100th Missile Defense Brigade (GMD)

Command Brief for NCSL Task Force on Military and Veterans Affairs

December 13, 2017
Agenda

• Threat
• Mission
• Brigade Organization
• Fire Direction Center / Missile Defense Element
• Training and Certification
• Where We Fight
  – Sensor Coverage
  – Ground Based Interceptors
  – Exo-atmospheric Kill Vehicle
  – Engagement Sequence
Threat

- Ballistic missile proliferation continues to grow as countries acquire a greater number of ballistic missiles, increasing their range, incorporating BMD countermeasures and making them more complex, survivable, reliable and accurate.

- Development and exchange of missile technology increases threat of those technologies falling into the hands of hostile non-state groups.

- North Korea has demonstrated the ability to reach CONUS; Iran is closely following and earnestly working to develop intercontinental capabilities.
North Korea

• Expanded the size and sophistication of its ballistic missile forces — from close-range ballistic missiles to ICBMs
• Conducted an unprecedented level of launches (3 times the launches performed by the 2 previous leaders) and nuclear tests since 2016; multiple nuclear tests, short-range to intercontinental as well as sub-launched ballistic missile (solid propellant technology) launches
  – Latest nuclear test = estimated @ 200kt
  – Demonstrated possibility of reaching continental United States with Hwasong-14, July 2017
  – Demonstrated possibility of reaching entire United States with Hwasong-15, November 2017
  – Demonstrated intermediate range ballistic missile success, September 2017
• Primary manufacturing underground
• Unknown payloads, yields or warhead types for ICBM/IRBM
Iran

- Capable of regional ballistic missile strikes, as far as S.E. Europe
- Will continue developing more sophisticated missiles/systems with improved range, accuracy and lethality
- Progress on space launch vehicles — along with its desire to deter the United States and its allies — provides Tehran with the means and motivation to develop longer-range missiles, including ICBMs
  - Capable of deploying operational ICBM by 2020
  - Enhancing lethality and effectiveness of existing systems; improvements in accuracy and warhead design (maneuvering reentry vehicles, and sub-munitions)
- Possibility (inconclusive) of cooperation/ties with North Korea pertaining to missiles/technology/nuclear research
Mission

On order, the 100\textsuperscript{th} Missile Defense Brigade (GMD) destroys intercontinental ballistic missiles in mid-course to defend the United States and designated areas.
A Unique Army Brigade

- Multi-component Brigade Headquarters
- Assets in 6 countries and 5 states
- T32 Active Guard Reserve (AGR) Battalion
- Active Component (AC)/Department of the Army Civilian (DAC) Security Detachment
- Active Component Missile Defense Batteries
- 24/7 Missile Defense mission
- 24/7 Security mission
- Requirements from USNORTHCOM, USASMDC/ARSTRAT, three State Adjutants General
- Research, Testing, Development, and Evaluation (RTD&E)
- Development of doctrine and engagement tactics, techniques, and procedures in coordination with USNORTHCOM
- We are the GMD Center of Excellence
Command Relationships

Operational Control For Combat Operations

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TAG: The Adjutant General
CDR: Commander
USNORTHCOM: US Northern Command
USSTRATCOM: US Strategic Command
SMDC/ARSTRAT: Space and Missile Defense Command/Army Strategic Command
GMD: Ground-based Midcourse Defense

As of 28-Dec-17
100th Missile Defense Brigade (GMD)

Where We Are

100th BDE HQ Colorado Springs, CO Activated 2004
49th BN Ft. Greely, AK Activated 2006
Detachment 1 VAFB, CA Activated 2011
Sensor Managers Hickam AFB, HI Activated 2006

11th Missile Defense Battery Kuricek, Turkey Activated 2011
12th Missile Defense Battery CENTCOM AOR Activated 2012
13th Missile Defense Battery Israel Activated 2012
14th Missile Defense Battery Kyogamisaki, Japan Activated 2014
10th Missile Defense Battery Shariki, Japan Activated 2006
Fort Drum Security Detachment Fort Drum, NY Activated 2015
Sensor Managers Ramstein AFB, Germany Activated 2011

Where We Are

100th Missile Defense Brigade (GMD)

14th Missile Defense Battery Kyogamisaki, Japan Activated 2014
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Brigade Organization

100th Missile Defense Brigade (GMD)
Fire Direction Center/Missile Defense Element

Fire Direction Center (AKARNG)
Tactical Level - Ft. Greely, AK

- Conducts the Tactical Level execution of the GMD mission for CDR NORTHCOM
- Provides tactical recommendations to the CDR NORTHCOM
- Executes CDR NORTHCOM tactical guidelines or real-time guidance
- Coordinates missile field activities
- Monitors GMD sub-system readiness & reports OPSCAP
- Conduct day-to-day training & Test Bed support
- Capable of conducting both operational and tactical execution

Manning
5 Table VIII Crews (25)
30 ACMs Staff support
5 CLE ACM Staff support
BN ORE Team

Missile Defense Element (COARNG)
Operational Level – SAFB, CO

- Conducts the Operational Level execution of the GMD mission for CDR NORTHCOM
- Provides operational and tactical recommendations to CDR NORTHCOM
- Synchronizes operations and conducts Fire Distribution across multiple GMD FDCs
- As required, de-conflicts the operational pictures for warning and missile defense missions
- Conducts oversight of Fire Direction Center tactical execution
- Implements Army GMD Force Readiness Conditions (REDCON) & develops and reports overall GMD OPSCAP
- Conducts day-to-day training and Test Bed support
- Capable of conducting both operational and tactical execution

Manning
5 Table VIII Crews (25)
5 GSD/LNOs VAFB
20 ACMs Staff support
BDE ORE Team
MD OPS RDT&E

As of 28-Dec-17
Operator Training and Certification

Untrained Soldier

Military Occupational Specialty (MOS) Training
Air Defense Artillery School
Fort Sill, Oklahoma
(10-14 Weeks)

Qualification Training
GMD Fire Control Qualification Course
Colorado Springs, Colorado
(7 Weeks)

C2BMC SA Training

Untrained Soldier

Table I
System Skills and
Day-to-Day
Actions

Table II
Crisis, Combat,
and Recovery
Operations
3 Events
(SLV, Test, Threat)

Table III
Individual and
Positional
Evaluation (Internal)

Table IV
Individual and
Positional
Certification (External)

Table V
Emergency
Procedures

Table VI
Crisis, Combat,
and Recovery
Operations
6 + Events
(SLV, Test, Threat)

Table VII
Crew Collective
Evaluation (Internal)

Table VIII
Crew Collective
Certification (External)

Unit Training and Certification (Gunnery Table Program)

All GFC Operators

Battle Rostered Primary Crews

“Guard, Engage, Destroy”
100th Missile Defense Brigade (GMD)

Where We Fight

Sensors
An effective layered defense incorporates a wide range of sensors to detect and track threat missiles through all phases of their trajectory. Satellites and a network of land- and sea-based radars provide worldwide sensor coverage.

Boost/Ascent
Defense Segment

Midcourse
Defense Segment

Terminal
Defense Segment

The System of Elements

C2BMC
Command and Control, Battle Management, and Communications

"Guard, Engage, Destroy"
100th Missile Defense Brigade (GMD)

GMD Sensors

Sensor Concept Of Operation

DSP/SBIRS

AEGIS

AN/TPY-2 (FBM)

COBRA DANE

SBX

BEALE

THULE

FYLINGDALES

S Band

X Band

L Band

X Band

UHF

UHF

UHF

"Guard, Engage, Destroy"
Ground Based Interceptors

- Multi-stage, solid fuel booster with an EKV payload
- Located at Ft Greely, AK and Vandenberg AFB, CA
Exo-atmospheric Kill Vehicle

- Intercept component of GBI
- Kinetic-force weapon
- Seeks target with multi-color sensors, onboard computer, and rocket motor to hone in on target and destroy with pinpoint precision

“Guard, Engage, Destroy”
GMD Engagement Sequence

1. Launch Detection
2. Surveillance and Track
3. Location and Intercept Commit
4. Refinement and Interceptor Updates
5. Interceptor Acquisition
6. Intercept

Space Sensors
Threat Re-Entry Vehicle
Sea-Based X-Band Radar
Aegis Radar
Upgraded Early Warning Radar/Cobra Dane Radar
FBX-T Radar
Interceptor Launch
Fire Control Node
Interceptor
Kill Vehicle
In-Flight Updates

Interceptor Acquisition

“Guard, Engage, Destroy”
Summary

• Unique Brigade
  – 24/7 missile defense and security mission
  – Multi-component
  – Responsive to multiple commands
  – Globally located

• Rigorous training and certification for missile defense crews

• Fight in the Midcourse
  – Sensors
  – Ground Based Interceptors
  – Exo-atmospheric Kill Vehicle

The 300 defending the 300 million.