SPACEPORT NEWS

Volume 2, Number 39 | NASA Launch Operations Center, Cape Canaveral, Florida | September 26, 1963

NASA TO OBSERVE FIFTH ANNIVERSARY

HIGH WINDS, RAIN LASH CAPE, MILA

Unrelenting high winds and torrential rains, held over the county this week by a slow moving cold front, have drenched the Canaveral area.

On the Cape at Complexes 34 and 37, there were no major problems although there is a low land area east of the complexes. A sand dune sea wall kept much water out and pumps stayed busy aiding drainage.

At 37's Pad B, SA-5 was safe from the elements inside its service structure, which was designed to provide such protection from winds.

At the Merritt Island Launch Area, construction was at a standstill during the storm. Erosion was eating away at shoulders, and water clogged manholes.

At Complex 39's Pad A, fill was washed away and surcharge eroded.

At the oceanfront Apollo Office Building in Cocoa Beach, where many LOC office workers are housed, the wind-driven rain soaked walls and ceilings and flooded the first floor Monday.

All LOC employees were excused from work an hour early Monday because of rain which inundated Brevard County roads.

PERT PATT Corbett, of LOC's Technical Group, reminds us that leaf-raking time is just around the corner. Monday was the first day of autumn.

ASTRONAUTS ON TV

NASA's 16 astronauts will be on nationwide television next Tuesday night from 10 to 11 on a special show entitled "Apollo—The Lunar Mission."

The show will be carried locally on Channel 2.

The National Aeronautics and Space Administration was very much in business on the day it was born — Oct. 1, 1958 — and has been very much in business ever since.

Although nowhere near fully grown when it first emerged on the national scene five years ago next Tuesday, it had five space probe projects and three satellite programs started by the Army and Air Force, Navy, and all of what had been the National Advisory Committee for Aeronautics, including four major research laboratories.

In 1960, at Huntsville, Ala., NASA acquired personnel from the Army Ballistics Missile Agency, including Dr. Wernher von Braun.

Within 24 hours of its formal establishment, NASA had a staff of 8,400 people from the old NACA and Navy's Vanguard program. It was the nucleus provided by NACA from which the NASA of today has grown.

30,000 Employees

Now, as NASA approaches its Fifth Anniversary, it has 30,000 on its payroll.

At its birth, NASA had four major research centers. It now has ten. Its first budget in fiscal year 1959 was $339 million. Its 1963 Fiscal Year budget was $3.67 billion and Congress has been asked for $5.7 billion for the 1964 Fiscal Year.

The National Space Act establishing the agency required that NASA " . . . provide for research into problems of flight within and out-

(See NASA, Page 4)

UF KICKOFF TUESDAY; NASA GOAL: $15,000

Brevard County will kick-off its 1963 United Fund Campaign Tuesday, with hopes of reaching a record $307,500 goal by October 30.

NASA's share will be $15,000, about five per cent of the overall goal.

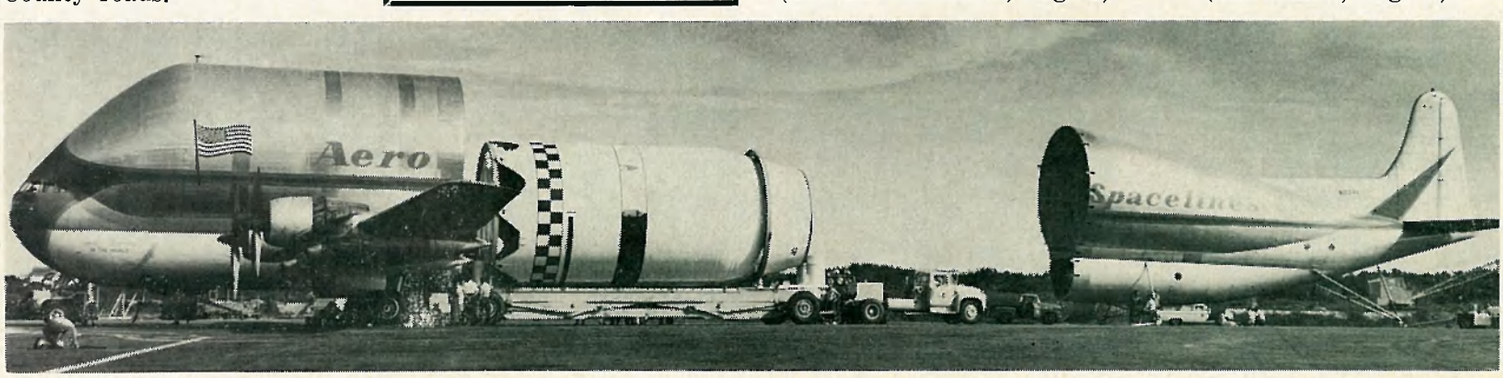
NASA Campaign Chairman Paul Siebeneichen, Chief of LOC's Community Development Office, said employees may participate directly with a single contribution, or they may make a pledge to be fulfilled over the next 12 months.

Siebeneichen and 32 NASA solicitors will attend an opening jamboree Tuesday in the Gemini Room of Schrafft's Carriage House in Cocoa Beach.

Money contributed to United Fund will be divided among 21 local, state and national health and welfare agencies.

The local program has the support of NASA headquar-

(See UF KICKOFF, Page 8)



THE FLYING Pregnant Guppy split in half at Canaveral's skid strip Satu rday to deliver its cargo, the S-IV second stage for SA-5.

SPOTLIGHT

FIFTH ANNIVERSARY

Five years ago — on October 1, 1958 — the entry of a proclamation on the Federal Register that NASA was "organized and prepared to discharge its duties" officially established the National Aeronautics and Space Administration.

As the first five years draw to a close, the American people may look back upon a series of successful missions in space research and exploration.

During the five years, NASA achieved manned space flight and advanced scientific knowledge of the universe, the atmosphere above the earth, and the earth itself.

Through its manned space flight program, NASA has proved that man can function satisfactorily in space.

NASA communications satellites have established the feasibility of a worldwide communications system, and weather satellites have led to increased accuracy in the prediction of hurricanes and the identification of weather patterns.

Research missions into deep space — to the areas of the sun and the planets, and to the moon — have provided scientists with a volume of previously unavailable data.

The success of NASA's first five years have established a sound basis for manned space travel to the moon and the planets, and for the future establishment of manned stations in space.

The significance of these and other accomplishments is being brought home as application of the knowledge we have gleaned provides tangible benefits to our world.

Of our accomplishments during the past five years we may be proud, but we cannot afford a rest upon our laurels. The challenge remains.

Meanwhile, from us to us — A happy fifth birthday!

SCIENCE AND RELIGION

Dr. Hugh L. Dryden, NASA Deputy Administrator, and a licensed lay minister in the Methodist Church, made some interesting comments during a recent interview concerning science and religion.

As a man who is deeply involved in both worlds, he sees no conflict between the two.

"Even a scientist needs religious faith," he said. "Science has made tremendous contributions to mankind. It has penetrated the mysteries of the material universe and freed the minds of men from ignorance and superstition.

"But science is a partial view of life, and in many respects, a narrow view."

Dr. Dryden does not accept the cliche that religious people live by "faith" whereas scientific people live by "objective" knowledge.

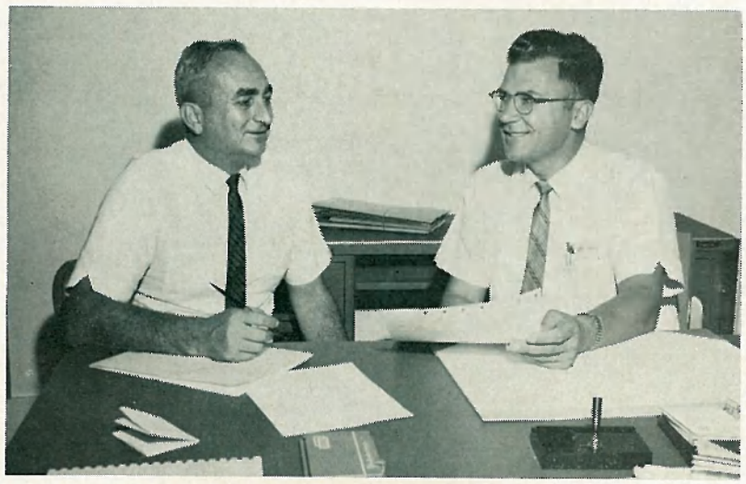
He said some people "are led to a purely materialistic view" of the universe while others are persuaded that there are both the material and the spiritual.

Either view, he emphasized, is necessarily held on faith, because neither can be demonstrated conclusively by the objective methods of science.

SPACEPORT NEWS

Published each week by the National Aeronautics and Space Administration's Launch Operations Center, Cape Canaveral, Florida.

LAUNCH OPERATION Support Division personnel gathered recently to receive service awards from Chief Bob Gorman, center. Left to right are C. Downing Sweat, Jr., 10 years; J. T. Campbell, supervisor; Gorman; Walter Collins, 15 years; Glenn Graham, 30 years; and Bernard Keene, 15 years.



WAYNE PRIDDY (left) discusses his new assignment with R. L. Body, Reliability Office Chief. Priddy, who formerly was Deputy Safety Director at MSFC, is assigned to LVO Technical Planning and Scheduling Office, and is attached to the office of the LOC Reliability Coordinator. A Navy veteran of World War II and Korea, Priddy has been a government employee since 1941.

Mars Fly-By Vehicle To Have Solar Panels

The Mars fly-by vehicle — another Mariner spacecraft — will have four solar panels with a combined area of 70 square feet attached to the basic structure.

At launch these will be nearly vertical, but will be erected when the spacecraft separates from the launch vehicle. Each panel is approximately three feet wide and six feet long.

The solar panel structures are being made at the Ryan Aeronautical Company, San Diego, California, under a quarter of a million dollar contract with NASA's Jet Propulsion Laboratory. Ryan also built the solar panel structures for the highly successful Mariner II which flew by Venus. The Mars fly-by is scheduled for launch in 1964.

Williams In London

Grady Williams, Chief of the Electronic Engineering and Instrumentation Office, is in London today manning a NASA Telemetry display at the International Telemetering Conference. The exhibit runs through tomorrow.

ENGINEER BEAMS OWN TV PICTURE

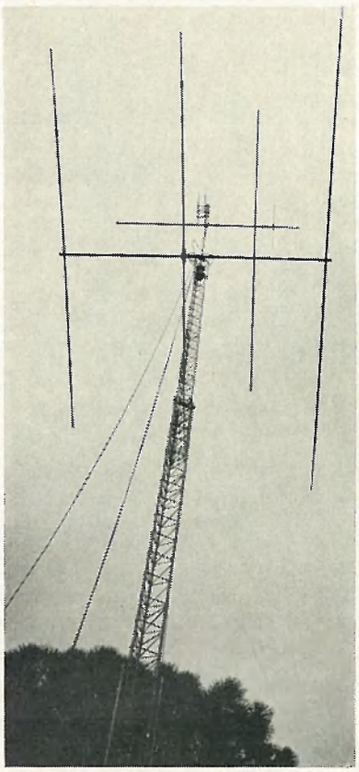
NASA engineer Hal Greenlee's TV tower and antenna is unlike any of his neighbors, or for that matter, anyone else's in the county.

It goes straight up — above the tallest pine trees that ring his front yard — to a dazzling height of 70 feet.

And atop the sturdy tower is not one but three different antennas, each with a separate function.

The astounding paradox is Hal doesn't have a TV set. He can't stand television!

The tower and a whole room full of complex radio and TV equipment inside his home on South Merritt Island are all part of his time-consuming hobby.



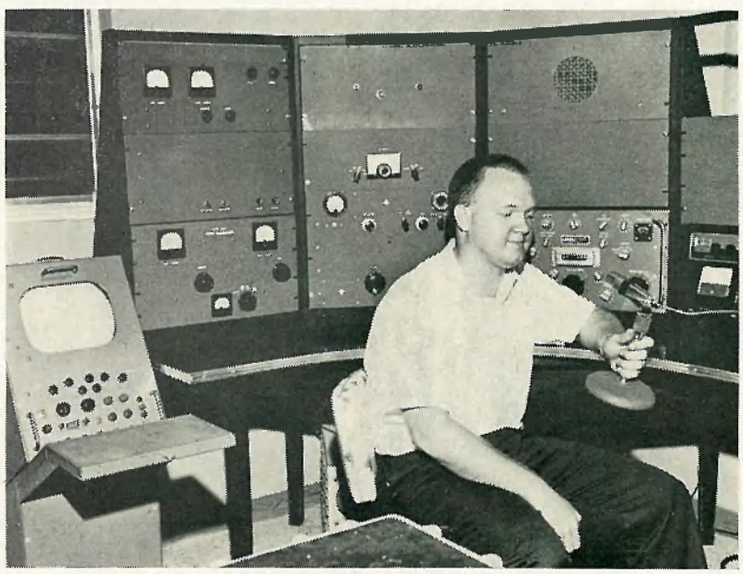
70-FOOT TV tower in Hal's front yard is topped by three antennas.

A licensed radio man since he was 15, Hal has now turned his talents to amateur television, and has built a station capable of projecting a TV picture over a 25-mile area.

The hitch is no one presently has the equipment needed to pick it up. By no means, discouraged, Hal is running test patterns anyway, and has long range plans to teach radio theory and other educational classes via TV once he does attract some viewers.

Anyone within the 25-mile limit can theoretically receive Hal's picture on their regular set, providing they have the proper converter and the knowledge to use it.

Hal is more enthused over the fact he can beam a picture than he is concerned that no one sees it. It represents a personal technical achievement that took many months of painstaking work and many more dollars.



SURROUNDED by banks of equipment, Hal prepares to transmit via short wave radio. With his 70-foot antenna, he can beam to practically any spot in the world.

HAL ADJUSTS converter on TV set to pick up picture of his wife Jo Anne, who was being photographed by the TV camera in another room.

News Photos by Jerry Cannon

A ham radio station isn't inexpensive, and amateur TV gear is even more costly. This is one reason, Hal believes, there are only about 100 people in the country like himself, who experiment with ham television.

For Hal, tinkering with electronic equipment is a long-standing labor of love. He has communicated via his shortwave radio with fellow hams in Russia, England, France, Denmark, Hawaii, Bulgaria, Germany, Italy, Panama, Ecuador, Canada and practically every state.

He became interested in television a few years ago and bought a couple of military surplus cameras with which he had little success. He worked on his present camera for six months to get it into shape. Now that he can transmit a picture, he is trying to encourage others not only to build converters so they can receive it, but also build stations of their. Several local hams are interested in the project.

Born in Panama, Hal grew up in the Washington, D.C., area, and graduated from William and Mary with a degree in Physics. He works in Canaveral's Hangar AE as an assistant engineer with the Goddard Space Flight Center's Field Projects Branch.

How much does he have invested in his hobby? About $2,000 cash and untold hundreds of man hours.

It is obvious, however, by the pleasure Hal takes in delicately manipulating the maze of dials, switches, lights and knobs on his banks of equipment, that the investment has been well worthwhile.

EQUIPMENT NEEDED? HERE'S LIST

For the technically minded, here's a rundown on Hal's television equipment:

The camera is a second-hand Dage industrial unit. It is a vidicon camera with a three-inch monitor viewfinder built into it. It has many modifications including one to allow driving the camera from an external synchronizing generator, which was necessary to make the video signal similar to a standard broadcast signal and compatible with all standard TV receivers.

The vidicon pickup tube is somewhat similar to the image orthicon tubes used in broadcast cameras, but much less expensive.

The synchronizing generator used to drive the camera is a home-made transistorized unit.

Hal's television transmitter operates in the 420-450 mc. amateur band at an average power input of 50 watts.

NASA TO OBSERVE 5th ANNIVERSARY

(Continued from Page 1)

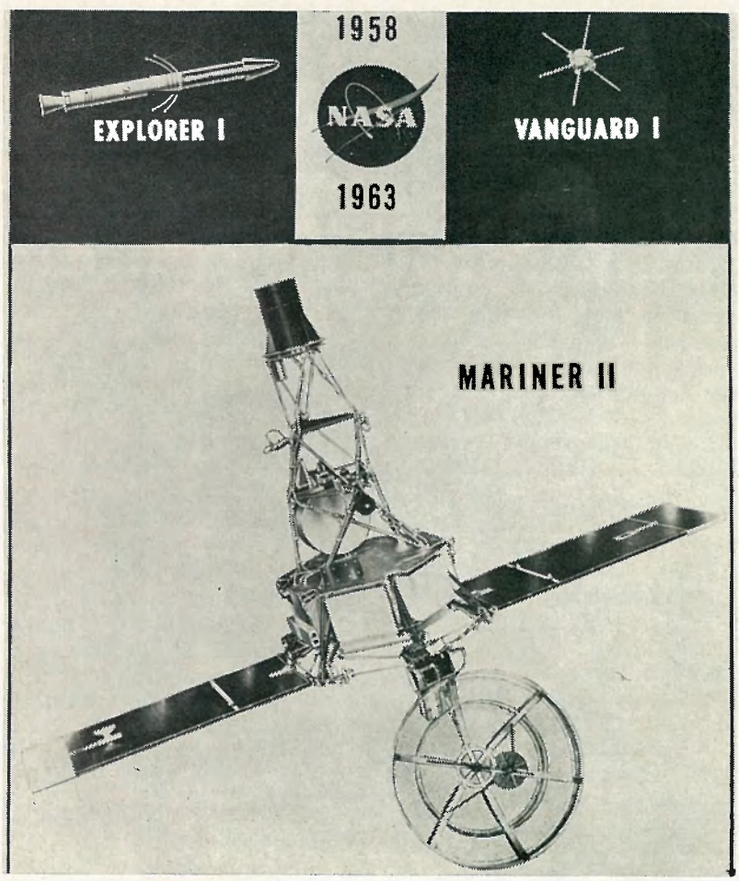
side the Earth's atmosphere, and for other purposes."

Continuing goals set forth by the President and the Congress include: unmanned lunar and planetary exploration; development and application of communications and weather satellites; development of launch vehicles and propulsion systems; extended aeronautical research; expansion of knowledge relating to space and how man can adapt to it; and international cooperation in space research.

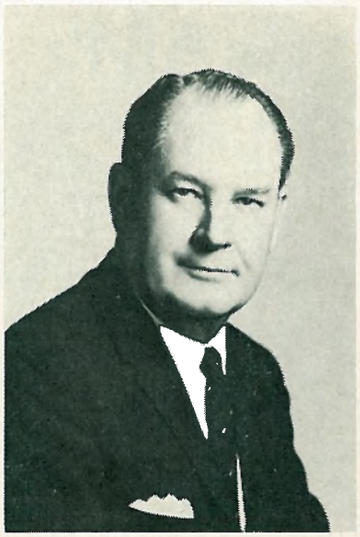
Space exploration became a major instrument of national policy with President Kennedy's statement to Congress on May 25, 1961, " . . . that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to Earth."

In each of these assigned roles, the space agency has made progress in its first five years. With more than 100 major launches, NASA has sent into space weather satellites, deep space probes, communications satellites, manned orbital space flights, and made numerous scientific discoveries. Thousands of sounding rockets have been launched to study the atmosphere.

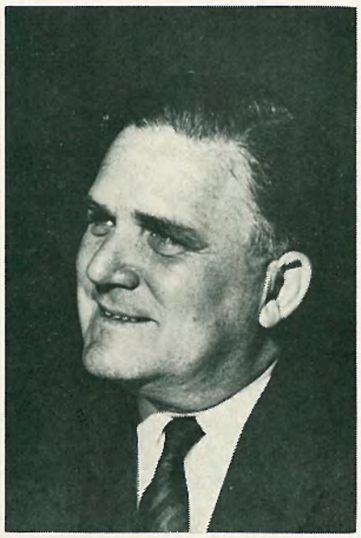
People the world over, and especially Americans, now know the Earth is somewhat pear-shaped rather than a perfect sphere. They also have heard about and have some knowledge of the X-15 research plane; the Van Allen radiation belts; man-made satellites; Echo, Telstar, Relay and Syncom; Mariner and Venus fly-by — all great achievements and discoveries in space exploration, and all directly attributed to an agency that did not exist only five years ago.



COMPARING NASA's first orbiting spacecraft — Explorer I and Vanguard I — to the very sophisticated Mariner II Venus prober — shows contrast in spacecraft advancement in the five years of the U. S. space program.



DR. T. KEITH Glennan served as the first administrator of NASA.



JAMES E. WEBB succeeded Dr. T. Keith Glennan as administrator of NASA on Feb. 14, 1961.

Manned Space Flights

Project Mercury, the first of three phases in achieving the nation's objective to reach the Moon, was successfully completed with the 22-orbit flight of Astronaut L. Gordon Cooper on May 15-16, 1963.

The Mercury project came out of pioneering work at the Langley Research Center, Hampton, Va., and grew into a truly national effort by the time John H. Glenn, Jr., made his historic three-orbit flight February 20, 1962.

The next two phases to the Moon are the Gemini and Apollo projects. The orginal seven astronauts, moved now from Langley to the newly established Manned Spacecraft Center in Houston, Texas, have been joined by nine younger astronauts. More are being selected.

The very nature of manned space flight, daring as it did to catapult man into the hostile environment of space about which very little was known, has overshadowed other great scientific achievements and space discoveries.

Flight to Venus

The flight of Mariner II past the planet Venus was of major scientific significance. Launched Aug. 27, 1962, it flew by Venus Dec. 14, 1962, extending the space communications record to 54.7 million miles. It transmitted to Earth vast amounts of data about Venus and interplanetary space. Follow-on programs will attempt to scan Mars.

Only a few months earlier, NASA had impacted the Moon with the Ranger IV. Launched April 23, the Ranger took three days to travel the more than 280,000 miles. Although the scientific objectives were not achieved, the flight did help prove the technology of an Earth "parking orbit."

Weather Satellites

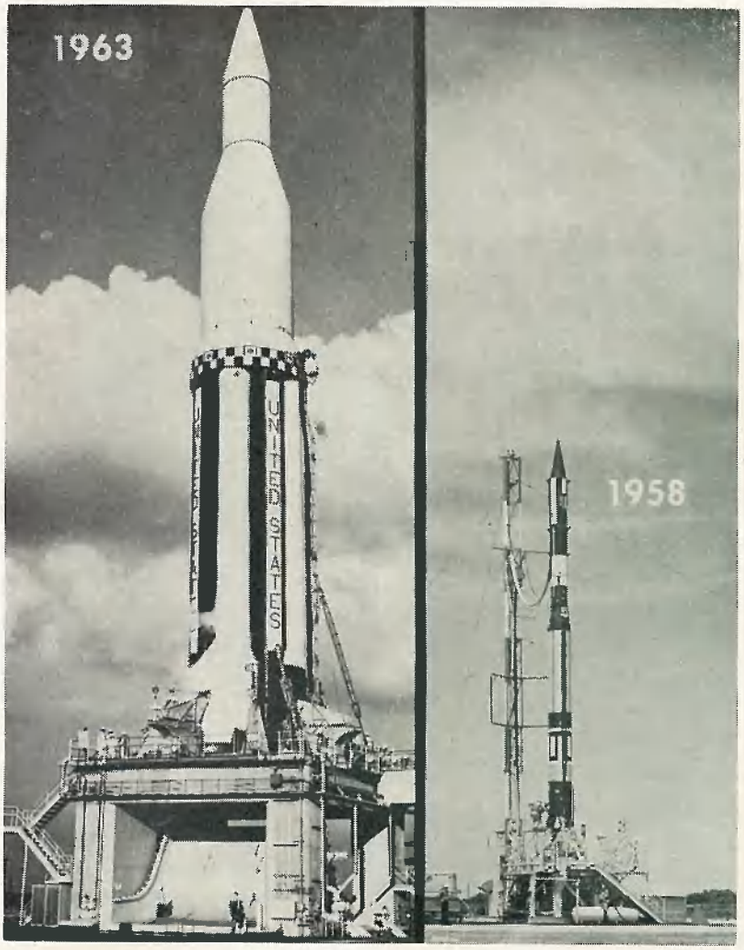
The first direct benefit to mankind from space technology came with the highly successful meteorological satellites. The TIROS (for Television Infrared Observation Satellite) has been a workhorse for weather forecasters, photographing vast cloud formations and giving early warnings of hurricanes.

The first of a series of seven TIROS was launched April 1, 1960. The most recent, TIROS VII, was launched June 19, 1963.

Communications Satellites

Telstar I, developed as a private venture by the American Telephone & Telegraph Company, was launched by NASA July 10, 1962 — the first of the active communications satellites. Linking two continents, it transmitted voice, teletype, photos and television.

It was followed promptly by NASA's Relay I which linked three continents. Both experimental satellites proved



NASA GROWTH is illustrated by the contrast of the 1958 Vanguard three-stage rocket (right) and the Saturn launch vehicle of 1963. Vanguard is 72 feet tall, and Saturn is 163 feet. Later, Saturn models will be used in the manned lunar landing program.

the feasibility of an "orbiting switchboard" for communicating between continents.

However, it was NASA's experimental Syncom II, launched July 26, 1963, which gave promise of a truly operational communications system. While it did not have nor was it intended to have, the communications capability of either Telstar or Relay, its orbit, synchronized with the Earth's spin, kept the satellite in the same relative position above the Earth. In this way intercontinental communications are possible 24 hours each day.

Syncom proved that three to four such satellites could be positioned to provide a worldwide, 24 - hour - a - day communications network via space.

Since taking over NACA's staff and facilities in 1958, the NASA has continued a broad program of aeronautical research and flight testing to assist the design and development of civil and military aircraft. Scope of the work ranges from helicopters to the fringe of space.

A stepped-up research program is supporting the national effort for a supersonic commercial air transport.

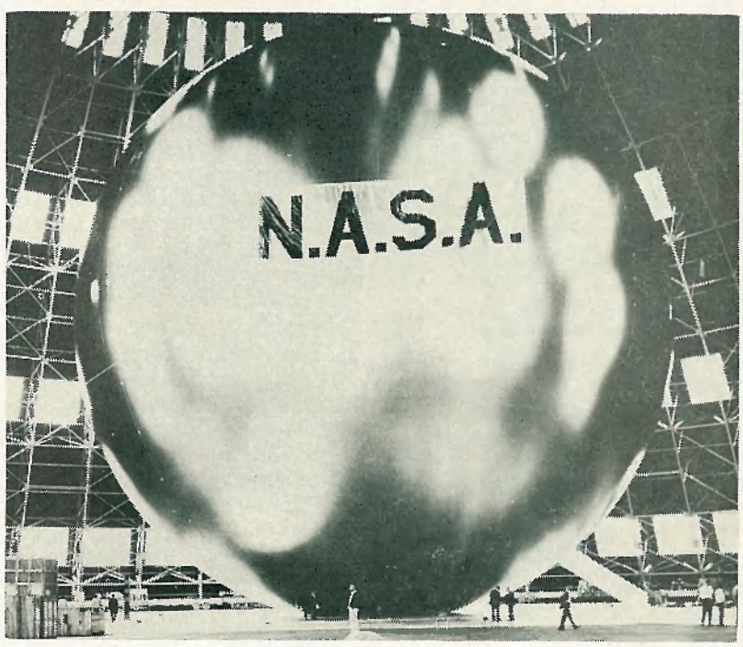
Scientific Knowledge

In five years, NASA scientists have gone well beyond the realm of science fiction in devising weird looking space vehicles with such names as OGO (for Orbiting Geophysical Observatory), OSO (for Orbiting Solar Observatory) and others.

From these and others yet on the drawing boards will come greater knowledge of the Earth's atmosphere and even greater knowledge of the Earth.

During its five years the NASA has openly shared its information with the world, and has cooperative space projects with more than 50 countries, including the U.S.S.R.

NASA GROWTH is illustrated by these two buildings. In 1958 (top) NASA Headquarters was housed at 1520 H St., the Dolly Madison House. In 1963 (bottom) the new headquarters offices, Federal Office Building No. 6 at 400 Maryland Ave., SW, Washington, D. C.



COMMUNICATION over intercontinental distances through the use of satellites was successfully demonstrated during NASA's first five years. Echo, a passive reflector satellite, was launched in August, 1960, and can still be seen by millions.

TOWERING high over the Merritt Island Launch Area landscape is this 250,000-gallon water tank, which along with a ground-level million gallon tank will service MILA's water needs.

Mixed Bowling League Enters Second Week

NASA's bowling League after two weeks, found the Tenpins four points winners over the Junkanoos to move into a tie for first place.

Don Oberlin with 533 and Jeri Yannotta with 461 paced the team.

The Sweet Nuthin's split with the Peapickers to remain tied for first place. Judy Dills with 485 and Fred Campbell with 476 led the way for the Sweet Nuthin's while David Bauman with 478 and Gen Link with 448 led the Peapickers.

The Baba's dropped 2½ points to the Pour Four.

The Wingdingers won three points from the Dare-Devils in a close one. Bill Lee had a 501 for the winners, Barcy Lamey a 528.

The Swingers divided four with the Long Shots and tied for third place with Peapickers and the Wingdingers. Al Branscomb and Becca Kinard were the high rollers, while Chuck Harvey and Bill Perkins knocked them down for the Long Shots.

The Gutter Dusters beat the Hot Shots 3 out of 4.

Scale Model Spacecraft Presented

A scale model of the 85-foot diameter spacecraft tracking antenna to be installed in Australia has been presented to Australian Ambassador Sir Howard Beale by Dr. Hugh L. Dryden, NASA Deputy Administrator.

The presentation symbolizes equipment to be operated at new tracking stations near Carnarvon and Canberra under amendments to the original agreement signed February 26, 1960.

The 1960 agreement established stations at Muchea and Woomera for the purpose of supporting the NASA program of space exploration.

The model was presented during a demonstration of tracking facilities and techniques by Edmond C. Buckley, Director of NASA's Office of Tracking and Data Acquisition, who has responsibility for installation and operation of equipment going to NASA sites in Australia and elsewhere.

"Australia is geographically vital for tracking in the Southern Hemisphere," Buckley said. "For that reason many American spacecraft projects are dependent on the Australian tracking stations and the excellent technical assistance provided by Australia in their operations."

Buckley explained that the station at Carnarvon will be especially important because most of the United States spacecraft launched from Cape Canaveral pass close enough to the west coast of Australia to be tracked from that site.

Carnarvon is almost diagonally opposite to Cape Canaveral, Buckley explained. Carnarvon lies at 25° south latitude while Cape Canaveral on the other side of the world is at 28° north latitude.

From the Cape the spacecraft heads southeast, crosses the equator, then swings on a northern curve up the Indian Ocean and toward the Pacific. Regardless of the azimuth angle of launch, the satellite passes within range of Carnarvon.

AERIAL VIEW of Launch Complex 36, looking east, shows construction progress of Pad A, service structure and access ramp. Pad B is in background.

APOLLO TO DEVELOP SEA RECOVERY GEAR

Industry has been requested to provide a study and models for development of Gemini/Apollo sea retrieval equipment.

An MSC proposal recognizes that Gemini and Apollo weights and sizes exceed the capabilities of existing deck winches and davits on destroyers and destroyer escorts. It is necessary to develop special equipment which can be readily placed on board a recovery ship and retrieve the spacecraft after water landings.

Although the Gemini and Apollo spaceflight programs incorporate ground surface landings, some of the early flights will end with water landings. MSC's contingency planning also calls for landing on the water in the event of emergency.

Proposals, to be submitted by October 3, will cover four phases of study. These are design concept, feasibility, preliminary design and model construction.

In the concept study, industry may design retrieval equipment so that it can be quickly attached or removed from the decks of a large number of ships, or the equipment may be more complex, requiring modification of the destroyers. In this case, a small number of ships will be fitted out and used.

Other factors considered in the design include weight of the equipment, its shipboard location and production costs.

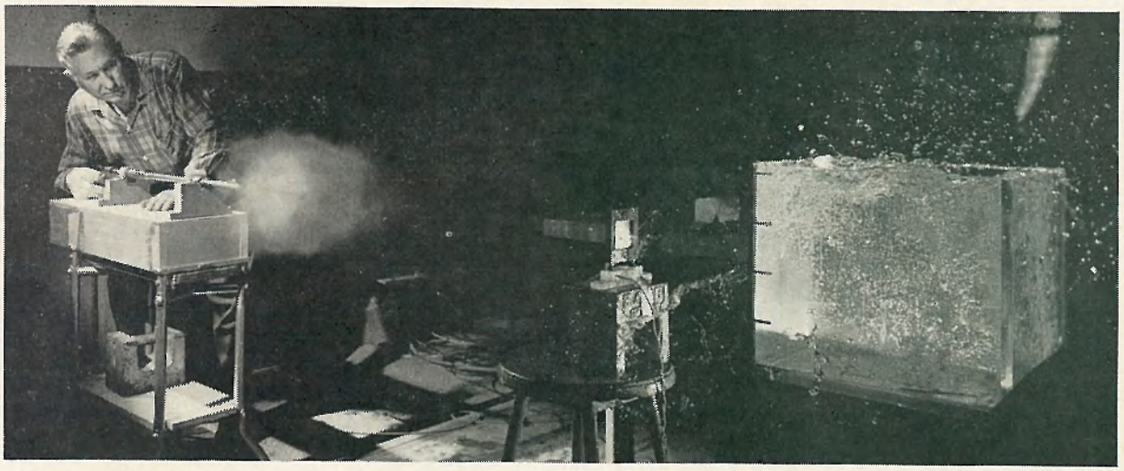
The study calls for methods of supporting and holding the spacecraft after it is placed on deck The steps in conversion of retrieval equipment from Gemini to Apollo use or vice versa is to be kept at a minimum and the devices must be reliable so that the safety of astronauts will not be compromised. Scale models will be built after approval of preliminary designs. The models are for testing retrieval techniques.

ACCOUNTANTS MEET

The Cape Canaveral of the Federal Government Accountants Association will hold its first meeting of the new fiscal year at Ramon's Restaurant next Monday at 6:30 p.m.

A film, "Building a Dynamic Organization" will be presented. Visitors and prospective members interested in accounting, budgeting, auditing and related management areas are cordially invited.

Among the newly elected officers are Eugene T. Nettles, NASA-LOC Regional Audit Office, Vice President, and Malcolm S. Stringer, Internal Review, Secretary.



HiGH-VELOCITY GUN fires tiny particles into this liquid-filled tank, simulating spacecraft's fuel tank, at Lewis Research Center. Purpose is to study what effect a michometeoroid might have if it were to puncture vehicle traveling in space.

NASA ENGINEERS BECOME MARKSMEN

Engineers at NASA's Lewis Research Center are becoming expert riflemen with revamped .22 caliber rifles that fire slugs at velocities 10 times that of ordinary bullets.

After a year of practice on the Lewis range, Francis S. Stepka and C. Robert Morse, engineers in the Materials and Structures Division, can hit the broadside of a spaceship's fuel tank with ease. Their modified rifles are loaded with little balls of nylon, aluminum, steel and, sometimes, even long copper slugs to simulate micrometeoroids that whiz through space at speeds up to 160,000 miles per hour.

Even though they are thought to be only tiny bits of celestial dust, micrometeoriods with such velocities can damage or even puncture spacecraft. NASA has launched several satellites designed to evaluate the micrometeoroid hazard and another more complete satellite study will be launched aboard a Saturn test vehicle.

Crucial Aspect

The Lewis engineers are studying a crucial aspect of collisions in space — a direct micrometeoroid hit on a fuel storage tank. If the micrometeoroid impacts with enough velocity to puncture the tank, some of the fuel or oxidant will leak out.

A recent NASA report refers to this as "simple penetration." What happens after penetration is the crucial problem. When a high-velocity particle penetrates the propellant tank wall, it will continue on through the liquid inside the tank. As it passes through, it causes violent pressure waves in the liquid in much the same way that ripples spread out from a stone thrown into a pond.

After firing numerous "space bullets" at various small tanks filled with different liquids, the Lewis group concluded that damage appears to vary with velocity of impact, material of the tank and the nature of the liquid in the tank.

There'll Be A Hot Time At Lewis

How hot is too hot to measure?

Thermonuclear rocket researchers at NASA's Lewis Research Center say 400,000 degrees Fahrenheit is not too hot. And they expect to be able to measure more than a billion degrees — as soon as they succeed in getting something that hot.

Such incredible temperatures are measured with very accurate spectrographic equipment in much the same way that astronomers have estimated the temperatures of the Sun and other stars.

Temperatures of millions of degrees exist inside stars where their structural materials have been changed by the intense heat into a swirling gas or "plasma." A plasma is merely a gas in which the atoms have become so active that they separate into their components — electrons and ions.

One of the big problems facing plasma researchers is how to measure temperature inside the plasma accurately. This is complicated by the fact that often the ions are at one temperature and the electrons at another. The usual way of measuring electron temperature is with a spectrograph.

The spectrographic method consists of comparing the heights of several spectral lines recorded by the spectrograph. A great many of these spectral lines will lengthen or shorten with changes in pressure as well as changes in temperature.

Thus, such measurements are accurate only insofar as pressure readings are accurate. Lewis researchers have eliminated this problem by finding and using a spectral line that is not affected by pressure changes.

In a recent test, the Lewis apparatus recorded an electron temperature of 20 volts, or about 420,000 degrees in an experimental helium plasma.

Echo To Be Inflation Controlled

Echo II, scheduled for launch later this year, will have a new controlled inflation system developed by NASA's Goddard Space Flight Center.

Earlier systems used a powdered substance that converted directly to a gas to inflate the balloon. The conversion to gas was uncontrolled and did not take place at the best time, severely reducing the available inflation pressure.

With the new controlled system, the substance, in the form of slabs, is confined in bags attached to the inside surface of the balloon. The bags are sealed with a low-melt-point adhesive wax to prevent gas forming while the balloon is folded in a canister on its way to orbit.

Heat Melts Seal

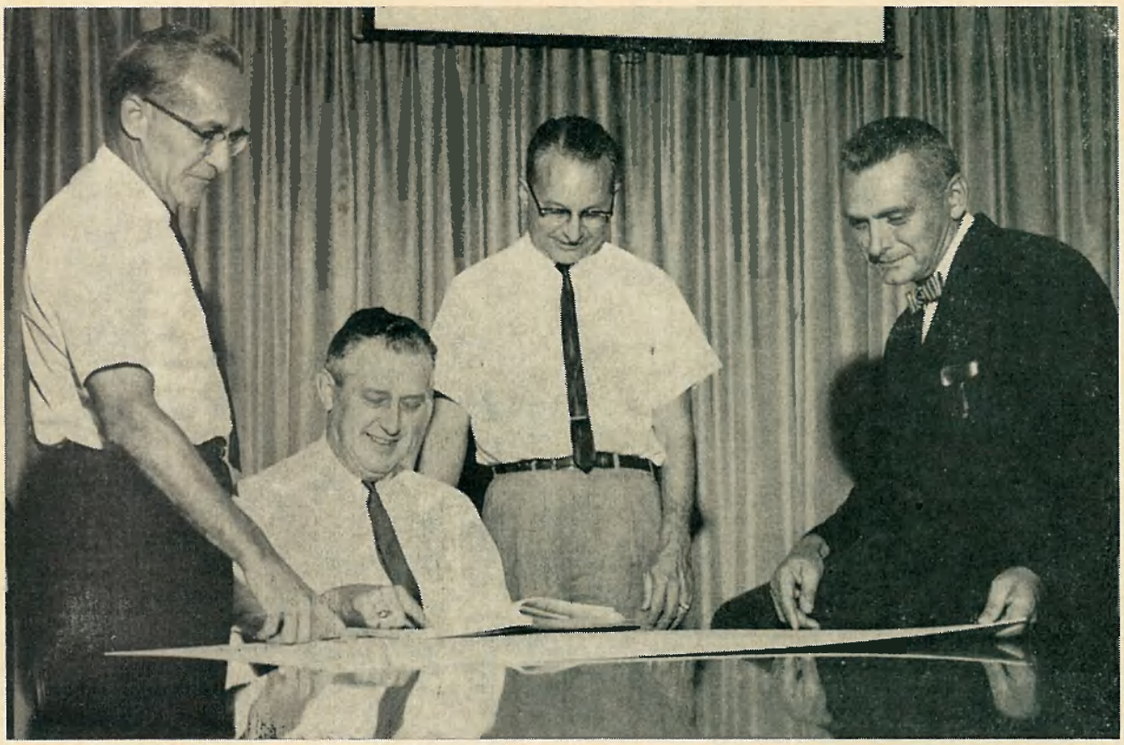
Upon deployment in outer space the heat transferred from the exterior to the interior surface causes the mean radiation temperature of the balloon to rise from 68 degrees Fahrenheit to between 120 and 140 degrees Fahrenheit. At about 98.6 degrees Fahrenheit the wax sealer melts, the bags open, and the slabs produce the gas pressure to inflate the balloon.

Because Echo II is a passive communications satellite, its surface must have a smoothness and roundness that only the proper amount of inflation pressure can produce.

Like the three-year-old Echo I — the first man-made passive communications satellite — Echo II will be spherical in shape. It will have a diameter of 135 feet, or 35 feet more than Echo I which was visible to millions around the world.

Launched from the Pacific Missile Range, Echo II will be injected into a polar orbit at an altitude of about 800 miles compared with Echo I's original orbit altitude of about 1,000 miles.

Drop tests conducted by the Goddard Center have insured that the bags can be attached to the balloon with no detrimental effects to the balloon material which consists of 0.00035-inch thick Mylar.



LOC's Community Development Chief, Paul Siebeneichen (right), briefed 32 employee-solicitors Friday on the coming United Fund Campaign. R. H. Glass (left), Boeing; V. M. Orr (sitting), Chrysler; and Art Snyder, Executive Director of UF in Brevard; assisted in the explanation.

UF KICKOFF TUESDAY

(Continued from Page 1)

ters. Administrator James E. Webb requested full support of the drive in a letter to LOC Director, Dr. Kurt H. Debus.

NASA's '63 goal is a 200 per cent increase over last year's $5,000 figure. NASA-AMR employees doubled their 1962 quota by raising $10,022.

"Last year we received a UF campaign award for exceeding our goal," Siebeneichen said. "We plan to go all out to top our quota again this year."

Regulations On Way For CS Withholding

President Kennedyhas asked the Civil Service Commission to prepare regulations that will permit voluntary withholding of employee-organization dues for Federal employees, to be effective about January 1, 1964. Cost of the service will be paid by employee organizations, with fees set by CSC.

At the same time the President requested CSC to study the feasibility of a similar plan for employees' voluntary contributions to United Funds and to national health and welfare agencies.

Dear Sir:

"We would like to know something very special. It is important, but it is top secret, so we are sworn to secrecy. We would like to have some folders about space and we would like to have the secret fuel that makes the rockets go up. What is it made of? We know it is important, but we need it badly."

All of us,
Syracuse, N. Y.

NASA NEWCOMERS

Eight new employees have joined LOC in the past week. They are:

Lawrence F. Benford, Jr., Roma D. Bowers, Travis V. Buchanan, Joyce A. Owen, Frank R. Penovich, Erwin M. Priddy, Grace L. Rebisc, and James M. Stumpf.

Security is your responsibility.

INNER SPACE EXPERT JACK OF ALL TRADES

An official who was frustrated and discouraged over trying to solve the many office space problems of his agency wrote **General Services,** Uncle Sam's over-all space manager, to relate his troubles and to ask what he should do to do a better job. In reply, GSA told him he needed the following characteristics:

The curiosity of a cat.
The tenacity of a bulldog.
The determination of a New York cab driver.
The patience of a self-sacrificing wife.
The diplomacy of a wayward husband.
The enthusiasm of a twist dancer.
The simplicity of a jackass.
The assurance of a college boy.
The tireless energy of a collector of bad debts.

SHOPS SECTION PARTY

Approximately 140 were in attendance as personnel of Shops section of the Supoprt Branch of the Lunar Operations Support Division held a dinner dance at the Tradewinds Cafeteria in Cocoa last Saturday evening.

Last week we ran some definitions culled from the NASA booklet, "Apollo Terminology." Response to the column has prompted a second story.

Pickoff, which in baseball causes embarrassment to base runners, means, when applied to space, a sensing device that responds to angular movement to create a signal or to effect some type of control.

Pilgrim, appropriately enough, refers to the lunar colonization project.

A **rockoon** is a rocket research vehicle designed to be carried by a balloon to very high altitude before being fired.

Skylark is a sounding rocket, and **slurry** is a suspension of fine solid particles in a liquid.

A small pyrotechnic device used to fire the igniter in a rocket is called a **squib.**

A new word is **terrella,** a self-contained manned spaceship in which crew life is maintained during space flight by a closed cycle breathing system.

And how's this for clarification: **Sigma Limits** — the interval expressed in units of standard deviation.

Or, if that one didn't throw you, try **stochastic variable** — quantities with a definite range of values, each of which, when chosen at random, can be attained with a definite probability.

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Employees of the Publications Branch of LOC's Technical Information Office will gather Friday night at the Patrick AFB Officers Club for a buffet dinner and dance.

Social hour will be at 6:30 p.m.

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The Mercury Club's Luau, scrubbed last Saturday due to inclement weather, has been recycled for this Saturday from 7 p.m. to 1 a.m. at the Patrick AFB Officers Club.