

SPACEPORT



NEWS

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Cape's Delta Day Honors Project Team

The men behind the Delta project were presented with NASA's Group Achievement Award last week for accomplishments described as "superb."

The Award was presented by Dr. Homer E. Newell, Director of the Office of Space Sciences, during Delta Day ceremonies held at the Cape on Pad 17, where Delta is launched.

In making the presentation to Dr. Harry Goett, Director of the Goddard Space Flight Center, Dr. Newell said, "Nowhere in the space effort is there a launch vehicle organization that has had a higher spirit of dedication."

The award was accepted by Dr. Goett in behalf of the Delta Project Group whose accomplishments Dr. Newell lauded.

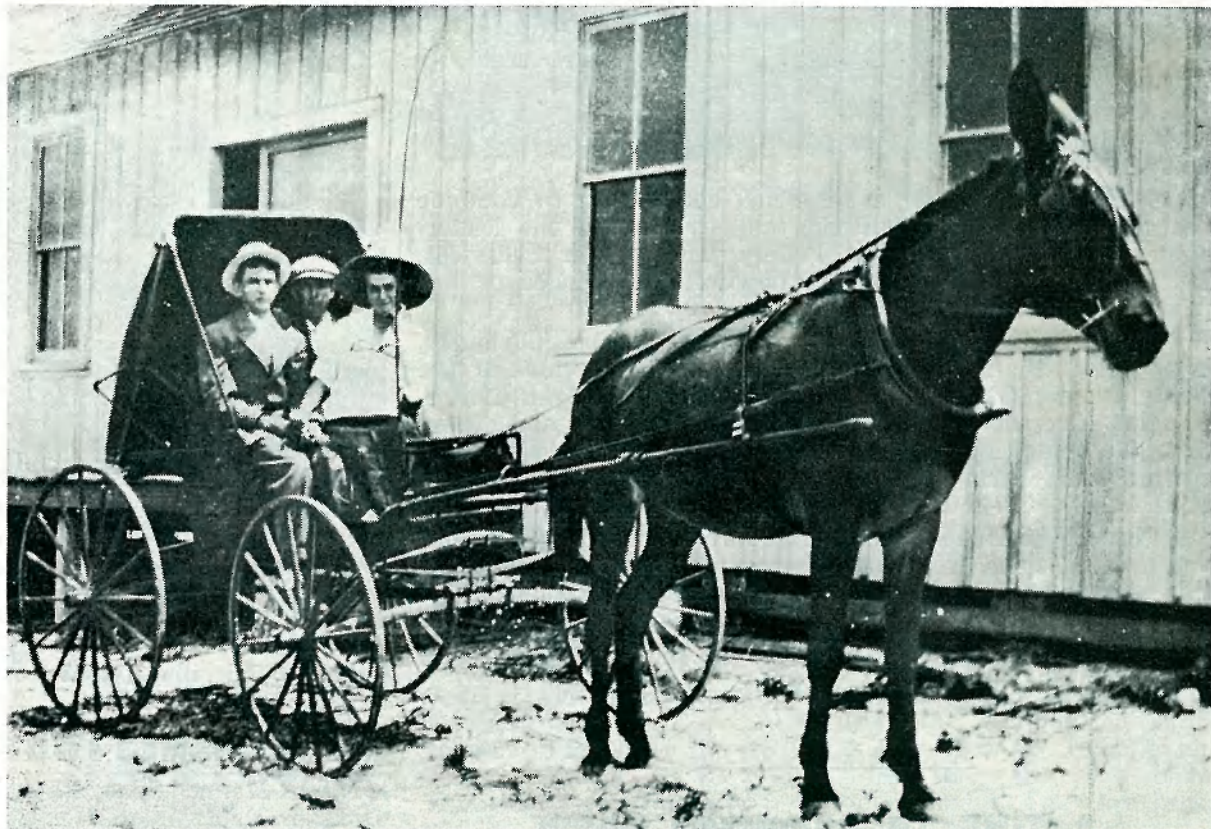
Douglas Honored

Douglas Aircraft Co., which makes the booster, also was honored for its part in Delta's 15-in-row record of successful launches. Charles Able, vice-president of Douglas' Missile and Space Systems Division was spokesman for his company.

Replicas of the Group Achievement Award were presented to William Schindler, Chief of the Delta Project Group at GSFC; and Bob Gray, Chief of GSFC's Field Projects Branch at the Cape.

During the ceremonies, Dr. Newell announced that NASA has ordered 14 more Delta space boosters from Douglas.

The order brings to 40 the number of Deltas NASA has purchased since the program began in April, 1959. When final contract details are completed, the new Delta order (See CAPE'S DELTA, Page 4)



OXEN, MULES AND WIND were power sources for settlers in the Cape area in David Taylor's youth. The grandfather of Joy Taylor, Resources Office, he is shown in 1910 on a buggy with friends in holiday attire. Taylor remembers that his father predicted 50 years ago that "someday something big is going to happen to Cape Canaveral."

Bygone Era

NASA Girl's Family MILA Pioneers

Flights to outer space will begin on land pioneered by the great grandfather of pretty Joy Taylor, Resources Office, in 1883.

A stalwart 19-year-old then, James A. Taylor had come on a pioneering trip to the near wilderness of east central Florida after the death of his parents back in his native Kentucky.

There was no east coast railroad south of Palatka then and travelers from the north, bound for what is now Brevard County, usually came south from Jacksonville by river steamer on the St. Johns River to Enterprise, across Lake Monroe from Sanford. From there, they

came by stage coach to New Smyrna Beach and then on to Shiloh by sailboat on the Indian River.

"Titusville was just a small village then," he said later. "Much of it was under water most of the time and travel was all by sail boat."

Shiloh was a center for trade along the river in 1885. Three sail-powered trade boats made regular trips between Titusville and New Smyrna, giving settlers along

the river thrice-weekly mail service. Shiloh, in the land recently acquired by NASA for Manned Lunar Landing projects, is on the north end of Merritt Island on a thin strip of land between the Indian River and Mosquito Lagoon.

This latter would seem to have been aptly named, according to David Taylor, 73, son of the original settler.

"We used to say," he remembered last week, "that when mosquitoes were out, you could strain a pint cup through the air and catch a quart of them."

"Many's the time when we (See NASA GIRL'S, Page 6)

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TESTIMONY TO SUCCESS

Last week, the fourth anniversary of the Delta launch vehicle's entry on the NASA official roster was celebrated with ceremonies appropriate for a rousing success.

And Delta, indeed, has been a success. Its 15-1 record makes it the most reliable performer in the entire NASA bull-pen.

From its inception, NASA has endeavored to combine the resources of this country's industries with the leadership and know-how of the Federal and military services. Delta is eloquent testimony to how well that endeavor has paid dividends.

But a launch vehicle, no matter how reliable, obviously, is no better than the men behind it. Thus, the men of the Delta Project Group at the Goddard Space Flight Center, Douglas Aircraft Co., a myriad of subcontractors and others can take some deep bows for this 15-in-a-row record. And curtain calls certainly are due Bob Gray and his group at the GSFC Field Projects Branch here at the Cape.

Now, NASA has ordered 14 more Deltas from Douglas and new missions are being planned for future launches. If this were a rookie, there might be some reservations about such ambitions. Delta, however, is a real veteran of the space league and already has assured itself of a berth on anybody's starting lineup.

Batter up!

A TIME TO SCROUNCH DOWN

When a car is struck from the rear by another, the heads of its riders are first snapped backward and then sharply forward in what traffic safety experts call the "whiplash effect." The head is naturally heavy, they say, and its weight is greatly accentuated by the sudden thrust forward. And human vertebrae were never designed to take this stress. So this common accident results all too often in painful and lasting disability.

This is a problem common to this area, where long lines of cars move in twice daily and where sudden stops are inevitable.

There's a way this painful injury can be avoided, the experts say. If you, or your driver, have to stop suddenly, look back instantly, and if it appears that a car is going to hit yours, lower your head as far as possible, at the same time hunching the shoulders. This is what has been described as "scrouching down." It lowers the head's center of gravity far enough that its weight can be handled by the heavier neck and shoulder muscles. This turtle-like approach to the problem may not be particularly graceful but it can save painful and lasting injury, the experts say.



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OFFICIALS of Grumman Aircraft Engineering, NASA contractors for the construction of the Lunar Excursion Module to be used in the Apollo program, attended a briefing session at Manned Spacecraft Center facilities here. Part of the group is shown viewing the area from the 300 foot level of the gantry on Complex 34, Saturn launch site, where, Jay Viehman, Protocol, in light suit, explained operational concepts to visitors.

HOLMES NAMES TWO NEW DEPUTY DIRECTORS

NASA Manned Space Flight Director D. Brainerd Holmes has named two Deputy Directors—Dr. Joseph F. Shea and George M. Low — in realignment of the Manned Space Flight Office structure.

Under the new organization, Dr. Shea who formerly headed the OMSF's, Systems

Directorate becomes Deputy Director for Systems; Dr. William A. Lee, Director of Systems Studies; John Dautraud, Director of Systems Engineering and James Sloan, Director of Integration and Checkout, will report to Shea.

Reporting to Low as Deputy Director for OMSF Programs will be the Director of Launch Vehicles, Milton Rosen; Director of Space Missions, a post to be filled but currently headed by Low.

William Lilly, Director of Administration for OMSF, will provide administrative support in both major areas.

Previously all the major directorates reported directly to Holmes. Holmes said the changes are designed to provide speedier action channels and generally strengthen the OMSF organization — further it will permit Holmes to administer more effectively operational and institutional matters of the three centers primarily associated with Manned Space Flight. They are Marshall Space Flight Center, Manned Spacecraft Center and Launch Operations Center.

GSFC To Get New Labs With Fiscal '64 Funds

Some \$21 million will be spent by Goddard Space Flight Center during 1964 to construct four new data acquisition and metal testing laboratories.

President Kennedy has asked Congress to appropriate \$67.9 million during fiscal 1964 for operating and research and development projects at GSFC.

Approximately \$5 million will go for equipment, with \$15 million slated for building and support systems.

This brings to more than \$72 million the capital investment in structures at the 548-acre tracking site,

Four Man Astronaut Teams To Make 6-month "Flights"

NASA has disclosed plans to put four-man astronaut teams through simulated flights lasting six months in a sealed cabin little larger than a freight elevator.

Industry has been invited to submit proposals for the design and construction of a "prototype six-month life support system for four men." The proposals must be filed at NASA's Langley Research Center, Hampton, Virginia, by February 26.

After exhaustive tests to make certain the "life support" equipment is working properly, a NASA spokesman said, four man crews will make simulated space trips in the cabin.

NASA has provided prospective designers with a few guidelines:

The cabin must provide living facilities and "shirt sleeve" comfort for four men in 2,600 cubic feet of space.

The internal pressure must be kept between 10 pounds per square inch and 14.7 pounds, the normal pressure on earth at sea level.

For design purposes, it is

assumed that each crew member will use two pounds of oxygen per day, manufacture carbon dioxide at a rate of two and one fourth pounds daily, and through breathing and perspiration produce two and two tenths pounds of water each day.

Mercury Social Club Searches For Name

An imaginative name finder can pick up a \$25 savings bond with a new name for the active social club in the Manned Spacecraft Center facilities here. The old name has fallen a victim to progress.

Originally named for Mercury Social Club, the group is now seeking a new name because personnel from Gemini, Apollo and Lunar Landing projects are now participating in the club's activities.

Club members are offering a \$25 bond for a winning name. There is no limit to entries and ballot boxes will be placed throughout the area. Closing date is March 29.



SPEED was the topic in conversations between Astronauts Cooper, second from left, and Shepard, right, and visitors to the Cape last week. Visitors were David Piper, (left), London, and Chuck Cassel, Fort Lauderdale, drivers who will compete in the Sebring, Grand Prix later in the month.

NASA Planners Reveal First Space Station Designs

An inflated rubber ring 24 feet in diameter resembling a huge doughnut, and a long plywood box shaped like a box car. . . .

These are models for some of the new ideas NASA scientists have for the design of space stations, big spacecraft capable of orbiting the earth for up to five years while astronauts and supplies are ferried to and from the earth by smaller spacecraft.

Although it will be several years before the first space station is in orbit, plans are already well beyond the drawing board stage at NASA's Langley Research Center. Space station development is expected to begin this year.

Vital Need Seen

The space stations will be needed urgently before the end of the decade, NASA spokesmen say. Manned space flights in orbiting space stations will determine how long astronauts and equipment can operate under weightless conditions. And they will enable engineers to experiment with the creation of artificial gravity for knowledge which may be needed for long interplanetary flights.

Space scientists point out that a host of tasks, such as continuous space reconnaissance, can be performed far more efficiently in a space vehicle. And, in time, earth orbiting space stations could serve as launching sites for

assembling spacecraft and dispatching manned flights to the planets, thus avoiding the great difficulty of lifting heavy payloads directly from the earth.

A space station will show marked change in appearance from the familiar bell shape of the Mercury capsule and other spacecraft now under development. They are broad at the base for stabilization in flight and shielded for heat protection during re-entry through the earth's atmosphere. Because space stations won't return from orbit, they need only to withstand the less violent air pressure of launching.

Tin Can Design

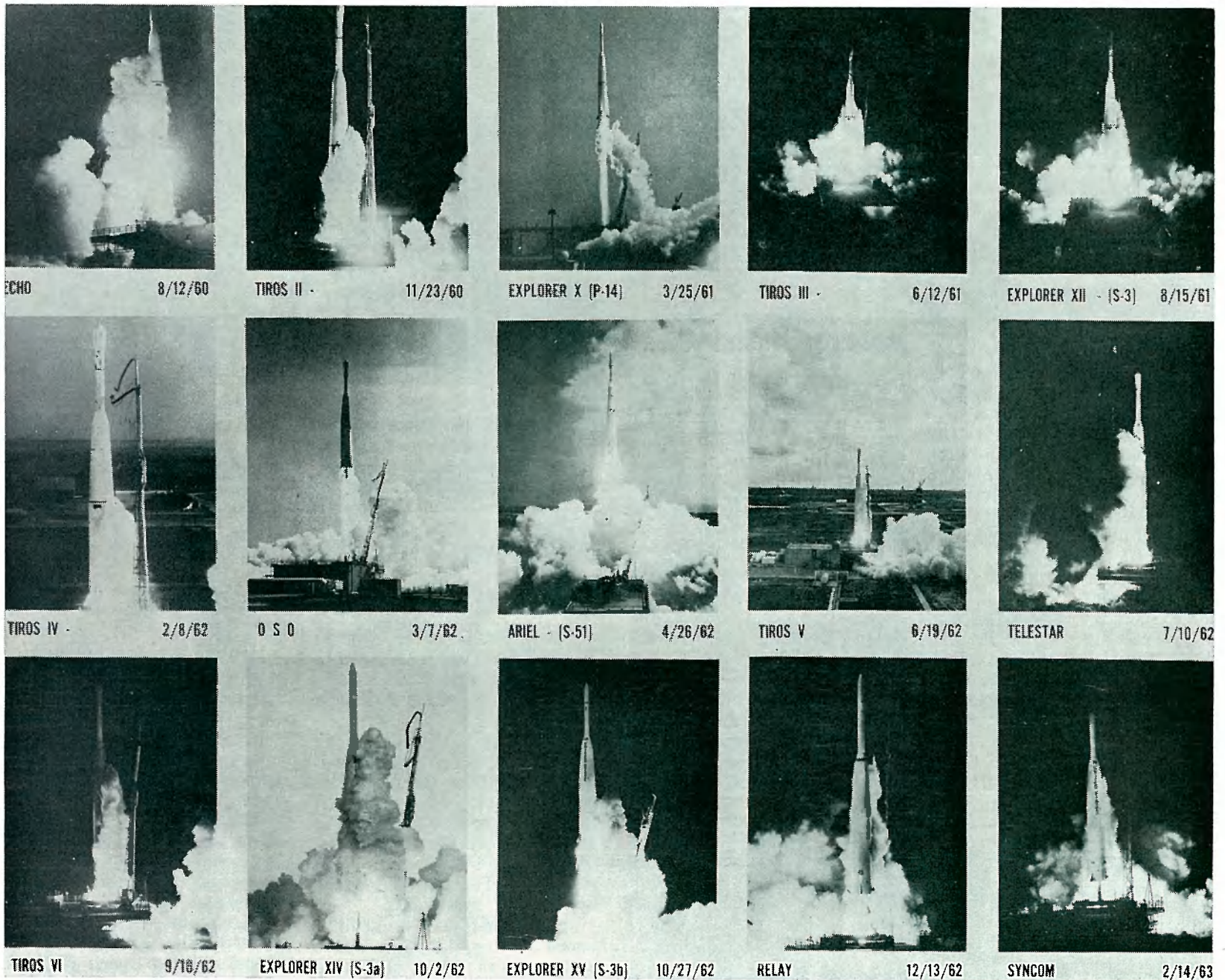
One NASA engineer explained that the simplest design is merely a big tin can, rounded on one end. Depending on the booster used, this first space station would weigh between 10 and 16 tons and would range in diameter from 10 to 20 feet and in length from 15 to 25 feet.

For men in spacecraft or space stations, experts fear that prolonged weightlessness may derange delicate biological processes of cell growth and vision.

Weightlessness results when the restraining pull of earth's gravity is precisely counterbalanced by the outward centrifugal force caused by the spacecraft's normal whirling motion in orbit around the earth.



INTENT LISTENERS to explanation of Saturn systems by Robert Johnson, Protocol, were Somchai Anuman-Raj Adhon, Thailand's Ambassador to the United Nations, and party, shown in Launch Complex 34 blockhouse. Escorting group was G. Merritt Preston, (rear), Manager of Cape Operations for Manned Spacecraft Center.



MONTAGE of launches from Echo to Syncom is photo record of extraordinary accomplishment of 15 straight successes for Delta vehicle. Delta Day ceremonies at the Cape were held in recognition of contribution of all people in the project to the nation's space program.



A PARTICIPANT in Delta Day ceremonies held at Launch Complex 17 last week was William Schindler, Delta Programs Manager (at microphone). Others who joined in the program were (from left) Dr. Richard Morrison, Director of Light and Medium Launch Vehicles, Office of Space Sciences; Dr. Harry Goett, Director, Goddard Space Flight Center; Dr. Homer Newell, Director, Office of Space Sciences; Dr. Kurt H. Debus, LOC Director.

CAPE'S DELTA DAY HONORS PROJECT TEAM

(Continued from Page 1)

is expected to cost about \$18.6 million,

In addition to the Delta hardware, NASA officials are also negotiating a contract with Douglas to cover launch services for the new Deltas. This contract, expected to be signed soon, will total about \$5 million.

Specific missions for all of the 14 new Deltas have not yet been assigned. However, most of them are expected to be earmarked for launchings of additional NASA communications and meteorological spacecraft as well as new scientific satellites.

Since May, 1960, 16 Deltas have been fired from Cape

Canaveral. Except for the first flight, which was unsuccessful, succeeding Deltas have performed their missions flawlessly. The Delta record to date of 15 consecutive successful firings is unmatched by any other U.S. space vehicle. Estimated cost of a Delta launch — exclusive of the satellite payload — is about \$2.5 million.

When the initial Delta contract was signed in April, 1959, 12 vehicles were ordered. At that time, Delta was intended to be an "interim" vehicle. However, because of its reliability and versatility, 14 more Deltas were ordered in October, 1961.

Capeside Inquirer

Cape People Suspect They'd Make Reluctant Astronauts

Toward the end of the decade, Project Apollo astronauts will explore the moon's surface.

Cape people gave these answers to the following questions:

If, for some reason, it was necessary for an untrained person to go along on one of the Apollo flights to the moon as an observer — and you were requested to make the flight — would you be willing to go?

Why?



H. M. Thompson
Motor Pool

"Yes, I'd go. The Mercury flights, which are a prelude to the Apollo flight, have proved that safety is the number one factor. Anyway, it'll be a good conversation piece. After all, they're still talking about Marco Polo."



Dottie Parker
Travel Section

"No! Height makes me dizzy, green is not my best color and I don't care for cheese!"



Joanne Suckow
Administrative Services

"No. I prefer to look at the moon for its beauty rather than to see it as more land to explore."



Dwight Spencer
Test Support Office

"The vicarious anticipation of such a trip is overwhelming. Extend to the moon the beauty and exhilaration of previously experienced orbital flights, and who could resist such a compelling opportunity."

NASA Womens Club To Name Candidates

The regular dinner meeting of the NASA Women's Club will be held at 7:00 p.m. Tuesday, March 12, at Ramons in Cocoa Beach.

Burt Williams, Procurements and Contracts, who is club president, said nomination for new officers will be made at the meeting.



Juliette Ray
Saturn 1 & 1B Office

"To be perfectly honest — No! I'd be too scared to even look out the window!"



Walt Barney
Program Coordination & Management

"It depends on who's driving."



Vern Ramnes
Audio-Visual

"I don't think so. I love speed and all the excitement that goes with it. However, I like to know that terra firma is directly under me so that I can pick myself up and walk away."

Incentive Program Now In Effect Here

An incentive awards program, designed to provide a greater incentive for increased participation in the solution of management problems at all levels is now in effect here.

All government employees are eligible to receive awards under this program; its objective is to assure the maximum and most effective use of manpower, money and materials through increased and continuous attention to the economy, efficiency and effectiveness of government operations.

As a reward for helping to achieve this objective, employees receive money, recognition and self-satisfaction. It is the policy of this Center to encourage full participation at all levels and to assure that deserving contributors receive appropriate recognition.

Among the less frequently recurring awards are those presented on an annual basis. Non-federal awards included in this group are:

The Arthur S. Fleming Award — presented to male employees under age 40 who have performed outstanding or meritorious work in scientific, technical, administrative or executive fields;

The Federal Woman's Award — presented to women employees who have attained the grade equivalent to GS-9 or above, have at least three years continuous, full-time service, and who have made outstanding contributions to progress in the work of a Federal Agency;

The National Civil Service League Career Service Award — presented to career employees with at least 15 years creditable Federal service for outstanding public service;

The William A. Jump Memorial Award — presented annually to the employee under 36 years of age for outstanding service in or notable contributions to the field of public administration;

The Rockefeller Public Service Award — presented to career employees with at least 15 years creditable Federal Service who are 45 years of age or older and whose performance for the Nation has been truly outstanding.



LOCATION of NASA's 52-story Vertical Assembly Building will not be far from site of first home James A. Taylor moved into with his family after bringing them to Shiloh from Bayou Mills, Livingston County, Kentucky.

NASA GIRL'S FAMILY MILA PIONEERS

(Continued from Page 1)

were kids, we would stand in the house at night and put our hands against the window screen. The mosquitoes would light on our hands so thick that if you jerked your hand back fast, you could clearly see its shape in the mosquito on the other side of the screen."

High Quality Oranges

He remembers that his father and an English lawyer, each knowing of the other's reputation for personal integrity, made an arrangement to grow citrus. The Indian River oranges they grew were of such high quality that for years they commanded the highest prices on the market. Years later, the Englishman wrote from London that he wanted to consolidate his holdings in Europe and his associate in Shiloh bought him out. Thus ended a long and profitable association for both — and neither had ever laid eyes on the other! All agreements had been made by mail.

And David Taylor remembers his father's efforts to assure the education of his children. In the early days, if no teacher was available for the country school at Shiloh, his father simply moved his family to a community where there was a teacher.

Close Knit Community

The community has always been close knit, David Taylor remembers. "Everybody did pretty well in the early days," he said, "and we enjoyed life. There were no social lines and

when there was a gathering, everyone came."

He recalls his childhood with obvious pleasure. "There was a gator cave over by the school house," he said. "Me and Horace Bennett used to go over there at noon time. Horace could grunt just like a gator and when he did, these little bitty gators — not over a foot long — would come out of the cave.

"We'd put those little fellers under our shirts and carry them back in the school house. Teacher put a stop to that right fast though," he remembered, grinning.

Snakes All Over

"Snakes? They were all over the place! It's a wonder to me more people weren't bit. But nobody paid much attention to them."

Their father's devotion to education is reflected in the fact that David Taylor's sister was for many years a school principal in Titusville and in county schools. And his brother, DeWitt Taylor, who was a highly regarded scholar at Rollins College, was principal at Pierson for many years. Taylor High School there was named in his honor.

Today many of the descendants of pioneer James A. Taylor still live in Shiloh and are active in the family enterprises which include land, groves, grove management, a store and an implement dealership.

Joy, 19, is a secretary in the office of Bert Greenglass, Chief of Resources.



BEACHWEAR of a bygone era was displayed by smiling Shiloh girls on picnic at the beach. Remoteness of the settlement caused people to create their own entertainment. Later, prosperous members of the community built their own community center, which is still standing.



DAVID TAYLOR and school teacher posed for photo during a Sunday gathering of the family. Their citrus crop was taken by mule-drawn wagon to Oak Hill for shipment to markets in New York and Boston where its quality commanded top prices. Settlers carried "mosquito brushes," fans made from palmetto.



TWO-WAY RADIO system is used by David Taylor for instant communication between headquarters office and fleet of grove tending trucks. Mrs. Danny Robinson, a sister of Joy Taylor, is at left. Family enterprises include land, groves, grove tending and management, a store, and a farm implement dealership.



JOY TAYLOR, a secretary in the Resources office, is the great granddaughter of David A. Taylor, a Kentuckian who was one of the early settlers in the Cape area.

Animal Trackers

Satellite Urged To Trace Migrations of Wildlife

A satellite has been proposed to seek answers to two questions which have long bothered biologists — where do animals migrate and what triggers their secret and habitual comings and goings?

Dr. Dwain A. Warner, curator of ornithology at the Minnesota Museum of Natural History, has suggested that animals be tagged with small transistor radios and batteries weighing 1/2 to 2 ounces.

Then, wherever the wandering animal goes, explained the scientist, it would broadcast a signal. A satellite circling the globe could catch the signal and send it back to observers who could plot

the animal's location.

Biologists have used radios to track various animals such as ruffled grouse, woodchucks, porcupines, skunks and rabbits. But as soon as the animal disappears over the horizon, its line-of-sight radio waves can't be picked up.

Sample transmitters already have been designed and tested for larger birds such as geese, swans, cranes, penguins and albatrosses. The same devices could be fitted to caribou, Warner suggested.

His article appears in the current issue of National History Magazine, published by the American Museum of Natural History.

Cape Called 2nd Choice As Rocket Test Site

Except for the objection of the Mexican government to having a missile range extending into its territorial waters, El Centro, Calif., rather

than Cape Canaveral would have been the site of the Missile Test Center.

A study of the official history of the Air Force Missile Test Center reveals that back in October, 1946, the Committee on Long Range Proving Grounds established by the Joint Research and Development Board of the nation's armed forces was instructed to select a site for the Missile Test Center.

"As a suitable site for the range," the report said, "the committee selected as its first choice the El Centro - Gulf of California range, and as second choice, the Banana River - Bahama Island range, with the launching site located at Cape Canaveral, Florida.

The first choice was never adopted because of difficulty in arriving at an agreement with Mexico.

Ratio of Federal to total employment in the country has been constant over the past 6 years — 36 per thousand and in both 1956 and 1962, with only small fluctuations in intervening years.

STORMS MAY PLAGUE SPACE TRAVELERS

Spacecraft may encounter gales in upper atmosphere corridors that will make the occasional hurricanes which harry launch areas far below seem like spring breezes.

Turbulent jet streams that move at 250 miles per hour, reverse direction at the bat of an eye and move just as fast backward have been discovered after two years of research at NASA's Goddard Space Flight Center.

The tests were the sources of the pinkish yellow clouds seen by millions of observers along the eastern seaboard during the past two years.

The clouds are created at dusk and dawn when sodium vapor is released by small rockets at altitudes between 50 and 100 miles.

Scientists report that at 44 to 50 miles up, winds become unpredictable.



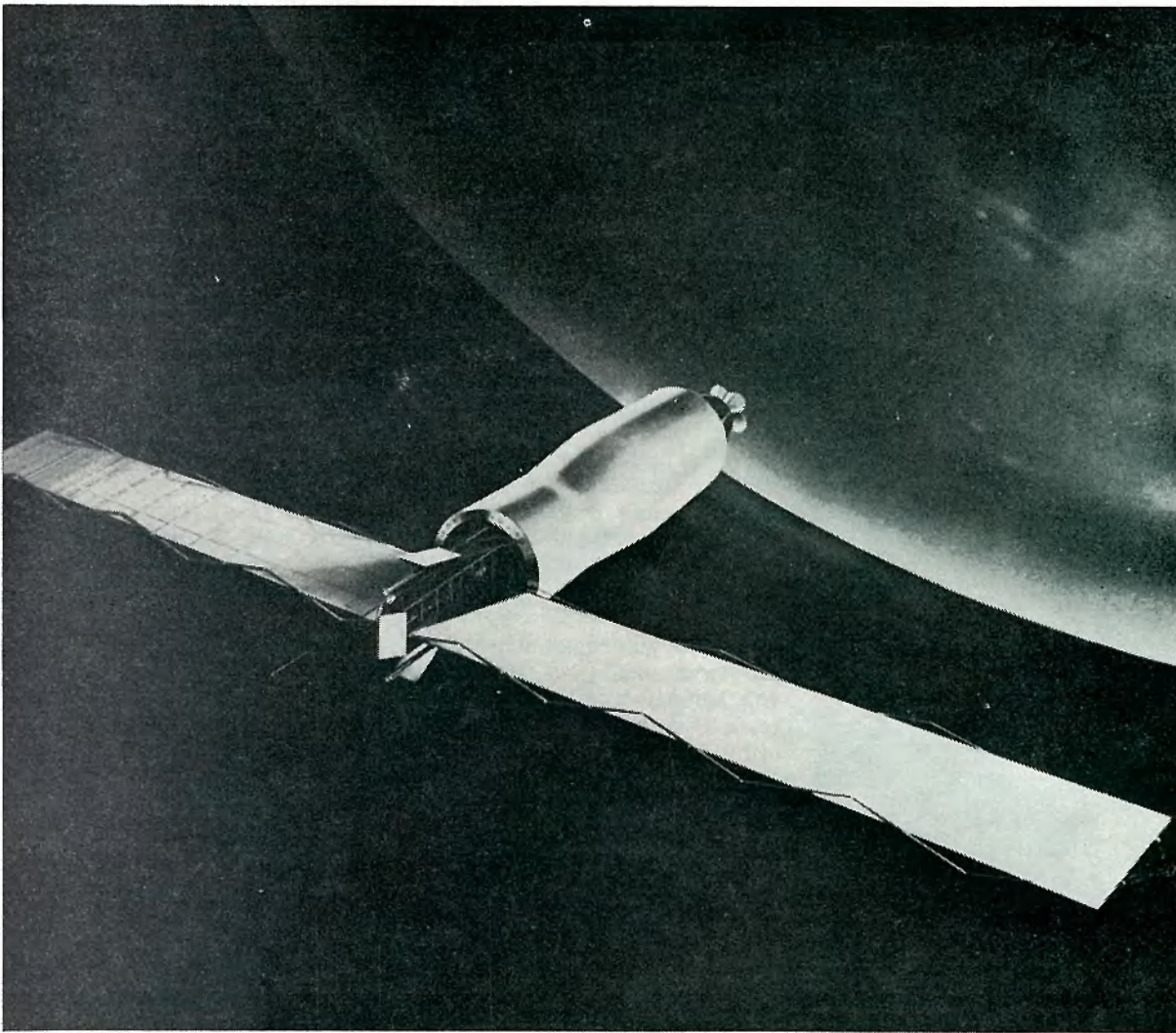
Road Conditions Molded Shape Of V-2's

Traffic problems near rocket centers didn't originate at Cape Canaveral.

In fact, Dr. Walter Dornberger, wartime head of the German rocket research center at Peenemunde, claims road conditions rather than engineering designs molded the stubby shape of the V-2s.

He explained it this way: "We had quite a time trying to haul the rockets through narrow winding village streets, so we fixed the length by hauling a long wooden pole along the intended route.

"Whenever we came to a place we couldn't get past, we chopped off a piece. What was left at the end of the trip was the length we made the rockets."



FLAT-WINGED meteoroid satellite appears to have reached its earth orbit in this artist's concept. The two-ton spacecraft's outer skin is electrically charged to record penetration of any meteoroids. It is to be housed in the 10-foot diameter boilerplate Apollo service module and orbited by a Saturn vehicle. Wing span in space will total 96 feet.

Cal Tech Plans Moon Shots To Study Its Composition

Scientists at Cal-Tech hope to use oilfield exploration techniques to determine the composition of the moon to a depth of 500 feet, using small controlled explosions.

Francis E. Lehner, senior project engineer on lunar seismology at Cal-Tech, and Dr. Robert L. Kovach, a geophysicist at the institute's jet propulsion laboratory are developing a system for gathering data on the moon's crust for NASA.

"The system is designed to

Changing Skyline

The rapidly changing skyline at the NASA-Marshall Space Flight Center takes on a new look with the construction of a 158-foot tall structure underway in the Manufacturing Engineering Division area.

be flown to the moon in an un-manned instrument package weighing about 50 pounds," Lehner said. "Possibly, it could be part of the scientific program when astronauts land on the moon.

"We propose to obtain subsurface information about the moon by touching off a series of small explosive charges, and then, with one or more geophones placed at varying distances from the explosion, detect the resulting waves that have penetrated into the crust and have been refracted again to the surface.

"A geophone converts a mechanical wave into an electrical one that may be amplified and recorded. Different kinds of rock formations and cracks, and layers of materials will affect the wave patterns which can be amplified and radioed back to earth."



Dear Sir:

"If Cape Canaveral sent a missile over New York, what would be the chances of it blowing up near Troy or Plattsburgh?"

Harriet D.
Troy, New York

High Speed Progress

We are entering an age, space planners say, when we will travel in technology the equivalent of the distance from the bronze age to the gunpowder age about every ten years.

Light Meals For Spacemen

Ways of preparing salads and sandwiches as light as plastic foam are being developed for space travelers, a doctor who specializes in the health of astronauts told a group of pathologists at the University of Minnesota.

Newest approach to preparing food for the astronauts is called the "freeze-dry" process. It consists of preparing the food completely and preserving it by freezing and drawing off all moisture.

"The result is quite different from ordinary dehydrating and provides much more satisfactory food," said Dr. George B. Smith, Jr., head of the Environmental Physiology Unit of NASA's Manned Space Flight Center.

The food processed in this manner does not lose its general appearance, Smith said, but it becomes extremely light when the water is removed. A sandwich or a potato salad might feel like a piece of styrofoam, he said.

New plastics also are being developed to keep the food dry until it is ready for eating. Water is then added to restore the normal weight.

If future spacecraft have more advanced heating systems, it will be possible to prepare such foods as steaks or spaghetti and meatballs in the same way, he said.

NASA Parts Group To Hold 3-Day Meeting

A quarterly meeting of the NASA Parts Working Group will be held in the conference room in the E & L Building March 11 through March 13, representatives from the Reliability office here announced.

This meeting is being arranged by the Reliability office here and persons interested in further information or in attending the meetings are urged to contact the Reliability office, spokesmen said.

The group, which has membership from all Centers, is sponsored by the Office of Reliability and Quality Assurance at NASA headquarters. The quarterly meetings are held on a rotating basis at various NASA Centers.