BY ORDER OF THE COMMANDER
SPACE OPERATIONS COMMAND

SPACE OPERATIONS COMMAND
MISSION DIRECTIVE 202

23 MAY 2023

Mission Directive

SPACE DEFENSE SQUADRONS

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available for downloading or ordering on the e-Publishing website at www.e-Publishing.af.mil.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ SpOC/DCG-O/S3/10O

Certified by: HQ SpOC/DCG-O
(DEVIN R. PEPPER, Brig Gen, USSF)

Pages: 6

This mission directive implements guidance in AFI 38-101, *Manpower and Organization*. Its purpose is to define the mission, organization, and responsibilities of the USSF Space Defense Squadrons (SDS). This mission directive applies to HQ SpOC and subordinate space defense units. This mission directive does not apply to Air National Guard, Air Force Reserve Command, or United States Air Force units. Refer recommended changes and questions about this publication to the OPR using DAF Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate service functional's chain of command. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW AFI 33-322, *Records Management and Information Governance Program*, and disposed of IAW the Air Force Records Information Management System Records Disposition Schedule. This publication may not be supplemented or further implemented/extended.

1. Mission. The combined mission of the Space Defense Squadrons is to prepare, present and project assigned and attached forces for the purpose of conducting Space Domain Awareness (SDA) to enhance an information advantage and enable space superiority in the defense of U.S. and allied interests. There are two active-duty squadrons: 18th Space Defense Squadron (18 SDS) and 19th Space Defense Squadron (19 SDS). They are organized under Deployment Identification Code 9 Unit Type Code of "1SCFA - SPC SATEL CTLG, COLLISION AVOID".

1.1. **18 SDS organized/designed mission.** 18 SDS is located at Vandenberg SFB, California and conducts SDA to provide and advance a continuous, comprehensive, and combat-relevant understanding of the space situation. 18 SDS provides the foundation for a Common Operating Picture to support senior leader decisions that enables combat operations and decision advantage. 18 SDS also maintains an Operating Location at Peterson SFB, Colorado and a detachment at Schriever SFB, Colorado. 18 SDS operates a variety of systems in support of Commander, United States Space Command (CDRUSSPACECOM) requirements.

1.1.1. **18 SDS Weapon Systems and equipment.** 18 SDS operates, maintains, and manages:

1.1.1.1. Space Defense Operations Center (SPADOC) is the legacy SDA Command and Control (C2) program of record. Space Predictive Effects Analysis Results Reporting is the life extension for executing custody operations (e.g., launch, maneuver, reentry, breakup events, etc.) until the follow-on system is delivered.

1.1.1.2. Command Analysis and Verification of Ephemerides Network (CAVENet) is not a program of record but is a historical repository of satellite catalog information. It also houses Astrodynamics Support Workstation (ASW), Special Perturbation Tasker and other software tools used in operational analysis.

1.1.1.3. ASW program of record supports the majority of the Resident Space Object database maintenance and all conjunction assessment/human space flight support operations. ASW relies on SPADOC for legacy Space Surveillance Network data and messaging. It requires the Non-traditional Data Pre-Processor (NDPP) system for new sensor observations, sensor messaging, data conditioning, and Cross Domain Solution functions.

1.1.1.4. Special Perturbation Tasker is a program of record algorithm that optimizes data collection across the Space Surveillance Network to maintain the Resident Space Object database accuracy.

1.1.1.5. NDPP is a program of record connected to the Cross Domain Solution. NDPP provides CAVENet data integration with external sources and message distribution to multiple sources at different classification levels.

1.1.2. **18 SDS applicable Threat Environments.** 18 SDS has been organized/designed to operate within Threat Level 1, Threat Level 2, and Threat Level 3.

1.1.3. **18 SDS Future Requirements.** 18 SDS is scheduled to receive the Common Framework Environment (CFE) 2.0 to re-host CAVENet software onto new hardware in CY23. CFE 2.0 will have all tools and data that currently reside on CAVENet; no new capabilities are delivered with CFE 2.0. The Space C2 program of record is projected to deliver Advanced Tracking and Launch Analysis System with enabling capabilities to

replace SPADOC. Non-traditional and other data, to enable SDA operations, will be provided by the Unified Data Library.

1.1.4. **18 SDS Air Reserve Component Total Force Integration relationship.** The 18 SDS was approved to receive their own dedicated associate unit, but none exists at this time. The 9th Combat Operations Squadron has a flight designated to support 18 SDS until 18 SDS receives its own associate unit.

1.1.5. **18 SDS Det 1 organized/designed mission.** 18 SDS Det 1 is located at Schriever SFB, Colorado and is operationally aligned under 18 SDS (Vandenberg SFB). In accordance with Combatant Command authorities and direction, 18 SDS Det 1 supports Joint Task Force – Space Defense by providing timely and actionable SDA for on-orbit threats in order to protect and defend critical U.S. and Allied space capabilities throughout the continuum of conflict.

1.1.6. **18 SDS Det 1 Weapon Systems and equipment.** 18 SDS Det 1 operates, maintains, and manages:

1.1.6.1. SPADOC is the same system in use at 18 SDS.

1.1.6.2. CAVENet is the same system in use at 18 SDS.

1.1.6.3. ASW is the same system in use at 18 SDS.

1.1.6.4. SP Tasker is the same system in use at 18 SDS.

1.1.6.5. NDPP is the same system in use at 18 SDS.

1.1.6.6. 18 SDS Det 1 utilizes prototype tools and systems to support threat analysis.

1.1.7. **18 SDS Det 1 applicable Threat Environments.** 18 SDS Det 1 has been organized/designed to operate within Threat Level 1, Threat Level 2, and Threat Level 3.

1.1.8. **18 SDS Det 1 Future Requirements.** 18 SDS Det 1 has the same future requirements as 18 SDS. 18 SDS Det 1 will require access to space C2 systems to provide SDA support for protect and defend missions.

1.1.9. **18 SDS Det 1 Air Reserve Component Total Force Integration relationship.** There is no associate unit for 18 SDS Det 1.

1.2. **19 SDS organized/designed mission.** 19 SDS is located at Dahlgren Naval Support Facility, Virginia and is responsible for producing Naval Network Warfare Command products, executing conjunction assessment including launch collision avoidance, interfacing with the Department of Commerce for Space Traffic Management and engaging in joint ventures across all enterprises with SDA operations experimentation. 19 SDS also has an Operating Location in Suitland, Maryland providing Satellite Control Authority and operational oversight for the Space-Based Environmental Monitoring mission to include the Defense Meteorological Satellite Program and Electro-Optical/Infrared Weather System – Geostationary constellations. For additional information, reference the Environmental Monitoring Mission Directive. 19 SDS assumes 18 SDS Resident Space Object database management and Sensor C2 missions in the event 18 SDS cannot perform them. 19 SDS operates a variety of systems in support of CDRUSSPACECOM requirements.

1.2.1. **19 SDS Weapon Systems and equipment.** 19 SDS operates, maintains, and manages:

1.2.1.1. Mission Processing System is the program of record at 19 SDS for executing SDA C2. It was developed separately from SPADOC and provides execution of custody operations and C2 tasking when Space Predictive Effects Analysis Results Reporting is unavailable.

1.2.1.2. CFE 1.0 is operational at 19 SDS and is used to house the same software that resides on CAVENet currently. CFE 1.0 will be updated to CFE 2.0 after 18 SDS. The upgrade will allow scalable hardware to address the growth in Resident Space Objects.

1.2.1.3. ASW at 19 SDS is the same software in use at 18 SDS.

1.2.1.4. SP Tasker is the same software in use at 18 SDS.

1.2.1.5. NDPP is the same system in use at 18 SDS. 19 SDS manages its own NDPP system.

1.2.2. **19 SDS applicable Threat Environments.** 19 SDS has been organized/designed to operate within Threat Level 1, Threat Level 2, and Threat Level 3.

1.2.3. **19 SDS Future Requirements.** 19 SDS will receive CFE 2.0 and the suite of software that 18 SDS will receive under the Space C2 program of record. 19 SDS will utilize Advanced Tracking and Launch Analysis System as the replacement for Mission Processing System once all necessary requirements have been met. Non-traditional and other data, to enable SDA operations, will be provided by the Unified Data Library. 19 SDS will support Beyond Geostationary Earth Orbit and cis-lunar operations to maintain objects that are more difficult to track.

1.2.4. **19 SDS Air Reserve Component Total Force Integration relationship.** There is no associate unit for 19 SDS.

2. Command. Combatant Command authority is vested in CDRUSSPACECOM, through the command's C2 facilities. CDRUSSPACECOM delegated tactical control of assigned space forces to Commander, Combined Joint Task Force Space Operations, who coordinates, plans, integrates, synchronizes, tasks, executes and assesses space operations. Resource management for 18 SDS and 19 SDS is provided by the Commander, Space Operations Command. Unit commanders are authorized to communicate, coordinate, and work with other units or agencies on matters relating to mission accomplishment or regarding administrative or logistical support under applicable agreements and memorandums of understanding.

3. Responsibilities:

3.1. Comply with requirements identified in all DAFIs, SPFIs and SpOCIs which include: AFI 1-2, *Commander's Responsibilities* and AFSPCI 10-605, *Operational Acceptance Process*.

3.2. Ultimately responsible for accomplishing assigned missions.

3.3. Ensure unit members are trained, evaluated, and certified mission ready operators.

3.4. Provide administrative and logistical support to assigned personnel.

3.5. Establish training and standardization and evaluation programs as directed by Higher HQ and Delta policy and guidance.

3.6. Evaluate on-site contractor performance in accordance with the statement of work and guidance from the contracting officer.

3.7. Ensure adequate security is provided to protect any restricted access facilities and resources.

3.8. Assume overall responsibilities for space systems maintenance, operations, training, evaluation, computer programming, computer operations, and satellite systems engineers.

3.9. Provide for resource management, budgeting, and accounting of government funds.

3.10. Provide data collection, processing, and reporting of operations and identify capability assessment.

3.11. Implement procedures for accommodating new mission requirements or system enhancements.

STEPHEN N. WHITING, Lieutenant General, USSF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 1-2, *Commander's Responsibilities*, 8 May 2014

AFI 38-101, *Manpower and Organization*, 29 August 2019

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

AFSPCI 10-605, *Operational Acceptance Process*, 20 June 2016

Prescribed Forms

None

Adopted Forms

DAF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

ASW—Astrodynamics Support Workstation

C2—Command and Control

CAVENet—Command Analysis and Verification of Ephemerides Network

CFE—Common Framework Environment

CDRUSSPACECOM—Commander, United States Space Command

NDPP—Non-Traditional Data Pre-Processor

SDA—Space Domain Awareness

SDS—Space Defense Squadron

SPADOC—Space Defense Operations Center