

The 557th Weather Wing



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Lt. Gen. Thomas S. Moorman Building



Overview



- **557 WW Mission**
- **Wing Organization Structure**
- **1 WXG and 2 WXG Structure/Missions**
- **DMSP Update**
- **557 WW Update**



557th Weather Wing Mission



Mission: Maximize America's Power through the Exploitation of Timely, Accurate, and Relevant Weather Information; Anytime, Everywhere

CHOOSE THE WEATHER FOR BATTLE



Organizational Structure



557th Weather Wing

Wing Staff

1st Weather Group
Offutt AFB

2d Weather Group
Offutt AFB

15 OWS
Scott AFB

2 WS
Offutt AFB

17 OWS
Hickam

2 WSS
Offutt AFB

21 OWS
Kapaun AB

2 SYOS
Offutt AFB

25 OWS
D-M AFB

16 WS
Offutt AFB

26 OWS
Barksdale AFB

14 WS
Asheville, NC

28 OWS
Shaw AFB

2 CWSS
Hurlburt Fld, FL

OL-K
Norman, OK

- **Support Today's Fight:** *Provide 24/7 World-Class Environmental Intelligence for Global Ops*
- **Transform for Tomorrow's Fight:** *Meet the Future Demands Across Air, Ground, Space & Cyberspace*
- **Leader in Innovation:** *Advance Air Force Weather Ops Through Leading-Edge Science & Technology*
- **Take Care of Airmen/Families:** *Build Strong and Resilient Wingmen*
- **Telling Our Story:** *Communicate Strategically and Effectively*

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557 WW's Team GLOBAL VIGILANCE



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1st Weather Group



1st Weather Group
Offutt AFB

Mission – Provide timely, accurate, and relevant environmental characterizations in support of AF, Army, and Joint Total Force ops



15 OWS
Scott AFB, IL



25 OWS
D-M AFB, AZ



17 OWS
JB Hickam, HI



28 OWS
Shaw AFB, SC



21 OWS
Kapaun, GE

OL-K (ROC)
Norman, OK



26 OWS
Barksdale AFB, LA

- Terminal Aerodrome Forecasts for 129 Airfields
- Resource Protection for 534 Total Force Locations
- Worldwide Graphic Aviation Hazards Forecasts
- Aircrew Mission-Execution Weather Briefings
- Remotely-Piloted Aircraft Support both at Home and Downrange
- Backup for NWS Storm Prediction and Aviation Weather Centers
- IMETOC lead for NATO Resolute Support and Air Policing
- Training – Provide Initial and Upgrade Training for All Weather Officers and 33% of Enlisted Weather Personnel
- JTWC: Tropical Cyclone (TC) Reconnaissance / Director and Typhoon Duty Officers/Assistants

Mission Execution



Forecaster Characterization



F-16s for Homeland Defense



Developing Airmen

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2^d Weather Group



2d Weather Group
Offutt AFB

AF's 24/7 Strategic Weather Production Capability – Six unique squadrons optimizing joint military and intelligence operations and readiness

2 WS
Offutt AFB

2 SYOS
Offutt AFB

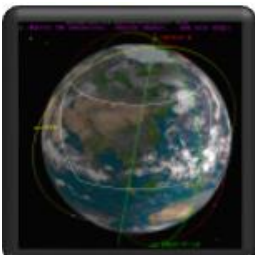
2 CWSS
Hurlburt Fld, FL

- Weather and Space analyses/forecast: CCMDs, JSpOC, NORAD, Space Ops, HF/GPS users and national intelligence operations
- Global volcanic ash advisories
- High Performance Computing: *Home to \$303M Strategic Weather Center & AF's Largest Special Purpose Processing Node*; providing global collection, processing, dissemination of terrestrial & space weather information
- Develops/exploits leading-edge weather forecasting models, web services
- Operational Training Infrastructure weather modeling and simulation
- Comprehensive weather archive and applied warfighter climate services
- Fielded weather system SMEs: deployment training and deployed/reach-back maintenance on tactical weather systems
- Conducts Operational Test & Evaluation for SPO capability releases
- 24/7 global focal point providing support, troubleshooting and cyber services for the weather enterprise's Strategic Center and fielded systems

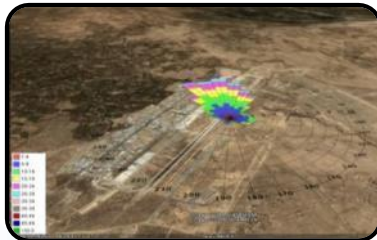
14 WS
Asheville, NC

16 WS
Offutt AFB

2 WSS
Offutt AFB



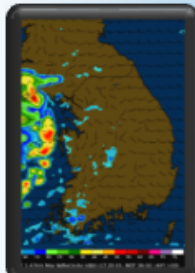
MetSat Exploitation



Wind Rose Climatology
to support Aerostat

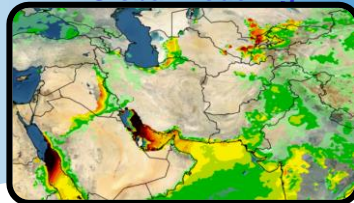


Solar Analysis
& Warning



Forecast Radar

Global Modeling



Pre-Deployment
Trng



Airmen in the Fight



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Unique DoD Missions



- 24/7 operational support for **Intelligence Community**
- Global **cloud** analysis and forecast modeling
- Global NWP for **USAF & US Army ops**
- Operate global network of **solar observatories**
- 24/7 DoD mission-tailored **space** environment analyses, alerts, forecasts, and warnings
- USAF/DoD's **climate** monitoring, analysis, and prediction capability
- Global **snow** cover/snow depth analyses
- **American Forces Network** (AFN) Wx Center for OCONUS DoD/DoS
- USAF/DoD's center for airborne **volcanic ash** products & backup
- Aviation Weather Center/Storm Prediction Center/SWPC **back up**



DMSP Status



■ **Constellation**

- Primary Ops: F17 & F18
- Secondary Ops: F16 & F15
- Tactical Ops (direct readout only): F14 & F19

■ **Aging Constellation (Design Life: 5 yrs)**

- Youngest Primary: F18 (7yr 7mo)
- Oldest: F14 (20yr 1 mo)

■ **Update on F-19**

- Command access lost on 11 Feb 2016
- SSML/S autonomous spin-down 5 Mar 2017
- Estimated to continue providing usable data until July 2017

■ **Real-Time Mission Sensor (RTMS) Data via MIVB**

- Captured, relayed to FNMOC (F16-F19)



557 WW Updates



- **Global Air Land Wx Exploitation Model (GALWEM) Implementation**
 - Running at 17 km resolution, migrating to 10 km
 - Organic 4DVAR DA at 557 WW
 - All required post-processed parameters in AFW-WEBS Mar 18
- **GOES-16 Direct Readout**
 - Antenna modifications and MIVB servers installed at Offutt AFB
 - Preparing 557 WW processes for Nov 17 ops activation
- **Himawari-8**
 - 14-channels via MIVB
 - Integrating 5 channels into cloud forecasting processes (more in 2018 timeframe)



557 WW Updates



■ Cyber Security Posture

- 557 WW vulnerable to “no-notice” at any time
- Collaborated with FNMOC regarding data center cyber security

■ Global Assimilation of Ionospheric Measurements (GAIM-Full Physics) Model

- Include FNMOC in Tech Interchange Meetings
- OT&E in Sep/Oct 17 within SWAFS program
- Risk mitigation: GAIM-FP output in both new format and re-gridded to legacy GAIM-GM format



Questions?



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