

Countering Electromagnetic Pulse (EMP) Threats

By

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See www.highfrontier.org for more information.

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Conference on Latest Terrorism Trends

Sand Dunes Club

1735 Atlantic Ave, Sullivan's Island, SC 29482

Get involved today—inform yourself and act! For more information on the threat and how to get involved to protect your family and friends, see www.highfrontier.org and its links to others who are already engaged in this important fight.

Electromagnetic Pulse (EMP) Protection: General Comments

Presentation Outline

- *Nature of the Threat*
 - *Manmade*
 - *Natural*
- *What can be done about it*
 - *Harden the Electric power Grid*
 - *Build Missile Defense sooner*
- *We understand the threat and how to counter it*
 - *Learned during Cold War but not applied to most critical infrastructure*
 - *What you can do to help*



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If Protected from Ballistic Missile “EMP” attack, should also be Protected from Solar Storms, but not the converse

- *The EMP from a high altitude nuclear explosion is more threatening*
 - *Has higher frequency components than from solar storms—these components are similar to lightning, but over a much larger area; highest will burn out electronics*
 - *Millions of small computers, ubiquitous in critical infrastructure regulating flow of electricity, controlling gas pipelines, operating traffic lights, automobiles, etc.*
 - *With proper planning, they could be replaced if damaged by EMP*
 - *The low frequency components are similar to the solar storm and couple into the long lines that interconnect critical infrastructure . . . Like the electric power grid*
 - *Large Transformers in the power grid are critical elements—each is tailor made for its power station, and cannot easily be replaced*
 - *No longer built in the US—have to be shipped from Germany or South Korea*
 - *Alternative measures is a challenge for electrical engineers*
- *If the defense is effective in shooting down an attacking nuclear weapon before it detonates, then all these effects will be countered*
- *But since no defense is perfect, the critical infrastructure should be hardened to the EMP effects in case of failure—especially the power grid*
- *In that case, the solar storm threat also will be accommodated*

Hardening the electric grid deserves top priority, as recommended by the congressionally mandated EMP Commission in 2004 and 2008, and validated by four other major reviews. Three congresses have failed to pass legislation enabling the needed initiatives—and advocates will try again in the next Congress.

The EMP Threat well understood from Cold War tests: 1962 Starfish Prime High Altitude Test

- A “wake-up call”
- *1.5 megaton explosion, 240 miles above Johnston Island in the South Pacific*
- *Damaged test instrumentation*
- *Killed three satellites immediately, and 7 more died in the next few months*
- *Electrical damage 900 miles away in Hawaii*
- *Today’s electronics would have experienced much more catastrophic damage*
- *Weapon designs can be more lethal, too—and at much lower yields*



Led to a major effort to harden our strategic systems—but we did little or nothing to harden our civil critical infrastructure

Hardened our Strategic Systems and their Supporting Command, Control and Communications Systems to EMP

- *Major hardening of our strategic retaliatory systems*
 - *ICBMs and SLBMs, Strategic Bombers, and Supporting BMC3 systems*
 - *But not civil critical infrastructure*
- *Associated classification constraints kept info closeted—at least to most*
- *Key 2008 release by Congressionally appointed EMP Commission (Reports on High Frontier webpage)*
 - *Included Soviet testing info, which was in some ways more revealing than our own*
- *Key Bottom Line Conclusion:*
 - *EMP from a single burst 200-300 miles over the US could shut down most if not all US electrical systems, possibly indefinitely*
 - *Return US just-in-time economy to 19th century operations without agrarian support*



E-4B Airborne Command Post

A key lesson for today: Success was insured by high level truly independent review—including key “red team” analyses and tests!

Today is the 52nd Anniversary of Pres. Kennedy's TV Address Disclosing Soviet Nukes/Missiles on their Way to Cuba

- *A Sober “Duck and Cover” Moment*
 - *U.S. introduced a Blockade, went to DEFCON 2 and threatened retaliatory response against USSR;*
 - *Behind the scenes negotiations—including agreement to remove our missiles from Turkey and for the USSR not to deploy missiles/nukes in Cuba*
 - *The Soviet ships stopped and the construction in Cuba halted and reversed*
 - *Secretary of State Dean Rusk said Khrushchev “blinked” in the face of U.S. resolve*
- *We “dodged a bullet” but did not know how close we came to disaster*
 - *After the Cold War, we learned there were already ~100 nukes in Cuba and Castro wanted them to stay*
 - *Khrushchev refused; nukes removed by the end of 1962*
 - *Had we understood Khrushchev's deception, there might have been no deal*
 - *Your guess is as good as mine if they had not been removed*
 - *Between being lucky and smart, rather be “lucky” every time!*



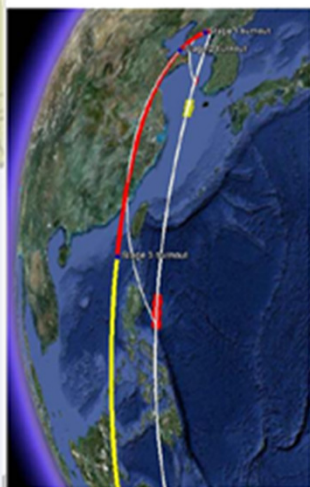
Today, we are again courting disaster by ignoring an existential threat from the South—again from distant powers! How lucky will we be?

**Today, we are on the brink of another threat “from the South” . . .
To which we seem just as oblivious as we were in 1962!**

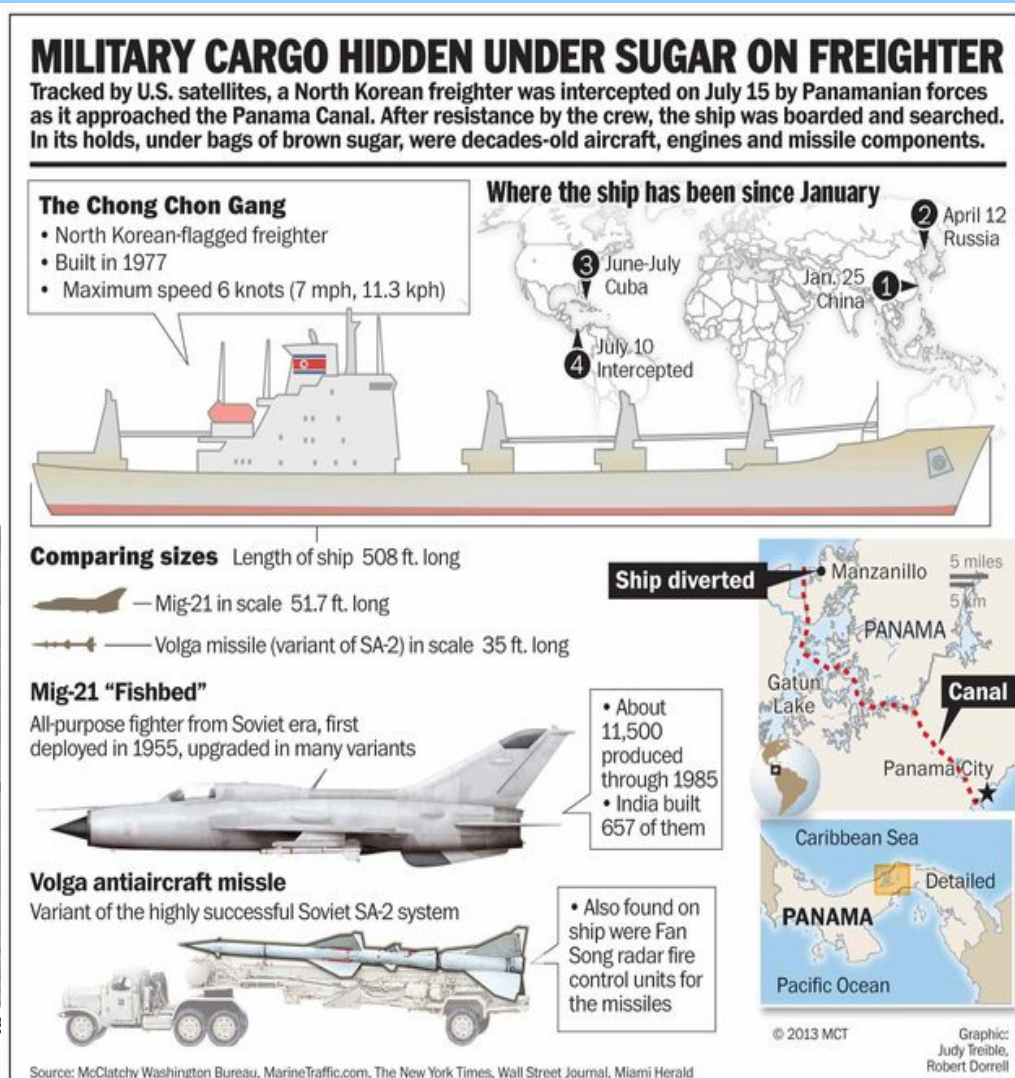
- *A Wake Up Call: June 2013 intercept of a North Korean ship carrying from Cuba to & through the Panama Canal nuclear capable SA-2s and other technology illustrates the “Cacophony of Proliferation”*
- *Of greater concern, Iranian (or terrorist) missiles could be launched from ships off our coasts, especially in the Gulf of Mexico and/or from Latin America, e.g., Venezuela*
- *North Korean or Iranian Satellites could carry nukes over the South Pole to attack the U.S.*



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



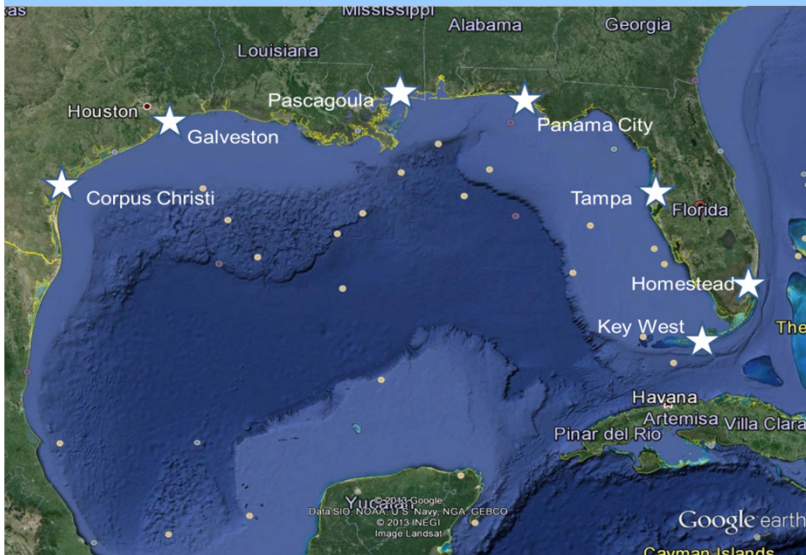
North Korea used 3-stage southward into polar orb



THE WASHINGTON TIME

We are currently defenseless against these threats from the South!

Important Quick Fix to Threats from the South: Aegis Ashore Sites Around the Gulf of Mexico



- *Aegis Ashore site in Hawaii is operational for testing purposes*
- *Construction of Romanian Site is nearly completed*
 - *Operational by 2015 with a second site in Poland by 2018*
- *Site spacing around Gulf coasts depends on interceptor speeds*
 - *Have met with folks in Mississippi and Florida*
 - *Pascagoula , Miss. where Aegis ships are built*
 - *Panama City/Tyndall AFB, FL home of 1st AFNORTH*
 - *Command Links to 263rd AAMDC in Anderson, SC*
- *Plan to go to Texas—Corpus Christi?*



Aegis Ashore employs Aegis BMD shipboard components as “football size” ground-based interceptor system—no additional R&D cost

The South Carolina National Guard has an Important National Role—including the 263rd Army Air and Missile Defense Command (AAMDC), which:

- *Is located in Anderson, SC, manned and led by SC National Guard personnel—and is a direct report to SC Adjutant General, under the Governor of SC*
- *Is already linked to critically important elements of our Homeland Defense*
 - *As ordered by the Governor, provides Defense Support to Civilian Authorities (DSCA), including for security operations in support of disaster relief, crowd control, or other duties as assigned by the Governor.*
 - *Under a USAF Lt. General at Tyndall AFB, Panama City, FL who is Commander of First Air Force, (AFNorth) and the Air Component Commander of the Continental NORAD Region (CONR)—and who has sole responsibility for ensuring the air sovereignty and air defense of the continental United States, U.S. Virgin Islands and Puerto Rico, as a direct report to the Commander of Northern Command in Colorado Springs*
 - *The Commander of the 263rd AAMDC is the Deputy Area Air Defense Commander for Continental NORAD Region (CONR)*
 - *Under an USA Lt. General who is Commander of Fifth Army (Army North) at Ft. Sam Houston, Texas who is charged with protecting the American people and their way of life, a direct report of Northern Command in Colorado Springs*
 - *Under Northern Command plans and operations, conducts Joint and Combined Theater Air and Missile Defense in support of designated operations plans and contingency operations.*
- *Role to be determined with respect to Aegis Ashore deployments to counter theater range ballistic missiles or other threats from the South*

SC Adjutant General's office can support National Guard "tabletop" exercises that include EMP and help plan a future Vigilant Guard exercise involving other states. Dec. 4-5 Infragard EMP Sig Dupont Summit is an important opportunity.

TPY-2 radar at Aegis Ashore (or THAAD) site in the Philippines would help counter North Korean FOBS attack

- *TPY-2 X-Band Radar in the Philippines could cue Aegis BMD ships at sea and GBIs on Vandenberg AFB, CA*
- *First generation Aegis BMD shot down satellite in 2008; Aegis BMD ships at sea now and in the future will have improved capabilities*
- *Philippine cooperation is needed, as well as software modifications and crew training*



North Korea rocket

Unha -3 Launch Trajectory toward the South Pole, anticipated to be repeated in upcoming launch from North Korea's Sohae Satellite Launching Station.



Interception Strategy:

- Boost phase intercept opportunities during first and second stage burn—possible with the Navy's SM-2 Block IV interceptor if an Aegis BMD ship is appropriately located, and its crew and system is prepared to do so.
- Subsequent SM-3 intercept opportunities after burnout if the Aegis BMD crew is prepared and needed sensor cuing is provided—recall that the first generation of the SM-3 was used in 2008 to shoot down a dying satellite with the help of such cuing information.
- The Vandenberg AFB ground based interceptors can be used to shoot down the satellite before it overflies the U.S.—again with needed sensor cuing information.
- An appropriate ground based radar—e.g., a TPY-2 radar—in the Philippines could help provide this needed cuing.

Americans need to wake up to FOBS threat & demand that their Representatives provide for the common defense!

Bottom Lines and Recommended Action

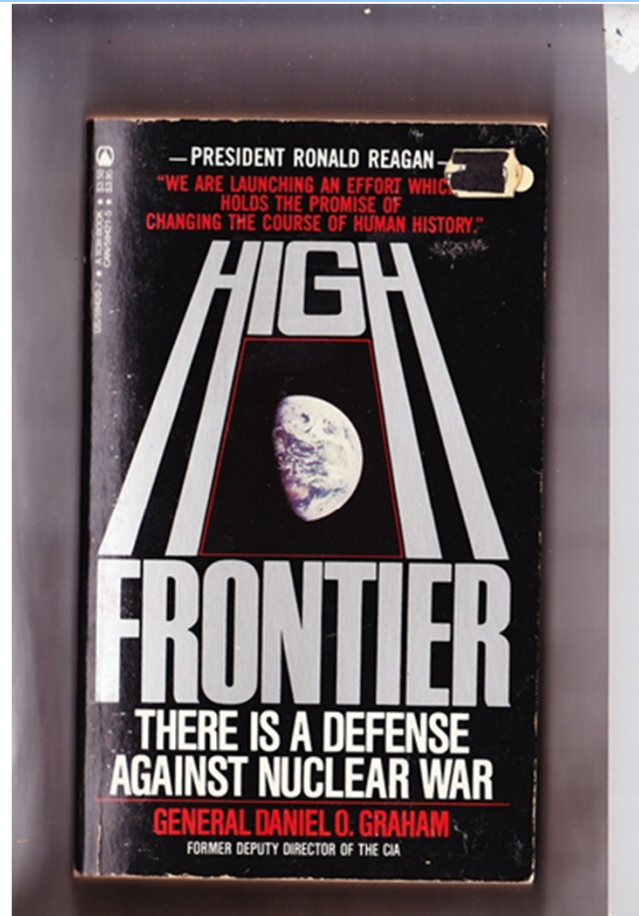
- *EMP poses an existential threat from even short range nuclear-armed ballistic missiles, especially if launched from the Gulf of Mexico*
- *Another threat from the South is the possibility of a satellite launched from over the South Pole to detonate its nuclear warhead over the U.S.*
- *In case of the threat from rogue states or terrorists,*
 - *The Navy's Aegis BMD system can provide an effective defense if trained and ready crews operate it near enough to where attacking missiles are launched*
 - *On a random day in 2013 along the east coast, 2 Aegis ships & 4-6 in port—e.g., for maintenance*
 - *Aegis ships do not normally operate in the Gulf of Mexico—leaving the US with a soft underbelly vulnerable to this threat—as well as others from the South, e.g., such as from Venezuela.*
 - *In that case, the same Aegis Ashore system American taxpayers are buying for deployment in Romania and Poland can be deployed on military bases around the Gulf of Mexico—possibly as soon as 2015 (Romania's scheduled deployment)*
- *In case of a the threat from over the South Pole, empower the Navy BMD to see what they can do—remember they shot down a dying satellite in 2008*
 - *Space-based defenses are needed to provide a comprehensive solution*
- *In case of the threat from Mother Nature (Geomagnetic Storms)*
 - *Appropriate hardening and reconstitution planning can protect our critical infrastructure—should begin with the electric power grid—and should assure hardening against nuclear EMP*
- *In both cases, a grass roots effort is needed to press the powers that be to provide for the common defense and protect our way of life—Outside critical review is essential!*

The powers that be need to take these threats seriously, provide for the common defense and protect our way of life—by building truly effective defenses and hardening the electric grid. These are important engineering and political challenges. Washington—both the Executive and Legislative Branches—are badly broken; so, state and local authorities now must play a leading role! Happily, there are signs they are—Hopefully, South Carolina will engage ASAP.

Please Let Us Hear From You!

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Check out our webpage at
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Thanks for your support—the vision lives on!!!

At High Frontier, we dedicate ourselves to passing to future generations
the blessings passed to us by the Founders and Forefathers.

May God bless America!