Kevin Briggs: **Given the threat, why the delay over *deciding* to deploy a national missile defense?**

During a disaster, your water may be cut off (surprise). How not to be thirsty, by James T. Stevens and Sharon Packer.

Journal of
Civil Defense
The American Civil Defense Association *Summer/Fall 1998 • $4.50*

Hunkering in its Rocky Mountain fortress, the North American Aerospace Defense Command is agile but aging.

NORAD

On its 40th birthday, is America's space watchdog ready for a **mission change** or a **mid-life crisis?**

by Brad Cope

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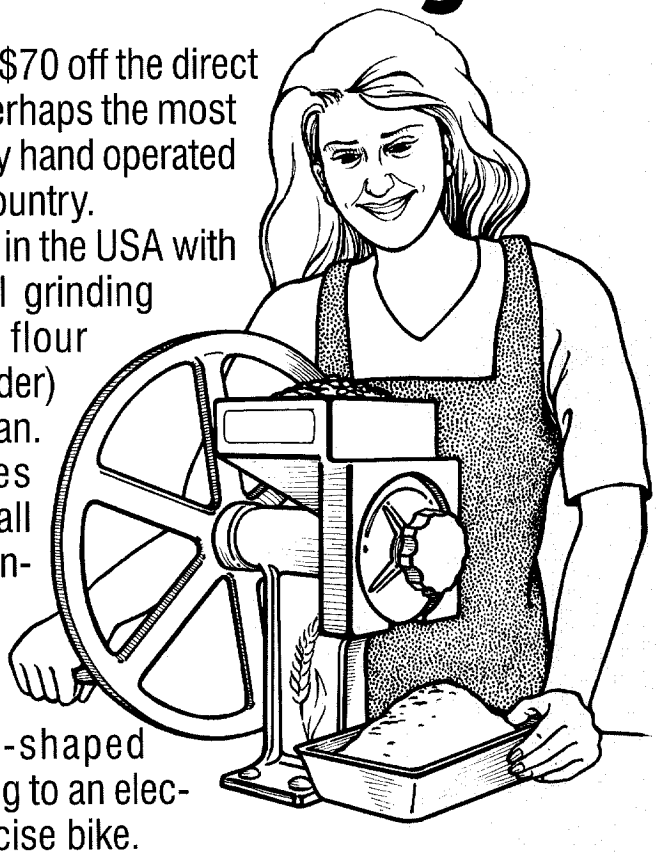

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Tacda

Journal of Civil Defense
The American Civil Defense Association
Promoting sensible precautions for disasters.
Summer/Fall 1998

inside

To our readers...

Should the United States *decide now* to deploy a national missile defense?

In this issue's **Washington Perspective** column, **Kevin Briggs** reports on the **Rumsfeld Commission's** warning that a *decision* to deploy such a defense is needed sooner rather than later. See page 2.

Continuing our coverage of this topic, we publish an exchange of letters between **U.S. Sen. James M. Inhofe,** R-Okla., chairman of the Senate Subcommittee on Readiness, and **Gen. Henry S. Shelton,** chairman of the Joint Chiefs of Staff. Read their views on pages 3-5.

Separately, 1998 is the 40th year of operation for **NORAD,** the North American Aerospace Defense Command. Starting on page 6, **Brad Cope** examines the organization's mission and by no means certain mandate for the future.

Water, conclude columnists **James T. Stevens** and **Sharon Packer,** is essential for survival after a natural or manmade disaster. In side-by-side articles on pages 15-16, these veteran preparedness writers tell how to store water and make it safe for drinking.

Need preparedness supplies? Check out the new offers from the **Tacda Store** in the centerfold and on the inside front cover (opposite this page).

Finally, you'll note that the date of this *Journal* issue is "summer/fall." Look for a double-length winter issue.

The Tacda staff

If this isn't proof of a threat, what is?

Kevin Briggs looks at the Rumsfeld Commission's warning of a missile attack and asks why the country isn't deciding now to deploy a defense.
page 2

Your water supply during a disaster.

In parallel articles, James T. Stevens and Sharon Packer cover the waterfront.
pages 14-15

Inside NORAD

Is the North American Aerospace Defense Command ready for the future?
by Brad Cope, *page 6*

The *Journal of Civil Defense* is the official quarterly of The American Civil Defense Association (Tacda), P.O. Box 1057, Starke, Fla. 32091; Kevin Briggs, president; Kathy Eiland, executive director. Tacda urges government and citizens alike to maintain sensible precautions for disasters — natural and manmade.

 U.S. annual subscription is $18; non-U.S. rate higher. To advertise, subscribe or inquire about manuscript submission policy, contact the *Journal* at 9303 Beowulf, San Antonio, Texas 78250, journalcd@juno.com or (210) 681-8339.

WashingtonPerspective

by Kevin Briggs

What more is needed?

On July 15, the *Report of the Commission to Assess the Ballistic Missile Threat to the United States* issued a clear warning to Congress. The summary:

> **Ballistic missiles armed with WMD [Weapons of Mass Destruction] payloads pose a strategic threat to the United States. This is not a distant threat. Characterizing foreign assistance as a wild card is both incorrect and misleading. Foreign assistance is pervasive, enabling and often the preferred path to ballistic missile and WMD capability.**
>
> **A new strategic environment now gives emerging ballistic missile powers the capacity, through a combination of domestic development and foreign assistance, to acquire the means to strike the U.S. within about five years of a decision to acquire such a capability (10 years in the case of Iraq). During several of those years, the U.S. might not be aware that such a decision had been made. Available alternative means of delivery can shorten the warning time of deployment nearly to zero.**
>
> **The threat is exacerbated by the ability of both existing and emerging ballistic missile powers to hide their activities from the U.S. and to deceive the U.S. about the pace, scope and direction of their development and proliferation programs. Therefore, we unanimously recommend that U.S. analyses, practices and policies that depend on expectations of extended warning of deployment be reviewed and, as appropriate, revised to reflect the reality of an environment in which there may be little or no warning.**

Here are three reasons to heed the commission's report:

1. **The report is bipartisan.** Says **Rep. Floyd Spence,** R-S.C., chair of the **House National Security Committee:** "The conclusions reached by the commission — conclusions that are unanimous and bipartisan — indicate that the intelligence community ... may be seriously ... miscalculating the threat to all Americans posed by ballistic missiles."
2. **World events back up the commission's findings.** Commission director **Donald Rumsfeld,** a former secretary of defense, predicted in mid-July that Iran could launch a **Shahab-3** missile **any time.** The Pentagon had estimated earlier in the year that the missile couldn't be launched until mid-1999. One week after Rumsfeld's prediction, the Iranians launched a Shahab-3 missile.
3. **The report was done right.** Commission members had the credentials, time and access to do the job. In addition to a former secretary of defense, these members included a previous CIA director, two former commanders-in-chief of the Strategic Air Command, a previous director of the White House Office of Science and Technology Policy, and other well-known defense experts (see bottom photo on opposite page). They worked for six months and met with more than 300 current U.S. intelligence experts to help them assess the threats.

In light of the commission's warning, you'd think our country would decide immediately to deploy national missile defenses as soon as feasible. On the contrary, the Joint Chiefs of Staff responded by endorsing the Clinton administration's position to *delay* a deployment decision until warranted by intelligence (see page 4).

Given the report, what more intelligence is needed? ❑

For more on the national missile defense debate, see the following pages and the "Tacda Letter" on page 16.

***Kevin Briggs** is president of The American Civil Defense Association.*

Views expressed in this article are those of the author and do not reflect the official policy or position of the Department of Defense or U.S. government.

Decide now to deploy? Or decide later to deploy?

Both sides of the **national missile defense** debate give their views.

Since most U.S. leaders agree a national missile defense is needed, why do they still debate the *timing* of the deployment decision? In the documents on these pages, **U.S. Sen. James M. Inhofe,** R-Okla., chairman of the Senate Subcommittee on Readiness, and **Gen. Henry H. Shelton,** chairman of the Joint Chiefs of Staff, explain their positions relative to the warning of the **Rumsfeld Commission** (see a report summary in box on opposite page.)

Inhofe

A letter to Gen. Shelton from Sen. Inhofe asks if current U.S. missile defense policy is "prudent and accurate."

Gen. Henry H. Shelton
Chairman of the Joint Chiefs of Staff
U.S. Department of Defense
Washington, DC 20318-9999

Dear General Shelton:

I write to seek your views on the recently released report of the Commission to Assess the Ballistic Missile Threat to the United States. As you know, this Commission and its report were authorized by the 1997 Defense Authorization Act and chaired by Donald H. Rumsfeld.

I specifically would like you to address two issues which I believe form, respectively, the most significant conclusion and recommendation of this report.

First, the Commission concludes that "the warning times the U.S. can expect of new threatening ballistic missile deployments are being reduced. Under some plausible scenarios ... the U.S. might well have little or no warning before operational deployment."

Does this not contradict, if not undermine, your previously stated "confidence" that we will have at least three years' warning of any emerging long range ballistic missile threat?

Second, the Commission unanimously recommends that "U.S. analyses, practices and policies that depend on expectations of extended warning of deployment be reviewed and, as appropriate, revised to reflect the reality of an environment in which there may be little or no warning."

In light of this, do you still believe that our current "3-plus-3" policy for national missile defense is prudent and adequate? Do the Joint Chiefs believe that continued adherence to the ABM Treaty is, and will continue to be, consistent with U.S. vital national security interests? Would the Joint Chiefs support an accelerated effort to deploy a limited national missile defense system as being in the national defense interest at this time?

I appreciate your providing me with your best professional military judgment on these important issues and that your response be unclassified.

Sincerely,

James M. Inhofe
United States Senator

See next page for Gen. Shelton's reply to Sen. Inhofe.

Commission to Assess the Ballistic Missile Threat to the United States, standing from left: *Gen. Larry Welch (USAF Ret.), Gen. Lee Butler (USAF Ret.), Chairman Donald Rumsfeld, Dr. Barry Blechman, Dr. Paul Wolfowitz.* ***Seated from left:*** *Dr. William Schneider Jr., James Woolsey, Dr. Richard Garwin, Dr. William Graham*

See previous page for Sen. Inhofe's letter to Gen. Shelton.

Gen. Shelton answers Sen. Inhofe: "We reaffirm our support for the current NMD policy and deployment readiness program."

The Honorable James M. Inhofe
United States Senate
Washington, D.C. 20510-3603

Dear Senator Inhofe,

Thank you for the opportunity to provide my views, together with those of the Joint Chiefs, on the Rumsfeld Commission Report and its relation to national missile defense. We welcome the contributions of this distinguished panel to our understanding of ballistic missile threat assessments. While we have had the opportunity to review only the Commission's pre-publication report, we can provide answers to your questions subject to review of the final report. [By the *Journal's* press time, the Joint Chiefs had read the final report; their position remains the same as expressed in this letter, a spokesperson told the *Journal.]*

While the Chiefs and I, along with the Intelligence Community, agree with many of the Commission's findings, we have some different perspectives on likely developmental timelines and associated warning times. After carefully considering the portions of the report available to us, we remain confident that the Intelligence Community can provide the necessary warning of the indigenous development and deployment by a rogue state of an ICBM threat to the United States. For example, we believe that North Korea continues moving closer to the initiation of a Taepo Dong I Medium Range Ballistic Missile (MRBM) testing program. That program has been predicted and considered in the current examination. The Commission points out that through unconventional, high-risk development programs and foreign assistance, rogue nations could acquire an ICBM capability in a short time, and that the Intelligence Community may not detect it. We view this as an unlikely development. I would also point out that these rogue nations currently pose a threat to the United States, including a threat by weapons of mass destruction, through unconventional, terrorist-style delivery means. The Chiefs and I believe all these threats must be addressed consistent with a balanced judgment of risks and resources.

Based on these considerations, we reaffirm our support for the current NMD policy and deployment readiness program. Our program represents an unprecedented level of effort to address the likely emergence of a rogue ICBM threat. It compresses what is normally a 6-12 year development program into 3 years with some additional development concurrent with a 3-year deployment. This emphasis is indicative of our commitment to this vital national security objective. The tremendous effort devoted to this program is a prudent commitment to provide absolutely the best technology when a threat warrants deployment.

Given the present threat projections and the potential requirement to deploy an effective limited defense, we continue to support the "three-plus-three" program. It is our view that the development program should proceed through the integrated system testing scheduled to begin in late 1999, before the subsequent deployment decision consideration in the year 2000. While previous plus-ups have reduced the technical risk associated with this program, the risk remains high. Additional funding would not buy back any time in our already fast-paced schedule.

As to the Anti-Ballistic Missile (ABM) Treaty, the Chiefs and I believe that under current conditions continued adherence is still consistent with our national security interests. The Treaty contributes to our strategic stability with Russia and, for the immediate future, does not hinder our development program. Consistent with US policy that NMD development be consistent with the ABM Treaty, the Department has an ongoing process to review NMD tests for compliance. The integrated testing that will precede a deployment decision has not yet gone through compliance review. Although a final determination has not been made, we currently intend and project integrated system testing that will be both fully effective and treaty compliant. A deployment decision may well require treaty modification which would involve a variety of factors including the emerging ballistic missile threat to the United States (both capability and intent), and the technology to support an effective national missile defense.

Again, the Chiefs and I appreciate the opportunity to offer our views on the assessment of emerging ballistic missile threats and their relation to national missile defense.

Sincerely,

Henry H. Shelton
Chairman of the Joint Chiefs of Staff

See opposite page for Sen. Inhofe's reply.

by the Department of Defense

The Joint Chiefs of Staff, from left: *Air Force Gen. Joseph W. Ralston, vice chairman of the Joint Chiefs of Staff; Army Gen. Henry H. Shelton, chairman of the Joint Chiefs of Staff; Gen. Dennis J. Reimer, Army chief of staff; Gen. Charles C. Krulak, Marine Corps commandant; Adm. Jay L. Johnson, Navy chief of naval operations; Gen. Michael E. Ryan, Air Force chief of staff.*

"Those policies are shortsighted and inadequate," Sen. Inhofe replies in a press release.

I am disappointed, but not surprised, that the Joint Chiefs would endorse the administration's policies to delay deployment of a national missile defense system, even in spite of the findings of the Rumsfeld Report.

Nevertheless, I and many of my colleagues in Congress, continue to believe those policies are shortsighted and inadequate. We believe the Rumsfeld Report reinforces the urgent need to change those policies. Specifically, a firm decision to deploy a limited national missile defense system should not be further postponed. Breaking out from under the arbitrary and outdated constraints of the ABM Treaty is long overdue.

I am not particularly reassured that the Joint Chiefs think the emergence of an unexpected long range missile threat is "unlikely." The recent nuclear tests in India and Pakistan were also "unlikely." The recent bombings of our embassies in Africa were considered "unlikely." The survival of Saddam Hussein as a menace to world security once seemed "unlikely." That a threat is "unlikely" is no longer, by itself, a good enough basis on which to formulate national security policy affecting the lives of millions of Americans.

Similarly, I am not reassured to hear the worn out line that the ABM Treaty remains the cornerstone of "strategic stability with Russia" when Russia is far from the only threat we face. By making a virtue of our vulnerability, the ABM Treaty only reinforces the discredited policy of mutual assured destruction at a time when the U.S. is being targeted by numerous potentially undeterrable rogue states and terrorists. The vulnerability of our population is the problem, not the solution.

The fact is we have it in our power, through technology and political will, to affordably protect the American people from limited long range missile attacks. It should be the policy of the United States to do so with all deliberate speed.

James M. Inhofe
United States Senator

See opposite page for the Joint Chiefs' endorsement of the administration's policies.

North Korea's 'satellite' launch?

Considered 'worrisome.'

Did U.S. defense and intelligence officials predict the Aug. 31 launch of North Korea's Taepo Dong rocket?

Yes and no. Officials said they knew in advance of the rocket launch but didn't know it would have a solid-fuel third stage. Previously, Taepo Dongs had up to two liquid-fuel stages.

"We did have information that a launch was imminent," **Ken Bacon,** assistant secretary of defense for public affairs said.

But **Robert D. Warpole,** the CIA's senior intelligence officer, said the intelligence community didn't know about the rocket's third stage in advance. "The existence of the third stage concerns us. We had not anticipated it," Warpole said in a speech covered by *The Washington Post.*

Still, as to the government's and Rumsfeld Commission's estimates of a North Korean missile threat, there was more agreement than divergence, Warpole said according to the *Post.*

Thought to be a failed attempt to send up a satellite, the August North Korean launch demonstrated a potential to send an intercontinental ballistic missile four to six thousand kilometers, Bacon said. "The capability that allows them to launch satellites is the capability to project payloads over a longer range. We consider that to be worrisome," he said.

Journal of Civil Defense

At 40, is North American Aerospace Defense Command ready for a mid-life crisis — or a new mission?

Inside NORAD

by Brad Cope

When it comes to spelunking, you could do worse than the cave just off Highway 115 due south of Colorado Springs.

Jumpsuited guides lead you through a 17-by-21-foot entrance into an ancient mountain. Inside you find 2.8 miles of tunnels, well-marked pathways, spring-fed pools, informative tours, a handy underground snack bar. And one more feature: the biggest military command network in the Western world.

The cave is Cheyenne Mountain Operations Center, home of NORAD — North American Aerospace Defense Command. Founded in 1958 by Canada and the United States near the height of the Cold War, the Operations Center's main job is to warn North America of airborne nuclear attack. The center, home as well to the U.S. Space and Air Force Space Commands, also helps the Drug Enforcement Agency nab smugglers and keeps the Space Shuttle away from the 8,000-plus objects in Earth orbit. Canadian Brig. Gen. Roy Mould, one of the people a phone call away from the U.S. president and the Canadian prime minister, compares the mountain to a "well-orchestrated ballet."

But some would like to see the curtain fall. While only the most extreme critics want a total shutdown of the complex, others point out that the mountain's original design called for a radar command center able to withstand a nuclear blast from Soviet bombers, but times — and vulnerabilities — have changed.

Today:

- The Operations Center cannot survive a worst-case ballistic missile impact.
- The threat of hard-to-track cruise missiles have eclipsed that of manned bombers.
- The Soviet Union no longer exists.

As a result, detractors question the mountain's effectiveness and its $175-million-per-year price tag.

As the complex turns 40 this year, it seems fitting to assess the competing images held by the mountain's backers and critics. Is the Operations Center a high-tech marvel prepared for the 21st century? Or a Cold War dinosaur on the verge of extinction?

Medal-winning performance

For decades, surveillance radars have lined the borders of Canada and the United States like a string of pearls. In the '70s, Defense Support Program satellites began training infrared sensors on the Earth from geosynchronous orbits. Now 10-foot-long aerostat blimps hover over the American Southwest and the Gulf of Mexico, and Air Force and Navy AWACS — Airborne Warning and Control System — aircraft scan horizons from miles above North

by the Colorado Springs *Gazette*

America. Back in Cheyenne Mountain, controllers scrutinize data from these varied sensors for missile, aircraft or space activity — the complex's three main vigils.

How well does this surveillance network work? "If I were handing out medals for tracking ballistic missiles and airplanes, the mountain would take gold and silver," says retired Air Force Col. Jim Moore, former public affairs director of NORAD and U.S. Space Command. "The ground radars, AWACS and satellites can pick up almost any missile launch or aircraft flight."

The Defense Support Program satellites account for much of Moore's confidence. Each of these orbiting sensors focuses 6,000 infrared detectors on the surface of the Earth, scanning for ballistic missile exhaust trails. The sensors pick up their targets at or near the launch, long before the missiles complete their lazy parabolas across the stratosphere. Recent improvements in coverage and data processing have kept the 20-year-old satellites useful, if not indispensable. In fact, U.S. forces in the Gulf War used them to warn warfighters and civilians of incoming Scud missiles and to help cue Patriot missile batteries.

Despite these successes, plans are underway to replace the old satellites with new ones. In a departure from the current setup, the Space Based Infrared Systems would orbit the Earth at two altitudes — high and low. The "high" satellites, which will provide better tracking of airborne objects from geosynchronous and highly elliptical orbits, should come online by 2003. Pending approval in 2000, the "low" satellites will employ a host of wavebands — including short-wave, infrared, medium-wave infrared, long-wave infrared and visible — to pick up targets with varied temperatures. If the low system gets the nod, the first satellite should be in orbit by 2006.

Above: *Operations Center workers come and go through three-foot-thick pneumatic doors. When closed, the doors — which aren't airtight — would help direct nuclear shock waves away from the center.*

Hit and missile

But while Operations Center controllers say they can warn against *ballistic* missile intrusions, they question whether they can spot an impending *cruise* missile attack.

Retired Air Force Brig. Gen. Ed Robertson, a former Operations Center command director, says that the slight signature of a cruise missile makes it almost impossible to locate one.

Dr. Loren Thompson, director of the Defense Program at the Washington

continued on page 10

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Are you and your family prepared to survive a natural or manmade disaster?

If your normal food and water supplies were cut off, do you have sufficient resources stored away to sustain yourself and your family for six to 12 months?

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Dehydrated food modules &

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Nonmembers: $2,299.95

This special unit is designed to sustain an entire family of four, for up to one full year. Tacda believes that this unit is the best basic long-term food supply on the market today. It goes way beyond beans and grains to provide variety. The Family Unit includes the following #10 cans plus 50 #10 can lids, 2 sprouting trays, and 1 cookbook:

- 2 fruit cocktail
- 2 raisins
- 2 corn
- 2 cabbage
- 2 salt
- 24 regular nonfat milk
- 24 hard red wheat
- 12 white sugar
- 4 chicken-flavored TVP
- 4 shortening
- 4 egg mix
- 2 wheat for sprouting
- 2 applesauce
- 2 banana slices
- 2 carrot slices
- 2 tomato powder
- 24 instant nonfat milk
- 12 pinto beans
- 24 whole wheat flour
- 2 bacon-flavored TVP
- 2 fruit-flavored gelatin
- 4 margarine product
- 1 sprouting kit
- 2 lentils for sprouting
- 2 apple slices
- 2 potato granules
- 2 green garden peas
- 2 chopped onions
- 12 elbow-macaroni
- 12 rice
- 24 cracked wheat cereal
- 6 beef-flavored TVP
- 2 soup base
- 2 cheese blend
- 2 Alaska peas for sprouting

Security Unit (one-year supply for two)

Members: $1,099.95
Nonmembers: $1,299.95

This unit is similar to the Family Unit shown above, except it is only half the size. It is designed to feed 2 people for 1 year, or 1 person for 2 years. This specially balanced unit includes the following #10 cans plus 32 #10 can lids, 2 sprouting trays, and 1 cookbook:

- 1 fruit cocktail
- 1 raisins
- 1 corn
- 1 cabbage
- 1 salt
- 12 regular nonfat milk
- 12 hard red wheat
- 6 white sugar
- 2 chicken-flavored TVP
- 2 shortening
- 2 egg mix
- 2 wheat for sprouting
- 1 applesauce
- 1 banana slices
- 1 carrot slices
- 1 tomato powder
- 12 instant nonfat milk
- 6 pinto beans
- 12 cracked wheat cereal
- 12 whole wheat flour
- 1 bacon-flavored TVP
- 1 fruit-flavored gelatin
- 2 margarine product
- 1 sprouting kit
- 2 lentils for sprouting
- 1 apple slices
- 1 potato granules
- 1 green garden peas
- 1 chopped onions
- 6 elbow-macaroni
- 6 rice
- 3 beef-flavored TVP
- 1 soup base
- 1 cheese blend
- 2 Alaska peas for sprouting

Modular Unit (a one-year supply for one person)

Members: $849.95
Nonmembers: $1,049.95

This modular unit gives you a strong basic supply of nonperishables foods, including fruits and vegetables, proteins, and even desserts. It includes the following #10 cans, as well as 34 #10 can lids and 1 cookbook:

- 1 cornmeal
- 1 popcorn
- 1 granola
- 2 chicken-flavored TVP
- 1 split peas
- 1 peanut butter
- 6 regular nonfat milk
- 2 fruit cocktail
- 1 green garden peas
- 1 cabbage
- 3 potato granules
- 1 fruit dessert mix
- 2 rolled oats
- 1 white wheat flour
- 1 elbow-macaroni
- 2 ham-flavored TVP
- 2 eggs
- 1 chocolate pudding
- 12 instant nonfat milk
- 1 banana slices
- 1 tomato powder
- 1 carrot dices
- 2 potato dices
- 3 rice
- 1 cracked wheat
- 4 beef-flavored TVP
- 2 bacon-flavored TVP
- 1 soup base
- 1 cheese blend
- 1 applesauce
- 2 apple slices
- 1 soup/stew blend
- 1 green beans
- 1 potato slices

Pantry Pak 6 (a six-month supply for one person)

Members: $499.95
Nonmembers: $699.95

This smaller, more compact unit is complete and extremely affordable. It provides balanced nutrition for one person, up to six months. This unit contains 1 cookbook, along with the following #10 cans:

- 6 regular milk
- 2 margarine powder
- 1 fruit cocktail
- 1 carrot dices
- 1 vegetable stew
- 1 cracked wheat cereal
- 1 strawberry dessert
- 1 chicken-flavored TVP
- 1 potato dices
- 2 elbow-macaroni
- 1 apple slices
- 1 applesauce
- 1 sweet corn
- 2 potato granules
- 1 creamy wheat cereal
- 2 parboiled rice
- 1 ham-flavored TVP
- 1 orange drink
- 2 white sugar
- 1 banana slices
- 2 egg solids
- 1 green garden peas
- 1 long spaghetti
- 1 no-bake custard mix
- 1 beef-flavored TVP
- 1 egg noodles
- 1 white flour

And these #2-1/2 cans:

- 2 cheese powder
- 1 chicken soup base
- 1 bacon-flavored TVP
- 2 tomato powder
- 1 beef soup base
- 1 season salt
- 1 iodized salt
- 1 chopped onions

Water storage

15-Gallon Water Barrel

Members: $24.95
Nonmembers: $29.95

30-Gallon Water Barrel

Members: $39.95
Nonmembers: $47.95

units

Pantry Pak 3 (a three-month supply for one person)

Members: $299.95
Nonmembers: $399.95

This smaller, well-balanced unit is both compact and affordable, and is designed to feed one person for up to three months. It contains the following #10 cans:

1 fruit cocktail
2 regular nonfat milk
1 sweet corn
1 cracked wheat cereal
1 elbow-macaroni
1 margarine powder
1 banana slices
1 potato dices
1 green garden peas
1 chicken-flavored TVP
1 parboiled rice
1 egg solids
1 potato slices
1 potato granules
1 beef-flavored TVP
1 split peas

And these #2-1/2 cans:

1 beef soup base
1 chopped onions
1 tomato powder
1 no-bake custard
1 bacon-flavored TVP
1 cheese powder
nnn

Emergency Unit (a one-month supply for one person)

Members: $159.95
Nonmembers: $199.95

Though its uses are seemingly endless, this compact unit is especially ideal for apartment-dwelling singles who need a supply that won't take up much space. It contains the following #2-½ cans, as well as 22 #2½ can lids:

4 regular nonfat milk
2 rolled oats
1 macaroni and cheese
1 green garden peas
1 beef-flavored TVP
1 margarine product
1 beef soup base
1 chicken soup base
2 apple drink
1 applesauce
1 mountain stew
1 carrot dices 1 sweet corn
1 ham-flavored TVP
1 peanut butter powder
1 Spanish-style rice
2 egg mix
1 fruit cocktail
1 stroganoff-style casserole
1 tomato powder
1 chicken-flavored TVP
2 potato granules
1 veg noodle soup mix

Ready-to-Go Pak (a six-day supply for four people)

Members: $139.95
Nonmembers: $179.95

This unit is great for family outings, but is also designed to sustain one person for up to three weeks. It contains the following #2-1/2 cans, as well as 23 lids, 1 measuring cup, and 1 can opener:

2 regular nonfat milk
1 banana slices
1 apple drink
1 macaroni & cheese
1 peach slices
1 green garden peas
1 salad blend
1 rolled oats
2 Yukon biscuits
2 mountain stew
1 Spanish-style rice
1 applesauce
1 carrot dices
1 peanut butter powder
1 egg mix
1 cheese blend
1 stroganoff casserole
1 vegetable soup mix
1 fruit cocktail
1 cut green beans

Camper Pak (a three-day supply for four)

Members: $69.95
Nonmembers: $99.95

This special family unit is designed to sustain a family of four for a 72-hour period, or one person for ten days. It contains the following #2-1/2 cans, as well as 12 lids:

1 apple breakfast drink
1 fruit cocktail
1 Spanish-style rice
1 soup/stew blend
1 applesauce
1 mountain stew
1 veg/ noodle soup mix
1 egg mix
1 rolled oats
1 stroganoff casserole
1 salad blend
1 Yukon biscuits

Water purification

Guardian Micro-Filter System

Members: $44.95
Nonmembers: $49.95

This compact, easy-to-use water filter requires less than 2 pounds of pumping force, yet is capable of producing over one liter of water per minute. The 0.2 micron multistage filter blocks virtually all waterborne bacteria (99.9%), as well as Giardia, "crypto", parasites and other protozoa. The water then passes through a bed of activated charcoal to remove pesticides, herbicides, solvents, halogens and unpleasant tastes and odors. The filter has a 200 gallon capacity.

Viral Guard Cartridge

Members: $21.95
Nonmembers: $24.95

While the Guardian Filtration system filters or blocks out virus and bacteria larger than .2 microns, the viral guard kills or deactivates 99.99 percent of water borne viruses before the filtering process. The cartridge is easily attached to the Guardian Filtration system, yielding water that is so safe and pure that it exceeds even the EPA standards for bacteria and cysts.

Guardian Filter System with the Viral Guard Cartridge

Members: $64.95
Nonmembers: $74.95

Order the Guardian Micro-Filter System and Viral Guard Cartridge in a single combined unit, and save even more money.

Replacement Guardian Ceramic Filter

Members: $21.95
Nonmembers: $24.95

This is a replacement cartridge for the Guardian Micro-Filter system, shown above.

Pro Portable Water Purifier

Members: $74.95
Nonmembers: $84.95

This advanced-technology filtration system uses ion-exchange resins to purify water, and is specifically designed to overcome conditions of high-sediment, heavy metals, including lead, cadmium, barium, etc., as well as pathogens such as Giardia Lamblia, Salmonella, Staph, E-coli, Cholera, and Pseudomonas aerugionosa.

It is capable of killing microorganisms in water, including bacteria, viruses and protozoa. It is rated by the U.S. EPA as the "best acceptable technology" for the removal of certain organic pollutants, and is capable of removing radon gas as well as the residuals from bacteriological and chemical warfare. This system also removes chlorine, and eliminates bad tastes and unpleasant odors.

This new and improved unit purifies 12,000 gallons and is totally maintenance free. It weighs about two pounds and is easily transportable. It has a flow rate of six gallons per hour.

55-Gallon Water Barrel

Members: $59.95
Nonmembers: $64.95

These new, high-quality water barrels are constructed with heavy-duty, food-grade USDA approved plastic. They are similar in dimensions to the steel barrels that you may already be familiar with, but will not rust. Each barrel has two bungs (openings), one threaded with the standard NPT threads and the other with a fine threaded bung stopper. All barrels are also fitted with O-ring seals.

Water Barrel Siphon Pump

Members and nonmembers: $11.95

Water Barrel Bung Wrench

Members and nonmembers: $7.95

Water Barrel Spout

Members and nonmembers: $1.95

Aqua Blox Purified Water

Members: $17.95
Nonmembers: $18.95

These containers are similar to the juice boxes that you find in the store, but they contain purified drinking water with a five-year shelf life. Each unit includes 27 eight-ounce containers.

Get your credit card, then call

1-800-425-5397

1-904-964-9641 (fax)

Or write:

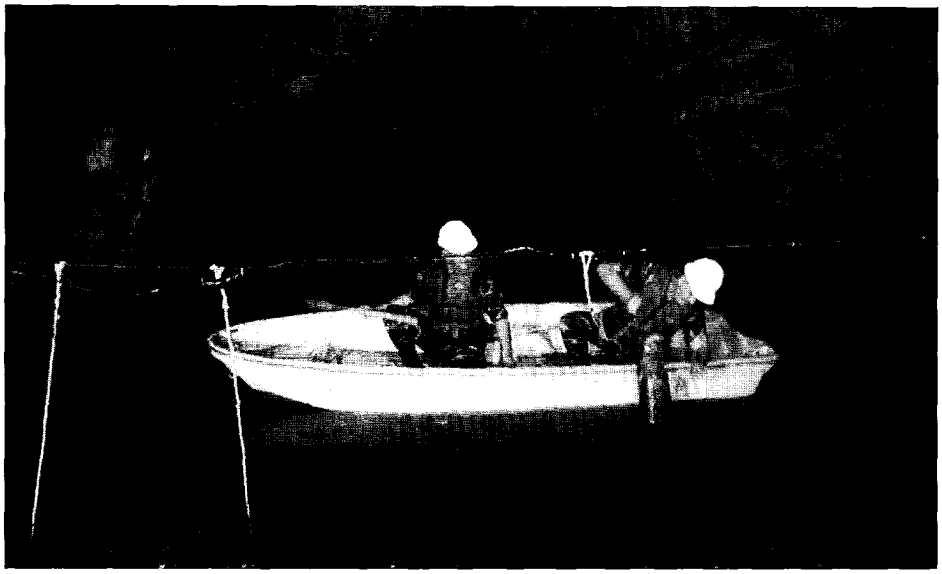
Tacda Store
P.O. Box 910
Starke, Fla., 32091

Or surf to:

www.tacda.org/offers/

Please include name, address, ZIP, and phone. Specify items and quantity. Make any checks to Tacda.

by the Colorado Springs *Gazette*



***Left:** Technicians check out one of the mountain's reservoirs — 400 feet long, 15 to 18 feet deep and V-shaped to absorb nuclear shock waves.*

How long before the new radars come online? Figure six years for forward-based systems and about two decades for space-based radars — if the programs receive funding.

Future plans: 'control of space'

Other related — but more controversial — upgrades are planned for U.S. air and space defense.

To counter the increasing ballistic missile threat to North America, plans are underway to deploy a ballistic missile defense. While squabbles between the administration and Congress over the scope and rollout of the system have caused delays, the government awarded the contract for the missile defense software program to Boeing last April. Since the data needed to shoot down missiles resembles the Operations Center's tracking information, many experts believe that the mountain should run the ballistic missile defense. The administration says that a limited missile defense system could be deployed by 2003 — if a decision to deploy one is made in the year 2000. [See coverage of the national missile defense debate on pages 2-5 and 16 of this *Journal* issue.]

The ballistic missile defense is a main feature of U.S. Space Command's Long Range Plan, which calls for "control of space" by 2020. Proposals include:

- *Assured access* — which would create a launch-on-demand vehicle

continued on page 12

continued from page 7

D.C.-based Lexington Institute, seems to borrow from *Popular Mechanics* and *This Old House* to explain how cruise missiles baffle surveillance systems.

"Imagine a bedroom-door-sized object flying 100 feet off the ground through remote areas powered by a fan-jet engine," he says. "That's a cruise missile. It's more like an oversized model airplane than a ballistic missile."

Robertson adds that military intelligence would have to tell the Operations Center where to point its cone-shaped radar zones to spot a low-flying cruise missile. Unfortunately, such information may not be available.

The former commander in chief of NORAD and U.S. Space Command would agree with Robertson's and Thompson's assessment. Air Force Gen. Howell Estes, who retired in August, told the Senate Armed Services Committee last year that the Operations Center could not effectively track cruise missiles. "And if somebody had the intent to build a cruise missile with a GPS [Global Positioning System] guidance on it," he continued, "certainly the technology is not very difficult. It's available in many countries today."

The "somebody" Estes mentioned could be any of 70 nations with anti-ship cruise missiles, a dozen countries with land-attack cruise missiles and some states with missiles that can travel 500 kilometers.

Plans are underway to counter the cruise missile threat, most notably forward-based X-band radar and space-based radar. While forward-based systems would use high-definition imaging to spot missiles from the ground, space-based systems would apply AWACS-style technology to track missiles during their non-boosted or "cold" phases. The new radars would allow the Operations Center to spot ballistic missiles during midcourse and re-entry, and cruise missiles at almost any altitude.

"Hopefully, future space-based radars will have the capability to detect cruise missiles and give air defense fighters sufficient time to lock on ... and shoot them down," says Air Force Maj. Ronald Wagner, chief of current air operations at NORAD Battle Management Center.

by Brad Cope

***Left:** SMSgt. Gilbert Noel and civilian Eloy Santillanes keep the Operations Center secure from rock slides inside Cheyenne Mountain. Among their duties: installing rock bolts, scaling away loose debris, and monitoring 42 cave-wall depth readings to make sure the mountain is staying put — especially after earthquakes.*

continued from page 7

that can operate in space at a cost of less than $1,000 per pound.

- *Surveillance of space* — which would improve ground- and space-based sensors for 100 percent tracking of high-interest objects.
- *Protection* — which would use sensors on board U.S. satellites to detect and report threats.
- *Prevention* — which would apply jamming technology and diplomatic pressure to deny enemies access to space-based information.
- *Negation* — which would launch space-based weapons that can attack enemy satellites.

U.S. Space Command's Long Range Plan is based on the belief that space assets are to the 21st century what electric and oil reserves were to the 19th and 20th centuries — precious resources that merit protection. While the plan takes into account that some of these proposals (such as full-blown ballistic missile defense and negation) violate current treaties, it states that the ideas are being considered "should our civilian leadership later decide that the application of force from space is in our national interest."

The plan does not estimate how much "control of space" will cost.

Last August, Air Force Gen. Richard Myers succeeded Gen. Estes as commander in chief of the complex. It's too early to tell how the Long Range Plan will continue to evolve under his leadership.

Long Range Plan or not, some critics charge that the increased use of "suitcase" or vehicle bombs, including those used at the American embassies in Kenya and Tanzania, have made the Operations Center irrelevant. The complex's response: As long as ballistic missiles, aircraft and space weapons threaten North America, its mission is far from obsolete.

Operations Center report card

Ultimately, rating the Cheyenne Mountain Operations Center comes down to some simple Qs and As:

- Does North America need a missile/air/space warning system? Yes.
- How well does the operation center perform this mission? Very well — except for cruise missiles.
- Could another site perform these services for less money? No. A 1995 Air Force Audit Agency report estimated that moving the Operations Center to another location would cost $18 billion.

While the Operations Center should be able to alert North America about most airborne threats for many years to come, the jury is still out on its ability to warn of post-Cold War menaces such as cruise missiles. The verdict will determine whether the middle-aged complex passes into its next stage of life as doddering or vibrant.

Inside the mountain near the blast doors, an odd sight appears: scores of square steel bolt heads fastened to the granite walls. Often joined by a web of chain-link fences, these 6- to 30-foot-long bolts hold the cave together, keeping loose debris off equipment and personnel. The ends of two small rubber tubes protrude from the holes made by the bolts. Water that would weaken the walls drips from the tubes, pooling in spots on the paved floor.

A pony-tailed former miner named Eloy Santillanes stands in one of these shallow pools next to the main blast doors. Before coming to the Operations Center 15 years ago, he worked at the Climax molybdenum mine in central Colorado. Santillanes explains that he and another employee use 275-psi torque wrenches to tighten the mountain's 115,000 rock bolts each year. Of all the diverse views of the mountain, his may be the most practical — and straight-forward.

"This is the safest place I've ever worked," Santillanes says. "But when you get right down to it, Cheyenne Mountain is still just a cave." ❑

*Free-lance writer **Brad Cope** lives in Colorado Springs.*

Journey to the center of the mountain

Like stepping back into the 1960s

A serpentine road winds from Colorado Springs to Cheyenne Mountain. About halfway to the cave entrance, a baby-blue guard house blocks the way. The remainder of the journey requires a guide and a neon red visitor's pass. No cameras or "knives with blades longer than three inches" are allowed. The road dead-ends in a parking lot bordered by an office building, a second guard house and a long-awaited glimpse of the cave entrance.

Designers added extra 90-degree turns in every building to lessen shock waves.

Just beyond the uphill guard station, buses ferry workers and visitors into and out of the complex. As the two-lane road enters the mountain, halogen lamps make tiny white crystals glitter in the granite walls. In a limited nuclear attack, this passageway would provide the first line of defense. Shock waves would enter one end of the .9-mile corridor and go out the other, leaving the adjacent complex intact. Nonetheless, if the Russians were to bring out of retirement and launch the SS-18 warhead (20-something megatons), Cheyenne Mountain would turn into a radioactive rock pile.

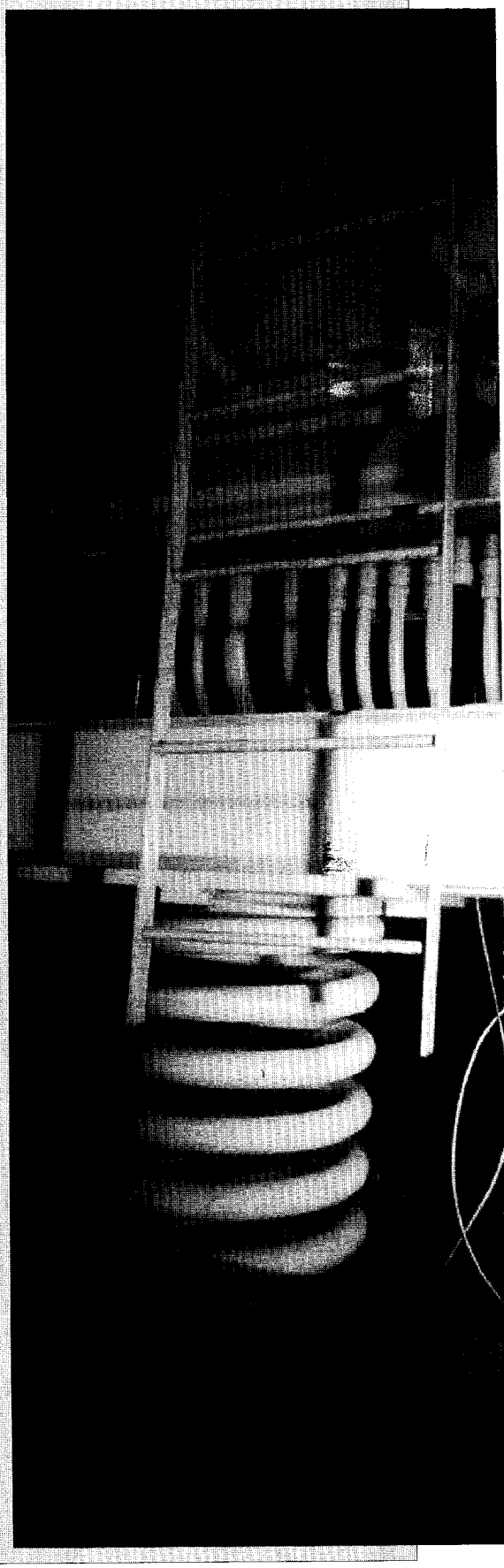
Next to the underground bus stop, two 50,000-pound blast doors stand between the passageway and the complex. Deputy base civil engineer Ben Borth — part of the 721st Civil Engineering Squadron (motto: "We Move the Mountain") — is proud of his doors. Made with stacked steel I-beams, two hydraulic pistons swing them shut in less than 30 seconds. The bearded civilian says that a smaller door down the main passageway can close in just 17 seconds. After the main doors close, pneumatic pumps push 22 steel pins into the frame, buttoning up the mountain.

Entering the Operations Center is like stepping back into the 1960s, when the complex could survive Armageddon. For instance, the buildings inside rest on 1,319 one-ton metal springs — the better to bounce back from nuclear blasts. In the event of an explosion, the structures can sway 12 inches in any direction. Flexible pipes between the buildings ensure a continuous flow of air, water and power to the workers. Another example of old technology appears around every corner. Literally. Designers added extra 90-degree turns in every building to lessen shock waves.

But an ironic twist of fate has made the complex's once outmoded engineering relevant again. Today's small-payload weapons, like portable bombs and cruise missiles, would likely not harm the Operations Center.

"Those threats wouldn't affect the mountain at all," says Navy Cmdr. David Knox, deputy director of public affairs at U.S. Space Command. "We'd just have to move some rocks and plant new trees outside."

— Brad Cope



by the Colorado Springs *Gazette*

Right: *To protect the complex from earthquakes and bomb blasts, the buildings inside the mountain rest on springs that can bounce 12 inches in any direction.*

Profile of a 'quick-alert event'

Nukes away!

In a building buried deep within Cheyenne Mountain, a nondescript door opens into the battle center — a conference room with a U-shaped table facing a row of six flickering TV screens. The command center appears through a plexiglass wall to the right. While the battle center sees action only during drills and crisis events, the command center receives information from the mountain's far-flung sensors around the clock.

Unlike the 1983 movie "War Games," the command center section within the mountain functions with fewer than 10 workers (not 50), uses four big wall monitors (not 12) and cannot launch a single nuclear missile (let alone the U.S. arsenal). Command center staffers — mission director, two emergency action controllers, battle management officer, message technician and deputy command director — sit in mauve armchairs around a rectangular console and answer to the command director.

One of the Operations Center's five command directors, Canadian Air Force Brig. Gen. Roy Mould, explains that the command center monitors "events," an incident picked up by the mountain's sensors.

The command center follows a preset pattern for all events: A warning — like "Quick-Alert Event" — appears in the top left corner of the "missile screen" in front of each staffer, and an alarm sounds. The team now has four minutes to assess the threat the event poses to North America.

Next, the command director uses a white "ops phone" to the left of his computer terminals — a kind of military party line — to reach key departments in the complex. If a plane enters North American airspace without an FAA-approved flight plan, the command director contacts NORAD Battle Management Center. If the infrared plume of a launching missile blooms over Russia, the command director talks to the Missile Warning Center. Or if an unknown object enters the Earth's atmosphere, the command director speaks with the Space Control Center. The Combined Intelligence Watch Center also provides the command director the latest information available for all types of events — air, missile or space.

The clock keeps ticking.

Meanwhile, the command center must validate the event with another source, much like a doctor's second opinion. Once any iteration of Defense Support Program satellites, radar, aerostat, AWACS or mission-tasked fighters confirms the original sensor, the command center attains the required "dual phenomenology."

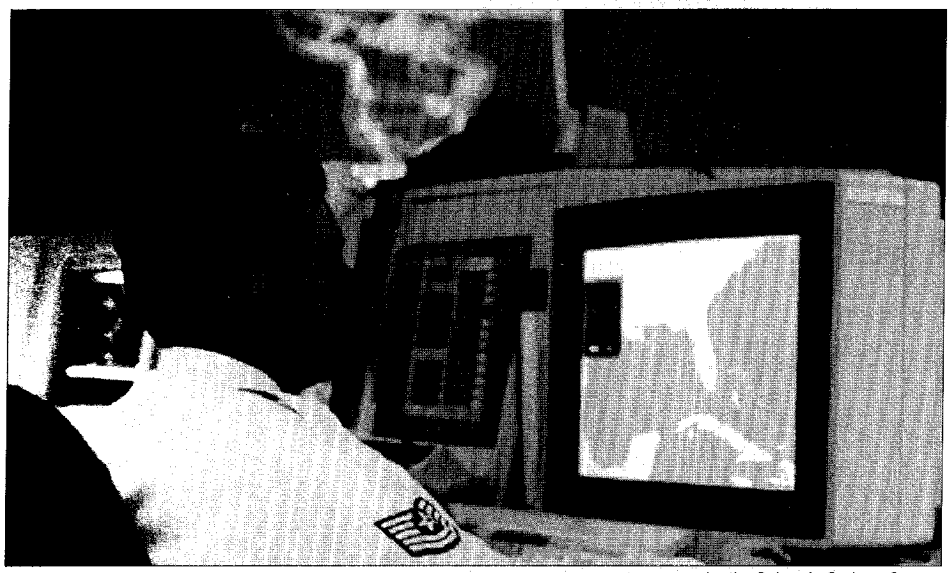
The clock keeps ticking. By the four-minute mark, the command director assesses how the event threatens North America. His options: no, concern or yes. All but no answers require the counsel of an "assessor:" the NORAD/U.S. Space Command commander in chief, his subordinate, or one of their American or Canadian counterparts.

An event that will — or could — threaten North America demands a yes or concern response. A screen in the command center projects a triangular outline in front of the tracked object that shows its possible range. If this "threat fan" falls within North America, a concern or yes response results.

After the command director gives his assessment, the team works to characterize the event. What type of missile/plane/object is this? What damage could it cause?

Finally, if necessary, the command director briefs the U.S. president or the Canadian prime minister on their options. Mould says one or two events take place every day. Still, he has given every event he has faced a single assessment — no.

— Brad Cope



Right: *The NORAD Battle Management Center tracks more than 2.9 million airborne objects each year.*

by the Colorado Springs *Gazette*

How to store drinking water *before* a disaster

by James T. Stevens
from *Making the Best of Basics — Family Preparedness Handbook*

Storing water is as easy as turning the faucet — if only you store it before an emergency arises! If you wait until it's critical, then both the frustration factor and the costs increase — in direct proportion to its availability! The following are some basic recommendations to guide you in completing this fairly simple storage project.

1: Store water from the source you're currently drinking.

2: Store your water reserves in new, thoroughly cleaned, heavy-duty, plastic containers with tight-fitting lids.

If you don't have a storage space problem, the larger containers are better for consolidating and organizing water storage. If your storage space is fairly limited, smaller storage containers facilitate stacking and moving them more often. Shipping-grade water containers, when filled with water, are capable of withstanding both outdoor hot and cold temperatures. This is important if some of your volume of water must be stored outside the protected environment of your living space.

There is always a great temptation to "keep it cheap" and store water in used containers. The difference in the price of acquiring and preparing used containers is comparable to acquiring new equipment, all things considered. It's not worth risking loss of your water supply by using containers of unknown origin and quality.

3: Don't reuse light-weight, food-grade, plastic containers previously filled with foodstuffs (mustard, ketchup, etc.), fruit or commercial drinks, milk, or nonfood products (pet foods, etc.), alkali-based or acid-based products (pickles, vinegar, household cleaners, etc.), or chemicals. The residual taste and odor of previous contents is often retained in the plastic, even though not immediately detected by smell or color and may cause contamination of water storage eventually.

Commercial one- and two-and-one-half-gallon plastic water bottles were designed and utilized originally for water-based products and may be reused for storing water in a protected (in-home) area.

4: Store your water supply away from paint products, all petroleum-based products, acids, or anything releasing objectionable odors, such as equipment, animal waste, fertilizers, etc. The composition of plastic containers acts as a permeable membrane which "breathes", allowing contamination of your stored water from strong odors, especially petroleum-based products.

5: Don't use metal containers for water storage. Cans without a special coating of enamel or plastic on the inside tend to impart an unpleasant taste to stored water, especially after lengthy storage. Water makes metal containers rust!

6: Rotate! Rotate! Rotate! We can't emphasize this enough! Rotate your water supply as a means of continuously checking its quality and shelf life.

Shelf Life of Stored Water

Water that is bacteria-free when stored in thoroughly clean containers will remain safe for several years. Tests of water quality after long-term storage showed that water stored properly for several years could not be distinguished by appearance, taste or odor from water recently drawn from the same source. However, the principle of rotation is the best guarantee for monitoring stored water's purity and taste.

Water is not only relatively inexpensive and easy to store, but it also stores indefinitely when a little care is given to its selection and preparation!

How much water to store? Each of us, during the average day, uses approximately 150 gallons directly in cooking our food, bathing our bodies, washing our dishes and clothes, flushing our toilets, and watering our lawns.

Each person's need for potable (drinking quality) water will differ, depending upon age, physical condition, level of activity, diet and climate. Because of its preeminent importance for survival and given the varying levels of need among individuals, it is difficult to determine definitively just how much water should be stored for a given family.

If you used only a half gallon per day, or 15 gallons per month, it would require approximately 180 gallons per person per year — just for minimal drinking purposes! At 8 pounds per gallon, that amount of water would weigh more than three quarters of a ton. It would also occupy approximately 150 cubic feet of valuable living space. Of course, that's space you need for living or for storing food and other preparedness items! Imagine the structural requirements for a large family's water storage, not to mention the cost of the storage equipment. How much more complicated to find storage if you live in an apartment, rent a house, or are away at school!

The magnitude of storing hundreds of gallons of water, weighing tons, is overwhelming. Why not consider storing only what is required to provide the amount of water for your family's basic subsistence (drinking water only level) or for basic maintenance (drinking water plus minimal food preparation, cleaning, etc.) for a defined amount of time, such as two weeks?

Basic Subsistence-level Water Storage Requirements

Basic subsistence-level water storage is defined as the amount of water required to sustain human body functions normally. This is considered a minimum daily amount of drinking water — any less will eventually create physical stress and possible ill effects.

A normally active person needs to drink two quarts of water per day — and more is better during emergency periods. To meet the minimum basic subsistence-level storage requirements plus basic personal needs — cooking some food, brushing teeth, washing face, hands, etc. — store at least one gallon for each family member per day for a two-week period.

Note the following about the basic subsistence-level quantity of water:

This amount includes no allowances for washing dishes or the body.

High-temperature environments require greater water intake.

Active children, nursing mothers and sick people will usually need to drink more than two quarts of water each day.

Most survival experts agree that when water supplies begin to run low, it should not be rationed (except, perhaps, at sea). The reasoning is there's nothing more demoralizing for the average person than being thirsty when under stress! The best rationing plan is to drink a reasonable amount of water daily, then find more! Rather than rationing drastically, minimize the amount of water the body needs by reducing activity and staying cool. In the next section you'll discover how to find emergency water sources in and around the house so you won't need to ration water too sharply.

Basic Maintenance-level Water Storage Requirements

Basic maintenance-level water storage requirements differs from basic subsistence-level requirements by the addition of water reserves to do some of the normally water-intensive chores — cooking and preparing food, cleaning utensils/equipment, and washing the body — without taking a bath! It's only slightly above basic subsistence-level water storage needs.

The recommended amount of water for Basic Maintenance-level storage requirements is two gallons for each family member per day for a two-week period.

If you're not ready to begin your storage program now, at least buy several gallons of purified water at the local grocer. You'll have some water to drink while you look for other water sources, should an emergency occur!

***James T. Stevens** is a preparedness expert and writer living in San Antonio. His latest book,* Don't Get Caught with Your Pantry Down, *is available by calling 1-800-880-6789.*

How to purify drinking water *during* a disaster

by Sharon Packer

If a disaster cut off your water supply, how would you cope — and drink?

Civil Defense Volunteers of Utah has been teaching water purification methods for the past 10 years. Member **Gary Barnes** researched the following tips for water purification.

All water obtained outdoors (lakes, streams, etc.) is subject to pollution and contamination. To purify this water, it must be clarified or cleansed. Then it must be disinfected or made biologically safe to drink. Emergency treatment of water can't guarantee the same quality water as a supply of properly stored water. We highly recommend that every person store emergency water. Devices which are sold with a claim that they can "purify" any water should be avoided because they seldom work as claimed.

Step 1 — clarification

Settling: Settling is the easiest method of removing most debris and suspended particulates, including radioactive fallout particles from water. Let the water stand in a container totally undisturbed for 12 to 24 hours. A handful of clay soil in each gallon of water will help speed this process. After settling is complete pour, dip or siphon the clean water into another container, being careful not to stir up the sludge at the bottom Discard the sludge, and the clean water is ready for disinfection.

Can filters: Clean a #10 or larger can. With a nail, puncture several holes in the bottom of the can near the center (avoid making holes near the edges of the can). Place an inch or two of washed, crushed charcoal in the bottom of the can (can be purchased at any pet shop or taken from a fire). Cover the charcoal with three or four inches of glass wool or polyester aquarium filter filling. In an emergency, paper towels, toilet tissue, pieces of cloth or even dried grass will work. Pack the material tightly against the sides of the can so that no water can leak around it without being filtered. Suspend the can above a clean container. Pour the polluted water into the can and allow it to drip into the clean container. This process will filter up to 2 gallons of water per hour.

Earthen filters: Earthen filters are used when filtering radioactive fallout from water. They are superior to distillation, ion-exchange filters or charcoal filters. Perforate the bottom of a 5 gallon can or wastebasket with holes punched within 2 inches of the center. Place a 1 1/2 in. layer of washed pebbles on the bottom of the can. Cover the pebbles with one thickness of terry cloth towel or other porous cloth. Scrape the top 4 to 5 inches of soil off the ground to get below fallout and then dig enough dirt to fill the can with 8 inches of this soil, packing it tightly against the sides. Cover the soil with another thickness of towel and then another inch or two of pebbles. Suspend the can over another clean container and pour contaminated water into the top. This process will filter up to 6 quarts per hour.

Coffee filters: Coffee filters are an excellent filtering medium. Place three or four of them (one inside the other) into a mason jar and let the edges protrude over the rim of the jar. Screw on a jar ring to hold the filters in place and pour the muddy water into the filters. Replace the filters when needed. This type filter will clean approximately 1 quart of very muddy water in two hours.

Step 2 — disinfection

Boiling: Water sterilization by boiling is preferred over any other method of chemical disinfection. Organisms can "hide" by burrowing into the microscopic particles that cause cloudiness, escaping the action of disinfecting chemicals and remaining capable of producing disease. Water that is boiled vigorously for five minutes will usually be safe from harmful bacterial contamination, adding one additional minute for each 1,000 feet of altitude. To conserve fuel, use a pressure cooker. Bring the water up to 15 pounds and then remove from the source of heat. The taste of boiled water can be improved by filtering through a charcoal filter.

Iodine crystals: Crystalline iodine is the most effective method of chemically purifying contaminated water. In the crystal form, iodine has an infinite shelf life and is very inexpensive. Great care should be exercised, however, when handling crystalline iodine. **Do not touch iodine crystals.** They can cause severe skin burns and can be fatal if swallowed in sufficient quantity. Add 4 to 8 grams of USP Grade Resublimed Iodine Crystals to a one ounce, clear glass bottle with a leak proof bake-lite cap. Plastic bottles are not acceptable, since they stain and can leak. After placing the crystals in the bottle, fill the bottle with water and shake vigorously for one minute, then allow the bottle to sit for one hour before using. Add 3 teaspoons of this solution (1/2 ounce) to a quart of clear, lukewarm water and let it stand for 30 minutes before using. If the water is cold or cloudy, use 6 t. of solution per quart of water.. When the solution in the bottle is used up just add more water to the remaining crystals and let it stand one hour before using to treat more water. Four to 8 grams of crystalline iodine should be sufficient to treat up to 1,000 quarts of water. The water in the bottle could be thought of as a 'start', just as sour dough is kept by bakers to add to their recipes.

Iodine tablets: Tableted iodine in the form of tetraglycine hyperiodide (sold in sporting goods stores under the names of Coghlan's Globaline, and Portable Agua) are very effective against all forms of bacteria, however, they are less effective against the dreaded protozoa Giardia Lamblia. Iodine tablets usually have a short shelf life (losing 20% of their effectiveness in just six months) and are very sensitive to heat and light. They turn color from gray to yellow as they become less potent. The usual dose is one tablet per quart of clear water and two for cloudy water. Let stand for 30 minutes before using.

Tincture of iodine: Tincture of iodine is not potent enough to kill GIARDIA. It will kill most other forms of bacteria. A 2% solution of tincture of iodine, as found in most first aid kits, can be added to polluted water. Use 32 drops of tincture of iodine per gallon of clear water or 8 drops for a quart and let it stand for 30 minutes before using. Double this amount if the water is cloudy.

Chlorine: Liquid household chlorine bleach will kill most common forms of bacteria but is totally ineffective against Giardia and other hardy forms of protozoa. Chlorine can be used to purify water provided the label says it contains hypochlorite as its only active ingredient. **Do not use granular or powdered forms of household bleach; they are poisonous!** Add 2 drops of bleach per quart of clear water, 8 drops per gallon, or one teaspoon for five gallons (double this if the water is cloudy). Liquid bleach loses strength over time, and in just one year of storage the dosage must be doubled to be effective. Two year old bleach must not be used. After adding to water, stir and let stand 30 minutes before drinking.

Halazone: These tablets are the least effective method of chemically disinfecting polluted water and as such are not recommended for most situations. If used, add four tablets per quart of clear water and eight per quart for muddy water. Their shelf life for storage is only 5 to 6 months if unopened and 48 hours if left opened.

***Note:** Regardless of the method of chemically disinfecting water, always double the dosage amount if the water is not absolutely clear. If the water temperature is cold, below 45 degrees F, double the treatment time.

***Sharon Packer,** of Salt Lake City, is cofounder and president of **Civil Defense Volunteers of Utah.** Questions about this article may be addressed to Box 8171, Midvale, Utah 84047.*

Tacda Letter

For members of
The American Civil Defense Association
Summer/Fall 1998

The following comments are sobering, to say the least.

They're from **Rep. Floyd Spence**, R-S.C., chairman of the **House National Security Committee** regarding the July 15 ***Report of the Commission to Assess the Ballistic Missile Threat to the United States.***

The comments point out how much trouble our leaders go through to get the truth out to the American public. Please continue to support our leaders, Republican or Democrat, who are trying to get this information out to the public. ***See pages 2-5 in this issue for more on the national missile defense topic.***


Spence

It has been a long uphill struggle to get to this point where an independent commission of experts is able to report to us with such authority. In November 1995, the Administration produced a controversial National Intelligence Estimate (NIE) that concluded the long-range ballistic missile threat to North America was 15 years away. Although the NIE contained fundamental analytical flaws — not the least of which was its failure to consider Alaska and Hawaii as part of the United States — its key conclusions were declassified and released publicly in the midst of a volatile debate between the House, Senate and White House over national missile defense policy. The President ultimately vetoed the defense authorization bill in December 1995 based on his opposition to a provision which called for deployment of a national missile defense. In so doing, the President cited the NIE's assertion that Americans were safe from the threat of long-range ballistic missile attack for more than a decade.

For months following the veto, I tried unsuccessfully to have the General Accounting Office granted access to the intelligence community in an effort to independently verify the methodology and conclusions of the controversial NIE. The Administration refused to grant GAO the necessary access, so the commission reporting to us today was created in legislation I authored in the fiscal year 1997 defense authorization bill.

Consistent with its mandate, the commission assessed the ballistic missile threat. The report does not recommend any particular solution. As the Speaker indicated in his remarks yesterday, **this report represents the most serious national security warning the American public has received since the end of the Cold War**. We all have our personal views on how best to address this threat, but I hope my colleagues will stay focused on what the commission has reported on — that is the problem, and not proposed solutions. The conclusions reached by the commission suggest that the ballistic missile threat to the United States is a serious one today...and is growing. The threat is certainly not 15 years away. The report contains a particularly disturbing conclusion that ballistic missile threats will likely manifest themselves sooner than we think, leaving little time or ability for the nation to respond. In the world of national security, when a worst-case threat assessment becomes a most likely scenario, taking a business-as-usual approach to policy-making is indefensible.

I am also struck by the commission's finding that the ballistic missile threat to the United States is "broader, more mature and evolving more rapidly than has been reported in estimates and reports by the intelligence community." Furthermore ... I am not surprised by the commission's finding that the progressive relaxation of U.S. export control policies has made the United States "a major, albeit unintentional, contributor" to the proliferation problem ....

I continue to believe that the American people have been lulled into a false sense of security since the end of the Cold War, and hope that the commission's report will serve as a wake-up call for all Americans. The world is a dangerous place and America, the world's only superpower, is not adequately prepared.

from the Tacda Staff

Events Info

The Journal of Civil Defense *does not take responsibility for the accuracy of the following information. Any or all of the information is subject to change without notice.*

1998

Nov. 15-19

American Water Resources Association (AWRA) 1998 Annual Conference on Water Resources and Symposia on Management of Human Impacts on the Coastal Environment and Applications of Water Use Information. Point Clear, Alabama. Contact: AWRA, 950 Herndon Parkway, Suite 300, Herndon, Va., 20170-5531; (703) 904-1225; fax: (703) 904-1228; e-mail:awrahq@aol.com; www.uwin.siu.edu/~awra.

Nov. 15-19

Integrating Emergency Management Structures into Your Organization, Ashburn, Virginia. Offered by the University of California Berkeley Extension through the George Washington University Virginia Campus in Ashburn, Virginia. Contact: Greg Shaw, Director, Training and Education, Institute for Crisis, Disaster, and Risk Management, The George Washington University Va. Campus, 20101 Academic Way, Suite 220B, Ashburn, Va. 20147-2604; (703) 729-8271; fax: (703) 729-8272; e-mail: glshaw@gwu.edu; www.seas.gwu.edu/seas/institutes/icdm.

Nov. 16-19

The Role of Information Technology in Fire Management, San Diego. Sponsor: University of California at Davis in cooperation with several federal and state agencies. Contact: Mike McCoy, Information Center on the Environment, Department of Environmental Studies and Policy, University of California at Davis, Davis, Calif. 95616; (530) 754-9171.

Nov. 16-19

Third International Conference on Forest Fire Research and 14th Fire and Forest Meteorology Conference. Luso, Coimbra, Portugal. Contact: ADAI, Universidade de Coimbra, Apartado 3131, 3000 Coimbra, Portugal.

Nov. 17-18

Tenth Annual Conference and Exhibition of the Survive! Business Continuity Group, Birmingham, U.K. Contact: Survive! Secretariat, The Chapel, Royal Victoria Patriotic Building, Fitzhugh Grove, London SW18 3SX, U.K.; tel: 0181-874 6266; fax: 0181- 874 6446; e-mail: surviveuk@cityscape.co.uk; www.survive.com.

Nov. 17-20

The Survive! Business Continuity Group, Seattle. Contact Survive! Business Continuity Group; 1-800-787-8483; fax: (908) 704-8999; e-mail: surviveusa@aol.com; www.survive.com. Attend workshops around the world on various aspects of emergency management in business. The group offers a suite of one or two-day workshops, which can be taken individually or collectively.

Nov. 19

Disaster Exercises: Planning and Running an Effective Drill. Edmonton, Alberta, Canada. Offered by: Major Industrial Accidents Council of Canada (MIACC). Contact: Linda Huskins, Manager of Events, MIACC, 265 Carling Avenue, Suite 600, Ottawa, ON, Canada K1S 2E1; (613) 232-4435; fax: (613) 232-4915; e-mail: lhuskins@miacc.ca; www.miacc.ca.

Nov. 23-26

First China-Japan Conference on Risk Assessment and Management (CJCRAM'98), Beijing. Organizers: Beijing Normal University, Society for Risk Analysis-Japan, and others. Contact: Dr. Huang Chongfu, CJCRAM'98 Secretary-General, Institute of Resource Science, Beijing Normal University, Beijing 100875, China; tel: +86- 10-62208144 or +86-10-62207656; fax: +86-10-62208178; e-mail: cjcram98@bnu.edu.cn - or - Professor Saburo Ikeda, CHCRAM'98 Secretary of Japan Section, Institute of Policy and Planning Sciences, Universtiy of Tsukuba, Tsukuba, Ibaraki 305, Japan; tel: +81-298-53-5380; fax: +81-298-55-3849; e-mail:srajapan@ecopolis.sk.tsukuba.ac.jp. Includes sessions on risk analysis of natural disasters.

Nov. 25-27

10th Japan Earthquake Engineering Symposium, Yokohama, Japan. Sponsors: Architectural Institute of Japan and others. Contact: 10th JEES, c/o Architectural Institute of Japan, 26-20, Shiba 5-chome, Minato-ku, Tokyo 108, Japan; tel: +81-3-3456-2051; fax: +81-3-3456-2058; www.aij.or.jp/jees/index.html.

Nov. 30-Dec. 3

Local Authorities Confronting Disasters and Emergencies (LACDE) 1998 Annual Conference. Vina del Mar, Chile. Contact: Conference Secretariat, Av. Carlos Antunez 2610, Providencia, Santiago, Chile; tel: +56-2 335-5450; fax: +56-2 234-1437; e-mail: transver@entelchile.net; www.achm.cl/LACDE -or- LACDE, Union of Local Authorities in Israel, 3 Heftman Street, Tel Aviv 61200, Israel P.O.B. 20040; tel: 972-3-695-5024; fax: 972-3-691-6821; e-mail: ulais@netvision.net.il; www.ladpc.gov.il.

Dec. 1

Fifth Annual West Coast Disaster Response Conference (WCDRC), Burnaby, British Columbia, Canada.Contact: WCDRC, c/o Epicentre Inc., 200 Burrard Street, Suite 1550, Vancouver, BC, Canada V6C 3L6; tel: (604) 682-6005; fax: (604) 682-0500.

Dec. 1-3

Second Meeting and Symposium of the Asian Seismological Commission (ASC98) on Earthquake Hazard Assessment and Related Topics, Hyderabad, India. Sponsors: National Geophysical Research Institute; Department of Science and Technology, Government of India; Indian National Science Academy; and others. Contact: S.C. Bhatia, Organizing Secretary, ASC98, National Geophysical Research Insitute, Hyderabad 500007, India; tel: +91-40- 7170141;fax; +91-40-7171564; e-mail: asc98@csngri.ren.nic.in; www.ngri.com/asc98.htm.

Dec. 6- 9

Society for Risk Analysis (SRA) 1998 Annual Meeting: "Assessing and Managing Risks in a Democratic Society," Phoenix. Contact: SRA, 1313 Dolley Madison Boulevard, Suite 402, McLean, Va., 22101; (703) 790-1745; fax: (703) 790-2672; e-mail: sra@burkinc.com; www.sra.org.

FEMA offers independent study course on pets and disasters

Anyone who loves or cares for animals can learn how to safeguard them during a disaster through two new Independent Study Courses developed by the **Federal Emergency Management Agency** (FEMA).

The first course, IS-010, discusses how disasters affect people and their animals, while the second, IS-011, focuses on incorporating animals into a community's disaster planning and is aimed primarily at emergency management officials and animal-care industries.

"Animals are often considered part of the family, and plans have to be made to care for them during a disaster," said **Joe Bills**, the course manager and project officer.

As with all FEMA's Independent Study Courses, there are no prerequisites or enrollment fees. The course materials can be downloaded from FEMA's Web site, at www.fema.gov/EMI/Ishome.htm Materials can also be ordered by writing to the Independent Study Office, Emergency Management Institute, National Emergency Training Center, 16825 South Seton Ave., Emmitsburg, Md. 21727. The courses include practice exercises and a final exam. Those who score 75 percent or better are issued a certificate of completion by FEMA's Emergency Management Institute. The average course time is 10 to 12 hours.

How to contact Tacda

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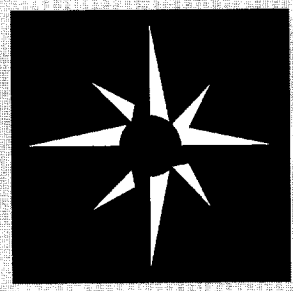

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