Relationships

Department of the Army

United States Strategic Command

NAVY FORCES (NAVNETWARCOM)

SMDC / ARSTRAT

AFFORSTRAT (AFSPACE)

MARFORSTRAT

U.S. MARINE CORPS FORCES STRATEGIC COMMAND
SMDC / ARSTRAT

Commanding General

Deputy Commanding General - Operations

- Operational Forces
  - 100th Missile Defense Brigade (GMD)
  - 1st Space Brigade
  - Astronaut Detachment

Ballistic Missile Defense Systems Manager
Space Personnel Proponent Office

Director Future Warfare Center

Innovative DOTMLPF Integration
- Battle Lab
- Directorate of Combat Development
- Decision Support Directorate

Deputy to the Commander For Research, Development and Acquisition

Research, Development and Acquisition Efforts
- Technical Center
- Test and Evaluation
  - USAKA/RTS and HELSTF
- Interoperability
- Integration
- Contracting and Acquisition

OPERATIONS

REQUIREMENTS

MATERIEL
Role as Proponent

Specified Proponent for Space and IMD
• Full DOTMLPF responsibility for Army Space and High Altitude related issues
• Authority & responsibility to develop and advocate Army positions on space-related functions (Joint, Combined, External)

Not duplicating TRADOC...integrating for TRADOC
Why Care About Space Weather?

ISSUE
Military Operations Depend on Integrated Air, Land, Sea, and Space Systems

IMPACT
Lack of Timely, Accurate, Relevant Weather Information May Fracture the Seamless Battlespace

STATUS
Multi-Hundred Billion Dollar Investment Not Optimized—COMBAT EFFECTIVENESS JEOPARDIZED

ISSUE
MAGNETOSPHERE
RADIATION BELTS
IONOSPHERE
MESOSPHERE
STRATOSPHERE
TROPOSPHERE

IMPACT
DSP
MILSTAR
DSCS
GPS
DMSP
SHUTTLE
U-2

STATUS
Space Weather
Terrestrial Weather

ISSUE
JEOPARDIZED

ISSUE
SEAMLESS ENVIRONMENT
Solar electromagnetic radiation and energetic particles impact the Earth’s magnetosphere and ionosphere, causing space weather disturbances which degrade military systems.
What do we teach on Space Weather

- Army Space Soldiers learn about space weather in the following courses – SOOQC, TSOC and AF Space 100 & 200 (Space Operations Officer Qualification Course, Tactical Space Operators Course)

- Space environment and space weather 101 (How solar activity impacts satellites, atmosphere, signals and the ground user)

- Military systems impacted by space weather events

- Capabilities and limitations of space weather forecasting

- Space weather warnings and advisories

- SOS (Space Operation System) tools and reach back resources to determine the impact of space weather events
**Army Space Force Structure**

**Organic Space Forces**

**Division**
- **Space Support Element**
  - Chief, SSE: LTC, FA40/SOO
  - SSE Officer: MAJ, FA40/SOO
  - 3 Soldiers ea.
  - 18 Divisions (10 AC, 08 RC)

**Corps**
- **Space Support Element**
  - Chief, SSE: LTC, FA40/SOO
  - SSE Officer: MAJ, FA40/SOO
  - 4 Soldiers ea.
  - 3 Corps (AC)

**Army**
- **Space Support Element**
  - SSE Officer: MAJ, FA40/SOO
  - 6 Soldiers ea.
  - 6 Theater Armies (AC)

**Army Space Support Team**
- **Organic Space Force**
  - TM LDR, MAJ, FA40/SOO
  - Dep, CPT 01A (FA40 eventually)
  - 25S20
  - 25B20
  - 21Y20
  - 96B30
  - 27 AC and RC ARSSTs today

**Augmentation Space Forces**

**Army Space Support Team – Tactical Set (ARSST-TS)**
- Each ARSST will receive one ARSST-TS

* SSEs get one as “TPE”, if deployed to the box
FA40 Space Environment Tools

• National Space Environment Services
  – Air Force Weather Agency (AFWA)
    • Daily World Regional Space Environment Situational Awareness
    • Alerts and Warnings
    • Forecasts: UHF SATCOM, HF, GPS, High Alt Radiation, Radar Interference
    • Satellite Ops Impacts, Space Object tracking
  – NOAA / National Weather Service – Space Weather Prediction Center
    • Alerts and Warnings
    • Today’s Space Weather

• Joint Space Operations Center (JSpOC) daily space brief
• Space Operations System (SOS) software applications
  – Single Integrated Space Picture (SISP) UHF/HF/GPS Predictions
• AFTTP 3-1.28 Tactical Employment – Space
Space Way-Ahead

- Better prediction capabilities
- Better understanding of effects
- Enhanced mitigation and survivability