1 AIR AND SPACE TEST SQUADRON

MISSION

1 Air and Space Test Squadron mission is: the developmental test and evaluation for missiles, launch vehicles and payload/launch vehicle integration. Support launch operations, provide program/customer specific test planning, test program field management, business management, and assistance with range integration, as required to support technology development and prototype booster launches. Develop processes to support experimental spacelift, research, development test and evaluation space launch systems. Identify and report payload, launch system, and facility issues that could affect critical path operations or the projected launch date to the Launch Group commander.

Support test and integration functions for experimental space systems, space launch vehicles, targets and interceptors (National and Theater Missile Defense). Monitor and assess contractor launch processing and integration tasks, identifying risk areas or anomalous events and tracking impacts through closure, current processing schedules, critical path items and the potential risks to maintaining them. Oversee the operations and maintenance of processing and integration facilities, launch control centers, launch sites, and other launch preparation/execution support facilities. Evaluate the effectiveness of the contractor in meeting program objectives, identify deficiencies, and recommend changes.

Interact with local offices of Government and contractor agencies concerning ongoing or planned launch site activities (e.g. NASA, NRO, etc.). Coordinate/review safety, security, and environmental issues as part of launch planning and ensure compliance with local, state, and federal laws as required for developmental aerospace test programs. Assist in the development and verification of operations requirements, procedures, launch documentation, and other documentation of expected nominal and potentially non-nominal test conditions. Manage logistics for vehicle and equipment shipments for off-site missions and periodic

maintenance/certification. Perform launch site transportation, handling and emplacement of launch vehicles.

Perform pre/post launch site operations and perform post-operation reviews and develop/maintain lessons learned. Identify/Report launch system issues that could affect critical path operations or the projected launch date to the Launch Group commander.

The squadron specializes in the reuse of deactivated ICBMs for a variety of new missions, to include space and target launch.

The Minotaur I space launch vehicle uses deactivated Minuteman II first and second stages, along with two stages developed by Orbital Sciences Corporation allowing for a light space-lift vehicle. This vehicle can insert approximately 1,000lbs into low earth orbit.

The Minotaur IV space launch vehicle provides an additional launch solution for U.S. Government sponsored spacecraft. The vehicle, which will provide the core of future responsive space launches, combines three government furnished Peacekeeper solid rocket stages and a commercial solid rocket Orion 38 upper stage from Orbital Sciences Corporation to provide great value and performance. This vehicle can insert approximately 3,800lbs into low earth orbit.

The primary target launch vehicles used by the 1 Air and Space Test Squadron are deactivated Minuteman II stages to boost a reentry vehicle payload to a desired point in space. In recent tests, the target vehicle was launched from Vandenberg AFB, with the payload (simulating an enemy warhead) used to test various components of the U.S. missile defense system.

The Missile Defense Agency's Ground-Based Interceptor is the weapon component of the Ground- Based Midcourse Defense system. The Ground-Based Interceptor consists of a multi-stage rocket booster and a kinetic kill vehicle for exoatmospheric interception of ballistic missile warheads. Interceptor test launches require extensive coordination as a target vehicle is launched from Kodiak Launch Complex in Alaska. A short time later, the Ground-Based Interceptor launches from Vandenberg AFB to accomplish a hit-to-kill intercept of the target vehicle's mock warhead.

The Kinetic Energy Interceptor is a high-speed, three-stage interceptor designed to destroy incoming ballistic missiles during boost, ascent, and midcourse phases of flight. The Kinetic Energy Interceptor consists of a mobile launcher, an interceptor, and a command and control system that is housed in a transportable trailer. It is deployable worldwide using U.S. military aircraft. Initially a land-based defensive capability, with test launches from Vandenberg AFB, Kinetic Energy Interceptor is being designed for transition to sea-based platforms.

Pegasus is very unique Orbital Sciences Corporation vehicle which is air-launched from the bottom of a Lockheed L-1011 at an altitude of approximately 40,000ft. When released from the aircraft, the vehicle free-falls for five seconds, the first stage ignites and the vehicle pitches up. A

45-degree delta wing aids in pitch-up and provides some lift. The vehicle is 57ft long with a maximum payload of approximately 975lbs

LINEAGE
1 Photographic Squadron constituted, 22 Dec 1939
Activated, 1 Feb 1940
Redesignated 1 Mapping Squadron, 13 Jan 1942
Redesignated 1 Photographic Mapping Squadron, 9 Jun 1942
Redesignated 1 Photographic Charting Squadron, 11 Aug 1943
Redesignated 1 Photographic Reconnaissance Squadron, Very Heavy, 10 Nov 1944
Redesignated 1 Reconnaissance Squadron, Very Long Range, Photographic-RCM, 4 Oct 1945
Redesignated 1 Reconnaissance Squadron, Very Long Range, Photographic, 13 Nov 1945
Inactivated, 10 Mar 1947
Disbanded, 8 Oct 1948

1 Test Squadron constituted, 12 Sep 1969
Activated, 15 Oct 1969

1 Reconnaissance Squadron, Very Long Range, Photographic, reconstituted and consolidated with 1 Test Squadron, 19 Sep 1985. Consolidated squadron designated 1 Test Squadron

Inactivated, 30 Oct 1991
Redesignated 1 Air and Space Test Squadron, 28 Oct 2003
Activated, 1 Dec 2003

STATIONS
Bolling Field, DC, 1 Feb 1940
Bradley Field, CT, 5 Dec 1941
MacDill Field, FL, 15 Jan 1944
Smoky Hill AAFld, KS, 26 Oct 1944-31 Jul 1945
Kadena, Okinawa, 9 Sep 1945
Clark Field, Philippines, 11 Feb-10 Mar 1947
Clark AB, Philippines, 15 Oct 1969-30 Oct 1991
Vandenberg AFB, CA, 1 Dec 2003

DEPLOYED STATIONS
Accra, Gold Coast, British West Africa, 11 Mar-13 Oct 1944

ASSIGNMENTS
Office of Chief of Air Corps, 1 Feb 1940
1 Photographic (later, 1 Mapping; 1 Photographic Charting) Group, 10 Jun 1941
11 Photographic Group, 1 Dec 1943
311 Photographic Wing, 5 Oct 1944
Second Air Force, 10 Nov 1944

311 Reconnaissance Wing, 4 Oct 1945
Far East Air Forces, 3 Feb 1947
Thirteenth Air Force, 11 Feb-10 Mar 1947
6 Air Division, 15 Oct 1969
Thirteenth Air Force 15 Dec 1969
405 Fighter Wing, 20 Apr 1970
3 Tactical Fighter Wing, 16 Sep 1974
6200 Tactical Fighter Training Group, 1 Jan 1980-30 Oct 1991
30 Launch Group, 1 Dec 2003

ATTACHMENTS
Eighth Air Force, 9 Sep 1945
United States Army Strategic Air Forces, 4 Oct 1945
Far East Air Forces, 21 Nov 1945
VII Bomber Command, 10 Dec 1945
Eighth Air Force, Mar 1946
1 Air Division, 7 Jun 1946
5 Reconnaissance Group, 11 Feb-10 Mar 1947

WEAPON SYSTEMS
C-8, 1940
B-10, 1940
C-45/F-2, 1940 1946-1947
A-29, 1941-1942
RA-29
P-43
A-20/F-3, 1942
B-24/F-7, 1942-1945
B-34, 1942-1944
B-25, 1943
B-17/F-9, 1943-1944
B-29/F-13, 1944-1947
L-4, 1946
L-5, 1946-1947
F-4, 1969
BQM-34A, 1969-1989
F-15, 1980
F-16, 1982
MQM-107D, 1989

COMMANDERS
Maj Donald G. Stitt, 1 Feb 1940
Maj Minton W. Kaye, 15 Nov 1940
Capt Charles P. Hollstein, 10 Jun 1941

Maj Richard W. Philbrick, May 1942
Maj Albert M. Welsh, Dec 1942
Maj Foster S. Randle Jr., Apr 1944
Lt Col Albert M. Welsh, 16 Nov 1944
Maj Foster S. Randle Jr., 10 Oct 1945
Maj Howard E. Brown, 17 Dec 1945
Unkn, Jan-Mar 1947
Lt Col William E. Powers, 15 Oct 1969
Lt Col William R. Martin, 21 Aug 1970
Lt Col William J. Watson, 27 Jun 1972
Lt Col Don O. Quane, 30 Jun 1973
Lt Col Jerry N. Hoblit, 17 Jan 1975
Lt Col James R. Alley, 25 Feb 1977
Lt Col Charles N. Nielsen, 20 Nov 1978
Lt Col Charles H. Holden, 30 Jun 1980
Lt Col Roger L. Prather, 21 Jun 1982
Lt Col Michael F. Tedesco, 1 Jun 1984
Lt Col Willard H. Whitley, Jan 1986
Lt Col Robert F. Fischer, Feb 1987
Unkn, Jan 1988-30 Oct 1991
Lt Col Marc DiCocco

HONORS
Service Streamers
World War II
American Theater
European-African-Middle Eastern Theater
Asiatic-Pacific Theater

Campaign Streamers

Armed Forces Expeditionary Streamers

Decorations
Air Force Outstanding Unit Award 3 Apr-31 May 1975
1 Jul 1976-30 Jun 1977
1 Apr 1980-31 Mar 1982
1 Jul 1985-30 Jun 1987
1 Jun 1988-1 Jun 1990

Philippine Republic Presidential Unit Citation
21 Jul-15 Aug 1972

EMBLEM

1 Photographic Squadron emblem: On and over a blue disc bordered in yellow with white clouds issuing from base, a flying brown and white hawk, with yellow feet and beak, wearing an aviator's helmet, focusing a black aerial camera. (Approved, 3 Oct 1941)

1 Test Squadron patch

MOTTO
First into the Future

OPERATIONS
Mapped areas of the United States, 1940-1943; Alaska, Canada, Newfoundland, Labrador, and Greenland, 1941-1943; Africa, Middle East, India, and China, 1943-1944; Italy, Sicily, and Sardinia, 1944; and the Far East, 1945-1947.

On 1 May 1943 RB-34 41-38076 was destroyed in a taxiing accident at Bradley Field, CT. Pilot was Louis N Brainerd.

On 14 Jul 1943 B-25D 41-29876 crashed. Charles A. Hamill bailed out due to mechanical failure in Keene, NH

1 Test Squadron replaced the 6400th Test Squadron.

1 Test Squadron conducted weapons system evaluation, known as COMBAT SAGE, of F-4s from 1969, of F-15s from 1980, and of F-16s from 1982, until shortly before inactivation. Also trained visiting aircrews in weapons employment and tactics.

VANDENBERG AIR FORCE BASE, Calif. (AFNS) 3/4/2008 Vandenberg Air Force Base may very well be redefining the concept of space lift in the years to come. Part of that is due to the work is done by the 1 Air and Space Test Squadron. 1 ASTS is like none other, literally. The squadron prides itself in being the only unit in the Air Force that carries out its space mission, launching a variety of small spacelift boosters and performing developmental spacelift tests at launch sites across the United States. "We are the only spacelift test unit in the Air Force," 1 Lt. Annette Rivas, a 1 ASTS launch mission manager. "We are a unique squadron, for a unique mission, at a unique base." From reusing decommissioned missiles to launch satellites, to performing launch missions that allow groups like the Missile Defense Agency to test and sustain their Ground-based Missile Defense interceptor program, the 1 ASTS members enable the Air Force to develop the technology needed in today's world to remain a dominant geopolitical force. "We are currently restoring and reusing the decommissioned Peacekeeper rocket, which was used for ICBM's in the Cold War, to launch satellites," said Lt. Rivas. "It's an incredible way to launch satellites and save the government money." The Peacekeeper was decommissioned at the end of the Cold War as a part of the Strategic Arms Reduction Treaty between the U.S. and the Union of Soviet Socialist Republics. The rocket can no longer be used as an ICBM due to the agreement the U.S. made with Russia in START II, according to the U.S. Department of State website. When the 1 ASTS is not working at Vandenberg AFB or with the decommissioned Peacekeeper, their efforts may be focused at Wallops Island Flight Facility in Virginia, performing their one-of-a-kind deployable spacelift mission. "We launched a rocket from Wallops this past year that helps with the Missile Defense Agency's space program," said Lieutenant Rivas. The program allows MDA to gather valuable information concerning the tracking of missiles during its phases of powered and ballistic flight. For the launches at Wallops, 1 ASTS personnel are completely "hands on" in the launch effort, with the only blue-suit spacelift maintenance professionals in the Air Force. Squadron members are involved in certifying the rocket is flight-worthy, installing command-destruct hardware required for safe launch operations, and performing ground operations. "At Wallops we drive the loaded transporter up to the pad, and then erect it," said Staff Sergeant Christopher Lanchoney, a 1 ASTS launch operations craftsman. "Then a crane comes and lifts it out of the transporter and on to the pad." These transporters are also unique, a modified version of the equipment used to support the operational Minuteman ICBM force. The mission of the 1 ASTS does not stop at today, but prepares for tomorrow. "Currently we are working, as an Air Force, to figure out how we can quickly maintain our satellites once in space," said Lieutenant Rivas. "Operationally Responsive Space will change today's norm of six months prep for a launch to launching at a moment’s notice." 2008

VANDENBERG AIR FORCE BASE, Calif. (AFNS) -- The 1 Air and Space Test Squadron at Vandenberg Air Force Base will be assisting with the first ever Minotaur IV launch from Cape Canaveral Air Force Station, Florida. The 1 ASTS team coordinated the transport for the first three stages of the engine to Cape Canaveral AFS where they will provide support through the day of launch. The Minotaur IV is an expendable launch system derived from an old Peacekeeper Intercontinental Ballistic Missile.

"We have specialized equipment here, where we stack the Minotaur and make sure they are good to go," said Capt. Julian Martinez, the 1 ASTS mission integrator. "The upcoming launch at Canaveral is a Minotaur IV vehicle, which is an old peacekeeper system. There are five stages, and the DOD owns the first three. We are the only Air Force blue suit team that is able to maintain, ship and handle all of these rocket components. When we are out there we always get referred to as 'the Air Force guys', because we are the only uniformed personnel that have a direct impact on ground operations." As the only unit in the Air Force that can stack and transport the Minotaur IV, the 1 ASTS utilizes experienced missile maintainers on a space assignment.

"As a unit we rely heavily on the missile maintainers that have prior experience in the missile fields," said Brian Tafoya, the 1 ASTS flight chief. "Even though we are now on the space launch side of the house, we are able to use the knowledge of the ICBM delivery systems to ensure we do our part in the launch process. It is a bit different than what we are used to. Instead of loading a missile into a silo we get to stack it on a launch pad. Our ICBM experience translates directly into the small space lift mission and is a pretty unique experience." The primary responsibility of the 1 ASTS is to ensure the launch vehicle is processed and stacked for a successful mission.

"For this upcoming launch from the Cape, we shipped the first three stages out about a month before the projected launch date," said Martinez. "After the boosters arrive in Florida, we coordinate with the 45th Space Wing to use their cranes to load the boosters onto Minotaur specific trucks called Type-II's, for convoy to the launch pad. After all three stages are stacked on the launch pad, we hand custody off to the launch service provider, Orbital ATK. Stage four and five are owned by Orbital ATK and include the payload, avionics, and instrumentation." With a low launch tempo for the Minotaur family of vehicles, the 1 ASTS team is constantly training. This prevents future discrepancies and maintains currency.

"We don't launch a lot of these, so one of the ways we stay ready for a real operation is by practicing," said Martinez. "We run through procedures and talk with quality assurance, keeping everything up to date. This mission will launch August 25th from Cape Canaveral AFS is a pretty monumental event for the whole squadron. The team will be traveling to watch the launch, and perform post-launch equipment recovery." The team may be small, but what they lack in numbers they make up for in dedication and expertise. "When we conduct an operation like this, from cradle to grave, it gives us a sense of pride," said Tafoya." 2017

DEPARTMENT OF THE AIR FORCE ORGANIZATIONAL HISTORIES
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Sources
Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.