

SPACEPORT



NEWS

Volume 2, Number 4

NASA Launch Operations Center, Cape Canaveral, Florida

January 24, 1963

Apollo Gets Lion's Share

\$7.614 BILLION SOUGHT FOR SPACE PROGRAMS

President Kennedy has asked Congress for a total of \$7.614 billion for space in Fiscal Year 1964, with NASA's share pegged at \$5.663 billion.

Other proposed expenditures for space include \$1.667 billion, Department of Defense; \$254 million, the Atomic Energy Commission; \$26 million, the U. S. Weather Bureau; and \$2.3 million, the National Science Foundation.

NASA's total budget request is for \$5.712 billion but included in the figure are funds earmarked for aircraft technology.

Of NASA's total request, about 20 per cent is for the Apollo program and about \$306 million for Gemini.

At a news conference, D.

Brainard Holmes, Director of the Office of Manned Space Flight, broke down the Apollo program anticipated expenditures:

\$650 million - command ser-

(See BUDGET, Page 8)

Boston Eyed As Research Center Site

Congress will be asked this year for money to establish a NASA electronics research center in the Boston area.

NASA Administrator James E. Webb said the center, "if it develops the full potential we expect," will represent an investment of about \$50 million and will employ about 2,000 persons.

Congress will be asked for an initial \$5 million to establish the center — \$3 million for land acquisition and \$2 million for planning and design of facilities.

According to NASA Associate Administrator Dr. Robert Seamans Jr., the electronics research center will be located on a 1,000 acre site in the greater Boston area, selected because of "the very strong university support we can receive in this area as well as the industrial support we can obtain there in electronics."

Dr. Seamans said, "We have made a very careful study of the requirements that we have NASA.

"We also find that as we are growing in size we run the risk of increasing some of our centers to the point where it may be difficult for them to really do good research and development work.

College Program To Enroll 4,000 'Within Few Years'

NASA hopes to have 4,000 college students enrolled in its training grants program "with the next few years."

Dr. Hugh L. Dryden, NASA deputy administrator, traced the history of the training program at a news conference on the budget for FY 64.

"We started," he said, "in 1962 with grants to 10 universities, ten fellowships each. In 1963, we have about 800 additional people. In 1964, we contemplate 1,250 more. So, at the end of '64, there will be 2,150 graduate students supported under this allocation."

He also said NASA has begun a program of facilities assistance — "including brick and mortar." Under it, NASA contributes toward the physical facilities needed for universities and colleges to carry out the training programs.



MERRY MINISTERS were part of a group of Episcopal Bishops which toured Cape as guests of NASA and the Air Force. Visiting blockhouse of Saturn Launch Complex 34 were from left, seated, the Right Reverends Henry I. Louttit, Bishop of South Florida; Chandler W. Sterling, Bishop of Montana. From left, standing, are the Right Reverends William L. Hargrave, and James L. Duncan, Suffragan Bishops of South Florida.

Treks To Outer Space Seen As Fifty Generations Long

Man may never know if life exists elsewhere in space outside our solar system.

This was stressed by Dr. Roger Revelle, Scientific Advisor to the Secretary of the Interior, in a report published recently by the American Institute of Biological Sciences.

In all likelihood, there are billions of planets, many quite like earth, revolving around the suns - or stars - of the universe. All stars, in fact, may have planetary systems. But the nearest star and

planet system is too distant for any sort of communication to be established in several human lifetimes, Dr. Revelle pointed out.

A radio message to one of the planets of Betelgeuse or Rigel — among the nearest of our star neighbors—would require several hundred years and the reply would require an equal time. A radio message from one side of our galaxy to the other would take 200,000 years before a

(See TREKS, Page 8)



SPOTLIGHT

HERE'S THE PAY-OFF

"Where's the pay-off? What are we going to get back for all the money we're spending?"

This is a rather common query from our friends and neighbors who are still carport oriented but who want to hear the word on space-age developments.

In answer, we can't see how much could be added to the space philosophy expressed recently by NASA Administrator James E. Webb:

"The most important reason for going into space—the one which promises the greatest rewards for mankind—is the least understood and the most difficult to explain.

"Scientists don't know what they're looking for in space. If they did, the best reason of all for spending the money that's going into the U.S. space program wouldn't exist."

One easy-to-understand reason for space exploration is, as he sees it, the belief that "the basic" scientific knowledge gained and the technological applications which will flow from it will unquestionably be the greatest reward over many years ahead which this investment of our national resources will produce.

"While we do not know what the fundamental discoveries in space will be, we do know that they will be made, and that they will add understanding and knowledge which will be applied to practical problems in ways which will profoundly affect our future lives.

"Exploring space is in many ways like walking down a strange street — we know the street is there and that it must lead somewhere, but we never know what is around the corner.

"History has repeatedly proved that many of the most valuable discoveries in science and technology have been unforeseen and, indeed, unforeseeable.

"The telephone, the radio, the electronic computer, the vacuum tube — all were outgrowths of experiments undertaken to help answer questions in the minds of scientists, not to achieve some carefully defined goal."

HOSTILE COMMUNITY

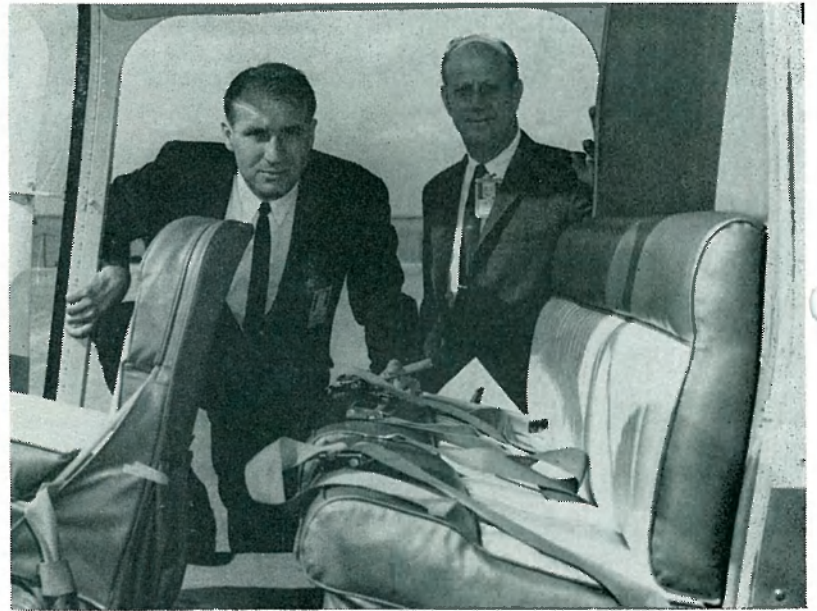
While the telemetry from Mariner II is being de-coded, an imaginative writer has speculated on what results might have been reached if the earth, in turn, had been under observation by a satellite from Venus.

It is not unreasonable, he suggests, that a report of an observation of Earth might be something like this:

"Temperature measurements of Earth's surface indicate a world meteorologically hostile to any form of life that might be recognizable on Venus. Two thirds of the planets surface is covered with a turbulent, saline liquid uninhabitable by air breathing creatures.

"Much of the limited land surface appears to be frozen wasteland. Mysterious blankets of white capable of supporting only the most primitive form of life cover the south pole and extend downward from the north pole for a distance of perhaps 6,000 miles.

Radio signals intercepted in the atmosphere indicate, however, that some primeval form of society is struggling to survive in that incredibly hostile world. Atmosphere analyses reveal terrible physical deterrents to the development of any advanced form of life. Much of the air blanket enveloping the northern sector of the western hemisphere is a gaseous form of garbage compounded of lethal chemical wastes and dangerously radioactive substances. We have concluded, therefore, that no form of creature dependent upon lungs could develop or survive in such an atmosphere."



NEW CONSTRUCTION and Facilities were seen from helicopter by Colonel R. P. Young, left, Executive Officer from the Office of NASA Administrator James E. Webb and Colonel C. Bidgood, Chief, Facilities Office.

Radio Astronomers Suspect Scorching Winds Sear Venus

Venus may be little more than a king-sized dust bowl, scorched by 600 degree temperatures and scoured by sandstorms moving at hundreds of miles per hour — and as such may not be a popular stopping place when space travel begins.

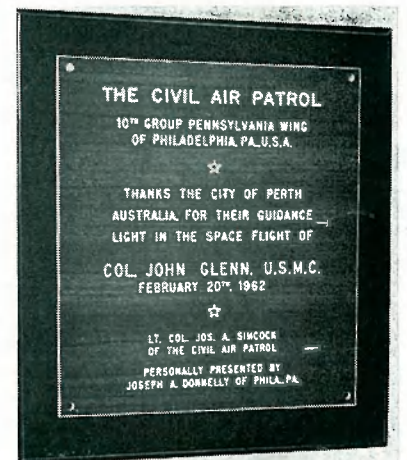
This is the picture of Venus suggested by recent radar and radio telescope studies of the planet made at scientific stations of the Naval Research Lab and Jet Propulsion Laboratory in California.

Studies by radio astronomers suggest that the atmosphere contains very little, if any water. They further suggest that the temperature of the planet may be 600 degrees or more.

There is evidence, scientists say, that enormous amounts of heat are being transferred from one side of the planet to the other as it turns lazily at a rate of once every 250 earth days. This heat transfer, they think, may be the mechanism for generating the high speed winds which lash the planet's surface and cause

the giant sand storms.

How accurate their picture is, radio astronomers say, will be partially determined sometime this month when the bulk of the results from the Mariner II fly-by, which are still being analyzed, are made public.



THANKS to City of Perth, Australia was expressed in plaque above after city left lights on as aid to John Glenn during "Friendship 7" flight. Donor was Joseph A. Donnelly, a Civil Air Patrol member from Philadelphia.

SPACEPORT



NEWS

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

Pioneer American Rocketeer Faced Long Odds, Short Aid

The father of American rocketry was a prophet without honor in his own time.

He was Robert Hutchins Goddard, a scientist whose name was little known to the public before NASA's Flight Research Center at Greenbelt, Maryland, was named in his honor.

German scientists rightfully are credited with being the first to develop operational missiles. But German successes in World War II — the V-2 rockets and buzz bombs — were based in large part on Dr. Goddard's experiments and writings.

It is little known, for example, that on May 31, 1935, one of his rockets shot 7,500 feet into the air. About that same time, the Germans tried a similar rocket. Walter Dornberger, head of a German experimental rocket institute, noted later that it "got stuck in its launching rack."

Some early successes in American rocketry were scored 33 years ago in a desolate section of New Mexico, which had been dominated only 50 years before by hard eyed Apaches who gave their name to Goddard's pioneer rocket station — Mes-calero Ranch.

He was then running America's only rocket program on a grant of \$25 thousand a year.

Some of the items he used in experiments then are on display in a New Mexico museum:

A couple of tobacco cans used as feeder valves; an

servo will be built to supply water for cooling stand flame deflector plates and for the fire fighting systems.

One Year Ago

Jan. 24, 1962—An attempt to orbit Composite 1, actually five satellites in one, from the Cape was unsuccessful.

Jan. 26, 1962—Ranger 3 was launched from the Cape. Excessive acceleration by the Atlas 1st-stage booster caused the 727-lb. payload to pass 22,862 miles in front of the moon on Jan. 28, instead of impacting as planned, but it proved out many of the systems within the payload, including the mid-flight guidance system.

alarm clock motor used to power a measuring device; a silk parachute stitched by Mrs. Goddard, a devoted supporter of her husband's experiments.

The fundamentals of the liquid fueled rocket were developed by Dr. Goddard with his own money and a few laboratory funds when he was a graduate at Princeton and a young instructor at Clark University in Worcester, Mass. While still a student in 1914, he had been granted a patent on a two stage rocket, prototype of the Atlas.

The Smithsonian Institute began to support Dr. Goddard's research in 1916, and the Army Signal Corps put him to work on a small tactical rocket, a forerunner of the bazooka, during World War I. He was so lightly budgeted in his work that he used ordinary metal music stands to support his launching tubes.

Classic Study

The Army lost interest in his work at the end of the war, but a stute German rocket scientist sent for his classic study, "A Method of Reaching Extreme Altitudes," which the Smithsonian published in 1919, and pushed their own experiments. Their V-2 missile was quite similar to the rocket described by Goddard in his study.

He went back to teaching at Clark University and pursued his lonely research with occasional grants from Smithsonian. In 1925, he built a 12 pound rocket that lifted its own weight for a "flight" of 27 seconds.

The next year at a test on a friend's farm, his rocket went 220 feet. But when he developed larger rockets, Massachusetts authorities became alarmed and banned all further tests.

His flight testing came to a standstill for more than a year as he sought funds and a place to fly his rockets. Then through Charles Lindbergh, he received \$25,000 from the Guggenheim Foundation and resumed his work in New Mexico.

He died in 1945, after having seen his early ideas developed to a high degree of success — by another nation.



"I WISH I HADN'T BEEN CLEARED FOR SECRET !! IT'S DRIVING ME CRAZY NOT BEING ABLE TO TALK."

Search For Space Life Deemed Vital To U. S.

The search for life outside the earth should be one of the top priority ventures in our space program, a group of prominent American scientists have recommended to NASA.

The study from which the recommendation came was conducted under the auspices of the Space Science Board of the National Academy of Science at NASA's request. More than 100 scientists participated in the study which was held at the State University of Iowa last year.

The academy's report to NASA, "A Review of Space Research," also observed:

"The search for extra-terrestrial life has an obvious and compelling fascination for peoples of all nations. In a few short years this topic — at one time merely science fiction — has been lifted from the category of escape reading and whimsical speculation and now stands as a serious objective of the international space race.

Enormous Impact

"If life does indeed exist on another planet and we or the Russians find it, that discovery will have an enormous and lasting impact on people of every race and culture the world over, whether they are scientists or not."

The Space Science Board

recommended, too, that scientists play an active part in manned exploration of the universe, specifically suggesting that:

1. A "scientist-astronaut" be a member of the crew that explores the moon.
2. A meteorologist be a co-pilot of future manned orbiting space observatories.
3. Biologists fly with other Astronauts to Mars, where it is thought some form of life may exist.

SPACE ALMANAC

A CHRONOLOGY OF
EVENTS IN SPACE
EXPLORATION AND
RESEARCH.

Three Years Ago

Jan. 25, 1962—The U.S. and Great Britain announced a cooperative satellite project. A Scout launch vehicle was to be used to launch a British-constructed satellite for experiments designed by British scientists.

Jan. 26, 1960—A Javelin four-stage sounding rocket reached an altitude of 600 miles after its launch from Wallops Island.

A three million gallon re-

Profile: G. Merritt Preston

Huge Responsibility Rests On Spacecraft Center Head

Five times in the last two years, G. Merritt Preston faced a problem which, though simple to state and easy to understand, was staggering in scope and chilling in its implications.

As Manager of Cape Operations for the Manned Spacecraft Center and Chief of Pre-Flight Operations, he had personal responsibility for declaring the director of the Manned Spacecraft Center:

(1) Insofar as was practicable, the Spacecraft systems would assure the safety of the Mercury Astronaut, and

(2) The Mercury Spacecraft were flight ready.

His successes would seem to speak for themselves.

Upon Preston — and the large group of highly skilled and dedicated people who report to him — rests a great deal of the credit for Project Mercury's outstanding achievements.

Tousled, restless and plain spoken, he seems to bear lightly the double-barreled responsibilities of his office.

"Wing Pants"

Preston's background serves him well in his work. Although he is youthful and exuberant in manner, his career in aeronautical engineering goes back to the time when the latest thing in aerodynamics was the snappy metal "wing pants" wrapped around fixed landing gear on airplanes to reduce drag.

"I got into this business for one reason," he said, "It was the best thing then for me personally."

"That's being honest about it," he went on. "I know it always sounds better to ascribe something noble to one's motivations, but in my case, it was just a matter of carefully picking something that looked good — and I've never regretted my choice for a minute."

He chose to join Government Service as an aeronautical engineer for the National Advisory Committee for Aeronautics at Langley Research Laboratory Hampton, Virginia. The year was 1939 and he had just received a degree in Aeronautical Engineering at Rensselaer Polytechnic Institute, Troy, New York.

From 1939 until 1942, he served with the Langley Laboratory in its full scale wind tunnel, then was transferred

to Lewis Flight Propulsion Center.

In earlier years, his work was in aerodynamics. "We were trying to improve performance by decreasing drag," he remembers. "A ten mile per hour increase was a real achievement and speeds were topping off around 350 miles per hour. Then along came jets and we moved almost casually into the 500-plus mph class. I think it shook us all a little when we remembered how we had struggled to get just ten miles an hour more out of those Buffaloes, Airacobras and Warhawks."

Controlled Crashes

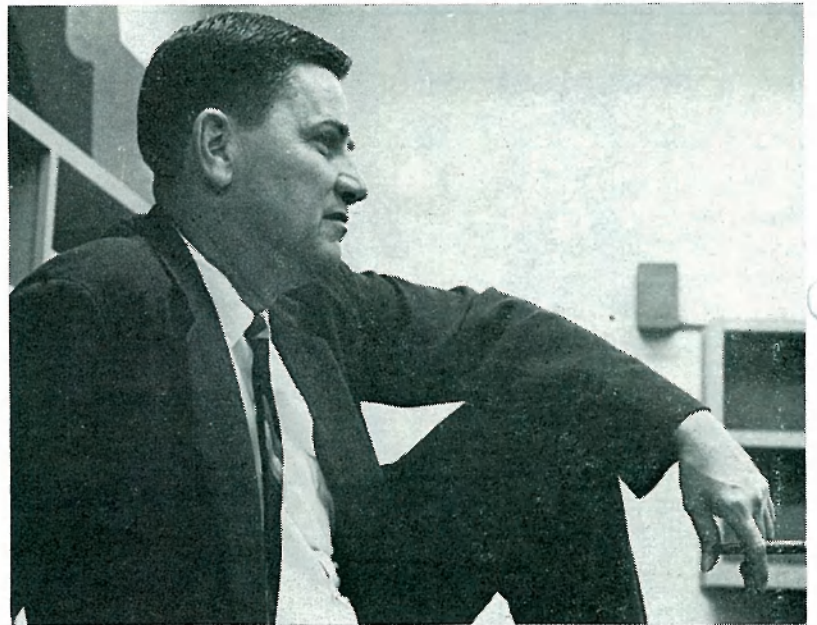
In Preston's varied research and work background are incidents ranging from the deliberate crashing of surplus airplanes into a clay bank to the shepherding through India, Pakistan, Ceylon and Burma, of John Glenn's spacecraft, "Friendship 7."

The fires which almost inevitably followed aircraft crashes then were taking great tolls. The deliberate crashing of various types of aircraft was an effort to pin-point fire causes and to study crash impact survival. From this study came a patent granted to Preston and his associates — one of whom was D. O. Black, his assistant here at AMR. — for a "Crash Fire Ignition Source Inerting System."

They received the Flight Safety Foundation award in 1954 and the Laura Tabor Barbour award in 1956 for the crash fire studies and the work toward solutions of impact survival problems.

The world-wide tour of the "Friendship 7" spacecraft was organized to provide foreign populations an opportunity to see first hand what the U. S. was accomplishing in space.

"We expected crowds" he said, "but we weren't quite prepared for the response of those people. In India, for example, an estimated million people turned out just to see the capsule moved from the airport to Brabourne Stadium



G. MERRITT PRESTON, Manager of Cape Operations for the Manned Spacecraft Center, and Chief of Pre-Flight Operations, started career in aeronautical engineering trying to raise aircraft speeds to 300 miles per hour.

where it was shown in Bombay.

Preston was made Chief of the Flight Research Branch in 1951. He came to the Cape as Assistant Chief of Mercury Operations in 1959, and was named Manager of Cape Operations and Chief of Pre-Flight Operations for the Manned Spacecraft Center in April, 1961.

He is particularly articulate and persuasive on the subject of higher education. "After all, education is the answer to most human problems, isn't it?" he said. Having grown up in a college town, he has great hopes for the development of universities in this area.

"Life is good in a college

town,' he said. "A college elevates the intellectual level of any community.

"And I'm not talking just about technical schools," he added. "After all, everyone's son isn't going to be an engineer.

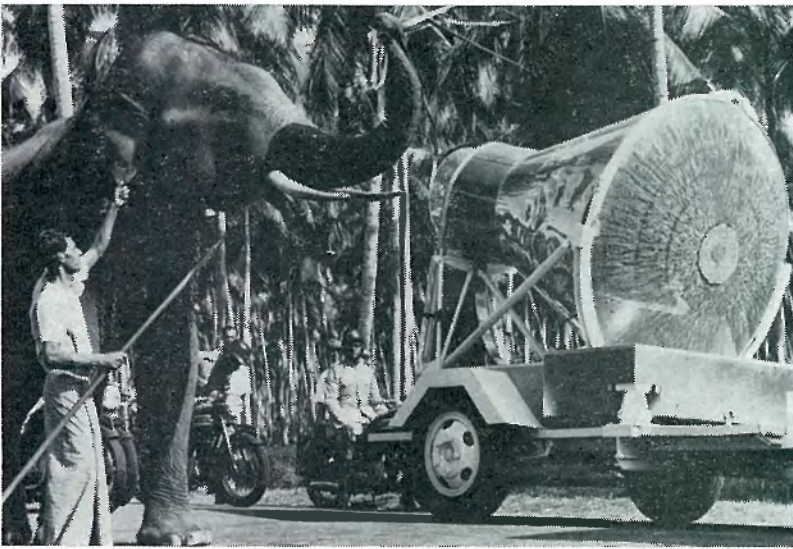
"I have great admiration for men like Dr. B. Frank Brown, the high school principal in Melbourne. What he's doing, of course, is part of any principals' job. But too few face up to it, and he does it particularly well. It would be difficult to estimate the volume of a man like that to a community."

Preston and his wife, Grace, and children Lelia and John live in Indian Harbor Beach.

Asked what he expects in



FLIGHT PLANNERS, officials from Manned Spacecraft Center met with Preston, with telephone, and Astronauts Cooper and Schirra in final weather briefing before Schirra's flight. They are, from left, Walter Williams, Astronaut Cooper, K. S. Kleinknecht, Astronaut Schirra and Dr. Charles Berry.



MAHOUT soothes elephant as John Glenn's spacecraft, "Friendship 7" passes enroute to showing before 55,000 people in Colombo, Ceylon. Tour was arranged to give Asian populations a chance to see U. S. space accomplishments first hand.

the future in his work, Preston smiled, "It might be easier to use the past as a gauge," he said, "I'm not an old man, yet I've seen the rise and decline of aircraft as an entity in military weaponry just in my own time. There were not over 100 airplanes in the entire military establishment when I first became interested in aviation. So, assuming that the rate of technical development is always accelerating—and it seems to be—then progress will be rapid and great discoveries will be made both here and in space. And I like James Webb's discussion of how these discoveries will benefit — and enrich — our future."



SHAH OF IRAN was an interested listener to an explanation of Manned Spacecraft Center activities by G. Merritt Preston during Cape tour.

Saturn, S-IV Enroute Here

A complete Saturn space vehicle and the second stage of another are en route to Cape Canaveral, each coming by water from two different areas.

The complete Saturn C-1 left the Marshall Space Flight Center at Huntsville, Alabama, to begin the 2,200 mile trip to the Cape. Scheduled to arrive in about 11 days, the 162-foot-tall vehicle will be launched in the Spring.

A Saturn S-IV second stage was shipped from the Douglas Aircraft Company's Santa Monica, California, plant Saturday. It will travel to the Cape by commercial water transportation via the Panama Canal and is scheduled to arrive in about two weeks.

The S-IV will be coupled with a booster to be shipped later from Marshall to ground test the Launch Operations Center's Launch Complex 37.

The launch complex is nearing completion and will be checked out this Spring. The S-IV will be used in the checkout and is not intended for actual launch.

40 Feet High

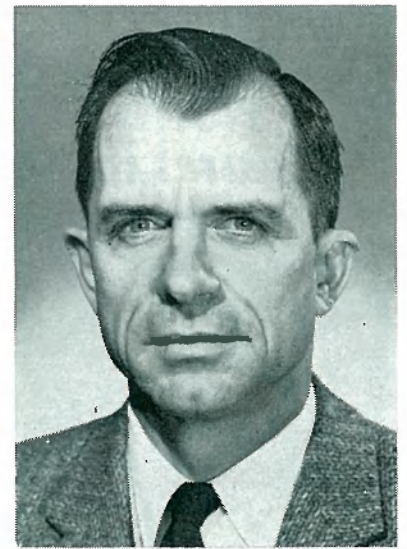
The S-IV, being developed by Douglas for Marshall, is 18 feet in diameter and is about 40 feet long.

Ground tests at Launch Complex 37 utilizing the S-IV will include assembly of the rocket on the new launch pedestal, checks of the propellant loading and other launch facilities, and checks of the vehicle itself.

The fully assembled Saturn—designated SA-4—was put aboard the barge Promise for the Huntsville-to-Cape Canaveral journey. Its three fore-runners made similar trips without major incident and were successfully launched from the Cape.

Computer System Bids Go To Small Business

Public opening of bids for a completely self contained digitized system will be held in the Procurements and Contracts office in the Canaveral Administrative Complex building in Cocoa Beach on January 28. This procurement has been set aside totally for small business and 69 firms have been invited to bid.



W. T. Clearman

Dutton and Clearman Address Florida Groups

NASA representatives Richard Dutton and W. T. Clearman, Jr., both of the Saturn Heavy Vehicle Systems office, were guest speakers at Central Florida dinner meetings last weekend.

Dutton spoke to the Mid-Winter Conference of the Cooperative Education Division of the American Society of Engineering Education January 21 at the University of South Florida in Tampa. The conference, made up of educators, engineers and professional people from the U.S. and Canada, heard Dutton's discussion of the advanced Saturn and NASA launch operations at the Cape.

A cooperative work-study program which has been established between the University of South Florida and NASA enables students in the program to work one semester here and attend the University for one semester. Approximately 20 students are working here now under the program.

Addressing the district meeting of the executive committee of Toastmasters, International, Clearman explained the Saturn C-5 program to an audience of 85 toastmasters and their wives. The dinner meeting was held Saturday night in the Cape Colony in Cocoa Beach. Clearman is a member of the Cocoa Beach Toastmaster's club.

Cape Counterpart

Ever heard of Kapustan Yar? It's Russia's counterpart to Cape Canaveral.

Capeside Inquiry

Spaceport People Believe Other Life Exists In Space



Sandy Arnette
Administrative Services Branch.

"I read that there are probably millions of planets in the universe with environments suitable for life. If that is true, there seems to be no basis for presuming that life is exclusive to earth."



Dick De Agro
Guidance and Control Branch.

"For a short answer — yes — because of the statistical improbability that it does not exist."



Lucille Malmberg
Photographic Operation Section

"Yes, I think that it is just too presumptuous of the human race to think that we are the only form of life anywhere in space."

Future space probes by NASA projects will try to determine if life exists on other planets. To get the thinking of people here on the subject, Spaceport News staff members asked the following question:

Do you think that life exists anywhere else in the universe?

Why?



Major R. C. Hock
Heavy Vehicle Systems Office.

"Any man who says no to that question will be pre-supposing a lot of information that no one has now."



Dick Dutton
Heavy Vehicle Systems Office.

"Yes. If what I read in the paper recently is true, high temperatures don't necessarily rule out the possibility of life. I saw an article on the analysis of very hot water from geysers in Yellowstone Park which showed bacteria in the water. So life capable of survival in a 600 degree environment may exist."



Jerry Moody
Administration & Services.

"Yes. If plant life exists, as scientists seem to suspect that it does, then it seems only reasonable that animal life in some form exists also."



Lali Russell
Technical Library

"Yes, if I'm to believe what I read here — and I do. The subject has been discussed in many of the technical publications here in the library and the concensus is that conditions suitable for support of life of some sort must exist somewhere else in the universe."

'O' Gravity Belt Patented

A "zero gravity belt" designed to enable an astronaut to leave an orbiting vehicle and perform outside inspection, repair and assembly jobs has been patented by Bell Aerospace Corporation.

The belt is a fiber foundation to which are attached 32 bundles of tubes that contain nitrogen gas under pressure. The operator grips a control on each side of the belt, which he moves in the direction he wants to take. He can push, pull, lift, depress or rotate the grips and float or turn accordingly.

A 20 - pound thrust is enough to move a weightless man, developers believe.

NASA-DOD Agree On Management Of Cape Areas

The Launch Operations Center will manage and serve as host agency at the 87,000-acre Merritt Island Launch Area under a new- NASA-Department of Defense agreement establishing management responsibility in the Cape area.

Signed by NASA Administrator James E. Webb and Defense Secretary Robert S. McNamara, the agreement stipulates that the Air Force will continue as host agency at the existing 15,000-acre Cape Canaveral and will remain the single manager of the Atlantic Missile Range.

In their respective areas, DOD and NASA will be responsible for their own logistic and administrative functions such as maintenance, water, fire protection, security police and the like. Most specific mission functions including preparation, checkout, launch and test evaluation will be performed by DOD and NASA in their own behalf regardless of location.

Certain fundamentals range functions will continue to be the responsibility of DOD in both areas. These include scheduling of launches, frequency control and analysis, flight safety, air traffic coordination, range sea surveillance, range search and sea recovery, underwater salvage, down range air lift, down range station operation and logistics and Port Canaveral operations.

The agreement provides that NASA Launch Operations Center, headed by Dr. Kurt Debus, will be the focal point for all NASA relations with the Atlantic Missile Range.

Joint Space Effort March Meeting Set

Russian and American officials will meet in March to plan for the cooperative space effort proposed between the two countries.

Dr. Hugh L. Dryden, NASA's deputy administrator, will head the delegation of American officials to the meeting in Rome.

Areas to be pursued in the cooperative effort include weather satellites, geomagnetic field surveys and cooperation on the next Echo launch.



SHOE STRAPS are tightened for Frank Borman, one of the second group of astronauts, as he prepares to try out training swing. Pivoting swing bar allows movement in two directions.



SWINGING SPACEMAN Pete Conrad goes "over the bar" on training swing as fellow astronauts look on.

Flights to Mars, Venus Scheduled for 1964-65

Plans for a second Mariner shot to Venus has been supplanted with a program to send a spacecraft to Mars sometime in 1964.

Flights to both planets had been scheduled for next year but the success of Mariner II's Venus flyby made it unnecessary to repeat the mission immediately.

The next flight to Venus will be attempted in November of 1965, using a 1,200 pound advanced Mariner, launched by an Atlas Centaur rocket.

A similar spacecraft will be used in the Mars probe next year, and it, too, will be designed to fly by the planet target.

The larger Mariner to be used in the 1965 Venus probe will be capable of landing and analyzing the planet's surface. The main purpose of the Venus and Mars probes is to determine whether the planets are capable of supporting any forms of life.

LETTER OF THE WEEK

"I am enclosing two small American flags, and I would like them to go with the next man in space. You see my grandson was born on Flag Day."

Mrs. J. B. M.
Evanston, Ill.

Sound Blasts Shoppers

Space age testing sometimes presents unforeseen problems.

When five engines for Saturn were being tested at Huntsville, low frequency sound waves bounced off a temporary inversion layer and focused accidentally on a shopping center ten miles away.

Stores emptied in record time, witnesses said,

Small Research Rocket To Study High Winds

Small wind research rockets will be launched from the Cape within a few weeks as part of a study of air movements at an altitude of 60 miles.

Information has been gained from larger rockets and satellites on wind conditions above 60 miles, and smaller rockets have gathered data on conditions at lower altitudes.

Now rocket experts at the Marshall Space Flight Center want to know more about the "blind" area 60 miles up because such information would be useful in the design of space vehicles and in the plotting of rocket trajectories.

The Hopi-Dart rockets to be used in the study are 76 inches long and weigh about 93 pounds. The rocket contains a dart which carries tiny particles easily tracked by radar. The dart is released at about 60 miles. It in turn, loses the particles to drift

back to earth — to be tracked as they fall.

About half of the 15 Hopi-Darts to be used in the wind studies will be fired from NASA's Wallops Island Launching Facility.

The study is being conducted by the Astrophysics and Aero Physics Branch of the Aeroballistics Division at Marshall Space Flight Center, Huntsville.

NASA NEWCOMERS

Five new employees have joined NASA-Cape operations since last week:

Personnel: Homer W. Forster.

Instrumentation and Planning: John L. Luzitti.

Financial Management: Cecil M. Taylor.

Program Coordination and Management: John L. Ridgeway and Albert L. Sheffield, Jr.

Public Admiration Causes No Change In Astronauts

The five Project Mercury astronauts who have made flights have been cast immediately into the public spotlight since, but they have undergone much less personality changes than was anticipated, space psychologists

say.

The scientists studying the five believe the astronauts entered the program not because of a yen for excitement, glory or money but because of practical opportunities for career advancement.

"They became astronauts because they wanted better jobs," Dr. Sheldon J. Korchin of the National Institute of Health reported to the American Psychiatric Association.

Mentally, the group is in the top one percent of the U.S. population, he pointed out, but all are action oriented.

One of the things the study has proved, the scientists agreed at a press conference, is that the selection method for picking the astronauts was sound.

"We picked people," Korchin said, "who had already done well in things most like they are doing now."

— will be spent on research, development and operation.

Operation Costs

The amounts to be spent by the centers for operation and the number of personnel anticipated in FY 64 are:

NASA Headquarters — \$65.5 million — 2,300 persons.

Ames Research Center — \$31.3 million — 2,309 persons.

Flight Research Center — \$10.4 million — 593 persons.

Goddard Space Flight Center — \$67.9 million — 3,700 persons.

Langley Research Center — \$54 million — 4,295 persons.

Launch Operations Center — \$37.2 million — 1,200 persons.

Lewis Research Center — \$65.8 million — 5,128 persons.

Manned Spacecraft Center — \$71.3 million — 3,980 persons.

Marshall Space Flight Center — \$132.3 million — 7,492 persons.

North Eastern Office — \$643,000 — 40 persons.

Pacific Launch Operations Office — \$830,000 — 22 persons.

Space Nuclear Propulsion Office — \$2.3 million — 160 persons.

Wallops Station — \$10.5 million — 530 persons.

Western Operations Office — \$6.9 million — 500 persons.

Electronics Research Center (which Congress will be asked to establish this fiscal year) — \$3.5 million — 250 persons.

Budget

(Continued from Page 1) vice module.

\$200 million - lunar excursion module.

\$150 million - guidance and navigation.

Remainder - procurement of Saturns, incremental procurement for flight operation, and supporting technology.

About \$1.3 billion is to be channelled into the development of launch vehicles in FY 64, with \$733 million directed toward the Advanced Saturn.

A total of \$800 million is envisioned for construction of facilities at various NASA centers in FY 64.

The Launch Operations Center is tapped for \$312.8 of this amount. More than two-thirds of the new construction expenditures foreseen for LOC — \$217 million — is for incremental funding of Launch Complex 39 on Merritt Island.

Some of the other centers and the amounts being sought for for construction of facilities there:

Goddard Space Flight — \$20.9 million.

Jet Propulsion Laboratory — \$7 million.

Manned Spacecraft Center — \$37.7 million.

Marshall Space Flight Center — \$38.5 million.

MSFC's Mississippi Test Facility — \$111.7 million.

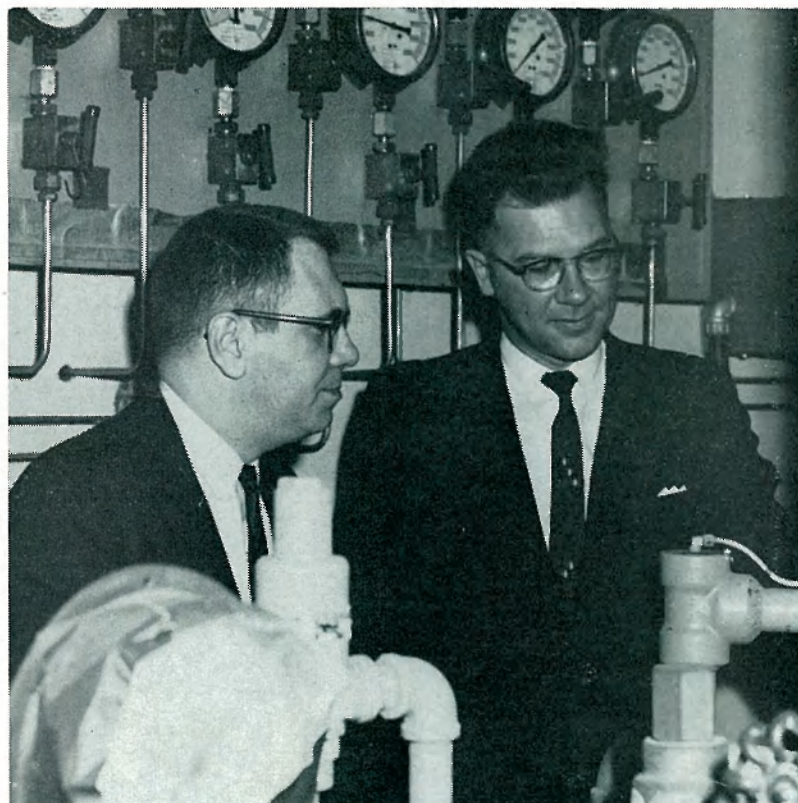
MSFC's Michoud plant — \$10 million.

The remainder of NASA's total budget — \$4,912 billion

Educators See Cape; To Update Curriculum

Electronics students of the Capitol Radio Engineering Institute in Washington, D. C., will get some up-to-the-minute instruction as a result of a recent Cape tour.

President H. E. Rietzke and Vice President E. H. McCall of the Institute were at Canaveral Thursday to see, first-hand, the latest electronic developments as applied to the space age.



JAMES T. KOPPENHAVER, left, Director of NASA's Office of Reliability and Quality Assurance sees part of liquid nitrogen system during tour conducted by Robert L. Body, Chief, Quality Assurance.

Treks

(Continued from Page 1) reply could be heard.

Beyond Capacity

"This," said Dr. Revelle, "is almost as long as human beings have lived on earth and 40 times longer than the entire history of our human civilization. To plan and carry out a research project involving the sending out of a space ship which could not return for 2,000 years is beyond the capacity of our present society. Men who can plan ahead effectively even 20 years are quite rare.

"We might conceivably send out a space ship crewed by human beings, but with the present life span, the original crew would not be able to survive a small fraction of the time required. Children would have to be born on the spacecraft and they, in turn, would reproduce and die through many generations so that finally only the remote descendants of the original crew would return to earth.

Unsuited Astronaut

"John Glenn is sitting unclothed in a corridor off the horror chamber."

This startling statement from the director of a museum in Ontario referred not to the famed astronaut, however, but to a wax likeness which the museum plans to display.

Glenn will join Soviet Astronaut Gagarin and Chairman Khrushchev in the wax museum — if and when he is decently clothed.

When the museum asked the U.S. government for a suit for the figure, it was suggested that they see the manufacturer of the suit. But the company's price of \$3,000 for one of the space suits was considered too high. Now, the museum is seeking a costume from makers in the U. S. and Canada.

Orientation Program Includes Tour, Film

A new orientation program for recently - hired NASA-AMR employees has begun on a periodic schedule.

The comprehensive program includes briefings on NASA's goals in space, NASA activities at Canaveral, safety

and Federal Civil Service Employment policies.

Also on the three-hour orientation agenda is a film, "Your Share in Space," and a tour of Cape facilities.

The program is sponsored by the LOC Personnel Office.