19 SPACE OPERATIONS SQUADRON

MISSION

19 Space Operations Squadron at Schriever AFB, Colo., supports the 2nd Space Operations Squadron in the launch, sustainment, operations and modernization of the GPS satellite constellation, providing highly accurate 24-hour navigation, timing and nuclear detonation information to users worldwide.

LINEAGE

19 Surveillance Squadron constituted and activated, 1 Nov 1966
Organized, 1 Jan 1967
Redesignated 19 Space Surveillance Squadron, 15 May 1992
Inactivated, 16 Jun 1997
Redesignated 19 Space Operations Squadron, 1 May 2000
Activated in the Reserve, 1 Oct 2000

STATIONS

Pirinclik AS, Turkey, 1 Jan 1967-16 Jun 1997
Schriever AFB, CO, 1 Oct 2000

ASSIGNMENTS

Air Defense Command, 1 Nov 1966
73 Aerospace Surveillance Wing, 1 Jan 1967
Fourteenth Aerospace Force, 30 Apr 1971
21 Air Division, 1 Oct 1976
7 Air Division, 1 Dec 1979
1 Space Wing, 1 May 1983
73 Space Surveillance (later, 73 Space) Group, 1 Oct 1991

21 Operations Group, 26 Apr 1995-16 Jun 1997
310 Space Group, 1 Oct 2000

COMMANDERS
Col William C. Watts, 1 Jan 1967
Col John A. Reding, 21 Jul 1967
Lt Col Warren E. Best, 3 Feb 1968
Col Rowland D. Smith, Jr., 20 Dec 1968
Col Jack L. Krout, 23 Oct 1969
Col Bernard J. Szczutkowski, Jr., 26 Sep 1970
Col Marty D. Coffin, 11 Sep 1971
Col Thomas C. Smith, 8 Sep 1972
Col Lloyd E. Thomas, 7 Sep 1973
Col Bernard M. Kerin, 1 Sep 1974
Col Jay T. Gannaway, 23 Aug 1975
Lt Col Joe L. Montgomery, Jul 1976
Lt Col Bruce J. Bohn, c. 1978
Lt Col Charles A. Anderson, by Oct 1978
Lt Col Jack L. Spearman, 21 May 1979
Lt Col James B. Bryan, III, 8 May 1980
Lt Col Phillip G. Dean, by Sep 1981
Lt Col Michael E. Wenninger, 3 May 1982
Lt Col Frederich M. Burkhart, 10 May 1983
Lt Col Louis H. Jones, 16 May 1984
Lt Col Kenneth L. Wall, 12 May 1985
Lt Col Billy G. Meazell, 7 May 1986
Lt Col Sanford D. Mangold, 17 Jul 1987
Lt Col Joseph D. Dumoulin, by Aug 1988-unkn
Lt Col Thomas Dougherty, Jul 1994
Lt Col Gary J. Jackson, 9 May 1995
Lt Col Karen Rizzuti, 1 Oct 2000
Lt Col Pamela J. Lincoln
Lt Col Damon S. Feltman

HONORS
Service Streamers

Campaign Streamers

Armed Forces Expeditionary Streamers

Decorations
Air Force Outstanding Unit Awards
15 Jun 1972-14 Jun 1973

1 May 1983-30 Apr 1984
1 Sep 1989-31 Aug 1991
1 Oct 1995-16 Jun 1997
1 Oct 2000-30 Sep 2002
1 Oct 2001-1 Oct 2002
1 Oct 2002-30 Jul 2004
1 Aug 2004-31 Jul 2006
1 Aug 2006-31 Jul 2008

EMBLEM

Blue and yellow represent the Air Force colors. The red represents the electromagnetic energy utilized by our equipment. The blue also represents the space environment within which the objects we track are orbiting. SIGNIFICANCE: The red equilateral triangle points out the three-point mission of this sensor, detect, track, and identify earth orbiting bodies. The crossed yellow streams represent the orbital paths of the satellites tracked by this unit. The X formed by the two streams symbolizes the fact that this unit has two designators one of which is classified in the country in which we are located. The concentric circles symbolizes a radar scope which is the tie between the mission and the output of data. (Approved, 15 Dec 1967)

MOTTO

OPERATIONS
Operated detection and tracking radar units to provide data on missile launches, deep space surveillance, and tactical warning, Jan 1967-Jul 1975 and Oct 1978-Jun 1997; not operational, Jul 1975-Oct 1978.

The world's largest military satellite constellation received a critical upgrade to its aging command and control system in September thanks to the combined efforts of the regular Air Force's 2nd Space Operations Squadron and its Reserve associate unit, the 19 SOPS, both located at Schriever Air Force Base, Colo. The Global Positioning System comprises 31 satellites that provide space-based positioning, navigation and timing services to more than a billion

military and civilian customers around the world. Prior to the software upgrade, the GPS relied on 1970s-era mainframe technology to provide command and control over the satellite constellation. The upgrade, which was implemented Sept. 14, is the first step in an $800 million Architecture Evolution Plan that will “make current and future GPS features available to users on the ground,” said Maj. John Doucet, 19 SOPS modernization support officer. “An immediate benefit is the ability to tie the control system into the Air Force Satellite Control Network, complementing an existing array of GPS ground control stations around the world,” Major Doucet said. The software is easier for space operators to use, offering a graphical user interface instead of the old system’s commandline interface. The system is also more modular and designed for modern hardware. “Maintenance will be easier,” said Craig Alliett, chief of maintenance for the 2nd SOPS. “It runs on a distributed server: If a hard drive dies, we pull it out and swap in a new one.” Mainframes are becoming increasingly difficult to maintain as fewer sources offer replacement parts, Mr. Alliett said. What made the transition more impressive was the fact that the two squadrons accomplished it without interrupting the mission. 2007

3/26/2009 The 2nd and 19 Space Operations Squadrons here assumed control of the Air Force's newest GPS satellite shortly after its launch from Cape Canaveral Air Force Station, Fla., March 24. The satellite, named GPS IIR-20(M), is the 34th satellite in the GPS constellation, which provides precise navigation and timing data to military and civilian customers around the world. Space operators with 2nd SOPS and 19 SOPS took over early-orbit operations for the new satellite 68 minutes after launch, said Lt. Col. Douglas Schiess, 2nd SOPS operations officer. "We're getting it ready to provide its combat effects to warfighters as soon as possible," Colonel Schiess said. "It's a great team effort by 2nd SOPS and 19 SOPS." GPS IIR-M satellites provide combat capability for military applications such as Joint Direct Attack Munitions and handheld, vehicle-based and aircraft navigation aids. Civilian applications include ATMs, bank and stock market transactions and power grid management. Currently, 31 of the 34 GPS satellites in orbit transmit navigation and timing signals to users. A Delta II launch vehicle carried GPS IIR-20(M) into low-Earth orbit. From there, a booster will lift the satellite into its operational orbit approximately 12,500 miles above the Earth. The launch was delayed from June 2008 due to a fault in the 40-second timer that triggers separation of the third-stage booster from the satellite. Air Force and contractor engineers resolved the problems, said Lt. Col. John Wagner, mission director for the Launch and Range Systems Wing at Los Angeles Air Force Base, Calif. The IIR-M spacecraft includes several upgrades from the earlier Block IIR model. A modernized antenna panel provides a stronger signal that is more resistant to GPS jamming and stronger encryption for military signals. It also includes two military signals and one civil signal beyond those transmitted by earlier GPS satellites. O

“Most folks don’t realize that there are only two units in the entire Department of Defense that operate GPS,” said Lt. Col. Damon S. Feltman, squadron commander. “The 19 SOPS is one of them and makes up 41 percent of the total manpower. We aren’t just involved in the mission; we are critical to it. The 19 SOPS is the strategic and operational backstop of the nation’s GPS capabilities.” Like most space units in AFRC, the 19 is associated with a regular Air Force unit.

Air Force Space Command's 2nd SOPS provides the operations center and maintains satellite control authority over the GPS satellite constellation, but daily operations are tightly integrated. "The 19 SOPS was total force integration before there was such a thing as TFI," Colonel Feltman said. "The mix of crew force, us or the regular Air Force, varies every day. Over the years, we've proven ourselves and built trust to the point where nobody blinks when they see a 19 SOPS member on the ops floor as mission commander or mission chief. The JSTO (Joint Space Tasking Order) says '2nd SOPS' because an ops center has to be identified, but everybody knows its Team Blackjack, the 2nd and 19 together, that's getting the mission done." "We've really carved out a niche for ourselves with launch responsibilities," said Senior Master Sgt. Martin Smith, 19 SOPS operations superintendent. "Last year, when the first GPS-IIF was launched, the 19 SOPS provided 95 percent of the crew force. We've got another IIF launch coming up this year, and it looks like the 19 will provide about the same amount of manpower for this one, too. And we're not just the manpower on launch day, either. "We provide the bulk of manpower from the time planning meetings and rehearsals begin about six months out until the satellite arrives on station and is declared healthy." In addition to its LADO responsibility, the 19 was chartered to support five other core tasks: daily GPS operations, training, deployment to alternate operating locations, subject matter expertise for GPS modernization, and navigation warfare and specialized analysis functions. Some tasks, such as deployments, align well with the classic strategic reserve model. Others, like support to daily operations and NAVWAR, are clear examples of how the squadron, along with AFRC as a whole, has transitioned to an operational status. According to Maj. Jason King, assistant operations officer, the key to the unit's ability to cover such a wide range of tasks lies with its people. "We're able to do a lot for this mission because of our experience and longevity," Major King said. "We have folks who have been with GPS since before the 19 SOPS was created. Also, a good number of our traditional Reservists work on the industry side of GPS. "Our depth allows the 19 SOPS to do things made difficult on the RegAF side due to folks coming and going on permanent change-of-station moves every three or four years." The unit trains to support all its mission tasks, but the level of effort for each varies depending on operational requirements. For example, when the GPS command and control segment transitioned from its legacy software to its current baseline in 2008, 19 SOPS subject-matter experts provided 100 percent of manning for the new operations center for 68 days until operational acceptance and then trained their RegAF counterparts in the 2nd SOPS to operate the new system. Colonel Feltman said the squadron does not intend to rest on its past decade of achievements. In fact, the unit has enough upcoming mission requirements to keep it busy for the next 10 years and then some. The unit has 11 GPS-IIF satellites left to launch, followed by the first of 35 GPS Block III satellites beginning in 2014. At the same time, the 19 will assist in the retirement of two ground command and control systems, replacing them with a single system by 2013. Finally, the unit will continue its support to end-users worldwide with its NAVWAR and analysis experts, whose requirements are expected to grow as the GPS user operations center continues to mature. 2011

GPS IIF Satellite Transitions to Operators' Control Air Force Space Command earlier this month transferred control authority of the latest on-orbit GPS IIF navigation satellite to the airmen of the 2nd Space Operations Squadron and Air Force Reserve Command's 19 SOPS at Schriever AFB, Colo. "Ownership has been transferred from the developers to the operators," said 2nd

SOPS Commander Lt. Col. Todd Benson. "We'll continue with more on-orbit checkup. Soon, we'll set the vehicle 'healthy to all users,' which means the general populace can start using it," he added. The Air Force and its industry partners on March 25 launched this satellite, the ninth GPS-IIF spacecraft, into space from the central Florida coast. It was the first of three GPS IIF launches scheduled in 2015. The Schriever airmen took control of the satellite on April 3. AFSPC in 2014 deployed the most GPS satellites that it has in more than 20 years, launching four into orbit. 2015

USAF Unit Histories
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Sources

Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.
Air Force News. Air Force Public Affairs Agency.