# 1 SPACE OPERATIONS SQUADRON

**MISSION**

1 Space Operations Squadron commands, controls and operates the Space Based Space Surveillance System, Advanced Technology Risk Reduction system, Operationally Responsive Space-5 and the Geosynchronous Space Situational Awareness Program.

Mission crews conduct 24-hour operations supporting the three major functions of satellite control: telemetry, tracking and commanding for USSF's only space-based SDA assets. Orbital analysts, mission planners and program engineers provide program-specific knowledge and support to those crews while operators perform all pre-contact planning, real-time contact and post-contact actions.

**LINEAGE**

1 Aerospace Surveillance and Control Squadron constituted and activated, 6 Feb 1961
Organized, 14 Feb 1961
Redesignated 1 Aerospace Control Squadron, 1 Jul 1962
Inactivated, 21 Apr 1976
Redesignated 1 Satellite Control Squadron, 25 Sep 1987
Activated, 5 Oct 1987
Redesignated 1 Space Operations Squadron, 30 Jan 1992
Status changed from a unit of the United States Air Force to a unit of the United States Space Force, 21 Oct 2020

**STATIONS**

Ent AFB, CO, 14 Feb 1961

Cheyenne Mountain Complex, CO, Apr 1966-21 Apr 1976
Falcon AFS (later, AFB), CO, 5 Oct 1987

**ASSIGNMENTS**
Air Defense Command, 6 Feb 1961
9 Aerospace Defense Division, 1 Oct 1961
Fourteenth Aerospace Force, 1 Jul 1968-21 Apr 1976
2 Space Wing, 5 Oct 1987
50 Operations Group, 30 Jan 1992
750 Operations Group (Later, Space Delta 9), 19 Jun 2020

**COMMANDERS**
Col Robert Miller, 27 Mar 1961
Col William C. Watts, 1 Jan 1968
Col Stanton G. Daries, 1 Jul 1970
Col Bernard J. Szczutkowski Jr., 18 Sep 1972
Col Thomas C. Brandt
Lt Col Donna L. Burk, 5 Oct 1987
Maj Louis H. Schweichler, 10 Jun 1988 (Acting)
Maj Thomas Baugh, 14 Jun 1988
Lt Col Alan H. Payne, 9 Feb 1990
Lt Col Robert L. Hooten, 20 Feb 1992
Lt Col Evan J. Hoapili, 4 Aug 1994
Lt Col John F. Anthony Jr., 24 Jun 1996
Lt Col Barry J. Bennett, 10 Jul 1998
Lt Col Michael K. Chesonis, 30 May 2000
Lt Col Burke E. Wilson, 3 Jul 2002
Lt Col Steven L. Lootens, 3 Jul 2003
Lt Col Craig L. Bomberg, 6 Jul 2005
Lt Col Erik J. Eliasen, 28 Jun 2007
Lt Col Lorenzo Bradley, 16 July 2009
Lt Col Michael Manor, July 2011
Lt Col Toby Doran, 24 June 2013
Lt Col Casey M. Beard, July 2015
Lt Col Mark Bigley, 7 July 2017
Lt Col Bryan Bell, 2019
Lt Col Patrick Gaynor, 21 June 2021
Lt Col Galen Thorp, June 2023

**HONORS**
**Service Streamers**

**Campaign Streamers**

**Armed Forces Expeditionary Streamers**

**Decorations**
Air Force Outstanding Unit Awards
1 Jun 1961-15 Sep 1963
1 Jun 1973-30 Jun 1974
1 Dec 1987-30 Nov 1989
1 Sep 1990-31 Aug 1991
1 Oct 2000-1 Oct 2001
1 Oct 2001-1 Oct 2002
2 Oct 2002-2 Oct 2003
1 Oct 2007-30 Sep 2009
1 Jan 2015-31 Dec 2016

**EMBLEM**


1 Aerospace Surveillance and Control Squadron emblem: On an Air Force blue rectangular area a stylized computer above a semicircular geometrical pattern all surmounted by a stylized satellite, its four antennae saltirewise, all Air Force golden yellow; the satellite charged with an Air Force blue star; issuing from dexter chief a portion of the sun in splendor, and in sinister chief a formation of stars, Air Force golden yellow. On an Air Force golden yellow scroll, edged and inscribed Air Force blue, PRIMARII AETHERIS DEFENSORES, Space Defenders of the First Rank. The emblem is symbolic of the squadron and its mission. Against a background resembling in shape the fan-like radar of the Ballistic Missile Early Warning System, deep blue in color to represent the sky, and supplemented with the sun and stars to indicate day and night operations, a stylized satellite of the Vanguard class symbolizes the squadron as the Vanguard of Aerospace Defense. The satellite surmounts two symbols representing a computer for analyses and computations and a detection system with the capability of the MIDAS system and world-wide sensors. The solitary star on the satellite indicates that this is the first organization of this type.


In 1961, the squadron had a competition to select the squadron emblem. One anonymous suggestion proved so popular that the squadron commander had copies made for all squadron members and other people who supported the squadron. The suggested blazon was posted with the submission. "Central in our noble emblem is a crystal ball, rampant on a field of confusion, depicted floating in a sea of coffee. The yellow streak, or batton sinister (heraldic mark of illegitimation, commonly called the bastards' bar maintains balance between the traditional ADC Azure, the official color of USAF uniforms at the time and NORAD purple (NORAD was sometimes considered purple, the staff being a combination of Army red and Air Force and Navy blue). Unfortunately, this line of demarcation is not quite long enough to keep things from getting confused. (This is a reference to the ongoing tension between NORAD and ADC, at times even involving CINCNORAD General Laurence S. Kuter and the ADC Commander, Lt Gen Robert M. Lee; both sometimes appearing distinctly unfriendly). Emblazoned, dexter chief and sinister base, are the symbols of the accuracy within which we attempt to maintain our orbital ephemerides (plus and minus infinity). Beneath the shield, the heroic name of our noble organization will be forever proclaimed on a roll of six-ply carbon paper. The crest, above the shield, is a crying towel, presented with the compliments of the 496L SPO (the Systems Project Office responsible for the development of Project Space Track). It is supported by two wings, depicting the hopeful thought that, if things get too tough, you can always go fly."


1 Satellite Control Squadron emblem



1 Space Operations Squadron emblem: On a disc Azure, between a polestar in dexter, a delta point up in chief, a polestar in sinister all Argent, and three bars enarched in base Or, two bars in saltire of the last, surmounted by a bezant, charged with a mullet of the field, all within a narrow border Blue. Attached below the disc, a Yellow scroll edged with a narrow Blue border and inscribed “1 SPACE OPERATIONS SQ” in Blue letters. Ultramarine blue and Air Force yellow are the Air Force colors. Blue alludes to the sky, the primary theater of Air Force operations. Yellow refers to the sun and the excellence required of Air Force personnel. The stylized satellite represents the heritage behind the mission of satellite operations. The star denotes the squadron and its function within the wing. The semi-circular enarching bars symbolize an antenna dish of a remote tracking station essential for satellite command and control functions of the unit. The flight symbol indicates the launch/early orbit stage of satellite life. The polestars represent the two states of satellite function, on-orbit and end of life phase. (Approved, 12 Nov 1993; replaced emblems approved, 30 Jun 1988 and 6 Feb 1962)

**MOTTO**

ALWAYS IN CONTROL

**OPERATIONS**

The unit was originally activated Feb. 14, 1961, as the 1st Aerospace Control Squadron, which was in operation until April 1976. On Oct. 5, 1987, the squadron was activated, renamed the 1st Satellite Control Squadron, and began its ever-growing satellite control mission. On Feb. 16, 1988, the squadron began commanding the Defense Support Program constellation.

The Space Operations Center was operationally turned over to Air Force Space Command Dec. 21, 1989. The SOC increased its mission Feb. 20, 1990, when the Defense Meteorological Satellite Program mission was operationally turned over. In May 1996, satellite command authority for the first research and development satellite controlled by AFSPC, Technology for Autonomous Operational Survivability, was given to 1st SOPS.

In December 1989, 1st SOPS assumed control of launch and early orbit operations for Global Positioning System including satellite activation, initial checkout and transfer to mission orbit. The last support to the GPS launch was done from 1st SOPS December 2007 before transitioning to 2nd SOPS.

On Dec. 4, 1998, the squadron assumed command and control capability on the Midcourse Space Experiment. MSX became an operational program Oct. 1, 2000, with the first-ever transfer of operations from the Ballistic Missile Defense Organization to AFSPC. MSX was decommissioned in July 2008.

In May 2003, 1st SOPS assumed responsibility of conducting mission assurance telemetry for Department of Defense Boosters, the first mission assigned to Multi-Mission Satellite Operations Center. This mission transitioned to the Space Test Squadron at Kirtland AFB, New Mexico in March 2009.

ATRR launched from Vandenberg AFB May 5, 2009, onboard a Delta II delivery system. ATRR conducts SDA operations in support of the SSN.

On Sept. 25, 2010, SBSS was launched from Vandenberg AFB, California onboard the Minotaur IV into a sun-synchronous orbit. It was the first space-based SDA sensor to be added to USSF's Space Surveillance Network. SBSS provides metric observations and Space Object Identification data on satellites operating in low-earth, semi-synchronous and geosynchronous orbits to the Combined Space Operations Center and NASIC National Air and Space Intelligence Center

The operation center's first mission, TacSat-3, was transferred to 1st SOPS June 12, 2010 and retired from mission operations Feb. 17, 2012. TacSat-3, an Intelligence Surveillance and Reconnaissance satellite, provided Hyperspectral Imagery in support of Air Force Research Laboratory Space Vehicles Directorate and NASIC. The satellite reentered the Earth's atmosphere April 30, 2012.

Satellite Control Authority was transferred to 1st SOPS Jan. 31, 2011, from the Missile Defense Agency. ATRR previously served as a pathfinder for next-generation sensor technology for future MDA space missions. It provides the CSpOC with geostationary belt surveillance for metric observations from a Low Earth Orbit.

On June 29, 2011, MMSOC's second mission, ORS-1, launched from Wallops Island, Virginia onboard the Minotaur I. It was the first ISR satellite dedicated to a specific combatant command: U.S. Central Command. ORS-1 provided optical and infrared imagery using sensors based on the U-2 Senior Year Electro-Optical Reconnaissance. In January 2012, ORS-1 gained early COCOM acceptance, a milestone that allowed MMSOC to bring this capability to the warfighter sooner than expected.

Two GSSAP satellites were launched aboard a United Launch Alliance Delta IV M+ (4, 2) booster configuration from Cape Canaveral Air Force Station, Florida, July 28, 2014 and two replenishment satellites were launched Aug. 19, 2016. The GSSAP satellites provide a space-based capability operating in the near-geosynchronous orbit regime supporting U.S. Space Command space surveillance operations as a dedicated SSN sensor.

GSSAP satellites support the Joint Task Force-Space Defense tasking to collect space domain awareness data allowing for more accurate tracking and characterization of manmade orbiting objects. From a near-geosynchronous orbit, they have a clear, unobstructed and distinct vantage point for viewing Resident Space Objects without the interruption of weather or the atmospheric distortion that can limit ground-based systems. GSSAP satellites operate near the geosynchronous belt and have the capability to perform Rendezvous and Proximity Operations. RPO allows for the space vehicle to maneuver near an RSO of interest, enabling characterization for anomaly resolution and enhanced surveillance, while maintaining flight safety. Data from GSSAP uniquely contributes to timely and accurate orbital predictions, enhancing our knowledge of the geosynchronous orbit environment, and further enabling space flight safety to include satellite collision avoidance.

ORS-1 operations were conducted in the MMSOC, a revolutionary approach to space operations. The operations center was focused on forging one-of-a-kind operations to demonstrate and field emerging space missions and satellite command and control technologies in a rapid, decisive manner, and it is the focal point for cutting edge technologies. In April 2014, ORS-1 operations were realigned under the command of the 3rd Space Experimentation Squadron.

ORS-5 launched on an Orbital ATK Minotaur IV from Cape Canaveral AFS Aug. 26, 2017. The satellite operates at an altitude of 372 miles and continuously scans the geosynchronous orbit at a reduced cost compared to larger, more complex satellites. The MIT Lincoln Laboratory built satellite provides metric observations to the CSpOC as a dedicated SSN sensor.

On June 19, 2020, as part of the U.S. Space Force protect and defend restructure, the 1st SOPS was transferred from the 50th OG to the newly activated 750th OG. The mission of the 750th

OG is to prepare, present, and project assigned and attached forces for the purpose of conducting offensive and defensive operations from space and providing national decision authorities with response options to deter, defend, and defeat adversary threats in space. As part of the U.S. Space Force structure change, as of July 24, 2020 the unit is under Delta 9.



Sources
Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.
The Institute of Heraldry. U.S. Army. Fort Belvoir, VA