Increasing Hawaii's Defense Capabilities Against North Korea
Friday, April 1, 2016

Admiral Harry B. Harris, Commander, U.S. Pacific Command

"I believe that we need to do everything we can to defend our nation and that's my job in the Pacific. I think the Aegis Ashore facility in Kauai is a national treasure, and we should use it to the best of our ability, and I think that one of the ways that we could improve our national ballistic missile defense capabilities is by converting that to a permanent facility with interceptors." –February 24, 2016 before the House Armed Services Committee

Admiral William E. Gortney, Commander, U.S. Northern Command

"It is 'prudent' to assume North Korea had the ability to miniaturize a nuclear weapon and put it on an intercontinental ballistic missile that could target the United States." –March 10, 2016 before the Senate Armed Services Committee

"We watch [North Korea] very carefully. And, you know, their very long-range capability is a function of how far do they reach. You know, so even from their own waters, they can reach part of our homeland. Hawaii is part of our homeland and they can reach Hawaii." – March 10, 2016 before the Senate Armed Services Committee

North Korean Capability—Actions in 2016

Jan 06, 2016 - Conducted fourth nuclear test
Feb 07, 2016 - Launched a satellite into orbit using a long-range rocket over the Super Bowl in San Francisco 4 hours before kickoff
Mar 10, 2016 - Fired two short-range ballistic missiles into the sea
Mar 16, 2016 - Conducted a land-test of its KN-11 Submarine Long Range Ballistic Missile
Mar 18, 2016 - Launched two Medium Range Ballistic Missiles into the sea off the east coast of the Korean Peninsula
Mar 21, 2016 - Fired five projectiles into the sea off the country's east coast
Mar 22, 2016 - Purportedly tested a solid-fuel engine which would extend the range of its missiles and provide less warning of a launch
Mar 29, 2016 - Test fired a short-range missile on its east coast
Apr 01, 2016 - Fired a short-range missile into the sea
Apr 01, 2016 - Tried to jam GPS navigation signals in South Korea

North Korean Intent—Statements in 2016

Mar 7, 2016 - In response to yearly joint U.S.- South Korean military exercises, North Korea threatened "indiscriminate" nuclear strikes saying, "We will launch an all-out offensive to decisively counter the US and its followers' hysterical nuclear war moves."
Mar 9, 2016 - Claimed to have developed nuclear warheads small enough to fit on ballistic missiles saying "The nuclear warheads have been standardized to be fit for ballistic missiles by miniaturizing them...this can be called true nuclear deterrent."
Mar 13, 2016 - Claimed to have developed a hydrogen bomb placed on top of an ICBM can wipe out everyone in Manhattan
Mar 15, 2016 - Announced "a nuclear warhead explosion test and a test-fire of several kinds of ballistic rockets able to carry nuclear warheads will be conducted in a short time to further enhance the reliance of nuclear attack capability."
Mar 22, 2016 - Kim Jung Un said that NK would "strike great horror and terror into the hearts of the enemies."
Mar 23, 2016 - Threatened South Korean President Park Geun-hye, warning that its military was ready to turn Cheong Wa Dae into a "sea of fire" in retaliation for joint military exercises.
Mar 25, 2016 - Kim Jung Un put his military on high alert "so that it may mercilessly pound the reactionary ruling machines in Seoul, the cesspool of evils, and advance to accomplish the historic cause of national reunification, once it receives an order for attack."
Mar 26, 2016 - Released a propaganda video called "Last Chance" with subtitles that read "If the American imperialists provoke us a bit, we will not hesitate to slap them with a pre-emptive nuclear strike."

Key Missile Defense Points for Hawaii

- Distance from North Korea to Hawaii – around 4,500 miles (approximately 20 minutes for a ballistic missile)
    - After final separation of a long-range missile, a debris cloud of hundreds of objects in space including the warhead forms and expands up to a couple of miles as the warhead moves towards its target
    - Long-range discrimination sensors need to be able to discriminate the warhead from the debris to increase probability of an intercept
- Shortest distance on a trajectory path for a possible midcourse intercept from Ft. Greely, Alaska – around 2,500 miles
- Shortest distance on a trajectory path for a possible midcourse intercept from Vandenberg Air Force Base, California– around 3,100 miles
- The U.S. homeland needs to maintain significant reserves of Ground-Based Interceptors (GBI) to protect the continental United States from North Korean and future Iranian ballistic missiles

Current U.S. Operational Capability to Defend Hawaii from North Korea

- Only 30 GBIs to defend the U.S. homeland and Hawaii from North Korea and Iranian Long Range Ballistic Missiles
    - Multiple shots from interceptors are required to defeat one North Korean long-range missile
    - Only 1 shot opportunity to defend Hawaii because distances are too far to allow for 2nd or 3rd shot opportunities from the 30 GBIs based in California and Alaska
- Sea-Based X-Band (SBX) discrimination radar based in Hawaii needs to be in the mid-Pacific -- underneath/or close to the intercept point -- to increase reliability and confidence in shooting down-long range ballistic missiles
- Air Operation Center and the Pacific Integrated Center for Integrated Air and Missile Defense for the battle management of the Pacific is located at Hickam Air Base at Pearl Harbor

Current U.S. Deployed Missile Defense Capabilities Throughout the Pacific

Guam
- 1 THAAD battery that includes a TPY-2 radar

Japan
- Aegis BMD Ships
- 4 Patriot batteries
- 2 AN/TPY-2 Radars

South Korea
- 8 Patriot batteries
- Aegis BMD Ships
- 1 THAAD battery that includes a TPY-2 (in discussion)

U.S. Mainland
- 30 GBIs
- Upgraded Early Warning Radars

Growing North Korean Ballistic Missile Threat

- North Korea will continue to proliferate and modernize its ballistic missiles including solid-fueled, road-mobile, decoys, countermeasures, and MIRVs
    - Solid-fueled ballistic missiles require less time for launch preparation, reducing U.S. warning time for a North Korean ballistic missile launch
    - Road-mobile ballistic missiles are deployed atop vehicles, increasing the launch area uncertainty and reducing U.S. and allied warning time to North Korean ballistic missile launches
    - Countermeasures and decoys from North Korean long-range ballistic missiles will create multiple radar signatures in the debris cloud
    - MIRVs (or Multiple Independently Targetable Reentry Vehicles) are when the nose cones for long-range ballistic missiles carry multiple warheads that can be used to strike multiple targets

Increase, Enhance, and Operationalize Hawaii's Missile Defense Capabilities

- Urgency to complete a U.S. Government requested study to determine alternatives to increase Hawaii's BMD capability
- Enhance the ground-based ballistic missile defense system's sensor discrimination capabilities to increase the probability of kill, reduce the number of shots needed, and to stay ahead of the North Korean threat.
    - Increase operational dwell time of SBX
    - Deploy and operationalize a long-range discrimination sensor in Hawaii
        - Increasing directly the probability of a kill for the GBIs designated to protect Hawaii
        - Providing discrimination and tracking for Hawaii that supports a 2nd and 3rd layer of defenses
    - Operationalizing the current Integrated Air and Missile Defense Radar (AMDR) at the PMRF
    - Constructing and deploying a new LRDR at PMRF
- Operationalizing Aegis Ashore in Kauai would provide additional layers of ballistic missile defense of second and third possible shot opportunities for Hawaii
    - 2008 - SM-3 Block IB interceptors employed by Aegis Ashore are enhanced versions of the SM-3 Block IA that was used to precisely shoot down fuel tank on a satellite that was traveling faster than the speed of an ICBM. This was a successful "engage on remote" sensor of the SBX in the Pacific in conjunction with Aegis BMD.
    - Dec 9, 2015 - First successful intercept test from the Aegis Ashore site at the PMRF using the SM-3 Block IB interceptor, which enabled the deployment of Aegis Ashore in Romania. Today, this site defends southeast Europe and millions of Europeans from Iranian ballistic missiles.
    - The Aegis Ashore site at the PMRF is the exact same demonstrated Aegis Ashore capability in Romania
    - In 2018, Poland will deploy the same Aegis Ashore site with new SM-3 block IIA interceptors that will provide a longer range shot opportunity and a 2nd layer with SM-3 block IB interceptors to defend northern Europe from Iranian ballistic missiles.
    - Baseline 9 employed by Aegis Ashore at the PMRF enables launch and engage off of far-away remote sensors
    - Deploying AN/TPY-2 radars to Hawaii and linking them with an operational Aegis Ashore site in Kauai would enhance the tracking and discrimination capability of Aegis Ashore to defend all of the Hawaiian islands from North Korean ballistic missiles
        - This is similar to the Aegis Ashore system currently operational in Romina, which is lined to a TPY-2 radar in Turkey and protecting millions of Europeans from Iranian ballistic missiles

Reasons to Operationalize

- Defend 1.42 million Americans, to the best of our capabilities, from the threat of conventional and nuclear-armed North Korean ballistic missiles
- Defend the U.S. Pacific Command and the Pacific Fleet from North Korea's growing capabilities
- An operational layered missile defense in Hawaii sends a strong message of deterrence to North Korea and changes the calculus of a successful attack on Hawaii.
- Missile defense is critical to keep the Pacific Region stable, help to prevent Japan and Korea from becoming nuclear to protect themselves and to prevent conflict.
- Deploying a long range discrimination radar and operationalizing Aegis Ashore in Kauai would not reduce the Pacific Missile Range Facility's capability to continue operating as a testing range since it can used for both. The U.S. needs to continue developing more cost-effective means to reduce the costs of missile defense intercepts, such as the development of directed energy and electromagnetic railguns, and testing these systems at the PMRF to stay ahead of the threat.