LEFT TO RIGHT

U.S. Navy Martin PBM-3C Mariners of patrol squadron VP-201 at Naval Air Station Banana River, Photo taken between December 1942 and February 1943.

Bumper, a two-stage rocket created with a German V-2 rocker and a WAC-Corporal rocket, was the first system launched from Cape Canaveral. Here Bumper #8 clears the umbilical tower and the mobile service tower.

Alan Shepard in his silver pressure suit and helmet preparing for the Freedom 7 launch aboard a Mercury-Redstone rocket. His fifteen minute flight made him the first American in space.

Missile Row at Cape Canaveral Air Force Station. NASA photo, 2005

A Unique History

Patrick Air Force Base

Sharon Watkins Lang, USASMDC/ARSTRAT Command Historian

Patrick Air Force Base can trace its history to the 1930s, specifically the Naval Expansion Act of 1938. The Banana River Naval Air Station, an auxiliary operating base for the installation at Jacksonville, Fla., was part of a larger effort to reinforce the Atlantic Coast Defense System. Construction began in December 1939 and the station was officially commissioned on Oct. 1, 1940. Located on a barrier island between Melbourne and Cocoa, the Banana River Naval Air Station covered 1,791 acres on an area roughly 4.1 miles long by 1.25 miles wide.

During World War II, Banana River served as a base for coastal seaplane patrols. The anti-submarine patrols were conducted by PBY Catalina and PBM Mariner seaplanes. In March 1942, the Navy replaced the PBMs with OS2U Kingfisher seaplanes for the newly created scouting Squadron VS-39. At this time the PBM returned to their primary training mission with both a PBM seaplane pilot training program and an advanced navigation school. The training mission soon expanded to include a blind landing experimental facility, known as Project Baker, and an Air Bombing Training Unit.[1] In addition to U.S. Navy personnel, NAS Banana River also trained officers from the Free French Navy.

With a growing requirement to repair the F6F Hellcats, NAS Banana River gained a new mission as an aircraft repair and maintenance facility. Blimp Squadron ZP-21, which conducted search and rescue missions along the Florida coast, also called Banana River home during World War II. Other occupants of Banana River were a Headquarters Squadron for the Fleet Air Wing, a Navy Band and a small detachment of German POWS. At its peak, NAS Banana River included 278 aircraft, 587 civilian employees and over 2800 active duty Navy personnel.

Banana River remained active for two years following the war, but was finally inactivated on Aug. 1, 1947. In September 1948, NAS Banana River transferred to the U.S. Air Force and in June 1949 became the Joint Long Range Proving Ground. It was renamed again one year later becoming Patrick Air Force Base on Aug. 1, 1950, recognizing the contributions by Maj. Gen. Mason Patrick to the development of an independent U.S. Air Force.

During the post war years, research and development for missile systems moved to the forefront. A requirement soon developed for a missile range which was both away from population centers and able to accommodate down range tracking stations. White Sands Missile Range in New Mexico proved to be too short for the newer more powerful missiles. NAS Banana River was one of three locations under consideration. The Washington-Alaska path was rejected as too remote and too cold. El Centro, Calif, was the first selection but plans fell through when the Mexican government refused to allow missile flights over Baja, Calif. The Florida location, however, met all of the requirements, remote location, existing infrastructure and pending agreements with Great Britain to allow missile flights near the Bahamas.

Construction began soon thereafter with launch complexes, missile processing facilities, and instrumentation sites at Cape Canaveral Auxiliary Air Force Base

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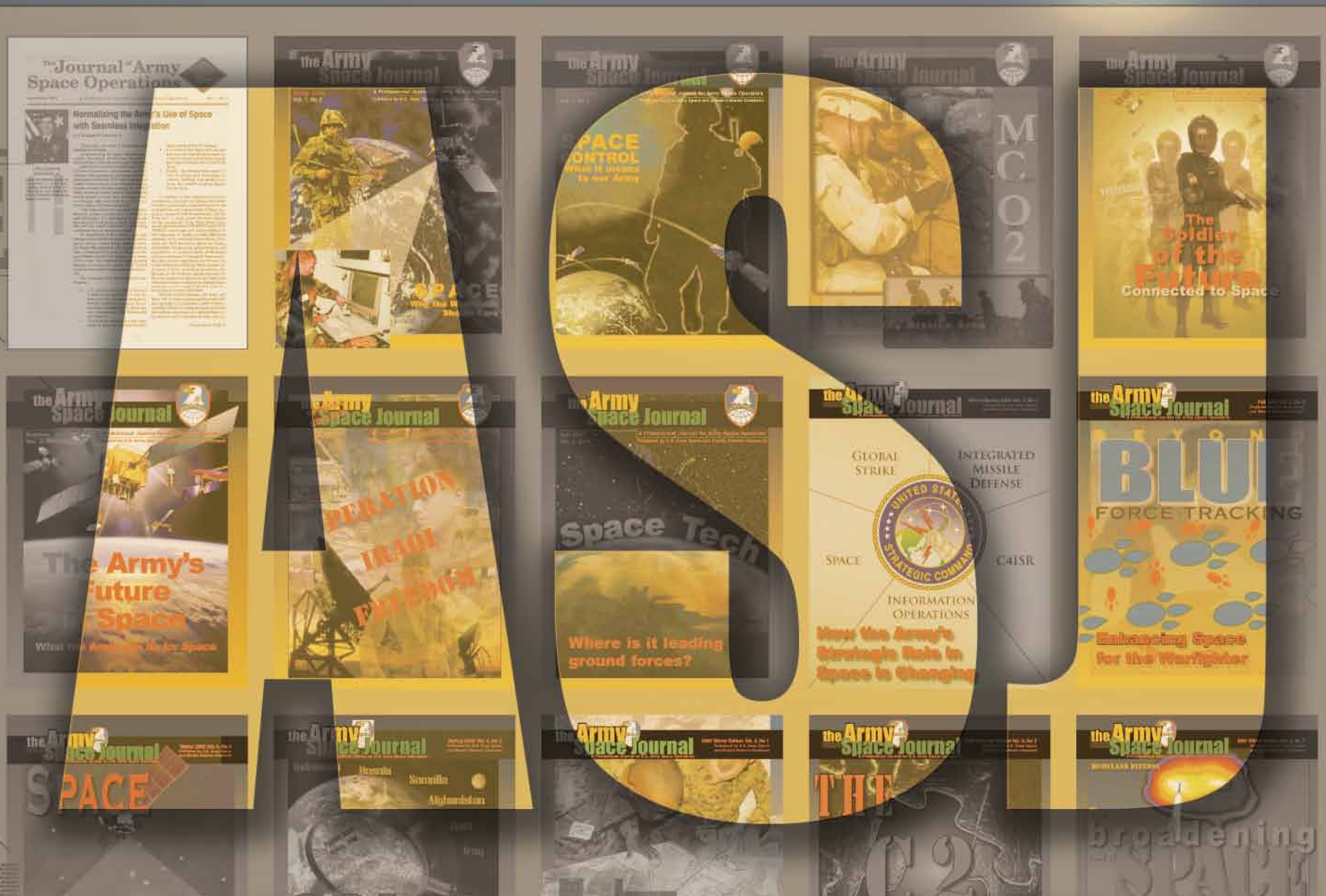
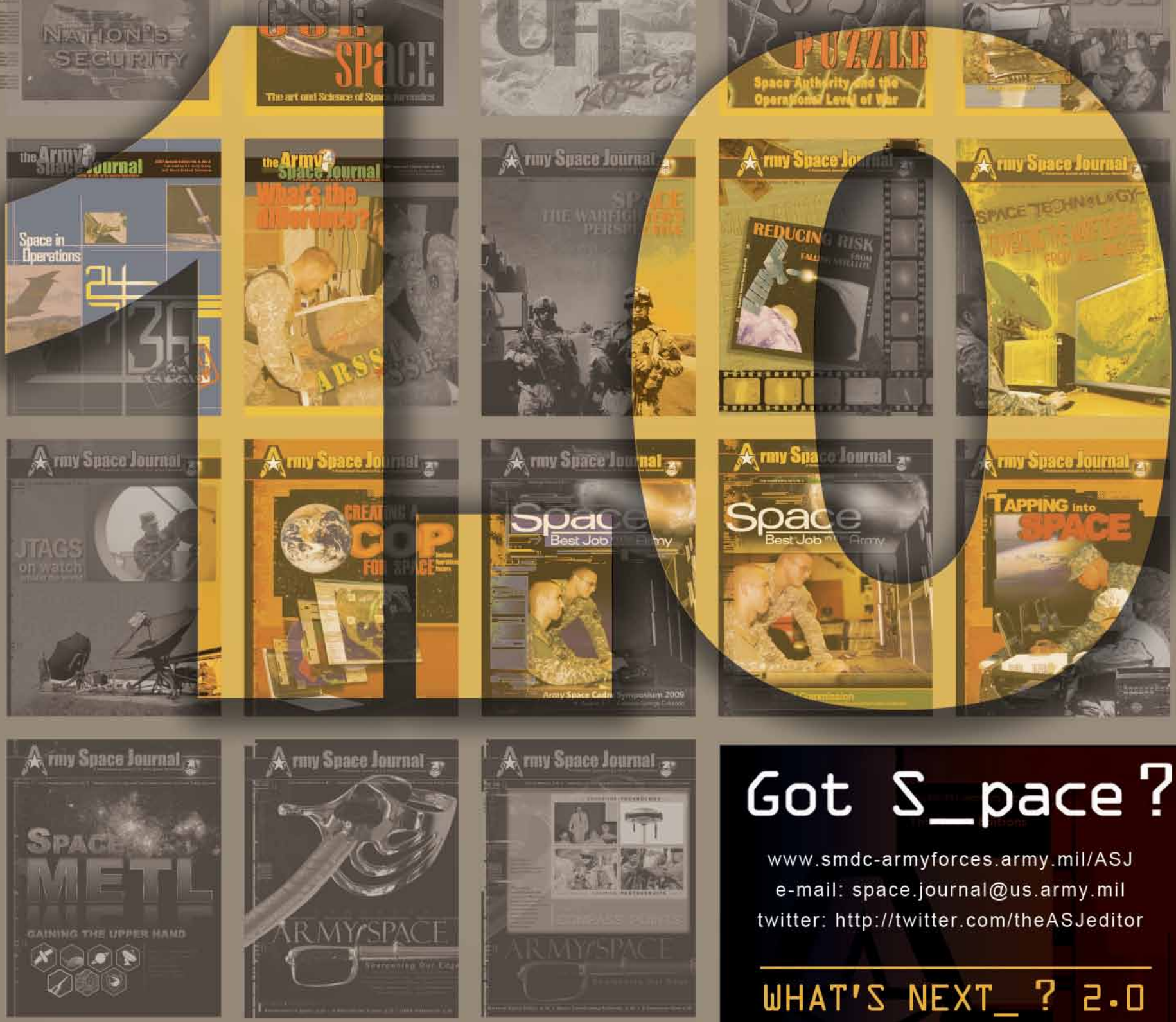
Army Space Journal

A Professional Journal on U.S. Army Space Operations





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and down range facilities in the Bahamas. Of the four initial launch pads, number three was first to be put to the test.[2] The test came on July 24, 1950, when the BUMPER WAC (Without Any Control) moved to the Cape to conduct near horizontal flight tests.

The Eastern Range, operated under government contract since 1954, is truly a joint facility supporting rocket and missile launches for all three services and later the civilian National Aeronautics and Space Administration (NASA). In addition to the BUMPER, Army programs included RV-A-10, REDSTONE, JUPITER, JUNO missiles and more recently the PERSHING I and PERSHING II missiles.[3] The Air Force test programs began soon after in October 1950, with the Lark winged missile. These were followed by 50 other Air Force missiles ranging from 286 launches of the bright red MATADOR to the SNARK, Thor, Hound Dog and the ATLAS, TITAN, and MINUTEMAN series of missiles. The Navy's first launch came six years later in December 1956 with the VANGUARD space launch vehicle. The Navy's POLARIS, POSEIDON and TRIDENT ballistic missiles have also been tested at the Eastern Range.[4]

As missile capabilities improved, the Eastern Range was expanded to meet the new requirements. For example, to support the Air Force's SNARK and Navaho programs agreements were negotiated to add an additional 5,000 miles to the test range extending it to Ascension Island.[5] On Oct. 31, 1957, a SNARK winged missile was the first to use the expanded range. Soon, however, the winged missiles were replaced by ballistic missiles and space vehicles, which would ultimately dominate the range schedule. Given their requirements, by 1960, the range included "13 major stations, 91 outlying sites, a fleet of ships and three marine support stations." Within three years, it extended even further around the tip of South Africa to the island of Mahe in the Indian Ocean.

Space programs at Cape Canaveral can be traced back to the very beginnings of the U.S. and Army space history. From this complex – #26, the Army launched Explorer I, the first American satellite in January 1958. In 1959, this site made further contributions to the space program as the launch site for Gordo, Able and Miss Baker, three monkeys which were launched into space as a prelude to the manned space flight program. Deactivated in 1963, Launch Complex 26 is now home to the Air Force Space and Missile Museum.

On May 5, 1961, history was made at Cape Canaveral when Alan Shepard, Jr. became the first American to fly in space. Launched aboard a Redstone Rocket, Shepard's Freedom 7 capsule reached an altitude of 116 miles and splashed down 304 miles out in the Atlantic. With the birth of manned space flight, the Cape Canaveral facilities expanded again in 1961 – this time inland. To support the complex Saturn and Nova boosters needed to launch an astronaut into space, an additional 80,000 acres were added to the Air Force facilities missile test facility. Today the Range incorporates 15 million square miles.

Although the name and the management for the range changed several times over the years, the mission remained steady. One unofficial source has documented

LEFT TO RIGHT

WAVES debark from bus after arriving at NAS Banana River, Florida, 1944

Missile display at Patrick Air Force Base near Cape Canaveral.

Close-up of Alan Shepard suited up and inside the Mercury Capsule of Freedom 7.

LEFT TO RIGHT

Space Launch Complex 41 at Cape Canaveral and the launch of an Atlas V rocket carrying second Wideband Global SATCOM (WGS) satellite. United Launch Alliance Photo for U.S. Air Force

A Delta Rocket launches the SSTS Demo for the Missile Defense Agency from Space Launch Complex 17B. *U.S. Air Force photo*

Launch of Freedom 7 and Americans first astronaut Alan Shepard aboard a Mercury-Redstone rocket.

3,229 launches at the Eastern Range between 1950 and August 2001. From February 2009 to February 2010, an additional 20 launches were conducted at the facility. It should be noted that these figures do not include weather rockets, sounding rockets and related programs which have also used the launch facilities on a regular basis.

The work of the 6555th Guided Missile Squadron was repeatedly recognized as the unit earned ten Air Force Outstanding Unit Awards between 1959 and 1990.[6] In that year, the Eastern Space and Missile Center and its components transferred to the Air Force Space Command. Finally on Nov. 12, 1991, the unit was organized into an operational wing with the activation of the 45th Space Wing. As successor to the mission and functions of the ESMC, the 45th manages all unmanned rocket launches at Cape Canaveral Air Force Station to include satellite programs for the military, the National Reconnaissance Office, the National Oceanic and Atmospheric Administration, among others, scientific payload launches for the NASA and other payloads in support of the European Space Agency and various commercial programs.

In addition to the 45th Space Wing, Patrick Air Force Base and Cape Canaveral Air Force Station are now home 35 other tenant organizations to include:

920th Rescue Wing - The only Air Force Reserve search and rescue wing it provide support to NASA for Space Shuttle launches from Kennedy Space Center. Other programs include search and rescue for missing aircraft and transporting ill or injured sailors and passengers from ships at sea. Most recently the unit deployed in support of Operational Enduring Freedom.

Air Force Technical Applications Center – Created in 1973, the AFTAC operates and maintains a network of sensors across the globe to detect events and monitor nuclear treaty compliance.

Defense Equal Opportunity Management Institute – The institute provides training to 1500 students a year from the various branches of the U.S. military and some foreign countries.

NASA's Flight Operations Facility which operates a fleet of helicopters and periodically supports the fixed wing T-38 Talon for Kennedy Space Center.

Naval Ordnance Test Unit - This unit provides a number of functions in support of Strategic Systems Programs e.g. coordinating and monitoring missile support equipment and supporting in-flight testing of sea-launched ballistic missiles; and

U.S. State Department's Bureau for International Narcotics and Law Enforcement Affairs which conducts counter narcotics missions and provides assistance for foreign countries.

Footnotes

1 William Barnett, "Naval Air Station, Banana River, Florida, WWII," Indian River Journal, Fall/Winter 2006, pp. 2-3; Naval Air Station Banana River, Wikipedia, http://wn.wikipedia.org/wiki/Naval_Air_Station_Banana_River, accessed on 4 February 2010.

2 Contrary to popular myths, Launch Pad 3 was "a remarkable engineering achievement in its day." It incorporated both underground equipment rooms and an "elaborate water deluge system built into the concrete pad" Cliff Lethbridge, "Cape Canaveral Rocket and Missile Box Scores Tabulated by Cliff Lethbridge; Tracks Total Cape Canaveral Launches In Chronological Order by Vehicle (Updated: August 10, 2001) on http://spaceline.org/statistics/rocktes.html, accessed on Jan. 14, 2010.

3 Cliff Lethbridge, "Cape Canaveral Rocket and Missile Box Scores Tabulated by Cliff Lethbridge; Tracks Total Cape Canaveral Launches In Chronological Order by Vehicle (Updated: August 10, 2001) on http://spaceline.org/statistics/rocktes.html, accessed on Jan. 14, 2010.

4 A deep water port originally planned to serve as a home port for instrumentation and cargo ships was later modified to support ballistic missile submarines.

5 More information on the growth of the Eastern Range at Cape Canaveral can be found in U.S. Air Force Fact Sheet "Development of the 45SW Eastern Range" http://www.patrick.af.mil/library/factsheets/factsheet_print.asp?fsID=4516&page=1.

6 U.S. Air Force Fact Sheet "Evolution of the 45th Space Wing" http://www.patrick.af.mil/library/factsheets/factsheet_print.asp?fsID=4514&page=1.