HIGH FRONTIER

Amb. Henry F. Cooper, Chairman . . . Lt. Gen. Daniel Graham, Founder

High Frontier . . Building Truly Effective Defenses . . Reagan's Vision Lives!

Overview:

During the past several months, High Frontier has begun using social media to inform America that we have major vulnerabilities to ballistic missile attack, not yet addressed by on-going ballistic missile defense programs. So far we have distributed 41 email messages discussing these issues, hopefully in terms easily understood by lay persons, all available on our webpage (www.highfrontier.org) and 15 of which are included here in slightly edited form to summarize several key points, in the following order:

- ***High Frontier's plans and priorities for 2013;***
- ***The existential electromagnetic pulse (EMP) threat from manmade and natural causes;***
- ***Why the U.S. government is failing to counter this threat and suggestions for improvement;***
- ***Homegrown terrorism and connections to the global Jihad;***
- ***Iran is connected to this global Jihad and has sworn to destroy America, the "Great Satan;"***
- ***Two ways Iran could pose an EMP attack from the south—from the Gulf of Mexico and from space;***
- ***Key ballistic missile defenses that could be deployed to counter these threats; and***
- ***The need for protecting the nation's electric power grid both: 1) As a back-up to these defenses—there is no such thing as a perfect defense; and 2) To protect against nature's existential threat from a massive solar emission that will happen; it's just a question of when.***
- ***Iran getting a nuclear weapon that can be mated to ballistic missiles is a "red line" for the U.S. as well as Israel.***

This information is presented in terms we hope will inform lay persons on how serious are our vulnerabilities, while reassuring them with possible, affordable remedies. Hopefully, this information will encourage the average person and their local, state and federal leaders to better inform themselves and to urge the "powers that be" to provide for the common defense, as required by our Constitution.

We welcome your feedback. Write us at High Frontier, 500, North Washington St., Alexandria, VA 22314; call us at 703-535-8774; and contact us on our webpage at http://highfrontier.org/support-our-cause/

High Frontier Plans and Priorities for 2013

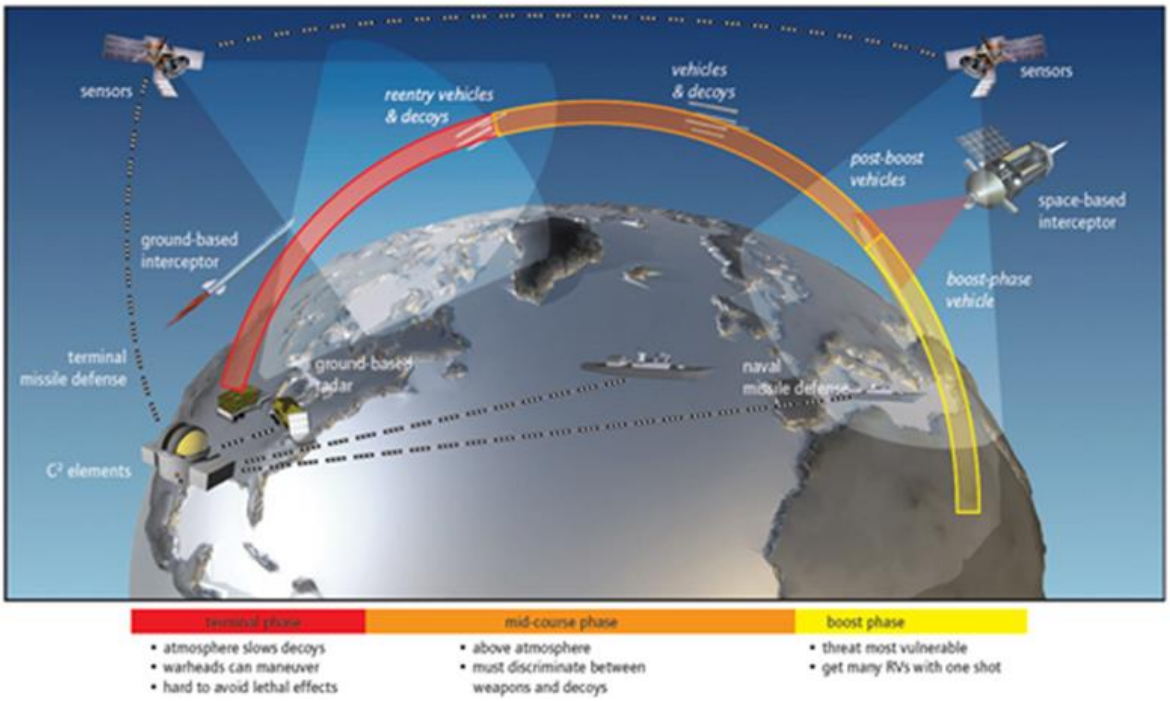
December 23, 2012

This is High Frontier's first email report intended to keep folks up to date on the important issues of the day regarding America's efforts to build effective missile defenses. We intend to send weekly emails in the future.

We chose today for our first email message because we survived the "end of the world" that some thought might attend the last day of the Mayan calendar. But *there really is an existential threat—all too real—that could lead to the death of 60-90 percent of all Americans* following an entirely plausible ballistic missile attack. More in a moment after a bit of background that led High Frontier to enter the "social media" world.

This email emphasizes that we are bringing our webpage (www.highfrontier.org) up to date and giving you our priority plans for the coming year. We seek your feedback, particularly your views on our plans, breaking events and how we might improve our efforts to inform the grass roots, as well as the powers that be in Washington.

Our new webpage, still in an unfinished Beta format, emphasizes High Frontier's heritage. It began with Army Retired Lt. General Daniel O. Graham playing a key role in initiating the Strategic Defense Initiative (SDI), as recounted by President Ronald Reagan in his telephone conversation with Danny on High Frontier's tenth anniversary. High Frontier still pursues Reagan's vision for an effective defense against ballistic missiles.



We join our efforts seamlessly with those of a number of other conservative organizations in an activity called the Independent Working Group (IWG)—and each of us plays an important role in informing the powers that be on the strengths and weaknesses of current U.S. programs in meeting the threat of ballistic missile attack—which is growing.

The Institute for Foreign Policy Analysis hosts our regular meetings and publishes our key reports reflecting many hours of joint drafting and editing, e.g., see our comprehensive report, *Missile Defense, Space and the Twenty First Century*, and key Questions and Answers. Some members, such as the American Foreign Policy Council, focus on key special interests such as the growing nuclear-armed missile threat from Iran and North Korea. Two IWG members, the George C. Marshall and Claremont Institutes, developed and maintain an important webpage describing this threat, related current events and articles and the state of ongoing missile defense programs. The Heritage Foundation includes our missile defense agenda in many of its activities, publications and conferences—e.g., watch a video of an important roundtable discussion of the electromagnetic pulse (EMP) threat.

High Frontier's top priority next year is to leverage these resources and others, and to take our message to grass roots America, especially to those who live around the Gulf of Mexico. I laid out our case in the first article of our new webpage, *An Open Letter to Citizens of the Coastal States around the Gulf of Mexico*.

Many short range ballistic missiles are already in the hands of Iran and North Korea—which sells to anyone with money. Terrorists could purchase and launch a single such missile from a vessel in the Gulf. If they detonate its nuclear weapon 80-100 miles over the U.S., the resulting Electromagnetic Pulse (EMP) could immediately halt our entire just-in-time economy—in effect, returning us to a nineteenth century existence without indigenous agriculture and little electrical infrastructure and associated transportation systems upon which our existence relies. See our second webpage article.

North Korea already has nukes, and Iran may be only months away—we have little time to address this serious deficiency. See the articles on our current webpage.

Fortunately, we have an affordable answer—requiring no research and development beyond already funded Pentagon programs—to protect all America from this looming threat: Deploy at several military bases around the Gulf Coast the same defenses the U.S. is funding for deployment in Romania (2015) and Poland (2018).

This defense would consist of the Navy's "Aegis Ashore" system, a land-based version of the missile defense components now at sea on 24 Aegis ships around the world—growing to 32 by 2015.

These Aegis ships are often in transit on the East and West Coasts, and can provide a defense against sea-launched Scuds during such passage. But they do not go into the Gulf of Mexico—which leaves us vulnerable to this threat.

The Aegis missile defense system has the most impressive testing record of all U.S. missile defense programs; and, based on that record, can provide effective defenses whether at sea or on land. The land-based components of this system

would cost on the order of $300 million—an amount that might double to support deployment activities. This is not a lot of money to the Federal Government, which is charged "to provide for the common defense" by the Constitution.

Next year, we will be building on last year's efforts in Mississippi to explain to the grass roots this threat and possible solution. We were well received by the faculty and engineering students at Ole Miss, the Jackson County Board of Supervisors and the Governor—and they would be delighted to support such a deployment in Pascagoula, where our Aegis ships are built, if only Washington would get the message and do its job.

We also intend to go to Florida, beginning with folks in the Panama City area—near Eglin and Tyndall Air Force Bases, either of which could be excellent locations for an Aegis Ashore site. We shall see how the local folks feel about the problem and the possible solution mentioned above—and we'll take that message to the powers that be in Tallahassee and Washington.

Subsequently, we will be seeking possible sites on military bases in the Florida Peninsula and in Texas to round out possible locations around the Gulf of Mexico—hopefully staying ahead of the threat.

As Israel's Iron Dome recently demonstrated by intercepting Hamas' rockets from Gaza, defenses are very important in the modern world. The naysayers observe that it is easy to intercept relatively slow moving rockets in their flight path of 3-25 miles. This is true if one knows they are coming one at a time—but not for salvos and if the timing is unknown.

Literally, Iron Dome's command and control system assessed the attack and decided whether to launch a defensive interceptor in seconds. Such requirements lead inevitably to a defensive system that is authorized to do its thing and can be terminated—but otherwise is entirely automated to fight the battle.

Israel's success was important for those advocating space-based missile defenses—indeed for any defense seeking to destroy attacking missiles in their boost phase, before they release their warheads, decoys and other countermeasures.

As in the Iron Dome case, timing is everything—shooting down slow-moving boosting ballistic missiles is as easy as was the case for slow moving Hamas rockets. But one must get into the battle early—and that requires a highly autonomous command and control system as we understood and designed during the SDI era before the Clinton administration killed the space-based defense programs. That concept is now "battlefield tested" and it succeeded with flying colors. We at High Frontier and other IWG members will continue our advocacy of such space-based defenses this coming year.

If you are considering year-end giving, I urge you to help us pursue this agenda. Help us escape the existential threat of nuclear armed ballistic missile attack—as it appears that providence has deferred the "end of the world"—at least for now. We hope you are enjoying a happy holiday season—a Merry Christmas, if we may, and a Happy New Year.

An EMP Existential Threat: An Unlikely Event?

December 30, 2012

Last week, High Frontier's first email discussed the existential threat posed by North Korea, Iran or Terrorists, who could launch a nuclear armed ballistic missile from a vessel in the Gulf of Mexico, to produce an electromagnetic pulse (EMP) that, in turn, could within 6-12 months lead to the death of 60-90 percent of all Americans. We recommended countering that threat deploying "Aegis Ashore" ballistic missile defenses at several military bases around the Gulf of Mexico.

This threat is considered by some to be very unlikely, though for well over a decade it has been understood to be a real possibility. As then Defense Secretary Donald Rumsfeld observed in a September 16, 2002 Pentagon Press Briefing,

"Countries have placed ballistic missiles in ships – dime a dozen – all over the world. At any given time, there's any number off our coasts – coming, going. On transporter-erector-launchers, they simply erect it, fire off a ballistic missile, put it down, cover it up. Their radar signature's not any different than 50 others in close proximity."

And in the middle of the last decade a specially chartered non-partisan Congressional Commission produced ample evidence to justify immediate actions to save many Americans should the threat materialize. Yet, little has been done to defend against this threat. Maybe our leaders are waiting for Iran to get a nuclear weapon? Some believe Iran may have nuclear weapons as early as in a few months—even if this is not the case, *seems like it is time to act!*

Furthermore, North Korea already has nuclear weapons—and as is well known they are willing to sell to anyone with money. They not only have been helping Iran build better ballistic missiles and develop nuclear technology; they could sell directly to terrorists. *Seems like it is long past time to act!*

The EMP Threat could have catastrophic consequences

- *A short or medium-range ballistic missile could be launched from a vessel near our coasts – and it could detonate a nuclear weapon at high altitude to produce an EMP*
- *Could cripple critical infrastructure*
  - *Telecommunications*
  - *Banking and finance*
  - *Fuel/energy*
  - *Transportation*
  - *Food and water*
  - *Emergency services*
  - *Government activities*
  - *Space systems*
- *Electronic damage from a single high altitude burst could span the entire US, bringing our "just in time" economy to a halt*
- *Several potential enemies, including terrorists, possess or can gain an ability to launch an EMP strike*
- *Current US missile defense has some capability against an ICBM delivered EMP threat and against shorter range missiles from ships off our East and West Coasts—but none against missiles from the Gulf*

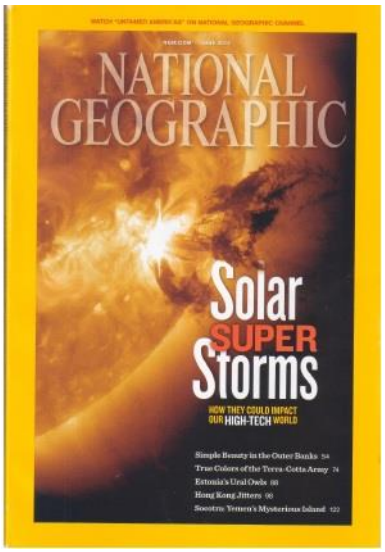
As reported in our last email, we can rapidly provide needed defenses. Some 24 of our Aegis ships can defend against this threat if they are operating near our coasts—and we should assure the usual few off our East and West Coasts are prepared to do so. But they do not operate in the Gulf of Mexico; leaving us totally vulnerable to an attack from the south—hence the need for several "Aegis Ashore" sites, that would be identical to those we are planning to build in Romania (2015) and Poland (2018).

But there is no such plan, still we delay!

Could this delay be because we think this threat is sufficiently unlikely to risk the lives of 300 million Americans who could die at the hands of those openly committed to kill as many of the Great Satan as possible?

While pondering this sad state, consider that there is another well, though not widely, known "unlikely event" that could produce an EMP effect with the same lethal consequences to unwitting Americans. *It can, and more importantly, will happen—it is just a matter of time*.

***The source of this threat? The Sun . . . that's right, the Sun*. If you have doubts about this claim and are suspicious that it might be a Pentagon conspiracy to scare an uninformed public, note as supporting evidence the very reputable National Geographic Magazine, which featured this threat as its June 2012 cover page article, "Sun Struck" (pp. 32-53).**



The author, Timothy Farris, referred to a May 1921 solar storm that today would turn off the lights over half of North America—and a March 13, 1989 solar storm that knocked out the power grid serving 6-million subscribers in Quebec. This latter rather dramatic solar storm was about a third less powerful than the largest on record, the so-called Carrington event, named for the scientist who observed it on September 1, 1859. That event knocked out some telegraph operations, in an era long before our extensive dependence on electronics, which has grown substantially since even the 1989 event over Quebec.

As also noted by Farris, a 2008 National Academy of Sciences study estimated such a storm "could wreak the economic disruption of 20 Katrina-class hurricanes, costing more than one-to-two trillion dollars in the first year alone and taking a decade to recover from." And we believe this could grossly underestimate the disastrous effects.

So this solar flare concern is well founded scientifically. Such a disastrous event may seem unlikely in any given year—since it has been over 20 years since the Quebec experience and over 150 years since the Carrington event. It is perhaps worth noting that such *major events are more likely in some years than others, given approximately an 11 year cycle of solar maxima—and 2013 is a year for a solar maximum, but not necessarily the year for a major solar storm.*

So, we have an event that is certain to happen, it's just that when it will happen is uncertain. As perhaps a humorous point to emphasize that a rare event can still be a certainty, consider another infrequent event that is happening this month—which has 5 Saturdays, 5 Sundays and 5 Mondays. This sequence occurs only once every 824 years. This interesting occurrence has only happened TWICE since Yeshua was born to Mary. It is infrequent but predictably certain. The fact that it is infrequent makes it no less certain. A Carrington event is also an infrequent, essentially certain-to-occur, happening—just one not so precisely predictable.

December 2012						
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31						

***So, we have two reasons to be concerned about the EMP threat—one man-made, by rogue states or terrorists who could get their hands on a nuclear weapon, and the other a sure consequence of Mother Nature*—only the timing of its infrequent occurrence is uncertain. Either would have disastrous**

consequences. The impressive October 12, 2012 National Geographic Channel TV report provided an excellent 40-minute discussion of both sources of EMP and what might be done to prepare for such an event if it occurs.

Our next email will discuss these preventative measures. I hope to make serious progress toward providing such preparation for the American people in 2013. As you consider your year-end giving, I hope you make a tax deductible gift to High Frontier and help us escape the existential threat.

Why Aren't We Countering the Existential EMP Threat?

January 7, 2013

High Frontier's two previous email reports described an existential threat to the America we know and love—it could kill 60-90 percent of all Americans. *This electromagnetic pulse (EMP) threat comes in two flavors: one manmade and the other a consequence of nature*.

- Any number of adversaries (including Iran and/or their terrorist surrogates) may obtain a nuclear weapon, mate it to a short or medium range ballistic missile and launch that missile from a vessel near our coasts to a hundred miles or so above the U.S. and there detonate its nuclear weapon.
- Periodically occurring solar storms (reaching a maxima approximately every 11 years—including the 2012-14 time period) create enormous clouds of electrically charged particles that travel 93-million miles in minutes to interact with the earth's geomagnetic field and create an EMP event.

In the first case for example, North Korea, Iran or Terrorists could launch a nuclear armed ballistic missile from a vessel in the Gulf of Mexico to produce an EMP attack. To counter that threat we recommended deploying "Aegis Ashore" ballistic missile defenses at several military bases around the Gulf.

The second case involves a potentially catastrophic "Carrington event" expected once a century or so—such an event last occurred on September 1, 1859. Even though this was long before our society became critically dependent on electronics, it caused fires in our telegraph stations and destroyed our undersea telegraph cable. More recently, smaller solar related EMP events (e.g., in 1921 and 1989) provided considerable evidence of the growing vulnerability of many electronic systems, including shutting down Quebec's electric power grid serving 6-million subscribers.

Of the two cases, the damage created by a nuclear EMP attack would be deeper and harder to repair than that from a Carrington-class geomagnetic super-storm. Both cases were discussed in detail by a specially chartered non-partisan Congressional Commission, which produced ample evidence to justify immediate actions to save many Americans should the threat materialize—and recommended measures to protect the American people.

Yet, little has been done. *So, what is needed to provide for the common defense of all Americans against this very real threat?*

Nature of the Problem:

As too often appears to be the case, bureaucratic and political resistance rather than technical or economic challenges are at the root of the problem the Federal Government has in dealing with the two cases above—not because many of the key powers that be are not informed. Furthermore, this resistance is amplified by a number of relatively uninformed "naysayers" who, nevertheless, provide fodder to those who seek to impede progress for whatever reasons.

Peter Vincent Pry spells out these issues in *Civil-Military Preparedness For an Electromagnetic Pulse Catastrophe*, 2011, available for Kindle on Amazon.com and in his soon-to-be-published Apocalypse Unknown. They are described in lesser detail by Michael Maloof's *A Nation Forsaken, EMP: the Escalating Threat of an American Catastrophe*, WND Books, Washington, DC, 2013.

As an example of this point, consider briefly a key common element of the above two cases. Both nuclear weapon and solar flare EMP events involve a low frequency component—the so-called E_3 component, which would couple energy into power lines that interconnect the key elements of the electric power grid. *When that E_3 energy is so coupled, it will focus on power plant nodes and can destroy associated transformers, leading to failure of major portions if not all of the grid*. The U.S. no longer makes these rather large transformers; replacing them could take many months, if they can be replaced at all given the possible concurrent damage to our transportation systems that feed our "just-in-time" commerce.

Loss of even a small segment of the power grid can cascade to bring down major elements. In July 1996, a tree branch fell on a power line in Idaho, causing cascading failure of several power plants and transmission lines, blacking out 18

western U.S. states. If key segments of the grid are lost—as major EMP events would likely cause, the entire grid could fail, for an extended period of time. *These losses could be essentially permanent for the current grid*, as noted above.

***This vulnerability has been widely understood since the EMP Commission's 2004 report, reinforced by its 2008 report. And cost-effective countermeasures are also known*.**

***The Federal Energy Regulatory Commission (FERC) estimates that to rectify this vulnerability would cost about 20-cents annually per subscriber—informed subscribers surely would pay a hundred times that amount for insurance against a catastrophic EMP event*. Yet multiple attempts to pass legislation requiring appropriate power industry authorities to act have failed, the most notable ones in the past two congresses were:**

- **HR5026, the Grid Act of 2010, sponsored by Cong. Edward Markey (D-Mass.) which passed the House by voice vote in and died in the Senate when blocked by a single Senator.**
- **HR668, the Shield Act of 2011 introduced by Rep. Trent Franks (R-AZ), never made it out of the Energy and Commerce Committee—in spite of broad bipartisan support in both the House and Senate that could have assured passage.**

***Hopefully, Congressman Franks will reintroduce the Shield Act in the new Congress for a third try to pass this important initiative—and this time, perhaps the powers that be can figure out how to move the Bill out of Committee and onto the floor where it should pass with ease*. Without a functioning power grid, all of our "just-in-time" commerce would grind to a stop for an extended period during which millions could perish for lack of food, medicine, etc.**

A high altitude nuclear explosion will in addition produce substantial energy at much higher frequencies than the E_3 component—these components can cause significant damage to critical infrastructure such as communications, transportation, and key elements of banking and commerce. As noted above, a nuclear EMP attack would be deeper and harder to repair than that from a Carrington-class geomagnetic super-storm.

These issues will be discussed further in future email reports.

So, What to Do?

Given the failure of Washington and the Federal Establishment to deal with this obviously important problem for nearly a decade, *High Frontier and the IWG have concluded we should take the issue directly to the American people.* Click here to read our 2010 White Paper.

The first step is to get a critical mass informed about the problem and possible solutions—a major reason *High Frontier is getting involved in the social media world*. Our primary focus in on the nuclear EMP threat, though we believe that addressing the solar super-storm vulnerability will deal with a major part of the problem for the nuclear threat case.

***Future email reports will deal with a number of related specifics*, including the importance of hardening against both high and low frequency EMP components in providing protection in case the ballistic missile defenses should fail. And attention will be given to the need for effective defenses to avoid this possible failure.**

***In the near term*, defense against ballistic missiles that might be launched from ships off our coasts can, as previously argued, *exploit the Aegis BMD system deployed on more than 24 of the over nearly 80 Aegis cruisers and destroyers* at sea around the world. In addition to ships that may be in transit near our East and West Coasts, *we recommend deploying at military bases near the Gulf of Mexico coastline the same "Aegis Ashore" BMD system that the American taxpayers are building in Romania and Poland.* U.S. bases should be less expensive that those overseas.**

The Aegis BMD system on cruisers and destroyers is integrated with their fleet operations. To date, operational crews have had 27 successful intercepts out of 31 attempts, including shooting down a "dying" satellite to protect major cities from its toxic cargo.

- ***If near our coasts, it can shoot down attacking missiles including those that threaten a high altitude EMP attack.***
- ***In principle, Aegis Ashore simply transfers the radar, launcher and command and control system to a land-based pad that can be placed on a military base near our coasts to perform the same BMD mission.***

In particular, High Frontier has an active program to inform folks around the Gulf of Mexico of the threat and what can be done about it—beginning with the citizens and then moving to their local and state authorities and eventually their

representatives in Washington. *We have begun our outreach effort in Mississippi, and are next headed to Florida and then to Texas.*

Eventually, a layered defense in needed—preferably one that can intercept ballistic missiles while they are rising from their launch sites in their boost phase, while their rockets are still burning and long before they can release their nuclear payload to produce a high altitude EMP event. More to come in future email reports.

If you agree with our concern and want to support our effort, please make a tax deductable gift to High Frontier and help us escape this existential threat.

Give us feedback in any case. To contact us, please e-mail info@highfrontier.org.

The Shield Act: "Who's on First?"

February 25, 2013

Congress will soon again consider legislation to protect the nation's Electric Power Grid from either the Electromagnetic Pulse (EMP) from the detonation of a nuclear weapon high above the United States or a massive Geomagnetic Disturbance (GMD) caused by a solar superstorm, a Coronal Mass Ejection (CME). As discussed in our December 20, 2012 email report, both are existential threats to the lives of most Americans—pertinent questions are: "Which will occur first?" And, "Will we be prepared to cope?"

Understanding efforts to deal with these existential threats has been blocked by a bewildering circumstances reminiscent of Abbott and Costello's comic routine: "Who's on first?" But nothing is funny about continuing failures of allegedly responsible agents of the public good.

In 2002, Congress chartered a blue ribbon commission to consider the EMP threat—a good start. That EMP Commission described in no uncertain terms, in 2004 and 2008, the reality of both the human and natural threat and recommendations for dealing with the threat. But neither the administration nor Congress did anything—and the highly qualified commission disbanded.

Since then, a few dedicated members of Congress and private individuals have sought without success to persuade the powers that be to deal with an EMP threat that is well known to our sworn enemies and could lead to the death of up to 75-percent of all Americans if not addressed.

High Frontier is studying these largely bureaucratic conditions so that we can explain to the American people how their institutions and representatives are failing them—especially in dealing with the nuclear threat, which can be countered by effective ballistic missile defenses. Then maybe they will demand that the "powers that be" do their jobs. Consider this a progress report on answering a few key questions.

Won't the Department of Defense (DoD) protect Americans from EMP Attack? So sorry.

You would think DoD would lead the charge to protect Americans from EMP effects. Indeed, we first learned about EMP in 1962 high-altitude nuclear testing in the South Pacific, when EMP from the Starfish high altitude nuclear test damaged electrical infrastructure in Hawaii. Since then, DoD has spent a lot of money to protect our strategic systems from EMP effects in a conflict in which nuclear weapons might be used.

So, the DoD understands what needs to be done and retains the responsibility for maintaining these skills to assure that future strategic systems, but regrettably not the American people, can survive these effects.

It should be understood that if Americans were protected from an EMP attack, they would also be protected from CME/GMD events. DoD could provide "one stop shopping," if only it would.

Why are they not protecting Americans from an EMP attack? Answer: Not DoD's job, except when it is.

For example, developing missile defense is a DoD mission, and DoD gives priority to building missile defenses for our overseas troops and allies—not so much for Americans at home. To be sure, DoD has built a limited defense to shoot down a couple of long-range intercontinental ballistic missiles (ICBMs) before they detonate their nuclear warheads a hundred or so miles over the U.S. But if a nuclear-armed short range missile were launched from a vessel off our coasts, our current missile defense plans and programs are deficient. Even terrorists could accomplish such an attack—once they obtain and mate nuclear weapons to ballistic missiles.

In any case, missile defenses won't protect us against a massive solar emission—or CME, which occurs infrequently (on the order of every century or so—and one is overdue). For that we need protection, and particularly for the electric power grid which is critically important and vulnerable to GMD caused by a massive solar emission (sometimes referred to as a Carrington event, the first recorded major GMD event, which occurred in 1859. The most recent geomagnetic "super storm" occurred in 1921. These events occurred before the advent of our present day continentally interconnected electric power grid with its inherent vulnerability to multi-state cascading failures.

DoD does not see fixing this problem as its job—although as noted above, if the grid were protected from a high-altitude nuclear explosion, it also would be protected from a CME/GMD.

Who is protecting Americans at home? The Department of Homeland Security (DHS)? Not much.
Key related Civil Defense measures once within DoD's charter were passed during the Carter administration to the Federal Emergency Management Agency (FEMA) and most recently to DHS, where FEMA now resides. But DHS has yet even to include EMP in its recommended set of threat scenarios governing its recommended protective measures for the various departments of government (and the states). And DHS has no particular capability for either understanding this threat or its countermeasures—DoD retains that competence.

A decade ago, the EMP Commission used some of its limited funds to pay the DoD to extend its normal activities to document EMP effects pertinent to the survival of the nation's critical infrastructure. No one was doing this elementary work and no funds were available among the billions appropriated each year for DoD-related activities "beyond its charter." Actually, DoD was spending relatively little on EMP effects on systems that were clearly within its charter.

DHS presumably is responsible for assuring the viability of our critical infrastructure, which includes the electric power grid. But it is hard to see much real DHS effort on that front as noted above.

So, who is next in line for protecting the electric power grid? The Department of Energy (DOE)? Maybe.
DOE's responsibilities with the electric power grid should extend to concerns about the EMP and CME/GMD threats to the grid. Furthermore, since nuclear reactors depend on the electric power grid for cooling, DOE would be concerned about the possible loss of the grid for an extended period—which could lead to major calamities of the sort observed from the tsunami effects on the nuclear reactors in Japan two years ago. States that depend on nuclear reactors for their electric power also should be concerned about this possible threat. (We have 104 nuclear power reactors at 65 sites in 31 states.)

DOE and DHS sponsored an important October 2010, Oak Ridge National Laboratory study—*Electromagnetic Pulse: Effects on the U.S. Power Grid*, which included a series of comprehensive technical reports for the Federal Energy Regulatory Commission (FERC). These reports disclose that the commercial power grids in two large areas of the continental United States are vulnerable to "severe space weather" that can result in a large earth-directed CME, inducing a GMD that collapses the commercial grids in these vulnerable areas. Excess heat from induced currents in transmission lines would permanently damage approximately 350 extra high voltage transformers.

The U.S. no longer manufactures these transformers and under normal conditions it would take 1-2 years to ship them from Germany or South Korea, where they are now produced. As a result, about two-thirds of nuclear power plants and their associated spent fuel pools would likely be without commercial grid power for a period of at least 1-2 years. In a worst case scenario, they might never arrive since our transportation system depends on electricity no longer available after losing the grid. Not to mention the consequences of losing cooling water for lack of electric power, e.g., like in the tsunami event in Japan a couple of years ago that contaminated much of the surrounding region all the way to Tokyo.

Recent expert financial analysis indicates that the grid could be protected to avoid these most undesirable CME/GMD outcomes for an annual cost of a postage stamp-per-subscriber. Regrettably, FERC, which has validated previously elaborated concerns about this threat with their own studies, doesn't have the authority to effect changes. Under current law, the responsibility for electric power grid standard development resides with the North American Electric Reliability Corporation (NERC), an electric industry consortium.

So, who does have this needed authority? Well, there's definitely a problem.
The House Committee on Energy and Commerce has oversight responsibilities for related plans and programs that might reside in DOE—and elsewhere. But during the last Congress, proposed legislation to deal with the vulnerability of the grid to EMP and CME/GMD events stalled for 18-months in that committee, presumably due to electric industry concerns that have entered the political milieu.

The reluctance of the private sector can probably be traced to a very faulty 2012 study by NERC, which alleges to be responsible for protecting the grid from natural and nuclear EMP. This study is refuted by several authoritative studies,

including the EMP Commission, the National Academy of Sciences, DOE and that of the FERC mentioned above which included careful studies by several U.S. National Laboratories. Notably the NERC report counsels a strategy of "further study." In other words, do nothing.

No wonder some experts consider the NERC to be a lobby for industry to evade government regulation. Some members of the NERC's own Geomagnetic Disturbance Task Force (GMDTF) refer to the 2012 NERC report as "junk science." And so far its strategy and tactics have worked—if delay and confusion were its objectives.

Meanwhile the clock ticks on. What shall we do?

We now are in a solar maximum, the period every 11 years during which CMEs are most likely. Someday during one of these 11-year maxima periods, many experts expect a repeat of the 1859 Carrington Event which destroyed telegraph stations and the undersea telegraph cable during the horse and buggy days when food was grown locally—an annoyance but not an existential threat.

Next time in an era of just-in-time manufacturing, production, shipping, etc. and little local agriculture, the consequences for our increasingly urban society are expected to be horrific—experts have testified that two-thirds to ninety percent of all Americans could perish within a year. Pray that it won't happen during this maximum, and that we will wise up before our time runs out.

There are plans to reintroduce legislation, previously referred to as "The Shield Act," in the current congress—and it remains to be seen whether it will fare better this time around. Meanwhile the clock is ticking on Mother Nature's solar emission-caused GMD—not to mention the manmade nuclear EMP threat as Iran increases the number and speed of its centrifuges while ignoring the sanctions intended to block their progress toward getting "the bomb."

So, why isn't the private sector alarmed about this threat?

Maybe FERC will work to better inform NERC—and maybe NERC will listen to its own GMDTF and at least deal with the CME/GMD events. DHS might provide scenarios to deal with both EMP and CME/GMD events and provide them to other government agencies and the states and local authorities to help them plan to deal with these existential threats. DoD and DOE also could be more helpful in preparing meaningful inputs to the process. Passage of the Shield Act would be an important step to allow FERC to mandate the development of needed protection standards.

Does that alphabet soup remind you of Abbot and Costello? We think High Frontier has a bit to do just to unscramble the language and alert the public to the existential threats posed by both manmade and natural means—and what can be done about these threats.

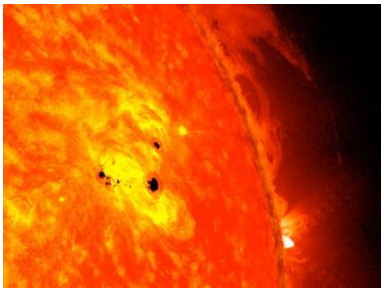
We can use your help in spreading the word to grass roots and local authorities to press the powers that be to provide for the common defense as they are sworn to do. Will you do your part?

Begin by passing this message to your friends and suggest they visit our webpage, www.highfontier.org for more information. Also, please encourage your sphere of influence to sign up for our weekly e-newsletter!

Beware the Ides of March!

March 4, 2013

No one knows when trouble will strike in a devastating way. And there is nothing magic about March 15 . . . just the date of Julius Caesar's assassination in 44 B.C., after which the "Ides of March" assumed a special identity to reflect a specific day that sent a ripple of History-changing repercussions throughout Roman society and beyond.



Last week a couple of articles from the web warn of events that could bring down America and Western Civilization much faster than the fall of Rome.

Everywhere under the Sun.

On February 22, Smithsonian.com published "Surprising Science: What Damage Could Be Caused by a Massive Solar Storm?" In this article, which you can read by clicking on the preceding title, the Smithsonian Blog joins the National Geographic Magazine's June 2012 issue in warning about the electromagnetic pulse (EMP) from massive solar storms, called Coronal Mass Ejections (CMEs). As noted in High Frontier's December 12, 2012 email report, hat article was followed by an October 12, 2012 National Geographic Channel TV program, which provided a ringing

warning about the EMP threat from either a massive CME or from a high altitude nuclear explosion and what to do about it.

The 40 minute video of this broadcast, Electronic Armageddon—posted on the High Frontier Webpage, is well worth reviewing from time to time—as warning of events that could end our way of life, or at least return the survivors to the ways of the 19th century.

Nuclear threats from afar?

On February 26, Family Security Matters published on its daily webpage an excellent comprehensive article by Peter Vincent Pry, "Understanding North Korea and Iran," which reflects on recent North Korean tests of long-range ballistic missiles and nuclear weapons. He most notably reminds us that these tests were only the latest in events during the past 20-years that should persuade an intelligent observer that they already could have nuclear weapons that could be mated to long-range ballistic missiles and detonated over any nation in the world by placing them in orbit and bringing them down on command. Moreover, he notes these "miniaturized" relatively low-yield nuclear weapons could be used to produce a high altitude EMP that could bring America to its knees.

As is well known, North Korea will sell essentially anything it has to anyone with money . . . and Iran is reported to be a collaborator that has been an observer on a number of the notable North Korean tests. Neither North Korea nor Iran has allowed diplomacy and economic sanctions to stop their development of nuclear weapons and ballistic missiles. And either could sell or give the fruits of their development to terrorists to attack Americans, including by launching nuclear armed easy-to-purchase short range missiles from vessels off our coasts. Such is the "cacophony of proliferation partners" that poses an existential threat to all we hold dear.

Key bottom lines.

So, as previously discussed, an existential EMP threat is posed by both natural (e.g., massive solar emissions) and manmade (nuclear weapon) events.

In the former case, our satellites could give us a couple of days warning (while the solar storm maximum travels to Earth) during which some actions could be taken to reduce the impact of the arrival of the CME, if the powers that be are prepared. For example, electric utilities could quickly disconnect transformers and put critical equipment in Faraday cages. Here on Earth, at the very least, we'd have some time to prepare for potential power blackouts and related problems.

In case of the threat of a nuclear explosion a hundred or miles or so above the U.S., we would have at most minutes to respond—if the attack was from a weapon delivered by a long-range intercontinental ballistic missile (ICBM) and we were provided immediate warning. If the attack were launched from a vessel off our coasts, we would have seconds. In either of these nuclear attack cases, we would have a "come as you are" party.

We have previously discussed the long-term effects of such an EMP event that could lead to the death of most Americans within a year, mostly due to the loss of the electric power grid that is essential to most of what we currently depend upon. Even farmers have so automated their operations that a loss of the grid would have a devastating effect on their ability to feed Americans at home—let alone the rest of the world, assuming that there was transportation for distributing the food. They would do well to feed themselves and their immediate neighbors.

Clearly, we should do all we can to assure we do not lose the electric power grid in either case.

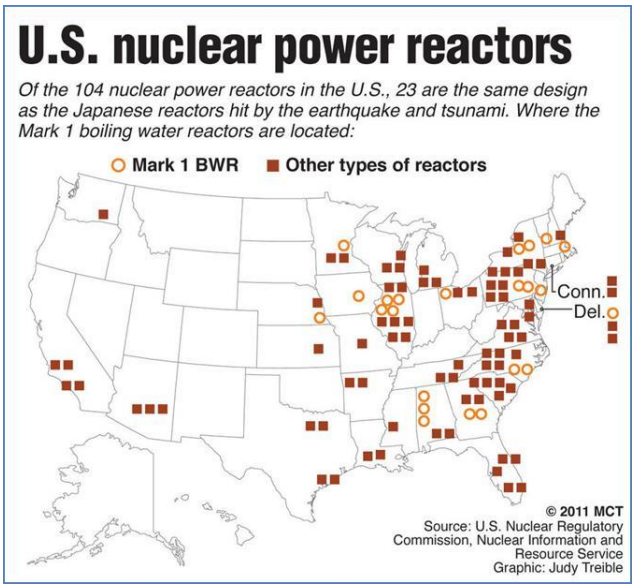
Impact on Nuclear Power Plants and a role for the Nuclear Regulatory Commission (NRC)?

The collateral effects within the power grid itself should motivate development of appropriate countermeasures, perhaps most notably involving the nuclear power component.

In our last email report, we reported that, following a massive Geomagnetic Disturbance (GMD) from either a CME or a high altitude nuclear burst over the center of the United States, studies suggest about two-thirds of U.S. nuclear power plants and their associated spent fuel pools would likely be without commercial grid power for a period of at least 1-2 years—because of the loss of key transformers which are not produced in the United States. In the worst case, they might never arrive from where they are produced in Germany or South Korea—because our transportation system relies on electricity that no longer may be available if the grid is lost.

The ominous consequences of losing cooling water for lack of electric power could be comparable to—or worse than—the March 11, 2011 earthquake/tsunami event causing a cascading failure in which 3 of the 6 reactors at the Fukushima Power Plant experienced full meltdown, and the overall radiation release was carried by the winds to contaminate much of the surrounding region all the way to Tokyo. This Category 7 event on the International Nuclear Event Scale (INES) is the same as that assigned to the 1986 Chernobyl Ukraine event, but the Fukushima event released much less radiation with less fatal consequences.

A consequence of the density of nuclear power plants from the central United States to the eastern seaboard is that the loss of cooling water at two-thirds of those sites would be far more horrific than Fukushima—beyond the impact of losing the electric power.



As shown in the adjacent figure, all but eight our 104 nuclear power reactors (at 65 sites in 31 states) are located in the eastern half of the U.S. The loss of electric power at two thirds of these sites could expose a major proportion of the population in the eastern half of the United States to radiation effects, given the usual southwest to northeast weather patterns that would distribute the radiation. Variations in wind patterns could affect the entire country. For the current wind flow pattern, click here.

Working in this environment could be more than a little problematic, even for those prepared to employ the means of survival that were common in the 19th century.

The Nuclear Regulatory Commission (NRC) should be taking these matters into account in evaluating the risks and potential countermeasures that they can assure are employed within their jurisdiction to assure public safety in the event of an EMP event. At a minimum, they should be better prepared technically to deal with the issues than most of the dysfunctional government organizations reviewed in our last email. If they do their job regarding public safety and the nuclear power industry maybe the stodgy bureaucracies in Washington will follow suit and also do theirs regarding the entire electric power grid.

Boston, Global Jihad and Missile Defense: Connect the Dots!

April 22, 2013

Most Americans were glued to their TVs last week, watching replays of terror at the Boston Marathon and subsequent events that literally shut down Boston and environs while federal, state and local authorities searched for and apprehended at least two of those responsible for killing three and injuring over 170 more with bombs reminiscent of those employed in the Middle East during the past decade.

Questions abound: Were the two brothers "lone wolves?"—as Bret Baier of Fox News asked in a bit of a disconnect. Who else was involved, at least in a supporting role? Are there related Jihadist "sleeper" cells? How did these two learn to build "pressure cooker" bombs and "IED" grenades? For what purpose were the other bombs—beyond those at the Marathon finish line? No one noticed anything unusual? What was done after a "foreign government" a couple of years ago warned the FBI that the older brother, who was killed on Friday, was a follower of "radical Islam?" What about the younger brother, now in custody? Etc.

And while it is important to connect the dots for this terrible event in Boston, the powers that be should also learn and export the lessons to a broader context. They should ask what is being missed about other Jihadists in the U.S. and elsewhere, who view America as the "Great Satan" to be destroyed along with the "Little Satan" Israel. No doubt, we will learn about missed warning signs that, if heeded, could have enabled appropriate authorities to prevent last week's events—not unlike in other past catastrophes and possible future ones, even large scale ones as Dr. Peter Vincent Pry discusses in "A North Korean Pearl Harbor?" and "North Korea Today – Iran Tomorrow."

The rest of this email report reviews key "dots" discussed in the past several weeks on an existential Jihadist threat to all we hold dear—again repeating our concern that the "powers that be" do not yet understand these clear signs. They are missing connections similar to those that should have warned of last week's pending terrorism in Boston.

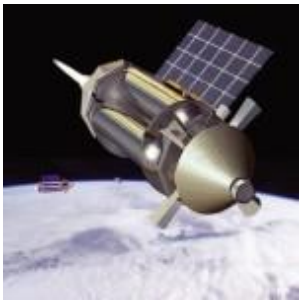
Recap of Past Key Points:

Our recent email Updates and Flash Messages have identified several related areas of concern—possibilities, even probabilities, of an existential threat to all we hold dear as part of a "Global Jihad." Iran most assuredly has committed to such a Jihad and has been working with North Korea to gain the means for posing a direct nuclear threat on Israel and the United States. Here are key points:

- **Iranian leaders have repeatedly declared their intentions to destroy the Little and Great Satans;**
- **Iranians and North Koreans have long worked together on nuclear weapons and ballistic missile technology, fed by a cacophony of proliferation of key technology and engineering knowhow from Russia, China and others;**
- **Iran and North Korea have both launched satellites into low earth orbit—capable of carrying light payloads over all the nations on earth;**
- **Thus, they both could, once they obtain a light-weight nuclear weapon, detonate it over any nation they choose—including the United States.**
- **If an appropriately designed device is detonated at about 300 miles altitude over Omaha, the resulting electromagnetic pulse (EMP) could lead to the death of a couple hundred million Americans over the following year;**
- **These EMP effects are well known to North Korea, Iran and most everyone else—and have been emphasized in 2006 and 2008 reports from the Congressionally mandated non-partisan EMP Commission composed of knowledgeable scientists and engineers;**
- **Their only remaining challenge is getting such a weapon, and North Korea has claimed to have a "miniaturized" nuclear weapon;**
- **The Defense Intelligence Agency (DIA) recently judged with moderate confidence that this is so—but the Director of National Intelligence (DNI) testified DIA did not represent the consensus of the 15-members of the Intelligence Community, noting that since they have not yet tested such a capability, "neither we nor the North Koreans know they have such capability;"**
- **But 70 years ago the U.S. used the world's first atomic bomb on Hiroshima without testing it and the second (of a different design) on Nagasaki immediately after a single test—the DNI's argument seems a bit weak;**
- **Prudence demands that we prepare to counter such a threat ASAP;**
- **Buying additional ground based interceptors (GBIs) for Alaska and considering an East Coast GBI site will improve our defense against ballistic missiles that attack us from over the North Pole, but little to defend against an attack over the South Pole—it's like locking the front door and leaving the back door open.**
- **To close the back door, we need to improve our existing missile defenses as quickly as possible. Aegis improvements could be accomplished quickly—to provide ascent phase intercept opportunities early after North Korea or Iran launches a rocket headed south toward the South Pole to attack the U.S. from the south, and to provide advance tracking information to our GBIs in California so they can intercept the orbiting satellite before it overflies the U.S.**
- **The Aegis system's Standard Missile velocity should be increased so that it can intercept missiles and satellites at higher altitudes and defend larger areas.**

Build More Effective Defenses.

While these Aegis improvements are feasible and should be pursued (among others), it is also important to build a defensive system that can intercept threatening ballistic missiles in their boost phase, while their rockets are still burning as they rise from their launch pads. The most effective such defense would be based in space, as has been recognized since the 1960s, when ballistic missile defense concepts were first seriously evaluated by the Defense Advanced Research Projects Agency. An issue has been whether the technology is available and affordable to support building such a system.



The last time such a comprehensive evaluation was accomplished was as a primary objective of Ronald Reagan's Strategic Defense Initiative (SDI), beginning in 1983. In 1990, a space based interceptor program called Brilliant Pebbles became the first SDI program to pass a full Defense Acquisition Board (DAB) review and enter a formally approved Demonstration and Validation (DEMVAL) stage. However, the program was curtailed by Congress and eliminated by the Clinton administration in 1993—nothing has been done since to revive the most cost-effective missile defense system concept of the SDI decade from 1983 to 1993.

For a definitive review of the entire history of space based defenses, see Donald R. Baucomb's "The Rise and Fall of Brilliant Pebbles." The full complement of technical and political/policy issues is discussed in the reports of the Independent Working Group (IWG).

If the United States is to be serious about dealing with the Global Jihadi threats confronting us today, including the "back door" EMP threat, serious consideration should again be paid to this concept.

Protect the Electric Power Grid.

Whatever is done to improve our defenses against missile attack, no defense is perfect; and steps should be taken to assure that an EMP attack does not create the conditions that would put the United States back into the 19th century without the benefits of that agrarian society. The smartest thing that can be done quickly is to harden the electric power grid—especially the large transformers that could be destroyed by an EMP attack—or a massive solar emission that reaches the intensity experienced in the 1859 Carrington Event.

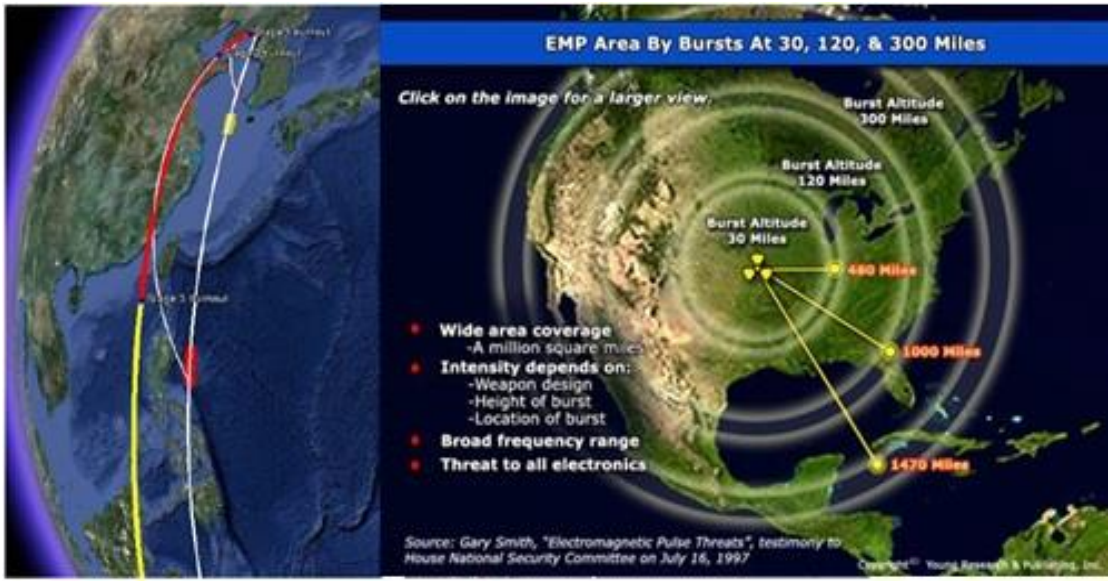
We will watching closely and report back on the steps that Dr. Ernest Moniz takes when he is sworn in as Secretary of Energy—we were pleased that he stated in his confirmation hearing that he intended to look into the EMP effects from both natural and manmade causes and take appropriate action assure the "robustness and resilience" of the electric power grid. Hopefully, we will see early initiatives from him.

And we continue to applaud Maine Representative Andrea Boland for her legislative efforts to protect against major solar storm geomagnetic effects all new transmission lines of the to-be-installed $1.4 billion Maine Power Reliability Program. And we look forward to seeing the related study that the full legislature has agreed to accomplish, thanks to her efforts.

No Monkey Business—Shut the Back Door!

April 24, 2013

Our last several emails observed that North Korea can place a lightweight nuclear weapon on one of their satellites, launch it over the South Pole and detonate it while in low earth orbit over the U.S. They have demonstrated this inherent capability, and the U.S. does not appear ready to defend against this threat, though there are possibilities.

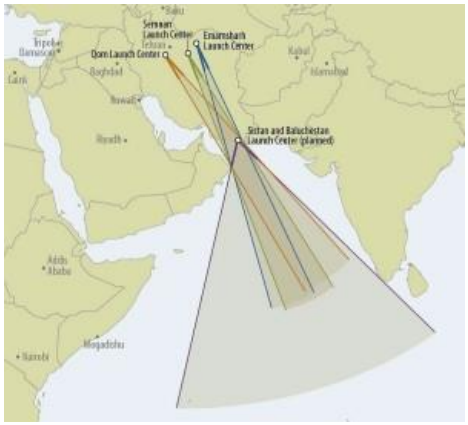


As discussed in our April 8 email report, North Korea reportedly has launched a 220 pound satellite to their south, as indicated in the left side of the adjacent figure, into an orbit that passes over the U.S. at an altitude of 300-350 miles. A nuclear weapon that fits into that weight constraint could be detonated to produce an electromagnetic pulse that would cover the entire United States, as indicated in the right hand figure. The result would be that the U.S. electric power grid would be shut down for an indefinite time, and a couple hundred million Americans could perish within a year from starvation and the consequent chaotic conditions.

A heavier nuclear weapon could also be placed in a similar but lower orbit that passes over the U.S. For example, a nuclear weapon detonated in a 120 mile high orbit would produce an EMP effect over most of the U.S. No doubt, the electric power grid that is not directly permanently damaged would be damaged by cascading failures of the grid.

Perhaps North Korea is not inclined to conduct such an attack—perhaps Kim Jong Un is only seeking to impress his military or seeking favors from the United States in return for North Korea's return to the status quo ante. And hopefully he will back down. Hope springs eternal.

But a greater danger may be from Iran—which also has orbited satellites by launching them to the south rather than to the north—so they also are potentially postured to achieve an ability to attack the United States from the south. And they may be more interested in killing many Americans of the "Great Satan" than North Korea. As illustrated in the figure at the right, the Congressional Research Service described in December 2012 a new launch site, which Iran's Defense Minister Vahdi indicated in June 2012 was about 80% complete, at the entrance of the Persian Gulf. This site will provide possible failed launches to occur over wide swaths of the ocean rather than land. Iran will have a broad span of possible launch vectors to send a satellite carrying a nuclear weapon over the South Pole to detonate over the U.S. in its maiden orbit.



Furthermore, Iran launched a monkey into space and returned it to earth last January 28th. The satellite was reported to have weighed 4400 pounds, lots more than needed to carry a rather heavy nuclear weapon. The press indicates great concern that this launch demonstrates Iran's capability to launch an intercontinental ballistic missile (ICBM) to attack the United States once Iran gains a nuclear weapon. This concern validates the congressional direction to the Obama administration to consider additional ways to defend the Eastern seaboard from Iranian ICBMs that would approach the U.S. from over the North Pole—to strengthen the limited capability of our missile defenses based in Alaska for such scenarios.

This is a reasonable concern. But notably missing so far is any apparent consideration of the threat Iran could pose by launching a satellite carrying a nuclear weapon over the South Pole, to attack the United States from the south.

Of course, the Outer Space Treaty bans stationing a nuclear weapon in space. And if the nuclear weapon is only intended to travel half an orbit before detonating over the United States, perhaps Iranian sharp lawyers may argue it isn't stationed in space. On the other hand, Iran is a signatory to the Nonproliferation Treaty and they are already violating that treaty by building a nuclear weapon as essentially everyone understands.

Better to have a defense against this threat—and soon! If anyone is listening, please shut the back door.

Aegis and the Little Engine that Could!

April 26, 2013

Those who read little books as children rather that iPads, will recall steam engines ("cho, cho" engines) and the tale about the "Little Engine that Could" that went something like:

A little steam engine pulled a few cars through the switches around the railroad station yard, making up the longer trains for travel to distant places. One morning, the yard master asked a series of large engines in the roundhouse to take a long train over the hill—and they all said, "I can't; that is too much a pull for me." In desperation after listening to these excuses, the yard master asked the little switch engine if it could take the train up the grade and down the other side. "I think I can," puffed the little engine, and it latched up to the great heavy train, began pulling, and as it kept bravely puffing faster and faster repeated, "I think I can, I think I can, I think I can." As it neared the top of the grade that had so discouraged the larger engines, it went more slowly. However, it still kept saying, "I—think—I—can, I—think—I—can" . . . and as it reached the top and while going down the grade on the other side, it accelerated to a more relaxed pace and chanted, "I thought I could, I thought I could . . ."

What an appropriate model for those building the Aegis Ballistic Missile Defense (BMD) system!

I will admit to a special bias in favor of Aegis BMD, because it is living up to the vision I had for it as the third director of Ronald Reagan's Strategic Defense Initiative (SDI). This vision became apparent to me in my 1990 review of the SDI program for then President George H.W. Bush and Defense Secretary Dick Cheney. They accepted my recommendations and asked me to lead a major redirection of the SDI program as the Berlin Wall came down and millions of Europeans gained their freedom.

That redirection emphasized a new threat to U.S. interests—not thousands of nuclear weapons on intercontinental ballistic missiles (ICBMs) launched from the former Soviet Union or its submarines, but a threat of up to couple hundred nuclear weapons that might be delivered on missiles of all ranges, launched from any number of places around the world to attack our interests and those of our allies and friends anywhere around the world. To respond to this new "post-Cold War" direction, we needed a global defense—and we called the new program Global Protection Against Limited Strikes (GPALS). It included for the first time a major role for defenses against shorter range ballistic missiles—labeled as Theater Missile Defense (TMD) systems—as well as a continued defense of the U.S. homeland, referred to as National Missile Defense (NMD) systems.

GPALS also had a very important space defense component, later ignorantly cancelled—but I'll wait to discuss that story another time. Here, I want to discuss the other way we can affordably achieve a global defense—at sea, because there Aegis' mobility can exploit well over half the earth's surface that is covered with navigable waters.

We envisioned an important role for Aegis BMD from the start—initially emphasized as a TMD system, but with inherent growth capabilities to become an important NMD system as well. However, had we shown any interest in the latter capability, the program would most likely been canceled, because the Antiballistic Missile (ABM) Treaty banned any development or testing of a sea-based defense of the American homeland.

My advice to Admiral Frank Kelso, then Chief of Naval Operations, was never, never, never to mention that NMD potential—which was apparent at the time—in conducting the program that we initiated with the Navy to develop Aegis BMD as a TMD system.

The legacy of that discipline is no longer helpful, because many still do not appreciate Aegis' potential in defending the U.S. homeland. Retired Vice Admiral J.D. Williams and I wrote about that potential in 2000 in hopes that President George W. Bush would not only withdraw from the ABM Treaty, but also invest in fully developing Aegis. Thankfully, President Bush did withdraw from the ABM Treaty, but did not take advantage of the new freedom to make Aegis "all it can be."

If we had, it now would be easy for Aegis BMD to shoot down a North Korean space launch carrying a nuclear weapon while it is still rising from its launch pad, headed south over the South Pole to be detonated over the United States to produce an electromagnetic pulse that could lead to the death of a couple hundred million Americans during the next year. But I digress . . . let me get back to a bit more history before discussing what might be done with what we actually have today.

Aegis has continued to move ahead at a deliberate pace, with much help from its friends outside of the Pentagon. From the outset in the early 1990s, Aegis BMD has enjoyed bipartisan support on Capitol Hill—without which it would have been killed several times by the Pentagon in both Democrat and Republican administrations. Our Japanese partners in building the Aegis BMD system now deployed in the Far East rescued the program when the Pentagon "powers that be" were about to direct Aegis developers to build a new large interceptor rather than one that fits in the existing Vertical Launch System (VLS) deployed throughout the fleet—and that would have resulted in an extended, expensive development program which I doubt would have ever been deployed.

And its development continues to be stifled by those who think important tasks are a bridge too far for Aegis BMD, either as it is or as it can become. Yet, it perseveres like the "Little Engine that Could" with the best record of all missile defense systems today (25 intercepts out of 31 attempts)—and all its intercept attempts, from the beginning, have been conducted by operational crews—no other missile defense system can make that claim. Hence, it is a working operational system at sea around the world—at my last count 16 in the Pacific and soon to be a like number in the Atlantic.

The Aegis "can do" spirit was demonstrated in early 2008, when President Bush was looking for a way to shoot down a dying U.S. satellite that threatened to spread its toxic chemicals over populated areas. Aegis was selected over other

options to conduct a mission for which it had never planned. Check here to see the YouTube video describing the February 20, 2008 event when the operational crew of the Lake Erie Aegis Cruiser shot down that satellite about 150 miles over the Pacific.

Now some say Aegis cannot shoot down a satellite launched from North Korea, to attack the U.S. from the south. I say, give the Navy "think I can" team a chance. As discussed in our April 17 message, there are three possible ways Aegis could be helpful in shooting down such a launch:

- Taking a shot at the North Korean rocket while it is still rising from its launch pad;
- Providing advance information to help cue the ground based interceptors in California so that they can be launched early to intercept the satellite in its first orbit before it reaches U.S. territory; and
- Shooting it down while it is in orbit.

There are challenges in all three possibilities. The second is probably easiest. The first requires achieving strenuous timing and sensor capabilities. The last because, at some altitude, the North Korean satellite will be too high to reach unless Aegis' Standard Missile is given a higher velocity—would that "the powers that be" had provided this a decade ago when Admiral Williams and I were pressing them to do so.

In any case, I urge that the Aegis Team again be given its head and sufficient resources to see what it can do to give the President options for dealing with a very threatening possibility that may already exist—since North Korea has nuclear weapons with EMP capabilities we may not well understand and they have launched satellites in orbits that could threaten the U.S. from the south, as noted in earlier emails.

Alternatively, Deputy Defense Secretary Ashton Carter, who recently received the Missile Defense Agency's Ronald Reagan Award, should probably dust off the 2006 Washington Post Op-Ed that he and Former Defense Secretary Bill Perry wrote on destroying the North Korean missile on the ground, entitled "If Necessary Strike And Destroy." Notably, the New York Times recently published an Op-Ed by Jeremi Suri ("Bomb North Korea Before It's Too Late") echoing the Carter-Perry article' conclusions.

There are disputes about whether North Korean ballistic missiles launched in a normal ballistic trajectory have sufficient range capability to reach the U.S. mainland, but there can be no dispute about whether a nuclear weapon on a satellite in a polar orbit can be detonated on-orbit above the United States—or anywhere else on the surface of the earth.

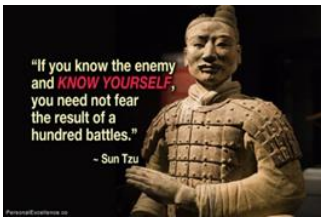
Unless destroyed before launch or intercepted afterward, such a satellite would approach America from the south and its payload could be detonated above Omaha—blanketing the entire United States with an EMP, the consequences of which could be, within a year, the death of a couple hundred million Americans. We have referred to this as a "back door" attack scenario, whereas our missile defense of the U.S. homeland is primarily deployed against a "front door" attack over the North Pole.

It is critically/urgently important to assure that such a back door attack cannot be carried out by North Korea, or in the future, Iran.

Can do?

Know Your Enemy and Know Yourself!

April 29, 2013



We got a rude wake-up call on April 15th and while last minute taxpayers were rushing to file, most Americans were glued to their TVs, watching replays of terror at the Boston Marathon and subsequent events that literally shut down Boston and environs for most of the week. By week's end, the two whose acts killed three and injured over 170 more in the explosion, and killed a MIT policeman and injured others in a shootout were stopped—one killed and one eventually captured and briefly interrogated.

On Connecting the Dots:

We now know some of the answers to the questions posed in last Monday's Weekly Update:

"Were the two brothers "lone wolves?"—as Bret Baier of Fox News asked in a bit of a disconnect, though we know what he meant. Who else was involved, at least in a supporting role? Are there related Jihadist "sleeper" cells? How did these two learn to build "pressure cooker" bombs and "IED" grenades? For what purpose were the other bombs—beyond those at the Marathon finish line? No one noticed anything unusual? What was done after a "foreign government" a couple of

years ago warned the FBI that the older brother, who was killed on Friday, was a follower of "radical Islam?" And what about the younger brother, now in custody? Etc."

With each passing day it seems ever clearer that these two were not acting alone, in spite of various press accounts that make them out to be what some have called "self-radicalized Islamists." Among other things, we have learned:

- **At least Tamerlan Tsarnaev, the 26 year old brother, had been on FBI and CIA watch lists, but there were no corrective actions after Russian intelligence authorities warned that he had become radicalized during a trip back to Chechnya last year.**
- **Others in the Tsarnaev family have for some time been involved in questionable behavior—e.g., the mother, liberally quoted by the press in claiming the innocense of her sons, was listed in the FBI Terrorist Data Base along with her elder son.**
- **To add insult to injury, the American taxpayer has supported this family on welfare after admitting them to the U.S. and while not following their questionable activities.**
- **There also are reported connections with a Saudi national, about whom the Secretary of Homeland Security at first denied any knowledge and then at least partially recanted.**
- **Before Dzhokhar Tsarnaev, the 19 year old brother—who ironically became an American citizen last September 11, could be fully interrogated to understand how the Boston Marathon plot was hatched and other valuable intelligence, he was read his Miranda rights, was lawyered up and went silent.**
- **He did indicate that the brothers, among other things, had additional "pressure cooker bombs" and planned to attack Times Square—so the Boston terrorist act was not a "one-off."**
- **The chairman of the House Homeland Security Committee says that evidence suggests the Boston bombing suspects had help in the attack and that he is concerned about a "wider conspiracy."**
- **It seems clear that there likely are other Jihadi terrorist cells closeted in the United States, perhaps connected in a global network.**

The failure of our dysfunctional "powers that be" in connecting the dots to prevent the Boston terrorism is uncomfortable to say the least. And mischaracterizations of this event as being the first Jihadi event since 9/11 reflect either appalling ignorance or gross dishonesty—and point to a more troubling reality.

A Biased Approach?

For example, in reporting the Boston bombing, CNN's homeland security analyst asserted: "We have not had (even) a small-scale terrorist attack on American soil since 9/11." But as indicated in the adjacent chart and in a less abridged form by Investors Business Daily, there have been numerous Jihadi terrorist acts and attempts since 2009; and all claims to the contrary, al Qaeda is alive and well—and not only overseas.

Furthermore, in spite of the tendency of this administration and its lackeys in the press to claim otherwise, these

June 1, 2009: Abdulhakim Mujahid Muhammad shot and killed one military recruiter and seriously wounded another at a Little Rock, Ark., recruiting station.

Nov. 5, 2009: Nidal Malik Hasan, a U.S. Army major and psychiatrist at Fort Hood, Texas shouted "Allahu Akbar!" — Allah is Greatest! — and killed 13 and wounded 29 fellow soldiers.

March 4, 2010: John Patrick Bedell, a Muslim convert, shot and wounded two Pentagon police officers at a security checkpoint in the Pentagon station of the Washington Metro.

Sept. 11, 2012: Al-Qaida operatives attacked an American mission in Benghazi, Libya, killing four Americans, including U.S. Ambassador Christopher Stevens; ten others were injured.

April 15, 2013: At least two Muslim jihadists set off pressure-cooker bombs loaded with shrapnel at the finish line of the Boston Marathon, killing three and injuring 183.

In addition to these actual terror attacks, other major plots and near misses included:

September 2009: Authorities arrested Afghan native Najibullah Zazi before he could blow up the New York City subway.

September 2009: Police nabbed Jordanian national Hosam Maher Husein Smadi before he could plant a bomb in a Dallas skyscraper.

December 2009: Passengers on a Detroit-bound flight tackled al Qaeda-trained Umar Farouk Abdulmutallab before he could detonate PETN and TATP explosives sewn into his underwear.

May 2010: A massive bomb planted by Faisal Shahzad, a naturalized U.S. citizen from Pakistan—trained and funded by the Taliban—failed to explode in his SUV in Time Square.

October 2010: Chicago synagogues discovered explosives packed inside two printer cartridges shipped by cargo planes from al-Qaida in Yemen. Luckily, the attack failed.

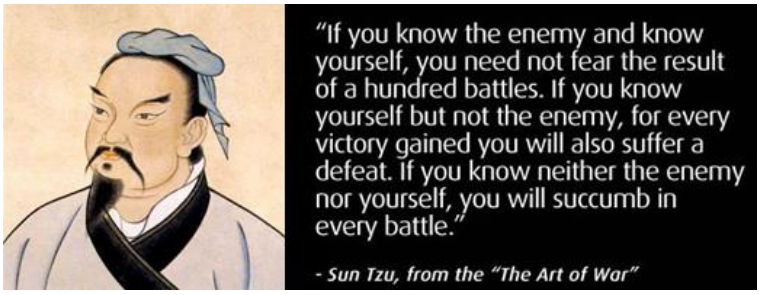
events can be traced to what some have labeled as "radical Islam." By using the adjective "radical," they no doubt intend to continue the myth that Islam is a "religion of peace," as claimed by President George W. Bush in the wake of 9/11. It has been incredibly suggested that the Tsarvanev brothers were "self-radicalized" from engaging the web, possibly intending to separate their paths from the Islamic mosques they attended in Cambridge, Mass. that have known "radical Islamic" ties with other radical Islamic groups including the Muslim Brotherhood, which created Hamas and al Qaida.

Some Hard Lessons:

All Muslims are not radicalized—in fact most are not. But the fact is that Islam as strictly taught by the Koran seeks peace only in the sense that those of other religious views "submit" to the doctrines of Islam. Otherwise, you pay tribute or die. Just ask the Christians who are persecuted by the thousands by the strict followers of Islam's authoritative Sharia Law around the world. And it is long past time for this truth to be acknowledged by our political leaders. We can be in sympathy for those under the thumb of the Jihadi advocates, but that does not mean we must be "tolerant" of such Islamic teaching.

And our leaders should openly acknowledge that this threat does not stop with terrorism such as the terrible event in Boston. They should export the lessons from that experience to the broader context to ask what is being missed about other Jihadists in the United States and elsewhere, even national leaders such as in Iran, who view America as the "Great Satan" to be destroyed along with the "Little Satan" Israel—and an electromagnetic pulse (EMP) attack, which threatens the very existence of the United States and all that Western Civilization holds dear, could be a means to that end.

One of the critically important truths is that to deal with any problem, it is important to clearly state the problem. Or in matters of conflicting views, it is important to understand the opponent's objectives and approach to reaching his objectives. Advice from the noted Chinese strategist Sun Tsu is at the right.



Following this sage advice is perhaps most important for our national security team responsible for providing for common defense as its members are sworn to do.

Yet, the administration has argued there is a big difference between terrorists and the tenets of Islam—even purged all references to any other point-of-view from the training materials for law enforcement and military officials—including at our premier service academies, no doubt to appease the American Muslim lobby. For a detailed press report on the essence of this important problem, see Rowan Scarborough's April 26 Washington Times article, "Obama's scrub of Muslim terms under question." This truly is folly!

Future New Direction?

It is long past time that misplaced priorities in our policies and practices in countering the Global Jihadist threat should be subjected to critical review, including by the appropriate committees of congress.

The remainder of this email report reviews key "dots" discussed in the past several weeks regarding the existential Jihadist electromagnetic pulse (EMP) threat to all we hold dear—again repeating our concern that the "powers that be" do not yet understand a number of clear signs. They are missing connections similar to those that should have warned the powers that be of last week's pending terrorism in Boston. And they should also be considered in the above recommended reviews.

Recap of Past Key Points:

Our recent email Updates and Flash Messages have identified several related areas of concern—possibilities, even probabilities, of an existential threat to all we hold dear as part of a "Global Jihad." Iran most assuredly has committed to such a Jihad and has been working with North Korea to gain the means for posing a direct nuclear threat on Israel and the United States. Again, here are key points:

- **Iranian leaders have repeatedly declared their intentions to destroy the Little and Great Satans;**
- **Iranians and North Koreans have long worked together on nuclear weapons and ballistic missile technology, fed by a cacophony of proliferation of key technology and engineering knowhow from Russia, China and others;**
- **Iran and North Korea have both launched satellites into low earth orbit—toward their "south", and capable of carrying light payloads over all the nations on earth;**

- **Thus, they both could, once they obtain a light-weight nuclear weapon, detonate it over any nation they choose—including the United States, when it arrives from the south whereas our defenses are postured against an attack from the north.**
- **If an appropriately designed device is detonated at about 300 miles altitude over Omaha, the resulting electromagnetic pulse (EMP) could lead to the death of a couple hundred million Americans over the following year;**
- **These EMP effects are well known to North Korea, Iran and most everyone else—and have been emphasized in 2006 and 2008 reports from the Congressionally mandated non-partisan EMP Commission composed of knowledgeable scientists and engineers;**
- **Their only remaining challenge is getting such a weapon, and North Korea has claimed to have a "miniaturized" nuclear weapon;**
- **The Defense Intelligence Agency (DIA) recently judged with moderate confidence that this is so—but the Director of National Intelligence (DNI) testified DIA did not represent the consensus of the 15-members of the Intelligence Community, noting that since they have not yet tested such a capability, "neither we nor the North Koreans know they have such capability;"**
- **But 70 years ago the U.S. employed the world's first atomic bomb on Hiroshima without testing it and the second (of a different design) on Nagasaki immediately after a single test—the DNI's argument seems a bit weak;**
- **Prudence demands that we prepare to counter such a threat ASAP;**
- **Buying additional ground based interceptors (GBIs) for Alaska and considering an East Coast GBI site will improve our defense against ballistic missiles that attack us from over the North Pole, but little to defend against an attack over the South Pole—it's like locking the front door and leaving the back door open.**
- **To close the back door, we need to improve our existing missile defenses as quickly as possible. Aegis improvements could be accomplished quickly—to provide ascent phase intercept opportunities early after North Korea (or Iran) launches a rocket headed south toward the South Pole to attack the U.S. from the south, and to provide advance tracking information to our GBIs in California so they can intercept the orbiting satellite before it overflies the U.S.**
- **The Aegis system's Standard Missile velocity should be increased so that it can intercept missiles and satellites at higher altitudes and defend larger areas.**
- **We should revive programs to develop space-based defenses, ultimately the most cost effective way to deal with the global Jihadist threat—as well as the threats from other nation states. The full complement of technical and political/policy issues confronting this revival are discussed in the reports of the Independent Working Group (IWG). If the United States is to be serious about dealing with the Global Jihadi threats confronting us today, including the "back door" EMP threat, serious consideration should again be paid to this concept.**

Protect the Electric Power Grid.

Whatever is done to improve our defenses against missile attack, no defense is perfect; and steps should be taken to assure that an EMP attack does not create the conditions that would put the United States back into the 19th century without the benefits of that agrarian society. The smartest thing that can be done quickly is to harden the electric power grid—especially the large transformers that could be destroyed by an EMP attack—or a massive solar emission that reaches the intensity experienced in the 1859 Carrington Event.

We will watching closely and report back on the steps that Dr. Ernest Moniz takes when he is sworn in as Secretary of Energy—we were pleased that he stated in his confirmation hearing that he intended to look into the EMP effects from both natural and manmade causes and take appropriate action assure the "robustness and resilience" of the electric power grid. Hopefully, we will see early initiatives from him.

And we continue to applaud Maine Representative Andrea Boland for her legislative efforts to protect against major solar storm geomagnetic effects all new transmission lines of the to-be-installed $1.4 billion Maine Power Reliability Program. And we look forward to seeing the related study that the full legislature has agreed to accomplish, thanks to her efforts.

Mayday, Mayday: Oh for Another Churchill!

May 1, 2013

As we hope to have made clear in our recent messages, America's rude Tax Day wakeup call in Boston shows we need informed and engaged leadership to deal effectively with the Global Jihad that poses an existential threat to America—

and all of Western Civilization. We again need leaders who not only understand, but who will speak the uncomfortable truths we don't wish to hear and mobilize free peoples to stand firm during this perilous time.

In short, we need a modern Winston Churchill, who was without question one of the most important leaders of the 20th Century. His clear articulation of threats to the freedoms for all of Western Civilization is among the reasons why—not to mention his leadership through Great Britain's darkest hours during World War II. Most important were two warnings: The first was ignored until it was too late, and the second was roundly heard and heeded in time for free people to avert disaster for all we hold dear. Would that he were still with us to wake us up and respond to the existential threat we confront today!

Today's Links to Churchill's Unheeded Warning:

On the eve of Monday's 20th anniversary of the U.S. Holocaust Museum in Washington DC, Israel's International Relations Minister Yuval Steinitz reminded a New York Jerusalem Post Conference that eighty years ago, Winston Churchill "warned the world against the rearmament of Nazi Germany." He recounted how people refused to listen to Churchill, and even mocked him. Listen, by clicking here, to a 2-3 minute YouTube excerpt of this important commentary by Minister Steinitz, with its reference to the 50-million who died in World War II, including 6-million Jews, because the then powers that be ignored Churchill's prescient warning.

With this poignant reference in mind, he then warned that a nuclear Iran is the equivalent of 30 nuclear North Koreas and said we shouldn't repeat the same mistake again—referring to the mistake made by those who ignored Churchill's warning.

Hear, hear! But who today is playing Churchill's critical role, as at least a backbencher, in the shadows of the councils of power?

And remember that Iran today calls for destroying not only the Jewish state in the Middle East, the "Little Satan," but also the "Great Satan," America. This time, we are in the crosshairs—Hitler perhaps thought America would continue to stay out of Europe's war as many U.S. isolationists at the time advised. But the Japanese ended that dream when they attacked Pearl Harbor.

As discussed in a number of our past Weekly Updates and Flash Messages, Iran is near to having a nuclear weapon and the ballistic missile means to deliver it, not only to attack Israel but also America especially in a back door attack over the South Pole—an existential threat to both. Take a half hour to listen to Reza Khalili, a former CIA operative who was a spy in Iran's Revolutionary Guard, and his "inside" information that Iran was involved in the Boston Marathon Jihadi attack—and that suggests more Jihad in America will follow. Could the electromagnetic pulse (EMP) attack we have discussed be in the cards for us? Anyway, Minister Steinitz is right in his assessment.

Another eerie parallel is worth recalling. On September 30, 1938, the German Fuehrer signed what Adolf Hitler a year later called a "scrap of paper," but what then was heralded by Britain's Prime Minister Neville Chamberlain as assuring "Peace in our time." Hitler, of course, was planning a "final solution" for 6-million Jews along with other events that led to World War II.

And why not? Britain, Italy and France decided to yield the future of Czechoslovakia's Sudetenland to the Germans, as part of Chamberlain's "big deal." Why would he expect such docile folks to stop him afterward?

Slightly less than a year after Chamberlain's claim of securing peace for all Europeans, Germany invaded Poland on September 1, 1939. So much for the policies of appeasement . . . and the British called on Winston Churchill, who had so presciently warned them, to lead them through the "blood, toil, tears and sweat" of World War II.

So, do we expect any different track from the evil we face today?

But I digress; Churchill's warnings and challenges of great consequence were not finished.

Churchill's 1946 Heeded Warning—and Today's Challenge:

After VE Day, Western Europe was free from Nazi Fascism's iron cross, but the 1945 Yalta meeting of the Big Three (President Franklin Roosevelt, Prime Minister Winston Churchill and Soviet General Secretary Joseph Stalin) set the stage for the makeup of the war-torn nations of Europe—which turned out not to be a pretty picture for those who love individual liberty.

Two of the three were soon no longer in power—President Roosevelt died shortly thereafter and his Vice President, Harry Truman, assumed the Presidency. The British changed ruling parties and turned Churchill out to pasture during the subsequent Potsdam Conference (July 17 to August 2, 1945)—again to become a backbencher in Parliament.

At the beginning: Winston Churchill, Harry S. Truman, and Joseph Stalin

Then, sitting (from left): Clement Attlee, Harry S. Truman, Joseph Stalin; standing: William Daniel Leahy, Ernest Bevin, James F. Byrnes, and Vyacheslav Molotov.

At Potsdam (during which Churchill was replaced by the Labour Party's Clement Atlee), Truman informed Stalin of the successful Trinity Test of the atomic bomb design to be dropped on Nagasaki. (The first bomb dropped on Japan (Hiroshima) had never been tested; so confident were the U.S. scientists in its design.) And while he did not say so, we now know that Stalin already knew of the Los Alamos developments based on effective Soviet espionage from very early in the Top Secret Manhattan Project—though Truman did not before becoming President.

We do not know what might have happened if Churchill had remained at Britain's helm. He better understood Soviet intentions than Roosevelt who held the high cards at Yalta—and as noted above Truman was new on the job at Potsdam. Notably, Roosevelt had brushed off warnings about Stalin's intentions, saying: "I just have a hunch that Stalin is not that kind of man . . . I think that if I give him everything I possibly can and ask for nothing from him in return, noblesse oblige, he won't try to annex anything and will work with me for a world of democracy and peace."

Sound familiar?

In any case, both Churchill and Truman shortly made clear their perceptions of a dire future that was developing in Europe—and the need for a different approach to the policies of the Free World.

At Fulton (population 7000), Missouri's Westminster College on March 5, 1946—and at Truman's invitation, Churchill again warned the western democracies of a great menace growing in the wake of World War II—a war that could have been prevented if the Western Powers had listened to Churchill's warnings in the late 1930s, as he noted in his Fulton speech. This became known as the "Iron Curtain" speech, because of its memorable phrase: "From Stettin in the Baltic to Trieste in the Adriatic, an iron curtain has descended across the continent." Churchill's speech to a crowd of 40,000 changed the way the Democratic West viewed the Communist East. Click here to see a YouTube presentation of this important segment of that speech.

Churchill delivers the speech, March 5, 1946.

Franco to U.S.: Mind Your Business

THE STARS AND STRIPES

Unite to Stop Russians, Churchill Warns at Fulton

How to Pull Coup Stumps Spanish Folk

Madrid Note Defies Action By 3 Powers

This time, the western democracies heeded Churchill's warning. Major geopolitical innovations followed that changed the entire U.S. approach to its foreign and defense policies. Historians may debate the details, but History places beyond dispute the success derived from major policy changes and reorganizations, most notably beginning in 1948. Our enemies during World War II, Germany and Japan, are among our closest allies; millions in Eastern Europe then behind the iron curtain are free; and while we continue to differ with Russia on important matters traceable to Cold War thinking, there are potential areas where we can carefully build on common interests without returning to the Cold War ways—or such naivety as expressed by Roosevelt quoted above.

Throughout those years, periods of peace were most secured and preserved when America was unquestionably strong and engaged with our allies in countering the ways of a common enemy and its ideology—Communism. Hopefully, we are done with that adversary—but now we confront another. It also is an ideological adversary of liberty: What some naively call "radical Islam" but is more accurately identified as a Global Jihad fueled by strict adherence to the tenets of Islam.

So What?

Churchill again assumed the Prime Minister's role from 1951 to 1955, after which he again served as a "back bencher" in Parliament until he finally retired in 1964 and lived another year to age 90. It would be wonderful if his advice were still available in this time when, as noted in our last Weekly Message, we seem not to know either our enemy or ourselves.

We must get beyond this stage—with or without such a senior statesman who would be invaluable. We must do the best we can to define the evil ideology now descending across the Western World, not unlike Communism of just over a half century ago. Since no such individual seems present, we must do the best we can to understand the problem and act appropriately.

Some things are relatively easy—like building the needed missile defenses to protect us from the existential threat potentially posed by Iran if they mate a miniaturized nuclear weapon (which they claim to have) to a satellite and launch it over the South Pole to detonate it over the United States (or anywhere else they choose) to create a wide area EMP. Or hardening the electric power grid to assure we can restore essential electrical and related critical infrastructure after such an attack—or after a natural EMP event, as discussed in our previous messages.

As a first step in understanding the nature of the Global Jihad threat, and in particular how it likely manifested itself in the recent Boston Marathon events, I strongly suggest that you invest an hour to follow this link and view Stephen Coughlin's excellent lecture on the nature of the problem in the context of the Boston "Individual Jihadi" attack and the misunderstanding of that threat by most of the press today. It in turn is linked to a full course intended to inform the interested and concerned public of the comprehensive nature of this deadly threat.

MAJ Coughlin is one of our nation's most astute and objective analysts on all aspects of the Jihadi threat. He is an expert in the connections between Islamic law, terrorism and the Jihadist movement around the globe, and has briefed widely on these issues in the Pentagon, the law enforcement community and the intelligence community, when they are permitted to listen. (As noted in our last email, political correctness decrees that even our elite service academies no longer be permitted to discuss critical issues associated with the Jihadi threat.) Through his knowledge of published Islamic law, Steve has provided forecasts of events in the Middle East and domestic, and accurately assessed future threat posture of Jihadist activities before they happen.

Steve also has briefed intelligence agencies and on Capitol Hill for Members of Congress. He has adapted his briefings to make available to the general public information that has behind it a professional standard of intelligence training. This is well worth an hour of your time.

"To be or not to be: That is the question."

May 6. 2013

Perhaps these well-known lines from Shakespeare's famous tragedy, when Hamlet contemplates life and death—and suicide, also apply when considering today's existential threat to America and all of Western Civilization posed by an electromagnetic pulse (EMP) event. Shall America, like Hamlet, experience an untimely death? Or shall we avert a possible end to all we hold dear?

In our recent Weekly Updates and Flash Messages, we have sought to connect a number of dots about all too real conditions that in combination pose a truly existential threat to very existence of our republic. The evidence exposes this threat, if only we would assimilate a few facts and draw obvious conclusions, some of which are at least creeping their way into the consciousness of a public that prefers to look away from unpleasant realities.

Jihadi Threats are Alive and Well.

For example, we now know that al Qaeda is not defeated or even in retreat, as has been claimed by our highest authorities—it is alive and well, as demonstrated by growing revelations of the attack on U.S. sovereign territory in Benghazi, causing the death of our Ambassador and three others—as if new revelations were needed to reveal the obvious to all but the mainstream media. (We now know it was obvious to the CIA immediately after the event, if not during it.) Also obvious is the wrongheaded claim of isolated "self-radicalized" Islamists who now are advertised to be our current Jihadi threat, of which the Boston Marathon terrorism is a purported example.

But the same Muslim Brotherhood that now controls Egypt and other Middle Eastern nations also is aligned with the Islamic Society of Boston, which has links to the brothers Tsarnaev—and they were known to have links to Jihadists in Chechnya, even if our Intelligence Community ignored warnings from the Russians. The Islamic Society of Boston's

associated mosque in Cambridge has hosted known terrorists. At one time Yusuf Al-Qaradawi, a Muslim Brotherhood spiritual leader, was a trustee. Among other things, he reportedly has preached that Muslims should acquire nuclear weapons to "terrorize their enemies"—read the Little Satan Israel and the Great Satan America.

Iran is a Big Problem.

Enter our concerns about Iran and its well-known aspirations to obtain nuclear weapons that can be delivered to kill Israelis and Americans, as Iran's leaders have openly stated is their goal. And what better way to "terrorize their enemies" than to kill hundreds of millions of Americans, as is possible in an EMP attack involving only a single nuclear weapon detonated a couple of hundred miles over the center of the United States?

We have emphasized that there are two apparent ways Iran could accomplish this dastardly deed—once they obtain a "miniaturized" nuclear weapon (that their partner North Korea claims already to have mastered) and mate it to a ballistic missile:

- First, they could, either themselves or through a surrogate Jihadi terrorist cell, place the weapon and its launcher on a seafaring vessel and launch it from off our coasts to detonate over the U.S.—the optimum place from their perspective might be from the Gulf of Mexico, since we have absolutely no defense located to could shoot down such an attack. Over a decade ago, Iran practiced such launches in the Caspian Sea.
- Second, they could carry their weapon by satellite, launched as Iran has also practiced, over the South Polar region to attack the U.S. from the south—circumventing our current homeland missile defense systems that are focused on shooting down ballistic missiles launched over the North Polar region; i.e., to come at us through our unprotected "back door."

Thinking about the Unthinkable in Small Towns.

Several times, we have previously discussed these two scenarios and what can be done to counter them. Here, consider the consequences of either scenario, if successfully executed.

The non-partisan congressionally appointed EMP Commission reported in 2006 on the seriousness of this threat and elaborated it in 2008 by making public previously classified information from our Cold War efforts to assure the survivability of our strategic forces. Let there be no doubt that this threat is real—and well known to our enemies, including North Korea, Iran and numerous terrorists.

Bill Forstchen, a member of our Independent Working Group, wrote a New York Times best seller novel—*One Second After*, describing in very graphic terms what might happen following such an EMP attack from the perspective of residents in the small North Carolina town in the Great Smoky Mountains near Ashville, where he is a University Professor of History. Click here for a graphic 10 minute YouTube interview with Bill—still timely even though the interview was in 2009, because nothing has been done to deal with this existential EMP threat.

Bad news, but the folks in Bill's novel actually were pretty well off in this small town, by comparison to their big city cousins. Imagine what it might be like in a big city to lose all electric power. Consider just a few facts that distinguish life between these cousins.

So, What About the Big City Problem?

If the electric power grid fails, practically everything in our just-in-time economy fails to operate in a nanosecond, literally. Airplanes won't fly, and the FAA won't direct the paths of any that do. Unprotected trains grind to a stop and clutter up the tracks, and trucks come to a screeching halt—but only if the brakes work. Lights go out all over town—everything dependent on the power grid ceases to work—elevators in the tall buildings; electricity for operating rooms and other time-urgent life supporting facilities; communications systems; fire stations and other emergency support facilities and operations; banking and financial systems; and on and on.

And consider some secondary effects—what happens if nothing or very little counters the natural forces of nature? We have become so accustomed to some obvious luxuries that we forget how dependent we are upon them.

For example, pumps cease to function to provide water to all manner of important essential activities, including for drinking and essential hygiene. Gravity will take over if there are no means to pump sewage in tall buildings—and with no windows to open think of the stench. Fire storms reminiscent of World War II bombings could occur if there are no modern means (nor old ones either—even for the bucket brigade, water is required) to fight fires, which regularly occur

in large urban areas—not to mention those that might be initiated by electrical arcing from the EMP attack. Whatever traffic that might be possible will inevitably stall with a breakdown of traffic control systems and jams of mass movements by whatever means are available—even if folks have bicycles.

What happens when the food and water on the shelves runs out? And think of the mortuary problems . . . Not a pretty picture—Bill might want to write a sequel.

Our previous suggestions that U.S. society would be reduced to at best a 19th century existence may be optimistic, except for those not living in urban areas. Massive deaths in urban areas could occur much more rapidly than the already horrifying pace of Forstchen's *One Second After*, which we'd recommend you read if you haven't already.

What to do?

These matters are well known and beyond serious dispute, and still the powers that be do nothing—or very little—to deal with the obvious existential threat. Key initiatives that should be undertaken immediately are:

- **Strengthen our ability to shoot down satellites from Iran (or North Korea) that might be launched over the South Polar regions to attack the U.S. from the South—and demonstrate that capability for all to see.**
- **Be prepared to destroy the Iranian rockets intended to put satellites in orbit on the launch pad if there is any doubt that we can shoot them down after they are launched—unless the Iranians permit credible on-site inspection of all payloads before they are launched.**
- **Deploy as soon as possible on military bases around the Gulf of Mexico the same Aegis Ashore capabilities the Pentagon is funded to build in Romania and Poland to protect our European allies from Iranian ballistic missiles—such sites can defend against ballistic missiles launched from vessels off the Gulf Coast.**
- **Harden the electric power grid—immediately, at least the major transformers that are not manufactured in the U.S. and for which we have few if any spares.**
- **Provide in appropriately shielded storage sites spares for key components of our critical electrical infrastructure.**

Collectively, we are on a path to committing societal suicide, whether by design or not. And we haven't even mentioned the companion natural threat associated with a major solar storm—the so-called Carrington Event that will happen, we just don't, and won't, know when.

"To be or not to be: That is the question." Indeed! Will the USA fare better than Hamlet?

Next Steps.

We will watch closely and report back on the steps that Dr. Ernest Moniz takes when he is sworn in as Secretary of Energy. He stated in his confirmation hearing that he intended to look into the EMP effects from both natural and manmade causes and take appropriate action assure the "robustness and resilience" of the electric power grid. Hopefully, we will see early initiatives from him.

We are making plans to visit friends in the Panama City, Florida area to discuss the apparent EMP threat that could be launched from a vessel off their coast and how large test ranges at nearby Air Force bases (Tyndall and Eglin) could enable an Aegis Ashore deployment. We will also be following up on initiatives begun last year related to the utility of a possible Aegis Ashore deployment in Pascagoula, Mississippi where our Aegis ships are built.

And we will continue to follow Maine Representative Andrea Boland's efforts to protect against major solar storm geomagnetic effects as new transmission lines are installed under the $1.4 billion Maine Power Reliability Program. And we look forward to seeing the related study the full legislature has agreed to accomplish, thanks to her efforts.

Nothing Concentrates the Mind as does contemplating the Hangman's Noose!

May 8, 2013

This paraphrase of quotes attributed to Samuel Johnson should capture our attention as we think about two existential electromagnetic pulse (EMP) threats—one that may be avoided if we are prepared and one that definitely will happen; both of which could lead to the death of several hundred million Americans. How long will the "powers that be" think before acting? Consider again the two existential threats:

- **Ballistic missile attack, illustrated by three scenarios that detonate a nuclear weapon 100-300 miles above the central United States: 1) Launch of a short or medium range missile from a vessel off our coasts, 2) Launch of a nuclear-armed intercontinental ballistic missile (ICBM) over the North Pole; and 3) Launch of a nuclear-armed satellite over the South Pole.**

- A massive geomagnetic disturbance (MGD) caused by a coronal mass ejection (CME) associated with solar storms that eject vast clouds of highly charged particles into space and peak every eleven or so years and—every so often these clouds reach our planet Earth, and depending on how "the world turns," the U.S. We're due a Carrington event that could bring down the electric power grid, thought to occur every 100-200 years—the last one was in 1859.

Any of the above events could shut down the entire U.S. electric power grid for an indefinite period—and that would have disastrous consequences as we have discussed.

A high-altitude nuclear explosion would create substantial additional damage because its high frequency EMP components could destroy critical electronics that might survive an arriving CME/GMD, which is dominated by a low frequency EMP component that couples massive energy into the network of long lines interconnecting the power plants and the rest of the electric power grid.

Bottom Lines:

These observations lead to a strong conviction that we should 1) Assure that our ballistic missile defense (BMD) systems can deal with that all too real threat and 2) Protect electric power grid against CME/GMD that will happen, the only question is when. A byproduct of the latter action, if carried out by knowledgeable technologists and engineers, should be protection of key elements of the electric power grid from a nuclear EMP attack. Most important would be to harden the power transformers that are produced only in Germany and South Korea.

Currently we are postured to deal only with one of the above scenarios—attacking ICBMs that arrive from over the North Pole. Our Ground-Based Interceptors (GBIs) in Alaska and California should handle a limited attack from North Korea or Iran—though they need improvements against Iranian launches toward the Eastern, especially the Southeastern, USA.

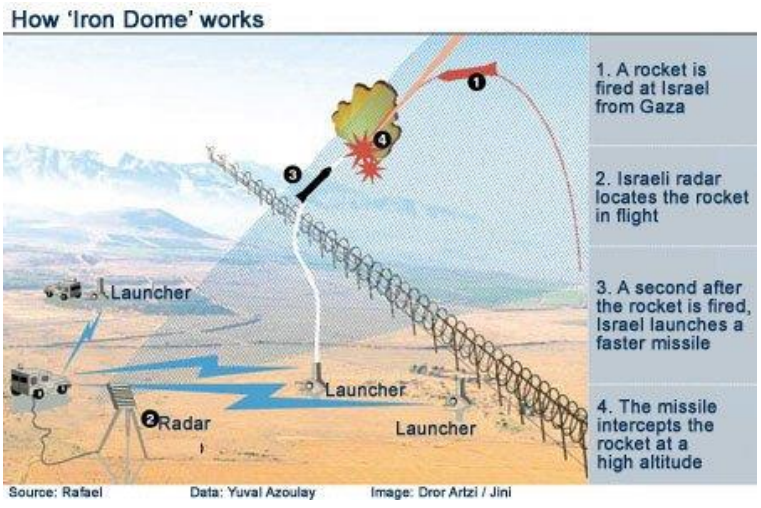
Congress has directed the Pentagon report this year on how to address this weakness, including deploying an East Coast GBI site. Hopefully, the Pentagon's report will also consider how to protect the U.S. against nuclear-armed ballistic missiles launched from vessels off our coasts—especially from the Gulf of Mexico.

Finally, I am unaware of efforts to counter the launch of a nuclear-armed satellite southward from either North Korea or Iran to be detonated over the U.S.—including on its maiden orbit. They both have launched satellites in near polar orbits that overflew the U.S. from the south-to-north, including on their initial orbits. We need to rethink our current defenses, which focused on defending against ICBMs that approach the U.S. from the north.

A Sense of Urgency can lead to Impressive Advances!

There should be a sense of urgency in addressing these concerns—yet the pace of the "powers that be" in doing so seem dreadfully slow. While countermeasures are available, little seems to be happening. Clearly, there needs to be a collective sense of "facing the hangman in the morning."

We know this sense of urgency can produce astounding results—e.g., Israel's rapid development, deployment and employment of its Iron Dome system. During the 2006 Lebanon war, Hezbollah launched thousands of short-range rockets that landed in northern Israel. In February 2007, engineers at Rafael Advanced Defense Systems began working with the Israeli Defense Force to produce in record time Israel's Iron Dome defense—and in late 2012 shot down 84-percent of several hundred Iranian-supplied rockets that Hamas launched from Gaza at Israeli cities.



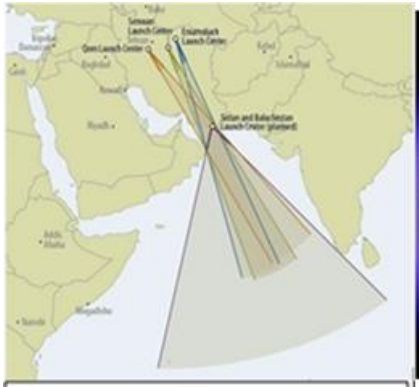
The challenge the Israelis overcame was not simply knocking rockets out of the air—actually that was the easy part. The essential development was to provide early tracking and attack assessment so that Iron Dome's fire control system can determine whether to invest an interceptor in shooting at a given inbound missile: Those headed toward critical areas are targeted; those bound for less important destinations are granted a pass in order to concentrate fire on attacking rockets likely to do the most damage.

And now—in spite of the usual naysayers, Iron Dome is on the job, helping Israel deal with Syria.

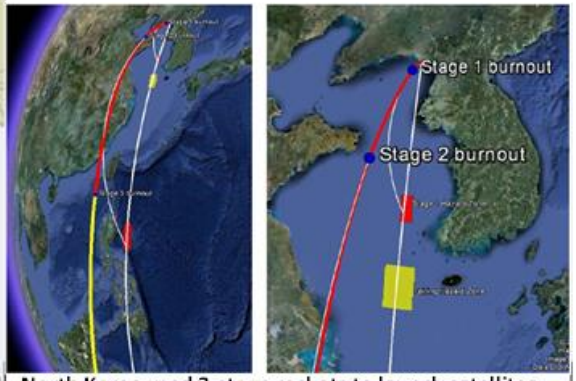
We Need the Same Urgency to Deal With EMP.

This same kind of time urgency is a critical component of the challenge, for example, in enabling the Aegis BMD system to shoot down North Korean or Iranian ballistic missiles during their ascent phase, before the Standard Missile-3 (SM-3) interceptor finds itself in a tail chase with a much faster ICBM. That Iron Dome engineers met such a challenging timeline should encourage Aegis BMD engineers in designing to deal with the threat of satellites that carry nuclear weapons over the South Pole to attack the U.S. from the south.

The Israelis demonstrated with Iron Dome that, with great motivation, effective management, and sound technology, rapid development of an effective missile defense system is feasible. "Contemplating the hangman in the morning" no doubt aided their achievement. So it should be in addressing the EMP produced by missile attack. And we need the same sense of urgency to protect the electric power grid from Mother Nature—the solar CME/DMD.



Iran has launched satellites into orbit to the South. over the South Pole



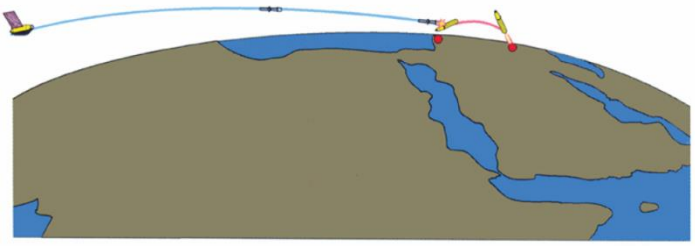
North Korea used 3-stage rockets to launch satellites southward into polar orbit over the South Pole

The Dog Not Barking

May 14, 2013

In Sir Arthur Conan Doyle's *Silver Blaze,* Sherlock Holmes solved a mystery by noticing the "watch dog did not bark" while the family slept and a crime was being committed. Just so, we may not avert a calamity if we do not in time note the dog not barking in the current search for counters to existential threats to all we hold dear.

The "dog not barking" in today's search for the most effective defense against essentially all ballistic missiles is the development of space-based defenses. The possibilities for such a defense are evident from the adjacent sketch, which illustrates at a conceptually accurate scale how a low altitude orbiting defensive satellite might be directed to intercept even a short range ballistic missile. Detailed computer simulations during my watch as director of the Strategic Defense Initiative (SDI) showed that such a space based defense could have shot down all of Iraq's SCUD missiles during the 1991 Gulf War long before they reached Tel Aviv or Haifa.



Such an intercept possibility exists because of the high velocity of any object in low earth orbit—faster than an intercontinental ballistic missile (ICBM) which reaches a much higher altitude than the defense orbit. Longer range attacking ballistic missiles than depicted above would be easy targets for such a defense, provided the defense can discriminate the attacking warhead from decoys.

Thus, defeating an electromagnetic pulse (EMP) attack like those discussed in the past several messages would be easy pickings for such a defense. Attempting high altitude detonations (and to reach much longer distances) would require attacking ballistic missiles to fly through the orbiting defense interceptors, presenting multiple shots for the defense.

We can do this . . . so why aren't we? The answer is a bit of a long story, but one important to understand if we are ever to employ such an effective defense. Consider a few highlights.

At the Beginning:

Understand that the basic space defense concepts have been evident for over a half century—beginning most significantly with studies sponsored by the Advanced Research Project Agency (ARPA), created in 1958 by the Eisenhower administration in the wake of Sputnik, when Russia beat us to space, to avoid another technological surprise.

Avoiding technological surprise remains the key mission of ARPA's successor agency today, now dubbed the Defense Advanced Research Project Agency (DARPA).

Between 1958 and 1965, ARPA's Project Defender explored plausible, then-considered exotic, technologies that could possibly defend against ballistic missiles, including lasers and a kinetic hit-to-kill system called Bambi (for Ballistic Missile Boost Intercept)—designed to intercept ballistic missiles in their boost phase while their rockets still burn and before they can release decoys. This comprehensive study fleshed out the conceptual ideas of most if not all of the missile defense concepts considered by President Ronald Reagan's Strategic Defense Initiative (SDI), in response to his March 23, 1983 speech, challenging the scientific community to develop effective defenses.

<u>Key SDI Initiatives</u>:

The SDI program updated the Project Defender concepts based on advancing technology, e.g., according to Moore's Law, named after INTEL's co-founder, the number of integrated circuit transistors doubles approximately every two years—translating to corresponding increases in the speed of computational operations for a given volume computer. By the late 1980s, this and related advances produced hand-held computers with the computational power of the CRAY-1, the fastest of the 1970s computers in large rooms to support the nation's cutting edge scientific computing needs.

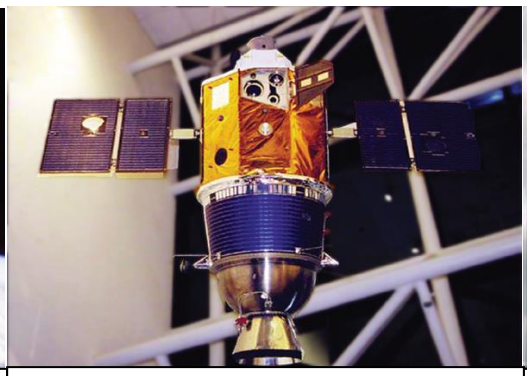
Indeed, an SDI concept called Brilliant Pebbles, developed by a Lawrence Livermore National Laboratory (LLNL) team, exploited this and other technological innovations—it was emphasized as the most promising of the SDI concepts by Lieutenant General James Abrahamson, the first SDI Director, in his 1989 End of Tour report. It became the first SDI program to enter a Pentagon formally-approved Demonstration and Validation (DenVal) phase under SDI's second director, Lieutenant General George Monahan. "Brilliant Pebbles" proceeded on my watch as the third SDI director, with two industrial teams (led by Martin Marietta and TRW-Hughes) competing for further development beyond the DemVal stage. Both teams were making excellent progress—but their efforts were not to last beyond my watch.

Toward the end of my watch, key congressional leaders, particularly in the U.S. Senate, made clear they intended to kill this program—I agreed with my predecessors' assessment that it was SDI's most important innovation, then funded at several hundred million dollars a year (in 1990 dollars).

As a hedge strategy, I began the Clementine Program to space qualify key technologies in a mission that was "politically correct"—to return to the Moon for the first time in 25-years and map its entire surface, demonstrating the inherent capabilities of the Brilliant Pebbles sensor suite. This mission succeeded beyond my fondest hopes—and a replica now hangs in an honored location in the Smithsonian next to the Lunar Lander, as illustrated in the adjacent photo (upper left).

One might rightly wonder what Clementine had to do with a space-based interceptor, which looks entirely different, depicted in the left hand photo below. In short, the Clementine spacecraft (center) carried sensors, each of which involved one of 13 spectral bands, identified during 1989 critical reviews of the Brilliant Pebbles concept as being needed to respond effectively to all the offensive countermeasures to avoid an intercept. These requirements were defined by many of the nation's smartest scientists including a number of outspoken SDI critics. In designing the $80 million Clementine mission, the Naval Research Laboratory, which was the spacecraft integrator, used sensors scavenged from the LLNL Brilliant Pebbles laboratory testing program that had indicated this outcome was possible during the critical reviews—needed was a proof of that conclusion.

Brilliant Pebble



Clementine

Astrid

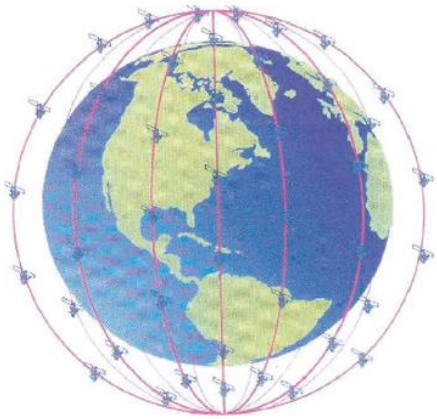
The Clementine mission lifted off less than 2 years after my go-ahead decision in 1992—it returned to the Moon for the first time in 25 years and mapped its entire surface in the

13 spectral bands—obtaining more such data than the entire Apollo program and identifying water in the polar regions of the Moon—confirmed by subsequent NASA missions. Several issues of *Science,* the prestigious journal of the National Academy of Sciences, were dedicated to publishing the Clementine data, and the small Clementine team, led by Air Force Colonel Pete Rustan who regrettably passed away last year, received awards from the National Academy and NASA for Clementine's scientific achievements and its demonstration of the "Faster, Better, Cheaper" approach sought by NASA Administrator Dan Goldin. Dan previously had led TRW's Brilliant Pebbles team and also well understood the importance of the demonstration for missile defense applications as well as its scientific achievement.

Thus, the main scientific elements of a given Brilliant Pebbles spacecraft were demonstrated in the acid test environment of space in 1994—including the Brilliant Pebbles software which managed the Clementine mission. In effect, Clementine space-qualified all Brilliant Pebbles advanced technology except for the light-weight miniature propulsion system; and that capability was also demonstrated on an *Astrid* flight test later in 1994—see the right hand photo in the above figure.

Confidence in remaining key system elements was provided by, perhaps, an unlikely source—the private sector. This evidence assures the possibility of the required mass production of a large number of satellites and a cost-effective on-orbit space-station-keeping management system to support them. That a cost-effective concept of operations for a full constellation of Brilliant Pebbles is possible was demonstrated in the 1990s by a Motorola-led consortium that developed, deployed and operated the Iridium world-wide telecommunication system illustrated below.

The Iridium team built and launched an initial constellation of 95 mid-sized (800 kg each—over 10 times more mass than the anticipated 50 kg Brilliant Pebble) spacecraft between May 1997 and November 1998, at a peak build-rate of 4 spacecraft-per-week; employing 19 launchers from a wide variety of American and foreign space-launch service-suppliers. Spacecraft quality was operationally demonstrated to be exceptionally high—only 2 of the launched 95 failed in the first half-dozen years of operation, an in-service mortality rate unrivalled in mass-produced spacecraft of all types and origins. The Iridium constellation provided world-wide coverage for communi-cations via handheld cellphones and pagers.



Iridium Constellation 6 rings x 11 platforms

Iridium Cell Phone RF Footprints

It is difficult to get the U.S. government to accomplish what was done in the private sector, with its profit motive. But the Motorala team's policies and procedures should be emulated by the powers that be. As the above discussion strongly suggests, technology was available twenty years ago to build this most effective missile defense.

Yet nothing—repeat, nothing—has been done to exploit that technology while the Pentagon has invested in a number of missile defense systems many times what was needed to develop and deploy such a global defensive system to protect the American people and our overseas troops, allies and friends. And that system would have been far more effective today than what we have in providing the needed defenses—a story for another day.

How Did Things Run Amok?

It became apparent during the summer of 1992 that congressional Democrats, particularly in the Senate, intended to kill the Brilliant Pebbles program—leading me to initiate, with NASA cooperation and support, the successful Clementine program. Clementine follow-on programs were strongly desired by the scientific community, but blocked by President Clinton—because, as a senior official told the press, it employed SDI technology. Defense Secretary Les Aspin killed the Brilliant Pebbles remnant and disbursed the associated technologists—as he said, "taking the stars out of Star Wars."

So, why did this happen? And why is nothing being done about it today? The short answer is that it's not a matter of technology or money—it's all about deeply entrenched ideology as briefly discussed below—more for another time. And these circumstances are not likely to change without key senior leadership—or a disaster that captures the attention of the American people who in turn demand that their leaders build truly effective defenses.

To illustrate how deeply entrenched these issues are, consider Bill Broad's October 28, 1986 New York Times article, which also referred to the early Project Defender/Bambi history and a number of the key political issues of that time, about three years after Ronald Reagan initiated SDI and a little over two weeks after the October 11-12 Reykjavik

Summit when President Reagan walked out because Soviet General Secretary Mikhail Gorbachev demanded that testing of space based defenses be restricted to the laboratory. Broad's article, which did not mention Reykjavik, reflected the heat of the then wide-spread debate over the wisdom of the SDI and the commitment of the arms control community to the ABM Treaty, while I was defending SDI in our negotiations with the Soviet Union.

It is not exaggerating to claim that without Ronald Reagan's strong belief that our search for effective defenses, including space defenses, was not to be traded away—SDI would have died in the cradle, perhaps in Reykjavik. This was before Brilliant Pebbles became a gleam in the eye of even General Abrahamson—then the SDI Director. Indeed, it came as a consequence of LLNL initiatives, primarily in the 1987-88 period—and the consequences were so profound that General Abrahamson initiated a crash technology assessment program and his successor, General Monahan, chartered a separate Task Force to manage the Brilliant Pebbles Concept Demonstration and Validation program that went public in 1988.

This coming-out no doubt prompted President Reagan's veto of the 1989 Defense Authorization Act because it cut space based interceptor funding. President Reagan's correct judgment left powerful enemies in congress who eventually (after my watch) were successful in killing the program—and their servants in subsequent administrations have not taken any steps to revive it. So it remains dormant today, even though President George W. Bush withdrew from the ABM Treaty, which had dulled serious thinking about the most effective defenses for 30 years—except for the SDI era during 1984-93.

See my 2001 Wall Street Journal article, written when I hoped that President Bush would revive the Brilliant Pebbles program—after he stated his intent to withdraw from the Treaty. Alas, he did not, and we remain hostage to Cold War ideology though not the legal limits of a Treaty written to underwrite that ideology. For an unabridged discussion of these important issues and more specifics on Brilliant Pebbles, see our 2009 Independent Working Group report.

I fear that the Obama administration and its arms control advocates will treat us to various "executive agreements," if not formal treaties that will again bind the hands and thinking of our scientific and engineering community—preventing us from building the most effective defenses for America and our overseas troops, friends and allies.

More about this concern another day. For now, remember "the dog not barking!" At least, you have been warned!

About that "Red Line". . .

May 21, 2913

U.S. media outlets and political discourse are dominated by discussions of the IRA and AP scandals and Benghazigate questions about who knew what, where and when. These are important matters, but meanwhile major threats to our national security are being ignored—a fact not widely reported.

To be sure, folks like Bill Gertz remind us of China's continuing and growing threat to our space systems (See the figure below illustrating China's 2007 antisatellite (ASAT) test.) and the Obama policies of appeasement, especially as a legacy of the President's pre-election promise of "flexibility" on limiting our ballistic missile defenses, most recently re. Russia's President Putin's two-faced concerns about our efforts to protect ourselves and our allies from ballistic missile attack while modernizing Russia's missile defenses (and offensive strategic forces as well. And the New York Times reports on Chinese hackers growing threat to U.S. defense and civil interests.

These concerns are quite serious. For example, the March 4, 2013 Space Review summary of a forum on Chinese ASAT and related missile defense issues observed that multiple **Chinese military journal articles emphasize American reliance on upon space,** implying to one participant that **"If we do not want the Chinese to go and develop ASATs, then we need to not rely on space." Fat chance . . . what is our alternative?**

Peter Huessy and Mark Schneider provide a comprehensive description of Russia's challenge in their May 20, 2013 review of Future Russian Strategic Challenges . . . again, the cards are stacked against us as our strategic forces atrophy

and Russia is modernizing theirs with a new mobile ICBM called the Yars-M with a range of up to 6,835 miles and carrying 10 warheads; a new rail-mobile ICBM to be deployed by 2020; new submarines being deployed with new submarine-launched Bulava missiles; a new strategic bomber to be deployed by 2020; a new Kh-102 air-launched cruise missile to be deployed by 2013; and a new Kaliber submarine-launched cruise missile in development.

But I would argue that these threats, as dangerous as they are, do not pose our greatest existential threat.

Our Greatest Existential Threat . . . From Iran.

I find myself in tune with Thomas Sowell's May 15 article comparing today's milieu to that of a century ago, when the 20th century began to unravel, with subsequent major disasters. Furthermore, he noted that concerns such as those listed above, coupled with the President's foreign policies re. Libya, Egypt and Syria, are distracting attention from his biggest test to come: A nuclear armed Iran—and what to do about it, while our time for possible action is fleeting.

Click here for the full Investor's Business Daily article, from which the excerpt below emphasizes Sowell's concerns about Iran. Based upon High Frontier's recent emails, you would rightly conclude that I whole heartedly agree. In fact, I believe that Sowell understates the concern.

> ***"Events have already overwhelmed President Obama's foreign policies, most obviously in the Middle East, especially in Libya, Egypt and Syria. But the biggest test is yet to come, as Iran continues to get closer and closer to having a nuclear bomb.***
>
> ***Whatever Barack Obama's words, his deeds have been directed less toward stopping Iran from going nuclear than they have been toward stopping Israel from stopping Iran from going nuclear. Now that this has bought Iran enough time to put some of its nuclear facilities deeper underground, there is a serious question whether Israel is militarily capable of destroying those facilities.***
>
> ***No one can know with certainty why Obama has chosen the path he has chosen. But what seems much more certain is that a nuclear Iran — the world's foremost terrorist nation — is a danger that dwarfs the danger from Kaiser Wilhelm II in World War I or Adolf Hitler in World War II.***
>
> ***It took only two nuclear bombs to force Japan to surrender, and the Japanese in 1945 were a lot tougher than Americans are in 2013. It may seem to be unthinkable that the United States would ever surrender, but we have not yet seen New York and/or Los Angeles in radioactive ruins. If fanatics are willing to die in a nuclear war but we are not, what is left except surrender?***
>
> ***Alarmist? Some dangers are worth being alarmed over. Politicians' tendency to kick problems down the road is all the more reason for the rest of us to look ahead before it is too late."***
>
> ***Thomas Sowell in***
> ***2013's Similarity to Eventful 1993 Can't Be Ignored***
> ***Investor's Business Daily, May 15, 2013***

Sowell refers to New York and Los Angeles being bombed into radioactive ruins—and this is a daunting possibility that we should take seriously. But as argued in our recent emails, a single high-altitude nuclear explosion could kill 10 times as many Americans without creating blast or radioactive damage.

The EMP Threat.

A nuclear detonation 300 miles over the center of the United States would be above the earth's atmosphere and cause neither blast damage nor radiation effects. But it would create an electromagnetic pulse (EMP) that could shut down our electric power grid and "fry" the tiny computers that manage most of our critical infrastructure—without which our "just in time economy" would instantaneously stop in its tracks. No lights, no communication, no transportation, no banking, no water and sewage, no refills for life-sustaining medicine, etc. Imagine the chaos that would result—turning the United States into a nineteenth century horse and buggy agrarian society without the horse and buggy, locally grown food, etc.

Unless we are prepared for this contingency, repairs could be impossible. Key transformers in our electric power plants would be difficult if not impossible to replace. Each is tailor made for its associated power plant; we have few if any spares; we don't build them anymore; and getting them from overseas would be problematic to say the least. Without these transformers, the grid would be down indefinitely.

As we have emphasized in several recent emails, North Korea and Iran could be able to achieve this threatening capability shortly—by launching a nuclear weapon on a satellite headed toward us over the South Pole. But our defenses are postured to defend against ballistic missiles that approach us over the North Pole. We have "left our back door open while locking the front door"—an incomplete security plan, to say the least.

Iran going nuclear really is the Red Line.

Of the two, I am more concerned about Iran because they have declared their intention to kill as many Americans as possible as a "theological mandate"—and this way of attacking us could lead to the death of hundreds of millions of Americans. Please understand that it makes no difference who is elected Iran's next president—the mullahs dub us the "Great Satan" and they are in charge.

Thus, we have as much at stake as does Israel (the "Little Satan"). Israeli President Netanyahu is right to say there is a Red Line that Iran should not be permitted to cross. Ditto, for us! But what are we doing toward that end? Not much, I would argue.

What To Do and Who Should Do It?

Three needed initiatives:

- **As argued previously, give the U.S. Navy the mission and resources to enable our Aegis ships to shoot down satellites from Iran and North Korea—hopefully within the next 2-3 years.**
- **As a longer term response, revive programs to build space-based defense, patterned after the Brilliant Pebbles concept of the late 1980s—with a target for an operational system within five years.**
- **Harden the Electric Power grid to assure the survival of the electronic grid should the defense fail.**

The first two missions belong to the Defense Department, with the Missile Defense Agency as the primary lead.

Accomplishing the last mission is more complicated, largely because no one seems to be in charge—and those who could be helpful seem dysfunctional. The Defense Department can help but does not have the overall mission to lead—indeed, no one seems to be charged with leading.

Hopefully, Dr. Ernest Moniz will live up to the promise he made during his confirmation hearing (4 minutes and 40 seconds in on this link) to become Secretary of Energy, and familiarize himself with the EMP threat to the energy power grid and the Department of Energy will take initiatives to harden the grid. Work with the Nuclear Regulatory Commissions should be closely coordinated, especially since the NRC produces about 20-percent of the nation's electric power—and we don't want a repeat of Japan's experience when an earthquake/tsunami caused wide area radiation leaks following a loss of power and reactor cooling capability.

The Department of Homeland Security should draft appropriate planning scenarios and assure that all government agencies are prepared in the event of an EMP attack.

Finally, Congress should pay attention and assure that the executive branch follows through to "provide for the common defense."

Taking Stock: An Important Week in Review!

May 24, 2013

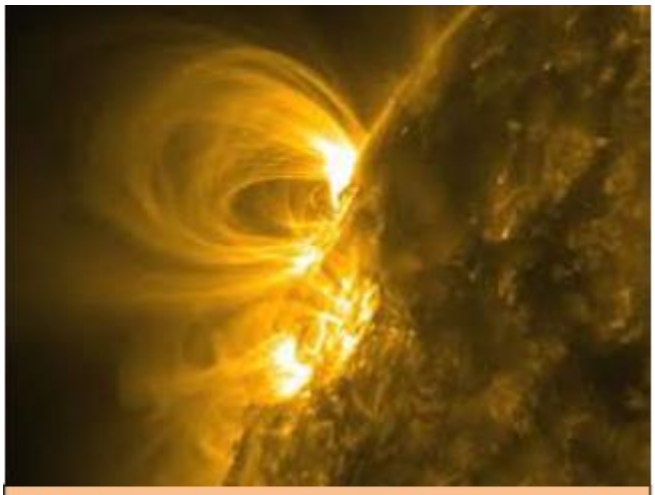
I hope you will have a memorable family time over this Memorial Day weekend—and that you remember those who spent their last ounce of courage to defend America and guarantee our liberty. I hope you will commit with us to continue in that same spirit to encourage the powers that be to deal with the existential threat of electromagnetic pulse (EMP) that could literally end our way of life.

There were several notable inputs this past week that encourage an expectation of progress. Consider the following brief summaries, with links to the full publications:

- **On Monday (May 20), I was interviewed on two radio shows. The first was with Donna Hearne of the Constitutional Coalition on her St. Louis program (Sorry, I do not have a link to the session.), and I was able to cover EMP issues, hopefully so that her audience could understand the threat and what can be done to deal with it. The second interview was with Dick Morris on his daily radio program, and I had the opportunity to discuss many of the EMP issues included in our recent publications—particularly the threat from Iran that flies over the South Pole to detonate over the U.S. and the possibility of using Aegis sea-based defenses in the near term as a defense against**

such a threat. Dick was particularly interested in the possibility that space-based defenses could be revived to provide unique capabilities for shooting down ballistic missiles in their boost phase.

- The May 21 Wall Street Journal published an excellent article by Former CIA Director Jim Woolsey and Dr. Peter Pry, who among other things was Executive Staff Director of the EMP Commission that warned the nation on the EMP threat a decade ago. They cued off of the North Korean launch of six short range ballistic missiles earlier this week to emphasize that while these might be threatening to regional stability in the Far East, North Korea actually poses a much more serious threat to the United States, including a nuclear weapon carried over the South Pole to circumvent our missile defenses deployed to defend against ballistic missiles that come at us from over the North Pole. This weapon would be detonated over the United States to produce an EMP that could shut down our electric power grid. Notably, Woolsey and Pry disputed the Obama administration's position discounting the Defense Intelligence Agency's view that North Korea currently may have a miniaturized weapon to use in such an attack. Since our current defenses are unprepared to deal with this threat, they advocated that the U.S. be prepared to attack North Korean space launchers on their launch pads, as former Defense Secretary Bill Perry and current Deputy Defense Secretary Ash Carter advocated several years ago.
- Also on May 21, Woolsey testified before the House Energy and Commerce Committee in much greater detail about this threat to the electric power grid. In a rather lengthy hearing on the cyber threat, he noted that such an attack, not considered a cyber threat in Western doctrine, is in the playbooks for an Information Warfare Operation of Russia, China, North Korea, and Iran. Their military doctrines include as a dimension of cyber warfare a wide spectrum of operations beyond computer viruses, including sabotage and kinetic attacks, up to and including nuclear EMP attack. Thus, he argued that nuclear EMP attack should be included in the cyber and information warfare doctrine assumed for potential adversaries, based on the work of the Congressional EMP Commission that analyzed this threat for nearly a decade (2001-2008). The Congressional Strategic Posture Commission and several other major U.S. Government studies independently arrived at similar conclusions, and represent collectively a scientific and strategic consensus that nuclear EMP attack upon the United States is an existential threat. And Woolsey observed that, during the Cold War, Moscow developed a secret Fractional Orbital Bombardment System (FOBS) that used a Space Launch Vehicle designed to carry a nuclear warhead southward—away from the United States initially, but to deliver the warhead on a satellite on a south polar orbit, so the nuclear attack would approach the U.S. from the south. As we have emphasized, he observed that Iran recently launched satellites on just such orbits. Furthermore, he discussed the proliferation pathway—including for "Super EMP weapons"—from Russia to China to North Korea to Iran.
- Also on Tuesday, May 21, The Washington Times published Frank Gaffney's article on the natural EMP threat—"The night that all the lights go out," which set the stage for a two day international conference in Washington, DC: the Electric Infrastructure Security Summit, attended by specialists and other interested parties from ten or so nations as well as senior U.S. officials. Click here for the two day agenda and main speakers. Frank's article gives an excellent summary of some of the problems and the hopes for improvement this year, including a reference to the Shield Act that will again be sponsored this year by the leaders of the EMP Caucus, Reps. Trent Franks (R-AZ) and Rep. Yvette D. Clarke (D-NY). As we have repeatedly noted, this will be the third try to get legislation through both houses of congress—hopefully this year we won't strike out.



A coronal loop on the sun. NASA Solar Dynamics Observatory

- I was unable to attend this important conference, but the feedback from several friends who did suggests that it was a good exchange and there is growing awareness of the threat, though not much action yet—at least in the U.S. to deal with the key issues. I was impressed that Lloyds of London, a co-sponsor for the Conference, has provided a serious report about how the insurance industry might view the risk and adjust to the possibility of major "solar storms" impacting North America. I was also impressed to learn that the United Kingdom and Israel have assigned a single agency to deal with this problem—a step that the U.S. powers that be might consider to bring focus to the currently dysfunctional U.S. interagency process. As we have

repeatedly urged, I believe the Energy Department is a good candidate for taking that leading role—and hope that Dr. Ernest Moniz, our new Energy Secretary, will take the initiative to assume the leadership role.

All in all, this was a good week for those of us trying to get out the word on this important threat—from both manmade and natural causes. But we still have a ways to go before we can rest in getting real measures to deal with what is increasingly clear to many to be a truly existential threat.

Again, to close as I began—I hope you and yours have a pleasant Memorial Day weekend—and that you take the time to thank God for our nation and those who have died to keep us free.

And what can you do?

Join us at High Frontier in seeking to alert the public to the existential threats posed by both man-made and natural EMP events—and what can be done about these threats.

We can use your help in spreading the word to grass roots and local authorities to press the powers that be to provide for the common defense as they are sworn to do. Will you do your part?

Begin by passing this message to your friends and suggest they visit our webpage, www.highfrontier.org for more information. Also, please encourage your sphere of influence to sign up for our weekly e-newsletter!

We welcome your feedback. Write us at High Frontier, 500 North Washington St., Alexandria, VA 22314; call us at 703-535-8774; and contact us on our webpage at *http://highfrontier.org/support-our-cause/*

Please click here to read Past Weekly Udpates!

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