as large, but they "make a convincing case" that their original results were not an artifact, writes University of Washington geologist Ronald T. Merrill in a companion article.



Troubled Times



Steens Mountain

The Steens Mountain Conundrum,
from [Science Frontiers](#) #80, Mar-Apr 1992.
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The layered lava flows of Steens Mountain, in southeastern Oregon, have preserved video-like records of the earth's magnetic field as it switched from one polarity to another about 15.5 million years ago. The scientific "instruments" here are the cooling lava flows. As they solidify from the outside in, a process taking about 2 weeks for a 2 meter-thick flow, **the lava is magnetized in the direction of the field prevailing at the moment of solidification**. We would thus have a 2-week continuous record of the behavior of the earth's field. Ordinarily, we would not expect to see very much change in 2 weeks; even a reversing field is thought to take thousands of years to complete its flip-flop. However, at Steens Mountain, when the field reversed 15.5 million years ago, the lava flows suggest that the field's axis was rotating 3-8° per day - incredibly fast according to current thinking, in fact a thousand times faster than expected.

The conundrum (one might call it a scientific impasse) arises because the flowing electrically conducting fluids that supposedly constitute the earth's dynamo would have to flow at speeds of several kilometers/hour. No one has ever contemplated molten rock moving at such speeds in the core!

Could it be that the prevailing dynamo theory is incorrect?

To make matters more interesting, it now seems that **the paths taken by the reversing poles follow similar routes with each flip-flop**. One preferred path is a band about 60° wide running northsouth through the Americas; the other path is 180° away cutting through east Asia and just west of Australia. The implication is that some unknown structure in the core somehow guides the reversing poles.

Almost Inconceivable Changes in the Geomagnetic Field,
from **Science Frontiers** #101 Sep-Oct 1995.
Copyright 1997 William R. Corliss

A decade ago, a trio of geophysicists published a group of papers based on their measurements of the remnant magnetism of the 16-million-year-old layered lava flows at Steens Mountain, Oregon. (SF#45) At that time, they claimed that these finely bedded lava flows testified that, during a field reversal, the earth's field swung around at the astonishing rate of 3° per day! This rate is about one thousand times the current rate of polar drift. Mainstream geophysicists could not believe the 3°/day figure because it implied incredibly rapid changes in the flow of those molten materials within the earth that supposedly generate the geomagnetic field. The Steens Mountain data were "tableted"; that is, dismissed.

The three researchers, though, continued their labors at Steens Mountain and have now offered additional, even more impressive data. They now find that **the geomagnetic field probably shifted as much as 6° in a single day**. Their work has been carried forward so professionally and meticulously that other scientists are finding their conclusions harder and harder to dismiss. Instead, the search is on for explanations of the rapid field changes. Three possibilities have been advanced -- all of them unpalatable to geophysicists:

- The Steens Mountain rocks are not faithful recorders of the main geomagnetic field. Should this be

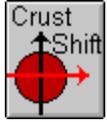
actually so, the whole field of paleomagnetism, including plate tectonics, is undermined, for it depends upon similar measurements.

- The earth's molten core can change rapidly, at least in some regions, in response to forces still unrecognized. This, of course, is not really a satisfying "explanation."
- The dynamo theory of the origin of the geomagnetic field is incorrect.

Coe, R.S., et al; *New Evidence for Extraordinarily Rapid Change of the Geomagnetic Field during a Reversal*, **Nature**, 374:687, 1995. Merrill, Ronald T.; *Principle of Least Astonishment*, *Nature*, 374:674, 1995. Appenzeller, Tim; *A Conundrum at Steens Mountain*, **Science**, 255:31, 1992. Lewin, Roger; *Earth's Field Flips Flipping Fast*, **New Scientist**, p. 26, January 25, 1992.



Troubled Times



Atlantic Rifts

A glimpse into this mechanism came from studies of the magnetic characteristics of the ocean floor. During the 1950's, at least partly driven by the military need to understand the ocean as the arena of submarine warfare, intensive studies of the ocean floor were carried out. It was found that the center of each major ocean was occupied by a ridge at whose center was a valley. On each side of this, parallel stripes of rocks magnetized in opposite directions were found. The pattern of stripes on one side was the mirror image of the pattern on the other side. The reversal of the earth's magnetic field recorded in the rocks was repeated on each side of the ridge.

This led H. H. Hess (1960) to propose the idea of sea-floor spreading. Molten rock is continuously extruded and cools to form the ridge. As it solidifies, it records the magnetic field at that time. Since it spreads to each side of the ridge, each side has the same record magnetic field record (one is the mirror image of the other). Since new crust is being formed at the ridges, it must be consumed somewhere. Hess proposed that this happens at deep sea trenches, where oceanic crust "dives" under a continent.

Continental Drift and Plate Tectonics



Troubled Times



Greenland

Climate Can Change Quickly

Associated Press, Oct 28, 1999

In a study that may sound a warning about global warming, researchers have found evidence that the world's climate can change suddenly, almost like a thermostat that clicks from cold to hot. A new technique for analyzing gases trapped in Greenland glaciers shows that an ice age that gripped the Earth for thousands of years **ended abruptly some 15,000 years ago when the average air temperatures soared.** "There was a 16-degree abrupt warming at the end of the last ice age," said Jeffrey P. Severinghaus of the Scripps Institution of Oceanography, lead author of a study to be published Friday in the journal *Science*. "It happened within just a couple of decades. The old idea was that the temperature would change over a thousand years. But we found it was much faster."

Severinghaus said the rapid rise in air temperature in Greenland may have been touched off by a surge in warm currents in the Atlantic Ocean that brought a melting trend to the vast ice sheet that covered the northern hemisphere. It still took hundreds of years for the ice to recede, but the start of the great thaw was much more sudden than scientists had once thought. This suggests, Severinghaus said, that the Earth's climate is "tippy" - prone to be stable for long periods, but then suddenly change when the conditions are right. ...



Troubled Times



SeaMounts

New England SeaMounts Once Near Surface

From *Science Frontiers* #1, September 1977, by 1997 William R. Corliss

Reference: Heirtzler, J.R., et al; **A Visit to the New England Seamounts**, *American Scientist*, 65:466, 1977; **Guyots pose several enigmas, Carolina Bays, Mima Mounds.**

Exploration of the New England Seamount chain by the research submarine Alvin confirmed that some of these peaks, now all a kilometer or more below the surface, were once at or above the surface of the ocean.

This undersea mountain chain contains more than 30 major peaks and stretches 1,600 miles southeast from the New England coast. Deep-sea dredging has previously brought up Eocene limestone of shallow-water origin from the submerged mountain tops, but the Alvin explorations resulted in the first eye-witness accounts of dead coral (which grows only near the surface) and rock samples containing strands of dead algae that grows only within 100 meters of the surface. The New England Seamounts have therefore either subsided on the order of a kilometer since Eocene times or sealevel has altered drastically.

The Alvin dives also discovered a series of very striking and perplexing buttes obviously the results of erosion (see drawing on cover). The buttes are apparently composed of volcanic rock and are only a few meters high. Some unexplained, extremely vesicular (holefilled) rocks seen on the sea floor during the dives seem to be identical to samples occasionally dredged up and formerly classified as cinders jettisoned from old steamships. The underwater surveys suggested that these "cinders" have a natural (still mysterious) origin.



Troubled Times



Mammoths

From: Jim I. Mead[SMTP:Jim.I.Mead@NAU.EDU]

Sent: 14 November 1997 16:13

To: michael@unicall.be

Dear Michael,

You apparently sent a message regarding mammoths to Mike Jacobs, who forwarded it to me. I will see if I can help.

1. Is it so that mammoths almost disappeared about 10.000 years ago? That the mammoths massively moved around that time towards other regions, from north africa to northern europe & asia?

Yes, it appears from the youngest accurate radiocarbon dates place the extinction of the mammoth at about 11,000 years ago. This certainly seems to be the case in North America. Andrey Sher in Russia seems to have very good evidence that mammoths (pygmy) may have persisted on an island between Alaska and Siberia until about 4,000 years ago. Mammoths are just a type of elephant and evolved in Africa and immigrated to other regions at various times. There are some great books in English and German about mammoths.

2. Is it so that mammoths were frozen in the Siberian ices about 7.000 years ago?

I don't know about accurate ages of 7,000 years, but there are a number of mammoths dating much earlier. I have worked on only one mammoth - it radiocarbon dated to about 23,000 years old.

3. Is it so that the few remaining mammoths disappeared about 3.500 years ago ? Do we know how the number of mammoths changed between 10.000 years ago and 4.000 years ago ?

It appears that most died out about 11,000 years ago, but as I mentioned above there appears (?) to be a relict population living until about 4,000 or maybe 3,000 years ago in an Arctic island.

4. Does science have an explanation for these changes? Sudden storms? Sudden climate changes?

Well, like any subject, there are a number of opinions out there. Paul Martin would say that mammoths died out because of over hunting by humans. This may be possible or probable in some areas of the world. I feel that it was a rapid change in climate, which changed the environment, and may have gotten too warm for them. Not sure. Lots more to learn and find out.

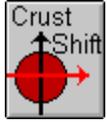
You may want to get hold of people at The Mammoth Site, Hot Springs, South Dakota. Let me know if you have more questions.

Sincerely yours,
Jim I. Mead

Chair, Department of Geology
Director, Quaternary Studies Program



Troubled Times



Flash Frozen

[Frozen Mammoth To Be Unearthed In Russia](#)

By Bas den Hond, Rotterdam, 5-22-99

The carcass of a woolly mammoth, kept out of rot's way for 20,000 years in the frozen ground of northern Siberia, will be excavated this autumn. The Jarkov mammoth, named for the family that discovered it, will be the first mammoth ever to be kept frozen as it's lifted out of its grave. It will be stored in an underground cave at minus twelve degrees centigrade.

Raising the Mammoth

Discovery Channel, Mar 12, 2000

Last October, amid the bitterness of the Siberian tundra, the carcass of a male woolly mammoth was lifted out of the ground where it had been frozen for more than 23,000 years. Soon scientists hope to begin searching that long-dead body for clues of an ancient world. The effort of the team led by French explorer Bernard Buigues to dig out the frozen block of earth containing the mammoth, then carry it almost 300 kilometers by a giant helicopter, was only a first step. After spending the winter above ground, the huge chunk of tundra and mammoth will soon be moved inside an ice cave in Khatanga, Siberia. There, a group of scientists will slowly begin thawing small sections of the animal and permafrost to look back into the world in which mammoths lived.

Intact Mammoth to be Carved from Siberian Tundra

Reuters, July 23, 1999

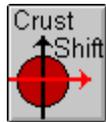
An adult woolly mammoth mummified 23,000 years ago under Siberia's frozen tundra will be dug out of the permafrost and may one day be cloned, an international team of scientists said on Thursday. In a scenario worthy of the fictional, cloned dinosaurs in the "Jurassic Park" movies, French explorer Bernard Buigues said the intact soft tissues and the hair of the Jarkov mammoth held out the possibility of recovering intact DNA. "It will be interesting to know the habits of this animal and what he was doing in this place that was a very difficult place to live," Buigues said in a teleconference with reporters from southwestern South Dakota, a center for fossil finds. "In the pictures we have, you see all the kinds of hair that the mammoth has. The colour is intact," said Buigues, who is affiliated with the National History Museum of France. "The smell of the skin is also there."

Most likely, any attempt to clone the extinct woolly mammoth - an example of one of the six or seven known species of mammoth that roamed the Earth through the Pleistocene era - would be done by using a genetically similar Asian elephant as the gestating mother, said Larry Ageneroad, a geology professor at the University of Northern Arizona, who will join the team in Russia in September. The Jarkov mammoth, named for the local tribesmen who discovered the submerged beast and who previously removed its valuable tusks, is a male who died at age 47, Buigues said. The exposed head has decomposed, but the body remains intact under the permafrost, or permanently frozen tundra. The six-week excavation project, to be filmed by the Discovery Channel for broadcast in March 2000, will begin in September as temperatures cool and will entail digging out a 33-ton block of permafrost containing the mammoth's body. The block will be flown by Russia's largest helicopter to the ice caves in Khatanga, Siberia, where a subfreezing laboratory will be fashioned for scientists.

This adult specimen is different from others found in Siberia and elsewhere because scientists will be able to examine grass and other flora that were preserved with it, and possibly recover organs and even sperm. Many of the plants mammoths were known to eat on the mountainous steppes of what is now the North American Rocky Mountains and Siberia are known to still exist, but the mystery of the mammoth's extinction persists, the scientists said. "In general, we know a lot about the woolly mammoth from (mostly skeletal) specimens found in France, Spain and Russia," said Dick Mol, another member of the team who is affiliated with the Natuurmuseum in the Netherlands. "If we can find more material of the woolly mammoth, including soft parts such as the ears and the tail, we can learn much more," he said.



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Buried Forests

A Forest from the Past

ABC, Feb 23, 2000

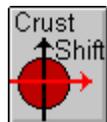
An amazing find of five acres of ancient [~10,000+ years old] forest, still standing and nearly perfectly preserved, down to the moss on the limbs of the trees. "If you look at the tree rings you can look at the microclimate (which determines growth) in this area right before it warmed up," Bornhorst says. "One of the really fascinating things is we don't see any indicators that the climate was going to warm up. "That has some practical significance. If nature didn't give any warning then, what about today? "All of a sudden it warmed up, the glaciers poured the water down and buried them, and boom, they're gone," Bornhorst says. "Researchers examined the tree rings, expecting to find some sign that the climate was changing so rapidly.

Lessons for Today?

"Is there an indicator 50 years before that something's going to happen?" Bornhorst says. "It doesn't seem like it in the tree rings." The results at this point are far from conclusive, but Bornhorst and others think the ancient forest may be telling us that major climatic changes may occur without warning. The trees in the ancient forest, he suggests, should have sensed that it was getting warmer and that should have been reflected in their rate of growth. But apparently they didn't. Now, all these years later, those ancient trees seem to be raising the same question today that they did 10,000 years ago: Does anybody really know what's going on?



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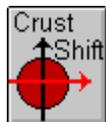
Ocean Bacteria

Burton's Page O' Weird Stuff

There are bacteria on the bottom of the ocean that are magnetically sensitive and line up with the Earth's Magnetic Poles. When core samples were taken so that the history of our magnetic poles could be determined, we were surprised to see an almost regular reversing of the poles every couple thousand years. Imagine the global destruction a pole shift could cause. Continental plates could rise and sink causing world wide floods.



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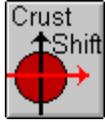
Antarctic Tropics

Although the time frame is given as "33 million years ago", new research at the East Antarctic ice sheet shows the area once contained nikau-like palm trees (whatever they are). The area also contained forests of beech trees, and flies and beetles flourished. This is from the [New Zealand Herald](#).

Offered by [Mike](#).



Troubled Times



East/West

Repost of an article in *alt.archaeology* August 23, 1998.

Offered by [Christer](#).

There is testimony from all parts of the world that the side which is now turned toward the evening once faced the morning.

In the second book of his history, **Herodotus** relates his conversations with Egyptian priests on his visit to Egypt some time during the second half of the fifth century before the present era. The priests asserted that within historical ages and since Egypt became a kingdom, *four times in this period (so they told me) the sun rose contrary to his wont; twice he rose where he now sets, and twice he set where he now rises.*(1)

The **Magical Papyrus Harris** speaks of a cosmic upheaval of fire and water when *the south becomes north, and the Earth turns over.*(2)

In the Papyrus Ipuwer it is similarly stated that *the land turns round (over) as does a potter's wheel and the Earth turned upside down.*(3)

The texts found in the pyramids say that the luminary *ceased to live in the occident, and shines, a new one, in the orient.*(4)

In the tomb of **Senmut**, the architect of **Queen Hatshepsut**, a panel on the ceiling shows the celestial sphere with the signs of the zodiac and other constellations in a *reversed orientation* of the southern sky.(5) The center of this panel is occupied by the Orion-Sirius group, in which Orion appears west of Sirius instead of east. *The orientation of the southern panel is such that the person in the tomb looking at it has to lift his head and face north, not south. With the reversed orientation of the south panel, Orion, the most conspicuous constellation of the southern sky, appeared to be moving eastward, i.e., in the wrong direction.*(6)

Plato wrote in his dialog, **The Statesman (Politicus)**: *I mean the change in the rising and setting of the sun and the other heavenly bodies, how in those times they used to set in the quarter where they now rise, and used to rise where they now set... the god at the time of the quarrel, you recall, changed all that to the present system as a testimony in favor of Atreus. At certain periods the universe has its present circular motion, and at other periods it revolves in the reverse direction. Of all the changes which take place in the heavens this reversal is the greatest and most complete.*(7) The reversal of the movement of the sun in the sky was not a peaceful event, it was an act of wrath and destruction. Plato proceeded: *There is at that time great destruction of animals in general, and only a small part of the human race survives.*(15)

Caius Julius Solinus, a Latin author of the third century wrote of the people living on the southern borders of Egypt: *The inhabitants of this country say that they have it from their ancestors that the sun now sets where it formerly rose.*(8)

The Chines say that it is only since a new order of things has come about that the stars move from east to west.(9)

In the Syrian city **Ugarit (Ras Shamra)** was found a poem dedicated to the planet-godess Anat, who *massacred the population of the Levant and who exchanged the two dawns and the position of the stars.* (10)

The hieroglyphics of the **Mexicans** describe four movements of the sun, 'nahui ollin tonatiuh'. *The Indian authors translate 'ollin' by 'motions of the sun.'* *When they find the number 'nahui' added, they render 'nahui ollin' by the words 'sun (tonatiuh) in his four motions.'* (11) *These four motions refer to four prehistoric suns or world ages, with shifting cardinal points.* (12)

The **Eskimos of Greenland** told missionaries that in ancient time the earth turned over and the people who lived then become antipodes. (13)

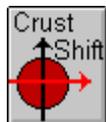
The **Koran** speaks of the Lord *of two easts and two wests.* (14)

References:

- (1) Herodotus, Bk. ii, 142 (transl. A. D. Godley, 1921).
- (2) H.O.Lange, "Der Magische Papyrus Harris," K. Danske Videnskabernes Selskab (1927), p.58.
- (3) Papyrus Ipuwer 2:8. Cf Lange's (German) translation of the papyrus (Sitzungsberichte d. Preuss. Akad. der Wissenschaften (1903), pp. 601-610).
- (4) L. Speelers, Les Textes des Pyramides (1923), I.
- (5) A. Pogo, "The Astronomical Ceiling Decoration in the Tomb of Senmut (XVIIIth Dynasty)," Isis (1930), p. 306.
- (6) Ibid, pp. 306, 315, 316.
- (7) Plato, The Statesman or Politicus (transl. H.N. Fowler, 1925), pp.49, 53.
- (8) Solinus, Polyhistor, xxxii.
- (9) Bellamy, Moons, Myths and Man, p. 69.
- (10) C. Virolleaud, "La déesse Anat," Mission de Ras Shamra, Vol. IV (1938).
- (11) Humboldt, Researches, I, 351.
- (12) Seler, Gesammelte Abhandlungen, II, 799
- (13) Olrik, Ragnarök, p 407.
- (14) Koran, Sura LV.



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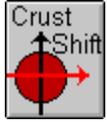
Mars Magnetism

The American Institute of Physics Bulletin of Physics News
Number 426 May 3, 1999, by Phillip F. Schewe and Ben Stein

The Mars Global Surveyor spacecraft has discovered patterns of magnetized surface rock, broad stripes of magnetic material pointing in one direction alternating with magnetic material pointing in the opposite direction, somewhat like the patterns seen at mid-ocean rift zones on Earth. On our planet the alternating stripes testify to the changing nature of Earth's magnetic field and to the recurring upwelling of magma resulting from the movement of tectonic plates above a seething molten planetary core. The conclusion: Mars too might have experienced tectonic activity. (*Science*, 30 April 1999.)



Troubled Times



Long Reach

May the Force Be With You? Mysterious Effect May Influence Spacecraft Trajectories

By Leonard David, *Space.com*, November 26, 2000

Space probes using Earth to slingshot their way outward into the solar system appear to have received an extra boost by a mysterious force - perhaps an unknown component of gravity. Scientists hope to confirm the unusual effect as the Stardust spacecraft whips by Earth this coming January. Analysis by radio scientists of the post-Earth flyby trajectories of three spacecraft have shown each craft to have picked up an unexpected increase in speed: The Galileo spacecraft in December 1990; the Near Earth Asteroid Rendezvous (NEAR) probe in January 1998; and the Saturn-bound Cassini spacecraft in August 1999. The Galileo spacecraft slipped by Earth a second time in December 1992. But the vehicle dipped too close to Earth making the measurement of any "flyby effect" unusable.

"This problem has been with us for about 10 years, and we haven't found a solution," said John Anderson, a senior research scientist and member of the Stardust science team at the Jet Propulsion Laboratory (JPL) in Pasadena, California. "We're looking forward to the Stardust flyby. That would be our fourth measurement of this anomalous effect," Anderson told SPACE.com. Using JPL's Deep Space Network of radio telescopes, the velocity of Stardust is measured by analyzing its Doppler shift. In this case, a change in frequency or wavelength of sound due to the relative motion between the emitting source, Stardust's radio transmitter, and ground receiving equipment. Stardust is expected to show a bump up in velocity as it flies by, Anderson said. "We can't find any source or any mechanism that would do that," he said. "Cassini, NEAR, Galileo...they all show it. If it follows the pattern that we've seen in the other three, it should be clearly measurable," Anderson said. "That's why we're so anxious to get the Stardust data," he said.

The Stardust spacecraft will zoom past Earth on January 15, 2001, at the end of its first elongated orbit of the Sun, said Donald Brownlee, Stardust's principal investigator of the University of Washington, Seattle. Launched in February 1999, Stardust is on a long-and-winding road to comet Wild-2. In 2004 the probe will snag cometary material, then return the samples to Earth in 2006. Stardust is equipped with an x-band transponder (radio transmitter/receiver), allowing radio scientists on Earth to precisely track the spacecraft, Brownlee said. As Stardust slips by Earth to attain a flight path change, it will pass 4,000-miles (6,000-kilometers) above Africa, Brownlee said. There is a prediction of where the spacecraft should be, one that takes into account the flyby effect, he said. "Those past spacecraft, after the flyby...they are leaving with slightly more energy than expected. Each one had a consistent anomaly. It's quite intriguing," Brownlee said. "It is possible, I guess, it's some new factor that hasn't been taken into account. But the most interesting possibility is it's a previously undiscovered component of gravity," Brownlee said.

Just what the effect might be remains a puzzle, Anderson said. "It could be fundamental physics...it might not be. I view it as a mysterious anomaly. To be speculative, it could be revealing something new in physics," he said. Anderson said he could not discount that some systematic navigation error, yet to be identified, has been uncovered. "Either way, it is important to pin it down, hopefully after we get the Stardust flyby," Anderson said. Stardust radio data collected during the January swingby could be fully analyzed by his four-person team at month's end, or later in February, he said. "If the force was with us, basically, this would be a phenomenal discovery," Brownlee told SPACE.com.

Anderson said colleagues have ventured guesses as to what might explain the effect, if it is a true phenomenon in the first place. One possibility being aired, Anderson said, is that spacecraft become charged as they whisk through the Earth's magnetic field. This electromagnetic charge then interacts with the Earth's gravity, creating the anomalous motion in the spacecraft as it cruises by Earth, he said. Anderson also said the effect could be some outcome of string theory prediction. String theory is a supposition that space is imbued with electromagnetic, weak and strong nuclear interactions, as well as gravity forces, that form curled-up dimensions, in addition to the observable dimensions of length, height, and width. But putting such speculation aside, Anderson said, obtaining matter-of-fact data in January is important. "Assuming that we see it again on Stardust... we should be able to start seeing a pattern to this," Anderson said. "Nobody has suggested that we shouldn't pursue this. There might be something to this. It's very hard to question our results. We just don't know what it is," he said.





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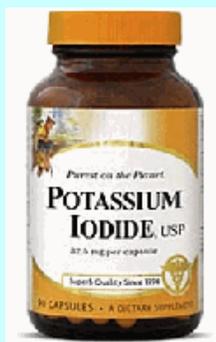
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Follow the link for more information on shelf stable [MRE Tortillas](#).



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Troubled Times



Day One

The days before and the day of a pole shift would find families in either a long day or long night and anticipating the hour when violent geological changes might occur. This waiting period would be less than a week, starting from the time the Earth's rotation stops. Families should be lying flat so as not to be dashed when an earthquake comes, under a metal or earthen or slate roof for protection from firestorms, banked by earth as protection from hurricane force winds, and surrounded by lightweight items that can't crush or impale one during earthquakes.

Day One Check List

- tent
- sleeping bags
- metal roof or metal sheeting, curved into the ground
- ready-to- eat, high protein foods
- bottled water
- water bottles and web belt to carry them (plastic military canteens)
- compass, thought may become erratic, a poor guide
- knife
- map
- first aid kit - tourniquets, medicines, and antiseptics
- breathing air tanks 80% nitrogen/20% oxygen (NOT pure oxygen)
- portable potty
- battery operated lights
- flexible plastic playpen
- books and toys for the kids
- books such as novels for adults
- emergency backpack



Troubled Times



Recovery

Immediately after the pole shift there may be injuries to attend to. Since the massive earthquakes are past, a large tent can be set up as temporary housing, covered by a water proof tarp as heavy rains can be anticipated. Setting up or repairing facilities to grow food will take some time, and in the mean time families should anticipate living off their supplies. Supplies should be stored below the surface of the ground so they don't get blown away, and covered with metal sheeting or earth to protect from possible firestorms and rain.

Recovery Check List

- large tent
- foam mats for mattresses
- blankets and pillows
- silver metalized polyester camping blankets to retain heat
- waterproof cover, tarp
- water filters and purifiers
- beans and rice
- canned tuna or beef
- can openers
- dried foods
- milk powder
- dried egg
- protein powder
- soup stock and herbs and spices for flavoring odd foods
- cooking oil
- vitamin and mineral supplements
- iodized salt to prevent goiter
- matches in water proof packaging
- magnesium bar, flake off fire starters
- road flares (emergency fire starters, the best!)
- short wave radio
- batteries
- aluminum foil to increasing lighting
- toilet paper
- soap, shampoo, detergent
- cotton balls, Q- Tips
- underwear, replacement supply
- shoes, replacement supply
- gauze bandaging
- ACE wraps
- Band-Aids of various sizes and shapes
- tape
- splints
- plaster of Paris and other cast materials.
- alcohol
- hydrogen peroxide

- salt (to make saline rinses and sprays)
- oral rehydration salt
- petroleum jelly
- iodine
- bleach.
- IV fluids and IV insertion kits
- aspirin
- acetaminophen (Tylenol)
- ibuprofen
- cold and flu remedies
- benadryl
- boric acid
- anti-diarrhea such as Immodium or Lomotil
- turkey basters (for emergency suction of mouth)



Troubled Times



Long Term

Setting up facilities to grow food and generate power from wind or water will be of primary importance during the recovery period after a pole shift, and more permanent housing than tents will be desired. With transportation blocked by downed bridges, parents should anticipate educating their own children and likewise educating themselves to do many tasks that they relied on others to do in the past.

Checklist for Long Term

- zip lock bags
- plastic tie wraps
- rolls of plastic for water proofing
- waterproofing material, spray cans, etc
- scissors (heavy duty kind)
- bicycle, tire pump, extra tubes and tires
- heavy work gloves
- lumber
- stainless steel tanks
- concrete in bags
- tool - saw, hammer, wrench, screw driver
- tape, twine, wire
- nails, screws, bolts
- Swiss army knives
- folding pliers with all the swiss army type inserts
- Entrenching tool type folding shovel
- all metal hatchet (no broken handles)
- chain saw
- climbing ropes and snap links
- substantial wrecking bar
- parachute cord
- light weight stainless cable come along (winch)
- hydroponics nutrients, chemicals in bags
- non-hybrid seeds
- yeast as sour dough starter or home brew ingredient
- small windmill
- water wheels, like Pelton
- recharable batteries
- bike rack generator
- metal tube type charcoal fire starter
- watches and clocks, manual winding type
- scissors and sewing needles and thread
- text books
- toys to teach and amuse children such as letter and puzzle games



Troubled Times



John's List

3 halide lamps w/ covers
9 pumps
5 extension cords (3 prong)
seeds for 10 different varieties of food that can be grown hydroponically
5 rubber maid (10 gallon+ containers)
5 hydroponic systems
10 plant trays
3 hoses
9 extra halide bulbs
15 chromalux light bulbs
beds for all residents + 1
clothing for at least 2 years + 1 person
winter clothing for at least 2 years + 1 person
canned food for at least 2 years ... 2 pounds per person per day +1 person
5 cases of bottled water
all furniture for 700 sq. ft., figuring one bedroom for each 2 people
sleeper sofa
gardening tools
electric rototiller
window coverings
wheelbarrow
5 flashlights
50 batteries(rechargeable alkaline)
recharger
fishing pole
all kitchen utensils/pots/pans that you have
As many books as possible
All textbooks
50 pencils
50 pens
computer in metal container
software sealed in lead container
ham radio
paper (10,000 sheets)
ink for computer printer (4 refill cartridges)
sheets for people x 2
blankets for people x 2
2 lamps per person + 1
10 lightbulbs per person + 1
board games
2 fans per person + 1
1 cooler per person
refrigerator
electric stove

hand washer
clothesline (2 per household)
hydroponic nutrients (48 gallons)
tools
dresser per 2 people
brooms
dustpans
1 table per household
2 power strips
shortwave radio
100 rolls of toilet paper
games
TV
VCR
bread machine
150 lbs. of flour
5 year medicine supply
hobby equipment
acoustic musical instruments
1000 matches
100 candles
100 rolls of paper towels
50 boxes of Kleenex
100 bars of soap
50 bottles of dishwashing liquid
50 shaving cream cans per male adult
5 year razor supply
iodine
100 hospital masks per person

Offered by [John](#).



Troubled Times



Little Box

What would you pack into a cardboard box that was 13 inches long, 8 inches wide and 6 inches deep.
Asked by [Clipper](#).

There's not enough room for significant food or water, so here goes:

- water purifying pills (to make water safe)
- basic first aid kit (for treating injuries/sterilization)
- matches (to make fire for warmth)
- as many high energy food bars as would fit (basic anti-starvation)
- vegetable seeds (in case you make it past the immediate crisis)
- a Bible (in case you don't)

Socks and underwear, or other clothing I could fit. Everything else could still be found or picked up en-route to wherever

1. I would put in my old and faithful Swish army knife, because it's a handy gadget with about 39 functions.
2. My Swish army compass, because It's always handy to know one fixed point, even if it's not the old north pole anymore.
3. Dynamo Flashlight with some extra light bulbs.
4. Refillable lighter with a gas-container and spare flints.
5. A laser sharpened knife, because what ever you do with it, according to the commercial, it won't get blunt.
6. The head of an axe without the handle to save room.
7. A string saw also without handles, I could make those after the pole shift.
8. To fill up the empty spaces, I would take some cotton-wool, needles safety-pins, and some bandages and of course some seeds.

[Katadyn PF .2 Micron water filter/pump \(2"x 10"\) to filter all but viruses/chemicals](#)

- 5 oz stainless steel cup for drinking/coffee making
- 6 Folgers instant coffee bags (like teabags)
- tiny notebook & ball-point pen (notes/messages on tree limb)
- 1 very tiny vial of 1/4 gr. sodium saccharin (old perfume sample vial) for coffee
- 20+ 1/2" sugar cubes for energy burst if needed
- Waterproofed matches (#30 in old pill vial) with coarse sandpaper wrapped around vial for striking
- Fire starter block(s) (total size = 1 breakfast bar) for easy fire start
- 1 roll of 1/4 oz gold Eagles (size of a roll of nickels - \$3K value today @ \$75 each) - for "barter"
- 1 roll of quarters
- 2 unopened Mylar Space blankets to keep warm
- 1 tightly-rolled long poncho with hood (doubles as shelter) ~ 2x 12" rolled - to stay dry
- 6'x 6' tightly-rolled 3-mil plastic (1"x 12" rolled) for ground cloth/tarp
- 1 very sharp lock-back knife with whetstone
- 1 Mini-Maglite and 2 extra AA [Duracell] batteries (spare bulb in base)
- #120 Survival Tabs (12 - 3.9 gram Tabs/day) - food for 10 days in pint Ziplock bag
- 1 multiple micro tool kit (pliers-in-a-pouch with fold-out tools in handles) - \$40 kind
- 1 small bottle (1/2 oz) of Liquid Bandage
- 1/2 oz Visine dropper filled with antibacterial soap with a few drops of iodine ...
- 1/2 oz Visine dropper filled with 10% pool chlorine (fresh) - in case of filter crap out
- 6 "Travel wipes" packets (like from Chinese restaurant)
- 20 feet of 1/4" Nylon line (or parachute cord) wrapped around Katadyn water filter

- .22 Short HP Beretta Semi-auto pistol & extra clip - defense/hunting
- Small towel (~12"x16"), tightly rolled, secured with HD rubber bands for cleaning
- 10-minute highway emergency flare to REALLY start a fire in rain/night signaling
- mosquito net for head or spray-painting hood for bugs or cold, depending
- compass
- whistle on lanyard
- bug repellent stick
- travel tissue pack (for TP)
- 1 pair very thin leather gloves
- in a thin metal tin like 20 cigarillos used to come in, (or old Sucret lozenger tin), put: needle & nylon thread, 6 safety pins, coiled 10# fishing line, hooks, split-shot sinkers, 2 lures; line is for snares too, bandaids, 1 condom (in case I get real lucky)

extra underwear and 2 changes woolen socks

foot powder

small bottle liquid iodine and iodine tablets for water purification

emergency solar blanket

plastic rain poncho

soap

lighter

waterproof matches

small sewing kit

pocket knife

tylenol

comb

halogen flashlight and batteries

tiny travel radio-alarm clock with spare batteries

small bottle natural insect repellent antibiotic ointment

toothbrush

anbesol for toothache

1 campers' fork, knife, spoon combo

quarters, currency, credit card

nail clippers

dental floss or fishing line

vitamin C

2 plastic garbage bags

salt in plastic bag

baking soda in plastic bag

Here is what I would take with me in a hurry.

1. High powered slinig shot + steel shots
2. Knife
3. Utility can opener/screwdriver/pick/evertrhing
4. Seeds
5. one picture of family
6. extra pair glasses
7. gun if enough room
8. antibiotic cream
9. large bottle of antibiotic pills

Metal instruments such as a knife, needles, scissors, ax head, pliers for pulling teeth, electrical wire, and seed.



Troubled Times



Mike's List

Assuming I don't have any cloths on then the box would contain: One pair of tennis shoes and clothes and a belt. I doubt I could get anything else in it as my shoes are 13" long. Assuming I can take the cloths and shoes that I am wearing at the time then I would put the following in the box:

- 2 flexible wire saw blades, has a ring attached at each end to put a finger through to be able to saw wood and one for metal - used for building shelter, Animal traps, throwing spears, or fire.
- Three Magnesium-flint fire starters. One for use to start fires in the rain. two to trade or as back up.
- One small stainless camping cooking pan - to make bug-root-soup with.
- One survival knife - has fishing line and spear point and sling shot hidden within it's handle - The spear point can be fastened to a wooden branch to make a throwable spear or to gig fish with. The sling shot can be used with rocks to hit rats, or other small animals.
- Squeeze lever type flash light (no battery) to generate light as needed. (include a spare bulb) Used to read the map and to not step where one shouldn't in the dark.
- Whistle - to call attention to your self if needed.
- One Poncho - help keep the water off
- Two Thermal blankets - To help keep warm at night when the bodies metabolism slows down. One as back up they don't last forever.
- Thin plastic tarp to wrap the body in or 2 heavy duty plastic garbage bags 33-40 gallon to sleep in or block the wind. One bag cut hole in for head, the other put over the feet.
- 100 ft of nylon string and 50 ft of camo cord - lies flat - takes up small amount of space is strong and can be used to construct traps, tie plastic around you at night, make a shelter, tie down plastic to keep it from blowing.
- Fishing 100 ft of fishing line, 4 different lures and hooks - will make 2-4 lines to fish with at a time can cut a pole from tree branches found.
- Small portable water filter (yet to be determined). - To filter rain water.
- Flexible plastic canteen for water squashed flat 1 to 3 quart. - Will use separate piece of plastic to catch rain water.
- Take a folded plastic water proof laminated map of the area you plan to stay within - used for orientation and to scrounge for things and to find planned destination.
- Cub scout lensatic compass with luminous dial - used for keeping track of where one is going so as to not wander in circles. Plan to mark the new north, after PS, on the map as soon as one can orient the map against some recognizable landscape objects.
- Watch - used to keep track of distance.
- Clear or white foldable plastic, or plastic bags and water proof fine point marker to make notes on of distance and personal maps. Small pad of paper and pencil may work if it can be kept dry.
- Collapsible telescoping telescope or small binoculars - to observe others before they observe you.
- 2 x 99.9% pure silver electrodes with wire and clips soldered - for when one can make distilled water and scrounge a battery/generator or use the squeeze generator flash light to make colloidal silver. In conjunction with the antibacterial properties of silver, I believe, that in a tight situation, by keeping a bit of silver in the body, the body will be less likely to hold onto lead and that any lead taken in will pass through without staying in the body as much as if no silver were present. Using this small amount of space in this box is an investment in the future. It will be hard to find pure silver wherever you go.
- Small Nylon bag, so one can put the contents of the box in it and tie it to your belt when the cardboard box gets wet and falls apart - and eat the box for it's fiber and nutritional value. - I am reminded of an experiment done with rats. One set was feed the contents of a popular breakfast cereal. Another set of rats were fed the box. The

control group fed the boxes lived longer.

- Fill the rest of the space with garbage sized and smaller plastic bags (some could be used for thermal insulation stuff dead leafs in them and stuff them in your clothes to keep worm)

Optional items if they will fit:

- Small pressurized container of pepper spray - for defense
- Small pocket edible plants ID guide - in case you can still find some plants or roots not destroyed by the PS.
- Dried Beans or protein powder to fill the space.

Note: All of the above assumes you have a plan or can find or build some place with additional resources, housing protection, before too long a time. The above items each have a limited lifetime. To just to continue to wander one would soon be reduced to a even more primitive existence as each item wares out.

Offered by [Mike](#).



Troubled Times



Shekhina's List

I would put in that little box:

My Medicine Stones - because each one came to me by hand of the Great Spirit, through friends and associates and each one reminds me of the honorable and timeless truths that come with each stumbling block that we transform into a stepping stone along our blended paths.

Flint and Steel - to provide me with fire - to warm my body and my spirit, that I may know the warmth of life and to light my way, that I may see the path of light that leads to fulfillment in life, and to gaze into during meditation and prayer, when all is one and we know no separation from Great Spirit nor the dawning of time.

Family Photos Wallet - for identification and memory and to remind me what the true treasures (love, faith, hope, joy, compassion, and communion) are in this life. (and they can't be found in a box... of any size)

Seeds - for planting and harvesting in the future, for the vegetables and fruits that are so important to the human body. Seeds might also be used for barter.

Paper & Pencils - to inspire me to write the passing of events and speak the joys of poetry, for those who may come after me, and to keep alive the joy of creation, even if it be only some sketches of a landscape or a simple puzzle that is written and solved to attain some tiny spark of wisdom.

A Bite of Chocolate - to remind me that there is always something sweet to look forward to in life, no matter how bad things may seem in the present.

A Bar of Soap - to keep myself clean and healthy in what could be the most terrible time to ever be encountered by humans. To remind me that it is always healthier and therefore happier to keep a clean body, mind, and spirit, even in the hardest of times.

A Harmonica - because music is the voice of the soul. It is an open channel to Great Spirit and music soothes the wild beast... even if that beast is yourself!

A Baby Rattle - so I will constantly be reminded of the simple joys in life and the purity of simple innocence, that I may always strive to see the world through the eyes of an innocent child.

...and I would forever cherish that little box...

Offered by [Shekhina](#).



Troubled Times



Nick's List

Great question this, caused some real thought.

- Army style square mess tin, with two main meal packets from MREs inside
- survival bag - orange plastic type
- 2 lt. fold flat water container
- beta light
- fishing Kit :- 100" nylon line, several swivels, 2 x wire traces, selection of small hooks, various shot weights and a single ledger type
- solid, full tang fixed blade knife, which is the continuation of the blade into the handle of the knife. A "full tang" runs the full length of the handle and provides the strongest construction
- eatherman tool, which is a multi-function tool in the vein of a Swiss Army Knife, it contains various screwdrivers, a blade, scissors and a folding pair of pliers in a small convenient package
- "pocket-pal" sharpener, which is a small shaped diamond hone for sharpening knives
- small coil of brass wire for animal snares, although it's useful for many purposes
- wire saw
- 6 large nails for various reasons, a fish spear springs to mind
- 2 disposable butane lighters
- zippo lighter
- lifeboat matches
- flint + steel
- shemagh, which is a scarf or headress of middle eastern origin, made of loose weave cotton, it is one of the most useful purchases I've ever made.
- compass, Silva type, a brand name, it's a standard protractor based compass
- pencil & waterproof notepad, which can be purchased in outdoor shops, they are made of chemically treated paper
- nylon cordage as much as can be fit
- polythene bin liners, again as many as can fit. The big black plastic bags are useful in shelter design and for carrying things, keeping stuff dry, etc.
- deck of cards
- trioxane/hexamine bar, which is solid fuel, used in folding camp cookers
- as much toilet paper as I can cram into the empty spaces left!

Offered by [Nick](#).



Troubled Times



SAS Survival Handbook

by John Wiseman

This is the survival book recommended most frequently. The book's wide scope (desert to jungle to liferaft) makes it a good broad starting point, but you'd probably want to supplement it.

Survival Kit (Pocket-Size):

- Matches
- Candle
- Flint
- Magnifying Glass
- Needles and Thread
- Fishhooks and Line
- Compass
- Beta Light [contact Penrith Survival Equipment, below]
- Snare Wire
- Flexible Saw (wire saw)

Medical Kit:

- pain reliever
- intestinal sedative
- antibiotic
- antihistamine
- water sterilizing tablets
- anti-malaria tablets
- potassium permanganate
- Surgical Blades
- Butterfly Sutures
- Plasters (band-aids)
- Condom

Survival Pouch (larger kit):

- Mess Tin
- Fuel
- Flashlight
- Flares
- Marker Panel (surveyor's tape?)
- Matches
- Brew Kit (tea kit)
- Clear Plastic Bag
- Food

- Knife & sharpener
- ...all in a waterproof pouch



Troubled Times



Urban Survival Handbook

by John Wiseman

Standard Kit:

- Paper Money
- Coins
- Phonecard
- Paper and pencil stub
- Needle and Thread
- Tiny Flashlight
- Safety Pins
- Tweezers
- Tiny Scissors
- Aspirin/Pacetamol
- Scalpel blade
- Magnifying lens
- Bandages
- Whistle

Personal Necessities:

- tiny screwdriver
- antihistimine tablets
- other medicines
- tampons
- condoms
- spare contact lenses
- matches



Troubled Times



Save Your Life

Survival: - A Manual That Could Save Your Life

by Chris & Gretchin Janowsky (Paladin Press)

This book is geared toward long-term survival in typical North American environments. A wonderful little book. Chris runs the World Survival Institute in Tok, Alaska and is a regular contributor to the American Survival Guide. The WSI can be reached at (907) 883-4243 or by writing to Box 394C, Tok, Alaska, 99780. He also produces videotapes, including a set of 4 wilderness survival tapes, 5 combat martial arts tapes, and 5 emergency response tapes. Beware of imitators selling his Tracking & Ambush tape!

Survival Kit:

- complete fishing kit
- gill net
- awl with extra thread
- 25 ft 550 cord
- carton cutter (razor knife)
- solar battery charger for AA batteries, with rechargeable batteries
- signal mirror
- magnifying glass
- 2 pre-made wire snares
- bug dope (insect repellent)
- camo paint kit
- Katadyne H2O purifier
- extra H2O purification tablets
- spool of nylon twine, with capped center holding safety pins and sewing needles
- 2 compasses (1 regular, 1 lensatic)
- duct tape
- waterproof notepad with pens and pencils
- space blanket
- thermometer
- Altibaro (combination altimeter and barometer)
- spool of tripwire

Speed Pouch Inside Survival Kit:

- lock-back knife
- EZ-Lap diamond knife sharpener
- WSI Hot Spark flint
- firestarter
- small flashlight
- slingshot rubber
- surveyor's tape
- electrolytes

Medical Kit:

- 6 3X3 gauze pads
- 4X4 gauze pads (6 doubles, 4 singles)
- 3 4X5 Kling bandages
- 3 3X5 Kling bandages
- 1 field dressing
- 10 Adaptic nonadhering dressings
- triangular bandage
- Ace bandage
- assorted bandaids
- assorted rolls of tape, 1 waterproof
- safety pins, various sizes
- moleskin
- swab sticks
- field surgical instruments
- assorted sizes of suture thread and needles
- iodine
- antibiotic cream/ointment
- Lanacane cream
- eyedrops
- Tylenol
- Bactine
- potassium iodine tablets
- ground yarrow flowers and leaves
- Tums
- vitamins
- toothbrush
- dental powder
- dental floss
- snake bite kit (optional)

Fanny Pack:

- fishing line, 2 kinds
- small crookneck flashlight
- mousetrap
- book: Survival, A Manual That Could Save Your Life
- waterproof collection bag
- net bag
- 2 ponchos
- 100 ft 550 cord
- sierra saw with extra blade
- 3 heavy-duty water bags
- 6 regular water bags

Misc Items for Belt:

- canteen with drinking/cooking cup and outside pocket for water tablets
- large knife with sheath

Fishing Kit:

- 4-1/2" x 3" x 1-1/4" box
- 4 assorted dry flies #12 hooks
- 4 assorted dry flies #14 hooks
- 3 large lead jigs in assorted colors #4 hooks
- 4 small ice fishing jigs, assorted colors #12 hooks
- 6 lead-lined jigs, assorted colors #6 hooks
- 6 short shank #4 hooks
- 4 short shank #14 hooks
- 4 short shank #2 hooks
- 6 long shank #4/0 hooks
- 1 gaff hook #8/0 hook
- 3 swedish pimples, assorted sizes (ice fishing jigs)
- 2 large safety pins
- 1 band-tied 3-hook worm harness
- 1 Rapella lure
- 1 red & white Dare-devil
- 1 small gold spoon
- 1 small silver- spoon
- 1 container floating fly dope
- 6 4" plastic worms
- 3 2" plastic worms
- 6 3-way swivels
- 6 ball-bearing snap swivels
- assortment of lead weights
- 1 tapered fly line
- 50 yards 18# test braided nylon squidding line
- 1 steel leader 8"
- 3 nylon leaders 20" each
- container fish poison

Large Survival Kit (for indefinite survival):

- sewing awl
- needle nose pliers with wire cutter
- needle
- dental floss (for sewing)
- folding knife
- Sierra saw (folding)
- ring saw
- survival saw
- snow shovel
- visqueen (heavy plastic tarp)
- water generator
- 3'x3' signal cloth
- fishing kit: safety pins, 150' 18 lb line, hooks, floats, bait, etc
- multivitamins
- protein tablets
- hard candy
- dried eggs
- dried milk
- tent cloth
- file
- silverware

- 3 space blankets
- compass
- signal mirror
- 2 sky blazers
- 4 candles
- micro-lithium flashlight, battery, bulb
- firestarter
- matches
- butane lighter
- flint
- bug dope (GI)
- 12 snares
- spool snare wire
- plastic drinking tube
- 2 heavy zip-lock bags
- p38 can opener
- water purification tablets
- sling shot rubber and ammo
- diamond knife sharpener
- whistle
- towel & facecloth
- soap
- 2 orange smoke signals
- 75 yards 42 lb nylon twine
- 75' nylon cord
- 1 pair work gloves
- metal cup
- mess kit
- small grill
- mousetrap
- 1 roll surveyors tape
- folding water jug



Troubled Times



Food for Thought

By Chris Janowsky

Whether it be a natural disaster or one that's manmade, being prepared can mean the difference between life or death. Many of you readers know me as a writer and a wilderness survival instructor. This is World Survival Institute's 25th Anniversary year of teaching people the skills and knowledge they need to stay alive in most any emergency. We constantly emphasize to our students the value of being prepared. Putting food up for the future is a very important aspect of being prepared and is usually one of the first things most of us think about. There are a number of good companies out there that sell M.R.E.'s, freeze-dried, or dehydrated food for backpackers and for storage. You may well choose to have some of their products as part of your overall emergency preparedness inventory. However, it is just as important that you know how to preserve food yourself, especially meat.

Meat is a significant part of most people's diet. From it, our bodies receive vitamins, minerals, electrolytes, and precious muscle-regenerating protein. In most wilderness survival situations, wild game and fish are very easy to procure if you know how. This makes meat and fish a natural way to go. Whether you are in the wilderness or in the city, putting up meat is a wise idea. However, there are certain considerations that we have to think about when dealing with meat or fish.

Depending upon the ambient temperature, meat can spoil very quickly. Meat by its nature is very heavy and if it has to be transported in the future, this should be of great concern, especially if you have to pack it on your back. There are many ways to overcome these problems either in the field or at home. First of all we have to know why meat spoils and what to do about it. We will address this issue soon but for now let's take a good look at the logistics and solution of the meat/weight problem.

Your first concern is your plan. What I'm talking about here is a complete plan. Nobody knows what is going to happen tomorrow but we should plan for the most likely emergencies. Your plan could make the difference between life or death for you and your family. As mentioned above, many people are stocking up on M.R.E.'s, or cases of freeze-dried/dehydrated meals. These, plus water and whatever you normally keep in your kitchen cupboards should be the first part of your plan. Having extra food and water at home during and after a disaster means you don't have to worry about battling the mob down at the supermarket-if it is open. Let's call this plan "A." But you and I both know that whenever you have a single good plan some SOB will probably mess it up. This is why you need plan "B."

Depending on the circumstances your plan "B" may have to be initiated. This plan would be implemented if you chose or were forced to move from your dwelling. Many people believe they will be able to use their trucks and cars to transport all their stuff to a safe haven. But what if the roads are closed? What if a natural disaster has destroyed bridges and covered highways with debris? I believe that it is a good idea to have your vehicles set up but don't depend on it. You may end up only being able to take what you can carry on your back, and folks, that ain't much.

Remember that flies can easily get into the ole ointment. The next plan is plan "C." This plan should be a part of all the other plans. And that is having the *knowledge* and *skills* to make these plans work, maybe even to having a plan "D" in reserve. This plan I don't even want to think about but I- and you-must. You may have to take off with what is only on your person, no bags, no backpacks. Knowledge at this time is worth far more than gold. You'll have to find your food as you go and be able to transport it (with reduced

weight) for tomorrow.

When you are in a wilderness survival situation and on the move, you must procure food wherever and whenever you find it. Let's say you come across a nice lake abundant with fish. Naturally you are going to take some fish for dinner, but what about tomorrow and the next week? If you are on the move, you may not find another good food source for days. If the fishing is good, you'll want to catch as many as you can NOW. Let's say you take in 44 nice fish averaging 1 pound each. You cook and eat 4 fish during that day. There are still 40 fish left, which equals 40 pounds. This is far too much weight to transport on your back, and if freezing conditions do not exist, they will spoil rapidly. You are going to have to dehydrate (dry) and smoke the fish. When you are done your 40 pounds of fish will weigh only 6-8 pounds. This you can easily carry and it's a 10 day supply of food for one person. Also, any part of the dry smoked fish you would normally discard like skin and bones will become bait for small animals.

Once you trap or snare a small animal, you will do the same with them as you did with the fish, cook and eat what you can and dry the rest. You can see at this point that you are not only eating well but you have also created variety. This couldn't happen without the drying process. Even animals like squirrels deliberately gather and spread out food to dry, like mushrooms. When putting up meat for the future at home you will be cooking, drying, and packaging it. You may want to smoke some for the taste it gives the meat. Most important will be the different ways you will be packaging the meat for your back up plans.

The meat you stock in your residence is to stay there. You can cook, dry and smoke the meat if you like. You can simply can the meat in canning jars. The weight of the jars is not important for this plan. If canned properly, meat will keep for many years. I've eaten meat that I've canned ten years before. The weakest part of this system is the lids. All lids are not equal! Over the years I've done a lot of canning. When I use my fish wheel to take in sockeye salmon, it's not uncommon to catch several hundred 5 to 8 pound fish in a night. And that represents a lot of jars and lids.

Once the jars are filled, they are placed in a pressure canner and cooked at the proper heat, pressure, and length of time. Afterward, the pressure is relieved from the cooker and the jars are left to cool slowly. As they cool, the center of the lids will be sucked down toward the contents of the jar. At this point the screw rings that held the lids in place can be removed. The jars of meat are ready for storage. Any lids that are not sucked down warn you that there is no vacuum in that jar and you *do not* have a seal. The contents in these jars will spoil. This situation is called a "failure."

I've found over the years that the best lids with the least amount of failures are Ball lids. If you have a failure it's usually because of a inferior brand of lid, a defective mouth on the jar, or you didn't clean the rim of the jar well enough after adding the contents. Stick with Ball lids and you will be in good shape. When you pull a jar from the shelf later, always check the lid. The center of the lid should still be sucked down very solidly. Tap it with your finger: it should sound solid and not move. If the lid sounds hollow and moves up and down, you have a failure. *do not* eat the contents.

Another little trick is if your jars are stored in your freezer, or are stored where they are subject to being frozen in the winter, always leave at least 1 inch of head space at the top of the jar. If you do this, the jars will not break when frozen. I've had jars that were packed in this fashion that experienced ambient temperatures of 70 degrees below zero and none broke. When I can meat it may be in chunks or in other forms. My store house does have meat in chunks but it also has many jars of my favorite homemade chili, Moose stew, and sausages in sauce. This way you can open a jar and your meal is already prepared for you. All you have to do is heat it up. This whole operation only requires reusable mason jars, lids, screw rings, a good pressure cooker, and a 1,200 pound moose.

The type of pressure cooker you purchase is important. I've used many and feel the ones made by American Canner are without a doubt superior in every way except weight. They are heavy but they are built to last. They also have many safety features that the others don't have. The best thing is that they use

no rubber O-ring. It's a metal-to-metal seal that will never wear out. Let's say you are set up at your wilderness home and it's two years from now. The rubber seal goes bad on your cheaper cooker. Where are you going to buy a new O-ring? The scary part is right then you'll need this cooker to put up more food, or you and your family could be in dire straits. It's something to think about now!

The next way to go is to preserve the same food in metal cans like those you see in the supermarket. It's easy to do and you have the advantage of lighter weight and no glass to break. This is a good way to go if you have vehicle transport. You will need cans, lids, a pressure cooker and a mechanical can canner. I put up a lot of food this way each year. Also you can seal up most anything from ammunition to medical supplies (You won't be using the pressure cooker for these items, especially the ammo!).

The difference between canning in jars and in cans is the procedure. With jars you add heat and pressure and then the sealing happens. With cans you mechanically make the seal then add heat and pressure. The lids on the cans will suck down, just like the canning jars. Your next step is to put up the light weight stuff. This is the food that you can carry on your back. Also, if you have a storage problem as far as space goes, cooked dried meat is the way to go. Not only does the meat lose weight, but there is a considerable reduction in its size. These are all plus factors for you. One way that I do this is to take some very lean meat; game meat like deer is the best. You can use beef, but make sure that it's lean. Usually the more inexpensive cuts are the leanest. That's good news! Take the meat and trim off any fat you can find. Put the meat in a pan on the cooker rack in a pressure cooker. Add about 1 inch of water to the cooker, put the top on, and you are ready to go.

You'll want to cook the meat until well done. Once you've gotten the water boiling and the steam gauge has risen to the right amount of pressure, you will be cooking 12 to 15 minutes for each pound of meat. You should keep the pressure at 15 p.s.i. during the entire cooking time. When the cooking process is over, the meat, no matter how tough it was, should easily flake into small slivers with the use of a fork. Next spread these flaked pieces of meat out on a cookie sheet or sheets. All you have to do now is to dry it completely. This can be done in many ovens at very low temperature with the door cracked open for ventilation and to get rid of moisture. This can also be done in a food dryer or a small smoker oven (The Sausage Maker company in Buffalo, NY makes several different size smokers, all of them excellent.).

As soon as the meat is completely dry, take it out and put it in containers that exclude all moisture. Vacuum sealers work very well for this purpose, and can be applied to canning jars and plastic resealable bags like M.R.E. packages. You can dry vegetables and add your favorite spices, mix it all together and then package it. When you need it, just add hot water and you have a meal ready to eat. You will want to cook the veggies before you dry them or they may be too tough for your liking. Pre-cooked dried rice or beans are a good addition also. Remember: cook it, dry it, keep it dry and it will last.

When putting up any meat for long-term storage, start with fresh meat, keep it cold, and process it as soon as possible. Bacteria like the C. Botulinum need a nice moist environment that lacks oxygen in order to grow. When we are canning meat we are creating this very environment. Luckily, the bacterium needs one more thing in order to survive, and that is the proper temperature. So when we can, we do it in a pressure cooker at 15 lbs. p.s.i. This creates a temperature of 250 degrees F., much too hot for the bacterium to live. This procedure is similar to sterilizing medical instruments in an autoclave.

The C. Botulinum bacterium cannot survive jerky making either, because in making jerky you take away the moisture and fully expose the meat to the air. As an added precaution, if you wish, you can also add a cure such as Prague Powder #1 to the marinade. This cure destroys the bacterium. Let's make some jerky! Jerky is easy to make and it's delicious. It's something you may want to always keep on hand. Because of it's nature, it's light in weight and easy to transport. It's a nutritious snack and good emergency food.

Start out with some nice lean meat. Beef works well but, again, wild game is by far the best. Next, slice the meat in strips 1/4 of an inch thick by 3/4 to 1 inch wide. I make these about 4 inches long. Make sure any fat or gristle is trimmed off. This is the secret to good jerky with a long shelf life. Fat can cause the

meat to become rancid. The meat is then mixed in a marinade of your choice. I will give you the recipe that I use. I'm sure that you will like it, but remember that it can be easily altered to your taste. Let the meat soak for no more than 24 hours in the refrigerator. Stir it around several times while it's soaking. Next day, blot the excess liquid off the meat and place on drying racks. The meat can be dried in many different ways so long as you can hold the temperature somewhere between 95 and 115 degrees F. Make sure there is good air circulation so moisture can escape. Depending on what type of drying system you use, the jerky will be ready in 8-10 hrs.

Many kitchen ovens will do a good job drying jerky if the heat can be kept low enough and the door is left cracked open to allow the moisture to vent. A food dehydrator or a small smoker also can be used. You'll know when the jerky is ready. It will be dry around the edges and rubbery in the center. It will smell wonderful and have taken on a pretty reddish color. At this point you'll probably be getting " Old Betsy " out to guard your precious prize, `cause if there's other people around, it'll disappear as fast as you can make it. And nobody'll fess up! At our survival school, the students make jerky in several different ways, and they also add smoke to it. If you like the smoke flavor, liquid smoke can be added to the marinade. There is a liquid smoke available that is very concentrated and all natural smoke. Or, if you use the small smoker, you can smoke the meat while you are drying it.

Jerky that is properly made will have a moisture loss of 70-80%. You should store the jerky in glass jars, like mason jars with lids. These lids should have several holes punched or drilled in them to promote good air circulation and prevent mold. If all the guidelines are followed and it is kept in a dry environment, your jerky will last for months. Here are two good recipes for the marinade. This will do 5- 6 pounds of meat, reducing it in 8-10 hours to delicious jerky weighing only 1-1/2 pounds.

Mild

- 1 tbs. salt
- 1 tsp. Prague Powder No. 1
- 2 tsp. garlic powder
- 2 tsp. ground black pepper
- 2 tsp. onion powder
- 1/2 cup soy sauce
- 2/3 cup Worcestershire sauce
- 4 cups water

Hot

- 1 tbs salt
- 1 tsp. Prague Powder No. 1
- 2 tbs. ginger
- 2 tbs. garlic powder
- 1/8 cup (1-1/2 tbs.) ground red pepper
- 1/4 cup sage
- 1/4 cup onion powder
- 1/4 cup chili powder
- 1/4 cup black pepper
- 1 cup soy sauce
- 4 cups water

As you start out, I would suggest you get some good books on food preservation. One I particularly recommend is called, *Great Sausage Recipes and Meat Curing*, by Ryttek Kutas. It's the best reference book on the subject I have ever seen. It is available from the **Sausage Maker Company** listed below, and I know it will be a welcome addition to your survival library. Whether you decide to buy the proper

provisions or put them up yourself, you should at least learn how to do it. These are important skills you may need in the future, and learning them can be a lot of fun for you and your family right now. Remember, knowledge and skills are your best insurance for an unpredictable future.

Chris Janowsky is the founder of the highly respected **World Survival Institute**, which offers courses in outdoor survival and self-reliance. These folks also carry a full series of video tapes which makes it possible to learn many of these skills from home. For further information you can write the author at P.O. Box 394, Tok, AK. 99780; or call (907) 883-4243.



Troubled Times



Camping and Woodcraft

by Horace Kephart (1917)

reprinted in 1988 by the *University of Tennessee Press*

This short list does not do justice to this work. This book contains over 800 pages of outdoor skills, from different types of fires for different purposes to diet and cooking to how to build temporary and permanent shelters and furniture. The hardcover costs US \$29.00 and will give you a lifetime of reading pleasure. While outdoor technology has improved in the past 75 years, most of the skills he teaches have not changed in 1000 years. If there was book I would want to have for *long term* (2 years+) wilderness survival, this would be it!

- small hatchet
- sheath knife (heavy or wet jobs)
- pocket knife (fine jobs/surgery)
- compass
- watch
- whistle
- maps
- paper & pen
- matches in waterproof container
- flashlight
- spare eyeglasses
- first aid kit
- repair kit: small scissors, tweezers, dental floss, needle, safety pins, rubber band, shoelace, twine, snare wire, rigged fishline, hooks, split shot, etc
- toilet articles: towel, soap, toothbrush, comb, mirror



Troubled Times



Common Sense

Common Sense Survival for Outdoor Enthusiasts

by Bob Newman

This is a mini guide to surviving for 5 days; it is a "friendly" text that you can give your spouse or child to read without scaring them. It does not cover foraging, snaring, etc so would be totally inadequate for medium or long-term survival.

First Aid

- 6 2"x2" gauze pads
- 6 4"x4" gauze pads
- roll of standard medical gauze tape
- assortment of povidone iodine wipes
- eye patch
- antibiotic/antiseptic cream
- package of steri-strips
- moleskin
- bandage scissors & tweezers
- 1 3" elastic bandage
- 1 3" gauze roller bandage
- Sawyer brand Extractor Kit (snake & insect bites)
- 2 cravats

Signals

- sturdy plastic whistle
- pencil flare launcher with 6 flares
- shatterproof signal mirror
- sturdy flashlight with extra batteries
- extra bullets/shells if you have a firearm
- several strips (3"x12") international orange cloth

Fire

- 1 35mm film canister with cotton balls coated with petroleum jelly
- magnesium block with striker
- commercial tinder sticks
- magnifying glass
- butane lighter
- waterproof container of wooden "strike anywhere" kitchen matches

Food and Water

- 100 yards 15 lb. test fishing line
- hooks, mostly small
- 1 packaged prepared catfish/scavanger bait
- 1 bottle PotableAqua brand, halazone, or iodine tabs for H2O
- 10' surgical tubing
- 2 plastic collapsible containers
- 1 clear pastic bag, large
- 1 dry compressed sponge (unused)

Shelter

- 1 solar blanket
- 50' parachute cord
- several chemical heat packs
- wiresaw
- 1 8'x8' tarp, reflective on one side
- 3 survival candles

Other

- fixed or lock-blade knife
- Silva compass
- topographic map
- spare eyeglasses/sunglasses
- spare wool hat
- aspirin or tylenol
- prescription medicine
- other items unique to your needs



Troubled Times



Ten Essentials

by Scott Stoddard

"Don't leave home without it." But what good will a green plastic credit card do you 20 miles from the nearest paved road? What do you really need when out away from civilization? Experienced outdoor enthusiasts know what items are most important to bring - even for short walks or hikes out of base camp. The "10 Essentials" are items that cannot be improvised from materials lying on the forest floor. To be found without these few items, even only a few miles from camp or cabin, can spell disaster.

The standard list of 10 essentials varies slightly depending on which source you go to. The **Boy Scouts** have their list, the **Sierra Club** has another, and the **Mountaineers** in their outdoor bible, *Mountaineering: The Freedom of the Hills*, have come up with another variation. They all incorporate the same basic items. The following list is not to be considered cast in concrete - each survivalist should customize his or her own kit for the barest minimum of supplies. Note that the first three items are for finding your way, the second three are for your protection, and the last four are for emergencies.

1. A **Map** of the area you will be hiking, canoeing, or camping should be detailed enough so that you can find man-made items like trails, unimproved roads, power lines, etc., and natural features such as rivers, streams, hills and other terrain landmarks that will guide you. A U.S Geological Survey Topographical map has all of these features and more. For an index to topo maps in your home state contact: **U.S. Geological Survey**, Map Distribution Section, Federal Center, Box 25286, Denver, CO 80225; (303) 236-7477. A 365 page book titled, *The Map Catalog*, (Every kind of map and chart on Earth and even some above it), is available from: **High Country Enterprise**, P.O. Box 746, Saguache, CO 81149; (719) 655-2432.
2. A map without a **Compass** is almost useless unless you possess a sixth sense in direction finding. I prefer the liquid filled "Silva" or "Suunto" compasses. These have straight edges that are useful in plotting bearings. Military lensatic compasses are more bulky and don't have a clear base making map reading through the compass impossible. With both map and compass you should be able to "orient" the map by lining up magnetic north on the compass with the magnetic north arrow printed on the map. Once you do this, you'll be able to identify terrain features and plot your course.
3. Be sure that the **Flashlight** you bring doesn't have a switch that is easily turned on and off. You may find that it has been accidentally on all day, and when you need it the batteries will be already worn out. In that case don't put the batteries inside the unit until you are required to use it. Even if you have the most advanced, water proof machined aluminum light source, bring a spare bulb and spare alkaline batteries just in case. A Mini-Mag Lite will fit in the smallest of 10 essential kits but may not be adequate for all-night travel. Headlamps are useful for cave exploring and when the hands are otherwise occupied.
4. On one trip to the top of an 11,000 foot peak I forgot my **Sunglasses** and I nearly went snowblind. After tiring of looking through my balled-up fists I finally had to cut slits in some cardboard and jury-rig some Eskimo sunglasses. Sunglasses are available today that stop 99 percent of ultraviolet light. Polycarbonate lenses with "wraparound" designs provide more protection against wind and side glare. Glacier glasses are recommended for snowy conditions. They usually have polarized lenses and leather side shields to block out the side glare. Buy some retaining straps when you purchase your sunglasses. Croakies or Chums cost less than \$5 and will prevent damage or loss of your expensive eye wear. Add some sunscreen to your kit for total solar protection.

5. **Extra Food and Water.** This category puzzles me a bit. Does it mean that I should have two water bottles filled with water and two bags of trail mix? The amount of water you bring should be determined by the length of the trip and the temperature and physical demand put on your body. Water should be used as needed and not rationed out, (i.e., a few ounces now and no more for another hour). If your body needs water, it needs it now not three hours from now! Water purification tablets might help you use other water sources. As far as food, some hikers throw cans of sardines or tuna fish into their packs knowing that they wouldn't eat it unless there was an emergency. Normal trail foods (dried fruits, nuts, and granola) should be eaten at regular intervals to resupply the body with energy. Pemmican is one of the most concentrated high energy foods you can carry. See the Oct. 1991 ASG issue on page 57 for directions on its preparation.
6. Once again, the **Extra Clothing** you bring is determined by the time of the year and the weather. A breezy summer hike may require only a poncho for rain protection and a light nylon wind jammer for possible cold. A day snow hike gets more complicated. An extra jacket or sweater may do, but if you will be in extreme mountain conditions, a bivouac sack, insulation pad, and a winter sleeping bag may be the only thing that will save you should the weather go bad. In normal conditions you should at least throw a metalized space blanket into your kit. This with a poncho can be used to rig up an improvised lean-to shelter. Tape the space blanket to the poncho for support, tie the poncho to trees to form a lean-to and then build a fire in front. The space blanket will reflect the heat of the fire back on to you.
7. Expensive **Waterproofed Matches** have always seemed a little too gimmicky for my taste. Strike anywhere wood matches are a lot cheaper and can be stored in a waterproof container such as an empty plastic 35mm film can. If they're too long, just clip off the ends to the right length. A more convenient item for starting fires can be found at your local liquor or convenience store. Throw-away plastic cigarette lighters work well and some have adjustable flames in case you need "blow torch" action. Other fire sparkers such as the flint/magnesium bars on key chains are good back-ups should you lose your matches or lighter.
8. **Firestarters.** In this category you can include a regular paraffin candle (store inside a plastic bag so it doesn't melt in your pack), commercial firestarter tablets, Sterno, or my favorite - Hexamine tablets that are available at most Army/Navy surplus stores. Hexamine tablets won't evaporate like Trioxane Fuel Bars do when the wrapper is ripped, and come six tablets to a small cardboard tube. A firestarter is used only when conditions make it difficult to start a fire. Preparation is the key to fire building. You need plenty of kindling sticks or pieces of wood split thin with your knife to make the larger diameter branches catch. Most people begin their fires with inadequate supplies of tinder and kindling and are frustrated when they can't get a three inch thick log to catch fire.
9. A **Pocket Knife** is your most important 10 essentials item. Among other things it helps in first aid, food preparation, and fire building. As long as you have a knife you can make fire. Striking steel on any flint- like rock will produce sparks that can catch fire in carefully prepared tinder and kindling - materials you have gathered and prepared using the knife. More elaborate versions of pocket knives contain a treasure chest of useful tools: saws, tweezers, scissors, screwdrivers, awls, toothpicks, can openers, etc A good Swiss Army knife will bring out the MacGyver in all of us. Don't forget this item!
10. A **First Aid Kit** really isn't one item but a collection of items that can contain the bare minimum of bandaids, aspirin, and iodine or on the other extreme contain suture kits, chemically activated cold packs and prescription drugs. This is where you will have to really do some customizing and personalizing. I store my first aid items in a plastic Zip Loc bag so that I can see everything inside and protect them from the weather. Along with an assortment of bandaids, gauze pads, and Steri-Strips, are the following: insect repellent, sunscreen, lip balm with SPF 21, triple antibiotic ointment, small bottle of Hibiclens Surgical Scrub, Aspirin, Diasorb tablets for diarrhea, Actifed (decongestant), Bonine (motion sickness), and Benadryl (antihistamine). Other items that are helpful are: a needle for splinter extraction, moleskin or Spenco Second Skin for blisters, Ace bandage, small needle-nose pliers, single-edge razor blades, and Calamine cream for insect bites.

The "11th" item of the 10 essentials most people carry is toilet paper. Other "essentials" I bring include: an Air Force type signal mirror, 50 feet of parachute cord, mini-Leatherman tool, and plastic fluorescent

marking tape for trail marking. You might want to add a pocket signal flare and other items such as a smoke generator for signaling. Your 10 essentials kit can be packaged in a number of ways. The most convenient is a small day pack. Day packs will hold your water bottle, extra clothing and food for most daytime trips. Get one made out of Cordura nylon with padded straps. For extensive mountain bike rides many cyclists like to use waist packs or fanny packs to store their emergency gear and a banana or two. A waist pack is generally cooler to wear and provides for a lower center of gravity. Water is normally carried on the frame of the bicycle, so the packs can be smaller and lighter.

The last essential that needs to be taken on all your trips into the wilderness won't fit in a survival kit. It's called common sense and is a prime commodity in both the city and in the outdoors. If it looks like rain - don't go. If it looks too high - stay back. If it's getting dark - get back to your base. By avoiding unnecessary problems and dangers you will save on your own personal wear and tear, and probably get back home in one piece. However, if something does come up, at least you know you've got those 10 important items stowed away in your rucksack.

(This article was optically scanned from: *American Survival Guide* / January 1992, 2145 W. La Palma Ave, Anaheim, CA 92801-1785)



Troubled Times



US Army

SURVIVAL FM-2176 June 1992 (US Army)

Issues to think about: (p 3-3)

- first-aid
- water purification
- fire starting
- signaling
- food procurement
- shelter

Items to include: (p 3-3)

- lighter, metal match, waterproof matches
- snare wire
- signal mirror
- wrist compass
- fish and snare line
- fishhooks
- candle
- small hand lens
- oxytetracycline tablets (diarrhea or infection)
- water purification tablets
- solar blanket
- surgical blades
- butterfly sutures
- condoms for water storage
- chap stick
- needle & thread
- knife

Survival Kits (Appendix A)

Cold Climate Kit

- food packets
- snare wire
- smoke, illumination signals
- waterproof match box
- saw/knife blade
- wood matches
- first-aid kit
- MC-1 magnetic compass
- pocket knife

- saw-knife-shovel handle
- frying pan
- illuminating candles
- compressed trioxand fuel
- signal mirror
- survival fishing kit
- plastic spoon
- survival manual (AFM 64- 5)
- poncho
- insect headnet
- shovel
- water bag
- packing list
- sleeping bag

Hot Climate Kit

- canned drinking water
- waterproof matchbox
- plastic whistle
- smoke, illumination signals
- pocket knife
- signal mirror
- plastic water bag
- first-aid kit
- sunscreen
- plastic spoon
- food packets
- compressed trioxane fuel
- fishing tackle kit
- MC-1 magnetic compass
- snare wire
- frying pan
- wood matches
- insect headnet
- reversible sun hat
- tool kit
- kit, packing list
- tarp
- survival manual (AFM 64- 5)

Overwater Kit

- kit, packing list
- raft boat paddle
- survival manual (AFM 64-5)
- insect headnet
- reversible sun hat
- water storage bag
- MC-1 magnetic compass
- boat bailer
- sponge
- sunscreen
- wood matches

- first aid kit
- plastic spoon
- pocket knife
- food packets
- flourescent sea marker
- frying pan
- seawater desalter kit
- compressed trioxane fuel
- smoke, illumination signals
- signal mirror
- fishing tackle kit
- water proof match box
- raft repair kit



Troubled Times



Kit Sources

Penrith Survival Equipment

The Square

Morland

Penrith

Cumbria CA 3AZ United Kingdom

postage: 4 first-class stamps; best to use a credit card to avoid currency problems

Telephone 01931 714444

Facsimile 01931 714450

Survival Kit R1016 - British Pounds 17.50 (appx \$US 26.25) "This kit contains over 30 essential items each carefully chosen and having several uses. Included are items for navigation (with plastic button compass), first aid, water purifying/carrying, fishing, firestarting, cooking, cutting, signaling, writing equipment, etc. Full instructions on use of contents and first aid, plus emergency message form and pencil are included. Pocket sized. 200g."

[This kit appears to be modeled on the survival list published by John Wiseman in the SAS Survival Handbook (above). For an additional 10 Pounds (appx \$US15.00), you can upgrade to Combat Survival Kit R1013, which is identical except for the inclusion of a button compass made of brass instead of plastic. On the other hand for \$15.00 you can get a pretty accurate Silva compass.]

[The editor received his Survival Kit on 3-18-96. It is a tin securely wrapped in waterproof tape. The contents are listed as follows: Tin (cooking pot, drinking cup) with detachable handle, lid with heliograph, miniature plastic button compass, hacksaw blade with knife, stainless steel wire saw, wind and waterproof matches with striker, flint and steel firelighter, candle, cotton wool, potassium permanganate, water carrier, snare, fish hooks (3) [very tiny! you may want to supplement!], 10m fishing line, puritabs (6), single edged razor blades (2), adhesive dressings, safety pins, needles (2), thread, lipsalve, salt and dextrose tablets, survival aids-memoire, emergency message form, pencil, masking tape, waterproof label. Detailed instructions on the various uses of the contents together with survival and first aid information are included on waterproof paper Contents may occasionally vary due to availability. The tin appears to be very solidly packed; there is no rattle when I shake it. *This is the best commercially available kit I have seen to date.*]

Walkers Go Pack R1015 - British Pounds 7.95 (appx \$US 12.00) "A neat pocket-sized pack containing all the essential survival aids for a hill walker or climber. Packed in a welded pouch with a see-through front and Velcro flap. 15.5 x 12.5cm. 210g. Contents include: survival bag, permanent match, perry whistle, miniature compass, adhesive dressings, Puritabs, pencil, emergency message form, mint cake, waterproof Survival Aide Memoire"

[The editor received his Walker's Go Pack 3-18-96. It is somewhat larger than the Survival Kit (above). It is sealed with Velcro in a bright yellow plastic sleeve with a clear front. The contents include: 7' x 3' 120-gauge plastic survival bag [very thin...would tear easily], windproof matches (5) and striker, instructions and first aid information and emergency message form on waterproof paper, perry whistle, mini compass, water sterilization tablets (6), adhesive dressings (3), mint cake (30g) [expires July 31 1996], pencil stub. Clearly, this is designed to keep you alive 1 or 2 nights--just long enough for the user to get out of the woods (using compass or whistle). Is this a worthwhile purchase? Not for Americans. When you consider the cost (about \$12.00 plus air freight -- probably another \$5.00) you can assemble a better kit on your own. Here's a quick and dirty shopping list: emergency blanket (\$3), mini compass (\$4), and emergency whistle (\$1.50) from Major Surplus & Survival 800/441-8855, Bic Lighter (\$1) at your drugstore, Potable Aqua (\$4) and Survival Candy (\$1.10) from Survival Supply Co. 916/621-3836. Add your own pencil stub,

paper, bandages, and a large clear plastic garbage bag and drop them all in a ziplock bag. Total cost is about \$15.00 and you have a better emergency blanket, more candy, more water tablets ... you get the picture.]

[It would cost too much to return this item, so here is what I did: removed the plastic bag and replaced with \$3 space blanket, removed the mint cake, added lighter, added miniature flint & steel, and add a small knife (Swiss Army or a folder such as the AFCK-800S or a mini blade such as Busse Combat Recruit). Together with the Survival Kit, I now have a good combo that unobtrusively fits in two pockets.]

Beta Light L3280 - British Pounds 54.95 (appx \$US 83.00) "A self-illuminated unit, the Betalight Torch is compact, robust, and has an in-service life of over 10 years. Illuminates well without affecting night vision. This torch works without batteries, light being provided by a glass capsule internally phosphor-coated and filled with tritium gas which activates the phosphor to emit light."

[The editor received his beta light 3-18-96. It is ruggedly constructed and emits a dim green light. There is no on/off switch; there is merely a flap that can be opened or closed. How bright is it? I would compare it to the newer watches that glow green such as the Timex Indiglo. It is bright enough to read a map, find a keyhole, or possibly lure fish. Don't expect to cook dinner or follow a trail with it! My beta light has the following markings: *Sanders-Roe Dev LTD Hayes Middx UK Nato No X4/6260-00-965-3582 BetaLight T19c1*]



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Gear Sources

Other sources for survival gear include:

Major Surplus & Survival, Inc.

435 W. Alondra Blvd.
Gardenia, CA 90248
(310) 324-8855
(800) 441-8855
fax (310) 324-6909

Survival Supply Co.

PO Box 1745
Shingle Springs, CA 95682
(916) 621- 3836
fax (916) 621-0928

Nitro-Pak Preparedness Center

151 N. Main Street
Herber City, UT 84032
(801) 654-0099
fax (801) 654-3860

Brigade Quartermasters

1025 Cobb International Blvd
Kennesaw, GA 30152- 4300
(770) 428-6870
(800) 338-4327
fax (800) 892-2999



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Richard's Lists

by richard@io.org

Items: Quantity and Purpose

- Tea bags - 28 Make tea
- Vitamin Pills - 50 Make up diet deficiency
- Pilot Bread - 30 oz food
- Butter (margarine) - 16 oz food
- Strawberry jam - 14 1/2oz. food
- Klik (spam etc) - 12oz. food
- Condensed milk - 14oz. food
- Chocolate bars - 10 of 5oz. food
- Matches (wood)100 Light fire and (2 bic lighter)
- Knife: 1 multi purpose
- Spoon: 1 eating, fish bait, scoop, shovel
- Whistle: 1 signalling
- 1 Double face mirror signalling. (heliograph)
- Fishing line 1x (100ft) - fishing, snaring, wick, string
- Fishhook: 4 fishing, catching birds
- Snare wire:1oz. - Setting Snares & other uses
- Candles - 2 cooking, light, etc
- Kleenex - 1 package multi-purposes
- Camphor - 1 small jar mosquito bites, cuts, chap lips

Remember to use wooden matches and to have them waterproof by dipping them in hot wax before going out in the bushes. If you don't have the Hudson Bay Kit then use an army kit canteen which is rectangular and fit one into the other easily and easy to make watertight as well and has a collapsible handle.

Pocket Kit

Here is another s/kit to be carried in a jacket pocket.

- Reusable plastic tape (also seals tin)
- 2 nch gauze squares
- Any antiseptic
- Adhesive bandages
- Concentrate chocolate
- Bouillon cubes
- 30 ft. Fishing line
- Nylon leader
- Various fishhooks & cork
- Wooden matches dipped in wax
- Candle stub (for light or wet-wood fire starter)

Aspirin

- Vitamin pills, (Vita 29)
- Iodine water purifying tablets
- Safety Pins to mend clothing,
- Single-edge blade
- Needle & thread
- Steel mirror for signalling
- Compass
- Whistle
- Magnifying glass
- Burn ointment
- Mosquito net that folds as a handkerchief
- Ground sheet 10 X 6Ft
- 2 Lighter fluid cans 5 oz.each.

Survival Kit

1. **Matches:** Waterproof matches are useful but bulkier than ordinary non-safety, strike anywhere matches, which can be made shower proof by dipping the heads in melted candle fat. To save space, snap off half of each match stick. It is much easier to use matches than to make fire by other methods but don't waste them, use only when improvised method fail. Take them one at a time from the tin and replace the lid. *Never* leave the container open or lying on the ground.
2. **Candle:** Invaluable for starting a fire as well as a light source. Shave square for packing. If made of tallow it is also fat to eat in an emergency or to use for frying. But be sure it is tallow; paraffin wax and some other candles are inedible. Tallow does not store well, especially in hot climates.
3. **Flint:** Flint will work when wet and they will go on striking along after you run out of matches. Invest a processed flint with a saw striker. Recently on the market you can buy a magnesium flint fire starter which is great on all occasions.
4. **Magnifying Glass:** Can start a fire from direct sunshine and be useful for searching for splinter and stings and to replace lost reading glasses. One of the advantage of the top of the line swiss knife is that it has a magnifying glass incorporated within.
5. **Needles and Thread:** Several needles, including at least one with a very large eye that can be threaded with sinew and coarse threads. Choose strong thread and wrap it around the needles.
6. **Fish Hooks and Line:** A selection of different hooks in a small tin or packet. Add a few split lead weight. Remember that a small hook will catch both and large fish but a large hook will only catch big ones. Include as much line as possible, it will also be useful for catching birds.
7. **Compass:** A luminous button compass. But *make sure* you know how to read it as some compass can be confusing and remember never make a reading close to any metallic surface. A liquid type is the best but also *make sure* that it does not leak, has no bubble in it and is fully serviceable. The pointer is prone to rust. *Make sure* it is on a pivot and swings freely.
8. **Beta Light:** A light-emitting crystal, only the size of a small coin but ideal for reading a mag at night and useful fishing lure, expensive but just about everlasting and well worth to buy.
9. **Snare Wire:** Preferably brass-wire - 60-90cm (2-3ft) should do. Save for snares, but could solve many survival problems.
10. **Flexible Saw:** These usually come with large rings at the ends as handles. These take up too much room, so remove them, they can be replaced by wooden toggle when you need to use it. To protect from rust and breakage cover it in a film of grease. Flexible saws can be used to cut even quite large trees, but be slow when cutting.

Medical Kit

What you include depends upon your own skill in using it. Pack medicines in airtight containers with cotton wool to prevent rattling. The following items will cover most ailments but they are only a guide.

- **Analgesic:** A pain reliever for mild and moderate pain. Codeine phosphate is ideal for tooth-ear and headaches. Dose is one tablet every 6 hours as needed but they can cause constipation as side effect so will help in case of loose bowels. Not to be taken by children, asthmatics or people with liver disorders.
- **Intestinal Sedative:** For treating acute and chronic diarrhoea. Immodium is usually favoured. Dose is 2 tablets initially, then one each time a loose stool is passed.
- **Antibiotic:** For general infections. Tetracycline can be used even by people hypersensitive to penicillin. Dose is one 250mg tablet 4 times daily, repeated 5 to 7 days. Carry enough for a full course. If taking them avoid milk, calcium and iron preparations or other drugs containing aluminum hydroxide.
- **Antihistamine:** For allergies, insect bites and stings and may also help in case of bad reaction to a drug. Piriton is recommended in Britain and Benadryl in USA. Sleepiness is a side-effect of Piriton, so useful as mild sleeping pill. Do not exceed recommended dosages or take with alcohol.
- **Water Sterilising Tablets:** For use where water is suspect and you can not boil. Follow manufacturer's instructions. Water near any city is dangerous and in most cities in South America as well.
- **Anti-Malaria Tablets:** Essential in areas where Malaria is present. There are types which require only one tablet taken monthly.
- **Potassium Permanganate:** Has several uses. Add to water and mix until water becomes bright pink to sterilise it, deeper pink to make an antiseptic and to a full red to treat fungal diseases such as athlete's foot.
- **Surgical Blades:** At least 2 scalpel blades of different sizes. A handle can be made from wood when required.
- **Butterfly Sutures:** Use to hold the edges of wounds together.
- **Plasters:** (band-aids) Assorted sizes, preferably waterproof for minor abrasions and keeping cuts clean. They can be cut and be used as butterfly sutures. Use the new burn type it doubles up in its uses for burns and cuts.
- **Condom:** Beside fun this can make a good water bag (1 litre).
- **1 Tampax:** Beside its feminine use, it can be used to start a fire and as well as blood cloth when you cut deeply.



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Camping Checklist

1995 by E. Michael Smith

This is a list of what we take camping. It's sort of a hybrid of car camping and backpacking, so feel free to down size or upsize as your needs dictate.

Lighting

- Maglight - 2 Cell AA Minimum. 3 x D or 4 Cell C better, per person.
- Gas Lantern - Primus single mantle, or Coleman Unleaded double.
- BIC lighter - And those butane fireplace lighters are real nice too!
- Spare batteries and bulbs
- Spare lantern fuel and mantles

Bedding & Shelter

- Sleeping Bag - Space blanket emergency aid as well.
- Ground Cloth - Big space blanket works well for individuals.
- Tarp for big tents.
- Mattress or pad - High volume, low pressure, inflator for air mattress...
- Pillow
- Tent (& camp axe or hammer to pound tent stakes)

Water

- Water jug or bottle, at least 1/2 gallon per person/day. 2 gal is better.
- Water Filter!

Cooking

- Stove with fuel - Primus single burner for one. Coleman unleaded 2 burner.
- Charcoal or wood & Grill for BBQ.
- Frying Pan - Non-Stick is nice. *Plastic Spatula!*
- Pot or sauce pan - Big enough to cook noodles for all. With lid.
- Can opener - If you have canned goods while car camping.
- Thermos - ersatz slow cooker?
- Tongs
- Coffee maker & Filters
- Lighter
- Pot Lifter grabber &/or pot holders
- Wine cork puller & Tablecloth for those tres yup trips.

Dishes

- Plate - Partition tray/plate is nice.
- Mug/cup - Sierra Club Cup or Coleman Mountain Mug style
- Kitchen knife - Nice to have. In general, carry a pocket knife.
- Bowl
- Knife, Fork, Spoon, Spatula
- Scrub Pad
- Dish Pan

Consumables

- Paper towels & napkins, trash bags
- Paper plates, cups, bowls, etc.
- Plastic Knives, forks, spoons, Ziplock Bags
- Aluminum Foil
- Dish soap

Clothing

- Hat - Broad brimmed sun/rain. Sleeping Cap.
- Bandana
- Jacket - As weather dictates. Eskimo style, MacIntosh, Windbreaker, etc.
- Poncho - Doubles as emergency tent/lean-to.
- Overalls - Painter Pants style work well. Or traditional Pants with Belt.
- Underpants - 2
- shirt - 2 or 3 (one light, one flannel)
- shoes & shower shoes or 'flip flops' - & Hiking boots, if so inclined.
- socks - 2 pair (wash socks & underpants daily).
- Work Gloves
- Warm Gloves
- Swim suit

Personal & Cleaning

- Bar soap - With washcloth, if desired.
- Shampoo
- Toothpaste & Toothbrush
- Comb or hair brush
- Razor
- Towel
- Toilet Paper - And perhaps a shovel to build a latrine.
- Trash bags
- Wisk broom to clean table and tent site
- And any cameras, books, radio, cards, games, toys, etc. that you want.

Medicine & Misc.

- Sun Screen
- Bug Repellent - Yard spray, personal spray, Citronella Candle, etc.
- Poison Oak remedies - Special soap.
- Antihistamine creams
- Allerest
- Tylenol, Advil, Aspirin

- Alkaseltzer, Malox, Tums
- Antibiotics - Whatever you need.
- Micatin for fungus, for example.
- Tweezers for splinters & ticks.
- Antiseptic, bandaids and bandages for big owies.

Food & Drink

- Pancake Mix - Krusteaze, 1/2 cup per person per day
- Cooking Oil - About 1 oz per person per day seems to work.
- Syrup - About 2 oz per person per day.
- Butter - 1/2 stick per person per day.
- Malt-o-meal - Or Cream of {wheat, rice, mush...}
- Oatmeal - Instant Quaker Oats single serving packs are nice
- Potatoes - 2 per person per day. Freeze dried if packing.
- Bacon - 4 slices per person per day
- Eggs - 2 per person per day. Fresh or powdered.
- Noodles - Angel Hair, Ramen, Flat egg ribbons, elbows or shells
- Sauce - Marinara, Cream or Alfredo? (In jars or dehydrated if packing)
- Bouillon cubes - Chicken & Vegetable Herb Ox brand
- Rice packages - Pilaf, Saffron. Use "instant" or "minute" if packing.
- Soup mix - Split Pea, Bean & Bacon, etc.
- Tuna - 3 Oz. pop top cans for single service. 6 Oz for groups.
- Bread - Roman Meal, 16 oz round top
- Condiments - Salt, Pepper, spices, Sugar, Coffee Mate, Catsup, Mustard
- Mayo - Smallest size jars you can find.
- Salami - Dry. Can substitute for ham or bacon if no ice chest is used.
- Cheese - Mild Cheddar
- Fruit - Small fruit cups or fresh market fruit
- Carrots - enough for carrot sticks daily
- Taco Stuff - (Meat. Seasoning package. Olives, Lettuce, tortillas)
- Kippers
- Cocoa, Coffee, & teas (don't forget the *sugar!*)
- Marshmallows & Graham Crackers & Hershey Bars (Oh My!)
- Peanut Butter & Jelly (of course)
- Ham slices
- Hot Dogs & Buns
- Milk, Soy Milk (Special Milk), Juice boxes, jug of juice, Cokes, rum, beer, tequila, etc..



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Pack Items

Food

The easiest (and most expensive) way to have food in your pack is to purchase "Meals Ready to Eat" (MRE's) from an Army/Navy Surplus store or a survival store. The cost (as of this writing) is around \$4.00 for each meal if purchased separately, or around \$36.00 to \$40.00 per case. (12 variety meals.)

The advantage to MRE's is that they are totally self contained. In addition to an (arguably) tasty and nutritious meal, each meal package also contains toilet paper, (freeing up much needed space in your pack as you won't have to pack separate toilet paper), a book of matches, snack candy, coffee, powdered drink mix, gum, salt, sugar, hand cleansing towelets and eating utensils. Each MRE is about 1800 to 2200 calories, ... enough to keep an adult healthy (if not happy) for another day. Remember, you burn more calories while on the move than you do sitting in the comfort of your home in front of a TV.

The MRE's come packaged in a water tight vacuum sealed thick plastic pouch. They are quite buoyant, and in a pack will provide more than adequate flotation support to use if crossing a deep river or stream for even a full grown adult. Being sealed the way they are, they can be buried for weeks or months and retrieved at a later date for consumption.

The disadvantage of the commercial MRE's is of course they *are* quite expensive compared to what you could prepare for yourself in a home made MRE. If you wish to take the time and trouble, you can dehydrate your own fruits and vegetables, prepare stews and soups, jerk beef and other meats, pack dried beans and legumes, rice and commercially prepared bread and biscuit flours, (just add water) mixed nuts, etc .

The disadvantage of preparing your own MRE's is that for the most part you will need to re-hydrate the foods before you can eat them using much of your precious drinking water, and you will have to cook them to make them edible. (The commercial MRE's can be eaten dry if necessary, as the main course already has moisture in it, and they don't need to be cooked or heated.)

If you decide to prepare your own MRE's, be sure to concentrate on high energy, high calorie *LIGHT weight* foods. Be concerned about nutritional properties of the foods that you pack. Whether you buy commercial MRE's or prepare your own, you should pack supplemental "one a day" type multi vitamins to stay healthy.

Water

Water will be one of the heaviest and most vital items that you put in your pack. Every member of the family should have and carry at *least* one container of water. Water is for drinking! It is not for washing hands or cleaning cooking gear! If needed, clean sand does a fine job of scouring cooking gear. Water can be carried in plastic "screw top" bottles or canteens.

A small bottle of water purification tablets is vital. It's suggested that you have at least one bottle per person in your family. They can be bought at Walmart, K-Mart, and many other department stores or anywhere that camping supplies are sold. A drop of chlorine bleach per quart of water can also be used to purify contaminated water, ... but if you decide to pack a small plastic bottle of bleach, be sure that the lid is *firmly* secured as bleach rubbing against skin for a day will cause sever burns. River and creek water, ... even water from a ditch, ... can be made safe to drink if you use a water purification tablet or bleach.

Water can also be boiled to kill any bacteria or insect larva if you don't have the purification tablets or bleach, but it's very time consuming and smoke from a fire may give away your location to those that you are trying to elude. Many people are packing the little "purification straws" in their packs for emergency use. (These can be purchased at most Army/Navy Surplus stores or in a survival store.) Using one of these straws, you can literally scoop up a cup of muddy water and suck through the straw giving you a safe drink.

Prescription Medication

This is of course self explanatory. It's suggested that you carry at least a 30 day supply of any medication that you or your family members need to take on a regular basis. Little children's medication should be carried by their parents or an older sibling. Be sure if you're diabetic that you bring a supply of syringes and alcohol.

Clothing

It's important for each person in the family to carry at least one change of clothing in their pack for health reasons. (A cold wet and clammy shirt on your back is not only uncomfortable, it's unhealthy and dangerous as well.) I carry several pairs of socks, (blistered feet are not fun to walk on!) and underwear. Time permitting, socks, underwear and other clothing can be washed in river water, creek beds or road side ditch water and allowed to dry in the sun or near a secluded camp fire.

I personally carry two changes of camouflage clothing and two changes of black (night use) clothing. It's not necessary to spend a lot of money on specialty clothing, although it's nice if you can afford to. A couple of pairs of good sturdy jeans will last a long time in the woods. I also carry a set of lightweight "tennis shoes" to give my feet a rest in camp from the hiking boots used while traveling. The use of a plastic bag to hold soiled or damp clothing is also recommended.

Every person should have some type of waterproof poncho or rain gear. Bright red or other florescent colors are *not* recommended! A large poncho can also double as a lean-to type shelter or a ground cloth for sleeping. Camouflage rain gear and ponchos are available quiet inexpensively from Walmart and sporting goods stores. At times extremely *good* bargains can be found at Army/Navy Surplus stores.

I also carry at least two baseball type caps. (I prefer the camouflaged kind.) We live in a sub tropical area, and for the most part we're not used to being outside all day. A good cap with a visor can ease a lot of eye strain from bright sun and help prevent heat stroke on a blistering hot day. Also keep in mind that 80% of your body heat is lost through your head, so wearing a cap or hood on a cool or cold night will make you far more warm and comfortable.

Shelter

I personally carry a small two man tent with collapsible tent poles and stakes. It's extremely lightweight and compact, ... easy and fast to set up and break down. Again however, it's not necessary to spend a great deal of money on an elaborate tent or shelter. A thick sheet of plastic or a light weight blanket sprayed with water repellent makes an excellent lean-to or two sided tent, and they're easy to pack. Even a poncho stretched from a tree in a lean-to arrangement can be quite comfortable and snug on a cold or drizzly day or night. Let your budget and your family's needs be the guide, but *don't* waste money on a large, heavy, hard to set up brightly colored dome tent. The key words should be "*light*" for ease of carrying, "*easy*" and quick to set up, and "*compact*" for packing purposes.

Weapons

It is strongly suggested that you consider purchasing a lightweight 22 caliber rifle and/or a 22 caliber target pistol in addition to your main firepower. Don't sell this small caliber short! It makes far more sense in hunting (to supplement your MRE diet) to shoot at a squirrel or rabbit with an inexpensive 22 caliber bullet than to blaze away with a Colt AR-15 .223 caliber round! A properly handled 22 caliber rifle or pistol can be deadly against a human as well, ... and the accuracy can be phenomenal. With practice, you should easily be able to put a 22 bullet into a two inch circle at 25 yards (75 feet) which is equivalent to placing the round in a squirrel's head in the top of a tree.

Another strong advantage of the 22 caliber rifle or pistol is that it's quiet, (harder for those you are trying to elude to determine where a shot is coming from), and that the ammunition is cheap and very light to carry. Even a 12 year old child can handle the weapon to bring in much needed food, and many women that may be more timid with the heavier rifles and pistols become dangerous and deadly shots with a 22.

Ammunition

Self explanatory. Carry the ammo that you will need for the weapon(s) that you have chosen. At least 100 to 200 rounds is recommended, but be careful of the weight! Ammo is *very* heavy, and most common rounds can be appropriated in the field as needed. It's also recommended that you carry *loaded* extra magazines for your semi automatic rifles or pistols. It's the easiest way to carry the extra rounds, and makes re-loading an empty weapon very fast. If you are carrying a 22 caliber weapon as a primary or supplemental weapon, you can pack literally hundreds of rounds at very low weight. Even a pre-teen child can carry hundreds of 22 rounds with no strain.

Sleeping Bag - Blanket

You will need a good sleeping bag or a blanket for sleeping in order to be fully rested and healthy each day. There is no need to spend a great deal of money on the "best of the best" in sleeping bags. Most light weight (3 to 5 pound sleeping bags) are more than adequate for the area and elevation that we live in and can be purchased in the sporting goods/camping department of most department stores from \$14.00 to \$20.00 or so. Be sure that each member of the family has their own sleeping bag, and make sure that it's attached securely to the pack to stay in balance. These bags roll up nicely and once packed into a separate small duffel bag or stuff sack, it can be attached to the pack simply and is then very compact and easy to carry. If you don't have a sleeping bag or need to wait to purchase one, a good quality blanket can be used instead.

Fire Starting Materials

As any smoker that has ever tried to light a cigarette with a wet Bic lighter can tell you, there's nothing more frustrating than trying to get fire and not being able to when you need it. Certainly you should include several Bic type lighters in your pack, but keep in mind these things will *not* work when they are wet! Old fashioned kitchen matches ("strike anywhere", ... not the "safety matches") with the striker head dipped in hot candle wax and then allowed to cool will last for months even if they become submerged in water. You can also purchase "fire sticks" at the Walmart sporting goods section or other camping supply outlets. A "fire stick" is a wax impregnated sawdust bundle that will burn strongly for a half hour or so once ignited. These can be used to coax wet wood to burn in starting a camp fire or even used alone to cook one quick meal on the trail. You can make your own "fire sticks" by soaking tightly wound paper in candle wax and letting it cool, although they won't burn as long or as cleanly as the commercially prepared ones.

Fine steel wool will also burn brightly and quickly when ignited with a match or lighter, and is also very useful in starting a camp fire with damp wood. For around \$5.00, you can also purchase a small magnesium block at the camping supply section of Walmart and other department stores. These little blocks have a built in flint striker that is used to ignite the shaved magnesium from the block. You take your camp knife, shave off a little pile of magnesium, and then holding the striker next to the pile you scrape the knife edge along the striker producing hundreds of bright long burning sparks. With practice, you can start a fire just as fast with this as you can with a match, and it has the added advantage that it doesn't matter if it's wet or not.

Prescription Eye-Glasses

Again, self explanatory. It will be dangerous and frustrating stumbling around if your eye-glasses become broken or lost. I personally keep a spare set of regular and prescription sunglasses in my pack at all times. It's better to be safe than sorry!

Rope

Rope is an often overlooked and extremely necessary piece of equipment to keep in your pack. It can be used to support tent poles, secure a lean-to, hang meat and food from a tree to keep animals from stealing your precious supplies, as a tourniquet, to tie extra equipment to a pack, to repair broken pack straps, used as a belt and literally hundreds of other uses. Medium weight cotton rope is the most preferred because of ease of handling and tying, but nylon rope is strongest.

Insect Repellent

Much to the back yard "Barbecue King's" surprise, the woods and fields are swarming with far more insects than they could have ever imagined. If you have not camped out in the woods before, heed the warning! A small and inexpensive bottle of liquid insect repellent will save you many hours of miserable scratching and perhaps even infection from insect bites! This is an often overlooked and much needed item for your pack. Every member of the family should have at least one bottle.

Survival Tools

The key to this category is multi-use tools and light weight! It becomes very easy to go overboard with all the different tools and gadgets that you "think" you will need. Remember, every thing you pack is going to be that much more weight on your back, and that many more calories that you have to burn to carry them.

Basic tools that you should have are; a strong and very sharp knife, a hatchet (the flat end of which can be used to pound in tent stakes) or small collapsible wood saw, and a multi purpose pocket knife such as a "Swiss Army Knife" that has a blade, tweezers, pliers, scissors, awl, file, etc., and finally a small sharpening stone for your bladed tools.

Maps & Compass

Each adult and teenager in the family should have at the very least a map of the state where you live and a good reliable compass. If you are part of a group of people that intend to rendezvous at a location, each teenager and adult in your family should have a clear understanding of where that meeting place will be and when, with the approximate route to the location marked out on the map. A good quality working compass is vital, for it becomes very easy to be turned around in the woods and fields where there's no roads or street signs to guide the way.

It's obvious that the map with the rendezvous location should be well guarded or even committed to memory. At no times should the map be left lying around in the open or be allowed to be viewed by prying eyes of your neighbors or co-workers.

Cooking Gear

This is another area where weight can be a tremendous factor. It's not necessary at all to have a complete set of cookware in your pack complete with pots and pans and skillets and coffee pots. A very simple field kit (available in Army/Navy Surplus stores) or a back pack cook kit (available in department store camping sections) is adequate. One kit can easily prepare two MRE's in a short period of time. If you rub bar soap on the bottom of your cook ware before placing it on a fire, it makes clean up as simple as wiping it down with leaves or a cloth.

I personally keep one set of metal eating utensils (fork and spoon) in my pack to be used with my camp knife to stir and help prepare food. In addition to the MRE's, I also carry a small plastic spice container that's divided into compartments and holds different herbs and spices that will help make wild foods more palatable and tasty.

First Aid Kit

There are many commercial small and inexpensive first aid kits available in department stores and drug stores. A very simple first aid kit can be made by using a water tight small Tupper-ware box and placing first aid products in it, thus avoiding the cost of buying a commercial kit that may not be as complete. Be sure to provide plenty of Band-Aids, anti-biotic creams, small scissors and tweezers, (if you don't have a Swiss Army type knife with them included), larger bandages, adhesive tape, perhaps an Ace bandage for sprains, a magnifying glass to help with splinters, etc. Most of the items one would put in a first aid kit are very light and small, so you can really cram them in there. Don't forget the aspirin or other pain killers!

Included with your kit should be a good quality snake bite kit! This is another item that's often overlooked, but is vital should the need arise for one! They are very inexpensive and are available almost everywhere.

Toilet Paper

There's an old soldier's saying that goes, "I'll share my rifle, and most of my ammo if you need it. If I only have one biscuit, half of it is yours, ... but don't you touch my toilet paper!" Nuff' said.

Light Source

Undoubtedly a lot of travel will be done at night. Even if it's not, there will be times when you may need to travel at night and will want a light source to guide your way. Do *not* buy the large multi cell "Mag Lights", as they're too heavy and too powerful for what you need! A small pencil Mag Light or equivalent will do fine, ... illuminating a few steps in front of you and yet very light to carry. (Be sure to carry a couple sets of fresh batteries.)

Another good source is the little "snap lights", ... the liquid filled tubes that glow with a soft green light when you snap them. Be sure to purchase green ones and not red ones, and keep in mind that though light in weight, they can only be used once, so a large supply will be needed if you intend to depend on them exclusively.

Soap, Toothbrush & Other Personal Hygiene Items

This is another item that's often left behind, ... and sorely missed in the field. Unscented bar soap is good, but there's commercially available unscented tubes of soap used by hunters that's better because it uses very little water to rinse off. Remember, it's not only more pleasant to have clean hands and a clean body, but it's healthier too! Fungus infections on your skin and scalp will make you miserable, and left unattended could actually be life threatening. Do yourself and your companions a favor and bring soap! The same goes for the toothbrush. Clean teeth and a clean mouth not only feel better to you and smell better to your companions, it's healthier for you as well. Women and teenaged girls should bring their choice of tampons or sanitary napkins. A sanitary napkin also makes a superb bandage for large cuts or wounds.



Troubled Times



FEMA

Your Family Disaster Supplies Kit

After a disaster, local officials and relief workers will be on the scene, but they cannot reach everyone immediately. You could get help in hours, or it may take days. Would your family be prepared to cope with the emergency until help arrives? Your family will cope best by preparing for disaster before it strikes. One way to prepare is by assembling a Disaster Supplies Kit. Once disaster hits, you won't have time to shop or search for supplies. But if you've gathered supplies in advance, your family can endure an evacuation or home confinement.

To prepare your kit

- Review the checklists in this document.
- Gather the supplies that are listed. You may need them if your family is confined at home.
- Place the supplies you'd most likely need for an evacuation in an easy- to-carry container. These supplies are listed with an asterisk (*).
- Disasters happen anytime and anywhere. And when disaster strikes, you may not have much time to respond.
- A highway spill of hazardous material could mean instant evacuation. A winter storm could confine your family at home. An earthquake, flood, tornado or any other disaster could cut off basic services - gas, water, electricity and telephones - for days.

Water

Store water in plastic containers such as soft drink bottles. Avoid using containers that will decompose or break, such as milk cartons or glass bottles. A normally active person needs to drink at least two quarts of water each day. Hot environments and intense physical activity can double that amount. Children, nursing mothers and ill people will need more. Store one gallon of water per person per day (two quarts for drinking, two quarts for food preparation/sanitation)* Keep at least a three-day supply of water for each person in your household.

Food

Store at least a three-day supply of non-perishable food. Select foods that require no refrigeration, preparation or cooking and little or no water. If you must heat food, pack a can of sterno. Select food items that are compact and lightweight. *Include a selection of the following foods in your Disaster Supplies Kit:

- Ready-to-eat canned meats, fruits and vegetables
- Canned juices, milk, soup (if powdered, store extra water)
- Staples--sugar, salt, pepper
- High energy foods--peanut butter, jelly, crackers, granola bars, trail mix
- Vitamins
- Foods for infants, elderly persons or persons on special diets
- Comfort/stress foods--cookies, hard candy, sweetened cereals, lollipops, instant coffee, tea bags

First Aid Kit

Assemble a first aid kit for your home and one for each car. A first aid kit* should include:

- Sterile adhesive bandages in assorted sizes

- 2-inch sterile gauze pads (4-6)
- 4-inch sterile gauze pads (4-6)
- Hypoallergenic adhesive tape
- Triangular bandages (3)
- 2-inch sterile roller bandages (3 rolls)
- 3-inch sterile roller bandages (3 rolls)
- Scissors
- Tweezers
- Needle
- Moistened towelettes
- Antiseptic
- Thermometer
- Tongue blades (2)
- Tube of petroleum jelly or other lubricant
- Assorted sizes of safety pins
- Cleansing agent/soap
- Latex gloves (2 pair)
- Sunscreen

Non-prescription drugs:

- Aspirin or nonaspirin pain reliever
- Anti-diarrhea medication
- Antacid (for stomach upset)
- Syrup of Ipecac (use to induce vomiting if advised by the Poison Control Center)
- Laxative
- Activated charcoal (use if advised by the Poison Control Center)

Contact your local American Red Cross chapter to obtain a basic first aid manual.

Supplies

There are six basics you should stock in your home: water, food, first aid supplies, clothing and bedding, tools and emergency supplies and special items. Keep the items that you would most likely need during an evacuation in an easy-to-carry container--suggested items are marked with an asterisk(*). Possible containers include a large, covered trash container; a camping backpack; or a duffle bag.

Tools and Supplies

- Mess kits, or paper cups, plates and plastic utensils*
- Emergency preparedness manual*
- Battery-operated radio and extra batteries*
- Flashlight and extra batteries*
- Cash or traveler's checks, change*
- Nonelectric can opener, utility knife*
- Fire extinguisher: small canister, ABC type
- Tube tent
- Pliers
- Tape
- Compass
- Matches in a waterproof container
- Aluminum foil

- Plastic storage containers
- Signal flare
- Paper, pencil
- Needles, thread
- Medicine dropper
- Shut-off wrench, to turn off household gas and water
- Whistle
- Plastic sheeting
- Map of the area (for locating shelters)

Sanitation

- Toilet paper, towelettes*
- Soap, liquid detergent*
- Feminine supplies*
- Personal hygiene items*
- Plastic garbage bags, ties (for personal sanitation uses)
- Plastic bucket with tight lid
- Disinfectant
- Household chlorine bleach

Clothing and Bedding

* Include at least one complete change of clothing and footwear per person.

- Sturdy shoes or work boots*
- Hat and gloves
- Rain gear*
- Thermal underwear
- Blankets or sleeping bags*
- Sunglasses

Special Items

Remember family members with special needs, such as infants and elderly or disabled persons.

For Baby*

- Formula
- Diapers
- Bottles
- Powdered milk
- Medications

For Adults*

- Heart and high blood pressure medication
- Insulin
- Prescription drugs
- Denture needs
- Contact lenses and supplies
- Extra eye glasses

Entertainment - games and books.

Important Family Documents

Keep these records in a waterproof, portable container.

- Will, insurance policies, contracts, deeds, stocks and bonds
- Passports, social security cards, immunization records
- Bank account numbers
- Credit card account numbers and companies
- Inventory of valuable household goods, important telephone numbers
- Family records (birth, marriage, death certificates)

Suggestions and Reminders

- Store your kit in a convenient place known to all family members. Keep a smaller version of the Disaster Supplies Kit in the trunk of your car.
- Keep items in air-tight plastic bags.
- Change your stored water supply every six months so it stays fresh.
- Rotate your stored food every six months.
- Re-think your kit and family needs at least once a year. Replace batteries, update clothes, etc.
- Ask your physician or pharmacist about storing prescription medications.

Create a Family Disaster Plan

To get started...

Contact your local emergency management or civil defense office and your local American Red Cross chapter. Find out which disasters are most likely to happen in your community. Ask how you would be warned. Find out how to prepare for each.

- Meet with your family.
- Discuss the types of disasters that could occur.
- Explain how to prepare and respond.
- Discuss what to do if advised to evacuate.
- Practice what you have discussed.

Plan how your family will stay in contact if separated by disaster. Pick two meeting places: 1) a location a safe distance from your home in case of fire. 2) a place outside your neighborhood in case you can't return home. Choose an out-of-state friend as a "check-in contact" for everyone to call.

Complete these steps

- Post emergency telephone numbers by every phone.
- Show responsible family members how and when to shut off water, gas and electricity at main switches.
- Install a smoke detector on each level of your home, especially near bedrooms; test monthly and change the batteries two times each year.
- Contact your local fire department to learn about home fire hazards.
- Learn first aid and CPR. Contact your local American Red Cross chapter for information and training.

Meet with your neighbors

Plan how the neighborhood could work together after a disaster. Know your neighbors' skills (medical, technical). Consider how you could help neighbors who have special needs, such as elderly or disabled persons. Make plans for child care in case parents can't get home.

Remember to practice and maintain your plan

The Federal Emergency Management Agency's Family Protection Program and the American Red Cross Disaster Education Program are nationwide efforts to help people prepare for disasters of all types. For more information, please contact your local or State Office of Emergency Management, and your local American Red Cross chapter. Ask for "Your Family Disaster Plan" and the "Emergency Preparedness Checklist." Or write to:

[FEMA](#)

P.O. Box 70274

Washington, D.C. 20024

FEMA L- 189

ARC 4463



Troubled Times



Antartica List

Ran into a NASA site while looking for something else. Information on what it takes to live in extreme cold notice the items they have chosen. It is quite a detailed list. One could use key words (manufacture) to find the tents, kitchen equipment, tools, radio equipment that they recommend or are using now. Some would apply, some would not, use your own judgment. Even a glossary of terms at the end.

Offered by [Mike](#).



Troubled Times



Ebay

LEDs of all types: Individual LEDs to 12 Volt DC tail lights white or colored. Example (Oct 06): Search for "led white mcd 100" and one of the sites you get is "100 PCS Mega Bright White LED 10mm 130,000 mcd" for buy it now price: \$15.99 with shipping at \$15.00. I have watched the mcd rating go up year by year. It was around 10,000 mcd in 2003. The longer you wait the higher it goes. Another example: Search for "led yellow mcd 100" and one of the sites you get is "100 PCS Mega Bright Yellow LED 10mm 60,000 mcd" for buy it now price: \$9.99 with shipping at \$16.00. Searching for "LED Bulb" will give a result that one can look for the 12 volt versions.

Dip Compass can sometimes be found by searching for "dip needle" (used for determining earth's latitude and for finding iron deposits)

High amperage 3 phase Diode Bridge Rectifiers are quite useful in converting AC to DC to charge battery banks. Can be used with generators, hydro plants, and wind power. Search for "diode bridge". 3 phase are more versatile in that they can also be used with single phase AC. A pre-made bridge is also better than trying to put this together from the individual diodes. A typical current price is \$54.95 with shipping of \$9.55 for 800 Volt 150 Amp. Get the highest amperage you can afford.

DC permanent magnet motors that can be used as DC generators.

Rebuilt car alternators that can be used to make for hydro power that charges 12 Volt batteries.

DC charging controllers that dump load when voltage is higher than a given value can be found on this site.

Hearing Aids sound amplifiers (behind the ear) battery operated around \$10.00

Offered by [Mike](#).



Troubled Times



Home Depot

- Water filters (lead and particle removal .5 micron)
- Refrigerators high energy efficient. Look for lowest power usage/year for size of interest.
- Fencing to keep animals out after PS.
- Heavy gauge wire to use for 12 or 48 volt electrical system. Typical household circuit breakers will work with low voltage just as well.
- High breakage strength clear plastic for small peep hole windows in survival quarters.
- Building supplies for storage and building after PS.
- Plastic Buckets 5 gallon \$3.00
- Stretched metal (the type used for holding stucco on the side of buildings) with small holes to cover a fire and keep hot coals from spitting out.

Offered by [Mike](#).



Troubled Times



Target

- Emergency medical
- Disposable diapers used as gauzes
- First aid items
- LED task and Flashlights.
- Shock protecting helmets
- Body padding
- Camping equipment
- Rain suits
- Back packs
- Stock pots (cooking over open fire)

Offered by [Mike](#).



Troubled Times



Walmart

- Protective Helmets (base ball, bicycle, and skate board types can be used for head protection during the pole shift)
- Body Protective Padding (knee, elbow, wrist)
- Tire hand pumps (For airing up a tire by hand. I like the ones with gauge on the pump. After the PS hand push carts will be the only thing moving.)
- Steel and Kevlar Bike Tires (Push carts made of bicycle parts will be used for some time.)
- Self Sealing Inner Tubes
- Fishing equipment of all kinds
- Camping equipment: Air mattress, Sleeping bags, Compass, Whistle, Back packs etc
- LED and florescent task lighting and flashlights. (I don't recommend using gas lanterns or candles. Earth will have many trimmers lasting for some time. These are too dangerous in that they can be knocked over and start a fire.)
- 1 Watt LED Headlamp is nice and bright.
- "Emergency Crank Flashlight" sells for \$7.47. (one minute charge will yield up to one hour runtime on a single LED)
- "Hand Cranking Flashlight with emergency flashers (RCF3L)" Has 5 LEDs and for a 1 minute charge will run for 8 min to 45 min depending on number of LEDs burning and sells for \$7.97. [See http://www.flashlightz.com/category.php/emergency-flashlights/?category=2099](http://www.flashlightz.com/category.php/emergency-flashlights/?category=2099)
- Rain Suits
- Golf cart 6 volt batteries.
- Cloth by the yard, for filtering water, and to use as mosquito net sleeping at night, etc.
- Hiking shoes and boots.
- Digital weather station.
- Outdoor thermometers.
- Glues and tapes of all kinds.
- Large stainless steel stockpots for cooking over open fires.
- Zip lock plastic bags.
- First aid gauze roles and pads, cloth tape, large adhesive pads, band-aids.

Offered by [Mike](#).



Troubled Times



Dollar Stores

- Eye Glasses folding and non-folding type
- Light bulbs - Florescent low wattage screw in bulbs (AC 125V) - 12 volt halogen 50 watt spot - 200 and 500 Watt halogen tubes. 115 Volt AC night lights.
- Carton Clear Sealing Tape 2" (3.0 Mil works best for boxes. The thinner types can be used for sealing of paper documents from the elements.)
- Glues of all kinds including 5 min epoxy.
- LED red flasher. Battery operated light (Sold for bicycle safety but can be used any where for any purpose in a primitive environment at night.)
- LED flash and task lights of all kinds (From time to time shows up. Usually sells out quickly).
- Low power soldering irons.
- Door/Window entry battery operated alarm. (Can be used to help secure food over night)
- Knives (multi-function, pocket, kitchen)
- Glues and tapes of all kinds.
- Tire and tube repair or patch kits.
- Outdoor use thermometers.
- Battery operated clocks.
- Hardware assortment of screws and bolts
- Light reflectors stick on type.
- Fly paper traps.
- Pet supplies.
- Canned food goods of all kinds for storage.
- Boric Acid Roach and Bug Killer.
- Twist tie wire in roles (cut your own to length as needed).
- Safety goggles and dust mask. (Use during dust and wind storms)
- Plastic spray bottle with sprayer. (For gardening and protection - use cayenne pepper mixed with water and with particles filtered out. Spray on animal's nose and eyes if in danger)
- Stainless Steel strainers of various types. (Take a magnet with you when you go shopping and look for that which is not attracted to the magnet to determine if SS or not.)
- Small Kitchen Scale (typically about 2lbs max. Can be used to ration out food quantities.)
- Hour timers wind up type.
- Cleaning brushes of all types.
- Toiletry Items (soaps, disposable razor blades etc.)
- Sewing needles and thread for hand repair.
- Assorted sizes of safety pins.
- Nail clippers and files.
- Emergency Medical Supplies: Bandages, gauze roll, sports tape, disposable diapers (for gauzes), ankle and elbow supports, first aid antibiotic ointment, Anti-itch and athletes feet ointment.
- Reusable plastic food containers with sealable lids (to keep bugs out)
- Zipper seal plastic bags and paper plates
- Soaps of all kinds
- Toys for kids.

Offered by [Mike](#).



Troubled Times



Big Lots

- Canned Foods
- Kitchen utensils: Cooking pots and pans including cast iron.
- Miscellaneous gardening equipment: Clippers, shovels, spray bottles, and watering cans.
- Miscellaneous camping equipment: 2-4 man inflatable boats, Tents, Back packs, and canteens various sizes.
- Fishing set. Collapsible rod and reel, 14 function SS tool, hooks and weights.-- \$9.99
- Fishing set. Collapsible rod and reel, hooks and weights.-- \$5.00
- SS 6" Fish fillet knife --\$1.99
- Occasionally available LED flash and task lights.
- Halogen 200 Watt Double-ended Tube (RSC Base) 2000 hours -- \$.29

Offered by [Mike](#).



Troubled Times



Harbor Freight

The following has been found usefully when preparing for living in a primitive environment. It is up to you to determine what is considered high or low Tech. I have listed the [Harbor Freight](#) sales price and/or the list price when it was available. Keep an eye out for when these items go on sale. Typical the first Friday, Saturday and Sunday of each month, there is a "side walk sale" (typical half price). Get there early, popular items go fast.

Emergency Medial & Body Protection:

- First Aid Travel Kit #47456 -- \$2.99 - 5.99
- Super Flexible Knee Pads #46697 -- \$3.00 - \$7.99 or Hard Cap Knee Pads #46698 -- \$3.99 -- \$4.99 and Deluxe Knee pads #32910 -- \$5.00 -- \$9.99 (protection padding during the shift and for work-gardening after the shift)
- 3 PC. Safety Kit (goggles, dust mask ear muff sound protector) #46876 - \$4.00 -- \$9.99 (can be used during dust and high winds)
- 3 Pair Safety Goggles #35710 -- \$1.99 -- \$2.99
- Industrial Ear Muffs #43768 -- \$3.99
- Cartridge Respirator #44113 -- \$19.99
- Cartridge Replacements for Respirator #44114 -- \$9.99
- 10 Pack Nuisance Particle Dust Mask #93256 -- \$1.49 -- \$1.99
- Particulate Respirators #47518 -- \$1.99

Lighting:

- 13" 15-LED Flashlight (3-D cells) #92784 -- \$12.99 -- \$19.99
- 12" 15-LED Flashlight (3-D cells) #94524 -- \$11.99 -- \$24.99
- Flexible 3-LED Light (magnetic base) #30224 -- \$4.99 -- \$7.99
- 12 Volt Mini Spotlight with magnet base #90048 -- \$1.49 -- \$2.99
- 3 Million Candlepower 12 Volt Spotlight #90247 -- \$6.99 -- \$15.99 (Narrow spot strong light for occasion base camp, to see into the distance. Draws about 6.1 amps or about 75 watts)
- 500,000 Candlepower AC/DC Rechargeable Spotlight #43972 - \$7.99 to \$11.99 (will recharge using 12 volts DC, is portable, and can be used to spot things at a distance.)
- Halogen Bulb (500 Watt) #31307 -- \$.79 -- \$3.99

Batteries, Chargers, Testers, Cables, & Switches:

- NI-CAD Rechargeable Batteries AAA, AA, C, D #47439 - 47442 - \$2.49
- Automatic Battery Float charger #42292 -- \$4.99 -- \$9.99
- 6/12 Volt Battery charger (2-6 amp) #45005 -- \$19.99 -- \$24.99
- 10/2/55 Battery Charger/Engine Starter (2-55 Amp) #3418 -- \$29.99 - \$34.99 (chouse the battery charger(s) that will work best with the gasoline or diesel generator you have and will work best with any potential AC source (like a small hydro plant) you might have after a pole shift.)
- 1.5 Watt Solar Battery Charger #44768 -- \$9.99 -- \$14.99
- 5 Watt Solar Battery Charger #41144 -- \$39.99 -- \$49.99 (This could be put in storage for those that want to have a bit of charging capability after the long period of darkness, when the sun finally comes back (about 20 years).)

- 50 Amp Battery & Charging System Tester #06317 -- \$13.99 -- \$27.99
- 100 Amp 6 Volt/12 Volt Battery Load Tester #90636 -- \$19.99 -- \$29.99
- 12 Volt Digital Battery Tester with CCA Settings #92903 -- \$25.99 -- \$35.99
- 500 Amp Carbon Pile Load Tester #91129 -- \$49.99 -- \$59.99 (One battery tester of one type should be sufficient.)
- 12 Ft. x 10 Gauge Booster Cable #04120 -- \$9.99
- Battery Disconnect Safety Lever #33783 -- \$19.99
- Battery Cut-Off Switch #92688 -- \$5.99 (one should disconnect or switch off power during the PS)

Modified Sine Wave Inverters:

- 1200 Watt Continuous/3200 Watt Peak Power Inverter #93761 -- \$79.99 -- \$149.99
- 1000 Watt Continuous/2000 Watt Peak Power Inverter #94009 -- \$79.99 -- \$129.99
- 700 Watt Continuous/1800 Watt Peak Power Inverter #91848 -- \$49.99 -- \$89.99
- 700 Watt Continuous/1400 Watt Peak Power Inverter #47642 -- \$44.99 -- \$89.99
- 400 Watt Continuous/800 Watt Peak Power Inverter #92708 -- \$19.99 -- \$39.99
- 150 Watt Continuous/450 Watt Peak Power Inverter #93095 -- \$19.99 -- \$29.99
- 100 Watt Continuous/150 Watt Peak Power Inverter #92707 -- \$19.99
- 60 Watt Continuous/100 Watt Peak Power Inverter #91813 -- \$9.99 -- \$13.99

Recommend one purchase a range of useful power level inverters, with a back up for the most commonly used wattage(s). This allows one to select the smallest power unit that will run the intended load. This insures minimum energy wastage due to inverters idling power (power on with no load) being the lowest.

Digital Multitester Meter:

- Cen-Tech 7 Function Digital Multitester #90899 -- \$2.99 -- \$9.99 (Useful for battery voltage testing and with a radio shack silicon solar cell to measure light intensity.)
- Cen-Tech Digital Clamp-on Multimeter #42396 -- \$11.99 -- \$17.99 (will work to measure AC currents with 10x adaptor or home made 5 turns of wire around each clamp leg.)

Powered useful items:

- 14.4 V 3/8" Cordless Drill Kit with keyless chuck #40209 -- \$19.99 -- \$36.99 (useful for hand crank generator, micro water power, and bicycle power)
- 18 Volt 4.5" Cordless Chain Saw #44493 -- \$89.99 (may run intermittingly on 12 volt at reduced power)
- 16" Electric Chain Saw #02810 - \$56.99 (115volts 7.8 amp or 2HP. Need an AC gasoline generator to drive it.)
- Multipurpose Bench Grinder #43533 -- \$29.99 -- \$39.99 (115volts) (Has a rather useful flex shaft sander-grinder.)
- 12 Volt Portable Electric Winch (6000 lb) #43331 -- \$39.99 -- \$49.99
- 12 Volt, 150 PSI, High Volume Air Compressor #93186 -- \$49.99 -- \$69.99 (For airing up tires and as a possible source of air for retrieval of items under water.)
- 12 Volt, Utility Pump (240 Gallons/hour, 23 ft Lift) #9576 -- \$24.99 -- \$39.99 (for clear water transfer from one place to another. Could be used to fill up a tank with enough height to use the hydrostatic pressure to filter the water and supply it to point of use.)
- "Kill A Watt" Electric Monitor #93519 -- \$24.99 (Measure and displays AC voltage, current, wattage, power factor, KWH and hours of use, to 2 percent accuracy. A useful item for accurately determining how much electricity each item you wish to use has.
- 25 Watt Safety Siren Megaphone #4271 -- \$29.99 (can be used to talk to some approaching group after a PS.)
- Photo Sensor Tachometer #41727 -- \$59.99 -- \$79.99 (Can be used to determine speed of wind and water generating equipment. EBay is perhaps a cheaper source for this item)
- Five Function Metal Detector #43150 -- \$25.99 -- \$39.99 (can be used to find tools and other things lost in the local mud of a camp site or scrounging after a PS)

- Non-Contact Laser Thermometer #91778 -- \$39.99 -- \$59.99
- Non-Contact Pocket Thermometer #93983 -- \$6.99 -- \$19.99
- Cordless Soldering Iron (battery operated) #91298 -- \$17.99
- Water Overflow Alarm #92334 -- \$9.99 (Indicates when an area is getting wet)
- 2 PC. Motion Detector Alarms #42768 -- \$14.99 -- \$24.99
- Harold Hoot Owl #43746 -- \$15.99 -- \$19.99 (Simple motion sensors can be used to detect motion in your camp site.)
- Cordless Hair Trimmer Kit #45751 -- \$9.99 -- \$19.99
- Electric Hair Clippers #47082 -- \$4.99 -- \$9.99
- Three Head Rechargeable Shaver #40195 -- \$5.99 -- \$9.99
- 12 volt, Rotary Tool Set W/30 Accessories #94076 -- \$7.49 -- \$14.99
- Single Needle Industrial Sewing Machine (handles denim, sailcloth, and heavy canvas up to 5/16" thick. Table sold separately.) #03914 -- \$269.99.

Camping and Primitive Survival:

- Two Quart Desert Style Canteen #92889 -- \$3.99
- Cargo Pad (72 x 40 poly/cotton) #47262 -- \$3.99 -- \$5.99
- Quick Stitch Sewing AWL #91812 -- \$4.99 -- \$9.99 (Very useful for repair and hand sewing of canvas, leather etc)
- Emergency Poncho #37012 -- \$.50 -- \$.99
- 6 PC. 12" Tent Stakes #4817 -- \$1.50 - \$2.99
- 4 Ft. 6" x 6 Ft. 6" Heavy Duty Tarpaulin #5611 -- \$1.00 - \$2.29
- 6 PC. Stretch Cord Set #93040 -- \$1.50 -- \$6.99
- Old Fashioned Pitcher Pump #1318 -- \$15.00 -- \$29.99 (Has up and down handle, for pumping water from shallow wells.)
- Multi-Fluid Rotary Barrel Pump #94666 -- \$24.99 (Polypropylene and Stainless Steel Components - will work with water and flammable liquids. 1.3 Gallons per 20 turns.)
- #32 Meat Grinder (5 lbs of meat in a minute.) #46749 -- \$39.99
- Propane Bottle Refill Kit (refills standard 16.4 Oz disposable portable bottles from a portable 20 lb. cylinder) #45989 - \$19.99
- Two Liter Hand Held Mister #94218 -- \$2.99 -- \$4.99
- Self-Priming Siphon Pump Kit #3878 -- \$4.99 -- \$9.99
- Heavy Duty Jiggler Siphon Hose #93466 -- \$2.49 -- \$4.99
- Fluid Siphon Pump #93290 -- \$2.99 -- \$6.99
- 8" Hunting/Survival Knife (8" SS Blade and Survival kit stored in Handle) #90714 - \$7.99 -- \$9.99
- 18" Machete W/Nylon Sheath #94154 -- \$2.99 -- \$4.99
- Folding Lock Back Utility Knife #90802 -- \$5.99 -- \$8.99
- 21" Bow Saw #92934 -- \$4.99
- Multipurpose Scissors #47877 -- \$.99 -- \$1.99
- 8" Stainless Steel Fisherman's Pliers #42269 -- \$4.99 -- \$8.99
- 4 lb. Drilling Sledge Hammer #46968 -- \$5.99 -- \$9.99
- 55 Lb. Anvil (Cast Iron) #806 -- \$29.99 -- \$49.99
- Magnifier with Head Strap #37586 -- \$5.99
- Magnifier with Head Strap with Lights #38896 -- \$2.99 -- \$5.99
- 10" Cast Iron Frying Pan #93710 -- \$7.99
- 3 PC. Cast Iron Frying Pans #44707 - \$4.99 -- \$9.99
- Welding Blanket (6 ft by 6 ft up to 1000 deg F) #41506 -- \$19.99 (Use around camp fires to keep clothing from burning where wet wood is causing popping and spreading of hot coals)
- 3 PC. Leather Welder's Combo Set #94128 -- \$12.99 -- \$19.99 (Can be used around a camp fire to keep cloths of cook from catching on fire)
- 3-Way Weather Station #46431 -- \$7.99 -- \$9.99
- Soil pH Tester #00514 -- \$4.99

- 1" Pocket Thermometer #46586 - \$2.49 -- \$4.99
- Mosquito Net Hat (Panama Jungle) #47071 -- \$3.99 -- \$8.99
- Pepper Gas Spray (3/4 Oz) #36506 -- \$5.99 -- \$8.99
- Electronic Fly Swatter (1500 Volt DC - uses 2D batteries) #40122 -- \$2.99 -- \$7.99
- Wasp & Hornet Trap #94139 -- \$2.99 -- \$3.99
- Animal Trap (Collapsible 37"L x 12"W x 13"H - medium size animals) #90218 -- \$19.99 -- \$29.99
- Animal Trap (Collapsible 32.5"L x 10"W x 13.25"H - medium size animals) #9646 -- \$19.99 -- \$29.99
- Folding Rodent Trap (16" x 5.5" x 5.5") #94397 -- \$5.99 -- \$9.99

Drill bits:

- 6 PC. Spade Drill Set # 2728 (3/8" to 1") -- \$1.99 - \$4.99
- 8 PC. Silver & Deming Drill Bit Set (9/16" to 1") #527 -- \$21.99 -- \$29.99 (large sizes)
- 29 PC. Titanium Nitride Coated High Speed Steel Drill Bit Set #5889 -- \$13.99 -- \$19.99
- 6 PC. Mini Drill Set #91682 - \$2.99
- 3 PC. 18" Auger Bits #93892 -- \$12.99 -- \$19.99 (for drilling through logs to help build log cabin)
- 5 PC. Extra Long M2 High Speed Steel Drill Bits Sets #90025 -- \$7.99
- 6 PC. Auger bit Set #36251 -- \$9.99
- 3 PC. Titanium Nitride Coated M2 HSS Step Drills #91616 -- \$9.99 -- \$29.99
- 7 PC. 3/8" Shank 1/4" to 1" Forstner Bit set #01903 -- \$14.99

Hand Tools:

- 2 PC. Hand Plane Set #47988 -- \$14.99
- 16" Tool Box Saw #94034 -- \$3.99
- 8" Flat Microplane Wood forming tool (15" long) #94438 -- \$9.99
- 12" Combination Square Set #92471 -- \$4.99 -- \$6.99
- 5 PC. File Set #07520 -- \$2.99 -- \$5.99
- 12 PC. File & Rasp Set #00924 -- \$9.99
- 14 PC Jumbo Punch and Chisel Set #39940 -- \$7.99
- 7 PC. Flexible Shaft Hex Bit Driver Attachment #92631 -- \$2.99 (Also, can be used as a flex shaft between a drill motor and the item needing to be turned)
- 48" 3.5 Tone Capacity Farm Jack #06530 -- \$29.99 -- \$36.99
- 6 PC. Precision Screwdriver Set #47823 -- \$1.49 -- \$4.99
- 8 PC. Heavy duty Screwdriver Set # 01694 -- \$4.49 -- \$8.99
- 4 PC. Chisel Set #42429 -- \$5.99 -- \$8.99
- 6-IN-1 Neon Screwdriver #39631 -- \$3.99
- 100 PC. Security Bit Set #91310 -- \$7.99 -- \$14.99
- Table vise (2", 360 Degree Swivel with 3" base clamp. 5.5 lbs.) #42284 -- \$9.99
- 55 lb. Anvil (cast iron) #806 - \$29.99 -- \$49.99
- Clamp - C-Clamp 4" #37848 -- \$3.99 -- \$1.49
- 16 Lb. Pull Magnetic Pickup Tool #90233 -- \$2.99 -- \$5.99
- Retrieving Magnet (lifting capacity 150 lbs) #36904 -- \$9.99
- 6.25" Multipurpose Magnet Holder #1939 -- \$1.99 -- \$7.99 (Any of the above Can be used to find iron ore or iron objects in muddy water. Can be stroked across a steel needle to make a primitive compass. Use a bit of wax to make the needle float in a small water container.)
- 6 PC. Pliers Set #38082/46005 -- \$9.99 -- \$19.99
- 2 PC. Mini Locking Pliers Set #91683 -- \$2.99 -- \$5.99
- 4 Ton Heavy Duty Porta Power #44899 -- \$69.99 -- \$99.99 (Optional item - can be used in times of emergency to help lift or move heavy objects. Examples: Trapped in a vehicle or house.)
- 24" Bolt Cutter #41149 -- \$8.99 -- \$16.99
- Ratchet Action Pruner #34980 -- \$14.99 -- \$19.99
- 4 PC. Steel Adjustable Wrench Set #903 -- \$6.99 -- \$10.99

- 4 LB. Drilling Hammer (fiberglass handle) #46968 -- \$5.99 -- \$9.99
- 4 Piece Solid Steel Pry Bar Set #7929 -- \$4.99 -- \$9.99

Cable Pullers and Presses:

- 1200 Lb. Cable Puller #30131 -- \$8.00 -- \$11.99
- 4000 Lb. Cable Puller #30329 -- \$10.99 -- \$15.99
- 8000 Lb. Cable Winch Puller #543 -- \$19.99 -- \$29.99
- 2000 Lb. Dual Drive Winch #41694 -- \$14.99 -- \$24.99
- 12 Ton Shop Press #33497 -- \$114.99 -- \$134.99
- 20 Ton Shop Press #32879 -- \$179.99 -- \$239.99
- Rope Hoist (block and tackle up to 500 lb) #45076 -- \$4.99 - \$6.99

Carts, Wagons, & Hand Trucks:

- Firewood Cart #44599 -- \$29.99 -- \$39.99
- Big Foot Wagon #1541 -- \$34.99 -- \$49.99
- Steel Mesh-Deck Wagon #38137 -- \$59.99 -- \$99.99
- Bigfoot Hand Truck #37520 -- \$35.99 -- \$59.99
- Heavy Duty Hand Truck #3163 -- \$25.99 -- \$34.99
- Heavy Duty 6.5 Cubic Ft Garden Cart #30422 -- \$89.99
- Heavy Duty 11.3 Cubic Ft Garden Cart #30421 -- \$109.99
- Mover's Dolly #92486 -- \$15.99 -- \$21.99

Log Splitting:

- Heavy Duty, Camper's Wood Axes (40 Oz 24" long) #90257 -- \$11.99
- Splitting Wedge #30177 -- \$6.99
- 5 Lb. Wood Wedge #94349 -- \$8.99
- Manual Slide Hammer Log Splitter #93360 - \$14.99 - \$24.99
- Two Speed, 10 Ton Hydraulic Log Splitter #39981 -- \$79.99 -- \$119.99

Consumables:

- Industrial Grade Electrical Tape #39654 and #6047 -- \$.33 - \$.59 (has many uses beyond electrical)
- Sheet Metal Screw Storehouse #92710 -- \$4.99 -- \$6.99
- Stainless Steel Self-tapping Screw Set Storehouse (880 PC.) #42250 -- \$18.99
- Stainless Steel Screw & Bolt Set Storehouse (520 PC.) #47113 -- \$15.99 (There are many types of Storehouse sets (not listed). Keep an eye open for when on sale and stock up as you feel about it's usefulness.)
- Pack of 100 Nitrile Gloves #37050 Med, #37051 Large , or #37052 EX Large -- \$7.99 -- \$11.99.
- Leather Industrial Work Gloves (6 pair) #489 - \$6.49 -- \$9.99
- Elastic Tie Downs (12 PC. Set) #91655 -- \$3.49 -- \$6.99
- Stretch Cord Set (12 PC. Adjustable) #47309 -- \$3.99 -- \$11.99
- Heavy Duty Silver Tarps (11 Mil thick) 7'x9' to 29'x58' #30872 to #1438 -- \$1.00 - 139.99
- Grommet Installation Kit #30037 -- \$2.99 -- \$5.99
- .25" x 600 ft. Twisted Polypropylene yellow Rope #47836 -- \$9.99 -- \$17.99
- 3/8" x 25ft PVC or rubber Air hose #91525 -- \$3.99 -- \$9.99 or #42184 -- \$7.99 (Can be used for water line, piped from the bottom of a raised 5 Gallon bucket or garbage can through a water filter.)
- Cloth Duct Tape (Shurtape 2"x50 yd.) #30100 -- \$2.99 -- \$3.99.
- 100 PC. Single-Edge Razor Blades #39748 -- \$2.99 -- \$4.99
- Heat Shrink Wire Wrap Assortment #45058 -- \$45058 -- \$1.49 -- \$2.99
- Slime Super Duty Tire Sealant (16 oz) #41331 -- \$6.99 -- \$9.99
- Medium 80 and fine 150 Grit Foam Sanding Pads, (24 PK.) #90324 - \$3.99 -- \$6.49

Offered by [Mike](#).



Troubled Times



Earthquake Magnitude

Excerpts from a book on the Troubled Times recommended book list - *Peace of Mind in Earthquake Country*, by Peter Yanev - explains man's attempts to measure earthquakes in a scientific manner.

Even today, the causes of earthquakes cannot be said to be completely understood. But there is now sufficient geologic evidence for scientists to conclude that the tremors are the effect of a re-balancing of forces arising from the collusion of continuously moving plates of layered rock that float upon the earth's molten interior. This is the theory of continental drift and plate tectonics, which holds that the land surface of the crust of the earth was once concentrated in a single continental mass - a supercontinent. ... As some of these plates meet and collide around the globe - roughly at the intersections of continents and oceans - they cause islands and mountain ranges to rise, land masses to emerge from or sink beneath the seas, volcanoes to erupt and the adjustments of plate friction which we know as earthquakes.

The rocky edges of the plates have a certain amount of elasticity and therefore tend to hold their basic positions along the fault. Portions of the fault frequently remain locked in this way, and under tremendous strain, for several years, decades or even centuries. Finally, when the accumulated strain exceed the frictional force that binds portions of the plates and prevents their natural movement, the distorted and shattered rocky layers along the two sides of the fault suddenly slip past one another in an explosion of movement that allows a new position of equilibrium for the opposing plates. This slippage, termed "elastic rebound" by scientists, can product a series of powerful vibrations and shock waves that toss and sometimes rupture the earth's surface and may shift the positions of the two sides of the fault by several feet both horizontally and vertically.

The depth of an earthquake is closely related to its destructiveness; for the shock waves of the deeper earthquakes are generally dissipated as they rise to the surface and are therefore less damaging to buildings. On the other hand, the deep-focus tremors usually affect a much wider area. Shallow-focus earthquakes are felt over a smaller area and are therefore sharper and frequently more destructive.

When the stresses of a fault are released in an earthquake, the highest intensity of shock waves and vibrations are felt along the fault line nearest the point of slippage. However, much of the length of a fault may also be affected by a major quake, so that destructive vibrations can occur along a fault for many miles on either side of the earthquake center. In addition, the shock waves disperse from the fault like the rings produced by a pebble dropped into still water, so that significant shocks and damage can affect areas 20 or more miles on either side of the fault. The intensity always diminishes with distance, of course, but an unstable, vibration-prone soil many miles from the fault can product more damage than a strong, rocky geologic formation only a few hundred feet away from the source of the quake.

Earthquake magnitude, the amount of energy released by a quake, was originally defined in 1935 by Professor Charles F. Richter of the California Institute of Technology in Pasadena. [Editor's note - each Richter scale point is 10 times the intensity of the preceding point, thus a magnitude 7 earthquake is considered to be 10 times greater than a magnitude 6 earthquake.] .. The Modified Mercalli (MM) intensity scale is the one most commonly used in the United States. The MM scale is denoted with Roman numerals from I to XII, with each number corresponding to descriptions of earthquake damage and other effects.

A Richter scale 7 is equivalent to an MM scale of IX-X - a major, destructive earthquake. Peter Yanev describes this

as:

Panic is general. Interior damage is considerable in specially designed earthquake-resistant structures. Well-built ordinary buildings suffer severe damage, with partial collapses; frame structures thrown out of plumb or shifted off their foundations. un-reinforced masonry buildings collapse. The ground cracks conspicuously and some underground pipes are broken. Reservoirs are damaged seriously. Most masonry and many frame structures are destroyed. Specially designed earthquake-resistant structures may suffer serious damage. Some well-built bridges are destroyed, and dams, dikes and embankments are seriously damaged. Large landslides are triggered by the shock. Water is thrown onto the banks of canals, rivers and lakes. Sand and mud are shifted horizontally on beaches and flat land. Rails are bent slightly. Many buried pipes and conduits are broken.

A Richter scale 8 or 9 is equivalent to an MM scale of XI-XII - a great earthquake. Peter Yanev describes this as:

Few, if any, masonry structures remain standing. Other structures are severely damaged. Broad fissures, slumps and slides develop in soft or wet soils. Underground pipe lines and conduits are put completely out of service. Rails are severely bent. Damage is total, with practically all works of construction severely damaged or destroyed. Waves are observed on ground surfaces, and all soft or wet soils are greatly disturbed. Heavy objects are thrown into the air, and large rock masses are displaced.



Troubled Times



Shift Speed

The pole shift is going to get us going pretty fast as it shifts. Could be of the order of magnitude of 12 times the normal rotational speed of the planet. This can be determined from the size of the planet and the Zetas 1 hr or less for the shift. Depending on how fast the deceleration takes place, the sliding force on a body could get up to 9 or more times the person's own weight (9 G). High winds during the polar shift will be caused by the mass of atmosphere resisting motion and sloshing just as what will happen with the oceans.

Determination of estimated shift maximum surface speed, and possible deceleration amplitudes as the shift stops. Using some high school physics formulas and concepts: Observable data: At the equator, the Earth rotates at a speed of 1,040 mph or 0.29 miles per second (1,670 km/h, 0.46 km/s). (see <http://ftp.sunspot.noao.edu/PR/answerbook/motion.html>). For normal earth rotation the surface speed at a 45 degrees latitude would be $1040 \cdot \cos(45) = 1040 \cdot .707 = 735$ miles per hour. The surface speed at the poles is 0 miles per hour. These same concepts would apply during the rotational motion of the polar shift.

The equatorial radius is about 6.378 million meters. Thus the perimeter is $(2 \cdot 3.14 \cdot 6.378 \cdot 10^6) = 40,000$ KM or 24,800 miles. (1KM = .621 Miles) See http://ssd.jpl.nasa.gov/phys_props_earth.html. Analysis: $S(\text{distance}) = (1/2)a(\text{acceleration}) \text{ times } t^2(\text{time of displacement})$ Solving this for acceleration we have: $a = 2s/t^2$ To find the number of "G" one would divide this by $g = \text{acceleration of gravity } 32 \text{ ft/sec}^2$.

Assume the polar shift of the earth would cause a uniform acceleration up to a maximum speed and then immediately start deceleration to zero for a total rotation of say one quarter turn or 90 degrees. Duration to be one hour. The distance along the earth surface for half of this or acceleration up to a minimum speed would be a 1/8 revolution. The perimeters of the earth at the equator is about 24,800 miles or 40,000 meters. Thus "s" above = $1/8 \cdot 24,800 \text{ miles} = 3,100 \text{ miles}$. The amount of "a" acceleration sustained for a uniform ramp up for 30 min would be about = $(2 \cdot 3100 \text{ mile} \cdot 5280 \text{ ft/mile}) / ((30 \text{ min} \cdot 60 \text{ sec/min})^2) = 10 \text{ ft/sec}^2$ or **dividing by g gives .31 G**.

$V(\text{final velocity}) = a(\text{acceleration}) \text{ times } t(\text{time for displacement})$ (assuming initial velocity is zero) $v = at = (10 \text{ ft/sec}^2) \cdot (30 \text{ min} \cdot 60 \text{ sec/min}) = 18,000 \text{ ft/sec} = (18,000 \cdot .681) \text{ miles/hr} = 12,200 \text{ miles/hr}$. Note: this is about 12 times the normal surface rotational speed at the equator. Suppose the polar shifts surface velocity of 12,200 miles/hr (18,000 ft/sec) comes to a stop in 3 minutes. What will the deceleration be?

$$a(\text{acceleration}) = v(\text{velocity}) / t(\text{time of displacement})$$

$$a = (18,000 \text{ ft/sec}) / (3 \text{ min} \cdot 60 \text{ sec/min}) = 100 \text{ ft/sec}^2$$

dividing by g gives 3.1 G of deceleration

As a worst case suppose the polar shifts surface velocity of 12,200 miles/hr (18,000 ft/sec) comes to a stop in 1 minutes. What will the deceleration be?

$$a(\text{acceleration}) = v(\text{velocity}) / t(\text{time of displacement})$$

$$a = (18,000 \text{ ft/sec}) / (1 \text{ min} \cdot 60 \text{ sec/min}) = 300 \text{ ft/sec}^2$$

dividing by g gives 9.4 G of deceleration.

Now suppose a car traveling 20 miles/hr hits a barrier and stops in 2 ft. Assuming uniform deceleration. What deceleration does the car receive? With no seat belt a friend of mine hit his head on the windshield and broke the glass during such a crash.

$$a = (v^2)/2s = (20*5280\text{ft}/3600\text{sec})^2/2*2 = 215 \text{ ft/sec}^2 \text{ or } 6.7 \text{ G force}$$

Offered by [Mike](#).



Troubled Times



Sudden Stop

The worst case situation should prepare for an impact after being dashed equivalent to a drop of 500 feet. This presumes no protections around the object or person to prevent impact injury.

ZetaTalk

What does a 500 ft drop mean? What does padding and no padding mean? A 500 ft drop will cause a G-force that has me deeply concerned. The following analysis will show you why. I have been going around and around with it over the last few weeks trying to find an error. I hope someone can find an error somewhere in the math or logic. If we first assume terminal velocity is not reached and air viscosity has no slowing effect. If we now assumed there is enough padding to allow for 6" of motion before the item completely squashes the padding and assuming the padding decelerates the object uniformly throughout the 6" of motion. Note: A typical mattress is say 6" to 8" thick and with someone laying on it squashes a bit so that in the best of conditions 4" to 6" of motion for deceleration is reasonable.

$$V = (2gS)^{.5} = \text{Velocity due to free fall of gravity}$$

$$v = (2as)^{.5} = \text{velocity at start of deceleration}$$

Set $V = v$ and solve for "a". This becomes:

$$a = (S/s)g = (S/s)G = \text{Deceleration in "G-force"}$$

$g = \text{gravitational constant } 32 \text{ ft/sec}^2 = 1 \text{ G}$

$S = 500 \text{ ft distance of free fall}$

$s = \text{Deceleration or stopping distance of } 6" = .5 \text{ ft}$

$$a = (500\text{ft}/.5\text{ft})G = 1000 \text{ G of force}$$

Note: The table below was determine from this formula using different distances of deceleration. Assuming no air friction. How fast would an object be going, if dropped from a height of 500 ft?

$$v = (2gs)^{.5} = ((2*32 \text{ ft/sec}^2)*500 \text{ ft})^{.5} = 179 \text{ ft/sec}$$

$$= 179 \text{ ft/sec} * 1\text{mile}/5280\text{ft} * 3600\text{sec/hr} = 122 \text{ miles/hr}$$

Note: (1 ft/sec = .682 miles/hr)

What is free fall terminal velocity or maximum speed? A sky diver friend of mine tells me this is from 120 miles/Hr (body horizontal) to over 200 miles/Hr (body vertical). The above is within the 120 to 200 mile/Hr range so that for our purposes we are probably safe assuming no air resistance in determining maximum speed of fall. Stopping "s" distance and amount of G-force experienced:

- A 500 ft drop results in a relative speed of 122 MPH
- A .5" deceleration distance results in 12,000 G-force
- A 1" deceleration distance results in 6,000 G-force
- A 4" deceleration distance results in 1,666 G-force
- A 6" deceleration distance results in 1,000 G-force
- A 1 ft deceleration distance results in 500 G-force
- A 2 ft deceleration distance results in 250 G-force
- A 10 ft deceleration distance results in 50 G-force
- A 100 ft deceleration distance results in 5 G-force

Summary: For example, what this is saying is that if the proper padding is used so as to uniformly stop a fall from 500 ft in a 6" distance, that the body falling would experience a force of 1000 times it's weight as it stops. To put this

in simple terms. Stack 1000 bodies your same weight on top of yours, put them on a typical mattress and we have two problems. Your body at the bottom is probably crushed with broken bones and the mattress went flat a long time ago, offering no padding. All this would happen rapidly depending on the padding thickness or stopping distance "s". Yet the G-forces will be there. Now if one wanted to experience less than 5 G-force then expect to use over a 100 ft of padding on all sides. This becomes absurdly ridiculous.

A 500 ft drop, with no padding at the bottom, is equivalent to a sky diver hitting the ground without a parachute. There have been sky divers falling at about 120 miles/Hr whose parachutes have not opened, and they have lived through it, with only some broken bones. Assuming the ground-body combination flexed 1" to 4" then the G-force could be between 6,000 G and 1,666 G. I don't know what the maximum limit of what a body can withstand and still live through it is. I do know, that for us average folks it's probably not as low a 9 G, but a lot lower than 1000 G. One needs to remember the duration of G-force is not going to be as long as tests done on individuals in centrifuges to simulate fighter pilots, or astronaut reentry situations.

There is the possibly of getting high G forces with low amplitude vibration of short duration's. Duration of G force is a big factor. High G force short duration is less destructive than the same G force for a longer duration. Longer duration will compress any padding and then transmit the acceleration to the component or body being padded. The short duration high G-force is expected and would be already shielded for, once the longer duration G-force shielding is in place. By defining must with stand a given drop height the duration is defined for each stopping distance, and thus becomes a good way to define the problem.

As far as electronic component protection: 4" to 1 ft. of padding would provide protection such that each component of the electronic unit would experience no less than 1666 to 500 times it's own weight in trying to tare the unit apart. The overall effect of all component motion is to attempt to squash the unit flat. Notes: One should note, that padding does not squish to nothing. It will have a squashed thickness that is not a part of the "s-distance" above. Also, padding being squashed in the real world will not produce a uniform deceleration. Expect the deceleration G-force to increase, to some degree, the more compressed the padding.

Offered by [Mike](#).



Troubled Times



Gradual Stop

If the polar shift takes 1 Hr for the earth to do an approximate 90 degree shift, then the maximum speed of the earth's surface at the perimeter (circle of largest motion) would be about 12 times the earth's normal rotational speed of about 1000 miles/Hr. If the starting and stopping is assumed to be a uniform acceleration, (which we suspect won't be the case) then, this is estimated to be about .31 G. A body along the perimeter of rotational shift would feel 31% heavier during this time. If the shift rotation were to come uniformly to a stop within 3 minutes, then, the deceleration would average about 3.1 G. If it stopped in 1 min, then, the deceleration would average about 9.4 G. If the polar shift is between these limits then the G force of motion we would feel during the shift will be between these limits. Note: A car going 20 miles/Hr hitting a barrier and stopping in 2 ft produces a 6.7 G deceleration.

The above numbers are a simplistic view, and only give a feeling for, or rough order of magnitude, for some of the factors involved from a point of view of simple high school physics. The crunching, and bumping of the plates will cause much more fluctuation in the amount of G force felt than the above estimations. I suspect as the 12th gets close to between us and the sun, that the 12th's magnetic field takes over control from the sun, and all of a sudden the shift starts. I am guessing that after the 12th planet passes between us and the sun, that there is competing forces that slow the shift down more rapidly than it starts. This may come from the residual magnetism of the core, and its repelling force with the sun in its new position. I expect planet earth by its inertia to swing past its ending position, and possibly oscillate for a while, ending in its new position, while the 12th slowly progresses on its way. I expect the 12th to hold the earth in its new position long enough for it to begin to rotate.

Offered by [Mike](#).

We know the earth stops its rotation for a short time, as history reports this in cultures world wide and not in contact with each other (just as the flood is so reported). This means the current scientific explanation of why the earth rotates goes out the window. It is *not* leftover motion perpetuating itself. It rotates because parts of its semi-liquid core are on the move. If one was in a rocket leaving earth. G-force would kick their butt because they are basically fighting gravity. If you were laying on the face of the earth and the earth was turning with you on it, would you still feel the effects of G-force? You would not be fighting gravity as everything moves together, gravity and all. I might be wrong, just one of those gut feelings. I know that inertia is what you would be fighting, but somehow I don't think it that bad.

Offered by [Clipper](#).

This is an interesting concept. If one is in a train taking off at a rapid clip, you could be knocked off your feet, but if the train takes off gradually, you don't feel this effect no matter how fast the train eventually goes. People are in airplanes going at supersonic speed, for instance, but can walk around. Why would the earth's core and crust move at a *sudden* speed? It would take off slowly, over a few minutes, and when stopping the turn likewise take a few minutes which would translate into a series of earthquake jolts.

Offered by [Nancy](#).



Troubled Times



Jolt or Dash

We seem to have a different look at the reality of this situation. We need to talk it out. A 9.0 quake is a factor of 100 more than a 7.0 due to the logarithmic scale. If we need to be prepared for a jolt that could be as strong as the equivalent of a 500 ft drop as the Zetas have said. Then, your TV will experience over 1000 to 16,000 times it's own weight to tare it off the wall. This would depend on whether the wall flexed 6 inches or .5". For that matter the apartment would need to take this amount of G-force also. What makes you think the apartment will still be standing? Think of your apartment building traveling along at 122 miles/hr and the foundation suddenly hitting a very thick brick wall. Will your TV still stay in place? Will you apartment still be standing? Not to mention what effect this will have on your body.

Offered by [Mike](#).

Earlier the Zetas said that the 500 foot thing was a totally unprotected dashing of a device. No walls, no restraints. It's on a picnic table in the middle of a field. The jolt comes. It flies. Now, if you limit the fling with a wall, or a padded wall - not 500 feet. If you limit the fling with a padding around it, not 500 foot unprotected dash. The bottom line is not to let our technology get thrown. Cars get moved into other lanes during even a 7.1, and TV sets moved off their perch and onto the floor. Furniture walked across the room during the 7.1 jiggles in 1989 here in San Francisco, so I was told.

We have a couple TV sets, the more expensive one wired to the wall. Unless those screws pull out of the wall, I expect that TV set to be intact with only perhaps a rub mark where the wires cross in front of it. The other TV set, and our PC monitors will be toast, that I know. Count the dishes out too. New crockery. My point, prevent it from being thrown!

Offered by [Nancy](#).



Troubled Times



Horizontal Motion

If on a picnic table, assuming the picnic table is fastened to the earth and a jolt is big enough for an object to fly off occurs. What this means is the inertia of the object was holding it in place and the picnic table experienced the greater G-force as compared to the object. Now if the object falls 500 ft and hits the ground then we have satisfied the Zeta criteria. But, lets assume it doesn't. It rolls or slides until it hit something that stops it. Now, for the Zeta 500 ft drop equivalent force to take effect the relative motion between the moving object and what stops it must be going 122 miles/hr.

Now, as worst case imagine the bouncing back and forth between two walls fastened securely to the earth in such an optimum frequency that the opposing wall is moving fast toward the object as the object is fast approaching the wall. This would be as viewed from a theoretical remote unmoving view point. The bottom line is to satisfy the Zeta's 500 ft drop criteria the relative motion of the object to the wall must be going 122 miles/hr. A 500 ft drop will impart a given amount of energy of motion in an object that when it is stopped must be dissipated. The high school formulas of Physics as given in the first report give the resulting G-force in relation to stopping distance.

If our electronics must survive this then the, housing and our bodies must survive the same jolt. Do you know of any human bodies that will survive traveling 122 miles/hr and hitting an object? The bottom line: You have me confused by saying essentially it not going to be as bad as what I am saying. Yet I think I am saying what is consistent to what the Zetas are saying which is something else, much stronger. I believe we can build to survive this but before we start I just want to be absolutely clear that 500 ft drop is the correct criteria. Next we need to know whether this applies to both free to move objects and fixed to the earth objects or only one and not the other. If it applies to free to move objects only then we need to know what the criteria would be when fix to bed rock so as to move with the earth's plate. This is so a housing specification can be built. We could also ask whether it's better to build a structure that is able to slide around or fasten to bead rock or something else.

Offered by [Mike](#).

In fact, this dashing back and forth is what brings buildings down in cities during earthquakes. The explanation is that buildings of differing heights move back and forth, sway, during an earthquake, at different frequencies. As long as all the building on the block are the same heights, no problem, or so I'm to understanding by what I have read. If a tall building and short building are side by side, the short one has a faster sway than the taller, and is moving to the left when the tall is moving to the right, and the short strikes the tall in the middle, fracturing it. Down comes tall, crashing and smashing short, etc.

Well, this is presuming that humans or electronics are *not* lying flat, in an area where they cannot move far as the walls (hopefully padded) are close at hand, a few inches perhaps. Yes, humans survive moving 122/hr and stopping if the air bag prevents them going into the dash *hard*. They are moving as fast as the car (substitute earth plate) and when it stops, if they haven't far to move and are padded, they and the electronics should be OK!

Offered by [Nancy](#).



Troubled Times



Car Crash

Some factors to note: The G-force of a car crash is depending on stopping distance. This would be how many feet the car gets squashed, and how much the object that got run into, moves, or gets crunched. The following table would apply. Stopping "s" distance and amount of G-force experienced: If a car going 122 MPH hits a brick wall, and crunches the front of the car. Lets assume as a worst case the wall doesn't move, and the squash of the car distance summed with the amount of squash of the air bag to be 5 ft, then, the body on an average would feel 100 G-force. Actually I think it would start lower, and build up to more than this. This would be due to, harder to squash the last 1 ft, as compared to the first 1 ft.

Air bags work because they distribute the G-force over a greater percentage of the body. If no air bag a small area of the body must take a large G-force, and bones get broken. Note well: The amount of squash of the air bag as compared to the squash of the car is minimal. Air bags to protect a body during a pole shift would take some thought. Using only one bag would not be recommended. If you knew the direction of the jolt and it was the same each time then you could position your air bag between you and the jolt, and this might work. But, sense the jolt may be vertical, or horizontal you would roll off if one bag were used. Many smaller bags tied together may work if each bag can be made strong enough. The thickness of the bag is yet to be determined. Stunt men jump off building, and land on very large air bags.

It seems to me years ago I ran into a study by either the car industry, or the insurance companies that estimated body survival rate of car crashes with the two variables stopping distance and speed. Right now I am thinking it would be better to let our survival quarters slide around as it needs. Once the horizontal G-force is greater than friction then it will break loose and slide. The only problem with this is you don't want the wind blowing you around, also. Reason - you could end up anywhere, and you might hit something real hard, going say 300 miles/hr. I am going to, for now, assume the 500 ft jolt criteria applies to everything until I hear differently. This would be independent of whether the object is loose to be dashed around, or fastened to bed rock. I am also going to assume 500 ft jolt is the correct number to design our survival quarters to. As vehicle speed increases from 0 to 40 mph, the rate of injury in an accident increases by 50% and doubles again from 40 to 60 mph. Safety belts, when worn, reduce the number of deaths by 45%, and serious injury by 50%.

Offered by [Mike](#).

So you're saying (below) that if the wall *moves* 100 feet, rather than being a brick wall, as they say, that the G force of the crunch is *less*. Well, in earthquakes, if you are laying in a trench 3" wide and the earth lurches this way and that, then you are moving *with* the earth and only fly a few inches during the stop, and the wall of the trench is moving with you as you stop. Also, you do not have that far to "fall" before hitting the wall. However, if you were a TV (or person) sitting on a picnic bench in a field, and the earthquake happened and moved the bench and TV (and person) rapidly in a direction and then stopped, even though the bench was slowing down somewhat gradually during the stoppage, the TV (or person) would go flying off into the air, in the direction of motion, and get dashed, perhaps against a tree or rock moving back *toward* the person at that time.

This is what brings buildings down during the swaying of earthquakes, one building coming back while another of a different height (vibration frequency) is still moving forward. They crash into each other!

Offered by [Nancy](#).

Earth sheltered or earth bermed dwellings essentially move *with* the quake. The stuff inside may move a little bit. The real problem with movements of dwellings in earthquakes is the moment of movement between the ground, the first

floor above the ground and the floors above. Each one will tend to move with a different inertia. However in a quake which produces waves in the ground will of course completely disrupt any building.

Offered by [Eric](#).



Troubled Times



Pivot Points

During the pole shift hurricane winds can be expected worldwide for an hour's duration, the time the crust is moving and shortly thereafter. Thereafter highly erratic weather will ensue.

ZetaTalk

This makes sense if one looks at the atmosphere as having inertia. When the shift takes place the atmosphere would tend to stay put until the land masses pulled it up to speed. To then slosh forward, causing wind from the opposite direction, as the planet slows down. This would depend on where one is with respect to the axis of the shift. Do we know where the pole shift rotational pivot points are? Being at a pivot point has a definite advantage, due to minimal inertia when the motion of the polar shift stops. The quakes near these pivot point should be much less than near the path, or plane of the polar shift. The plates in the area also have less adjusting in height to do. Do we know how fast the 12th is going to pass us? To get a feeling for this, the answer could be expressed in how long it takes to traverse say 15 degrees, or 1/24th of a circle, at it's closest approach. This angle could be expressed, as viewed from a theoretical non-moving earth.

Offered by [Mike](#).

Historically, people who experienced the long day/ long night thought in some cases it was only a double day, could not tell time, etc., but it wasn't all *that* long. They also didn't report the earthquakes as continuous, outside of any other normal "big one". Just as we will have whole world earthquakes, with all the connected plates jolting, likewise we'll have whole world hurricanes. No air mass will remain unaffected, and look at the variables! Heating and cooling taking place real fast! As for the pivot points, atmosphere wise, there *will be no* safe place. *All* will experience hurricane force winds, no telling the direction, etc. The atmosphere, unlike the earth plates, is free to *move*.

Offered by [Nancy](#).



Troubled Times



80% / 20%

Our ancestors obviously survived similar events through many cycles, it would seem, since we're still here to discuss it. I doubt they took all the precautions we're talking about either.

Offered by [Ron](#).

I feel this is getting out of hand a bit. Either we lay down to die, or we try to make the best out of things. There is no room for doomsday despair. I believe we are fortunate to receive the Zeta message. It is coherent with all other "End-time" messages, but even gives us the precise information as to how and when. I may not be able to preserve any PCs or Hi-Fi equipment, but I may be able to save my family and myself. If I loose some of them in the process, what is the difference to everyday car crashes etc.? Sorrow and grief; yes. End of the world; no. They will be given another chance.

If the worst case scenarios are right, well, we might all have to wait for a another chance on another planet. Instead of worrying, go off and enjoy your last years on earth! On the other hand, if you look at the other part of the Zeta message; what to come, that should be good news for all of us. It may have been worse before in history, but the current state of affairs is definitely not good on Mother Earth. All environmental efforts are too little, too late, human lives are second to market shares and stock value. A restart will do us all good.

As for the preparation, all risk management goes for the high probability, high impact issues. Low impact; forget it. Low probability; ignore it unless it is terminal. Add in the 80/20 rule; with 20% effort, you should be able to deal with 80% of your issues. As for myself, I will rather dig into the latest research on how to build earthquake-proof buildings. I have seen some encouraging technologies on the Discovery Channel that I will try to explore further.

Offered by [Jan](#).

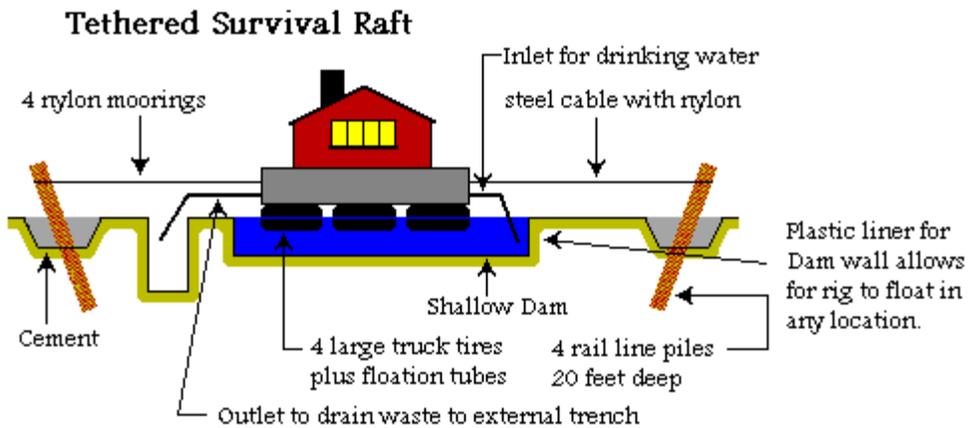


Troubled Times

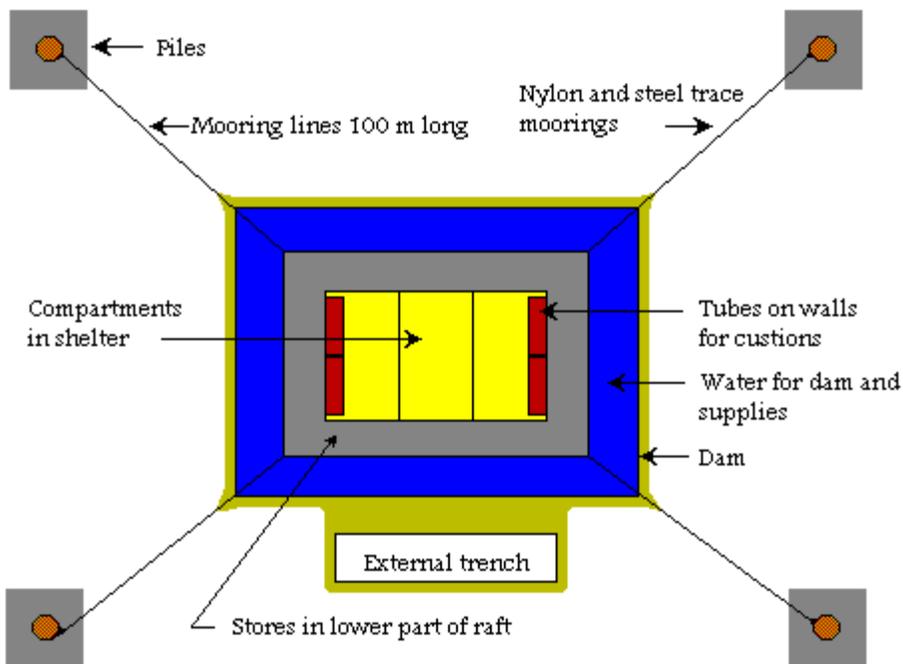


Water Cushion

I have been trying to visualize a way to survive mega quakes. So far:

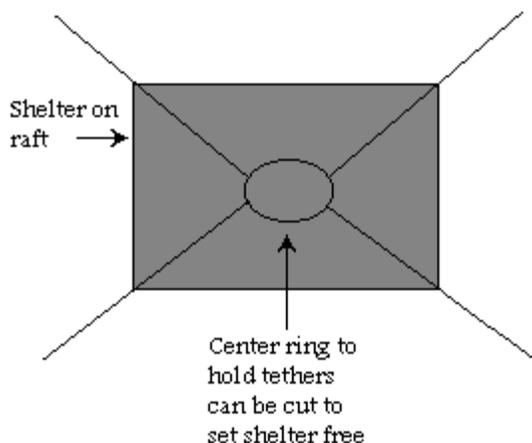


- I am thinking of a relatively shallow dam with a raft with a dwelling made from numerous truck tubes. The raft could be set in a small shallow dam, dug and filled for this purpose. The dam water to be only knee deep so one could walk to and from shelter. In any case the dammed water would be a useful asset. This would also absorb any smaller jolts, and would be constant proof and reassurance that the buoyancy was OK. The dam need only be slightly bigger than the raft to do this job. Thus someone on a farm with a couple of dozen tires would have all that was needed.



- The raft is secured by four deep steel piles via nylon "mooring" lines, say 100 meters long to all cardinal points. Nylon has great strength and some stretch and a steel wire trace could be placed at the near max stretch of nylon

mooring lines to back them up. This would cover both lateral and vertical earthquakes. I would bring the four steel traces to a center ring and to that attach personal safety lines as yacht sailors use. Care on getting the steel piles deep and cemented most important.



- While a survival trench certainly will give more wind and fire type protection it will be a hell place to be in a huge jolt (before, during and after). The Chinese build huge sailing junks without an unstayed mast, in a Typhoon the mast gives and the vessel survives. In a tethered raft the shocks will be absorbed much the same, it could still have a heavy duty steel cover, and does not have the worry of getting out of a buried trench, and always getting air in. I would not like to rely on a dugout if there was also a chance of inundation's, so the floating "capsule" is double survival chance.
- The most likely worst effect would be to get a shower from splashing water occasionally. A heavy pair of bolt cutters and a knife would allow one to cut the tethers if the water level went up beyond the allowed lift in the tethers. Should the inundation cause the raft to rise on the four moorings, the center tether should be cut freeing 3 moorings, and not setting the raft free just yet. The fourth mooring would hold the raft as an anchor point and allow for even further rises yet remain tethered. If flooding continued even higher then cut the fourth tether and take your chance on a wild ride to who knows where, but still a very high survival possibility. The worlds history and literature has many stories of people surviving clinging to various rafts, etc.
- More smaller car tubes could be put on the inner walls as cushion shock absorbers for further back up. If the dam became exhausted the system would still work, this time with truck tires say at the four extremes of the raft acting as skids and shock absorbers. If all this was on a clay type base abrasion of tires with lateral movement would be minimal.
- The shelter could have a tent like cover. An additional benefit of floating on a dam would be immediate access to water in a fire storm. For drinking water, simple water boiling and carbon filtration would provide perfectly suitable water, if the water was cloudy, some alum sulfate to flocculate (cause the particles to drop out of suspension) could be added prior to boiling. Provided waste water was sent to a separate trench and the dam could easily be lined with a plastic liner for low cost, then there would be no contamination.
- The whole thing would be easy to build and cheap. Most tire repair places are happy to give away old tires and even quite repairable tubes. The truck tires would either have tubes inflated or better still be foam filled with two anchor plates to hold and protect the foam there (much as is done to make mooring buoys).

Anyway, we have to start thinking about concepts that might just work. Might not be the Hilton but it would give a fighting chance.

Design by [Darryl](#)



Troubled Times



Houseboat on Land

Foundation	24 inches deep consisting of three layers of criss-crossed pressure treated 8 x 8's. Alternative: 12 to 18 inches of very heavily reinforced concrete. The reinforcement would need an internal fully pre constructed triangular steel structure, which has concrete poured around it.
Ballast	Since the foundation is fairly light(if the wood foundation is used), it will be necessary to have ballast to prevent blow over in wind and to limit the bounce that could be caused by a 9 Richter scale quake. A reinforced 4 inch slab in the interior of the house would work and would also hold in heat.
Interior Walls and Flooring	A conventional stick house would be used using 2 x 6's instead of 2 x 4's. Plywood of 5/8 to 3/4 would be glued and screwed interior and exterior. Wiring for 12 volt DC would be used, as this will be the easiest to provide in the after conditions. A design concern will be to work at a way to have the superstructure be able to slide slightly on the houseboat platform to provide structural flexibility in an earthquake.
Exterior Walls	Exterior Walls would be finished with 28 gauge Corrugated Steel.
Roofing	The structure would be the same as the walls and flooring, with screwed and glued plywood inside and out. A shed roof with a 4 ft slope would be used. The steel would go over steel piping which would provide an air space for possible red hot gravel lying on the roof structure. This area need additional design considerations. This structure would allow one floor, but with space above the floor for bunk beds and possible storage.
Overhangs	Overhangs are necessary for good looks and for rain protection. These would be provided, but as a knock off, or for easy removal at the time of the events. Overhangs that cannot be taken off would be ripped off by winds, which could also rip the roof off.
Out Building	Storage of equipment on site before hand, and during the cataclysm securely is necessary. Corrugated steel pipe used for road construction would be put into the ground, with sealed ends these pipes could safely store equipment building supplies for the after time.
Sanitation	A composting Toilet would be used. However material would be provided for building a privy.
Water	An internal manual pump would be part of the house connected to flexible tubing to go into the ground. Purification would be part of a different information set.
Energy	Heat A steel coal/wood stove would be part of the design with pipe to be put up later. Electricity: Steam engine, bike engine, windmill.

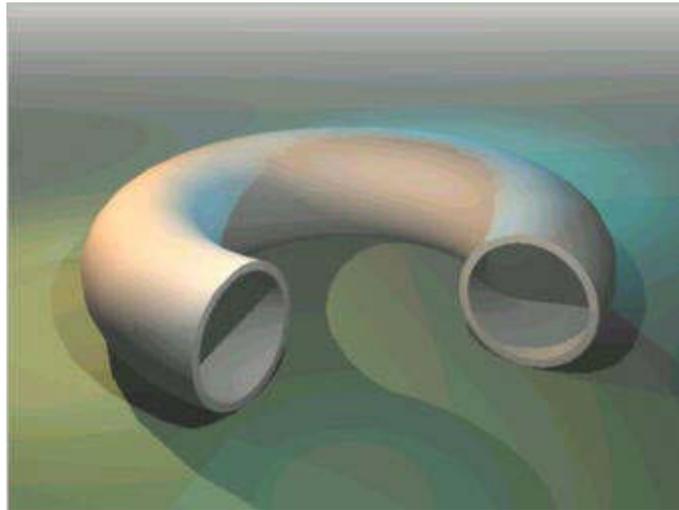
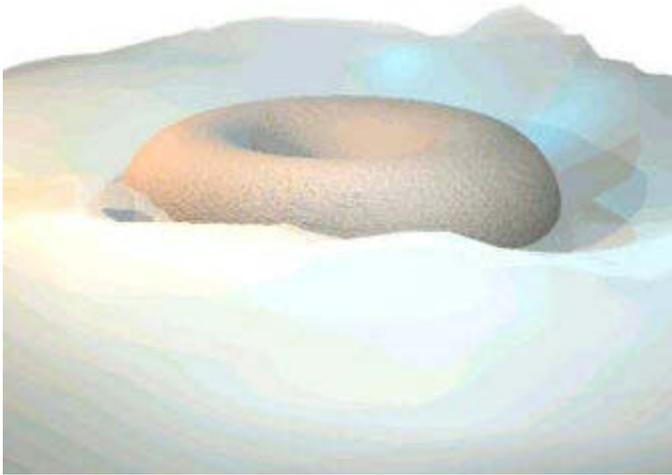


Troubled Times



Culvert Torus

What if you wrapped the pipe into a torus, giving you the extra side strength and aerodynamic properties of a dome. You could perhaps build a fire or heater in the middle of it, heating the hoop evenly. Just drop a glazed donut on the ground and you'll have a precise scale model. The cool part is that you might not have to do much with it, besides make some sort of a door. Snow or mud would pack around the sides, so I don't think it would slide around too much. The culverts like used in large sewers should be flexible to a certain extent, maybe enough to form a hoop.



Offered by [Joe](#).



Troubled Times



Car Shelter

Why not use a car or a van as a shelter during the pole shift? Burying it 3/4 or fully underground and protecting the windows with plywood or sheets of metal under a thick layer of dirt. The car could even be reinforced by a strong box of poles around it. The space between the car and the poles could be filled with debris. A window in the roof could be used as an entrance and escape hatch. During the few 'heaviest' days the seats with its security belts and the car suspension should do well to protect you against the earthquakes. You can even take your supplies with you in your car. After the stormiest days you can get out and raise the tents. A problem could be the amount of oxygen that would be needed to rest some days underground. That car-shelter could be a fast and cheap alternative for all those people, who are preparing too late or have not the possibility to buy land and build concrete domes on it. Another important point is that with your car you can be mobile up to the last day before the time gets rough and you decide to dig in like a battle tank in war. All in all it would be the last but lifesaving service from your car!

Offered by [Jörg](#).

Real good idea Jorg. I would suggest that preparations be made to include:

1. Proper ventilation; a snorkel device and capped in such a manner to prevent debris from entering but letting (If it's available) oxygen in. I would recommend a very sturdy device, an iron pipe or even some PVC and set firmly or welded onto the roof of the car. The snorkel would function similarly to the "thing" that is on top of a chimney.
2. If you're going to be digging holes then dig one where the inhabitants will have at least a relatively sanitary place to attend to body functions namely - elimination. Killer diseases arise to strike at opportune times and the poleshift will give those maladies cause to raise their ugly heads. The area should be sealed off with a door. Lye should be kept in the room and used to speed decay, but sealed tightly as it's fumes are caustic. Definitely, the room, or space, should be adequately ventilated. In the Marine Corps we would dig a deep and narrow hole about "arms width and length" in a foxhole for two purposes; grenades and waste.
3. Watch out for battery acid fumes. I don't know what to do about that. Ventilate the battery to outside also?
4. Include with essential equipment an AC/DC converter (plugs in to the cigarette lighter) and a small electric fan to aid in the elimination of stale air. Radio Shack can supply components to rig the fan to adapt to the converter.
5. Some type of berm around the hole may be necessary as there will be downpours. And a roof. We don't want the car to "float" out of it's hole and/or soak or drown the inhabitants. I would dig the pit with about a 2-4 degree slope in order for water to drain outward and downhill through some kind of drainage pipe as the possibility of leakage into the pit can occur. In fact, it may be useful that some leakage should occur which would help in the nasty job of discharging waste, as in a sewer system, to the outside.
6. If we're going to bury a car, bury a van and a big one; they're roomy with space to store essentials.

Offered by [Mike](#).

If you're going to bury a vehicle, make sure you have a slight downward slope to your "garage", and proper drainage. There will be a lot of rainfall after the pole shift and you don't want to find yourself buried in a mudhole! Also, once you get your vehicle "parked", It would be a good idea to drain engine fluids and the gas tank, and bury them a safe distance away. Best to eliminate the possibility of fire or explosion while you are buried in your vehicle!

Offered by [Brent](#).



Troubled Times



Reinforced

In addition a car shelter is a low cost option. The hole we bury the vehicle in will be like an underground car park, because we have to drive the thing in at least and possibly drive it out. So at some extra cost would it be reasonable to have concrete sides (tight fitting), for extra protection, that just allow the vehicle in. Then the lot may be covered with soil or whatever? I am imagining a sort of Armourguard truck or similar. The councils here in Australia construct subways under roads by using a square cement (very thick/robust) pipe about 9 feet high. It should be easy to use something like that, well seated in a concrete bed to drive the vehicle into. They will handle all the earth you want to pile on top. This, dug into a hill side would be inexpensive and very strong.

A half pipe shaped like 'l_l' may be buried in a trench (obviously upside down, solid part on top) that has been dug out on a low concrete slab (that has been damp proofed) The metal rods then are cast into another slab that will create the floor. One end is sealed with concrete and the other (entry) would have a type of reinforced door. The outside I would cover thickly with pitch. The top I would cover with thick plastic and then pitch again before giving it soil 3+ feet. Along the sides I would put down agri-pipe to drain the water leakage. On the outside I would put crushed rock 4 inch diameter +/- and then fill with soil. This would allow the drainage of moisture. I do not know if this will work as planned, I would have to test drive this. However if it works, we would have a low cost (I'd guess \$100-200 each pipe) very sturdy shelter. Each pipe is 5 meters long x at least 3 wide. This would also provide heaps of storage space at low cost. Recently someone wrote about underground caches. This could be one feasible way.

Offered by [Stephen](#).

If I did decided to use an auto as shelter I would construct a metal roof by using one-half of a huge culvert perhaps 8-10 feet in diameter. You know, cut it in half and bury the edges perhaps a foot or two into the edge of the pit with a berm surrounding it. No dirt on the roof of the auto. The round dome-like roof would permit wind to pass over, and it would be fireproof and possibly strong enough to deflect incoming debris. The open ends could be sealed by welding plates over them. At this point I don't know what type of shelter I will use as just about anything that I construct in my mind creates as many problems as it solves when I consider the heaving that will occur. But you're right; moving earth is extremely dangerous. Mother earth is going to be really rocking and rolling. It seems to me that any pit that is dug to contain an object the size of an auto would need to be supported by concrete walls to avoid collapse, as somebody suggested.

Offered by [Mike](#).

Why not strip a vehicle down to its seats/harnesses and frame, then weld the frame to a re-bar grid. The grid would then reinforce a concrete foundation for that re-bar-reinforced concrete dome, the construction of which is detailed on a ZetaTalk site. Auto-seat/harness configurations are already designed to take tremendous jolting and impact. With the auto frame welded to the foundation grid and buried in the reinforced concrete, all an "Earth-rider" would need is a helmet for head protection, a barf-bag and an extra pair of trusty Depends.

Offered by [Granville](#).



Troubled Times



Crumple Cautions

Burying a car underground is not wise. Modern cars are built to absorb and dissipate the energy of impact by the use of "crumple zones", these are areas designed specifically to fail under certain levels of stress. Most modern cars are built using lightweight panels that cannot resist the weight of a single person on them without flexing or distortion, this indicates their overall lack of strength for the application you suggest. To bury a car with two or three feet of earth on top of it (the minimum to be effective) will crush most vehicles. The only ones that can sustain that kind of pressure would be welded or cast steel armored vehicles. The only way to use a vehicle as an earth sheltered habitat would be to leave it on the surface and berm the earth around it into a sloping mound up to the bottom edge of the lowest window.

If your planning on using your car as a shelter, another plan you may wish to consider is to equip it with an ax, pick and shovel and sheets to build on of the expedient shelters in Kearny's book *Nuclear War Survival Skills*. The designs in his book have been tested and proven both buildable by anyone, safe and effective. I don't mean to rain on anyone's parade but earth sheltering is a serious concept that deals with a very heavy medium (earth) that can kill without warning if you ignore the laws of its use. Get the book, have the knowledge and you'll always be able to create a safe and dependable shelter literally with dirt. *Please* never assume that earth sheltering is safe unless you know the medium and have practiced the principles of its use.

One of the most influential people in my life, a proponent of affordable owner built homes and one of the most knowledgeable people in the alternative building movement, Ken Kern, died in the collapse of an experimental earth wall. His chest buried, he was unable to breathe or even call out for help. Earth sheltering is inexpensive and effective for efficient, safe housing, but must be treated with the caution it deserves. I have chosen to go this route for my base shelter and have no regrets for that choice. Please learn more about the materials you will have available and you can better decide how they may effectively be used. If you insist on using an auto for whatever reason, do not wait until zero hour to try it. Buy a cheap junkyard version of the car you will use and bury it in a field. If your happy with the results, go for it, you will at least have tested your design and know it works. Like I said I'm not trying to rain on anyone's parade, I just don't want you hurt or killed, especially if I something that can help prevent it.

Offered by [Ray](#).



Troubled Times



Dual-Use

One relocation venue that may be worthwhile is some form of mobile home with which one takes an "early holiday" to a safer area when the cataclysm draws close, leaving for the holiday about a week ahead of things starting to happen. People that can't find themselves able to justify the financial outlay of a ready-made mobile-home can buy a used lorry or military surplus truck and do some cheap modifications to allow it to function as a mobile home. I myself am planning to rebuild a US M46 type military ehicle for this purpose. A budget of ca. \$3000 for the vehicle and \$1 to \$2000 for the modifications is a realistic estimate, at least where I live (Scandinavia). The "slightly above average" do-it-yourselfer can, with the budget above, create a mobile-home that will rival all but the most expensive of mobile homes. Also, a vehicle that can tow some form of trailer behind it will allow you extra space for needed supplies (seeds, fuel, water filters-tools etc.)

Offered by [Thomas](#).

A prime reason for having a good set of mechanics tools and a couple of general car repair manuals. One may also want to include a small sledge hammer, wrecking bar or similar in the car to enable the easy removal of the front or rear window glass which can be very stubborn. Scavenging will be the major source of mechanical supplies post pole shift.

Offered by [Ray](#).

Don't forget the generator can be used as a wind or water driven battery charger, a bank of car batteries or even better deep cycle batteries from caravans and mobile homes will give a lot of useful energy, the rest of your car is so full of useful stuff to aid survival, there wont be a shortage of wrecked cars to scavenge from.

Offered by [Ian](#).



Troubled Times



Limestone Cave

I say "go buy a bag and start putting some survival gear in it " the rest will fall into place. If you can not purchase the land at least check out some spot in a National Park or elsewhere, ideally with some limestone caves nearby. Why?

Listen to a cave guide some time as he tells you how the stalactites are one hundred thousand years old - certainly more than 3600 years old and guess what? They are still in place with not a mark to show. I recently toured in the cave near my site and one guide told me she was actually doing a tour when the big Newcastle quake struck in 1989 and they did not feel a thing. It turns out that limestone is a flexible soft rock *not* affected by most Earthquakes, hence why they have survived for 100's of thousands of years! Think about it!

Buy a trailer to load your gear (don't tell me you can not afford a trailer or I would say go sell your computer!) the only thing then left to do is get your timing right, i.e. when to go. Even those of us who "own" a site still have to get there on time!

Advice from [Darryl](#).



Troubled Times



Silicon Jell

The black box recorders on airplanes survive the fall from extreme heights, so technology can be designed to withstand violent earthquakes. However, as most technology is not so designed, protecting fragile parts from a pole shift jolt might be done using silicon jell. Many part are shipped in silicon jell, all within a sealed plastic bubble. Silicon jell also protects the parts from water damage or exposure to the air. Upon being opened, the silicon jell melts and evaporates, leaving no residue.



Troubled Times



Giant Spring



A spring would absorb a lot of vibration.

Offered by [Clip](#).



Troubled Times



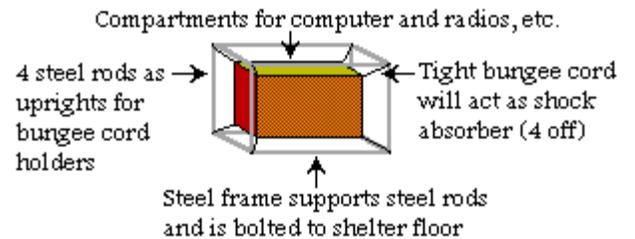
Bungee Rack

Inside the water cushion raft or any other kind of shelter could be a mini duplicate of the water cushion raft, i.e. four posts of say 1/2 inch solid steel rods with eyes to hold bungee cords say about five feet square. Each cord holds a corner of a shelf that holds fragile gear, i.e. ham radio, computer, etc., thus another shock absorber inside the main shock absorber raft.

Design by [Darryl](#)



Shock Absorber Rack Support



Troubled Times



Hammock Net

Imagine that the day has arrived and the pole-shift is about to occur. How will you position your body in order to prevent injury? I have this idea, and I don't know if its any good, but here it is:

- In an open clearing (away from potential flying objects like branches), set up a large hammock-like net that is firmly attached to four deeply concrete-set poles. For the hammock, perhaps a fisherman's net would suffice. The idea here is to keep your body from flying in which ever direction the pole shift takes you! Alternatively, perhaps just lying on the ground will keep individuals safe.
- A second part of the hammock could be an additional net that is positioned directly above the first with some space allowed. Thus you have a sandwich made of nets. The top net protects you from being hurled out of the lower net, and provides some protection from flying debris.
- The lower net needs to be above the ground far enough to prevent the maximum oscillation of the nets from banging the user into the ground. If the body was insulated, and wrapped in protective garments, perhaps this hammock could survive the terrific winds that occur during a pole shift where as many building won't survive. Also, the net could be put inside a cleared-out room, given enough space and a metal roof above.

Is this idea any good?

Offered by [Charles](#).



Troubled Times



Safety Seat

When the pole shift happens we will need a safe place to ride it out. I thought of this as I was thinking of NASCAR racing (cars). A driver at a race rolled 25+ time over the distance of 1/2 mile at 200 mph and walked away. So with that in mind I came up with a pole shift Safety Seat. What they use is a racing seat that has a cushion that wraps around the ribs, and a head rest that wraps around the head. The head rest will keep the head from going to the left and right and with a safety strap to the helmet keeps it from going forward. The seat has a 6 point seat belt, one over each shoulder, two lap belts, two belts to go between the legs. They *walk away* from 200 mph crashes all the time. Add two straps to the legs to keep them in place and two straps for the arms and you've got a very *safe place* to be when the pole shift happens. With the full *fire suits* they have (boots, gloves, and helmets) this should be damn safe. Mounting these seats to a slab of concrete should work. You can put these in a circle facing each other. This is what I'm going to use unless a better idea comes around.

After the shift these can still be used as a strait jacket for people who have gone mad and are temporarily violent, so they will not hurt themselves or others. Just cut a hole in the seat (You know what for) and there you go.

Offered by [Bruce](#).



Troubled Times



Fujita Scale

Fujita Scale - What To Do

By Lee Audirsch, April 17, 1998

Tornadoes are measured using a scale that measures the amount of damage the tornado causes. The scale is known as the "Fujita [Tornado Intensity Scale](#)":

F0 (Gale tornado) 40-72 mph

Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.

F1 (Moderate tornado) 73-112 mph

The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.

F2 (Significant tornado) 113-157 mph

Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.

F3 (Severe tornado) 158-206 mph

Roof and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted

F4 (Devastating tornado) 207-260 mph

Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.

F5 (Incredible tornado) 261-318 mph

Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged.

F6 (Inconceivable tornado) 319-379 mph

These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies.





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the Dull End

feel

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- **Basic Two Person Aviation Survival Kit**

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AVIATION SURVIVAL KIT REVIEWS

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Publisher and Editor: [Doug Ritter](#)

Email: [Doug Ritter](#)

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Introduction

For too long, the term "survivalist" has called to mind paranoid separatists or white supremacists who give up the conveniences of modern society, drop out of the government's databases and live in one-room backwoods cabins like the Unabomber.

Well, Captain Dave and the good folks at the **Survival Center** know survivalists are much more likely to be Floridians buying hurricane shutters a few months before the next hurricane season, Californians preparing a three-day cache of food and water in case the next big one rocks their town or a Minnesota resident who keeps a few blankets, a pair of old boots, warm socks and a few candy bars in the car during winter. This isn't paranoia, it's just good planning. Like carrying a spare tire, even if you never need it.



But there are plenty of online resources for people who just want to prepare a three-day kit. Captain Dave's Survival Guide is designed to take you to the next level. Because in a true emergency, three days may not be long enough. We want you to be mentally, physically and financially prepared for any emergency on *any* scale.

- We define *survival* as emerging from a natural or manmade disaster in a better position than the average person. In other words, you get to keep on keeping on, while others may not.
- *Preparedness* means making preparations before disaster strikes to improve your chances of survival. Surely you remember the old saw about closing the barn door...
- *Survivalists* have a self-reliant bent and choose to prepare on their own or in a small group rather than rely on the government to help them survive.

Some Common

Terms

So, how can you prepare to survive? What can you do to prepare, to become a "survivalist?" The Survival Center has developed this eight step program to help you get started. While designed as a guide for the new survivalist, it has plenty of information for the hard-core preparedness expert as well.

A warning: Captain Dave's Survival Guide contains some lengthy chapters (although we've kept graphics to a minimum to speed loading and designed each page so the text loads first). You may wish to save each chapter or print it out for reading at your leisure. And remember, in many emergencies, your computer will be inaccessible, so a hard copy of any chapters you find especially helpful isn't a bad thing to have on hand.

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Troubled Times



Shelters

Survival in the Nuclear Age has information on shelters, doors and hatches for shelters and other good information. It may come in handy for someone, depending on their level of involvement.

Offered by [Clipper](#).

We have been helping people to build shelters for the past ten years and average one completed shelter a month. We currently have five shelters in various stages of construction. Several different structural materials were considered when researching shelter construction. Consideration was made for construction from concrete, fiberglass, wood, old tires, and steel. The blast shelters constructed from steel plate and corrugated steel appear to be the least expensive and most easily constructed. However, we have done some concrete shelters.



Troubled Times



Tidal Waves



Graphic by Bruno Laugerat.



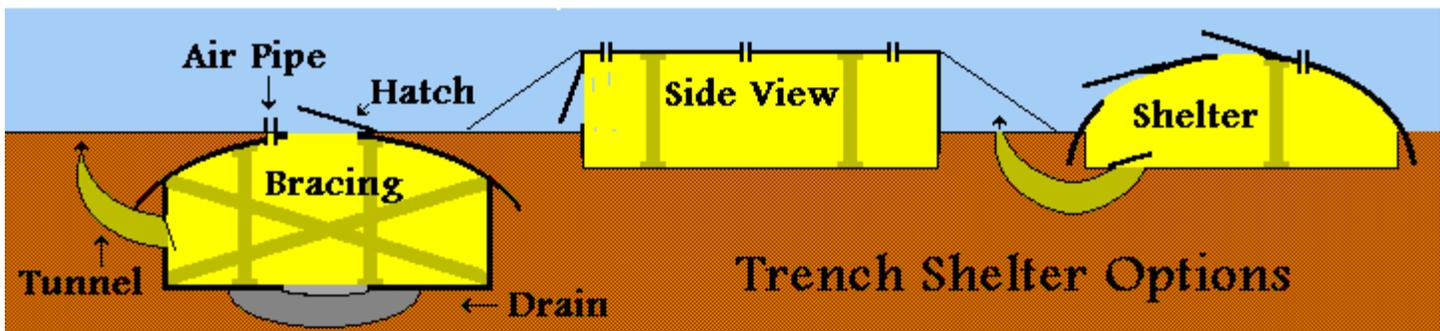
Troubled Times



Trench Shelter

There are several variations possible for a trench shelter. The key is to have a smooth metal roof that winds will pass over, to be at or below the surface of the earth.

- The key to survival, both for folks and the mechanical equipment one hopes will not shatter, is to not have to move more than a few feet. Think of falling in gravity. In the air, you fall 200 feet and die. If you only fall 2 feet, you don't normally die. If one doesn't have far to roll or fall far when the jolt comes, rolls along the ground only 2 feet or so, then one only gets a bruise.
- As one must also deal with hurricane force winds, the best location is under the surface of the earth. Tornadoes pass over storm shelters, and people are advised to lay down in trenches for protection if caught out in the open when a tornado comes. Dig a wide trench, cover with a metal sheet for protection from firestorms and hail, and put earth over that so that there is no edge the winds can pick up. Use a mesh nets to secure the roof also, putting the mesh into sod roots on either side of the roof so that the root system helps hold the metal roof over the trench. One might have a big bracing object on the inside of the trench so that if anything collapses, the brace will hold the metal roof up. The trench should not be that deep, only just below the surface. The metal roof should be at the same level as the ground surface.



- One should have more than one entry/exit possibility, like the little rodents that burrow - they have alternative exits in case snakes come after them. One should be concerned about the oxygen supply holding up during a digging out process, should the exits be blocked. That is why lots of trapped miners die, they run out of oxygen. One could construct hatches in the metal roof, for an air supply or as an escape route. A few might get covered with debris, but not all. The hatches could be closed when there's danger, just as submarines close their hatches.
- The trench should be located where it can not easy fill with water. There may be torrential rains too, so drainage should be considered. Perhaps the trench could be placed on a slope, with a drain hole at the far end. These types of precautions have to be taken when constructing a trench shelter.



Troubled Times



Buried Bug

Get an old VW bug or other car, possibly bigger. Reinforce it with your choice of strong materials, to withstand flying debris mostly. Place it in the ground and cement it there. Voile! an inexpensive way to survive the initial jolt. Call it "Car-boat in cement, make it to withstand liquefaction etc. Seatbelts already there. Of course take out the gasoline tank, and anything else that may explode under heat and pressure.

Offered by [Cindy](#).

Good Idea, This combines the best of two types of survival ideas into one. The curvature of most automobile bodies combined with wire mesh (5-8 layer of chicken wire) reinforced concrete 4-6" thick with some reinforcing rods should make it strong enough. This would be a much easier way of supporting the sides and top than using plywood. Re using the trunk as an escape hatch. This is not a good idea - too easy to get blocked and you may not be able to hinge it open. You need a small strong hatch that opens to the inside. Might be better to make a hole in the roof or trunk, bolt a heavy steel plate (say 1/8" to 1/4") from the inside. Concrete the outside all but this hole which would be slightly above ground level. This hatch might look like a smaller version of a manhole cover from the inside with nuts on studs around the perimeter. The studs would be well anchored, being welded to the reinforcing rods in the concrete.

If the car seats are planned to be used with the existing seat belts then the car could be orientated with the front end of the car higher than the back. This would give less strain to the occupants for forward jolts. This means that the access would be best from the top or the front engine compartment or in the case of a VW bug the front trunk. Note: The VW bugs or beetles I have been familiar with, do not have very strong seats. It would be wise to beef these up well ahead of time if you plan to use them in this fashion.

Offered by [Mike](#).



Troubled Times



Sand Bag

Since the beginning, I have felt in my gut that there is an effective and very inexpensive solution to the problem of construction of a Pole Shift Shelter that anyone could construct easily. Until last week the solution had eluded me. Then last week I remembered my experience in Viet Nam. In Viet Nam, we routinely constructed shelters that could withstand almost a direct impact of high explosive artillery. These, of course, were constructed of Sand Bags. These cloth sand bags are available almost everywhere for building retaining walls during flood conditions. Many empty bags fit in a small space (like an auto trunk) and are quite inexpensive. These are the means of constructing a Sand Bag Shelter and in a very short time.

Basically, the shelter consists of sand bags filled with sand or even ordinary soil. It is constructed in two phases. First, the walls are built by laying filled sand bags on top of the ground in a suitable diameter circle with the first course of bags at least 3 or 4 wide. That is, the inner circle is laid, then snug against it another circle laid along its outside diameter, etc. Once a course (layer) is completed, the process is repeated, laying the next course on top of the first until the desired height is achieved. For the first 2 or 3 layers, the circle isn't quite completed, leaving enough space to crawl on your stomach through this door opening. Sand bags sufficient to fill in this space are left inside the shelter to close this opening once everyone is inside. The walls can be made somewhat stronger by driving 5/8th's rebar vertically through the middle of the inner diameter ring of sand bags every few feet and well into the ground.

The next phase is the roof. This can be constructed from 3/4th inch plywood, or the hood of your car. The shape and size of the shelter is determined by the shape and size of this roof so that the outside edges lay on the middle of the second diameter ring of sand bags. Two 3"X4"s (or a single 4"X4") are placed vertically inside the center of the shelter to provide support for the roof. Next, sand bags are piled on top of this roof 3 or 4 layers deep. When completed, the entire structure should look like a little hill of sand bags. This construction should be sufficient to easily survive any wind or fire storm, with the fire simply burning the first layer of cloth from the most outside sand bags, leaving a hill of sand or soil.

If one had the time, this could be made even more secure by coating with an inch of concrete made from one part cement to 3 parts coarse sand. About a gallon of water is sufficient to activate the cement, with the mixture "stiff" enough so that it can be trawled onto the sand bag structure. This will cure in a couple weeks. The advantage here is additional protection against fire and a smoother surface to the wind. Its strength can be greatly increased by first shaping chicken wire over the sand bag structure and making the concrete up to 2 inches thick. The concrete outer layer, however, really isn't absolutely necessary. A family without rural property can carry in the family car sufficient empty sand bags to construct this shelter during the last few hours. Just don't forget the shovel.

Offered by [Ron](#).



Troubled Times

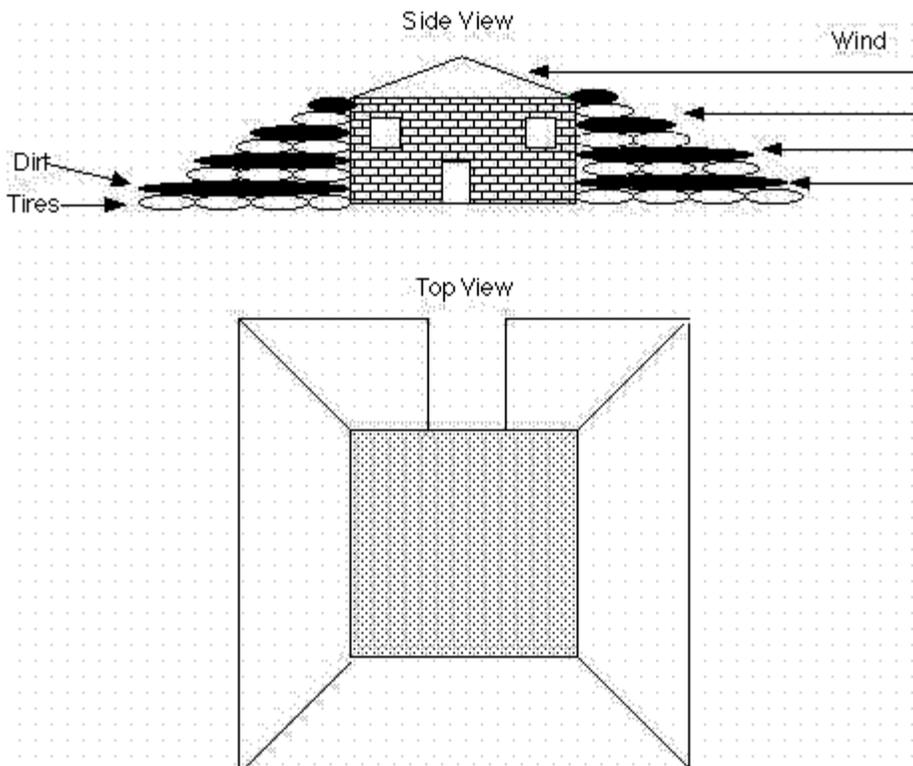


Tire/Mud Bracing

After watching what Hurricane Fran's winds did to buildings and structures with just 115 MPH sustained winds it got me to thinking (always dangerous) of ways to shield existing structures from the 150 MPH winds we are to have during the Cataclysms. I like the subterranean solution but that may not be viable in certain areas where rock is close to the surface or where the water table is very high or an option to save an existing structure. I kept getting stumped with how to build a shield that would survive the winds themselves. Any type of hinged solution would not be durable enough and end up as a projectile, far more of a problem than a solution and most materials would get torn to shreds. I really could not come up with any solution would work. So I decided to look to our past for an answer. I asked myself what structures have survived previous Pole Shifts? The Pyramids of course. They were designed by our 12th planets buds who knew what was coming.

The sloped sides of the pyramids would be far more wind resistant than a vertical side. An air mass would flow up and over the sloped side as apposed to slamming directly against a vertical side and tearing the roofs off as hurricanes do to our building structures. So before you think I have had one to many implants, I am not saying we should build our own personal Giza's. A temporary solution would be build sloped sides that are flush up against the side of the structure you are trying to protect. To construct our temporary "tiremid" we would use old truck type tires filled in with dirt. Essentially, you would build this in levels.

- The bottom level would be 20 tires out, the second level 18, third 16 and so for until you reach the top.
- It would be best to leave a passage way open to get inside the structure if one planed to be on the inside however, it would be much stronger if the entire structure were sealed by the tires.
- It would be best for your "tiremid" to cover the ledge of your roof and sealed tightly so the wind will go up and over the roof and not get under the roof and take the roof with it.



Design by [Brand](#)



Troubled Times



Laying Low

Protecting Yourself

By Lee Audirsch, April 17, 1998

Unfortunately, tornadoes aren't limited solely to the United States. In fact, Australia has the second highest incidence of tornadoes, and hundreds of other countries around the world experience tornadoes every year. So how can you protect yourself? If you are at home when a tornado is sighted:

- Go at once to the basement, storm cellar, or the lowest level of the building.
- If there is no basement, go to an inner hallway or a smaller inner room without windows, such as a bathroom or closet. Get away from the windows. [When I was a kid in Oklahoma, we were taught to open all windows to "equalize the pressure." It turns out that the only thing that this does is get your carpet wet. In other words, *keep your windows closed and stay away from them!*]
- Go to the center of the room. Stay away from corners because they tend to attract debris.
- Get under a piece of sturdy furniture such as a workbench or heavy table or desk and hold on to it.
- Use arms to protect head and neck. [Remember all those movies where the airplane is about to crash and everyone is told to "assume crash positions?" That's what you need to do.]
- If in a mobile home, get out and find shelter elsewhere. [It sounds silly, but you'll be a heck of a lot safer lying outside in a soggy ditch.]

All of these tips come from the United States **Federal Emergency Management Agency's** Tornado fact sheet.



Troubled Times



Pipe Shelter

Let's assume the terrible combined catastrophe: **Fire from the Sky, Earthquakes, Tidal Waves, Category 5 Hurricane Force Winds**. Moving to safety on gets rid of the **Tidal Waves**. So we still have the:

1. **Fire from the Sky**
2. **Earthquakes** at the 8-10 on Richter Scale
3. **Hurricane Force Winds**

Looking at all of these together requires an unconventional structure. You can build a structure that will handle hurricane winds, but that concrete structure will deform in the earthquakes. You can build a structure that might hold up in earth quakes, but it might come apart in hurricane winds due to lift forces. And all of these require a metal m-16 tank to survive burning rocks falling form the sky. What is needed is:

1. **Extreme Rigidity** (but with some flex to a point) to prevent breaking apart in earth quakes
2. Something with very few angles or flat surfaces that would allow lifting forces, and would be low enough to the ground to resist tornado forces.
3. Something that is totally non-burnable even if subjected to a rain of red hot gravel.

This excludes any kind of normal house as we know it. What does it require? We're talking about a catastrophe shelter.

- **Corrugated Steel Road Pipe** in 10 or 15 foot diameter. This could be on a 8 x 8 wood pressure treated cradle platform partially bermed, or simply placed on a gravel foundation with possibility of some free movement. For stability, there should be two pipes side by side, bolted in the center, and cabled together at the top and bottom - rigidity but also some flexibility. A connecting door or "lock" between them should be provided.
- An **Internal Floor Platform** on rollers to equalize changes in a sideways direction could be provided. For a forward slant, hydraulic jacks would be used after the fact to level the dwelling.
- The partial berming should be up to halfway level in the ground. For a 15 foot diameter, it would be bermed to 7 - 8 feet, for a 10 foot Diameter, 5 - 6 feet. The rigid metal characteristics of the dwelling (plus internal bracing) should resist breakup even if the berming is slid sideways, and the whole thing bounces up and down. The berming will help with the hurricane winds after the pole shift.
- One of the **Pipes** would be a restroom and sleeping quarters with bunk beds. The other **Pipe** would be a living quarters with kitchen and wood/coal stove. Only the main living quarters would be heated with the stove. Fiberglas insulating would be suspended from the ceiling between the roof and chicken wire netting. Foam could not be used due to the projected heat of fire from the sky. Fabric could be used on the inside for decoration and a warm feeling.
- Steel doors would be on ends of both dwellings. The other end would be partially bermed, and would be corrugated steel bolted to heavy wood supports (inside and out), and with metal ties, bolted to the pipe and the inside and the outside. Small plastic **Sky Lights** would be installed for light, but additional pieces of corrugated steel would slide over the skylights for protection, and bolted in to protect from violent weather. Windows could be installed at the door end of the tubes, but these would also have shutters to protect the dwellers.
- Smaller diameter pipe would be used to store essentials, as having a shed in the backyard. The pipe would also

be protectable in a way that a wooden structure would not, and could be locked for the long periods that no one is there on the premises while we wait for the event.

Beyond the price of the pipe, the whole catastrophe shelter would be comparatively cheap to a house. The whole thing including the land might not cost more than \$10,000. Additional supplies to about \$5000 would be needed.



Troubled Times



Propane Tank

Buy a large home sized propane tank. It comes with "feet" upon which it normally sits. After the trench is dug I plan to dig 6 foot deep by 2 foot round holes where each "foot" will go. Insert ample rebar then pour a slab 6 to 8 inches deep the length of the tank, filling the 6 foot holes. While the cement is still wet place the propane tank on the still very wet slab so that the feet sink well into the cement and then put more rebar under the cement surface but over the top of the "feet". After the cement cures the propane tank will be very securely anchored. I'll then fill in around the tank with only about 4 inches above the surface.

I'll then take a cutting torch and cut a "hatch" in the top angling the cut angle "outward" at a 45 degree angle all around the hatch circle. This will cause the "hatch" to fall inside the tank, and because of the angle with which it was cut, it will be impossible to remove the hatch cover from inside the tank. You eventually want the hatch to open from the inside with no possibility to open toward the outside, i.e. during firestorm when air valves are closed and low outside air pressure could "suck" the door open. When fitted closed from the inside it cannot open outward because of the angle of the interface between hatch and tank. Secure the hatch cover by welding hinges and latch from inside the tank.

Air vents will be essential. Two holes will be cut towards both ends of the tank on the top with a diameter of 6 or 8 inches each. Through these holes will be welded 1 foot high pipe segments. The pipe will have a wall thickness of 5/8 inch and extend into the tank 2 inches. On top outside of the pipes will be welded 3 equally spaced around the circumference 2x1x1 inch steel "stand offs". The 2 inch side will protrude 1 inch above the top of the pipe. Two "caps" will be fabricated by using 8 or 10 inch diameter 5/8th inch pipe cut into two 3 or 4 inch lengths. To one end of each of these "caps" will be welded 5/8th inch flat steel cut to the outside diameter of the "cap" pipe. These "caps" will then be welded to the standoffs providing an air opening that will not allow rain to enter the pipes, even when driven by high winds.

Inside the tank, the protruding ends of these air pipes will be connected to valves which can be completely closed during any firestorm so that no air will be "sucked" out of the tank. During normal (no fire storm) time the valves will be fully open. To the other end one of the valves will be installed a hand cranked air blower normally used to provide a high flow of air to a steel forge. This will be used intermittently to refresh the air supply inside the tank. Also provided inside the tank will be a carbon dioxide detector to warn when the air is becoming "stale".

The tank will be set with a slight slope toward one end. Before the tank has been set in cement, a 2 inch hole will be cut into the bottom of the tank at the "low" end and a two inch diameter by 1 foot long pipe will be welded. The other end of the pipe will lead to a "dry well" 6 foot deep and 2 foot diameter filled with gravel. This will be outside the area to be cemented. This will provide a "drain" to the bottom of the tank to drain away condensation, gray water, and urine. The bottom of the tank will be fitted with a wood plank floor which will be 6 inches above the bottom most curvature of the tank. The planks will rest snugly against the curvature of the inside wall of the tank and 1X1 inch angle iron will be welded to the tank sides so as to hold the planks down snugly. The tank will be provided with at least 1 or 2 weeks supply of water and food. In addition, it will be provided with heavy mattress material on which to lie along with straps with which to secure myself in place in a prone position.

This shelter will be used until all chance of firestorms are past. It will also serve as a refuge in the event of severe weather.

Offered by [Ron](#).



Troubled Times



Water Tanks

Has anyone thought about using an abandoned water truck (tank only)? You would have more space inside for both you and your supplies. If it was buried 2/3 of the way up it would have a very good chance of holding up during the pole shift. It may be costly to buy and transport a used tank, not to mention digging it in, but much cheaper than building a dome house. If you went one cheap step further you could surround the tanks with concrete or RASTRA, thereby making your instant shelter that much more sturdy.

This brings up another idea; What if you were to connect four of these tanks to each other in the form of a square? Each tank would make up one side of the square with hatches cut into the ends to enable a person to walk through into the next tank. If each tank has a hatch cut into the top as well (one that only opens from the inside) then you have a better chance of avoiding having your only exit blocked by debris and turning your survival shelter into a coffin.

Offered by [Doug](#).



Troubled Times



Cauldron

There are ancient legends that the Irish survived the old world order when the fairies and giants existed because of their black cast iron cauldrons(dome shaped cooking utensils) for when the high winds and rains came they simply overturned their great cooking vessels and sat underneath them. Buy a great cast iron cauldron for yourself!

Offered by [Kristy](#).



Troubled Times



Metal Roof

With regard to building something with a metal roof on top to protect from firestorms during the pole shift, it has been suggested that a trench should be built, and I assume this means something akin to a foxhole. What's a foxhole like? Could you build a metal roof on a traditional foxhole, or if you can't, how could you adapt it? Also, what's bothering me a bit is, what would you do about the over-heating which must occur inside this foxhole or trench, or whatever is under the metal roof? Is there insulation that would stop this? I mean, I'm assuming it would overheat if the metal roof got hot, right? Would this idea work, a foxhole with a metal roof, I mean?

Offered by [Helena](#).

All very good questions. First of all, a Foxhole is basically a round pit in dirt, usually 3 or 4 feet deep, depending on the terrain you are digging in. The looser the soil, the deeper you can dig before you get exhausted! A soldier will dig a foxhole with his folding shovel that he carries in his pack. I don't feel that a foxhole is practical to use during the pole shift. For one thing, it's round and deep, and there is no drainage! An elongated trench, on a slight downward slope would be better. This trench would be say, 4 or 5 feet deep, and rectangular, maybe 10 to 15 feet long, by 6 to 8 feet wide for one or two people. Longer and wider for more folks. I don't think anyone has addressed how to "attach" the sheet metal to the trench! Just laying it on top won't work, because of the high winds. Also, if you bury it in the dirt around the edges of the trench, you will have the same problem: High winds blow the dirt away, and carry your sheet metal too. I would bury all the edges in the dirt, then put something heavy over that, soil filled tires, flat stone, chunks of discarded cement - anything flat and heavy that the wind would have trouble grabbing the edge of.

As far as heat build up, that's a problem. For one thing, no one knows where the concentrations of hot rock "fallout" will be. Some things to consider to maximize protection: Distance from the heated surface. Probably means digging your trench deeper to get further away from the radiant heat of the metal. Insulation: I'm not sure which type is best for extreme heat, probably the foam insulation is the best, but then it is usually sprayed between two surfaces. And foam insulation is not practical! I wonder if a "space blanket" could be used to help keep the heat down? Here's my idea: Dig a trench on a slight slope, size dependent on how many people you are accomodating. Sheet metal on top, edges buried, and weighted with items that will not catch in the wind easily. If possible, brace your roof on the inside with wood or metal "poles" too prevent sag. Now, on *top* of the sheet metal roof outside, lay something for insulation, then cover with dirt. If someone is building this before the pole shift, there are many possibilities, and even cement can be used to help reinforce your trench walls. If this is built just before the pole shift, and someone is building it on the spur of the moment, obviously their options become more limited.

Offered by [Brent](#).



Troubled Times



Storm Pipes

For a survival shelter I have gone to a simple, cheap, and tough system that consists of circular storm pipe 1 meter round by 2.5 meters long and only \$220 each. Set on a 4 degree angle on a hillside, with top end sealed and covered in earth. Simply slip in the open end, and wait for the fireworks to stop. I've used these pipes to put a road over a creek, and was impressed to see the contractor driving a 20 ton truck over them with only 300 mm of dirt on top. The contractor said they are so strong you could run 50 tons over them. It's the egg shell principle.

Offered by [Darryl](#).

One could build a one person slanted tube with the top sticking barely out of the ground. Possibly on the side of a hill. Cap off the top with a inwardly opening hatch. At the last minute add in some supplies. Tie or strap them down to the bottom of this tube. Get in with extra clothes on to help act as padding. Sit at the bottom on your supplies with knees and/or feet against the other side and your back to the lowest side of the tube. A safety belt with a cushioned seat and back could be bolted to this lower side to hold the back of the body to the wall of the tube.

Offered by [Mike](#).

Supplies in the back strapped down, heavy pad on the floor along with straps to the floor to hold me. Ride it out laying down. In the side of a hill above where I estimate water to accumulate/runoff. Cap on the outward end, opening inward and a shovel as part of the supplies. Just have one or more culvert's delivered and bury them by hand. Excuse for the culvert(s) is to dig a shallow water well.

Offered by [Ron](#).

I decided to research this subject a little. [Thompson Culvert](#) have good info. I still think this might be a good solution if it was covered with a layer of earth and waterproofed.

Offered by [Liai](#).



Troubled Times



Safe Room

From today's [August, 1998] paper:

The 25-page home brochure *Taking Shelter from the storm: Building a Safe Room Inside Your House* will be available starting in October from FEMA. Interested persons can call 1-800-480-2520 or through the internet at www.fema.gov.

Offered by [John](#).



Troubled Times



No-Window Dome

The common commercial domes currently sold for housing substitutes should not be considered for surviving a pole shift. From a frugal cost, yet practical, able to survive the pole shift point of view, look at the following concepts.

- Have no windows before the pole shift. If you make it through the pole shift and want a window, do the following. If it is a Monolithic dome - take a sledge hammer and pound some holes where you want windows and doors. Cut the wire mesh and reinforcing rod. Concrete in windows and doors wherever you want them. If it is a steel dome then, cut holes with appropriate steel cutting saws. I don't consider wood domes worthy of being a pole shift survival quarter.
- If you want a port hole for viewing, use one of those fish eye peep holes used in doors that bolts through the door. Use this at several places through the dome wall (concrete or metal). You may not be able to use it during the pole shift but afterwards you may be able to tell which exits are blocked.
- Have a few strategically located, small sturdy inwardly opening escape hatches. One should be at or near the top. This is in case debris gets piled up on the sides and blocks lower exits.
- The angle the side (inside of the dome) makes with the ground should be no more than 45 degrees. To be really safe this should be 30 degrees or less. The smaller this angle the more likely an object will bounce off, and not damage the dome. Makes more of a glancing blow as debris bounces and blows along the ground. For most housing type domes today, the sides come down vertically at 90 degrees with the ground. This is certainly not recommended. For existing domes planned to be used, dirt can be piled on the outside to whatever height is needed, to reduce this side to ground angle.

Note: You many not want many, or any windows after the pole shift. The growing and task lighting could give away your position to unfriendly passerby's.

Offered by [Mike](#).



Troubled Times



Protective Clothing

It makes sense to me to wear the full-body padding used in American football, along with a motorcycle helmet. Did you ever see some of the pops these guys take, and then they just shake it off as if nothing happened?

Offered by [Mike](#).

I've got my hockey equipment which is even better. Did you see the pictures of the forest devastated during the Colorado blizzard with 120 mph winds? Double that speed and what happens? The wind needs to be able to get through the hammock and that's probably possible. My concern would be the poles. If 300 year old trees get destroyed by 120mph winds, what chance do your poles have.

A prototype ski jacket that could help the wearer survive an avalanche has won a technology award from the **Welse Development Agency**. The jacket can be inflated by pulling a ripcord which activates compressed air canisters. This creates a protective pocket which cushions the body from injury caused by the weight of snow and ice during an avalanche. The jacket also serves as a buoyancy aid to help victims remain on the surface. Between this and a bike helmet, you could be OK.

Offered by [John](#).



Troubled Times



Shallow Trench

I keep thinking - slingshot! A hammock is a slingshot. Ever see what happens to flags flapping in a hurricane? Shredded survivor! Friction against the ground is part of the goal, in keeping one from being dashed. What about putting a foam pad, thick, on the ground and the net above that, pressing the person into the foam? Less sling shot, less concussion from rapid snapping back and forth, less chance of becoming a sling shot of one or more of the ties breaks lose. You need to be just under the surface of the ground, lying flat in a in a shallow trench covered over with a sheet of metal secured on the edges by turf, grass that has been allowed to grow over the edges. This will

1. keep the firestorms from catching your shelter on fire,
2. keep you from blowing away,
3. prevent you from being dashed more than a few inches (you might feel a little scrapped)
4. keep you from having your building collapse on you,
5. allow you to dig out easily, as the edges of the shallow trench are just inches from the surface.

Offered by [Nancy](#).



Troubled Times



Fuel Supplies

Don't blow yourself up. Wouldn't that be a rip if you had a nice place to ride out the pole shift but had a can of kerosene that blew you up? If I was going to store any fuel, or try to, I would do it away from where we were at the time. I would also not put "all my eggs in one basket" so to speak. Small storage areas in different places. No big piles for a "biggabadda boom". If you lose one small pile, you might still have another someplace else. I live near the Alaskan pipeline. That will be an 800 mile long torch so fuel storage has crossed my mind a time or two.

Offered by [Clipper](#).

Gas fuel can not be stored for very long. I think 18 months is what I've heard. You can extend that another year or so with Sta-bil but that's about as far as you will be able to go with that solution. Now, another possibility is to make your own gas (alcohol), and convert your gas powered engines/generators to take alcohol. I am researching this area but the "cost" of making your own alcohol may outweighs its usefulness compared to other sources of power like wind and hydro. It just depends. Having many different sources of power is always good, just don't rely completely on one source. You sure won't be able to rely on gas 3 years after the pole shift.

Offered by [Jon](#).



Troubled Times



Ultimate Catastrophy

Let's assume the terrible combined catastrophe - Tidal Waves, Category 5 Hurricane Winds, Earthquakes, Fire from the Sky.

Tidal Waves:

Move to safe ground several hundred miles away from tidal waves, and out of coastal and piedmont areas.

Category 5 Hurricane Winds:

Select an area that is nestled between two small hills, up off the bottom, to avoid flooding, but away from the crest so that the winds tend to pass over. This should drop the wind to Category 3. Structure the house with enough weight to avoid lift or push over, and without any edges to lift of roofs. While its always nice to have forest nearby, this site needs to be on an open hillside. The winds might easily ignite a forest fire, considering the drought conditions possibly existing, and the Fire-from-the-Sky as indicated below. The hill site should face west or west-southwest. Wind direction will change to east or north east.

Earthquakes:

Choose a site which will not have major quake or volcano incidence. Choose a site which has not had earthquakes since 1500 AD. This should limit quakes to 6 to 7 on the Richter scale, but not the ones which will be above that. Structure the house to be rigid enough to not come apart in quakes, but not connected to the ground, so that it will ride on possible waves of quakes which could run in the 7-9 on the Richter Scale, but proably below that because of the choice of site.

Fire from the Sky:

Once again, this will depend on site and luck. The cave would give the most protection here (unless hit by a large meteor when you'd need a real cave.) The structure of the outside skin will be made of corrigated steel. This would be on the roof and sidewalls. The deck (an extension of the foundation) would use simple galvanized steel. One cannot be sure whether this would be enough protection. It will be important not to be close enough to trees so that one would in effective be burned up in a forest fire. Remember, having any foresting nearby might result in an inferno whipped by the rising winds.

Offered by [Eric](#).

It is not sufficient to use the Richter scale to design structures, for the local geography maximum forces on all axes need to be quantified. The idea of having a structure laying loose on top of the ground may be useful for decoupling horizontal shaking, but if vertical displacement forces are over 1g the structure will be dashed to bits as it is repeatedly tossed into the air and slammed into the ground.

Offered by [Steve](#)



Troubled Times



Ultimate Map

Go to your US Geological Survey or book stores and ask for maps on Plate Tectonics (about \$15), Topographical known as Topo maps (about \$4) of the place where you might want to be. Look for 750 feet above sea level on these maps. Ask for maps on local and large fault lines, and possibly ask for maps on volcanic activities in that area. But *get this map* if nothing else - **This Dynamic Planet** - world map of volcanoes, earthquakes, impact craters, and plate tectonics. Compiled by **Smithsonian Institution, US Geological Survey, US Navel Research Laboratory**. It covers the whole world. This map is a must if you want the big picture. You can order them from:

U.S. Geological Survey map distribution
PO Box 25256 Federal Center
Denver, Colorado 80225
(303) 236-7477 or 1-800-USA MAPS

Offered by [Clip](#).



Troubled Times



Altitude

It is possible with some diligent web work to find the elevation of any spot in the US, and many spots in the rest of the world. [Microsoft's Terraserver](#) has aerial maps of the entire US and spotty maps of Europe. Using this, you can zoomed in and literally find your house. You can then find the latitude and longitude of that spot to within less than a second of accuracy by clicking on 'Image Info'. If you are in a covered area, you can get a not-bad elevation reading by clicking on 'Back' then on 'Topo' from there. The scale is different, so it might be a little tricky finding your point. By reading the contours and finding your spot on the map, you can come fairly close to the correct elevation. If you are in an area not covered by the terraserver, find your latitude and longitude as accurately as possible, to less than a second if possible. And be prepared to do a lot more work.

The US Geological Survey has topographical maps called DEM files (digital elevation models). Finding the right one is a *bear* so they have a guide. The files can be large, and the data files are usually zipped and tar'd (double compressed) but when you find the right one and get it uncompressed, you're in business. They are available for free by anonymous ftp. Using the freeware program called MICRODEM, you load the DEM file, zoom in, and as you move the cursor around, the latitude, longitude, and elevation are displayed for any point on the map. If you have hills around, you can actually recognize the terrain using perspective views.

Offered by [George](#).

Here is a link to a convenient website that people can use to put in their Geographical Location to determine their height above or below Sea Level. For instance, for [Philadelphia, PA](#), my hometown.

Offered by [Dave](#).



Troubled Times



Topo Maps

I am site-searching and want to make sure that the elevation on sites I look at is adequate (at least 750 ft above sea level). It is hard, however to pinpoint an exact elevation for a typical site, even using a topo. map for the area. I looked into several GPS (like the **Garmin Summit** \$250.00 at REI) which would give you accurate, pinpoint altitude, although costly.

Offered by [Craig](#).

If you can find your site on the **Terraserver** photographs, you can get the latitude and longitude to the *second* by clicking on 'image info'. If your site is covered by the top maps, just click on the 'topographical map' icon and it should cover the same area. Or with the **Microdem** software and DEM files you can get a very close to exact elevation. You can also go to the county seat recorder's office and examine the official plat plan of any piece of property, which typically has elevation, latitude and longitude of corners of the parcel. You should be able to get height within 20 feet or so even with pretty rough topographical maps. By the way, there are GPS Devices for less than \$100.

Offered by [George](#).

I've dealt with the same issues as you describe. I purchased a **Magellan Map 410** and additional software for it. It works *great*, especially since the DOD recently reduced the GPS error margin for civilian use. This unit uses both GPS altitude data and barometric pressure to determine elevation. This unit is the one most preferred by helicopter pilots, which is why I chose it. Even so, I've found the elevation data to be almost useless for critical elevation evaluation. Topo maps are what I rely upon for this critical parameter in this area.

Offered by [Ron](#).

Microsoft's Terraserver and info on **US Geological Survey** topographical maps also have a link to a freeware program for viewing the maps.

Offered by [Michael](#).

[TopoZone](#) is not the best topo maps I've seen, but it gives you the elevations you'll need.

Offered by [Brent](#).



Troubled Times



Real Time

This Seismic/Eruption program gave a dynamic display on a map of earthquakes and volcanoes, and ran only in a personal computer environment. It displayed maps of many portion of the world and displays earthquakes and volcanic eruptions in rapid real-time manner. The viewer could generate their own maps, interactively. 3D and cross section views could also be displayed. Hypocenter files for the world from 1960 through the present are provided, data provided by the USGS. Note the links to this site went inactive in 2001.

- Creator: Alan Jones of SUNNY Binghamton
- Version: 1.1 Level 97.09.28
- The program contains about 9 MB of hard disk space
- Runs on Windows 3.1, Windows 95, Windows NT, or OS/2
- Reference manual as Windows Help
- Installation instructions: transfer the program in binary to computer. From windows select the seisvole.exe program and run it. The program will extract itself and install itself.



Troubled Times



Deep Valleys

It occurs to me that anyone wishing to be a survivor and be able to give aid to other needy, fleeing survivors may seek to relocate to a higher, deep valley area, where the possibilities of inundation are reduced, excess precipitation will pass over and thermal air will help to keep the sky clear and provide sunshine for growing crops.

Offered by [Ray](#).







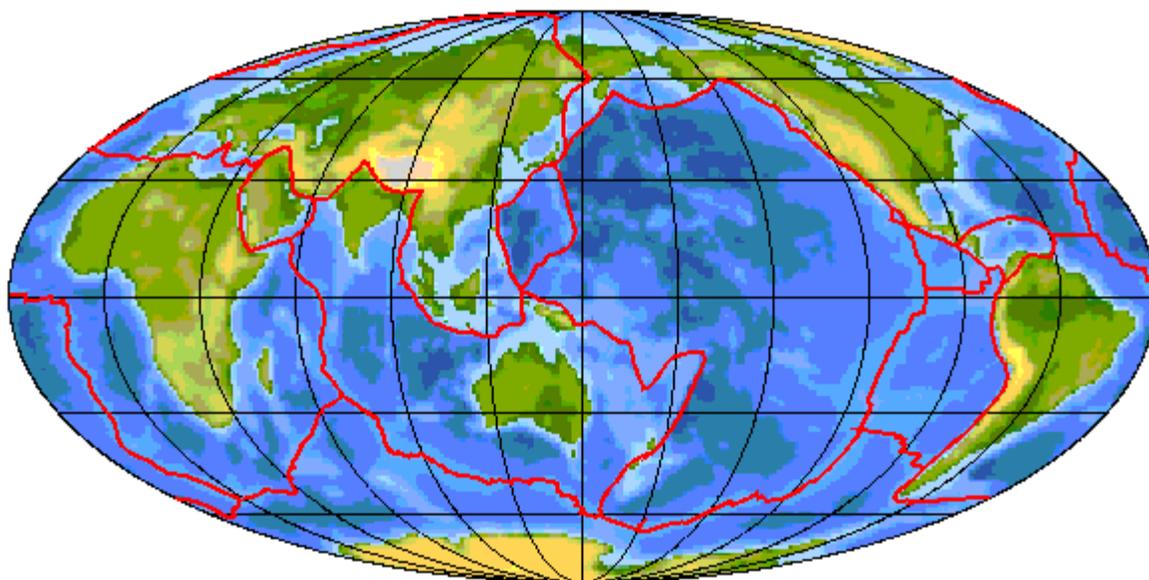
Troubled Times



Plate Boundaries

A private organization known as The Council of the [National Seismic System](#), working out of Berkeley, CA, provides earthquake data and answers questions at their web site. Their graphic of plate boundaries shows at a glance where fault lines proliferate.

Global Plate Boundaries



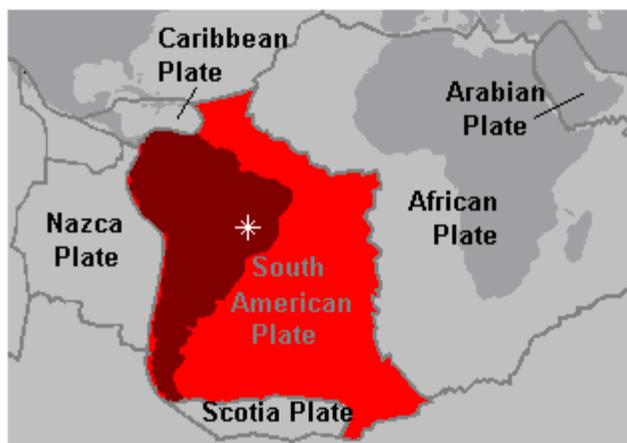
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South American Plate

The South American plate is about 1/3 land mass with a convergent plate boundary on the west coast.

Examining the center of the plate that is on land mass, one finds the city of **Brasilia** in Brazil. Approximate longitude of 40 degrees and latitude of 15 degrees. Brasilia is about 875 miles from the east coast and located in an area about 1500 feet above sea level. It is located about 2000 miles from the plate boundary on the west coast of South America. Brasilia does have a large lake of about 75 miles long east to the west and 50 miles wide, running north to south. One might take this into consideration when choosing a spot to go. It may be a good lake to be near after the pole shift but not during. Brasilia is located in a mountainous area with mountains in the 1500 to 2000 feet range.



There appear to be no hot spots due north except 1000 miles to the west and due north at the top of South America near Venezuela. This area looks like old land. I am making my assumption by what the Zetas have said about Arizona.

Offered by [Clip](#).



Troubled Times



North American Plate

The north American plate is 2/3 land mass covering both the United States and Canada. There are many good locations in both places due to what is called the Canadian shield. It is constructed of very old and stable rock with very little earthquake activity and no known volcanic activity. The west coast from central America up along the coast to Alaska, is a divergent (spreading) boundary. The bottom part of Alaska is a subduction zone where the Pacific plate will submerge under Alaska along the Alaskan chain causing volcanoes and earthquakes in these areas. There is no known volcanic activity north of these areas, some activity to the west in the mountains and to the south increasing into central America. These areas will probably be heavily populated.

Canada

Good locations would include Alberta, Saskatchewan, Manitoba, and Ontario. The elevations of these areas range from 650 feet in Ontario and Manitoba to 3000 feet in areas of **Alberta**. One must keep in mind when choosing a location to stay 100 miles from major bodies of water such as Hudson Bay and The Great Lakes because of inland tidal waves and avoid being high in the mountains to the west due to earthquake activities that will occur there.

The United States

Good locations would include the eastern half of Montana, North Dakota, South Dakota, Nebraska and the north east corner of Wyoming. The elevations in these areas range from 650 feet in North and South Dakota and Nebraska and up to 3000 feet or more in areas of **Montana**. Parts of Minnesota may be OK in the western half of the state but remember to stay at least 100 miles from Lake Superior. These areas have a little more earthquake activity than Canada, decreasing in activity the farther north you go towards the Canadian border.



Iowa has an elevation is 650 feet to 1500 feet but there may be little protection from the winds. I would not call Wisconsin a real good place because of the Great lakes being so close and you will probably get little protection from the winds here. I would not call Illinois a good place to be either as it is also too close to the Great Lakes. The southern half may be OK from tidal waves, but will probably have little protection from the winds. Also, the elevation of Illinois is 650 feet or less from what I can tell. Not good for any kind of stability after the pole shift due to high waters moving inland.

Offered by [Clip](#).



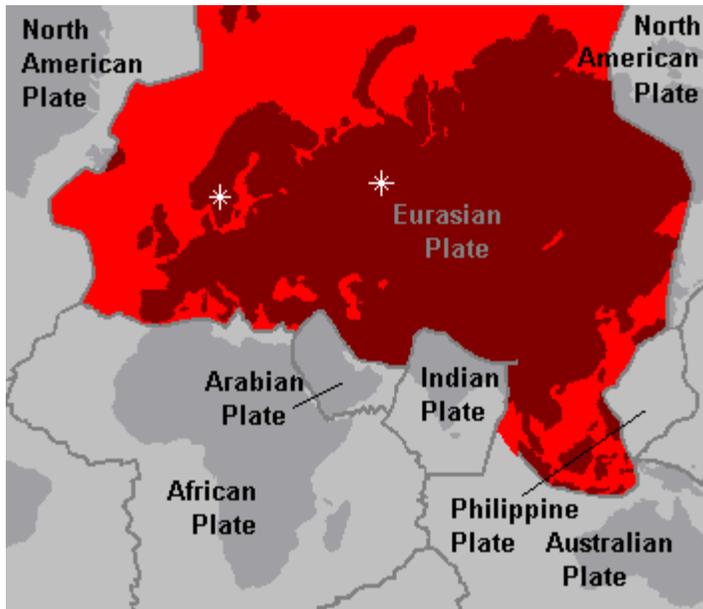
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Eurasian Plate

The Eurasian plate is 85% land mass with a very undefined plate boundary on its southern border connecting to the African, Indian and Australian plates. My guess is, this border will be very defined after the pole shift because of the extreme earthquake activity in this area. The city of **Pechora** is located almost in the center of the plate, longitude of 59 degrees east and latitude of 64 degrees north in the Ural Mountain range. Located 800 miles from the border of Finland to the east, 3000 miles from the Pacific ocean and 300 miles south of the Arctic ocean at an elevation of about 3000 feet. Probably just about any where south of Pechora in the **Ural Mountains** would be a good spot to be as they should give good protection.

There is no shown volcanic activity north of the Urals. There is old volcanic activity south near Africa with sparsely scattered earthquake activity within a few hundred miles. The Urals have resources that could be available after the pole shift for these people.



The central and southern Urals contain great mineral wealth, particularly iron ore, bauxite, copper, and zinc, as well as many rarer minerals. The southern Urals are flanked by coal and petroleum fields. These resources have given rise to smelting, metallurgical, and engineering industries, and to large industrial centers.

1995 Grolier Multimedia Encyclopedia

Because of the massive size of the Eurasian plate and the amount of people on it, I think a second location should be chosen for this plate as well. In the area around the cities of **Sveg** and **Mora** in **Sweden** is a good choice. They are located at latitude of 62 degrees north and longitude of 14 degrees east at an elevation of 1000 to 6000 feet. This area is located 200 miles east of the Norwegian Sea and east of the mountain chain and 100 miles west of the Baltic sea. There is no shown volcanic activity north of this area and has minimal earthquake activity. This area is closer to the Atlantic rift, but should be pushed away from most activity. This area may get splashed with tidal waves. This will probably be its worst downfall. Be prepared. Sweden produces copper, lead, zinc, silver, and arsenic (and from personal knowledge, this should be a gold producing area as well.)

Offered by [Clip](#).

Clipper states that Sveg and Mora are safe places. However, Mora is only at about 160m or 525 feet above sea level. If the pole melt and the sea level, worldwide, rise by 650 to 700 feet within two years as ZetaTalk predicts, Sveg is OK though, at about 360m or 1180 feet, but Mora is not.

Offered by [Jan.](#)



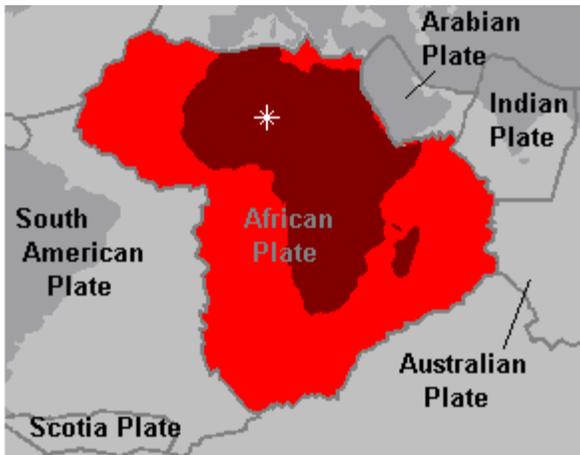
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African Plate

The African plate is approximately 1/2 land mass with a divergent plate boundary on the west edge running up through the Red Sea. The center of the plate is on land mass, but not in a good location. The African plate turns at a very slow counter-clockwise direction causing a lot of earth quake and volcanic activity on the west coast of Africa. The center of the plate would be too close to this area.

A better location having good elevation with less earth quake and volcanic activity, I would choose a city called **Tamanrasset**, located in the **Ahagger Mountains** in the northern part of the country in **Algeria**. The city of Tamanrasset is located at longitude 10 degrees west and latitude 20 degrees north, 2000 miles from the Red Sea to the east, 1400 miles from the west coast, 1000 miles from the Mediterranean Sea to the north and 1100 miles north of the nearest southern seas. Tamanrasset is at an elevation of 3000 feet, with varied elevations of zero to 9000 feet within a few hundred miles.



The local area shows no volcanic or earth quake activity. There is activity almost due north in and above the Mediterranean Sea near Europe 1500 miles to the north and in the mountains in Chad located 800 miles east. These seem to be the closest activity at the present time. This area should be fairly old land because of the rotation of the plate and most activity being on the east coast and then pushed west because of new land being formed. For future use, the country has petroleum deposits and the fourth largest natural gas reserves in the world. There are also deposits of iron ore, phosphates, mercury, and zinc.

Offered by [Clip](#).



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Safe Locations

Safe locations are first and foremost those that avoid *unsafe* conditions, such as:

- fault lines, land on subducting plates
- coastal locations subject to tidal waves
- valleys coming off a coast can experience a tidal bore, where the waters rush in at a higher level as they have nowhere else to go
- low lying areas that might be down from dams that would most likely rupture and flood
- military installations where nuclear weapons could explode
- nuclear power plants
- chemical plants where chemical clouds or mixtures could pollute the water or air
- railroad lines where derailed and leaking tank cars could result in exposure to hazardous chemicals such as chlorine gas
- heavily populated areas where an influx of survivors might overwhelm the camp and raids from gangs might occur
- and if one cares to heed the ZetaTalk warning, the subduction of India and western Australia and the new pole locations over Indian and just off the bulge of Brazil



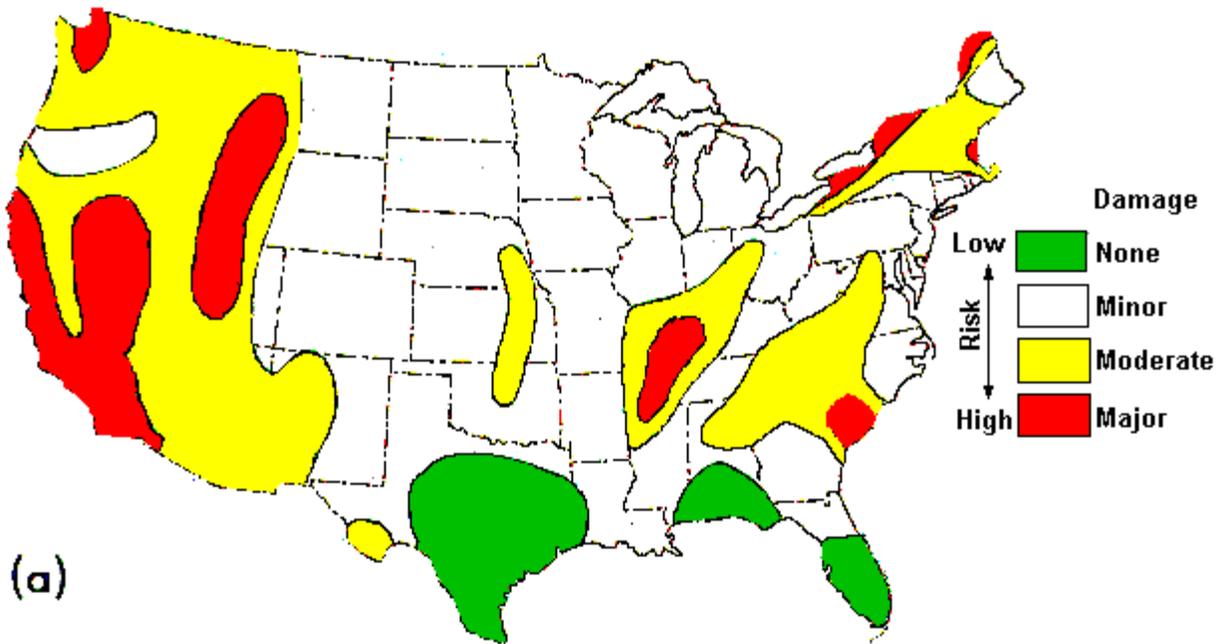
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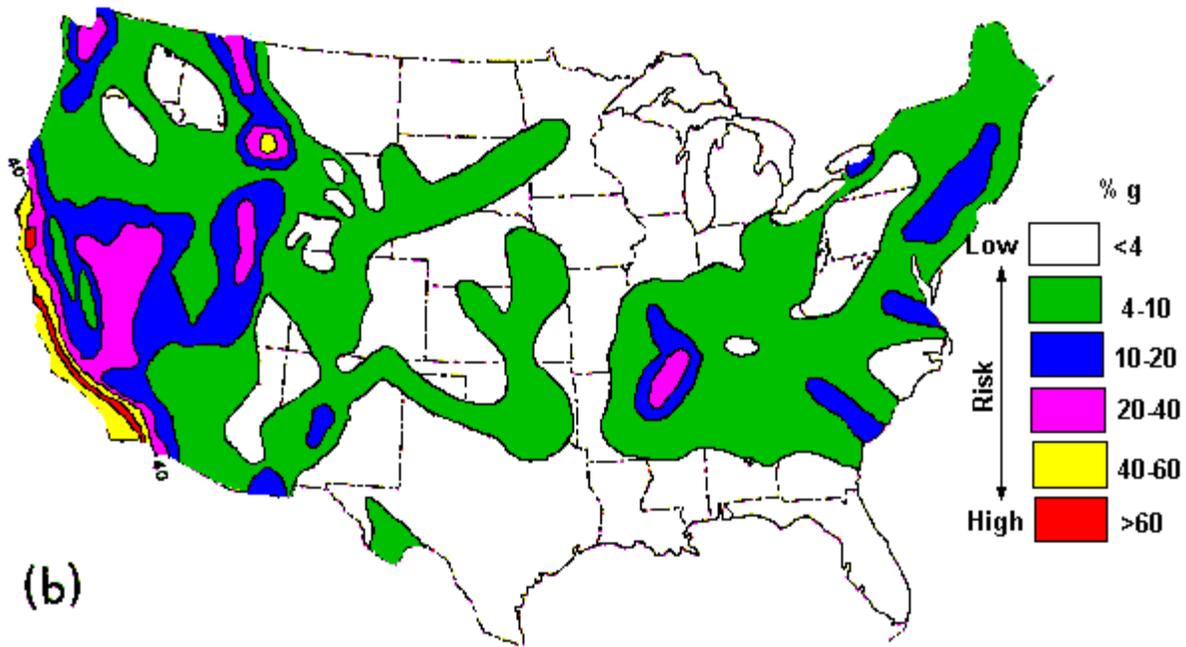


USA Risk

The earthquake hazard in the United States has been estimated in a variety of ways. Chief among them is the production of "risk maps." Such maps prove useful in establishing building codes, engineering design standards, and insurance rates in areas of high risk. Seismic risk maps are based either on relative risk or on the probability of a certain seismic event at a particular time and place.

Two examples of risk maps are shown in this map, which shows four zones that are assigned risk on a relative scale. The maps below are based on the known occurrence of damaging earthquakes in the past, evidence of strain release, and consideration of major geologic structures and provinces believed to be associated with earthquake activity.





Earthquake risk maps of the United States: (a) Relative risk of damage, based to a large extent on known earthquake history (Algermissen, 1969). (b) Probabilistic risk map showing maximum horizontal ground acceleration with a 90-percent probability of not being exceeded in 50 years (Algermissen et al., 1982).

Offered by [Brand](#).

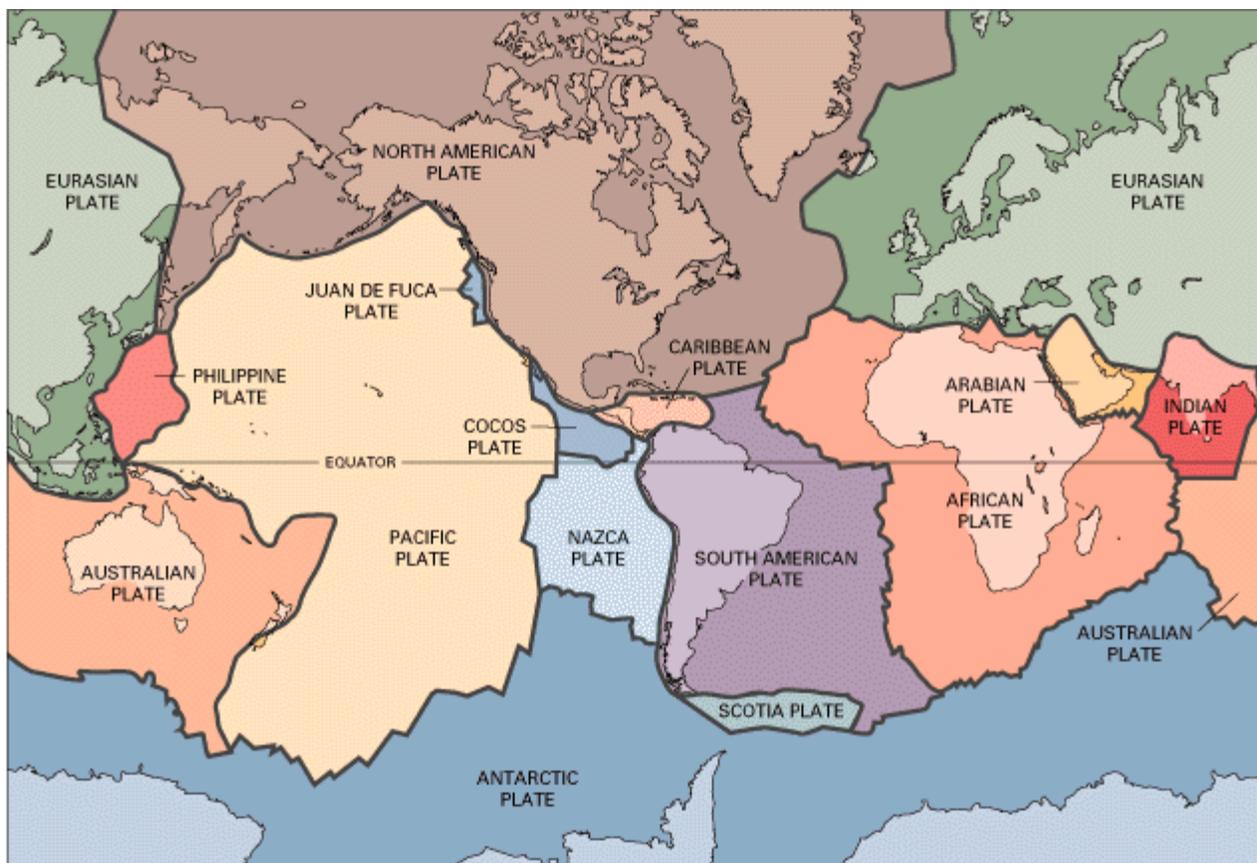


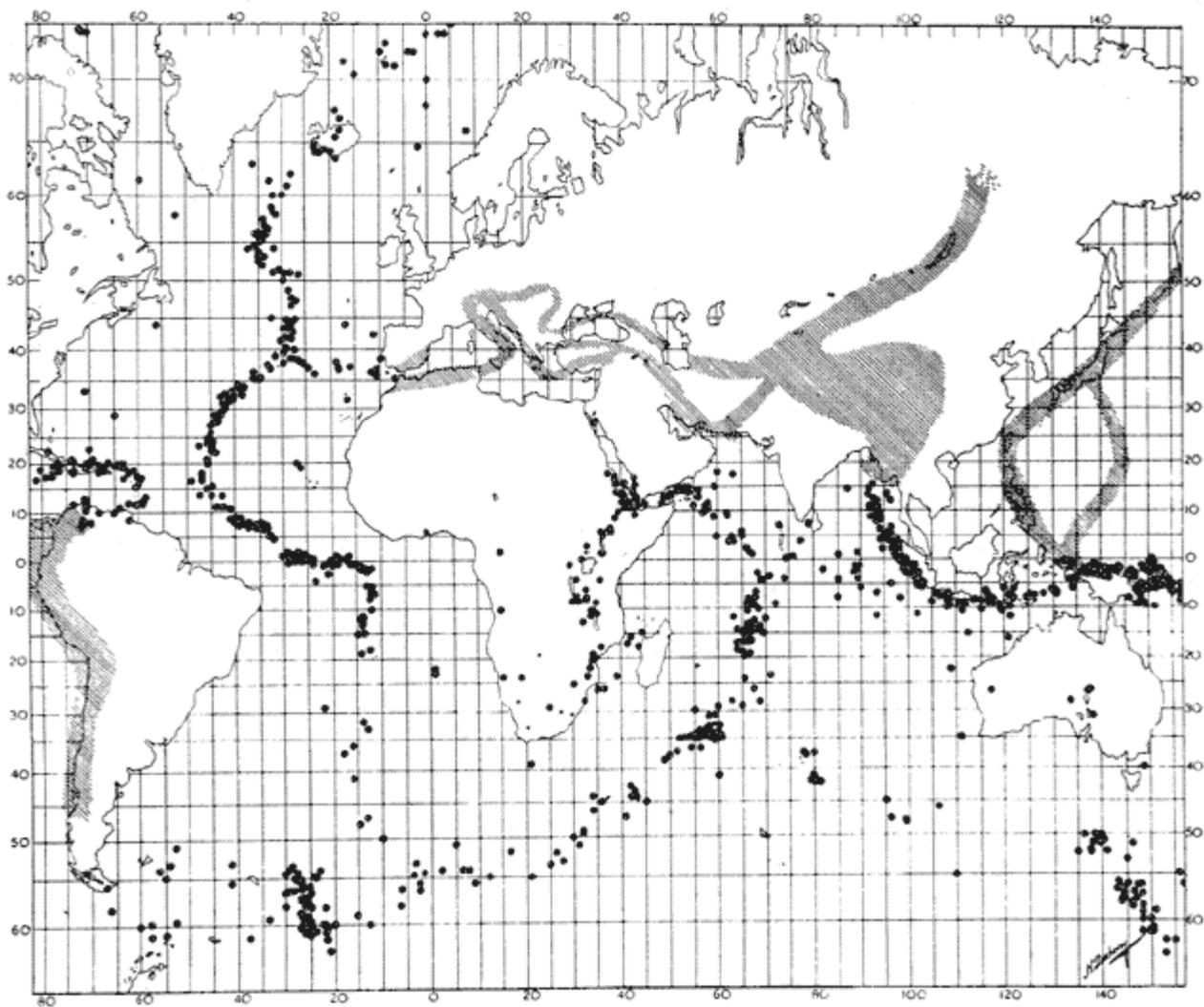
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Worldwide Risk

Earthquake risk increases as one is on the edge of a plate. Maps below of the plates around the world show where these zones are, and how earthquakes cluster on the edges of those plates.





Offered by [Brand](#).



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Quake Severity

Japan's revised Earthquake Intensity Scale, which is used as a companion to the Richter Scales, clarified what you can expect from various earthquake intensities.

Rating	Effects
1.0 - 1.9	Some feel trembling.
2.0 - 2.9	Many feel trembling. Suspended lights sway.
3.0 - 3.9	Some feel frightened. Dishes rattle.
4.0 - 4.9	Those asleep are awakened. Some items fall off shelves.
5.0 - 5.4	Some seek shelter. Dishes and books fall.
5.5 - 5.9	Many frightened. Some free-standing objects tip over.
6.0 - 6.4	Can't stand still. Many windows break.
6.5 - 6.9	Can only crawl. Some brick walls crumble, doors come off.
7.0 - 7.9	People and furniture thrown about.
8.0 - 8.9	Earthquake-proof buildings suffer damage.
9.0 - 9.9	Total destruction.



Troubled Times



Plate Logistics

We could also say the bigger the plate the more motion of the plate and the more violent the volcanic activity around the edge.

The Pacific plate is big and nick-named the Ring of Fire. I am sitting on the edge of it. I've been watching it and feeling its shaking for a while now. I'm getting fairly good at judging earthquake distance, magnitude, and size from how they feel. For example a somewhat slow build-up and rolling motion means it's a distance. A quick strong jolt which tapers off means it's close. How long it lasts and the amplitude indicates how big it is. The direction of center from you is usually parallel to the motion. Watch something hanging like a lamp or pot plant and in which way it is swinging. This is for small quakes, for the bigger ones you feel the swaying. Vertical thrust quakes mean you are close to the source. These are the most destructive.

The reason I say all this is with large quakes kicked off at the edge of a plate, the greater the distance from the plate center the slower the build-up so that one might have time to dive for the floor or ground or take safety, etc. The distance makes more of a rolling motion which helps take some of the destructive force out of it.

Still some places will go into resonance at some frequency and be a very destructive place to be. I don't know how to get a handle on this. We will have to trust our intuition and knowings and choose the best spot we can. I think this will not be that much to worry about for once it kicks off for a while waves will be going every which way (white noise). However, anything with weight, that is long and secured at only one end, is suspect to resonance and possible destruction. For those who don't know what resonance is then look at a child in a swing giving a small shift of weight (a kick) using his legs at the right time to gain more and more amplitude. If the earth moves at the right frequency to give the extra kick each time a flexing object reaches a maximum amplitude then resonance and destruction is the result. Everything no matter how solid has flexibility and mass and thus a resonance frequency.

There is value to be near the center of a Technic Plate to give a potential pre-warning time and to minimize the strength and damage of shaking.

Offered by [Mike](#).



Troubled Times



Local Geography

Bedrock Age	Needs to be old. The older the bedrock the more likely it is to be stable, other factors being equal. You are looking for Devonian period (360 million years ago) or earlier.
Incidence of Earthquakes	You are looking for a place with zero incidence of any earthquakes. Additionally, should be at least 20 miles from known fault lines.
Geothermal Gradients	This is the temperature change per kilometer depth. It may be a measure of the degree to which the plates are causing friction now and the level to which the heat of the ground could be expected to rise. Chose below 25 degrees centigrade per kilometer.
Distance from Mountains	Mountain ranges are indicative of mountain building in the past, so this could return during a pole shift. Mountains may thrust up suddenly, creating cliffs, or push over the nearby foothills.
Rolling Hills	Small rolling landscapes are desirable, as you do not want to be in the flatlands. The winds may be monstrous for years following the pole shift, and if you are on flat land there is nothing to prevent the wind from blowing with all its might. However, if you can choose a spot in some rolling hills, not near the edge of an earth plate, this might be best. There, the winds will be pushed upward a bit by the rolling land, and your home and the surrounding landscape can be in a quiet pocket.
Distance from New Poles	Remember, the earth will rotate. What is now the east will be in the north in the future. So, if you position yourself in Kentucky in 2002, you may survive the pole shift, but by the year 2005 the climate will be like what is now lower Canada. It will be the new northern part of the North American continent. If we can position ourselves more toward the new equator, there will be more natural warmth for our bodies, so our food will not have to be expended for heat. Also, plants grow better when air and soil temperatures are warm. More and quicker growth from plants means a more consistent and stable food supply.
Distance from Ocean	100 miles inland and 200 feet high, else a greater distance from the ocean. Mountain ranges are a mitigating factor, but you need to have mountains of at least 1,000 feet height between you and the ocean, otherwise the oceans will simply wash across, even beyond the 10 mile range. Several mountain ranges would be worthwhile.



Troubled Times



Liquifaction

Given strong shaking over a given minimum short time certain soils will turn to a liquid. This is called liquefaction. The looser and the smaller the particles the more effect. Sand would be worse. Bed rock will not liquefy. Hard dry clay is probable that it will, but is still to some degree questionable in my mind. Once the soil is in a liquid form it will slosh like any other liquid. I am sure at some places on this planet we could have quite high waves of sloshing soil that cover and engulf objects. This is one of the whys behind not building underground or putting wells and other objects underground without some best guess at the effects of liquefaction for the area.

My best guess at this time is if the soil is good enough to grow in, it will most probably liquefy and depending on how long the shaking last could get quite stirred up. The landscape around you would change. Also any shelter built on this would need to float slide and ride the waves and right it's self due to a properly designed low center of gravity. The good news is the heavy duty shaking and hurricane winds is estimated to last less than one hour. One more thing to know - just as a boat will sink until it displaces it's own weight in water - so will it be with all things lighter than the liquid soil. So with this you can predict after the shaking stops, how much will be above ground for your survival quarters.

Offered by [Mike](#).

Just as a further example of liquefaction, look at the Alaskan 64 earthquake and Anchorage. Anchorage is built on silt basically. During the earthquake and when things were shaking, some of the buildings there settled into the ground due to liquefaction and a term called "thicksotropic". Think of a bottle of catsup that has been sitting in the fridge. It has a small layer over the top, causing great concern for many a diner on "I can't get this stupid catsup out of the bottle!". You could lay a penny on top of catsup and it will stay there on top. But, if you shake that bottle (simulated earthquake) the penny sinks and is thrown around and buried because that top layer of the catsup is broken. *That* is liquefaction. And, since we are here, just shake your catsup bottle next time before you pour it, then it will come out.

Offered by [Clipper](#).



Troubled Times



Safe Room

The Federal Emergency Management Agency (FEMA) has made plans and specifications for building a "safe room" inside your house available on-line via the URL above. Developed in collaboration with the Wind Engineering Research Center of Texas Tech University in Lubbock, Texas, "Taking Shelter from the Storm, Building a Safe Room Inside Your House" and the associated construction plans draw on 25 years of field research by the Texas Tech researchers. Their work has included studies of the performance of buildings following dozens of tornadoes throughout the United States and laboratory testing on the performance of building materials and systems when impacted by airborne debris. The National Association of Homebuilders Research Center evaluated the designs for construction methods, materials, and costs. The shelters are designed with saving lives as the primary consideration.

I am quite familiar with the work done at Texas Tech in developing these designs. They are specifically intended for tornadoes which affect any particular house for a very short period of time and seldom reach winds over 200 mph. From what we are told about the winds associated with the pole shift, which will be much longer lasting and greatly exceed the normal tornado, I would not rely upon these designs for my personal shelter. I would be underground in a shelter which is fireproof.

Offered by [Ron](#).



Troubled Times



Low Profile

The pole shift will come and the pole shift will be over. And there will be a lot to do and a lot to have and a lot to know after that. But survivors won't be only us who prepare or only us who behave. There will be a lot of people that would do anything to get hold of what we have and know. And they will take any measure needed. How to defend? Your ideas?

Offered by [Tomaz](#).

It is certainly not the intent of Troubled Times to be a militant home pages filled with topics like "4 easy was to off someone and topics of the like". I am all for survival of the fittest which means pushing away from the table as well as the computer desk as needed and exercising. The will to do is a remarkable tool. (I know from experience.) What you learn from all this, try to practice so that knot tying and fire starting or what to eat or what not to eat is all fresh in your mind. Number 1 rule do not ever tell anyone that does not share your views that you are preparing for this and give them a verbal shopping list of your stores or supplies. What I am prepared to do is not a blue print of what all will or would be willing to do. Because bad guys and gals will survive to.

Offered by [Lou](#).

When groups of people working together are faced with the occasional shthead, the odds aren't exactly fair. If I had a large quantify of an item I would definitely split up the lot into many parts and hide them all separately. Then if someone steals some it would be unlikely that they would get all of it.

Offered by [Joe](#).

My advice has been to do bait and switch when preparing, and have a mobile survival site. This means if you do mail order, the place the packages arrive should *not* be where the site is, but the stuff should be moved. Have a tent and supplies and several places picked out. Then if gangs are where you don't expect them, move. Set up afterwards based on the lay of the land, and who is in this or that place. Be flexible.

Offered by [Nancy](#).



Troubled Times



No Windows

It will be dark and wet much of the time. What is one going to see? Especially if it's light inside. What will the light emitted from a window be liable to attract? How easy will it be for someone desperate to break in through that window? I am thinking of permanent peep holes, that stay covered most of the time so no light gets out. Most of us will have made a fortress to survive the pole shift. Why not keep it that way for protection and defense reasons. I suspect most bullets will not penetrate a monolithic dome.

One can buy, relatively cheaply these days, simple outdoor motion detectors that turn on lights. These can be easily modified to sound a door bell or an alarm and/or light a light in your survival quarters. So one would know when to turn out the lights and look through the peep holes to see if the intruder was it a curious animal or a humanoid. Domes that do not emit light, can be camouflaged to look like small hills. Most humans will walk on by. I do see, if the survival quarters are too small, then there will be claustrophobic effect and windows will be necessary. Thus, the above idea is only if one can make a sufficiently large survival quarters to feel comfortable. This would ultimately be an individual type decision.

Offered by [Mike](#).



Troubled Times



Silent Weapons

There are *lots* of silent weapons, easily made and some that can take care of a number of bad folks. There are lots of sources that I personally have used and produced weapons from. I recommend the book *The Poor Man's James Bond*.

When one-on-one the following is listed in order of preference:

1. one's own hands - you gotta really know what you're doing
2. knife, like the Marine KA-BAR - again, appropriate training is essential
3. bow & arrow - you must be accurate enough to make the first (and only) shot do the job.
4. silenced shot gun using slug ammunition - silenced higher velocity ammunition causes the equivalent of a sonic boom that alerts others at a great distance that you are around.

Up to three attackers could be taken on with a licensed shot gun; but more than that, assuming they are armed, will probably take you out. Best bet is to run. Or, if you are very skilled take them out using 1 or 2 above on separated individuals to increase your chances.

My biggest fear for any settlement is to be discovered by roving groups of deserted military, with their firepower. In such circumstance there really is no defense, especially should they have armed vehicles. Every community should consider their potential location such that natural obstacles would prevent military vehicles from getting too close should you be discovered. Escape plans should also be in place should your settlement become in danger of being overcome by foot soldiers who would possess much greater fire-power than can reasonably be maintained by an individual community. In such a situation it would be much better to abandon the site to live and build again another day.

Just my 2 cents.

Offered by [Ron](#).



Troubled Times



Long Bow

A crossbow is an excellent choice when it comes to accuracy and power, if you have a good one; however there are some drawbacks.

1. Most states do not allow hunting with a crossbow unless you are handicapped, thus there is no opportunity to learn the skills of tracking your kill (game will usually still run for a while before they hide and die); true for bow or crossbow. Also there is no chance to learn to gut, clean, and skin the game - again learning these skills before they become life or death can eventually determine whether you live or die.
2. A bow is usually much faster than a crossbow when you must make a second or third shot.
3. I personally go even further and prefer the longbow, which can be as powerful as a crossbow, has *much* less weight to carry, and can be more readily built from scratch.

One advantage of the crossbow, however, is that a bolt, the arrow when used with a crossbow, is thicker and heavier and can thus be made more easily.

Offered by [Ron](#).



Troubled Times



Lay of the Land

Becoming familiar with your surroundings. If you know where you will be for the pole shift, get used to the lay of the land. Also get used to where any supply sources may be. This would make it much easier to find your way around later. Choosing alternate routes then will be easier also, leaving you more mental space to cover your butt against attack from gangs. The land may change in many ways, but you will still have a better idea of where you may be going, and how to get back.

Offered by [Clip](#).

Expeditions for supplies will bring danger, but are a must. If you don't do them, you don't know what's going on in your neighborhood, and the situation can be even more dangerous.

Offered by [Kiko](#).



Troubled Times



Non-Lethal

There are numerous ways to make non-lethal traps and alarms. You can use several variations of lethal traps; such as the Malaysian Sling to slow down the "bad guys". You just don't want to put spikes on it or have it come around hard enough to kill them. Alarms are easy to construct from using soda cans filled with rocks to trip flares. I use trip wires with rocks to keep critters out of my garden, works some of the time. As far as cacheing goes there are numerous sites on the net that have information on it. You might want to consider guerilla farming for your gardening needs.

Offered by [Mike G.](#)



Troubled Times



Infinite

There must be ways to defend without guns, but defensive measures nonetheless.

- How to **booby-trap food stores** (In a non-harmful way)
- How to make **perimeter 'alarms'** of some sort. Something that would make a hell of a lot of noise when crossed.
- How to effectively **split up resources** so if theft occurs, it isn't all stolen.
- How to make a **slingshot** & which kinds of 'shot' will only repel, and what will actually kill. Maybe how to make it out of natural materials, in case you need an effective weapon on short notice.
- How to make lots of **thin tripwires** and set them up so that anyone who doesn't know where they are will trip and fall, probably yelling "@##@\$#@ \$" during the 1/2 second before impact - alerting the whole bunch to his presence.
- How to make some **substance that just smells completely horrible**, something that will make almost anyone throw up just by smelling it. Like Syrup of Ipecac for the Nose. You could store valuable stuff somewhere, and put the 'Hell-Smell' around it, causing wandering bypassers to wander elsewhere. They probably wouldn't expect food to be in a smelly place, and you can put a clothespin on your nose when you make food runs. (seriously!)
=>

Also, perhaps *some* anarchy type things could be put to good use, like:

- **Smoke bombs** you can make on the stove, for smoke screens or something)
- Other ways to **disable vehicles**, like pouring sugar or other substances into the gas tank or sticking bananas in the tailpipe or whatever.

Offered by [Joe](#).



Troubled Times



Vigilante

The best way to maintain the psychological health of a group will be to have everybody fully occupied with productive tasks. Organizational and leadership skills will be vitally important. There will still be problems. Leadership will hopefully respond to the challenges when they arise. The purpose of a posse in the old days was to take extreme action with the support and presence of significant members of the community, in sufficient numbers to be over powering. In your above scenario, I'm afraid we need a posse and an oak tree.

Offered by [Jack](#).

If you choose to fight as a way of dealing with others make sure that everyone in your group agrees with you and the consequences that it brings. We all may face events that will call for a drastic measures. If you witness a group of people that will choose to rape and murder just for fun of it, you may have no other choice to stop them. Discuss it with your friends and family before it happens, so you all will know the answer.

Offered by [Chris](#).



Troubled Times



Guns

First, there is nothing wrong with defending yourself, your loved ones, or other innocents, against real threats to life and property. We should all "give until it hurts" in so far as sharing our resources goes, but that does not mean that we ought to lay down like lambs and let marauding criminals take what ever they please - including our lives. Next, let me say that as a military historian of the Cheyenne Indians, I can tell you that even these skilled warriors made the cardinal error of depending on their animals (in this case dogs) to warn them of intrusions into their camps. This, in spite of the fact that they *knew* that on their own raids, they were able to get past the dogs and steal horses (the usual object of Plains Indian raiding).

The idea of using geese as sentries is hopelessly inadequate. And when the geese begin to raise the alarm, then what? Lock the door? Yell "please go away"? I suggest that guns in the home be kept in a gun safe, with trigger locks as well. I suggest that every adult be proficient with a battle rifle and pistol. We talk about skills. Here's one: I can put a round of .30-06 tracer about a foot from someone's head at 300 meters. That will get his attention. Showing an aggressor that you have the capability and willingness to kill him may well spare you from having to do so. Do I value the lives and well-being of my family more than that of strangers with criminal intentions? You bet I do. A dead man can't be of much service to others.

Offered by [George E.](#)



Troubled Times



No Guns

Been doing some deep thinking lately on the subject of self defense. Even the term "Self" defense has a negative ring to it. By thinking in those terms, it would be more appropriate to call it "others" defense. Simply meaning that one should take into consideration, the entire group, not just ones self in terms of defense.

- Children and guns do not mix.
- Guns make lots of noise, not good when you don't want to be heard.
- Ammo would eventually run out and you would then be stuck learning new approaches to a problem that should be learned in the present tense. Not when you "have" too, with limited time, supplies and resources for learning like you do now.

Therefore, I don't think guns are the best choice for self defense. The best self defense for others would be to read up on how to keep a low profile, and teaching others to learn as well. How to use silent weapons when searching for food, and teaching others to learn as well. Learning the lay of the land, (the most important in my eyes) and teaching others in your group to learn as well. There are lots of non-lethal methods to protect your self like using geese, that will help you and others sleep safe. Look at hungry dogs as an opportunity for food. Set safe traps and eat the dogs as you catch them. Sounds bad, but two birds with one stone so to speak. What I am trying to say here is, there are many ways to protect you and yours from outsiders. Your goal is for you and yours to survive, not to die at the hands of your own weaponry. Use your mind, it is the best defense you have.

Offered by [Clipper](#).



Troubled Times



Expertise

Despite the fact that I personally believe that in an after situation that becomes much like the 1880's in Oklahoma, I don't believe that Troubled Times should have any recommendations regarding guns. People can get that from many other sources. Besides, if you have a facility with guns, you have the facility. If you don't, it will take a while to get some experience. In my own case, its taken me two years to get to the point where I will find myself, armed on my own property.

However, I have not been able yet to instill the appropriate fear of the effect of guns on my son enough to include him in the involvement with them at this point. He still thinks they are a fun event. They are not a fun event; they are very very dangerous. Drawing one means that it must be used or be willing to be used. Samurais never drew their sword unless it was to be used. Guns must be the same.

Offered by [Eric](#).



Troubled Times



Alternatives

I am totally against active fight on the basis that it will create death and injury on both sides. Having injured in your group it will produce additional burden both physical and psychological. In addition if you win the fight you will have to take care of wounded on opposite side as well. For those of you who want engage with guns think again. If you lose your fight and in the process kill or injure your attackers you will be faced with revenge. Unless you have good military training, do not do it.

The best option is to patrol your area. Know who is there. Set some indicators on the trails, roads to know if there is movement (i.e. stones position on the ground in a certain way, branches etc.). Use simple warning devices. Empty cans with stones inside connected by thin wire will make a lot of noise at night if somebody drags it. Make escape routes in your camp and camouflage them carefully. Do not store all supplies in the main camp. Teach your children to withdraw quickly. Build underground tunnels with at least two entries. Such tunnels were quite effective way of hiding for many partisan groups in the past. Patrolling around your camp will require a possibility to alert others about situation. Train a dog or other pet to deliver messages to the rest of you, so they have enough time to prepare. I personally prefer pigeons.

Just to give you an example of non violent survival through war. During World War II entire Jewish families survived the holocaust living in the forest for six years with minimal or non support from local population. They did not kill to survive. As for low tech warning devices they are very effective. During my scouts years, sometimes we trained with military. One night we used cans as an early warning system quite successfully against well trained unit (I will not mention unit name here). I bet they were doing extra pushups next day.

Offered by [Chris](#).



Troubled Times



Backfire

Please check the [Straight Jackets Scenario](#) in which one of the fathers, sober and stoic and in charge, has the gun in his possession and goes nuts. In the scenario I paint, he just shots one person in the face, in a fit of rage and the multiple frustrations facing him (starvation, injury, worry about the morrow, and teenagers running off with their last food and flashlights). The scenario could as likely have been that he takes quite a few out before being subdued. This *is* what happens when folks "go postal" as the saying goes, go berserk and start shooting everyone they *know*, not the strangers.

Statistically, you are more likely to be shot in the home, by someone who got a gun to protect *you*. In platitudes about guns, folks are assuming sane and mature adults, and no fit of rage or *misuse* of weapons by these supposedly sane adults. The statistics are, simply, that most murder or death by the hands of others happens in the home, by someone the victim knew, and most gunshot death likewise occurs in that setting. You can argue philosophy, but these are the hard facts.

Restrictions are supposed to prevent anyone but the reliable from purchasing a gun, but this is a joke. Guns will make you free? They are more likely to make you dead. Then there is the argument that those with guns are shot to "disarm" them, and those without guns are *not* shot. England for centuries did not arm their Bobbies as this was more likely to escalate violence. Statistically, they were better off not carrying arms.

Offered by [Nancy](#).



Troubled Times



Sleep Safe

It is my belief that the bathroom and the sleeping quarters of any dwelling should be the most secure portion of the house. They should be separated from the rest of the dwelling by a bolted steel door, and any windows should be barred in that portion of the dwelling. There might even need to be firing holes in that diamond 1/4 in double clad steel door. The import point here is that if an attempt is made to break in during the sleeping hours, there is enough time to mount a defense, which would not be available when one is groggy from sleep and surprised. Other protections such as guards or alarm systems might be circumnavigated by the gang, but a defensive sleeping fortress is a worthwhile thought.

Offered by [Eric](#).



Troubled Times



Honking Geese

Ancient Roman army encampments had a clever solution, if I remember correctly. They carried either geese or ducks with them for use as nighttime sentinels. Apparently these birds have very sensitive hearing - and they honk like the Dickens when troublemakers are nearby.

Offered by [Mike](#).



Troubled Times



Tachometer

Tested a Radio Shack (Archer) cat no. 49-201 Infrared Photoelectric Relay - Intrusion detection unit (out of date, originally sold for \$69.95). Attached the Radio shack Infrared Photoelectric Relay with a .1 uf capacitor on the output to filter the 60/120-cycle noise that was showing up on the frequency meter. The result was workable up to about 11 Hz before the circuit stopped switching. This is equivalent to about 660 RPM. Does work but is hard to get it to line up and reflect off the tape on the rotating shaft. This is because of the invisible infrared beam. Not really that portable or easy to use. Currently runs off 115V AC but with some modification could run off 12V DC. I didn't think it was worth going any further with this.

Next Attempt: Tried an old hand held cassette tape recorder that had a good audio amp with a mic and speaker jack. A small solar cell was attached to a microphone coax cable and plugged into the microphone jack on the recorder. A 200-ohm variable resistor was attached across the solar cell. Hand held laser pointer to reflect off the aluminum tape on a rotating shaft. The output of the speaker wire went to the DM 645 frequency meter and an oscilloscope for testing. The pot was adjusted to allow the frequency meter to select different amplitudes in its calculation. All AC lights (florescent and incandescent) near by needed to be turned off to cut down on the 60/120 cycle picked up by the solar cell. By adjusting the pot sometimes one can get the correct frequency. Most of the time the frequency measured was way too high. The frequency response of the audio amplifier in this typical small tape recorder was not high enough to work. Was taking the pulse and changing it into a decay sign wave. Which was to be expected. This introduced lots of higher frequencies. Thus this approach is not recommended.

The best approach so far has been to use a solar cell attached to an oscilloscope with a laser pointer bouncing off aluminum tape stuck to the shaft. The timing is then done by counting centimeters on the scope screen and multiplying by the sweep rate to get fraction of a second between pulses, or for one revolution. 60 sec/min is then divided by the fraction of a sec or number of sec for one revolution. This then gives RPM.

After much research: The most reasonably priced off the shelf unit that I can find that will measure low RPM is Photo/contact Tachometer (\$155.00 part no. 01DT2236) from Electronix Express (800) 972 2225. This unit measures between 5 to 100,000 RPM using the photo approach and .5 to 19,999 RPM using contact. Note: The frequency meter used above was a DM 645 (\$38.95 part no. 01DM645) from the same place. Being able to measure to one Hz is really not enough. 5 Hz measured is 300 RPM, 1 Hz is 60 RPM. As you can see this is not very good accuracy at low RPM. Thus all in all I think it better to purchase the above unit.

My next action is to purchase one of these, for portable use unless I have missed something easy to try. I don't think I want to spend the time designing or finding a circuit for a solar cell that will amplify the square wave pulse keeping the original shape rejecting 120/60 Hz noise.

Offered by [Mike](#).



Troubled Times



Dog Attack

Lets say that you are in the unfortunate position of coming under attack by one or more vicious dogs (post-pole shift chaos, and dog attacks are reportedly epidemic in the USA at the current time). The way to stop this kind of attacker is to strike a crushing blow to the animals larynx. The animal wind pipe will be crushed and the animal will not be able to breathe.

Offered by [Charles](#).





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ZetaTalk: Safety Measures

Note: written on Aug 15, 1995

The cataclysms present those who would survive with several challenges. Hailstones, firestorms with brief period of oxygen depletion, earthquakes of a magnitude mankind has never experienced, rapid mountain building, spewing volcanoes, winds of hurricane force, and tidal waves high enough to sweep over tall buildings. What to do?

Tidal Waves

As the exact position of the Earth when it stops rotation cannot be calculated, just which shore will experience the worst tidal waves cannot be predicted. This is more severe on the dark side of the Earth, as the waters are gripped by the passing comet on the side facing the Sun, and thus are not as free to flow. Practically speaking, to take no chances, one should calculate to a height of 200 feet and be at least 100 miles away from any shore.

Volcanoes

Clearly safety involves removing oneself from active or even relatively active volcanoes. Volcanoes, new and old, will present those living nearby with sudden activity during the cataclysms, with little warning. The plates are thicker than man presumes, but the thickness become slush, semi-molten lava which is more attached to the plates than the core. For mankind, which lives atop the plates, the issue is where the breaks are. Those plates that form the continents are composed of lighter material than the plates deep under the seas. It is no coincidence that they float higher or lower. It is not the weight of water that pushes the plates under the ocean down, as they must have been down in the first place for the water to have settled there. The semi-molten lava under the plates gives way to heavy objects floating on its sea, just as objects floating on water sink more deeply than lighter objects which buoy to the surface. For man, in addition to being positioned on light plates, being in the center of large land plates is a safety factor. For man, staying away from the edges of plates where very molten lava can seep and explode, during pressure of plate movement, is a significant safety factor.

Mountain Building

Remove yourselves from areas where mountain building is likely to occur. Flat plains or plateaus are safest. In this, geological analysis of plates should be your guide. Don't be above a subducting plate, as even if you are riding on top, the ground beneath you may be heated white hot, from friction.

Earthquakes

The earthquakes will essentially level all cities, and of course railways, landing strips, and highways and bridges will be unusable. Don't figure on any power or water systems to be functional, and the telephones will surely be permanently dead. Practically speaking, one should shield any mechanical or electrical devices one hopes to use after the cataclysms with extensive padding such as rubber mats. Wrap everything as though it were going to be dropped from a height of 500 feet. Test this, and see if your device survives. If not, then sturdier devices may be required. Independent power sources, such as windmills, need to be secured. Batteries may be handy, but won't last long and will not be replaceable. Your mechanical and electrical structures will suffer damage from violent earthquakes more than your flesh and bones. You may bruise and break, but you heal. Your electrical device will stay broken. When the earthquakes are expected, lie flat. In this way you will skid and slide a few feet. Standing, or positioned at a height, you will be dashed. And by all means, do not be under a structure that will fall upon and crush you.

Hailstone and Firestorms

Metal roofs will deflect the firestorms and hailstones also, if sufficiently thick. The thickness of a protective metal plate is not as important as simply being metal, not bursting into flame. Thin metal can bend and crumble under pressure, where thick metal might shear or snap, having less flexibility. Where the metal is deemed to be protection from falling ash and rocks from exploding volcanoes, the thicker the better. For large meteors, which are few, there is no safety measure to be taken. Trust to luck, there. If the shelter you are in is not open to the outside, temporary depletion of oxygen will not affect you.

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Sources

When I read this same page some time ago I was also concerned about the availability of Oxygen to breath. My concern was for the mentioned brief periods during which one side of the planet will have the oxygen to some extent burned off. I assumed the danger time to be hours to several days.

My thoughts to date have been:

1. Have a storage bottle of **compressed oxygen**. Possibly dual purpose as part of an Acetylene welding rig.
2. Have a hydroponics setup growing "Chlorella", "**Blue-green algae**" or etc. that I can bubble carbon dioxide rich indoor air through, that will in turn provide oxygen rich air.
3. Be prepared to electrolyze water into hydrogen and oxygen. Would use this only if I had plenty of electrical power. Pipe the oxygen into the survival quarters. Keep the hydrogen and the **electrolysis process** outside. Could use the hydrogen for cooking or heating if there is enough oxygen in the outside atmosphere to burn it. Must be handled with care. Hydrogen and oxygen mixed is extremely explosive. If worried about the dangers then just vent the hydrogen off to the outside air. With a lot of shaking going on this will probably be the norm.
4. Keep an eye out for a **chemical powder or liquid** that I can mix as needed to supply emergency Oxygen. This last one has not been researched yet.

Some brain-storming thoughts.

Offered by [Mike](#).



Troubled Times



Algae Ponds

In selecting plants for indoor gardening, consider the oxygen generating potential of algae compared to the common potato plant. Algae is also an outstanding food source high in protein. One drawback of algae ponds - they can stink.

NASA Questions and Answers

QUESTION: How many potato plants does it take to supply one person with enough oxygen. - Canada

ANSWER is curtesy of Cheryl Mackowiak on July 30, 1997 at:
<http://atlas.ksc.nasa.gov/celss/STAFF/staff.htm>

It has been reported that the average human needs 0.83 kg of oxygen each day.

Oxygen regeneration from plants is dependent on photosynthetic rate and this is dependent on various environmental factors. In our system (20/16 C light/dark, at a 12/12 hr. photoperiod and CO₂ at 1200 ppm), it would take 171 potato plants or 26 m² growing area. Wheat can be grown at a much greater density and so it would only take 19 m² growing area (11,937 plants).

Encyclopaedia Britannica, on algae.

Ninety percent of all photosynthesis is carried out by algae, and it is believed that they played an important role in creating the Earth's oxygen-rich atmosphere early in the planet's history.



Troubled Times



Spare Air

Now, as far as the air issue is concerned (vacuum caused by the burning hydrocarbons) most sporting-goods stores selling diving equipment sell these things called Spare-Air's. They hold about 10 minutes of air (with a little training that could easily be doubled) anyway they cost about \$100.00 each so they aren't that expensive, they might prove a worthwhile precaution.

Offered by [Thomas](#).



Troubled Times



Radio Interference

An article called **Radio Loma Prieta** on page 14 of the May 1990 issue of *Discover* magazine describes a recent accidental discovery of earthquake detection based on radio signals. Excerpts of the article follow:

Fraser-Smith, a physicist at Stanford, has a contract from the Navy to monitor very-low frequency radio waves (less than 10 hertz). ... In mid-September the airwaves around Corralitos[, California, 70 miles south of San Francisco,] started getting noisier, and on October 5, Fraser-Smith's antenna suddenly recorded a 20-to-30-fold jump in the signal below one hertz. In the following days the signal gradually declined, until by October 17 it was down to five times the normal background level. That afternoon it soared again, this time to 200 times the normal intensity. Three hours later a massive earthquake struck the San Francisco area. This epicenter was in Loma Prieta, four miles from Corralitos.

An article called **Electrical clues precede some tremors** on page 407 of the Dec 18, 1994 issue of *Science News* magazine describes additional studies that have been conducted. Excerpts of the article follow:

Battling the skepticism of their colleagues, some geoscientists are investigating the controversial idea that faults release electromagnetic signals prior to generating large earthquakes. Researchers last week reported hints that such electrical bursts have preceded several recent quakes, raising the possibility that this phenomenon might finally be drawing serious attention. ... At a meeting of the American Geophysical Union in San Francisco last week, [Seiya Uyeda, a seismologist who splits his time between **Tokai University** in Shimizu, Japan, and **Texas A&M University** in College Station,] reported that [an experimental observation network along the western coast of Japan] had indeed detected unusual changes in Earth's voltage in the weeks preceding four strong quakes that hit Japan between 1991 and 1993.

Anthony Fraser-Smith of **Stanford University** in Palo Alto, Calif., ... got into the earthquake business by chance after one of his machines detected an unusual magnetic disturbance before the Loma Prieta earthquake in October 1989. He has since set up five of these instruments at key sites along the San Andreas fault, waiting to see whether similar magnetic signals precede another quake. ... Stanford's Simon L. Klemperer and an Israeli colleague have devised a theoretical model that could explain what Fraser-Smith observed in 1989. They suggest that movement of the earth before a quake causes tiny water-filled pores in the rock to connect, thus enabling an electrical current to flow.

From an article called **Broadcast Warning** on page 27 of the March, 1990 issue of *Scientific American* magazine describes similar studies that have been conducted. Excerpts of the article follow:

Since 1987, in an effort to survey background noise that might affect VLF communications, the **Stanford** team has monitored radio waves ranging from .01 to 10 hertz. This ultra-low- frequency (ULF) margin of the VLF has been largely neglected by other scientists, according to Fraser- Smith. He and his colleagues originally installed their antenna, a metal cylinder wrapped in wire, on the Stanford campus. Then they moved the device to Corralitos, a small town where electromagnetic emissions from cars and a mass-transit rail system would not distort the readings. ... [The] amplitude of the .01 hertz signals had increased dramatically about three hours before the [Loma Prieta] quake.

Malcolm J. Johnson of the **USGS** points out that the geological literature is full of "hints" that earthquakes may be linked to electromagnetic activity. Japanese and Soviet scientists claim to have detected strong VLF signals before and during quakes. Witnesses have also recalled lightninglike flashes emanating from

the earth during quakes and poor radio reception beforehand. ... Fraser-Smith suspects that only large quakes produce detectable signals. His equipment, he notes, did not record signals before or during a magnitude 5 quake near Corralitros this past August; the magnitude 7.1 Loma Prieta quake was more than 100 times stronger.

An article called **Pre-quake quirks: Searching for predictors** on page 231 of the October 13, 1990 issue of *Science News* magazine describes results of studies done in Japan. Excerpts of the article follow:

One report ... comes from Kozo Takahashi of the Communications Research Laboratory in Tokyo and Yukio Fujinawa of Japan's **National Research Institute for Earth Science and Disaster Prevention** in Tsukuba. The Japanese scientists found that anomalous electromagnetic changes preceded several quakes and an undersea volcanic eruption that shook the central eastern coast of Japan in July 1989. Takahashi and Fujinawa devised an electromagnetic radiation monitoring technique that effectively filters out urban and atmospheric background interference. The system measures the vertical electrical field between two electrodes - a steel pipe in a 603-meter-deep borehole, and a 40-meter-wide ring of grounded wire encircling it.

On July 5, 1989 a magnitude 4.9 temblor struck off the coast of Ito, about 150 kilometers from the electrodes. Roughly six and again four hours before the quake, the monitoring system detected electromagnetic bursts in the extremely-low-frequency and very-low-frequency ranges - between 1 and 9 kilohertz. Sporadic bursts also occurred hours before a magnitude 5.5 quake four days later, and again the day before an undersea volcanic eruption on July 13. Even larger pulses preceded a magnitude 6.5 quake last February, Takahashi says.



Troubled Times



Personal Predictor

Below is a report received from someone who lived in the Santa Cruz mountains, essentially the epicenter, during the Loma Prieta earthquake. Aftershocks occurred for years after this 7.1 quake. Portions of this report follow.

- I can tell you my personal experience with this. I lived in the Santa Cruz mountains from 1988-1994 and before each local EQ the noise level on a standard AM radio would frequently drown out the local AM radio stations.
- This was extreme in the 10 days prior to Loma Prieta when no AM stations could be received on my car radio until I got over to San Jose each morning. In the Santa Cruz area you can predict every EQ just by listening to your AM radio between 530 KHz and 1MHz.
- However, there are things to beware of, like local radio noise sources or the computer next door.



Troubled Times



Geo Monitor

This Newsletter fills an important gap in the efforts to make earthquake warnings a reality. **It emerged from the amateur radio community where people have been picking up odd signals for many years.** Of particular value, is the sharing of many techniques and instruments being used in basements and garages all over California and into the Midwest. It is now possible for high school and junior high students to set up their own monitoring stations. Tied together by computer, these kids will have the potential to play a major role before "THE BIG ONE" hits. *GEO-MONITOR*, edited by **Vince Migliore**, is based in **Santa Clara, California**.



Troubled Times



3.8 to 4.0 Hz

The Northridge, CA, Earthquake, January 1994

Elizabeth Rauscher, Ph.D. & William L. Van Bise, Electrical Engineer

Rauscher and Van Bise called the "Earthquake prediction registry" at the Library of Congress on January 8, 1994 to report impending events likely to occur within 30 days. Unique signals indicated that quakes would occur in or near the Los Angeles area. The Northridge quake struck on January 17th. **Unusual surges of signals from 3.8 to 4.0 Hz were recorded beginning two weeks before the quake.**

Dr. Rauscher and Mr. Van Bise were prominently quoted in *Angels Don't Play This HAARP* by Begich and Manning, pages 69 to 75.

The Landers, CA, M 7.5 forecast, June 1992

Elizabeth Rauscher, Ph.D. & William L. Van Bise, Electrical Engineer

An International Workshop was held at Lake Arrowhead, California, June 14-17, 1992, with the title, "*Low Frequency Electrical Precursors: Fact or Fiction?*" Rauscher, a particle physicist and former science advisor to the United Nations, and Van Bise presented a paper on measurements of ELF signals. Rauscher announced that a magnitude 7 or greater earthquake would strike "in the region of the conference, very soon." On June 28th the Landers quake, M7.5, struck 44 miles east of the conference site; several hours later Big Bear Lake, only 20 miles east, was hit by a M6.6 temblor. They were able to focus on the area, timing, and strength because of extensive contacts with Charlotte King. **They used an array of antennae, located near Reno, Nevada, to pick up signals at 3.8 cycles per second.** Details were presented at Tokyo in September 1993.



Troubled Times



Pulse Papers

The Tokyo International Workshop, 1993: Tokyo, Japan, September 6-8, 1993, where Bise and Rauscher's presentation was "**Ambient Electromagnetic Fields as Possible Seismic and Volcanic Precursors.**"

Hayakawa, M. and Y. Fujinawa (Eds.), **Electromagnetic Phenomena Related to Earthquake Prediction**, Tokyo: **Terra Scientific Publishing Co.**, 1994. 677 pp.

Proceedings of International Workshop, 6-8 September 1993, **The University of Electro-Communications**, Chofu, Tokyo, Japan.

Mueller, R.J. and M.J.S. Johnston, **Large-scale magnetic field perturbation arising from the 18 May 1980 eruption of Mount St. Helens**, Washington, *Physics of the Earth and Planetary Interiors*, Vol. 57, pp. 23-31, 1989. - "A traveling magnetic field disturbance was detected on an 800-km linear array of recording magnetometers installed along the **San Andreas** fault system in California, from San Francisco to the Salton Sea."



Troubled Times



Detector Devices

Referring to the Fraser-Smith discovery, the May, 1996 issue of *Scientific American* featured an article called **Detecting Natural Electromagnetic Waves** which describes how the amateur scientist can make their own antenna to detect these earthquake precursors. The article on page 98 stresses that this is an inexpensive undertaking:

Rebar, an iron rod obtainable at any construction supply house, is inexpensive and makes a suitable core.

...

Some shops that repair electric motors will wind your coil for about \$80. Alternatively, you can wind it yourself in an afternoon ...

you will need bell reducers, which are fittings that link pipes of different diameters. ..

Drill half-inch-diameter holes into two plastic coffee cans lids. ..

Use the tines of a dinner fork to guide the wire into snug coils. ..

Encase each completed coil inside a plastic pipe to protect it from the elements. ..

If you have an analog-to- digital interface, you can read the data directly into your home computer.



Troubled Times



Lehman's

The following is from the July, 1979 *Scientific American*, article titled **The Amateur Scientist: How to build a simple seismograph to record earthquake waves at home**, by Jearl Walker

The construction of the [Lehman Seismograph](#) was described several years ago by Walker (1979), and its utility was discussed by Barker (1983). The seismograph can be rather easily built for \$120 worth of ordinary lumber, hardware, plumbing and electronic parts, plus a necessary strip-chart recorder. The seismograph seems to have received little attention from geology and earth-science teachers and it appears that perhaps less than a dozen are in operation in the United States (G. Barker, personal communication). In spite of its simplicity, the Lehman seismograph is capable of recording earthquakes of Richter magnitude 5 which occur in the continental United States, and magnitude 6 elsewhere. It is sensitive enough to detect the tilt of a concrete basement floor as a person approaches or withdraws from it.



Troubled Times



Back Yard

The April, 1996 issue of *Scientific American* featured an article called **The New Backyard Seismology**, which describes how the amateur scientist can make their own seismograph. This personal seismograph is now an inexpensive undertaking due to the availability of a new product.

Using a new breakthrough technology, amateur can now, for about \$100, easily build seismographs that are robust and that approach professional quality. The breakthrough is a remarkable micromachined accelerometer on a silicon chip.



Troubled Times

TEAM:  Quake

A Troubled Time TEAM has been formed to experiment with earthquake prediction methods such as:

- [Radio Static](#)
- [Copper Catch](#)

Troubled Times



Flies

From the [Millennium-Arc](#)

Prevention: Keep kitchen garbage tightly closed. Sprinkle dry soap or borax into garbage cans after they've been washed and allowed to dry; it acts as a repellent.

Orange: Scratch the skin of an orange and leave it out; the citrus acts as a repellent.

Cloves: Hang clusters of cloves to repel flies.

Mint or **Basil.** Mint planted around the home repels flies. A pot of basil set on the windowsill or table helps to repel fleas. Keep basil well-watered from the bottom so that it produces a stronger scent. Dried ground leaves left in small bowls or hung in muslin bags are also effective.

Sugar and **Corn Syrup:** Make your own fly paper by boiling sugar, corn syrup, and water together. Place mixture onto brown paper and hang or set out.

In our place (Taiwan), we use transparent plastic bags (3 or more) filled with clear water and hanging in a row to prevent flies coming close. I think the idea is to confuse their eyes. It works like magic!

Offered by [Kerne](#).

We have huge swarms of flies and mosquitoes in any nature spot in Israel. The flies don't just sit on you, they sting pretty hard for the first few weeks of living in a place like that, before your skin gets used to them. Anyhow, when I first saw those plastic water bags hanging in the middle of the room or tent, I was amazed at how effective they really are. I haven't actually been able to get a proper scientific explanation for this phenomena, but flies and mosquitoes really do somehow shun rooms that have those hanging bags. Now it doesn't get rid of all the flies and mosquitoes, of course, but it greatly diminishes their number. Beats me how.

Where I lived, we considered rosemary ointment to be pretty effective for keeping mosquitoes off the kids at night, and for itching relief after bites. Rosemary is also very good for getting rid of lice in kids' hair. (lice prefer children's hair to that of adults). Lavender was also considered good relief against insect-bite related itches.

Offered by [Sol](#).



Troubled Times



Maggots

Keep the lid on to prevent maggot from growing in the garbage. In fact, if you were to start with a clean trash can and always keep the lid on, you should not have any maggots since the flies would not be able to get in to lay their eggs.

Offered by [Clipper](#).



Troubled Times



UltraSound

For the past couple of weeks I have been testing ultrasonic electronic pest repeller. These things put out a 42 kHz +/- 20% and use about 5 watts. They were designed for indoor use. I cut up an old plastic bottle. Took a 20' extension cord cut the receptacle end off. Melted a hole in the plastic lid of the bottle with the soldering iron. Ran the wire in the top and soldered it to the 110v plug prongs of the unit. Used silicon rubber to seal the wire with the top so that water would not run down the wire into the top of the bottle.

The instructions say the unit is effective in controlling mice, rats, roaches, fleas, flies, crickets, silverfish, waterbugs, moths, ants, and most other common pests. It covers about 750 square ft or 15' radius. I mounted 2 units outside about 5'-6' above the ground and about 10' apart. I did this in stages of one week apart. The first unit was put up near 3 large spider webs and a series of 15 or more in the bushes near by. Just after turning it on I noticed no different behavior in the spiders. The next morning the three spider webs were gone and have stayed gone. The webs in the bushes had collected lots of leaves and debris (no spider to clean them). The second unit was put up 10' away and the 2 large spider webs present disappeared over night. Flies and bees still visit the area. What it looks like to me is - the sound is just annoying enough to discourage taking up residency.



I plugged one of these things in within 4 ft of my two cats that were resting but not asleep. One became fascinated by the red flashing light or possibly the sound and knew something was going on. The other continued to rest for a while but then became interested in what the other was interested in. Neither one moved from the area. I ended the test. Decided if I hung it 5 or more ft in the air they would not be bothered if in the area. From my own experience I think the effective range outdoors is about 6 to 12 ft. I purchased 3 units for \$17.99 from [Harbor Freight](#) tools item number 33626.

Offered by [Mike](#).

I've never used them, but ultrasonic devices are very effective at driving insects away - all insects including the good ones. I see two problems with this. The first is that the majority of your vegetables rely on insects to pollinate. If the bees and other flying insects don't seem to be bothered, this might be a minor problem. The other problem is that if one or more of your devices fails suddenly (and you don't catch it right away) you will be inundated with insects almost immediately and the first ones, of course, will be the "bad" ones! (They always seem to know when there is a shortage of predator insects in a locale.)

Offered by [Roger](#).

I live in a basement and have one of these wonderful little sonic devices. It works *great*. Absolutely *no* bugs, and my house used to be buggy. I put one of these on each floor and they are all gone. I think it really works and is a good idea to repel pests in a grow area. I am currently working on a small project that one can build with a few \$ at radio shack to do the same thing. The circuit is very simple. Otherwise, they are only like \$20 to buy, but I have only seen

them mail order - not in stores.

Offered by [Rob](#).



Troubled Times



Cats and Coons

I don't know the frequency response of raccoons however if it is similar to cats it should work. I have two cats that I have effectively trained to keep off my desk and other areas by the use of a \$39 motion sensor that kicks off a burst of high frequency sound. I can't hear it but it is loud to my cats when they cut the beam. It doesn't hurt them, being just loud enough to be uncomfortable. The device is called CatScram and can be purchased from **Comtrad Industries** 1-800-704-1211. It lasts 1-6 months on one 9V battery depending on how often it detects motion.

Offered by [Mike](#).



Troubled Times



Snails

From the [Millennium-Arc](#)

Natural Predators. Gardener snakes, grass snakes, ground beetles, box turtles, salamanders, ducks, and larvae of lightning bugs all feed on snails.

Clay Pots. Place overturned clay flower pots near the shady side of a plant. Rest one edge on a small twig or make sure that the ground is irregular enough for the slugs and snails to crawl under the rim. They will collect there during the warmest part of the day. Remove slugs and snails regularly and drop in a bucket of soapy water.

Sand, Lime, or Ashes. Snails avoid protective borders of sand, lime, or ashes.

Tin Can. Protect young plants by encircling them with a tin can with both ends removed. Push the bottom end of the can into the soil.

Here are some snail-prevention methods, I found, during my research for a more peaceful way to get rid of the snails than **the well known beer-trap**. The negative side of the beer-trap is that the snails drown, which I think would be a horrible way to die. It would be better, if you want to kill them, to crush them under your heel. This way it's over in a second. Furthermore, a beer-trap is quite expensive, because beer isn't cheap and if it rains in the beer-trap the effect will soon be gone.

Now for some I think better ways to get rid of your snails:

The best way I found is to **get a hedgehog** to live in your garden. Of course this can only happen when you live in an area where there are hedgehogs. You'll need to make arrangements for the hedgehog in order to let it live in your garden. First of all don't keep your garden too tidy, because the hedgehog likes to have places, which he can crawl under. Put some sticks, branches with leaves and tree trunks in a corner of your garden, so there's a bit of open space in between the branches, through which the hedgehog can crawl to get into the heap, and this will have a great place where he can sleep.

Chicken meal is full of little seeds and meal/flour from ground seeds. You put this on an open space in between your plants, and the snails will come in the night to eat from it. They **like it much better than your plants**, so they won't have any room left in their bellies for your plants. If the chicken meal gets wet, it's all the better, because then it will smell more and will attract the snails. Of course you haven't gotten rid of the snails, but at least they're not eating your plants anymore. To get rid of them, you can combine this with the next point.

Provide a **living space for the snails**. Put a rhubarb leaf on the ground and the snails will crawl under it. Then you will know exactly where to search for the snails and can gather them, to bring them far away from you garden. You can also use a plank, or a piece of cloth, pieces of wood or wool, or whatever you can think of.

I haven't tried this one, but according to a magazine I read, it works very well. You must make **garlic-water**, by bruising some garlic parts and letting them soak in a bucket of water for a day. Then you spray your plants with this water and the snails won't like the taste anymore and will leave your plants alone.

I also haven't used this, but it does make some sense I think. Make it **hard for the snails to crawl** to your garden, by throwing sawdust, crunched egg-shells, needles from conifers, or something like this around your garden and plants.

Offered by [Jeroen](#).



Troubled Times



Locusts

St. Louis Post Dispatch - Wednesday, September 2, 1998

Chinese unleash chickens to help control severe outbreak of locusts.

The *Associated Press* Beijing. In northwestern China's war on its worst locust infestation in a decade, some talented chickens have emerged as heroes. A program to use 100,000 chickens to control the dreaded farm pests worked so well this year that counties around the regional capital of Urumqi have decided to train 200,000 chickens next year, the government-run Xinhua News Agency reported Tuesday. The chickens had to be trained for two months so that they would start hunting locusts at the sound of a herdsman's whistle. No details of the training regimen were released. Each chicken can cover about an acre of grassland during a summer. As an added bonus, chickens fattened on protein-rich locusts fetch a much higher price than ordinary chickens, Xinhua reported.



Troubled Times



Aphids

Use live ladybugs for aphids, as they are a super natural predator of the aphid and work beautifully. You can purchase containers of live ladybugs from a Home Depot or similar gardening supplier.

Offered by [Kathy](#).



Troubled Times



Helpful Insects

Helpful predators around the home include frogs, spiders, ladybugs, praying mantises, and dragonflies. Keeping these beneficial creatures around can help you reduce pest populations.

[Millennium-Arc](#)

We have a swamp behind us and when we moved in 10 years ago we expected mosquito city (as did everyone else) and put in a screened porch because we were sure they would be unbearable. In 10 years, I can honestly say we've had one bad mosquito day. In 10 years. That's because we have an incredible number of frogs, spiders, ladybugs, dragonflies, turtles, blue herons, ducks, geese and swans -entire ecosystem, and it stays in balance. The only thing out of balance right now is those stupid black flies that are worse this year than any other, much more heat this year than any other. We were prohibited from "cleaning" up the pond because it was deemed a migratory feeding ground prior to us moving in 1989. Best thing that ever happened.

Offered by [John](#).

Spiders

Generally speaking, arachnids are good. Most of them are carnivorous. There are a few species that are herbivorous. Properly identifying and categorizing your green spiders would take more info, but you should be able to determine their value with a little observation. Do they have a web? Does this web look like it is designed to capture insects or is it more of a warning device? Watch the little dudes themselves, do they stay in one place or are they moving about and appear to hang out near the undersides of leaves or stem joints?

Herbivorous arachnids will either collect plant material for later consumption or feed directly off of the vital juices in the plant, i.e., chiggers and spider mites. Of course the only chiggers that feed off of plants are the males! The bottom line is, leave them be unless they are over-running your plants. Nature will take its course and if they are bad, they will be eaten by something good. If they are overpopulating, kill some of them off.

Ants

Ants are the housekeepers of nature. They collect dead plant material and insects. They can be a nuisance, but by and large, they are good. Some ants are aphid farmers and these ants would be considered bad as they work in a symbiotic capacity with the aphids, they offer protection from aphid predators in exchange for aphid milk. Also some ants will collect seeds for food. This can be bad, especially if the seeds they are collecting are the ones you just planted!

Offered by [Roger](#).



Troubled Times



Substitutes

From Tennessee Valley Authority [Regional Waste Management](#)

Against pests in the home, the best offense is a good defense. The first step is to make the house -- especially the kitchen - unattractive to insects by cleaning up food spills immediately, keeping hard-to-reach areas reasonably clean, and removing clutter that can hide pests. Store foods attractive to pests, such as flour, in the refrigerator. Water attracts pests, so leaky faucets and pipes should be promptly repaired. Doors and windows should be well screened. Cloths should be regularly cleaned and aired, and properly stored in paper or cardboard boxes sealed against moths.

A number of nontoxic substances can be used to repel insects. Generally, they are highly fragrant or volatile herbs or spices. Powdered red chill pepper, peppermint, bay leaves, cloves, citrus oil, lavender, rosemary, tobacco, peppercorns, and cedar oil can repel various types of insects.

Insects can be trapped and killed without resorting to dangerous chemicals: generally a poison nontoxic to humans is mixed with a food that insects find attractive, and spread in the infested area. Examples are oatmeal (attractive) and plaster-of-Paris (poisonous), and cocoa powder and flour (attractive) and borax (poisonous). Old-fashioned flypaper -- not a hanging strip of insecticide -- is an effective trap. For specific house pests, try these solutions:

For ants

Sprinkle powdered red chill pepper, paprika, dried peppermint, or borax where the ants are entering.

For beetles

Kill manually when you see them.

For cockroaches

Mix by stirring and sifting 1 ounce TSP, 6 ounces borax, 4 ounces sugar, and 8 ounces flour. Spread on floor of infested area. Repeat after 4 days and again after 2 weeks.

For fleas

Feed pet brewer's yeast in powder mixed with food or by tablets.



Troubled Times



Alternatives

Below is a post on the Keelynet site about bee sting and insect bite relief among other things.

Offered by [Steve](#).

Fire Ants:

A friend told him about the ultimate in killing fire ant bites and relieving their sting. Of all things, anti-fungal jock itch spray. He said he believes fire ants actually inject a fungus into the skin which cause the horrible sores when bitten. A case he recounted was a guy wearing shorts and walking in the country near his house, kicked up a piece of rotting wood and hundreds of fire ants swarmed at him and up his legs inflicting extremely painful bites. He brushed all of them away as quickly as possible and ran back home. Grabbing the anti-fungal jock itch spray, he covered his legs and feet yet, the pain relief was instant and he didn't notice a bite on his thigh which later began hurting tremendously and bubbled up with pus. He sprayed it but too late, this apparent fungus had wangled its way in. It eventually healed after much misery and he has a scar to show for it at the bite. So, I don't know if this works, but I trust the guy who told me, it might be a good idea to keep a can of this anti-fungal jock itch spray in your medicine cabinet and camping bag or in the car if you are out walking.

Hornets:

A friend got by some hornets the other day and says he used a fluid that will relieve the bite in less than 5 minutes. Bonnie Bell 1006 astringent (blue bottle) will kill and cancel any venom from bee, spiders, and other venomous bites.

137 TEN-O-SIX Deep Pore Cleanser - Original Formula Bonnie Bell, Inc.

No-See-Ums:

A method to repel insects such as 'no-see-ums' is to use Bounce fabric strips (the blue foam thingies you put in the dryer), put one in each shoe and one near your neck, the fumes from the chemical is supposed to drive away biting insects. Got this from a Mexico forum.



Troubled Times



Ants

From the [Millennium-Arc](#)

Vinegar. Wash countertops, cabinets, and floor with equal parts vinegar and water to deter ant infestations.

Flour and Borax. Mix 1 cup flour and 2 cups borax in a quart jar. Punch holes in the jar lid. Sprinkle the contents around the house foundation. Keep borax out of the reach of children and pets.

Bonemeal or powdered charcoal or **lemon.** Set up barriers where ants are entering. They will generally not cross lines of bonemeal or powdered charcoal. If you can find a hole where ants are entering the house, squeeze the juice of a lemon in the hole or crack. Then slice up the lemon and put the peeling all around the entrance.

Pennyroyal, Spearmint, Southernwood, and Tansy. Growing these plants around the border of your home will deter ants and the aphids they carry.

Ants also hate **galic.** Cut a clove in half and rub over infested area. They will not cross **talcum powder** either.

Offered by [Jan.](#)



Troubled Times



Fleas

From the [Millennium-Arc](#)

Vacuum. Vacuum, remove the vacuum bag, seal it, and dispose of it immediately outside your home.

Vinegar. A ratio of 1 teaspoon vinegar to 1 quart water (per 40 pounds of pet weight) in their drinking water helps to keep your pets free of fleas and ticks.

Fennel, Rosemary, Red Cedar Shavings, Sassafras, Eucalyptus, or Pennyroyal. Spread leaves or shavings of these plants under and around the pet's bed.



Troubled Times



Moths

From the [Millennium-Arc](#)

If you can see moths, these aren't the ones to worry about. Moths that cause damage to clothes are too small to notice. It is the larvae of these moths that eat fabric.

Prevention. Store items in a clean condition; moth larvae especially like areas soiled with food stains.

Rosemary, Mint, Thyme, Cloves, and Ginseng (optional). Chicago area weavers and spinners use 1/2 pound rosemary, 1/2 pound mint, 1/4 pound thyme, 1/4 pound ginseng (optional), and 2 tablespoons cloves. Mix and put in cheesecloth bags and place in closets or drawers.

Dried Lavender or **Rosemary** and **Mint**. Make sachets of dried lavender or equal portions of rosemary and mint. Place in closets, drawers, or closed containers to mothproof garments.

Rosemary, Sage, Mint, Dried Lemon Peel, and Cinnamon. Mix handfuls of first three ingredients. Add a little lemon peel and a pinch of cinnamon. Place in muslin bags.

Molasses, Vinegar, and Yellow Container. To trap moths, mix 1 pan molasses with 2 pans vinegar and place in a yellow container to attract moths. Clean regularly.

Clothes Dryer. Kill moth eggs by running garment through a warm dryer.



Troubled Times



Roaches

From the [Millennium-Arc](#)

Prevention. Close off all gaps around pipes and electric lines where they enter the house by using cement or screening. Caulk small cracks along baseboards, walls, cupboards, and around pipes, sinks, and bathtub fixtures. Seal food tightly. Rinse food off dishes that are left overnight. Do not leave pet food out overnight.

Hedge Apples (Osage Orange). Cut hedge apples in half and place several in the basement, around in cabinets, or under the house to repel roaches.

Flour, Cocoa Powder, and Borax. Mix together 2 tablespoons flour, 4 tablespoons borax, and 1 tablespoon cocoa. Set the mixture out in dishes. **Caution: Borax is toxic if eaten.** Keep out of reach of children and pets.

Borax and Flour. Mix 1/2 cup borax and 1/4 cup flour and fill a glass jar. Punch small holes in jar lid. Sprinkle powder along baseboards and doorsills. **Caution: Borax is toxic if eaten.** This recipe may not be for you if there are young children or pets in the house.

Oatmeal, Flour, and Plaster of Paris. Mix equal parts and set in dishes. Keep out of reach of children and pets.

Baking Soda and Powdered Sugar. Mix equal parts and spread around infested area.



Troubled Times



Moles

From the [Millennium-Arc](#)

Castor Oil and Liquid Detergent. Whip together 1 tablespoon castor oil and 2 tablespoons liquid detergent in a blender until the mixture is like shaving cream. Add 6 tablespoons water and whip again. Keep this mixture out of the reach of your children and pets. Take a garden sprinkling can and fill with warm water. Add 2 tablespoons of the oil mixture and stir. Sprinkle immediately over the areas of greatest mole infestation. For best results, apply after a rain or thorough watering. If moles are drawn to your lawn because of the grubs feeding in the soil, you may be able to rid yourself of both pests by spreading milky spore disease to kill the grubs.



Troubled Times



Mice

From the [Millennium-Arc](#)

Mashed potato powder or buds. Place instant mashed potato powder or buds in strategic places with a dish of water close by. After eating the powder or buds mice will need water. This causes fatal bloating.



Troubled Times



Weevils

To keep weevils out of food cupboards scatter bay leaves on shelves and stick bay leaves inside containers under the lids, (with blue tack or the like).

Offered by [Jan](#).



Troubled Times



Lice

Olive Oil or a treatment of Mayonnaise, then Vaseline, are said to be effective against head lice.

Offered by [Leila](#).



Troubled Times



Pennyroyal

Posted on the Usenets by Stephanie.

The herb **pennyroyal** is a good insect repellent. It could either be extracted or planted around a living area to repel insects. It is especially good at repelling fleas and ticks.



Troubled Times



Lemon Grass

Source: [Journey to Forever](#)

We've found one good answer. We planted three stalks of Thai lemon grass (*Cymbopogon citratus*) we got from the local supermarket, and after a few months they'd grown into a composite clump about 15" across. We used a lot of stalks for cooking, but the clump didn't seem to get any smaller. We cut the tops every couple of weeks because it shaded out the other herbs in the herb bed (lots of green stuff for the compost), but it quickly grew back. And we found it keeps the mosquitoes away. It contains something very similar to citronella oil, it's a safe and natural insect repellent that's just as effective as the commercial chemical products, especially when it's fresh. In fact lemon grass is more effective than true citronella.

Rubbing the long, grassy leaves on the skin worked well, but the stalk worked even better. Take one stalk of fresh lemon grass (grip it near the ground and give it a sharp sideways tug to break it off from the clump), peel off the outer leaves, snap off the grass blades behind the swollen stem at the base. Bend the stem between your fingers, loosening it, then rub it vigorously between your palms so that it fractures into a kind of fibrous juicy mass, and rub this mess over all exposed skin, covering thoroughly at least once. Pleasant on the skin and effective: 98% protection at the Beach House at sundown, 100% any other time, and the effect lasts about 4-5 hours. In most places, where the mosquitoes are less fanatical, you can use less and it'll last longer.

We tried making tinctures so we could spray it, and this worked just as well.



Troubled Times



Wilderness Way

Posted on Usenets by [Glen Monaghan](#)

Regarding the recent discussion about insect repellents, Vol 2 Issue 3 of *Wilderness Way* has an article about natural pest control.

- Mentioned the usual **Vitamin B**, eating lots of greens such as lambs-quarters, **dandelion**, and **sunflower**. Eat **garlic** and **onion**, domestic and wild for "allicin and related components." However, it is noted that diet alone almost requires total immersion to be effective. Hence, make use of natural plant chemical warfare.
- Strong plant odors usually are for attracting pollinators or repelling predators, or both. Just have to find the right one(s). **Mint family**, especially American **Pennyroyal** and **Citronelle**, leaves can be crushed and rubbed on skin/clothing for some of "strongest repellents in nature." Also drink as strong tea (except don't drink Pennyroyal tea, which causes liver damage) or use as a wash.
- **Eucalyptus** good too, if available.
- **Feverfew** contains Pyrethrum compound. Dried tops are used to make a wash that is a powerful insecticide vice repellent.
- Wash from **bloodroot** roots said to be especially effective against flies and mosquitoes, but is toxic and requires care. **Goldenseal**/bear grease/elderberry root salve also said to be effective. Cooled wash of **mayapple** leaves that have been crushed and boiled. All these may stain clothing and should not be ingested.
- Mentions that ring worm (a fungus) can be treated with wash made from outer hulls of **black walnuts**. Also use it on other fungi like athlete's foot. Definitely stains.
- **Osage** orange fruit placed around an area repels pests, particularly roaches. Don't eat the fruit.
- Transplant **Sweet Flat** (*Acorus Calamus*), an aromatic cattail look-alike, around mosquito breeding grounds.

Has references to *An Illustrated Flora of the Northern United States and Canada*, Dover Pub, by Britton and Brown; *Natural Insect Repellents for Pets, People and Plants*, *The Herb Bar*, by Grainger and Moore; *Little Medicine: the Wisdom to avoid Big Medicine*, *Media Methods*, by Meuninck; and *Stalking the Good Life*, David McKay Co, by Gibbons.



Troubled Times



Insect Repellent

As posted on the Usenets by [Bill Walters](#).

In the book *Wildwood Wisdom* by E. Jaeger ('47) it says:

An excellent repellent for **mosquitoes**, **midges** and **flies** has been developed by the Canadian Entomological Branch. It consists of:

1/2 fl oz oil of thyme
1 fl oz concentrated extract of pyrethrum
2 to 3 fl oz castor oil

[Note: pyrethrum is an extract from dried flowers of chrysanthemums; *C. cinerariaefolium*, *C. coccineum*, or *C. marschallii*; and was used as an insecticide hundreds of years ago]

Another good bug dope may be made as follows:

1/2 fl oz oil of citronella
1/4 fl oz spirits of camphor
1/4 fl oz cedarwood oil
2 oz white petrolatum

[Note: I think the petrolatum is just a base to thicken the oils - I don't think it is an active ingredient]

Melt the petrolatum and add the other ingredients, stirring the mixture well. Bottle and cool by placing in a basin of cold water. This makes a whitish, non-staining cream of pleasant odor, soothing and antiseptic. It may be used on hair or body.

A third kind may be made with:

1-1/2 oz pine tar
1/2 oz oil of citronella
1/2 oz spirits of camphor
1/2 oz oil of pennyroyal
2 oz vaseline, castor oil, or petrolatum

Heat the pine tar with vaseline or petrolatum and add the other volatile ingredients.

[for] **Fleas** ... some applications of turpentine are made.

Kerosene is a remedy for **head lice** and mercuric chloride for the **crab lice**.

A drop of kerosene or alcohol, a bit of moistened tobacco, intense smoke, or hot water will make [**ticks**] back out and drop off.

Before going afield, rub the wrists, neck, ankles, and abdominal areas with kerosene. This often discourages **chiggers**. Powdered dry sulfur dusted in the clothing is also a good preventative.

[for] **Scabies** ... a colorless mite ... mix 18% sulfur with a bland soap. Apply the lather and allow to dry. About 3 applications in 4 days may be sufficient.

[for] **Bedbugs** .. Kerosene with the addition of pyrethrum is used to destroy both the adults and eggs.

The crushed stems and leaves of the beautiful watery plant, the jewelweed or

touch-me-not, was made into a poultice by the Indians and placed upon the wounds made by the stings of **bees** and **wasps**. This plant seems to have an antidote for the acid injected into the wounds by these insects. Ammonia or a solution of baking soda also relieves bites and stings.

[Note: we now know that these insects inject a protein based venom, not an acid. Enzymes such as found in meat tenderizer are very effective in reducing the pain of bee and wasp stings.]

Several sources tell of natives covered with grease as both an insulation against cold and a protection against insects.



Troubled Times



Staying Clean

Posted on the Usenets by [John Goude](#)

I have noticed and read that being clean (no sweat) helps. Some 3rd world people try to bath 3 times a day for this reason. Others cake grease and/or clay on themselves as a barrier against these critters. Bay leaves (*Umbellularia Californica*) were used to repel fleas and lice. Some use them to keep bugs out of dried food like grains and beans. But they seem to do nothing to mosquitoes and the like.



Troubled Times



Mosquitoes

From the [Millennium-Arc](#)

Prevention. Encourage natural predators such as dragonflies or praying mantises. Eliminate pools of stagnant water. Avoid wearing perfume, bright colors, flowery prints, and bright jewelry as these items attract mosquitoes.

Citronella, Tansy or Basil. Plant citronella, tansy or basil around the patio and house to repel mosquitoes.

Fish love mosquito larvae too, and to stop mosquitoes from breeding in rain water tanks a (dessert spoon only) of kerosene poured on the top of water kills the larvae.

Offered by [Jan](#).

Mosquitoes are drawn to carbon dioxide, or your breath. I think your skin emits a certain amount also. So cover exposed skin as much as possible and wear loose fitting clothes so they can't get their little beaks into ya. The itch you feel when bitten is a chemical reaction caused by the saliva they put into you to keep your blood from coagulating while they feed. They lay their eggs in ponds of water and swampy areas. Their eggs here can live through -60 below zero and even colder sometimes. So they are hardy, right up there with the cockroach. The wind and slight breezes blow them away. Birds are a good defense for them as they eat plenty of them all day long, as the swallows do here in the summer. The **EPA** offers some good advice on how to control mosquitoes.

Offered by [Clip](#).



Troubled Times



Insect Swarms

As posted on the Usenets by [Bill Walters](#).

Bradford Angier (in his most excellent book *How to Stay Alive in the Woods* ('56) - if you haven't read it you should do so) says the following:

Insects are considerably more dangerous in the wilderness than any wild animals, and in fact mosquitoes and black flies become so thick in many regions of the United States and Canada that they can actually kill a full grown man in good health who is lost or stranded without sufficient knowledge or ingenuity to protect himself.

Modern insect repellents can solve the problem more quickly and easily than anything else, short of keeping inside an enclosure whose openings are protected with fine netting. Present compounds are colorless, do not damage most clothing, and have an odor not at all disagreeable to most individuals, whereas the old pine tar products used to dirty everything and were not particularly effective to boot. These newer repellents are being so continually improved that it will be well to check with several as informed sources as you can contact as to what at the moment is best for your purpose.

Smoke, too, will help discourage the pests while one is camped. Mud plastered on exposed parts will afford protection during travel. Plugging the ears lightly with cotton will often make buzzing insects a lot more bearable. Inadequate clothing can be reinforced with some wild substance, a sheath of birchbark beneath the stocks for example adding protection for the legs. The most comfortable provision is to keep whenever possible to windy stretches such as bare ridges and wide shores.



Troubled Times



Natural Products

Just read an article that a study conducted in Ontario last year showed soybean oil to be nearly as effective as DEET. Products such as citronella oil, clove oil, peppermint oil and lemon oil were significantly less effective.

Offered by [John](#).

Word from the fishermen who make their living on the Mississippi, vanilla extract is the way to go. I tried some last night and it works. Mosquitoes and gnats do not bite. They may hover looking for a spot but will not bite.

Offered by [Pat](#).

My Dad in Texas wrote: This afternoon i was working in the garden and lots of flying bugs were buzzing and landing on my head ears, etc. so I went in and applied vanilla extract - no more bugs the rest of the afternoon. Ruth says I smelled better too.

Offered by [Mike](#).

I can remember my dad telling me if I was ever caught out in the woods to just take a handful of those pine needles that lay on the forest floor and rub them vigorously over your skin. The oil in pine needles is an insect repellent. Last year when I retreated to the woods to just get away from it all. I tried it: it works!

Offered by [Kristy](#).



Troubled Times



Lizards

During my college days, I lived off campus. The building had so many roaches it was scary. I tried everything. Bug bombs worked for about 2 days. Exterminators said that just spraying my apartment would do no any good since I was on the second floor (almost he very middle of the building) Nothing worked until I started using lizards. I kept 6 -8 lizards in my apartment at all times. It was amazing to watch them hunt down the roaches. After a while the roaches just didn't come into my apartment anymore. For four years I got a roach free apartment.

Lizards make excellent pets, but I didn't use them as pets. I know that this is cruel but once you let them go you only see them seldom, and when you do they were always on the move, behind furniture, stove, refrigerator. They are wonderful to watch. Such life and death battles on a small scale. I never saw any droppings. I know that sounds strange but I never saw any. They got all of their moisture from the roaches consumed. Occasionally when one would die I would find a completely dried out husk. No smell. No rot. Just dried out kind of like beef jerky, and much much smaller than the original.

In Louisiana we called them tree lizards, very common. They were about 4-6 inches long. Green in color. Could be found everywhere. But any Lizard will work. Stay away from the really big lizards 12 inches or more. They don't hunt really small things like roaches. The roaches can run and hide. The smaller the better.

Offered by [Pat](#).



Troubled Times



Nematodes

With the use of the roaches' natural enemy, the nematode, only the roaches are effected. Nematodes are harmless little itty bitty worm like creatures.

Offered by [Mark](#).

When I studied botany as a freshman, I remember the teacher was an expert on nematodes and always spoke of them as a plant parasite. They burrow into the roots of affected plants and greatly stymie the plant's growth. So while they may be useful against roaches, they do live off plants.

Offered by [Ed](#)



Troubled Times



Snakes

My sister kept a black snake in her basement to kill off the mice and rats. Worked extremely well! They are not poisonous, it was peaceful coexistence all the way! Rat free, I might add.

Offered by [Nancy](#).



Troubled Times



Pythons

Vietnamese Use Pythons To Curb Rats

Associated Press, 12/19/98

Demand for pythons is rising in the Mekong Delta because they have proven effective in killing and frightening off rats that are devastating crops, a Vietnamese official said Saturday. The official said the price for a month-old python has shot up to \$4 from 70 cents several months ago. An adult python can go for \$21, a large sum for poor farmers. Officials said 81 million rats have been killed so far this year by traps, poisons or other methods compared with 55 million rats for all of 1997. The central government launched an anti-rat campaign earlier this year.

But there also have been human casualties: Dozens of people have died from accidentally stepping on electric rat traps or ingesting poisons meant for rats. No statistics on Vietnam's booming rats population are available. It is believed to be in the hundreds of millions. Rat numbers have been growing in recent years due to increased availability of food and the shrinking number of predators, such as cats or snakes which have been served as meat or sold to China for traditional medicines. Officials estimate that rats are causing \$5 million to \$6 million in damage a year to crops. The government this year decided to close down restaurants that served cat. It also banned exports of cats and snakes and encouraged people to raise cats.



Troubled Times



Derivatives

Citronella would be the first natural product that comes to mind for controlling mosquitoes.

Offered by [Mark](#).

Some Earth-friendly solutions to pest control are offered by **Friedman & Sun Access Store** and include using Sassafras, Citronella, Aloe, and Chrysanthemums.

Permaguard

Insecticides formulated from food grade diatomaceous earth, pyrethrins derived from chrysanthemums, and piperonyl butoxide derived from sassafras.

Earth Friendly Pest Control Solutions

SeaBrite's system is based on catching and holding pests using humane traps or sticky compounds. Their products are effective and ingenious. The Stickem Special and Green (copper added) is used on the trunks of fruit trees to prevent insect larvae from crawling up the tree and damaging the fruit.

Insect Repellents and Bite Treatment

Natrapel's insect repellent is made from 10% citronella in a non-greasy aloe vera and water base. It works well against mosquitoes, blackflies, biting midges, chiggers, gnats and fleas.

Natural Pet and Home Care

Natural Animal makes cruelty-free herbal and mineral insect repellents for people, pets and plants. Pyrethrum, a derivative of Chrysanthemums, is a highly toxic but biodegradable substance used for killing fleas and ticks.



Troubled Times



Pyrethrums

I use Rotenone/Pyrethrums in liquid form. This is an organic insecticide that is derived from plants. It does not harm predator insects and does not kill on contact. I lightly coat the leaves of whatever is being eaten. The Rotenone spray dries and stays on the leaves and is eaten by the bugs where it then interferes with their digestion and kills them. Like I said, predators are not affected (even when they eat the effected bugs). The other advantage with Rotenone is that it is photochemically reactive which means that it breaks down quickly when exposed to sunlight. This may seem bad as it means that your spray won't last long, but you can spray in the evening to lengthen it effectiveness. The good thing about this is that you can pick and consume your veggies the following day and do not need to concern yourself with washing your harvest thoroughly. There is a slight risk with inhalation of the spray, but simply spraying downwind eliminates this problem. You have plenty of time to finish spraying before you need to worry about washing your hands as it does not penetrate the skin and become toxic to humans. As with any spray, you will need to spray again in a week to catch the next generation of bugs.

The bright side is that insects should not be such a problem in a controlled environment, i.e., indoor hydroponics. So this stuff is not something that we will need to stock a whole lot of for the future. I can foresee the need to accumulate an amount necessary for a couple of seasons just in case a few bugs get into the indoor garden. Unless your screens get torn and the little buggers are out there just waiting for their opportunity to get into your lush garden before you can fix the screens, you will eventually eliminate them in your controlled environment.

Offered by [Roger](#).

One of the seeds we on the Seed TEAM will be growing is a pyrethrums producing daisy. We got a small sample from The Arc in 1998, and with the seed harvested from these plants (God willing) I intend to distribute to the team for mass propagation next year. With this daisy, survival sites can produce their own pyrethrum protection.

Offered by [Nancy](#).



Troubled Times



Cockroaches

The Apr-May, '96 issue of *National Wildlife* magazine reported on a solution to the cockroach problem. Below, as subsequently reported by the July-Aug, '96 issue of *Spectrum* and then by *New Heaven New Earth* newsletter.

In 1990, the cockroach problem at a public school in Allegan, MI was so bad that children were carrying cockroaches home in their lunch boxes and pant cuffs. Regular insecticides were ineffective - the bugs had developed a resistance. In desperation, a local exterminating company took the radical approach of creating an artificial ecosystem inside the school that was hostile to the cockroaches. Two of the cockroach's natural enemies were introduced: nematodes and tiny wasps the size of pinheads. Neither posed a threat to humans but quickly eliminated the cockroach problem at a cost less than conventional methods. Biological pest control is now used in all Allegan's school, making it the first US school system to replace pesticides with natural methods.



Troubled Times



Mice

Remember that the Hanta virus is in a large portion of the rodent population. If you are not careful about grain storage etc, then you will most likely have these uninvited guests. They can be much more of a danger than people realize. There are parts of California Parks that are put off limits on rare occasions because the black death (bubonic plague has been found in the rodent population. I have no intent of sounding doom and gloom but these little furry creatures can have turn your success into failure if caution is not observed. I grew up on a farm and they breed incredibly fast. There is also a warning for South American travelers. Bat droppings are also dangerous but mice are more common, if you must clean up an area where mice have been it is best to make sure there is lots of air flow and if possible dampen the area to prevent air borne dust. Probably one of the most dangerous to deal with other than bats. I picked up an infection when I did some renovations on my home, yes there was evidence of mouse infestation. So caution is advised.

Offered by [Dave](#).

I lived in the rural area of New Mexico where hanta virus first erupted, and it's presence to this day is held under suspicion as to it's cause. Personally, due to my distrust of the NWO, I suspect also that it was another "invented" pathogen used, but failed, to diminish the population in the southern US. The disease, however devastating to it's human host, is usually merciful in it's timing; it kills quickly within short days affecting first the respiratory system and then all other body functions. It's a real killer and still surfaces here and there, but mostly in the southwestern US and appears that some want to put the blame on the native Americans living under conditions in an environment where mice flourish in large numbers. After all these centuries of continued arid conditions why suddenly the appearance of an unexplainable killer?

Offered by [Mike](#).



Troubled Times



Boric Acid

Boric acid works also: You sprinkle this odorless, white powder (a bit like fine sugar) where roaches might crawl in cupboards, cracks, - gets on the legs of roaches as they crawl around - they like to clean themselves and lick it off their legs - they get extremely thirsty - go for water usually outside - take on so much water as to get drowned - don't have the facility to vomit it up like higher life forms - nice of them to die outside - keeps the house clean. :)

Warning: Per the "THE MERK INDEX", the eleventh edition, published by MERK &CO., Inc, in 1989, Boric Acid, Human toxicity, "Death has occurred from 5g in infants and from 5 - 20 g in adults"

Boric acid in low percentages is used in eye washes. I have used it quite effectively for perhaps 20 years to control roaches. You can have an infested place and after putting some of this around watch the population decline to nothing after 1-3 months. "Thrifty drug" store has this and chemical supply houses. The stuff is not expensive. I have even bought it at the local 99 cent store. Sometimes it's hard to find. To be safe, hide, or make it inaccessible by kids and pets. I usually put it in cracks. Put it where the roaches will walk, but make it safe for those living in the area.

Offered by [Mike](#).

A pinch of boric acid in a 20% alcohol solution does wonders for dog's ear infections. Much cheaper than vet bought stuff and more effective.

Offered by [John](#).



Troubled Times



Carbon Dioxide

CO2 Lures Pests to Their Deaths

[EurekAlert](#), 1/15/98

A Colorado State University scientist's discovery may lead to a safer and cheaper way to prevent termites from infesting homes, where they cause an estimated \$750 million in damage in the United States annually. Entomologist Louis Bjostad found that termites' natural reliance on carbon dioxide to find food and shelter can also be used against the insects as a non-toxic alternative to current forms of pest control. Termites are naturally attracted to carbon dioxide for two reasons. Rotting wood - the termites' main source of food - releases CO₂, a process that likely guides the insects to food. Now Bjostad and his colleagues are using the discovery to create a substance that slowly releases CO₂ underground to lure termites away from houses and other structures where they cause damage. Because it occurs in abundance naturally, CO₂ offers an inexpensive, non-toxic alternative to current methods of pest control, Bjostad said. Many soil-borne insects also rely on CO₂ to locate food and shelter. If so, the gas could be used to steer other agricultural and household pests away from places they do harm.



Troubled Times



Coca Cola

My dad used to feed coca cola to rats in the barn. Just killed them without any poison.

Offered by [Leila](#).



Troubled Times



Mildew

I seem to recall someone on the list recounting problems that were documented after/during the Exodus with regard to mildew that we may re-experience due to the high rainfall and constant high humidity, post pole shift. Accordingly, I offer the following article from a local paper (stock up on bleach, soap and borax!).

Mildew might seem like a docile organism to some, but for many, it has a number of consequences. An allergic reaction to mildew spores can result in an extended hospital visit. At best, mildew is a nuisance. So, with that in mind, here's how to deal with it. But, first a bit about where the black, fuzzy stuff comes from. Mildew and mold spores are everywhere. And your home can be a primary breeding ground. Condensation and humidity are the culprits. If you live in a humid area, you are destined to have mildew. That's because humid air ends up causing damp surfaces and that is exactly where mildew settles. And where there is moisture in the air or on ceilings and walls - or even in walls and ceilings and below floors - mildew can, and usually does settle in. Mildew is everywhere just waiting for enough humidity, condensation or puddled water to start growing. Go ahead, don't dry off the walls after showering and see what grows there.

You can battle mildew by eliminating the feeding ground. Keep the house dry and mildew will not find a damp surface upon which to grow. You keep the house dry by circulating the air; by exhausting damp air in bathrooms, at the stove and in the laundry or wherever water vapors appear. In that way, condensation can't occur. Opening windows after a shower helps as well. In very humid areas a dehumidifier is a must. But, if you have a portable one, be sure to empty the drain pan. Also, don't forget the drain pans in your air conditioner and refrigerator. Swamp coolers work best in extremely arid locations. If you live in a warm humid climate and you have a swamp cooler you can count on having mildew and mold year round.

Offered by [Kraige](#).



Troubled Times



Anti-Fungal

Just watched a TV gardening show that said that *milk* is a good fungus fighter, for different kinds of plants. Apparently if you mix it 1 part milk to 9 parts of water, then spray on foliage and around plants, all kinds of fungus and mildew are killed. Who'd have thought it? No mention of whether it had to be cow's milk, but I suspect any kind will do. This is a great relief to me as I could not think of how to go about locating sulphur deposits when my stockpiles ran out.

Offered by [Cass](#).



Troubled Times



Cataclysms

I'm not certain if this post is a particularly necessary suggestion to a solution set, but possibly it may be of some benefit to somebody interested in the historical preservation of records. The past cataclysms that are known to have occurred were not recorded by witnesses who survived the event, but by the recordings of historians and scribes who lived after the event; in some cases it remains a mystery where and from whom they acquired the information. Too bad they didn't have a camera in those days. As all electronic communications will terminate upon the arrival of another pole shift any method to which we're accustomed for the preservation of archival records will cease to exist, and power will not be recoverable for years. Pen and paper perhaps will be available, and even some artists may survive to offer their skills, but as the saying goes, "a picture is worth a thousand words".

Record keeping has been discussed here before, but I don't recall the mention of the use of a Polaroid camera which is a fail-safe method to get the big picture. If one is so inclined they could stock up on film and safely store it away from the adverse elements that will be near constant for a while. Following the pole shift and after the dust settles and year 1 begins we'll resume what once was once our normal lives as best we can including the education of children. Pictures, if we recall our own early education, were enhancements to learning. Perhaps there will be the establishment of some form of government where records for historical preservation will be necessary; a picture can weave a long tale, especially the before and after sequence.

Offered by [Mike](#).

First of all, I don't know how much of the actual pole shift you may capture, as the recommendation is to stay indoors and lie down. Anyhow, for whatever record keeping is necessary, I would think electronic means better. True, we will need energy to run the PCs, and we must stock disks etc, to keep the PCs running for years after the pole shift, but Polaroid films in my experience do not last for a prolonged period of time. I'd rather go for a good digital camera and store some memory cards. As long as we have working printers, toner and paper available, digital images may be printed. I hope we will be able to share images via Packet Radio as well. I plan to keep my PCs running for many years post pole shift, and am currently stocking for that scenario. I think the usage of any records, pictures etc. will be for the benefit of the post pole shift society during the first decades only. Who knows how things will progress and what means will be available to us when our friends start dropping their high technology on post pole shift Service-to-Other sites?

Offered by [Jan](#).

I am having trouble visualizing someone taking historical camera shots while bouncing off the walls and ceiling. No one is going to be standing or holding a Polaroid camera during a magnitude 9 earth quake even while strapped down. Most, me included, will be screaming and holding on for dear life. Remember there will also be 300 to 400 mile/hr winds and a sound like a fright train coming right at you. I think a better approach if you have the resources and want a historical record is to take an existing digital camcorder or digital camera and shock mount it inside a reinforced concrete structure (small dome I am thinking). This could be on top of your dome or structure. Use 1" thick clear Lexan between the outside and the lens. Sand and dirt moving at 300 to 400 miles/hr makes a good sand blaster. You may get some recordable time before the view is fogged. You probably don't want your lens to be sand blasted. This unit would be securely shock mounted with a remote control that you would kick off as the shift starts. Or you could have the shaking automatically switch on the camera for you. It would not be hard to set up weight attached to a sick of wood that is wedged in such a way as to hold a switch open. Once the shaking starts the stick pops out and the digital camcorder start to roll until out of tape. I think a remote control switch back to where you are strapped in would

be more reasonable because you could turn it on and off when interesting events happen.

I don't think I would recommend purchasing a digital camera just to do this. Spend your money on seeds, electrical power, water purification, and shelter. If you already have a camera and have all the basics covered and you still wish to record for historical purpose then consider the above.

Offered by [Mike](#).



Troubled Times



Knowledge is Lost

In a short term or limited disaster, like after an earthquake or hurricane, recovery is helped by the stability elsewhere in the world. But in a widespread disaster, the technology gets *lost*. Folks die and fail to pass it along to the little ones, or the little ones don't understand what they have been told due to their living circumstances. The group is concerned with survival, and due to this, schooling and the ability to practice what they are learning suffers. For instance, writing. Little children could be taught written language, but unless the group had paper and were able to write to each other, this lesson would not *stick*. Then the old teacher dies, and the ones taught teach the next generation, but they are even less motivated to learn, and eventually everyone just stops.

So, in like manner the great civilizations of China just *disappeared*. After a pole shift, civilization falls back to the stone ages to some degree, with fur clothing and hunting and gathering and the like in some cases. Civilization must start anew, again, or essentially does that. Perhaps there are some little places where this or that knowledge is retained, and spreads out again among other peoples gradually. The danger is where thugs or sadistic gangs that don't care about teaching and technology take charge. Where they rule, technology dies out because of this. So, technology and methods can be retained, but a gang can come in and destroy what's there, and then it is lost.

Offered by [Nancy](#).



Troubled Times



Children



Graphic by [Michel](#).



Troubled Times



At the Knee

In education, like everything else, we need to be specific on what is taught to children. So much of formal education is just teaching children how to sit still, be polite, be quiet, etc. Rules and regulations are taught, and often religious beliefs, all under the guise of educating the child. For instance, in the US, children often learn the Pledge of Allegiance as the first thing! To truly have education stick, it is important to have the child work with what they have been taught right away. Learn and then do, and then it sticks and is not forgotten. During the Aftertime, when the adult may have little time to spare, children should be taught concepts as they share in the maintenance work on the survival systems.

- If the child helps repair the water wheels, they can learn at the knee of an adult how water wants to fall and how to utilize this. Concepts like the siphon can be explained and demonstrated.
- Mechanical concepts can be taught while the spinning wheel or door knob is being repaired.
- If one wanted to teach a child simple math, say the group has 100 people and there is a bushel of berries. To give all an equal amount, count the berries and divide.
- If a type of Internet is functioning, this will help encourage children to learn and use different languages.

In other words, as the children spread out and help with the chores, the adults can take time out to explain things to them as they go along. The child learns and while they do their chores.

Offered by [Nancy](#).



Troubled Times



Home School

I can speak from experience that the existing [Home School](#) systems are good. My parents enrolled me in home school in the 6th grade and I stayed with it through high school. The grades 6th to 8th were from a company called **Calvert School**. This school offers K-8 grades and it is a complete system. You get all the books and manuals of what to study on a daily basis. The manuals are designed for a parent/teacher to use to instruct the child. Once in high school I went with a school called **American School**. They offer the 4 high school years. It is very similar to the other one but the manuals are more designed for self education. Both have periodic tests to take and send to the school for grading. Obviously this part won't be available for much longer, but the prices are very reasonable. As a testimony to the quality of the education, I finished high school a year early at the age of 17. I then enrolled in ITT Technical Institute in a two year degree program in electronics and I graduated with a 4.0 GPA. I was one of only two people in my graduating class with a 4.0 GPA.

Offered by [Michael](#).



Troubled Times



One-on-One

Though I am not an educator, I have worked professionally with children for two decades. Thus, I think I know a little bit about how they think and learn. Each child learns in different ways: some learn by doing, some by listening. Thus, teaching the post-pole-shift child will be more of a one-on-one technique (much like the mixed grade classrooms of 100 years ago). After the pole shift, I suggest we observe each child and note how he/she learns. Teach each child accordingly at his/her own pace. Some will learn biology, for example, by interacting with their environment, and some will learn it by reading.

Offered by [Lyn](#).

Children need one-on-one teaching, to a certain extent, something which nowadays isn't part of the educational system which in it's own way is a mechanized production plant producing poorly educated children not at all ready for life, only ready, to a certain extent, for taking part in the capitalistic society. Be glad a pole shift is coming, for in the Aftertime, might you be part of a community that can sustain procreation. One-on-one will be a possibility again as there won't be too many children around.

Offered by [Michel](#).

From what I gathered, today's educational convention of teaching all the kids the same things at the same time, is increasingly being blamed (at least by some researchers) for being one of the causes of alienation and dyslexia among the young. The reason for its continued use despite the obviously apparent drawbacks, is, as you're probably well aware, a financial one. We simply don't have enough money to hire yet more heavily underpaid and under privileged teachers, in order to decrease the number of pupils in each class. So, what do we do about it? Well, a possible suggestion is offered by the behaviorist B. F. Skinner, who presents a very believable and (I think) beautiful vision of a futuristic utopian commune in his book *Walden Two*.

He basically says that the children's learning process should be divided into two parts: the part that all do together, and the important part, which each kid does on his own or in very small groups. All the kids are taught together the very basics of arithmetic, geometry, science, and language, and then each kid becomes a sort of an apprentice with a group of adults who are busy at a certain task anyway, and learns from them while they work and he helps them. In this way, everyone benefits, as it has been proven (in my opinion, at least), that children learn the most by experience and trust. Children need to know the basics of everything, and from then on each is drawn naturally to what his knack is in life.

Offered by [Shaul](#).



Troubled Times



Environment

I visited the Waldorf school. This is a philosophy based on Rudolf Steiner's thoughts. I don't know a whole lot about it. However, what stood out to me as something to strive for follows.

1. The teacher's stay with their students from first grade through 8th grade. They are very loving and patient with their children.
2. They teach through story telling (as one method).
3. They encourage the children to create on their own. Individually yields to future possibilities of affecting your world, of making a difference.
4. Competition is not the way to go. Again, I think when a group of people are striving to make an improvement and they are not competing they are freer to look at things from many different angles than one another and thus come to great results. When you compete you tend to say "Hey, that guy has a great start I'm going to take it all the way." and then forget about the different angles one could look at the issue from and also forget about sharing your next ideas and brainstorming together.
5. The most exciting thing I noticed at The Waldorf school - children are taught at a very young age how to *do* things and to stick with it until the end. The first graders cannot read but they can play many songs on the recorder, they can knit, they can carve wood and they can stick with a project over long periods of time - months. They are learning life. Most of the important things we do don't get done in a day. We have to be patient.

My personal belief, as a parent and a teacher, is that the basics will come if the child has a rich environment and has the capacity to learn. Parents must read with their children, and to themselves, although the Waldorf school disagrees at least not before their somewhere between 6 and 8 years old. (I am going back and I will ask about this.) I think educators need to be willing to take the children's leads. Of course the educator must supply an environment that calls for curiosity and exploration. People are naturally curious. We need to be patient and ready to guide, tell, play whatever the need of the child is.

My goal is to live with my children. Live life. They will learn to work together, all the skills (academic and non-academic) needed in life and they will be curious about things and learn things that I don't know. If we experience life with our children we can guide them to mentors and to objects (books, manipulatives, environment) that will broaden their knowledge and skills in any area.

Offered by [Karen](#).



Troubled Times



Devoting Time

The key to producing successful children is actually being physically near them much of the time, to give them the necessary love and attention that they need, when they need it. One of the really bad things about our society today, I think, is the fact that we have to spend most of our time away from home, making a living, and so don't have extended periods of time to spend with the family and kids. This has never been as true for mankind as it is nowadays. In the past (I'm not talking about the Middle Ages, but about relatively enlightened times, like in ancient Greece) - people from what we call today the middle class used to work less hours (there was less to buy), and had more free time to devote to their children.

The same is true of the tribal societies, such as that of the American Indian, which is the kind of society that we envision we'll have right after the pole shift. The women never wander far from the village, working in the fields or at home with the kids. The hunter-warrior males may go further afield and be absent for several days or weeks, but then they're home doing nothing for the next month. I'm not saying that this is exactly what we need or what we'll be doing, but the basic idea is that we'll be home with the children a lot more than now.

Offered by [Shaul](#).

I heard today on the radio that in California this year, to fund a child's education for a year cost \$4,500 while housing a criminal in the penal system costs \$35,000. I don't know the solution to this problem, but I know that it is the dedication of the devoted teacher, often acting with inspiration and at odds with the system who has influenced my life and stayed with me all the years. Perhaps the personal aspect is more important than the curriculum, at least where the curriculum is designed to make us better cogs in the societal wheel. I agree with the idea that knowledge of basics must be preserved and taught, and hopefully by those with compassion, patience, insight and the ability to instill the highest expectations for our young. Only then can we advance as a species, not with the aim of fueling the machine but to make quantum leaps forward in personal and communal development, higher knowledge and enlightenment.

Offered by [Craig](#).



Troubled Times



Books on Basics

Does anyone know the best (most time efficient) way to teach the basic of education - reading, writing, and arithmetic? I think we need a recommendation on what simple books and materials to have on hand after the pole shift. With no public schools, I think the older among us will turn to teaching the younger generation in small home groups. I think we will need books and materials to orient us into the proper gradient teaching approach. Thus I am looking for recommendations on what to stock up on for the students and the teachers.

Offered by [Mike](#).

There are an enormous number of books available that tell you how to teach to varying groups of children, kindergarten through 12th grade. Different approaches are necessary at different age levels. It's hard to recommend specific "how to teach" books because what you get out of them will depend on how you were taught, how you learn, how you communicate as well as your own prejudices about others(which we all have). I learned it this way so you can too, etc. We will have math, English, history, biology, chemistry and a great number of "how to" books since post earth change, practicality will be the order of the day vs. theory.

Offered by [John](#).

So I would say, pack some books that teach children arithmetic and language up to about 4th grade. After that, they will become attached to a specialist in a certain field, and that person will know enough of his field to teach somebody young, and maybe even have the appropriate higher textbooks himself. Other than those books, some other basic texts should comprise an initial educational library - a concise history of the world, for example, is a must (else we'll forget). Also basic college or high-school texts on all the sciences - for the kids that will become interested in those fields. Some texts on mechanics, electricity, computer logic, geography (from before the shift, of course), geology and meteorology. The list of books can become very long, but I would say that about 10 - 20 volumes should cover the most.

Offered by [Shaul](#).

We shouldn't make it overly complex or too many books. Beyond the 4th grade level I think the specialist apprenticeship described above could take over. During all education we will need to balance time spent with theory and application leading to eventual apprenticeship. I think all children will need to work after the pole shift. It should be a volunteered thing, not enforced. Young kids naturally want to help. We just need to allow them to win at it. This is not a bad thing as we are lead to believe today. The child who works feels valuable and able to contribute - grows up real fast spiritually with responsibility for others. The older among us could volunteer to teach and at the same time establish a wisdom with age concept back into the culture.

Offered by [Mike](#).



Troubled Times



Self Teaching

I believe looking into [Montessori](#) methods might be valuable in teaching kids after the PS. The methods devised by Montessori are developmentally appropriate and do a great job of teaching children how to become responsible at a young age by allowing them to do as much for themselves as they want, and similarly teaching cooperation by allowing the children to work in small groups together.

Offered by [Ted](#).

Skinner was heavily influenced by Montessori, though he was not a strict Montessori adherent, as Montessori wrote from a Catholic perspective, while Skinner lived in the sober age of post-atheism and denial of religious dogma of any kind. The Montessori doctrine, while being basically very good, has to be reviewed in order to fit better in the world today, and so is Skinner's probably, but they certainly both had the right idea. Some schools use [Both Techniques](#) and there is information on the Internet about operant conditioning and behaviorism in general.

In addition, consider this thought: it has been proposed, that all human knowledge, whether it was written or even only conceived as an idea in someone's mind, is encoded into each human brain, as part of the *collective subconscious* of the human race as a whole. This idea has been first proposed by Carl Jung and others in the 20's, and has gathered increasing acceptance today, so that people like the New Age crowd pretty much take it for granted. This means that every person, at any given time, has the ability to willfully tap into those vast knowledge resources, that are just waiting in the brain anyway to be used.

Certain techniques have always been available to glimpse at least part of that huge store of data. Some schools of thought claim that they can teach you how to do it. Gurdjieff and Ouspensky, for instance, wrote about methods to help you "remember". There are also many recorded instances of uneducated people suddenly reading books out of their mind, or people playing a famous music piece without any musical training, and so on. There have been many explanations for these phenomena, such as demon-possession, walk-in, contactee, etc. All these could be true, but I prefer to think that it's just us tapping into our unconscious store of the entire sum of human knowledge.

Our human selves will change greatly after the pole shift, perhaps gaining the ability to tap into that store of knowledge all the time. I think so. Thus, the traditional system of education as we know it today will have to be done away with, and a whole new, currently inconceivable approach, constructed. I believe that we will know what to do when the time comes. Nonetheless, in the interim conditions immediately after the shift, while we're still clinging to our 3d Density selves, we will probably need to have some sort of books with which to at least start the kids on the way to the kind of education we know. Somebody got us thinking when we were young, and now it's our duty to do the same for the next generation.

Offered by [Shaul](#).



[An urgent message to our readers](#)

What is Unschooling?

by Earl Stevens

"What we want to see is the child in pursuit of knowledge,
not knowledge in pursuit of the child."

- George Bernard Shaw

It is very satisfying for parents to see their children in pursuit of knowledge. It is natural and healthy for the children, and in the first few years of life, the pursuit goes on during every waking hour. But after a few short years, most kids go to school. The schools also want to see children in pursuit of knowledge, but the schools want them to pursue mainly the *school's* knowledge and devote twelve years of life to doing so.

In his acceptance speech for the New York City Teacher of the Year award (1990), John Gatto said, "Schools were designed by Horace Mann ... and others to be instruments of the scientific management of a mass population." In the interests of managing each generation of children, the public school curriculum has become a hopelessly flawed attempt to define education and to find a way of delivering that definition to vast numbers of children.

The traditional curriculum is based on the assumption that children must be pursued by knowledge because they will never pursue it themselves. It was no doubt noticed that, when given a choice, most children prefer not to do school work. Since, in a school, knowledge is *defined as schoolwork*, it is easy for educators to conclude that children don't like to acquire knowledge. Thus schooling came to be a method of controlling children and forcing them to do whatever educators decided was beneficial for them. Most children don't like textbooks, workbooks, quizzes, rote memorization, subject schedules, and lengthy periods of physical inactivity. One can discover this - even with polite and cooperative children - by asking them if they would like to add more time to their daily schedule. I feel certain that most will decline the offer.

The work of a schoolteacher is not the same as that of a homeschooling parent. In most schools, a teacher is hired to deliver a ready-made, standardized, year-long curriculum to 25 or more age-segregated children who are confined in a building all day. The teacher must use a standard curriculum - not because it is the best approach for encouraging an individual child to learn the things that need to be known - but because it is a convenient way to handle and track large numbers of children. The school curriculum is understandable only in the context of bringing administrative order out of daily chaos, of giving direction to frustrated children and unpredictable teachers. It is a system that staggers ever onward but never upward, and every morning we read about the results in our newspapers.

Children pursue life, and in doing so, pursue knowledge.

But despite the differences between the school environment and the home, many parents begin homeschooling under the impression that it can be pursued only by following some variation of the traditional public school curriculum in the home. Preoccupied with the idea of "equivalent education", state and local education officials assume that we must share their educational goals and that we homeschool simply because we don't want our children to be inside their buildings. Textbook and curriculum publishing companies go to great lengths to assure us that we must buy their products if we expect our children to be properly educated. As if this were not enough, there are national, state, and local support organizations that have practically adopted the use of the traditional curriculum and the school-in-the-home image of homeschooling as a de facto membership requirement. In the midst of all this, it can be difficult for a new homeschooling family to think that an alternative approach is possible.

One alternative approach is "unschooling", also known as "natural learning", "experience-based learning", or "independent learning". Several weeks ago, when our homeschooling support group announced a gathering to discuss

unschooling, we thought a dozen or so people might attend, but more than 100 adults and children showed up. For three hours, parents and some of the children took turns talking about their homeschooling experiences and about unschooling. Many people said afterward that they left the meeting feeling reinforced and exhilarated - not because anybody told them what to do or gave them a magic formula - but because they grew more secure in making these decisions for themselves. Sharing ideas about this topic left them feeling empowered.

Before I talk about what I think unschooling is, I must talk about what it isn't. Unschooling isn't a recipe, and therefore it can't be explained in recipe terms. It is impossible to give unschooling directions for people to follow so that it can be tried for a week or so to see if it works. Unschooling isn't a method, it is a way of looking at children and at life. It is based on trust that parents and children will find the paths that work best for them - without depending on educational institutions, publishing companies, or experts to tell them what to do.

Unschooling does not mean that parents can never teach anything to their children, or that children should learn about life entirely on their own without the help and guidance of their parents. Unschooling does not mean that parents give up active participation in the education and development of their children and simply hope that something good will happen. Finally, since many unschooling families have definite plans for college, unschooling does not even mean that children will never take a course in any kind of a school.

Then what is unschooling? I can't speak for every person who uses the term, but I can talk about my own experiences. Our son has never had an academic lesson, has never been told to read or to learn mathematics, science, or history. Nobody has told him about phonics. He has never taken a test or been asked to study or memorize anything. When people ask, "What do you do?" My answer is that we follow our interests - and our interests inevitably lead to science, literature, history, mathematics, music - all the things that have interested people before anybody thought of them as "subjects".

A large component of unschooling is grounded in doing real things, not because we hope they will be good for us, but because they are intrinsically fascinating. There is an energy that comes from this that you can't buy with a curriculum. Children do real things all day long, and in a trusting and supportive home environment, "doing real things" invariably brings about healthy mental development and valuable knowledge. It is natural for children to read, write, play with numbers, learn about society, find out about the past, think, wonder and do all those things that society so unsuccessfully attempts to force upon them in the context of schooling.

While few of us get out of bed in the morning in the mood for a "learning experience", I hope that all of us get up feeling in the mood for life. Children always do so - unless they are ill or life has been made overly stressful or confusing for them. Sometimes the problem for the parent is that it can be difficult to determine if anything important is actually going on. It is a little like watching a garden grow. No matter how closely we examine the garden, it is difficult to verify that anything is happening at that particular moment. But as the season progresses, we can see that much has happened, quietly and naturally. Children pursue life, and in doing so, pursue knowledge. They need adults to trust in the inevitability of this very natural process, and to offer what assistance they can.

Parents come to our unschooling discussions with many questions about fulfilling state requirements. They ask: "How do unschoolers explain themselves to the state when they fill out the paperwork every year?", "If you don't use a curriculum, what do you say?" and "What about required record-keeping?" To my knowledge, unschoolers have had no problems with our state department of education over matters of this kind. This is a time when even many public school educators are moving away from the traditional curriculum, and are seeking alternatives to fragmented learning and drudgery.

When I fill out the paperwork required for homeschooling in our state, I briefly describe, in the space provided, what we are currently doing, and the general intent of what we plan to do for the coming year. I don't include long lists of books or describe any of the step-by-step skills associated with a curriculum. For example, under English/Language Arts, I mentioned that our son's favorite "subject" is the English language. I said a few words about our family library. I mentioned that our son reads a great deal and uses our computer for whatever writing he happens to do. I concluded that, "Since he already does so well on his own, we have decided not to introduce language skills as a subject to be studied. It seems to make more sense for us to leave him to his own continuing success."

Unschooling is a unique opportunity for each family to do whatever makes sense for the growth and development of their children. If we have a reason for using a curriculum and traditional school materials, we are free to use them. They are not a universally necessary or required component of unschooling, either educationally or legally.

Allowing curriculums, textbooks, and tests to be the defining, driving force behind the education of a child is a hindrance in the home as much as in the school - not only because it interferes with learning, but because it interferes with trust. As I have mentioned, even educators are beginning to question the pre-planned, year-long curriculum as an out-dated,

19th century educational system. There is no reason that families should be less flexible and innovative than schools.

Anne Sullivan, Helen Keller's mentor and friend, said:

I am beginning to suspect all elaborate and special systems of education. They seem to me to be built upon the supposition that every child is a kind of idiot who must be taught to think. Whereas if the child is left to himself, he will think more and better, if less "showily". Let him come and go freely, let him touch real things and combine his impressions for himself... Teaching fills the mind with artificial associations that must be got rid of before the child can develop independent ideas out of actual experiences.

Unschooling provides a unique opportunity to step away from systems and methods, and to develop independent ideas out of actual experiences, where the child is truly in pursuit of knowledge, not the other way around.

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The collage consists of six rectangular images arranged in a 2x3 grid. The top-left image shows a woman carrying a child in a black baby carrier, pointing towards the right. The top-right image features the 'bobai freedom together' logo with a green circular icon and the website 'bobafamily.com'. The middle-left image is a dark banner for 'Natural Parenting Group' with the text 'Join our Attachment Parenting and Natural Family Living Community!'. The middle-right image shows a woman holding a book titled 'STATUS QUO' and a plug, with the text 'UNPLUGGED MAM' and 'unpluggedmom.com'. The bottom-left image has a purple background with a white heart icon and the text 'The Unschooler's Emporium Everything Unschooling Unique Items by Unschoolers'. The bottom-right image shows two women in traditional colorful clothing, with the text 'NCP Shop Unique items for babies, children, and parents'.

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Children reflect the treatment they receive.

Troubled Times



By Heart

I believe knowledge preservation should be planned based upon the old mechanisms. Learn by heart, tell your children, let your children or grandchildren write it down when paper is reinvented or our friends arrive. Be selective. Of all the so-called knowledge we are exposed to every day, what is real knowledge, and what is everyday soap? Should we prioritize modern arts and rock music over history? The human brain is the best storage device ever invented. True, it may be slow, and limited in raw capacity. However, associations, the broad picture, interpretations etc. can only be stored in the human brain. Computers have no clue. Once you start training your brain, it is absolutely incredible what it can store. Learn to fetch by association instead of storing facts only.

Offered by [Jan](#).



Troubled Times



Preserved

In thinking about the preservation of books and paper, I found my way to this web site that is pretty much dedicated to such things. They have a wide variety of products to protect photos, books, papers, journals, etc. Has anyone considered [lamination](#) of paper? It is really quite cheap and most all printing shops offer this service. If not for large amounts of info, how about laminating lists of instructions, checklists for setting up camps, etc? At least this way the info would be safe from water damage and from tearing and stuff like that.

Offered by [Michael](#).

Instead of lamination another way might be to use [mylar sheets](#). When I took a cartography course we made maps on letter size opaque mylar. If the geography department sold this stuff then I am sure that it can be found somewhere. Just run it through a photocopier like paper. Metal plates like stainless steel one would think would be a really good medium to record data but history has proved that metal - regardless of its cultural, intellectual importance - has always invariably been recycled into cooking pots, swords, plows etc.

Here is one way you can keep written information for a really long time, and it is proven to keep information for 1000's of years, through direct exposure to hostile environments that would render paper or CD-ROM's unusable in about a year. Go out and get some clay, make a tile of a uniform thickness -about 1/4 inch would probably be OK-and with a stylus write the information that you want to keep. Once the clay has dried out in the air, fire it. You all may laugh but if you look at nearly all the Mesopotamian writings we have today, Epic of Gilgamesh, The enuma elish, which chronicles the myths of the creation of the world of the Summarians/Akadians and a host of others all came to use on [clay tablets](#) from the ruins of libraries. It is harder to keep lots of data in a compact way, but once fired you would have to grind them up into a fine powder to completely destroy the information on them.

Offered by [Gus](#).

Tiles are a possible medium for storing information for the after- pole-shift time. The main problem would be capacity and manual entering of data, hence it would only be a viable solution for very limited, very critical information. Lamination of paper would be higher capacity but lower life-span. All laminated paper I have seen has disintegrated over time, even though it can take a lot more than non-laminated paper. Possibly a good solution for protecting medium size paper documents. Check-lists etc. would be perfect.

Offered by [Jan](#).



Troubled Times



Many Forms

I am a writer. And I, for one, (if I survive) will not allow the art of writing to die. I think it is most important to preserve records and archives in whatever form we can, and maybe in several forms, just to be safe. Paper can easily be made from [birch bark](#). As long as the paper is in a plastic sleeve of some kind, it is fairly easy to preserve, though it does deteriorate after time. [CD-ROM](#) will be most likely to survive all the changes. (Has anyone made a battery-operated CD drive?)

There are also [cassette recordings](#) of information and music. I keep many of my family records on mini-cassettes, because there are times that it is just easier to speak into a tape than to sit down and try to write things out. Also, the inflections and emotions of the moment are preserved this way. Another form of preservation, I think, is still the old [vinyl records](#), which would be good, as wind up record players would be the most simple technology to duplicate after the pole shift. The government still keeps archives on [microfiche](#), which can also be viewed with simple technology (magnification).

Offered by [Shekhina](#).

As far as preserving books, I think [microfiche](#) would be our best bet. Visible with a magnifying glass, these small sheets of plastic film are compact, and do not rely on technology.

Offered by [Thor](#).



Troubled Times



Paper and Ink

I think making paper is more important in recording records than CDs. True CD's can hold vast amounts of information but how many CD's are you going to preserve and what if your laptop gets destroyed during all the chaos. If one knows how to make paper then one doesn't have to worry about problems with one's laptop. I think it's important to preserve technology but I think it's more important to get back to the basics that way you could be totally self sufficient.

Offered by [Morgan](#).

After the pole shift. it's going to be awfully damp. Constant rain, mud and stuff underfoot. Paper will be difficult to store. Of course we have to make sure we have lots and lots of parts to fix the computers and CD-ROM drives. Not only that, but even if there is a good way to store paper - which there probably is - paper takes up an awful lot of room. Also, if we get rid of the paper, we don't have to worry about making ink, having lots of pens, etc. Now, having said that, it occurs to me that we do not want to lose the art of writing either. I know you can write on computer screens. Is there something else, like a slate, that can be written on, and then cleared, and written on again? Just some ideas to be kicked around. Sorry if this sounds stupid; but I communicate always either in Braille, or by email, or on tape; so I don't know what's out there with regard to writing.

Offered by [Helena](#).



Troubled Times



CD-ROM

I'm not so sure making ink is that great of a problem. You can make all the ink in the world, but you still need something to write on. And even if you construct something similar to paper, you need a dry, protected place to store it. A much better solution (in my opinion) is to protect a laptop computer for use. If one was equipped with a windmill or bicycle generator, the laptop batteries could be recharged easily and the computer could be used even in the event there was a temporary generator or windmill problem. Compact discs would be the ideal storage medium, as they are not affected by water and dampness (unless taken to the extreme). Each CD has the storage capacity of roughly 600 - 625 Megabytes. That's a lot of text and records.

Offered by [Thor](#).

CD's themselves are very durable, being optical, not magnetic, media. Dedicated game computers (Nintendo, etc.) are all electronic and should also be quite durable. Remember that computers contain hard drives and floppy drives, which *are* magnetic, and thus subject to extreme electromagnetic disturbances. CD's containing Windows 95 and the application software should also be preserved so that damaged hard drives can have the software reinstalled. Also, your idea for keeping several computers and CD-ROM drives, is excellent. As the drives become faster, the old slower drives closeout sell for \$30-\$50 apiece. Same with computers. The most effective way to get spare parts is to have multiple computers/drives which are identical; that way, you can cannibalize. And as far as spare parts, few computer technicians actually *repair* anything; they find what module is defective, and swap out the entire module. (Add soldering irons and solder to your repair kits if you are going to attempt to actually repair technology).

Offered by [George](#).



Troubled Times



HD-Rosetta

A few weeks back, there was a discussion about long term media storage, and the problems with digital media only lasting a few years, and then becoming unstable. The *New York Times* decided to do a time capsule, but didn't want it dug up for 1000, (yes, that's one thousand!) years! They had a fascinating article in their magazine on how they planned to accomplish this grand task, and all the complications involved. One of the problems they came across was the CD ROM digital disintegration problem. Their experts decided to revert to analog storage for the media they wanted to put in their capsule.

The company that helped them with media storage is [Norsam Technologies](#). Their solution is something they call the HD-ROSETTA Disc. Using Norsams Ion beam system, images and full pages of text are etched into a metal disc. The durability tests show that the data remains on the disc at temps up to 300 Degrees C. Also, it withstood saltwater testing. The disc Data can be "eye readable" with a Lupe or magnifying glass, or you can put as many as 100,000 images on one disc, and read it with a student's microscope. This reminded me of the old style Microfiche, but on metal storage discs. They don't say what the cost is but I'm trying to determine this.

Offered by [Brent](#).



Troubled Times



Floppies

From personal experience I know that floppies are not the medium to be used in the long run. Over time they do degenerate, especially when they are stored badly, like in a damp and dusty environment. I once lent out my old Amiga500 game computer to my girlfriend's little brother. In their house was a bucket filled with water and some days after he had the computer his mother moved the bucket of water and it dropped empty onto the open box of floppies (over 200). They spend some time they told me cleaning it up with cloths, floppy per floppy per floppy. When I got the computer home again most of the floppies were 'kaput'! The data had been damaged sadly enough. This was due to a mixture of water within the floppies and the method of drying the floppies one at a time. Because they used a cloth and rough method of moving the metal plate protection they must have touched and smeared out the water, rubbing it into the disk within the plastic. And floppies are easily influenced by magnetic forces.

Offered by [Michel](#).

Yes, hard cased floppy disks are liquid repellent, but not resistant. If any liquid would have managed to seep into the casing and dry on the magnetic film held inside, the result may not be noticed right away, but one by one sectors on the disk would go bad and eventually the disk tree (the place on a disk that tells the computer what info is stored where on the disk) would develop a bad sector. Without this info, the disk is useless.

Offered by [Thor](#).



Troubled Times



Hard Drives

I know hard drives are very delicate if jostled internally. I also know there is a way to "park" a hard drive to prevent it from damaging itself during travel, etc.

Offered by [Thor](#).

The old hard drives needed to be parked, but I think all newer hard drives park themselves automagically when not in use. I'm not 100% sure though. I've carried my computers around in the car a lot with no problem, so I wouldn't worry about shaking too much. As long as it doesn't slam into anything, vibration probably won't do much.

Offered by [Joe](#).

Only fairly old hard drives have this problem. 'Parking' the heads over a non-data area protects the data recorded elsewhere on the drive. Most systems which need a head-parking utility program have it. Many hard drives automatically park the heads when powered down. Hard drives manufactured in the last few years are *very* much more rugged, particularly those in laptops. Most can survive being dropped even while operating. They are less prone to damage while powered off, in any case.

Offered by [George](#).



Troubled Times



Slates

There are items on the market that can be written on again and again. These are 'slates', I guess that word is right, that consist of a layer of transparent film, under this film there is a layer of magnetic dust or something but I don't know the exact make up of the materials used. Then one has a pen to go with that with which one can draw a line over the magnetic part of the board which will be black. When one wishes to erase the drawing/writing/sketch there is a little handle on the side connected to an elongated magnet under the magnetic film. When you move this handle from right to left then all the magnetic particles get evened out and the screen is blank again. A year ago I saw this on TV too, but this time as a tool to be used in offices as a substitute for the 'flip over', this in order to spare paper.

Offered by [Michel](#).

What you are describing sounds like the 'Etch a Sketch'. If you have ever tried it, actually writing on it is very difficult. There is a simple writing device which is a transparent gray film over a slick, black cardboard background. You write or draw on it with a blunt stylus. This causes the film to stick to the background, making a line. When you want to reuse it, you simply pull up one end of the sheet and it is 'erased'. For temporary drawing or writing, it would be hard to beat the simplicity of chalk and slate! Also available in multiple colors! Paper is still important, as it would be the lowest-tech medium which would have any chance of surviving for a long period of time. Writing should not be allowed to die out!

Offered by [George](#).

I know of the slates you speak of. They retail for about 15.00 - 20.00 US dollars in any department or toy store.

Offered by [Thor](#).



Troubled Times



Homemade Paper

From the *Homemade Paper* site

Bring the paper chase home to roost. Making your own paper is fun, easy, and a delightful project for the weekends. Note that this tutorial won't teach you to make printer-quality office paper (although you can recycle used office paper to make your own new paper) - it'll teach you to create pages of personalized pulp upon which to pen your powerful sentiments. Why? Homemade paper lends a distinctive personal touch to any project from greeting cards to a personal note or letter. And it's much easier than it sounds once you draw off a page or two.

Historically, the best papers in Europe were first made from a processed sheep, goat, or calf skin. Other parts of the world used woven vegetable fibers pounded together: the Egyptians used papyrus, a long coarse grass; and the cultures of China and Japan are known even today for producing very fine rice papers, made from the rice leaves or shoots. When the development of the printing press created a demand for paper, Europeans used old rags and recycled clothing, and eventually wood pulp from trees. Most paper products today, from newspapers to packing boxes, is made from wood pulp, a poor-quality fiber requiring glues and bleaches to be added. These additives, called sizing, account for the yellowing effect you see in old newspaper clippings. The quality of paper is largely based on the fibers used. Look around your home for attractive scraps you've been saving. Many different colors can be mixed, but bear in mind what the paper will be used for. Keep the colors relatively uniform and light in hue if it'll be used for writing. A small amount of glossy, bright paper can be added to otherwise bland fibers to give a speckled effect. Use scrap paper which contains a minimum of writing and printed ink on it. These could tint the paper unevenly, or worse, an unintended memo from the past could find its way back to the surface.



Troubled Times



Find the Fiber

From the *Homemade Paper* site

Find the fibers. The paper that you'll make is essentially a mesh of plant fibers pressed together to make a strong flat surface. The ingredients you choose will determine the look and quality of the paper. Gather enough fiber to create a few sheets of paper. This need only be a cupful (1/4 liter) of paper scraps, loosely packed, per standard sheet. It's good to have extra raw material on hand in order to experiment with thickness and quality. Expect to lose the equivalent of a page or two of material in the process. Use old paper that has interesting texture. Tear a piece of it-- does it rip cleanly or leave a jagged edge? The harder to tear, the longer the fibers are in the paper. Long fibers create strong paper. Short fibers create smooth texture. Interesting yet durable paper balances these two ingredients.

Optional

Lint from clothes-dryer lint trap is ideal paper fodder. Small flowers and leaves, bits of foil (from leftover holiday paper and champagne bottles) and colored threads also add a special touch. Grab anything you can shred and that floats. But use these specialty items sparingly, otherwise the page won't hold together. Let 'er rip! Once you've gathered enough scraps to make paper, tear them up into pieces about 1 inch (2 cm) square. If you're using different kinds of paper it's a good idea to separate them into different piles. Thread, metallic foils, and other small decorations should be cut to length using a pair of scissors. Be creative--vary the sizes from 1/8 inch to two inches (30mm to two cm). A few long threads are interesting; too many and it looks like spaghetti. Foils and bright colors are better in small pieces less than 1/4 inch (5mm) across. Set any of these decorative fibers aside for now. Don't shred these in the blender.



Troubled Times



Sort the Scraps

From the *Homemade Paper* site

Sort your scraps by fiber length and color, and identify the base color: the pile of scraps that most resembles the color you want the paper to be. Cut the screen Ordinary window screen works great for making paper. It should be free of dents and curves, otherwise the paper will come out in exactly the same shape. Rust-free wire screen works the best. Synthetic screen should be used with caution; it's less rigid, which can cause problems later in the process. Synthetic screen may be serviceable if used with a frame, as described below. Cut the screen the same size as the sheets you want to make, slightly large if you want to make a frame for the screen. If you intend on making lots of paper the same size you should consider building a frame around your screen. In this case allow two extra inches in each direction before cutting the screen. For example, if you want to make a frame for 8 by 10 inch paper, then cut a screen 10 by 12 inches large.

Optional

Build a frame using lengths of wood 1/2 inch wide by one inch thick, or one inch square. You don't have to get fancy, just be sure that the inside of the frame is the same size as the paper you want to make, the corners are square, and not too wobbly. Set your screen down on top of the frame evenly and nail or staple it in place. You want the screen attached snugly to the frame, without any big gaps between the wood and the screen. Blend it to bits And now a dash of paper theory--in order to make new paper from old paper, you've got to change it to a mushier state. Blenders accomplish this nicely, and the result is the pulp. Fill a blender about 3/4 full with clean water. Take a handful of scraps from your base color pile and put them into the blender. Cover the top and blend on medium-high for a few seconds. The water will start to look like very watery oatmeal.

Add various scraps one by one, and give a short blast with the blender each time. You want to put shorter fibers in first, then gradually add scraps of longer fibers. Otherwise all the fibers will end up about the same length - short!

Add any special items (including threads) last. Don't turn the blender on at this point as it may ruin these items or wreck the blender, or do both.



Troubled Times



Make a Pulp

From the *Homemade Paper* site

Don't make a pulp more than one part scraps to four parts water - ie, don't fill the blender more than 3/4 full. If you're making large volumes, pour out the finished pulp mix and start again. Hit the tub! In this step you'll use a tub of water to put the pulp into a watery suspension. This will ensure an even distribution of pulp onto the screen. Note: you'll make one sheet at a time. This way you can adjust the sizing or pulp-to-water ratio, as you see how each sheet comes out. You may want to test the screen with a little pulp, to check that the water can run through the screen while retaining the pulp. Fill a large tub with clean water. Pour the pulp (the fiber and water mixture) into the tub. Swirl it around. The pulp should be distributed evenly throughout the water before you start dipping. If the mixture sits for a while before you're ready, some settling will occur. Just give it another swirl with your hands when ready.

If you're using large amounts of lint or vegetable parts (including wood-pulp paper), add a few drops of white glue to the tub and mix it in thoroughly. Substitute a tablespoon of cornstarch if you don't have any glue handy. This sticky, binding substance is called sizing.

Hold the screen with the frame on top. Dip it in the tub at an angle until it's fully immersed, then move the screen back and forth until the pulp is evenly dispersed in the water and across the surface of the screen. Finish by pulling the frame straight up out of the tub.

You should have collected enough pulp on the frame to make one sheet of paper--the pulp should fill the screen to the inner edges of the frame. The water from the tub will run through the screen, depositing the pulp on the top level of the screen. Hold the frame above the tub until only a few drops of water remain on the screen.

If the paper looks too thin, add more pulp to the water in the tub, swirl, and dip the screen again. Too thick? Remove some pulp from the tub, dip the screen and collect a screenful of pulp. You can then remove the pulp from the screen by rolling it off with your fingers.

No frame? If you're not using a frame, hold the screen about four inches below the surface of the tub. Agitate the water by moving the screen back and forth until the pulp is evenly dispersed in the water and across the surface of the screen. Draw the screen slowly and evenly up out of the tub. Hold the screen above the tub and allow the water to drain. Take care to keep the screen taut, or the pulp may "puddle" in the middle, which will produce lumpy paper. Squeeze out the water. There are actually two actions happening here: the force applied by the roller squeezes out the water from the paper, and absorbent materials above and beneath the paper prevent the paper from reabsorbing the water. Lay one sheet of wool felt down on a flat tabletop. Wool felt is ideal because water runs right through it and it's strong enough to sustain the pressure. The felt must be larger than the sheet you're making. Several felts, or a stack of old newspapers or even towels can be placed underneath the felt to help absorb water.

Turn the frame over on top of the felt. The freshly drawn pulp should drop out easily. If it sticks, then gently tap the frame onto the felt.

Lay another felt on top of the pulp. Cover with another sheet felt (or newspapers or towels).



Troubled Times



Press and Dry

From the *Homemade Paper* site

Take a rolling pin and press down on the pile to squeeze out the extra water. This will also bind the pulp fibers together. Start at one end and roll firmly and evenly across the pile. Do this several times to get as much water out as possible and to press the fibers together.

The hand press option: a small hand press is great for squeezing out the paper. Turn the paper out on a large sheet of wool felt and cover with another sheet of felt as described before. Now squeeze the felt sandwich with the press. Or using the old-fashioned washing machine, feed the felt sandwich through the rollers. Hang it out to dry. Now carefully remove the top layer of felt (and any other absorbent materials) from the pulp. It should now hold together as an honest-to-goodness sheet of paper. Carefully take up two corners of the paper by rolling them back (just a half inch/one cm or so) with your fingers. Hold a corner with each hand and gently peel the sheet off the bottom felt.

Clip the fresh sheet on to a laundry line with ordinary clothespins to dry. Any place that's warm and dry will be fine--wherever you would hang laundry. Avoid damp areas (mold might grow on the paper), dusty areas (wet paper will collect any dust in the air), or windy places (your paper could be blown off the line!)

Drying time is about three hours, more if the air is humid or if there is little sun.



Troubled Times



Write CD

Current magnetic storage technology is far too fragile to be trusted, a single human hair or dust particle can destroy a disk. The main advantage of CD-ROM storage is that it is not magnetic. It is very similar to an old-style record. A laser "burns" microscopic grooves into a thin metal sheet encased in plastic. Only physical destruction can destroy data on a CD. Readable/writable These CD's, stored in a fire-proof (and therefore temperature resistant) lockbox placed in a reinforced steel safe would have the greatest chance of surviving a 15-Richter quake, and meteor shower. This equipment (safe and lockbox) is available at your local Wal-Mart store for under \$100.00 and the CD-ROM drive, provided you already have a computer that can support it, only costs about \$400.00 or less. CD's run about \$4.99 at Best Buy or any other computer/technology shop.

Offered by [Helena](#).

Nothing like a good pole shift to change western civilization into a third world country. If you have a spare \$895, you can buy, from [ATL](#):

The Appropriate Technology Microfiche Library of over 150,000 pages of full text covering all areas of village-level and do-it-yourself technology--all on microfiche, indexed and organized in a carrying case you can lift with one hand. The AT Microfiche Library gives you all the benefits of a comprehensive appropriate technology library in the space it takes to store a shoebox.

Offered by [Steve](#).



Troubled Times



TEAM: School

In the after-time, once the shaking and quaking have ceased and things have settled down somewhat and are as close to normality as they are going to get for a while, thought will have to be given to the task of educating the children. It is not the purpose of this topic to try to tell you how to do this; individuals and communities can make these decisions for themselves. Our intent here is to inform you of what we feel are the best ways in which material can be preserved, in order to help this process along when the time comes. Current TEAM efforts or concerns are:

- [Questions & Dilemmas](#)
- [Library Project](#)
- [Preservation](#) Techniques
- [What to Save?](#)

Contact [Shirley](#).

Troubled Times



Shrink Wrap

Seal-a-Meal is a machine that has been out for years and should be easy to find. It is known by many brand names that I am not sure of, but has the same basic design. **Seal-a-Meal** was the first company to make this way back, so that is what I call it.

It is a machine where you put food that you want to store such as meat, vegetables and even other small stuff. Basically. You put the books into plastic bags that come with it and are available at places like **Woolworth's** and such, the open end sets on the front of the machine and it sucks all the air out of the bag. Shrivels it up like a prune. It creates a vacuum inside the bag and whatever may be in it. You then push on the top and it melts a line across the plastic sealing in the vacuum and the air out.

I got mine at a yard sale for about two bucks, so am not sure of the price. Probably about \$25 or so. I am using it on books to preserve them from moisture and the air until later when they will be needed. They can be packed away in boxes and "duct" taped shut until we need them later. This information will be worth a million bucks in the future for prolonging our technology and for amusement. **Seal-a-Meal** is sold by **Rival**, 1-800-557-4825.

Offered by [Clipper](#).

I get my **Seal-a-Meal** bags at **Orchard Hardware** - they also call themselves OSH.

Offered by [Teresa](#).



Troubled Times



Resources on CD

I don't know whether laptop computers with CD-ROM drives will survive, but if they do, they will be invaluable in preserving something of our present culture. The CD's themselves should be quite durable. Some things to preserve:

- music CD's of all types of music
- reference works (Encyclopedia Britannica, etc.).
- complete works of Shakespeare and other authors.
- images of great works of art.

Let's get some thinking going along these lines, as well. I wouldn't want to survive in a world without any intellectual or spiritual stimulation.

Offered by [George](#).

Also, on the CDs, we could have stories and things, educational material, for children. Fiction books, even, to provide escape for times when the days are long, and - I know there is going to be a lot of work to do, but there may be some downtime to be filled. Each community should try for several computers, and several CD-ROM drives; also parts, to fix them. We certainly should get something going on this.

Offered by [Helena](#).



Troubled Times



Online Books

[Online Texts Collection](#)

The IPL Online Texts Collection contains over 10,000 titles that can be browsed by author, by title, or by Dewey Subject Classification. They can also be searched using the form below. For questions about the online texts collection, or how to search, please see the help page.

[netLibrary](#)

For several years industry watchers have predicted that the Internet would become the "Library of the Future." That is, millions of books will become available online where you can read them in the privacy of your own home or even on a portable handheld electronic device. In the past few years several companies have started on projects to make books available online. This week I had a chance to use one of the biggest and apparently also one of the most successful of the new online libraries.

netLibrary.com has complete texts of more than ten thousand books available online today, and the company says it will be adding books at the rate of 200 a day before long. The nifty part is that you can quickly search the contents of these books for words or phrases. At a traditional library you can search the card catalog looking for titles, authors, or subjects. You can do all of that on netLibrary.com, plus you can search for words in the text of each and every book. The library offers free access to about 2,800 books in the public domain. For a fee, users can also access thousands of additional volumes still under copyright, both through the site and through a growing number of academic and other libraries to which the company sells the electronic versions. The process of digitizing the books usually involves cutting the spine off each book and feeding the pages through an electronic reader.



Troubled Times



Duplicate Copies

Be aware that most paper today, especially in books, only survives a certain time before disintegrating. Somebody should do some research on availability of paper with a prolonged lifetime. Store the paper away from sunlight (may not be a problem after the pole shift) and humidity. Store at least two copies, one for your own reference, one for posterity. Everything you store on recordable media, print the essential parts. (Forget trying to print it all. One complete encyclopedia can now be stored on one CD.) This is not a question of CD-ROM or paper. It is a question of using all available options, and hoping that at least one of the mechanisms survives, both the PS in itself, and then the aftertime.

Any mandatory technology should be stored in at least 3 -three- copies, preferably in different places, preferably with different structures. (Dome on solid rock, reinforced and protected shed on earthquake-proof foundations etc.). All spare parts will have to be stored in advance, including any recordable CDRs. I believe your best bet is new systems directly from the vendor in the original boxes. If necessary add shock-proofing protection around the boxes.

Offered by [Jan](#).



Troubled Times



Computer Backups

After the pole shift, we can be sure that the whole PC industry and the IT industry as we know it will be gone, as well as any paper mills. Whatever we want to use, we need to stock in advance. This will not be cheap. Forget old 286, 386 and 486 PCs. Make certain the PCs and your software are Y2K certified. (No problem if you purchase them now or after Y2K.) Mainframe technology and high-end servers will be gone. Your best bet for survival will be industry strength PCs. For making it through the pole shift, laptops will be best. For durability after the PS, desktops will be best (if you can create the stable power required). No light laptops, no cheap Radio Shack PCs etc. except for spare parts. Modular systems based on SCSI or multi-bay laptops are the best. If you want to use one type of PC only, go for laptops. Buy plenty of additional batteries (and I mean plenty). If you want to go for desktop PCs in addition, you need 3 copies of each technology. Two laptops and one desktop is a poor choice.

Diskettes are out. Anything you want to save for the after-time, use 2 x 3 (yes, two times three) different copies. 2 CDs, 2 Hard-disks (I currently have 5.5 Gigabytes on my PC) and 2 DAT tapes. Remove the disks from the PCs. Modern disks park the heads automatically. Keep the original boxes for the disks. Normally, disks are not very well shock-proofed. Add shock-proofing insulation. Store your CDs, disks and tapes in 3 different places. Remember that if your PC technology fails, you will have no way of recovering the data. Harddisks, tapes and CDs wear out. Use only fresh components. Verify the component, store whatever you want stored, pack it away. Seal it watertight. Test your water protection in a river, pool or whatever. Better to lose a component now when you can buy and prepare a new one. Beware of magnetic influence on your disks and tapes. CDs are not subject to magnetism, but contrary to normal belief, they wear easily, especially the ones you record yourself.

There could be two different usages for binary recordable media:

1. For your own reference after the pole shift
2. For knowledge preservation

For knowledge preservation, do not attempt to open or use the recorded media after the pole shift. Store your own reference and knowledge preservation copies together, so that you will have a good idea of whether the media survived by using your own reference copies. If your PC equipment fails, you should still watch over the recorded media like crown jewels. PC technology should not be your primary means for knowledge preservation, it is too fragile. This is for *backup* only.

Offered by [Jan](#).



Troubled Times



Biomagnification

Don't plants filter for themselves? If a plant is dead - don't eat it. If a plant is still thriving and edible wouldnt it be safe to eat? Because as it's still alive, it must not be poisoned.

Offered by [Aron](#).

Washoff of fields containing small amounts of pesticides gets into groundwater. This water supports life and you know how the food chain works. Where the magnification comes in is when animals get larger and work up the food chain. Guess who's at the top? Aquatic plantlife grows and contains small amounts of pesticides. The tadpole swims and grows in the water eating the aquatic plantlife only to be eaten by a fish. This wouldn't be so bad, but the fish is larger than the tadpole and therefore must eat more tadpoles. A little bigger fish eats several smaller fish and every step in the chain intensifies the effect of the originally small amount of pesticides. The lower that you eat on the food chain the less impact you will feel from biomagnification. Eat low on the food chain.

Offered by [John](#).



Troubled Times



Citric Acid

Environmental Science & Technology, 30 December 1998

BNL Scientists Report On A Natural Cleanup Solution

for Polluted Soil & Incinerator Ash

A new, natural method for cleaning toxic metals and radioactive elements from polluted soil and other wastes is described by Brookhaven Lab scientists in an article in *Environmental Science & Technology*. Based on simple citric acid and naturally occurring bacteria, the method is effective in removing nearly all contaminants.

U.S. Department of Energy

Contact: Kara Villamil

karav@bnl.gov

516-344-5658



Troubled Times



Cleansing Plants

Mustard

Scripps Howard reported on April 16, 1996 that scientists at the University of Georgia changed the genetic makeup of the arabidopsis weed to hold a bacterial gene, mercuric ion reductase, according to a study published by the **Proceedings of the National Academy of Sciences**. The gene causes the plants to produce an enzyme that digests mercury into a less toxic form. In fact, the plants grew well in growing media that contained toxic levels of mercury. Arabidopsis, a mustard, is a common research plant, but may not be useful in the field. **Rich Meagher**, a professor of genetics at the university who has coordinated work on the project since 1989.

Poplar Trees

Scripps Howard reported on April 16, 1996 that **Rich Meagher**, a professor of genetics at the University of Georgia, working with Georgia forestry professor **Scott Merkle**, has been able to insert the heavy metal eating merA gene into the yellow poplar, also called the tulip poplar, and is working on other trees, such as sweet gum and cypress. The researchers hope to include the gene in a strain of salt marsh grass, which could help clean up pollution caused by paper mills in fragile estuaries.

Horseradish

Purdue University researchers say raw, minced horseradish roots mixed with hydrogen peroxide remove chlorinated compounds often found in the wastes from steel mills, mining operations, paper bleaching and the manufacture of plastics, textiles and detergents. The key to success is the enzyme horseradish peroxidase, which causes pollutants to form insoluble polymers that can be easily removed. Scientists already knew that horseradish can detoxify wastewater, but they say soils might be decontaminated simply by rototilling horseradish growing in the soil and adding hydrogen peroxide.



Troubled Times



Corn Waste

New Heaven New Earth newsletter reported on an *Associated Press* article by Christopher Wills.

Waste from corn could become a cheap, effective tool for cleaning up polluted water, says Jacob Lehrfeld, a chemist at the **National Center for Agricultural Utilization Research** in Peoria. The substance absorbs not only lead and other toxic materials but also chemicals, such as the weed killer atrazine. Current anti-pollution agents can't do both. "It's basically a 'two-fer' -- you get rid of a waste material and also you're utilizing a corn product that currently is not being utilized," says Lehrfeld.

Steven Eckhoff, a professor of agricultural engineering at the **University of Illinois** welcomed the news: "I'm excited. It would ultimately lead value back to the farmer because it makes the whole corn-milling industry more viable." When corn is milled to create cornstarch, a common byproduct is "corn steep liquor" -- a brown, syrupy liquid. Another leftover is corn bran. Those leftovers are generally turned into a cheap livestock feed. But corn steep liquor contains something called phytic acid. Lehrfeld mixes that acid with the corn bran and heats the mix in a slight vacuum. The result is a black, powdery resin that absorbs pollutants in water. When the resin and pollutants are removed, clean water is left behind.

Lehrfeld envisions his product being used at factories that must clean their water before releasing it. It also could be used in municipal water-treatment systems. Lehrfeld said the resin absorbs roughly the same amount of toxins as the petroleum-based products that now are used for such purposes which cost anywhere from \$1.50 to \$12 a pound -- a corn-based version would cost roughly \$8 a pound, and the price should drop quickly once production becomes commonplace. Currently corn-millers are only getting about 3.5 cents a pound for feed.



Troubled Times



Hair

Science Watch: Oil Spills? Ask a Hairdresser

June 9, 1998, *New York Times*

Cleaning up oil spills could turn out to be easy, if people just use their heads. Or at least their hair. It is an idea the space agency has field-tested - or ditch tested, to be exact. The idea came from Phillip McCrory, an Alabama hairdresser who, as he puts it, "walks around in the stuff all day" in his Huntsville salon. In 1989, McCrory saw television footage of an otter soaked in oil from the Exxon Valdez spill. "That's when the light went off," he said. If the otter's fur soaked up oil, would human hair do the same?

McCrory went straight to the experimental stage. He built a test otter by stuffing four pounds of human hair into a pair of tights, filled his son's wading pool with water, dumped a gallon of used motor oil on top and heaved in the hair. "In two minutes the water was crystal clear," he said. Tinkering gave way to figuring. How much hair is thrown out every day? If there are more than 200,000 salons in America, he figured, 200,000 pounds a day would be an extremely conservative figure. Then, some of McCrory's customers from NASA's Marshall Space Flight Center in Huntsville put him in touch with Maurice Hale, a technology transfer expert. When some diesel oil spilled in a ditch at the center, McCrory made a rough filter - 16 pounds of hair in a barrel. When the tainted water was pumped through, it came out containing 17 parts per million of oil - clean enough to dump in a sewer.

The secret is that every hair shaft is covered with tiny cuticles - "like fish scales," McCrory said - that give the surface tension of oil, which cannot bind with water, something to cling to. Subsequent lab tests with Hale yielded the estimate that 1.4 million pounds of hair in re-usable mesh pillows could have soaked up the 11 million gallons spilled by the Exxon Valdez in about a week. By contrast, Exxon spent \$2 billion on a lengthy cleanup that captured only about 12 percent of the spill.



Troubled Times



Lead Detection

Based on some of the recent postings on toxic waste being used as fertilizer, I forwarded a copy and asked the following questions to a person I know of that could possibly give us a start on the subject lead. What I got back was more than I hoped for as you will see in the following links.

Subject: Re: Lead
Date: Tue, 29 Jul 1997 12:22:04
From: Chris Brown <Chris-Brown@ouhsc.edu>
To: mikelob@gte.net

At 12:15 PM 7/28/97 -0700, you wrote:
>Chris, Troubled Times a group I am on a list server of would like
> to find tests for lead (and possibly other heavy metals) along with
>economic ways to remove it from land and water.

The best methods for checking for lead and other heavy metals in soil are to microwave digest the soil and then analyze the remaining liquid. There are a number of methods of then sampling for the lead in that form (of different costs). HUD and the EPA have the recommended methods of sampling for lead online.

As for removal, the expensive way to remove it from water and groundwater is to use a cation exchange system (VERY COSTLY!!!), and so far as I know, that is the only way. What is being done currently with heavily contaminated soil is to bulldoze it, bury it and cap it. But unlike carbonized contaminates, there are no magic bugs (bacteria) that I know of that can get rid of it. The best solution is to not get the heavy metals there in the first place. And as you can see from the articles, that is not being viewed by the distributors of "acceptable fertilizers".

>Volcanic eruptions often cause toxic levels of lead in local land and
>water for years afterwards. More and more Volcanic eruptions are
>occurring each year. Also, with the current interest in lead getting
>into the food chain do to toxic waist becoming fertilizer this may be a
>topic you may know something about or have an interest in finding
>something about it. I would like to post whatever you recommend.

If I run across more I will let you know, but the solutions I have run across so far are not real promising. Mostly the technologies are being developed at Superfund Sites where they have the federal capital to fund these expensive clean-up projects. For the regular Joe, the best bet is to move to cleaner ground. Not a real viable solution, I'm afraid. And I won't give you my opinion
re: EPA work in this area as this e-mail would self-destruct.

I ran across a recent piece of research on decontaminating soil contaminated with heavy metals in situ by the DOE. It looks pretty good, but the price tag may be a bit high.

<http://em-50.em.doe.gov/BEST/techs/aa/tech0125.html>

Christopher A. Brown, M.S., Research Assistant
University of Oklahoma Health Sciences Center
Department of Occupational & Environmental Health
Voice: 405-271-2070 FAX: 405-271-1971
<http://rentsv1.uokhsc.edu/cbrown>

Offered by [Mike](#).



Troubled Times



Microbes

Using Microbes to Clean Environment

[CNN NEWS](#), 3/26/98

A company in Atlanta has developed an algae-based system that uses microbes to remove toxic metals and organic chemicals from industrial waste water. **Microbial Aquatic Treatment Systems, Inc.** has produced an experimental, three-tiered machine that will be used by a nuclear power plant to filter radioactive metals from water that would be released into a river. It's part of a growing trend to use microbes as effective environmental cleaners, and it's hoped this will turn out to be a more cost-effective, efficient way to deal with dangerous waste. Microbes are also used to clean auto parts in garages, auto parts stores and automobile factories across the nation.



Troubled Times



Charcoal

NHK TV had a program on June 7, 1999 from **Kyoto University**. The wood quality science Lab's Professor Mr. Imamura said that wood charcoal was made by burning it at 200 degrees C or so degrees (491 F). By it's nature, charcoal absorbs Lead. Charcoal has many micro cells which are empty, and these cells absorb Lead. Charcoal produced at a higher temperature, 600-1200 C degrees (1339-2611 F) have even more empty cells. This absorbs Mercury as well. The higher the temperature, the greater number of empty micro cells produced.

Charcoal prepared at 1000 C (2187 F) degrees are 95% Carbon, which by its nature is a fire retardant. Fire retarding door or vault material is made by pressing charcoal powder like Baumcoohen with special bonds or glues. This layer of compressed Carbon allows heat to escape. For instance, it was reported on July 16, 1999 in the *Sankei* newspaper that the Carbon lamp heater by **Mitsubishi** pencil company and **Matsuruhita-Kotobuki** industrial company in Kagawa is 30% warmer than the Tungsten heater. This Carbon lamp heater was made from hard pencil Carbon and ceramics materials. Compressed carbon can also disburse an electric current. The higher the temperature in this layer of compressed Carbon, the better the flow. This can disburse or shut out an electro magnetic wave.

In general, charcoal can clean water of offending odors, clean the air, and can remove dampness from the air. One could remove grime from used bath water, and recyle the water. In Japan, a 24 hour bath recycling system is for sale, but where it is now improved, it was reported as not very popular in the past. It still cannot remove bacteria completely.

The following are Japanese web sites describing the use of charcoal:

http://www.ruralnet.or.jp/sumi/yokomori/yoko_19980421_2.htm

<http://www.soma.or.jp/~kunio/murata/sumiyaki.htm>

Offered by [Inoue](#).

If this is true then one could in primitive conditions mix some charcoal from your last fire with water that has lead. The sloshing in carrying this would gradually filter the water. When ready to drink a simple cloth strainer would filter out the charcoal. This is all theoretical based on the above statement. We should keep our eyes open for verification. If this works then building of filtration of rain water, etc. becomes a possibility for settlements also.

Offered by [Mike](#).



Troubled Times



Algae

PIROLL with algae can remove tri-hallo-methane pollutants. Livestock stalls contain bits of pollphryn, and the algae recycles this pollphryn by re-synthesising it. Algae grows naturally in river or pond mud, and the spores are present in this mud. For example, if somebody makes a hydroponics plant, after a couple months, algae naturally grows. Perhaps the spores are in the air. I tried a hydroponics system on my second floor verandah, growing tomatoes, and the box was filled with green algae. However, there are many different kinds of algae, so one must test to verify.

By scattering PIROLL on the land, algae will grow and increase, as the PIROLL acts as a fertilizer. PIROLL is composed of solid waste from humans and livestock, limestone, blood, sea bottom mud, bone and feather powder from animals, ashes from plants, grain embryos, Mangan ore, Bauxite ore, and Phosphorus ore. These contain Vitamin A, carotene, B1, B2, B6, B12, CA, FE, MG, Niacin, Colin, Pantotensan, Coffein, Tannin, and Pprophil.

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Troubled Times



UV

PCB's can be removed from water by micro-organisms or Ultra Violet (UV) rays, per the **Railway General Institute** and **Mitsubishi Industrial** company. A normal temperature and atmospheric pressure can be used, for less cost.

1. Put PCB and Alcohol in a Reaction tower (a tank).
2. Irradiate with UV rays, which turns the PCB into Chlorine
3. Distillate it, then cultivate twice using Micro-organisms (Rhodococcus opacus TSP203 and Comamonas testosteroni TK102).
4. The PCB is then decomposed into water, CO₂, NaCl

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Troubled Times



Super Heated Water

Another method to remove PCB's from water is to use a super critical water oxidation, per the **Organo** company in Japan. This method completely decomposes PCB's. Super critical water is water that is heated over 374 C (860 F), at an atmospheric pressure of 220. This super critical water has a super oxidation faculty, which can decompose Dioxin. This method is also non-chemical, avoids the possibility of fire, and allows a factory to drain the water when the process is complete.

Mitsubishi Industrial company in Japan has an SRI thin tank patent in the USA for hot water dismantling of PCB's. The reacting tower is maintained at 380 C, 270 atmospheric pressure. The technique is to put in the PCB polluted water with Na_2CO_3 . Then put in O_2 (Oxygen) and the PCB's are dismantled. The catalytic-NaCo eliminates Cl from the PCB's, so the NaCl step does not occur, dismantling Viphanyl at the same time.

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