

AIR FORCE MISSILE TEST CENTER



AIR FORCE
SYSTEMS
COMMAND

CAPE CANAVERAL

PATRICK A. F. B.

POWER
FOR
PEACE

ARMED FORCES DAY
MAY 20, 21, 1961
OFFICIAL PROGRAM

50c

BENEFIT OF P.A.F.B.

YOUTH WELFARE FUND

50c

Stoll

WELCOME TO CAPE CANAVERAL

Your visit will be a safe and enjoyable one if you follow these rules:

Traffic lanes are being monitored by TV and helicopters. Raising the hood of your car will be the accepted signal for needed assistance.

- DO keep traffic moving as directed.
- DO stay in traffic lane unless directed to change by a traffic patrolman.
- DO pull off roadway in the event of mechanical difficulty. Raise your hood - assistance will arrive as soon as possible. Commercial vehicle service is available at normal AAA charges.
- DO in case of illness, pull off the road, raise your hood, and assistance will be dispatched to aid you.
- DO stay in your car if a traffic bottleneck occurs. Photographs may be taken at such times, but DO NOT leave your car to take them.
- DO retain all litter in your vehicle.

Latrine facilities are located in several designated areas for your comfort.

Thank you and enjoy your visit to Cape Canaveral

DO NOT BE A LITTERBUG

HELP KEEP THE CAPE CLEAN

E M E R G E N C Y I N F O R M A T I O N

Automotive

1. If your car breaks down, drive off the road if possible.
2. If you can get to a telephone, call the Brevard County Sheriff's Office, Cocoa, Fla. (NE 6-3641 or NE 6-3657), state your name, location and nature of emergency. A commercial tow truck will be dispatched to assist you.

Medical

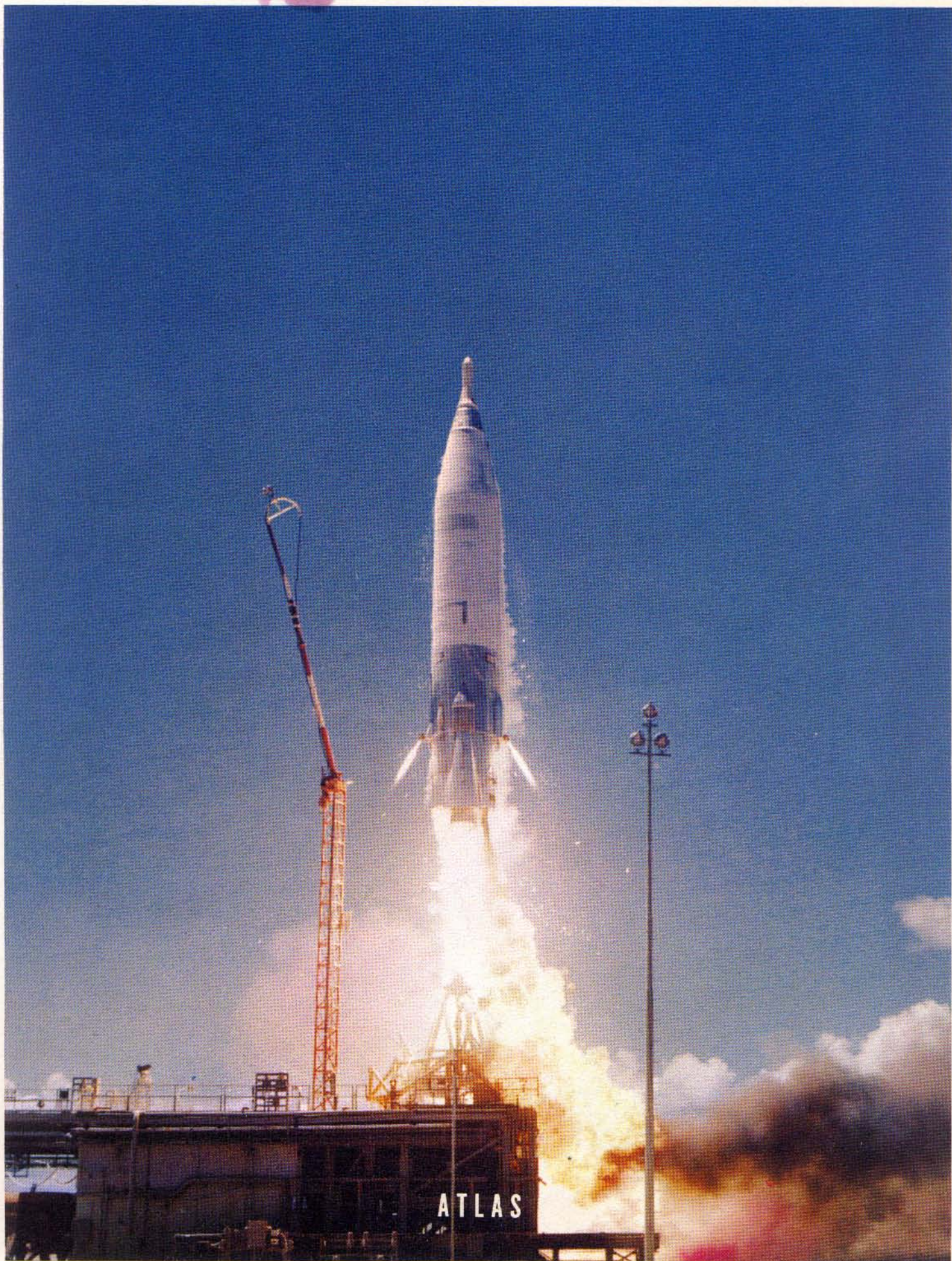
For your safety, the United States Air Force is patrolling the entire area with helicopters. If you experience an acute medical emergency while you are tied up in traffic:

1. Drive off the road, if possible.
2. Spread white cloth or garments, in the shape of a cross, on the roof of your automobile. Remember, this signal must be visible to an aircraft.
3. If you can get to a telephone, call the 6550th Air Force Hospital Command Post at Patrick AFB, (UL 7-4015 or UL 7-2904). Clearly and concisely state the nature of your difficulty and your exact location in reference to road intersections, towns or other prominent geographical landmarks.
4. A helicopter, with a medical team aboard, will be promptly dispatched to your location. You will be taken by helicopter to the 6550th Air Force hospital and later removed to a civilian hospital, as traffic conditions permit.

AIR FORCE MISSILE TEST CENTER
ARMED FORCES DAY 1961



POLARIS



ATLAS

History of PATRICK AIR FORCE BASE

The area that is now Patrick Air Force Base was formerly commissioned as the Banana River Naval Air Station on October 1, 1940. It served as a naval air station during World War II and was inactivated in 1947. This inactive station was transferred to the Air Force and the Air Materiel Command in September 1948.

On June 10, 1949, the station was redesignated as the Joint Long Range Proving Ground. In October of that year it became the Long Range Proving Ground Air Force Base. In August of 1950 the base received its present name of Patrick.

On May 14, 1951, Patrick AFB and all Long Range Proving Ground off-base facilities were transferred to the Air Research and Development Command, now the Air Force Systems Command. It was declared a permanent Air Force installation in 1952.

There followed a general build-up of real estate, improvement and rehabilitation, along with increase in the number of military and civilian personnel. Today the base, although compact, houses a variety of missions. More than forty aircraft are based here, flying down-range missions in behalf of the missile program, and transporting personnel up and down the range.

The Air Force Technical Laboratory, a mile south of the base, is one of the largest buildings in Florida, and doubtlessly is one of the more important ones. Men of all branches and services are seen here daily, giving an appearance that Patrick is the "crossroads of missiledom."

**Cover: Launching
the U. S. Air Force's
MINUTEMAN ICBM**





*Major General
Mason Mathews Patrick*

General Mason M. Patrick was a military engineer who made significant contributions to the young U. S. Army Air Service. He served as its chief from 1921 to 1927. At the age of 60 he took flying training and became a pilot.

During his period as chief, the first air-circling of the globe took place. He personally headed or served on the leading departmental aviation committees and boards which sponsored and fostered American air development.

General Westover, later Chief of the Air Corps, wrote of General Patrick: "Most of the laws and regulations which are largely responsible for the present stature, not alone of the military but of civil aviation as well, in this country, owe their inception and arrangement, and in fact their initial organization to him."

Welcome!



On behalf of us at the Air Force Missile Test Center, I am pleased to have this opportunity to give you a look at the birthplace of much of this nation's missile power.

Through the use of many photographs, we have attempted to provide you with a representative picture of Cape Canaveral, Patrick Air Force Base, and the Atlantic Missile Range.

I sincerely hope that this souvenir will provide you with a permanent remembrance of a place from which some of the free world's most spectacular and worth-while space shots have been launched and its most powerful missile weapons have been tested.

L. I. DAVIS
Major General, USAF
Commander
Air Force Missile Test Center



THE AFMTC STORY

The Air Force Missile Test Center operates the largest ballistic and cruise type missile proving ground in the free world. The vastness of this modern complex may readily be seen on the map below which shows missile routes and tracking thousands of miles southeastward far into the Indian ocean.

AFMTC is one of several research, development and test organizations of the Air Force Systems Command. This Center's mission is to maintain the Atlantic Missile Range; flight test Air Force, Army, and Navy missiles; and to record and process missiles flight data.

The Center's headquarters at Patrick AFB provides logistic and administrative support for the Atlantic Missile Range.

BACKGROUND TO ESTABLISHMENT

The theory of rocket propulsion is centuries old. However, its development and practical application have

been relatively slow because of the tremendous technical problems involved. It was not until World War II that the military potential of rocket propulsion was exploited. With the introduction of the V1 Buzz Bomb and the V2 by the Germans, the world saw for the first time the awesome destructiveness of guided missiles.

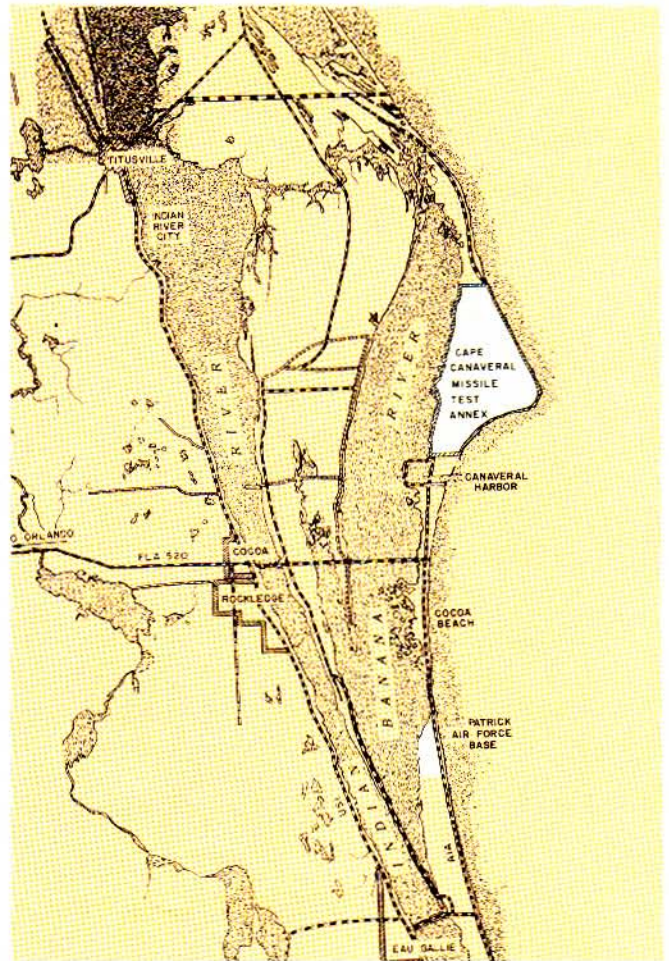
For obvious reasons U. S. military leaders were keenly interested in missiles as weapons destined to revolutionize traditional concepts of warfare. Thus, in the closing days of World War II, the Joint Chiefs of Staff agreed that an accelerated post-war missile program was needed and preliminary contracts were awarded. However, no suitable long-range missile testing range was available. Then the longest instrumented ranges were at Point Mugu and Inyokern, Calif., neither of which could be extended economically, and one at the White Sands Proving Ground in New Mexico — also with limited long-range potential. Thus an adequate long-range missile test area was a prerequisite to a successful missile program.

CAPE CANAVERAL SELECTED

Despite the post-war cutback of the nation's military forces, the Joint Chiefs of Staff were determined to develop a U. S. missile capacity. In October 1946 a committee on a Long Range Proving Ground was appointed to study possible missile launching sites and ranges. On site surveys were made the most promising locations, and the Committee finally selected Cape Canaveral. Decisive factors were many; the Cape was relatively uninhabited and undeveloped, and parts of it were owned by the government. Its isolation meant that safety and security costs would be low. Further, the Banana River Naval Air Station, (later Patrick AFB) was available for use as supply and administrative support headquarters.

Beyond these advantages offered by the Cape itself, the over-water flight range potential from there was a major factor in its selection. Moreover, West Indies islands and the South Atlantic offered ideal locations for permanent missile tracking stations. On July 8, 1947, the newly created Department of the Air Force was charged with development of the Cape and the range.

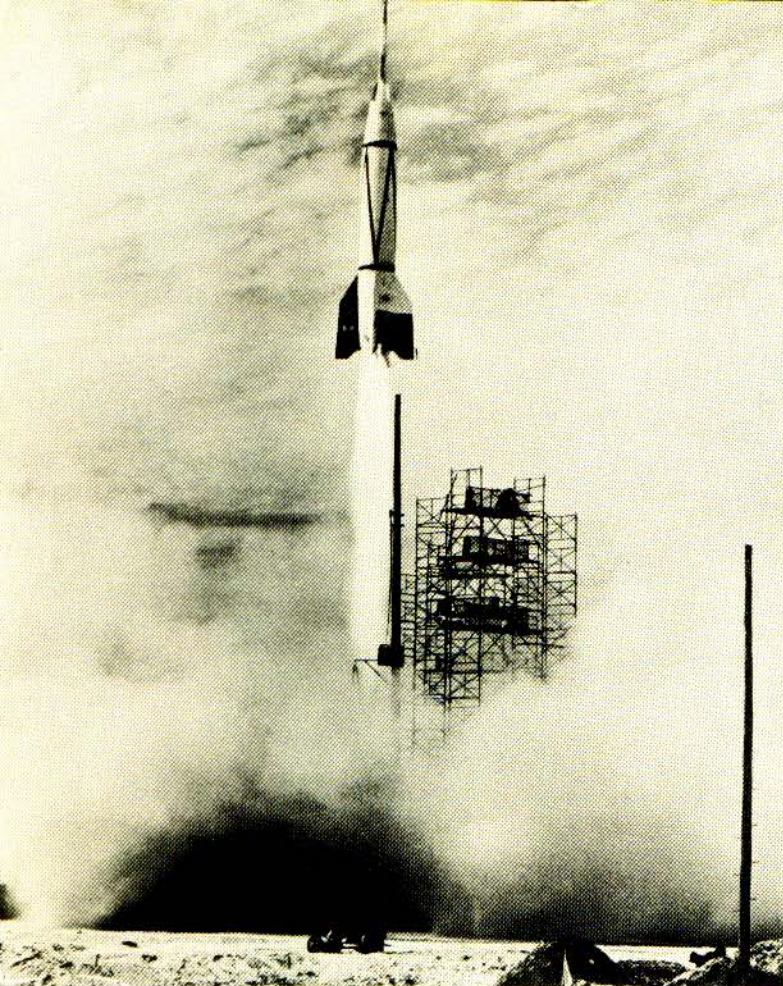
Meanwhile, one of the first tasks was to begin negotiations with the British and colonial officials for approval to construct the down-range tracking stations on the British controlled West Indies islands. In February 1949 an agreement for construction of the first station was reached. Three months later, legislation was passed and signed by the President. In 1948, the Navy transferred to the Air Force the



Banana River Naval Air Station, and renovation began, along with planning for construction of missile launching and telemetry facilities at the Cape.

This laboratory receives all of the information concerning a launch. Inside this seven million dollar building, with

its 455,000 square feet of space, telemetry is fed into computers and reduced automatically. Along with flight photographs and other material, a test report — 50 to 150 pages — is issued summarizing the missile launch and flight. This serves as a guide to the solution of problems and becomes a permanent record.



On July 24, 1950, a Bumper WAC Corporal, similar to the one above, became the first missile ever launched at Cape Canaveral.

Below, a remote camera near the launch pad catches this Atlas with its three engines and two vernier engines on the sides spouting flame.



MISSILE TESTS STARTED . . .

The first missile launched from the Cape was on July 24, 1950 when a German V-2 rocket carrying a second stage Army WAC Corporal missile in its nose was successfully launched. In June 1951 the Matador was launched, becoming the first operational surface-to-surface missile in the Air Force. In 1954, emphasis changed from cruise type missiles to ballistic missiles, which travel much faster, farther, and are less subject to enemy counter action.

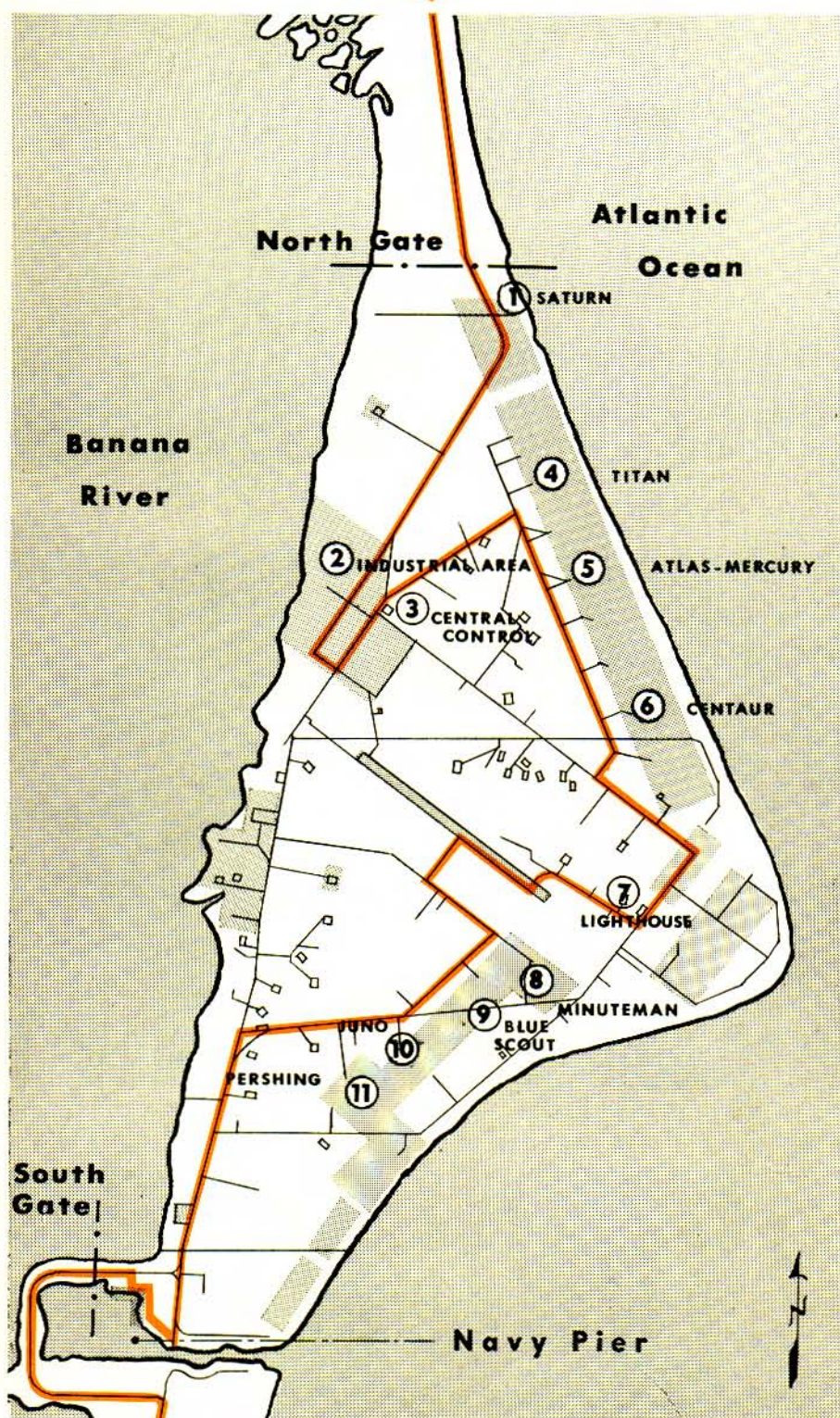
By 1957, agreements had been concluded with Great Britain, as well as the Dominican Republic and Brazil, establishing 12 major tracking stations. In addition, several ocean range vessels were modified to serve as floating telemetry stations between the tracking stations.

In line with Air Force policy to use private enterprise for specialized non-military operations, bids were requested for operation of the Missile Range. Pan American World Airways received the contract, and it in turn subcontracted with the Radio Corporation of America for technical work involved in operation and maintenance of the range.

In recent years, AFMTC has compiled a colorful record of "firsts" in the nation's military and space missile programs. A single accomplishment, exemplary of AFMTC's record, is the launching into orbit of the Atlas satellite on December 18, 1958. Weighing 244,000 pounds, the giant missile sped to a velocity of 17,100 miles an hour in about 4½ minutes.

Today, from Patrick AFB, an extremely complex operation is controlled, including the Cape, several subsidiary telemetry and camera sites in Florida, and the island stations in the down range area. About 22,000 people are employed. Several airfields are maintained, along with the small fleet of ocean vessels and about 40 aircraft supporting the test missions.

YOU ARE ENTERING HERE



Entering Cape Canaveral through the North Gate, the first launching complex approached is the future launching site of Saturn, to the left of your route. (See photo "One" on adjoining page and location "One" on map.)

Additional copies of this booklet may be obtained by mailing 50c per copy to: Dependent Youth Activities Council, Patrick AFB., Florida.

Making a right turn, you travel approximately two miles before entering the industrial area (2). Here are located various shops and missile hangars. Leaving the industrial area, Central Control (3), nerve center of Cape Canaveral, will appear to your right.

Slightly more than a mile from Central Control is Intercontinental Ballistic Missile row. Directly in front of you will appear a Titan complex (4) and after you turn, two more Titan facilities will be passed on your left. Next, is the Atlas-Mercury complex (5). This is followed by three Atlas launch stands. The Centaur launching facility (6) is also left.

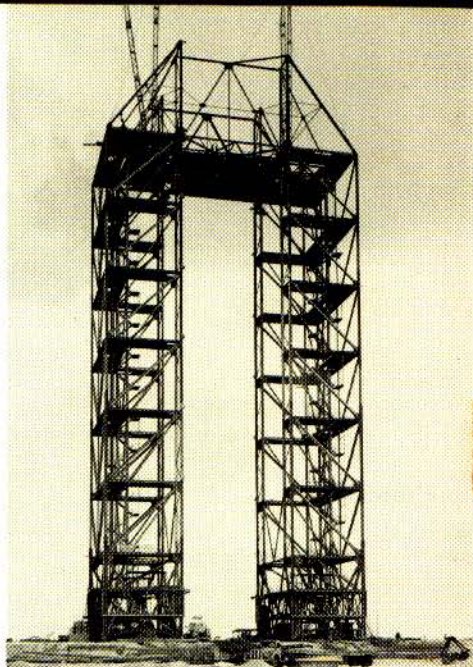
The lighthouse (7) has often been referred to as "my favorite missile" and many tales are circulated of the uninitiated patiently waiting at a safe distance to see it launched.

Minuteman facilities (8) will be directly ahead, followed by the Blue Scout complexes, left. Blue Scout (9) uses a modified Thor stand and the old Vanguard facility. Two Thor towers, similar to the Scout's, appear next. These are used for Thor boosted space shots.

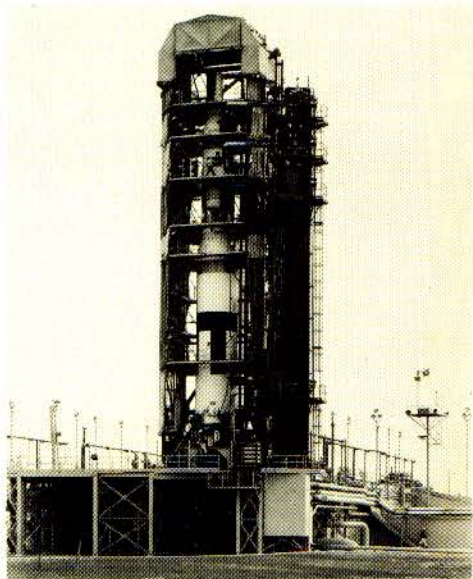
Juno facilities (10) are on the left. The Mercury-Redstone is also launched from this area as was Jupiter "C" which put up our first satellite.

The Army Pershing facility (11), left, has a small service tower.

The route proceeds through the Port Canaveral area where the Navy will have one or two vessels on display. A missile launching cruiser will probably be included, but at press time definite information was not available. Since the drive-through route does not pass closely to the Polaris facilities, the Navy will also have a display at some route location yet to be determined.



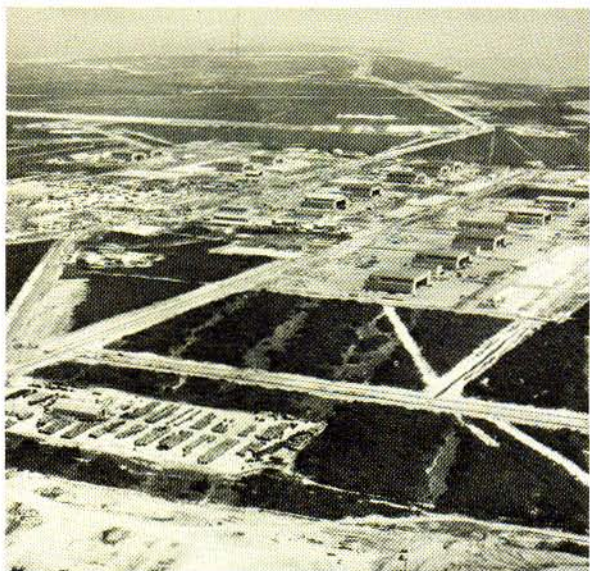
1 SATURN



4 TITAN



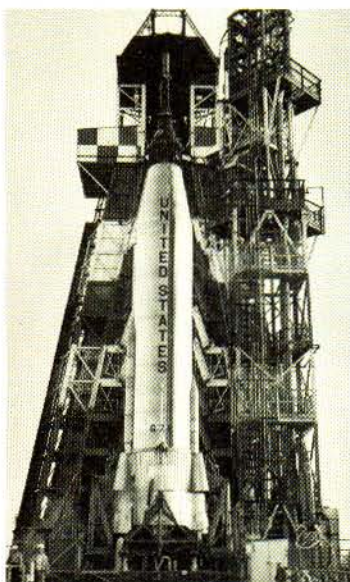
CAPE CANAVERAL MISSILE TEST ANNEX



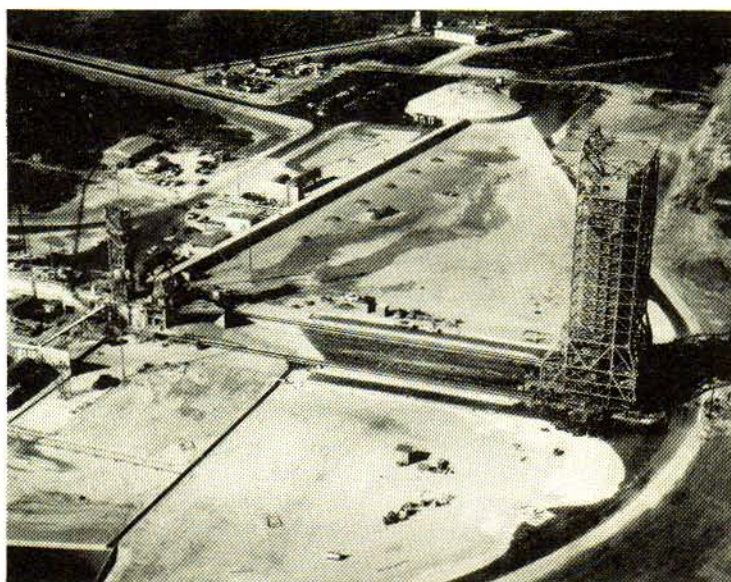
2 INDUSTRIAL AREA



3 CENTRAL CONTROL



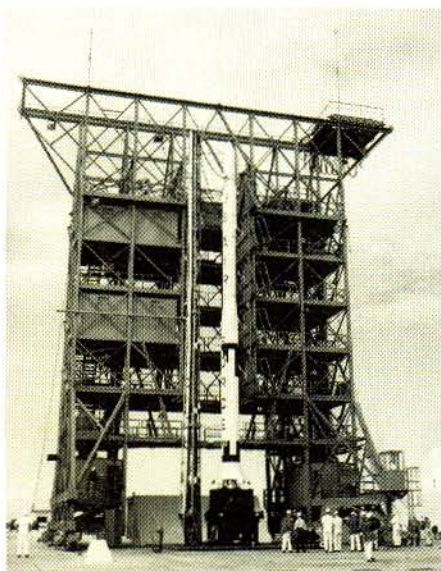
5 MERCURY ATLAS



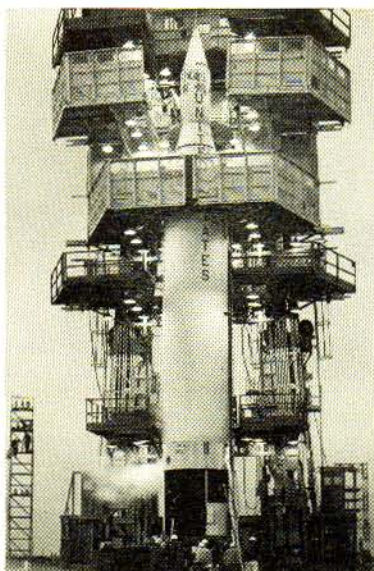
6 COMPLEX 36



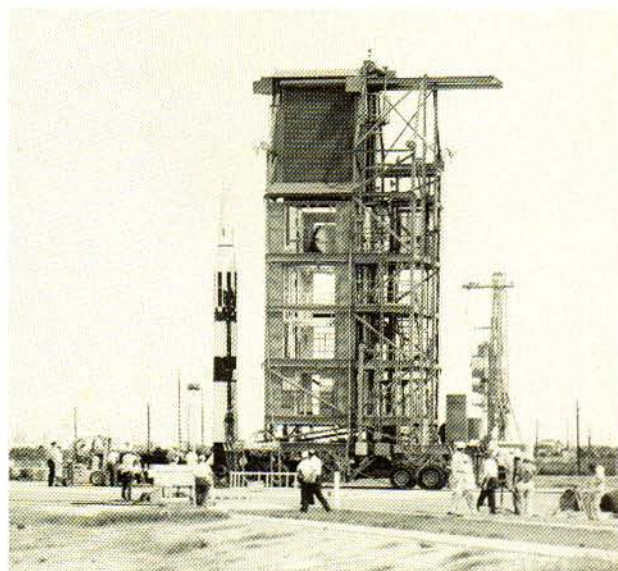
7 LIGHTHOUSE



9 BLUE SCOUT



10 JUNO



11 PERSHING

8 MINUTEMAN



POWER FOR PEACE

Facilities of the Air Force Missile Test Center are used by the Air Force, National Aeronautics and Space Administration, the Army, the Navy and a host of missile contractors. The purpose of the Center is not to build missiles but to test them. This entails a great deal more than the mere launching of missiles. Flight data is painstakingly gathered from the instance of lift-off to impact, thousands of miles away in the Atlantic Ocean.

Because of the unique nature of the Center's mission, there is rarely such a thing as complete failure at Cape Canaveral. Even when missiles explode on the test stand prior to launch, much valuable information is gained that will help in the perfecting of future missiles. The first Atlas ICBM flight ended in an explosion and was reported to the world as a failure. But the truth is that the missile was exactly 98 percent successful! Most of its test objectives were met.

Since July 24, 1950, when the first missile was launched at Cape Canaveral, a long and impressive list of accomplishments has been recorded. Eight missile weapon systems have been fully tested and are in the nation's operational inventory. These are: the Atlas, Thor, Polaris, Jupiter, Redstone, Snark, Matador and Mace. Advanced versions of the Atlas, Polaris and Mace are currently under test at Cape Canaveral.

The Atlas is an intercontinental range ballistic missile of proved accuracy. It has made flights up to 9,000 miles down the Atlantic Missile Range. It was an Atlas that went into orbit in 1958 carrying the President's Christmas greeting to the world.

The Thor is an Air Force intermediate range ballistic missile. It was the first IRBM to be sent to overseas bases. The last military version of the Thor was fired at Cape Canaveral in December 1959, but it is still used extensively as a booster for space vehicles.

The Jupiter is an Air Force IRBM developed by the Army Ballistic Missile Agency. The last Jupiter research and development test flight took place Feb. 4, 1960. It also is used as a booster for space vehicles.

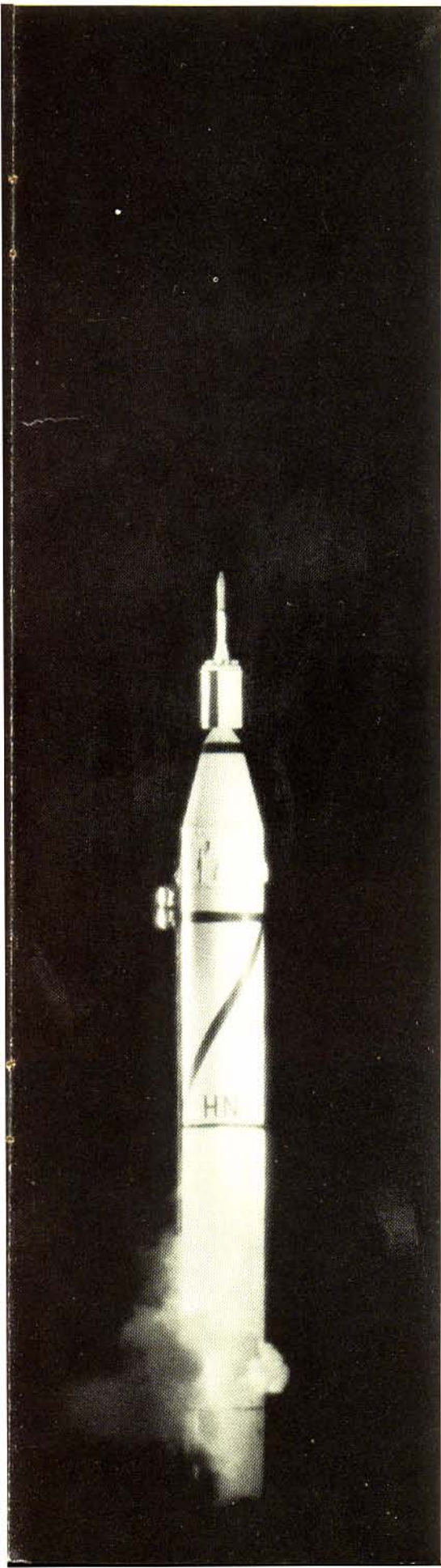
The Navy Polaris is an IRBM which can be launched from a submarine. At press time there were two atomic powered, Polaris firing submarines patrolling. These will soon be joined by two more. By the end of 1961, a total of six such submarines are expected to be operational.

Redstone is an Army missile of combat zone range and the Snark, Mace and Matador are Air Force cruise missiles. Cruise missiles have aerodynamic surfaces like those of an aircraft.

There are two other ballistic missiles of intercontinental range being tested at Canaveral. These are the Air Force Titan and Minuteman. The Titan is a two-stage liquid fueled missile and the Minuteman is a three-stage solid propelled vehicle. It is the first solid fuel ICBM to be tested. Titan II, now under development, is planned for use in the Dyna-Soar program. Titan I will also be employed as a booster for early Dyna-Soar spacecraft.

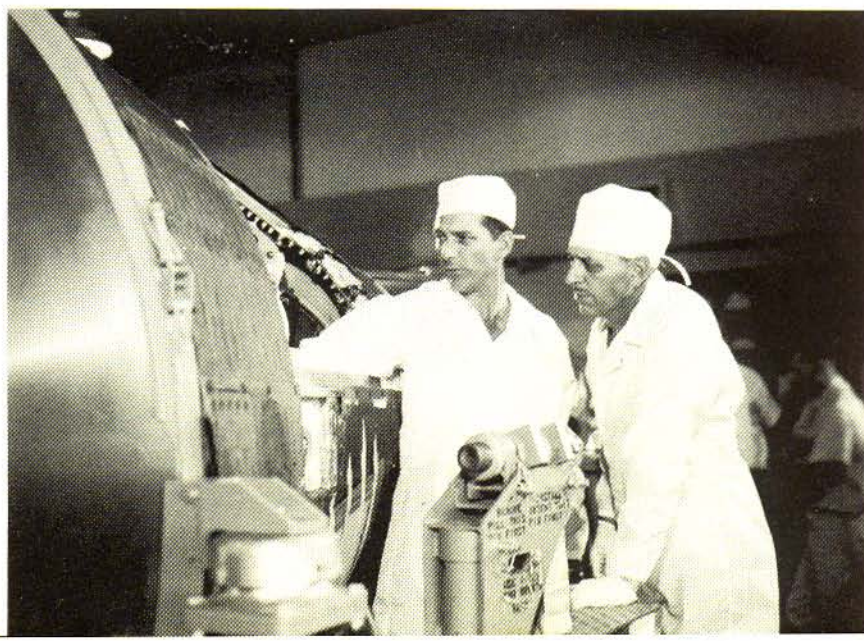
Jupiter C and the Moon





Placed in orbit by a Thor-Able space vehicle on April 1, 1960, Tiros I is still an active satellite. Its photographs of the earth's cloud cover have been widely publicized.

Absolute cleanliness and precision are watchwords for the men working with the Mercury — man in space-capsule.

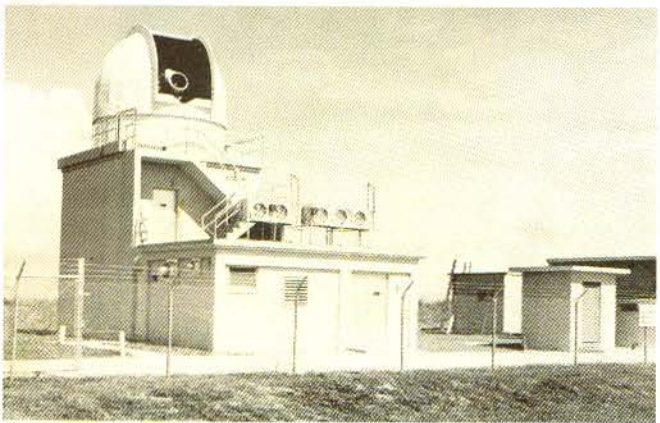




A huge C-133 "Cargomaster" parks on the skid strip at the Cape, opens the rear hatch, and out comes a Titan missile which is flown here from the factory in Denver, Colorado.



A missileman gets an accurate reading with his periscope that extends through the cement roof of an ICBM blockhouse.



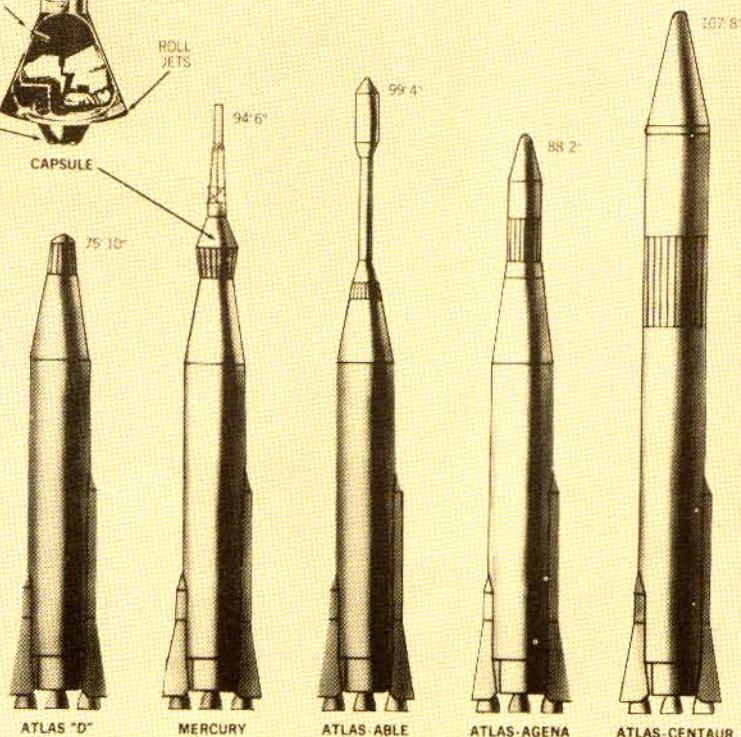
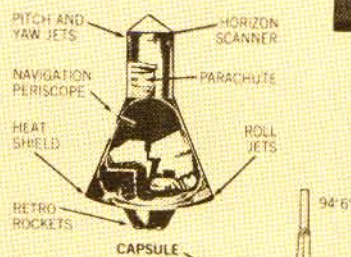
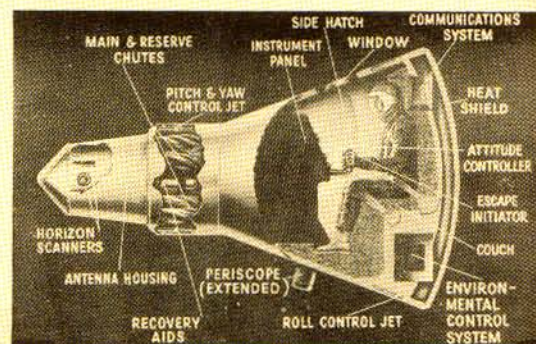
Site of a ROTI, a recording optical tracking instrument. This camera has a 500 inch focal length, and can photograph a baseball eight miles away. Several of these are used in missile tracking.



PROJECT MERCURY

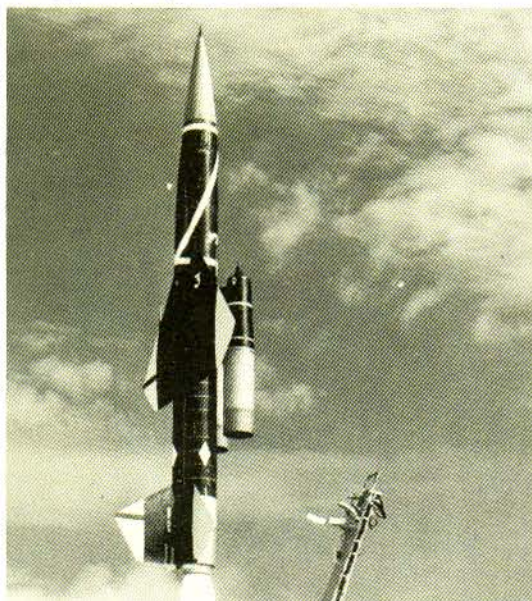


The "Astronauts" visit the Mercury Control Center at the Cape, accompanied by Chris C. Kraft, fourth from the left, Mercury flight director. All seven are in military or naval service. Left to right: Walter M. Schirra, Donald K. Slayton, Virgil I. Grissom, Kraft, Leroy G. Cooper, M. Scott Carpenter, John H. Glenn Jr., and Alan B. Shepard Jr.



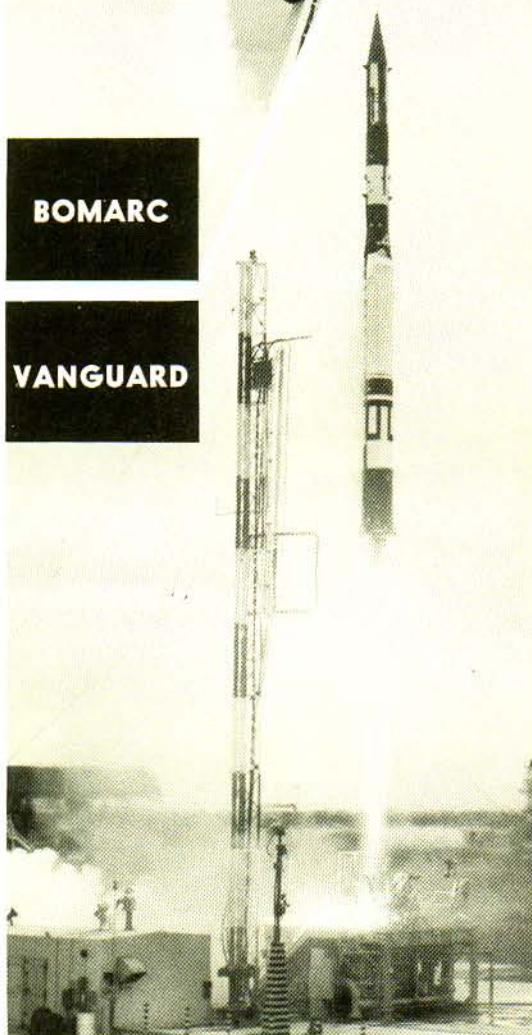
Several down-range ocean vessels are in use throughout the Atlantic Missile Range.

A Bomarc air-breathing surface to air missile, capable of carrying a nuclear or high explosive warhead, blasts off straight upward. It has a supersonic speed.



BOMARC

VANGUARD



A Navy Vanguard leaves its launch pad in a hurry. An early launch vehicle, it orbited three satellites.

Our "Old Glory" and the British "Union Jack" fly side by side on a down range station.



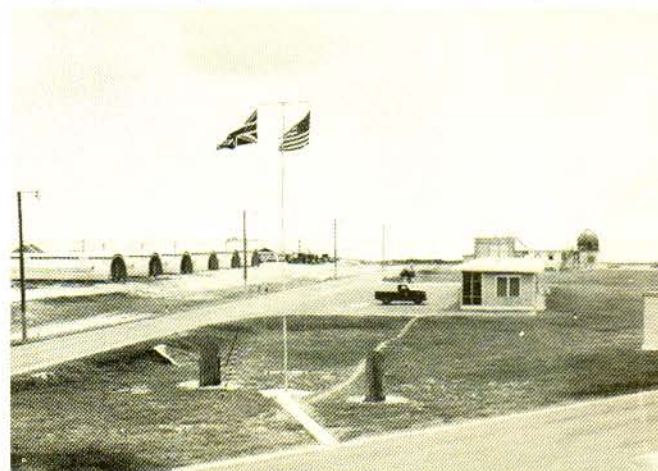
The Snark is an operational air-breathing intercontinental guided missile. Its launch weight is about 30 tons.



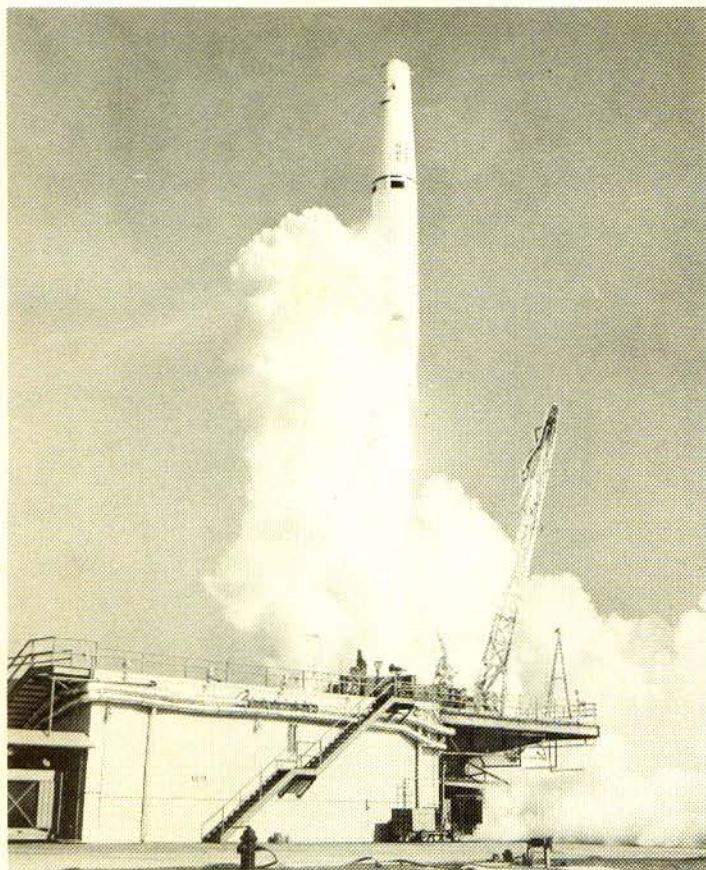
Aerial view of Patrick AFB, the runways, and Capehart housing, looking south on Highway A1A.



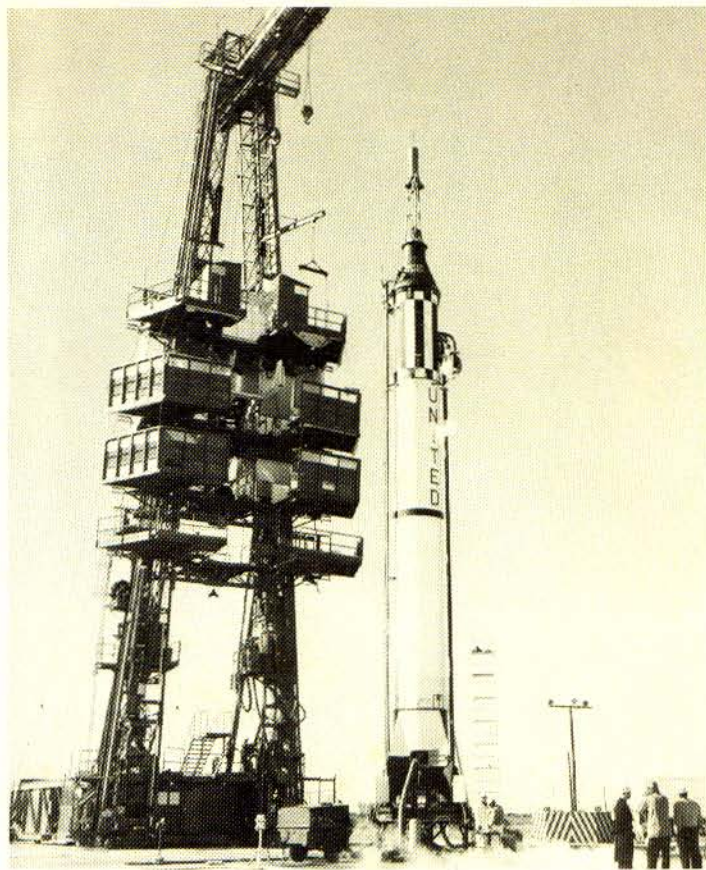
A Mace, tactical range cruise missile, streaks away. A surface-to-surface supersonic aerodynamic surfaced missile, it is similar in size to an airplane.



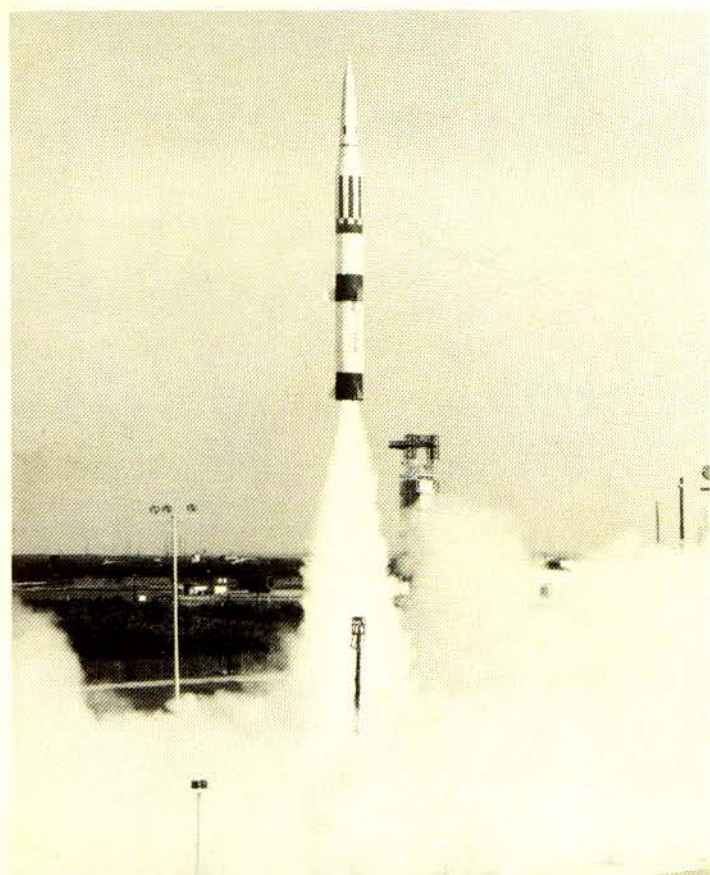
**ATLAS
FAMILY OF
SPACE
VEHICLES**



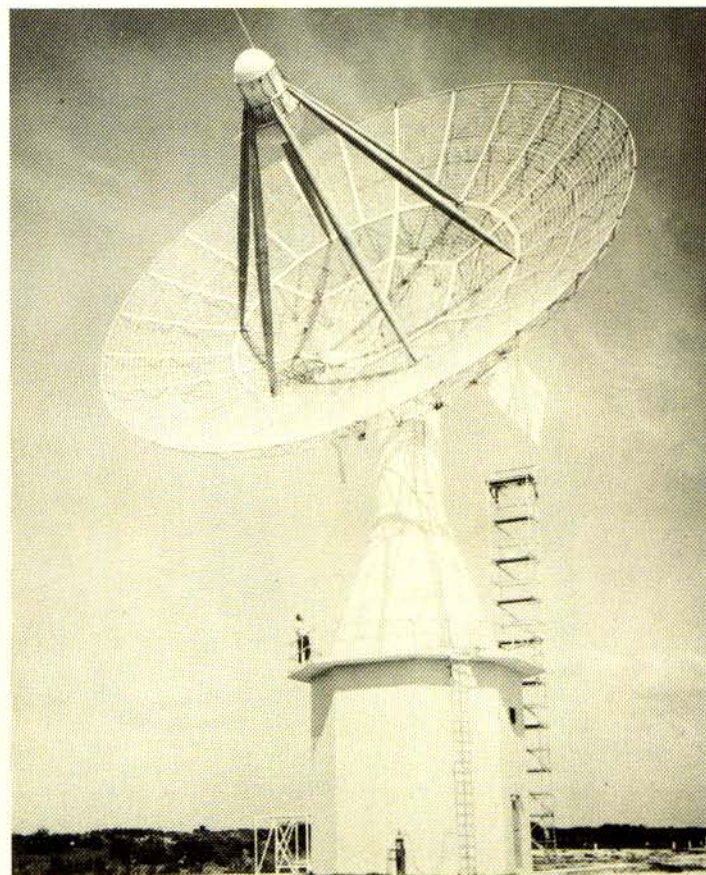
A Douglas Thor intermediate range ballistic missile reaches for the sky.



With a Mercury capsule visible on top of the striped section, A Redstone sits outside its gantry.



The Army launches its sleek Pershing, a combat range artillery missile.



Prominent on the horizon at the Cape is this 60 foot diameter high-gain dish antenna. It is a telemetry receiver, tracks automatically, and is used during missile and space launches.



TITAN