

SPACEPORT



NEWS

Volume 2, Number 51

NASA Launch Operations Center, Cape Kennedy, Florida

December 19, 1963



'63: A BUILDING YEAR — IN SPACE AND ON GROUND

Although 1963 was a lean year for NASA launches at Cape Kennedy, it was also a year of unparalleled mission success, and one in which the U.S. cemented yet another firm stepping stone on its stairway to the moon.

Nine major NASA launches emanated from the Cape during the past 12 months, and all nine were unqualified successes.

The reliable Delta booster was responsible for six of those flights, placing two Syncoms, an Explorer, a second Telstar, a TIROS and an Interplanetary Monitoring Platform into Earth orbits.

The nation's mightiest rocket, Saturn, scored its fourth straight success on March 28th, and Centaur made its first triumphal flight last month.

Sixth In Space

In May, Astronaut Leroy Gordon Cooper became the sixth American rocket passenger, the fourth to circle the globe, and the first to stay up more than one day.

But as these milestones were being recorded in the vast void of space, construction workers on Earth were molding the spaceport from which lunar launches will originate.

Ground for the Merritt Island Launch Area's first building was broken in January, and as the year ends, facilities are blossoming all over the Island.

Among the world's leaders who toured NASA's sites at the Cape in 1963 were the King and Queen of Afghanistan, the Grand Duchess of Luxembourg and the late President of the United States, John F. Kennedy, for whom Canaveral was renamed on Thanksgiving Day.

Here are the major events of the year, month by month:

January

Relay and Telstar, two sat-
(See '63, Page 11)

Pact For LUT Equipment Let

A contract for more than \$9 million has been awarded to two companies which will provide electrical and mechanical equipment for three launcher-unibical-towers (LUTs) to be used by the Saturn V.

The joint venture contract for \$9,847,000 was awarded by LOC to the Paul Smith Construction Co., Orlando, Florida; and The E. C. Ernst Co. Inc., Atlanta, Ga.

The two companies will provide such equipment as heat shields, computer room enclosure, air conditioning, mount mechanisms and other technical paraphernalia for the huge tower-like structure upon which the Saturn V launch vehicle will first be assembled and later launched.

The fabrication and erection of the LUTs will be by the Ingalls Iron Works of Birmingham, Ala., under an \$11.2 million contract awarded by NASA several months ago.

The Smith and Ernst com-
(See LUT, Page 9)

Season's Greetings

We hope you enjoy today's special, 12-page, year-end issue.

Spaceport News, along with a great number of employees, will take annual leave next week and resume publication January 2nd.

Meanwhile, Merry Christmas and Happy New Year!



A CHRISTMAS MESSAGE

TO ALL LOC PERSONNEL:

The approaching Holiday Season marks the completion of a year of great promise in growth for this organization.

Our Yuletide happiness is tinged with sadness because of the tragic death of our late President. His abiding faith in the space program brought us to a vital turning point in man's journey to the moon. His memory will continue to spur us onward as it is forever preserved in the name and spirit of the John F. Kennedy Space Center.

We can find reassurance and comfort, however, in the inspiring leadership of President Lyndon B. Johnson under whose guidance the nation enters a New Year rich with opportunity and, for us, great expectations.

It is in that spirit that I extend sincere greetings to you and your families for the Merriest of Christmases and a Happy New Year.

May He whose will we serve continue to light our way to the stars.

Dr. Kurt H. Debus.

MEASURING THE SPIRIT

Planning a big Christmas? Got an oversized turkey ready for the horde of relatives who will be down? Spend a mint on presents? Well, be thankful you could.

There are many of our Brevard neighbors who aren't as fortunate, and whose Christmases won't be as bright.

We can help those in need, however, by sending contributions to LOC's Community Development Office, rather than exchanging Christmas cards with friends at work we see daily.

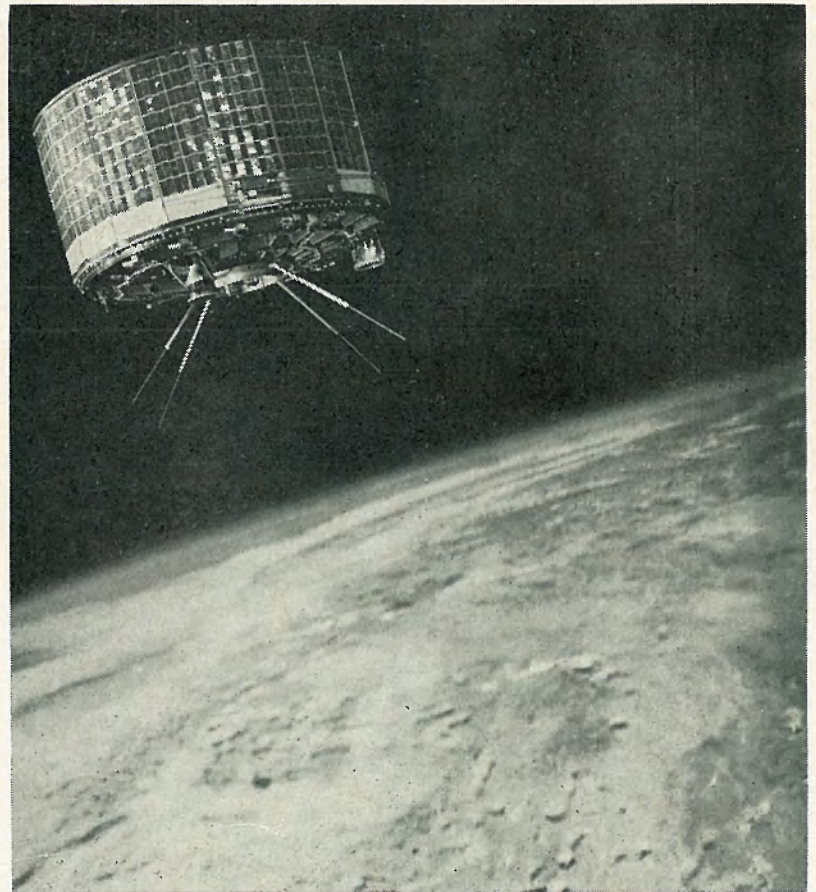
The money will be turned over to the Salvation Army for distribution, via food baskets, to those who couldn't otherwise have afforded such a meal.

There are undoubtedly many Tiny Tims in the county, and the donations will be put to excellent use.

We know that, throughout the year there are fund raising campaigns and fund raising campaigns, and all are worthy. But this is, after all, the season in which we should take stock, count our blessings, and indulge in the real meaning of Christmas — that of giving.

The benefits to be reaped through such a contribution—the knowledge that a hungry family down on its luck will enjoy a fine holiday meal — cannot be measured by material means.

They can be measured only when someone finds a way to put a yardstick on the true spirit of Christmas.



IN THIS REMARKABLE photograph, taken by Don DeFillips and Jim McNearney, TIROS VIII, scheduled for launch tomorrow morning, appears to be high over the Earth taking its own pictures of cloud formations. The hitch, of course, is how did DeFillips and McNearney get into space to take this shot? Answer: they didn't. They double-exposed the spacecraft against a background of black velvet, and placed it into the same frame of a photo Gordon Cooper took from space during his orbital flight.



Dear Sir:

Would you please send me a copy of all the astronauts.

David H.
Chatham, N. J.

PILOT OF THE YEAR

Chief X-15 pilot Joseph A. Walker has been selected by the National Pilots Association as its 1963 Pilot of the Year.

The award was made in recognition of Walker's contribution to aeronautical research and the general advancement of aviation.

PROGRAM MAY RESULT IN MAN-MADE COMETS

The first step in a long-range program that may result in launching a man-made comet has been successfully completed at NASA's Lewis Research Center.

Two sounding rocket experiments launched from Wallops Island simulated some of the chemical reactions that occur within comets.

A successful man-made comet would answer a number of questions.

If the simulated comet duplicates the behavior of an actual comet, we will have a better understanding of natural comets. This is important because a current theory holds that comets are composed of the materials of our solar system at the time it was formed. Knowing precisely what this cometary material is may tell us something about conditions in the universe at the time our solar system was born.

SPACEPORT

NEWS

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

SERVICE PINS AWARDED TO 126 LOC EMPLOYEES

The following NASA employees have been awarded service pins:

30-years: Winston L. Kielkopf, Hyman Rosenstein, and Raymond A. Woodbury.

20-years: Fabian R. Andrews, Thomas M. Davis, John R. Galbraith, Robert D. Heinemann, Joseph A. Kennedy, Fred A. Mazzanoble, Thomas E. McGuire, Thomas E. Royal, John A. Russell, A. L. Sander, Frank W. Saulsbury, Harry W. Smith, Junior M. Viehman, and Sadie A. Weissenegger.

15-years: Jack B. Abercrombie, John W. Ault, William B. Calhoun, Simone B. Cameron, Eleanor J. Crossman, Joseph W. Dunn, Virgil N. Finch, Jose L. Gonzalez, Eugene S. Kapica, William J. Mountz, Patrick A. Obenhaus, Eugene Oropallo, Parry W. Owens, Thomas D. Pantoliano, Henry J. Porter, III, Clifford R. Shumway, Edmund F. Smith, Lawson L. Speckman, Steve W. Tatham, and Mary H. Waller.

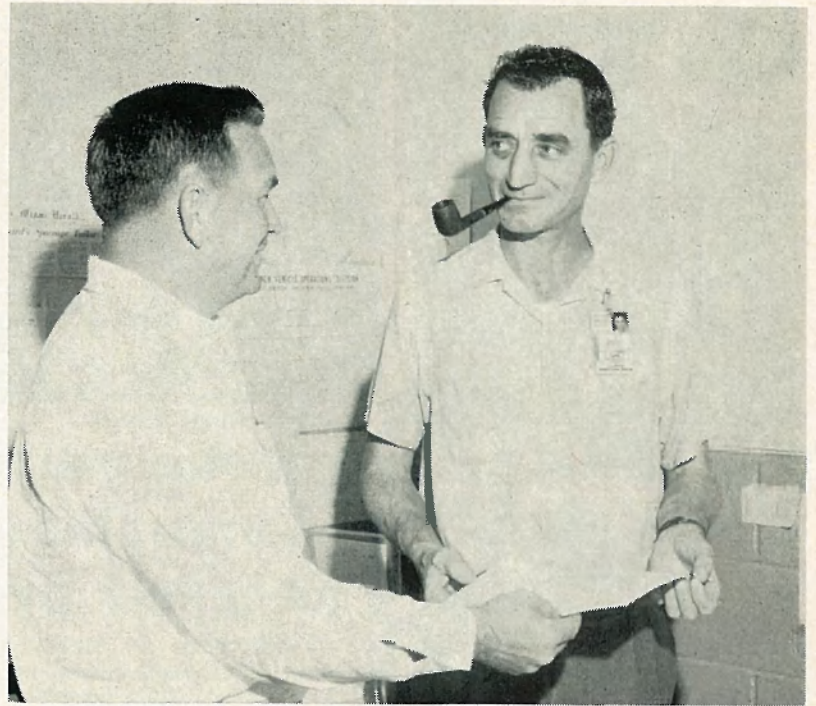
10-years: Editha D. Blaney, Robert M. Bricker, Bobbie W. Clark, John P. Cressman, Roy V. Curtis, Jr., Donald M. DeSlover, Byron C. Driskill, James R. Ellis, Myrtle F. Frey, Charles G. Gadow, Cleo A. Gagne, Beatrice S. Graham, Floyd P. Harris, Steven L. Harris, William R. Harris, William J. Horner, Jr., James C. Hughes, Richard K. Jenke, Harold A. Meeler, Jim Orr, Gordon C. Robinson, Mary A. Rutkowski, Joseph L. Schertz, Mittie C. Smith, Elizabeth N. Snoddy, William H. Spates, Jr., Virginia S. Speckman,

George W. Walter, John D. Watt, and Allen M. Wooldridge.

One year: Zack Strickland, Bettye Latham, Lee Moss, Jane Harbin, Joe Crawford, Gertrude Vredeveld, Ann Barton, Joyce Taylor, Gary Rhoden, John O'Brien, Babette Cissell, Elizabeth Johnson, Ruby Balthaser, Lorinda Brand, Peggy Middleton, Clariece Williams, Mary Summers, Malcom Stringer, Ruth McClain, Myron D. Christensen, Carolyn Wilcox, Joseph Burke, Jr., Clarence Coleman, Marilyn Reuter, Nancy Labroad, Phyllis Parks, Eugene Sweat, Gerard Fradette, Viola Bradley, Denison Phelps, Gale Abbott, Carole Seanor, Shirley Fortier, Frederick Myers, Lucille Malmborg, Donald Melcolm, James Courson, Beaufort Jones, Harold K. Wetzell, Eleanor Ensor, Daniel Rorrer, Larry Davis, Mary Roytek, Loren Padelford, Melvin Phillips, Paul Rice, Glenn Swanson, Clifford Wood, Douglass McDuffie, Jr., James Scott, Ernest Eulitz, James Lingerfelt, Edward Timmons, George Van Arsdall, Jerilyn Moss, Nancy Butler, Ray Balton, Harriet Meeler, and William Knerr.

PAY DAY CHANGE

Since a normal pay day falls on January 1, a legal holiday, NASA employees will be paid on December 31. This will cause 27 pay periods in calendar year 1963, instead of the normal 26.



CHARLES LANGFORD, President of the International Association of Machinists' Aerospace Lodge 1306, presents a certificate of commendation to his boss, Jay Campbell.

Rare Labor Relations Award Given To LOC Supervisor

Labor - management relations are, in a sense, comparable to airline operations. Whenever an airliner crashes, it makes front page banner headlines. Not a word, however, is ever said about the thousands of safe flights and the overall excellent safety record maintained by airlines.

Parentetically, whenever a union decides to call a strike it's news. Never mentioned are the good working relations enjoyed by the vast majority of labor and management organizations.

Friday, however, this trend was reversed when local members of the International Association of Machinists, (IAM) paid a rare tribute to an LOC Supervisor.

Charles Langford, President of Aerospace Lodge 1306 presented the certificate to Jay Campbell, Chief, Technical Shops Section.

It said, in part, "we of IAM Lodge Local 1306 would like to express our appreciation for the fine working relationship which you have set up between our Local and NASA management.

"We feel that under your guidance our Local has maintained a spirit of cooperation and a desire to excel which is seldom achieved. This is the

direct result of the trust and confidence which you inspire.

"At all times our members have felt that you had our safety and welfare in mind in all decisions, and that your consideration for our well-being reached beyond that of the average manager-employee relationship.

"Your door has been open wide to our troubles, both on the job and off. Our triumphs have been made greater by sharing them with you as our defeats have been softened. We have been inspired by your justice and strengthened by your counsel.

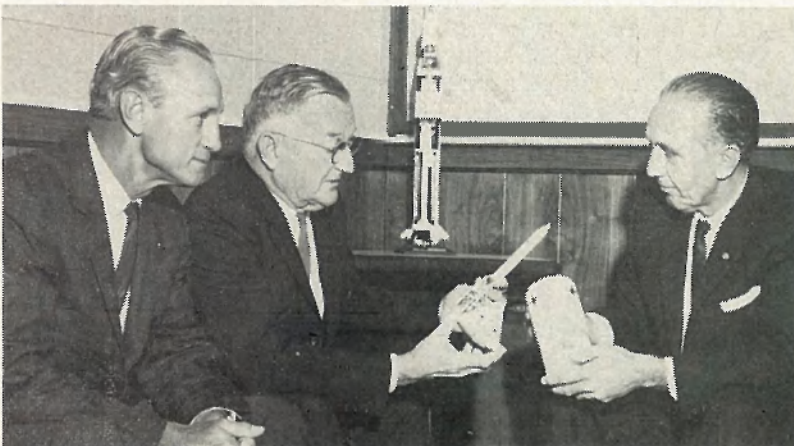
"All members of IAM Aerospace Lodge Local 1306 join in looking forward to the continuation of your excellent leadership and the achievements which will result from this spirit."

Saturn Rescheduled

The launch of the fifth Saturn I space vehicle has been postponed due to technical difficulties.

Pre-launch checkout revealed cracks resulting from stress corrosion in critical pneumatic lines in the first stage.

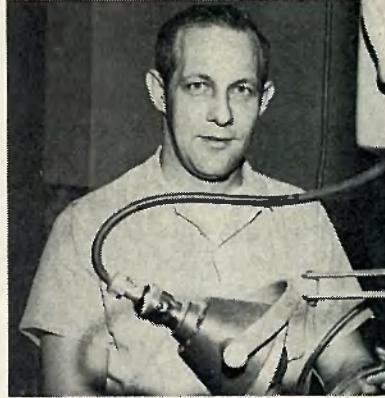
The new launch date is estimated in late January.



LOC DIRECTOR, Dr. Kurt H. Debus, right, was presented with a 1/40th scale model of the Apollo spacecraft last week by North American officials W. S. Ford and Joe King. North American is prime Apollo contractor.



G. H. Robinson



Edward Henry



L. L. Speckman



Eleanor Ensor



Jo Ann Mace

Memorable Christmases Recalled By Employees

To catch the spirit of the season, the Capeside Inquirer this week asked employees "What was your most memorable Christmas?"

G. H. Robinson, Mechanical Systems Operations: "The Christmas I remember best was in 1960. One evening just before Christmas, we as a group of young people sang Christmas carols on the lawns of shut-ins. We had an enjoyable party and covered dish supper afterward, but the highlights of the evening and the season was the smile on the faces of these people."

Edward J. Henry, Machine Shop: "Last Christmas, which was our first Christmas away from our home town, I spoke to my Dad on the telephone. I commented to my wife about how expensive it was to speak on the phone, but it was the best call I ever made. My Dad died two months later. I'll always remember that conversation."

L. L. Speckman, Budget Branch: "The Christmas, I remember most was two years ago while employed at Brookley AFB, Alabama, when my wife, two daughters and I got a little 2-year-old orphan boy out of the orphanage and made Christmas for him."

Eleanor Ensor, Passenger Travel Section: "Our first Christmas away from home, my husband was on 24-hour alert and not allowed home. Therefore, I spent Christmas Day by myself and cried most of the day."

Jo Ann Mace, Supply Policy Office: "I'm from Washington, D. C. and when Christmas comes, we are knee-deep in snow plus freezing cold. One year my family and I went to visit my sister in New Orleans for Christmas. The temperature was about 90 degrees and we went swimming. That certainly is the Christmas I remember most."

John E. Potter, AMR Installation Office: "While stationed in Norfolk in 1954, pay day fell after Christmas. After buying gifts, we could not afford a tree until a card arrived containing \$5. We bought our tree and had a very Merry Christmas."

Robert B. Hegwood, Engineer Support: "The first year Sarah and I were married, we agreed not to buy each other a Christmas present. I received a present and she didn't. I can't forget it because she won't let me."

Joan Roytek, Propulsion System: "In 1958 while living in Chicago, I spent Christmas Eve and half of Christmas Day in a railroad station trying to get to my home town. Delayed trains and inclement weather didn't lower most travelers' Yule Spirit."

Alan Beckman, Manpower Section: "I remember 1954 best because that was when I got my first bicycle."

Diane Deimling, Administration Services: "I feel that I will remember this coming Christmas most of all. I haven't seen my family for a long time. Just being with them will make this one of my favorite Christmases."



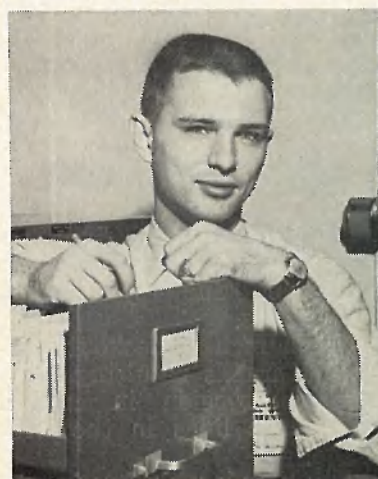
Robert Hegwood



John Potter



Joan Roytek



Alan Beckman



Diane Deimling

The Feathered Variety

BIRD COUNT 'LAUNCH DAY' NEARING

Mechanical giants spouting brilliant flame as they take to flight, aren't the only kind of birds to fly over Cape Kennedy.

This area has, in fact, gained a national reputation all its own for the variety of feathered species that call the Cape home, or at least a stopping off point on migratory hops.

And, like their man-made cousins, Mother Nature's birds have their own tracking specialists, who not only follow flight patterns intensely, but use powerful cameras to preserve them for further study.

Acknowledged leader of the local bird followers, is Allan D. Cruickshank of Cocoa chief photographer for the National Audubon Society.

"Launch day" for his expert tracking team is next Wednesday—Christmas Day.

The occasion is the Audubon Society's annual bird count. Each year at this time,



Allan Cruickshank

some 15,000 professional and amateur bird lovers across the country sacrifice a warm home, holiday meals and the usual complement of football bowl games to participate in the count.

Each group selects a 15-mile area, and records how many different species are spotted within its boundaries during a 24-hour period.

The Cape Kennedy-based team, led by Cruickshank, has topped the nation in the count for seven straight years, and set an all-time record of 200 species sighted in 1960.

Unique Location

Cruickshank explains it this way:

"This area of Florida has a unique geographical location. No other pocket of land in the country can offer such a variety of terrain.

"One perimeter borders the Atlantic Ocean, and stretches westward across Port Canaveral's rich mud flats, through pine woods, mangrove swamps, palm hammocks, citrus groves (all on the Merritt Island Launch Area) and open ranch lands, to reach the fresh water marshes of the St. Johns River."

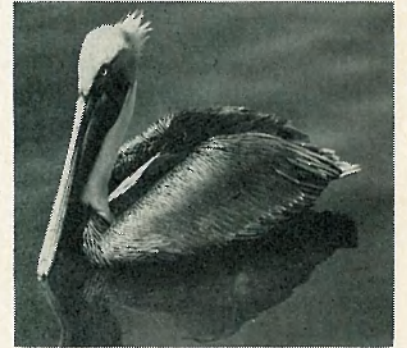
Such an area, Cruickshank explains, provides nearly every sort of habitat for birds.

Varieties sighted in the Cape Kennedy—MILA region run the gamut from the common Red-Winged Blackbird to

the excessively rare Dusky Seaside Sparrow, and include such other specimens as the Great Black-Backed Gull, the Royal Tern, the Black Skimmer, Fish Crow, Carolina Wren and Ruddy Turnstone.

And, Cruickshank estimates, if the count were extended year-round, the total number of species sighted here would more than double—to 400 plus. (There are about 750 different species in America.)

So intense is the Cape's bird population that the U.S. Bureau of Fisheries and Wildlife last year conducted an unprecedented survey to determine if rockets prove harmful to wildlife.



AN UNPERTURBED pelican rests on the Banana River between dives for a fish dinner.

Two hours before the scheduled firing of SA-3, a tour of nesting areas and feeding spots within 8,000 feet of the launch pad was made. More than 2,700 birds, including 40 species, were counted.

When the rocket roared to life, the birds, en masse, took to wing. But when the metallic bird had flown out of sight, the others settled back down peacefully. This satisfied the government officials that co-existence was possible.

Worthy Incident

There is one other well-recorded bird incident involving the Saturn that is worthy of mention.

At T-minus 90 minutes in the countdown of SA-1, launched October 27, 1961—two security policemen drove northeast of Complex 34 and turned the sirens on their patrol car to full blast.

Their mission carried a strange purpose: to flush from the launch danger zone a covey of 21 rare Roseate Spoonbills.

It seems these beautiful pink birds, often mistaken for the more familiar Flamingo, had selected a site within a stone's throw of the Saturn as one of their migratory rest stops while enroute south.

Cruickshank and his wife, Helen, had spotted the spoonbills, realized their precarious position, and called NASA officials for help.

The resulting excursion by the police not only chased the spoonbills from the area, averting their certain cremation, but the noise caused a blackening of the skies as hundreds of ducks, herons and various other winged specimens took to flight.



FLORIDA'S only stork, known as the Wood Ibis, lights on a patch of mangrove. This bird is common to the Cape area.



THOUSANDS OF THESE Lesser Scaup ducks are landing daily on the Banana and Indian Rivers. Photos by Allan and Helen Cruickshank

Meet Don Mackey

ARTIST WITH A S

A tribe of Indians camped at Cape Kennedy, a dinosaur roaming loose on Merritt Island, a model T Ford driving on a road inside a crater on the Moon's surface?

Fantastic, yes. But nevertheless these and dozens of other oddities such as pink elephants and little green men appear at the Cape and on Merritt Island.

Where? In artists' concepts of what the spaceport will look like in years to come. Or, specifically, in artist Don Mackey's concepts.

Mackey, a senior technical designer for Brown Engineering, turns out many paintings of what the Vertical Assembly Building, the Merritt Island Launch Area, Complex 39, and other areas will look like when completed. Most of his work is created for LOC's Facilities Engineering and Construction Division.

Where Mackey's paintings differ is that he adds a delicate, personal tongue-in-cheek touch to his work.

Take the painting of the Lunar Excursion Module landing on the surface of the moon that hangs in the LOC Director's office for example.

Hidden from immediate sight, but clearly visible if you know they're there, are two little green men peeking out from behind some rocks.

The Indian village, complete with teepees and a smoking fire, is smack in the middle of Merritt Island on another painting. (See photo, lower right.)

A pink elephant stands on a concept of Complex 39, a wooden snack shack is located next to a rendering of the VAB, and a dinosaur lurks in the Merritt Island underbrush.

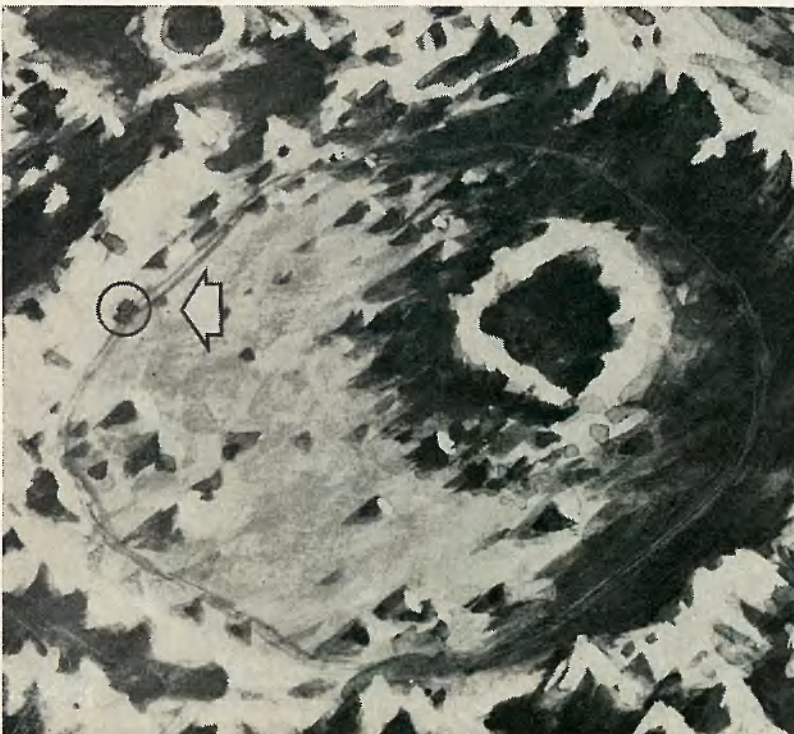
Mackey's sly ingenuity lies in the fact that all these improbable additions are in full view in the paintings, but are so cleverly woven into the overall pattern they are practically invisible until he points them out.

"Actually, this isn't anything new," Mackey explains. "Paintings as far back as the 14th century had little things hidden in them, and many of the more famous artists have used what we call 'negative space' to sneak something in."

The people who order many of Don's paintings have come



MACKEY'S RENDERING of a lunar vehicle approaching the moon's surface seems harmless enough, but notice the large crater in the lower righthand corner. Enlarged photo of this area, below, reveals a Model T Ford motoring inside the crater on a well-worn road.



SENSE OF HUMOR

to look for his little extras, and once when he'd failed to add anything in one, they searched diligently, in vain, for an hour and a half.

"Other times I'll put two or three into one painting and make one of them rather obvious," he says. "This really confuses them."

"Only once has Don been criticized for his additions, which actually are so small — sometimes painted with a single hair from a brush — that they would be extremely difficult to detect without knowing what and where they were.

The lone criticism was voiced on his placement of a Confederate flag on the moon's surface on a lunar landing concept. A slide was made of the original and blown up on a screen. "I guess the flag showed up pretty well when they projected the slide," Don says.

A native of Waukegan, Illinois, Mackey has been wearing out sketch books since he was in grammar school.

He even rode the rails for awhile as a hobo, hitting 48 states and sketching scenes wherever he went.

He studied formally at the Chicago Art Institute, and held several art director jobs from New Orleans to California before joining Brown Engineering in February 1962.

A bachelor, Don also paints in his spare time, and sells many of his canvasses, below, even before they're finished.

His work at the Cape is highly respected, and many of his paintings have been reproduced in national publications.

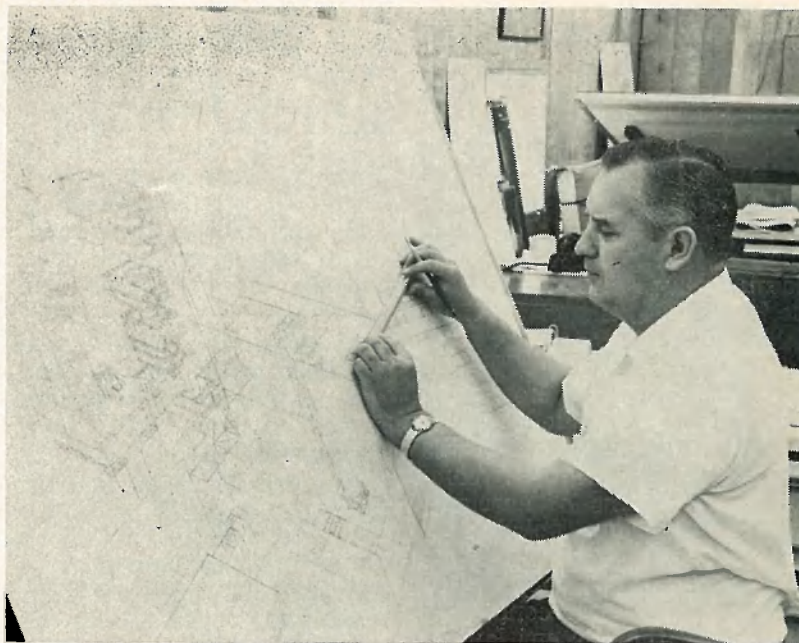
Where does he get his ideas of what to "fit" into a painting?

"I just put in what seems appropriate at the time," he says. "The Indian Village almost seemed to belong in that painting of Merritt Island."

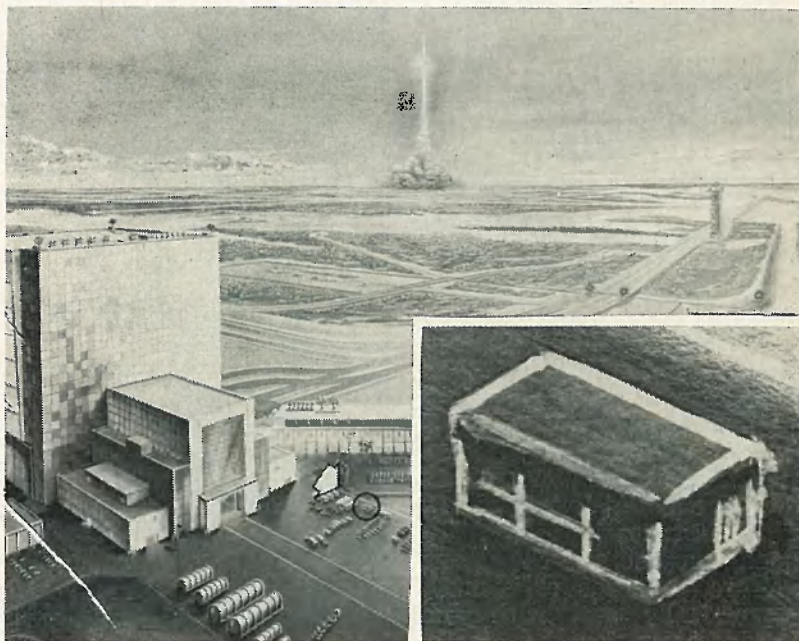
Snakes, lizards, a monkey, an outhouse, a man sleeping, owls, and a flying saucer are other objects that have found their way into his paintings.

So, next time you see a Don Mackey painting, take a long second look at it. There's no telling what you may find.

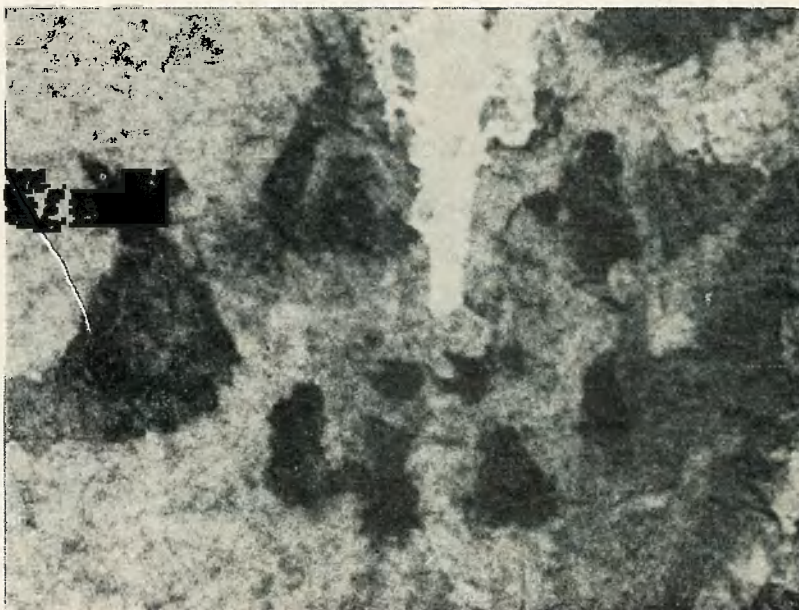
How will you know it's a Mackey painting? You shouldn't have any trouble. He once painted a portrait, and hidden in it was his signature — 100 times.



Mackey at work in his office at Cape Kennedy.



VIRTUALLY UNNOTICED near the overshadowing VAB, above left, is a tiny snack shack, inset. Below, is a Mackey Indian Village, complete with campfire, on the Cape.



230-Ton LPS To Simulate Space Flight Launch Phase

The NASA/Goddard Space Flight Center has announced negotiations with the Marine Engineering Department of Northrop-Nortronics, Needham, Massachusetts, for the design and construction of a huge test device to simulate the launch phase of space flight. Final negotiations are expected to lead to a contract estimated at \$1,900,000.

Called a Launch Phase Simulator (LPS), the device will test unmanned space-flight units and components under the separate or combined conditions of acceleration, vibration, noise and vacuum. It is designed to duplicate, as nearly as possible, the environmental conditions typical of the current launch vehicles in use.

Essentially, the 230-ton test device will consist of a

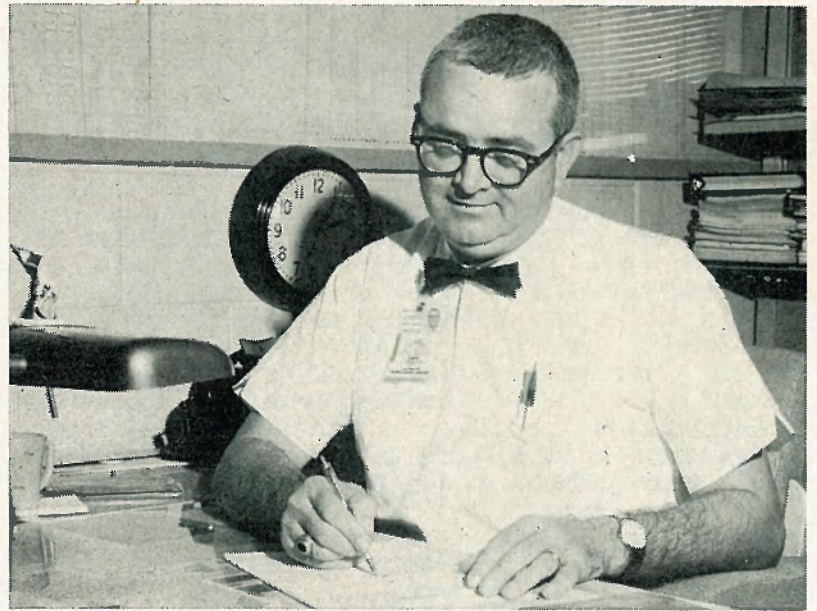
controlled—environment test chamber mounted on one end of a counter-balanced rotating arm. The device will have a 60-foot test radius.

Spaceflight units weighing up to 4,000 pounds and measuring 10 feet in diameter by 15 feet in length will be accommodated by the test chamber.

A near-vacuum will be created in the vacuum-tight test chamber by a steam-driven air ejector system located in a trench beneath the simulator.

Present plans call for equipping the test chamber with a rugged, 14-inch television camera to permit the continuous observation of the space-flight units tested inside the chamber.

Regenerative braking will be used to slow the simulator.



JACK BING, Project Engineer for Heavy Missiles Systems Facilities, signs a procurement request for \$66 million. The money will be used to finance work on the Vertical Assembly Building and Launch Complex 39.

Stabilization Board Membership Changes

The Cape area Project Stabilization Board met yesterday under the leadership of its newly elected chairman, Lewis Melton, LOC Financial Management Officer and Acting Assistant Director for Administration.

Purpose of the Board is to see that construction work at the Cape and at Patrick AFB, which is essential to the National purpose and the public welfare, proceeds efficiently, economically and with due consideration for the protection of labor standards, wages and working conditions.

Other LOC members of the Board are Gerald Michaud and Joseph Miraglia. Alternate members are Sigfrid Carlson, M. E. Naworth and Oliver Kearns.

DOD Board members are Colonel Albert James of the Air Force, Colonel W. L. Starnes of the Corps of Engineers, and Commander J. W. Roloff of the Navy.

BACHELORS WANTED

If you are a handsome, eligible bachelor in the \$25,000 income bracket, drive a Stingray, Jaguar or Caddy convertible, and have a good credit rating, there are three "eligible, adorable, average-income (typist pay) single girls" looking for you. They mailed a "wanted" note to Spaceport News Tuesday, adding that three of the above described males were needed "at once."

The only problem is, should someone fulfill the qualifications, they wouldn't know who to contact. The girls failed to identify themselves.

\$66 Million Expenditure To Finance 39 Area Work

If high finances make you nervous, or you have trouble balancing the family budget, then Jack Bing's job wouldn't interest you.

Bing, Project Engineer for Heavy Missiles Systems Facilities, signed a procurement request Friday authorizing the expenditure of \$66 million.

"It's probably one of the largest amounts ever turned loose at one time by a government agency in this area," Bing said.

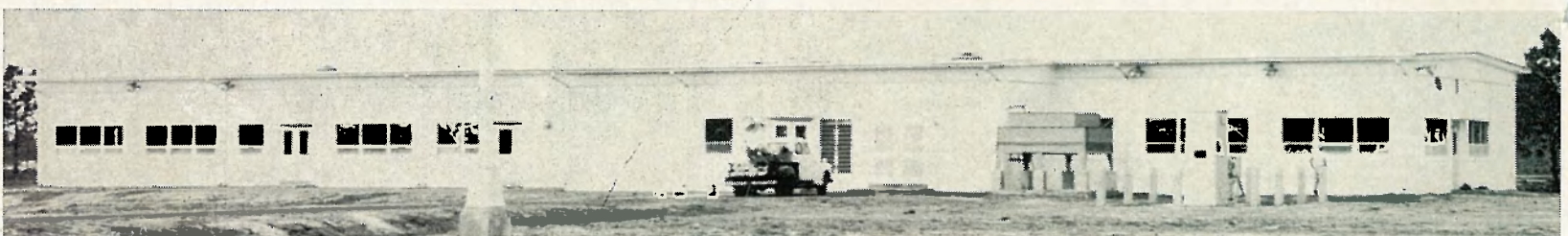
The money, following P&C processing, will be turned over to the Canaveral District of the Corps of Engineers, to be used for completion of the Vertical Assembly Building and other facilities at Launch Complex 39 on Merritt Island.

Specifically, the bulk of the money will be used to install VAB platforms, outfit the building with sidings and roof, and have it ready by mid-1965 to service Saturns.

The contract package, on which contractor bids will be opened January 7th, also includes construction of the launch control center, a utility plant, water and electrical distributions systems, roads, parking, LUT erection area number three, a transporter erection area, POL, paint and chemical storage building and a high pressure gas storage building.

Already, contracts totaling about \$52 million have been awarded for work in the 39 area. Blount Brothers Construction Company has two of these pacts, an \$8 million one for the VAB foundations and a \$21 million one for construction of Pad A at 39 and the three-mile-long crawlerway connecting it to the VAB.

The American Bridge Division of U. S. Steel has a \$23 million contract for the structural steel portion of the VAB.



OFFICIALLY OPENED at ceremonies Friday was this new resident office of the Canaveral District of the Corps of Engineers. The \$200,000 building is the first of more than 40 structures to be completed in the industrial complex of the Merritt Island Launch Area.

CATALYTIC COMPANY TO NEGOTIATE PACT ON PROPELLANT JOB

The Catalytic Construction Co. of Philadelphia, Pa., has been selected for negotiation on a contract to manage the installation of a propellant loading system on NASA's Launch Complex 39.

The contractor will manage and supervise fabrication and installation by subcontractors of the propellant loading complex. The systems include facilities for liquid hydrogen and liquid oxygen, liquid nitrogen, RP-1 (kerosene), high pressure gas and environmental control.

Responsibilities also will include coordination of subcontractor efforts, quality control, reporting, on-site inspection and overall timely completion of the system in accordance with specifications provided by NASA.

The contract will be a cost plus fixed fee type and its estimated cost is approximately \$800,000. Cost of the work the contractor will manage is estimated at \$13-15 million dollars, all of which will be accomplished by fixed price subcontracts.

LUT PACT

(Continued from Page 1)

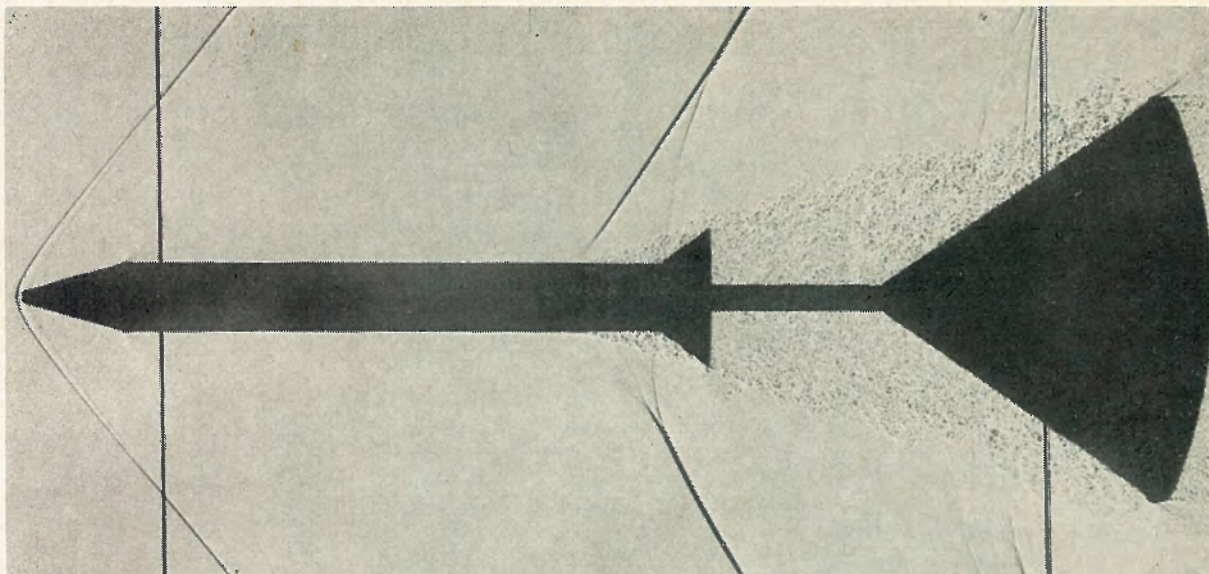
panies will fabricate much of the equipment elsewhere but installation and checkout will be at NASA's Merritt Island Launch Area, where the Saturn V Apollo project will be launched.

Terms of the contract call for the first LUT to be outfitted by December, 1964; the second by March, 1965; and the third by November, 1965. All work under the contract is scheduled to be completed by February, 1966.

The two companies were selected from four proposals made to the Launch Operations Center to provide the equipment. A total of 111 firms were invited to submit proposals.

New Space Fuel

Thermonuclear fusion, source of the Sun's energy, may someday provide power for space propulsion purposes.



SHOCK WAVES are produced by this Apollo Launch Escape Vehicle traveling at supersonic speeds. From tests like this at Ames Research Center in California, NASA scientists determine whether the vehicle will carry moon-bound astronauts safely away from the booster if it misfires during launch. This model was launched from a special gun in a large tank. A shadowgraph photographic process recorded the progressive shock waves of air passing over the vehicle.

AUSTRALIAN TRACKING SITE MOVED

The moving of manned spaceflight tracking and data acquisition facilities in Australia from Muchea to a new site being constructed near Carnarvon at the westernmost point of the country has been jointly announced by NASA and the Australian Department of Supply.

The move will consolidate at one site NASA's ground support facilities in Australia for the Gemini and Apollo projects.

In announcing the transfer NASA Administrator James E. Webb and the Australian Minister for Supply Allen Fairball spoke of the valuable contributions of the Muchea station to the Mercury program. From a performance standpoint the Muchea station was regarded as one of the best in the Mercury Network.

The new site will also include tracking and data acquisition facilities for the unmanned Orbiting Observatory series of scientific satellites.

The move to Carnarvon is being made for technical efficiency as well as for operational economy. On all NASA launches from Cape Kennedy—regardless of the azimuth angle—the spacecraft passes near Carnarvon on its first orbit, and of the succeeding orbits more are in view from this farthest west point of

Australia than from any other point of land in the southern Pacific.

In Project Gemini, the prime job at Carnarvon will be to follow the Agena rocket and later the astronauts' spacecraft as each in turn

swings up from the Indian Ocean toward Australia, and to obtain data indicating line of flight, thereby determining the orbits. Tracking and communication with the spacecraft by radio telemetry will continue during rendezvous.

TELEPHONE "PERSONALITIES" EXPOSED

The following list of telephone personalities was published in Space News — the publication of NASA's Western Operations Office — following a telephone company's program entitled, "See yourself as others HEAR you."

The "LOUD MOUTH"—the guy who speaks much too loud and too close to the mouthpiece. Instead of speaking in a soft pleasant voice, he shouts into the telephone injuring the other party's eardrum.

The "KNOW-IT-ALL"—the type who doesn't need a telephone directory. He can remember all telephone numbers as easily as his own. This person usually complains the loudest when billed for wrong long distance calls.

"ELUSIVE LOUIE"—usually an executive type who, when leaving the office, never-never informs his secretary of his destination, doesn't leave a number where he can be reached, or indicates how long he will be gone. He's never available when he is needed to make a decision.

"SCATTERBRAIN"—So disorganized he is fortunate if he calls the intended person; his mind is never on the present situation. His disordered desk makes it almost impossible to find the subject matter and the purpose of the telephone call is lost.

"MR. CIGAR-MOUTH" and "GERTRUDE THE GUM CHEWER"—Understanding these types is a real problem as they try to talk through a cigar, a kingsized wad of chewing gum, or a mouthful of cookie crumbs.



OUR GOOSEPIMPLED pinup, Hil-da Littleton of McDonnell, reminds us to bundle up — Saturday is the first official day of winter.

Edison Idea May Be Used

A device first patented by Edison in 1883 may be used to generate electric power in space according to scientists at NASA's Lewis Research Center.

Back when he was building the first light bulbs, Edison noticed that very hot wires "boiled" electrons off their surfaces. These negative electrons were pulled toward a positively charged surface as a magnet is pulled toward some metal surfaces. Edison patented this process of "thermionic emission."

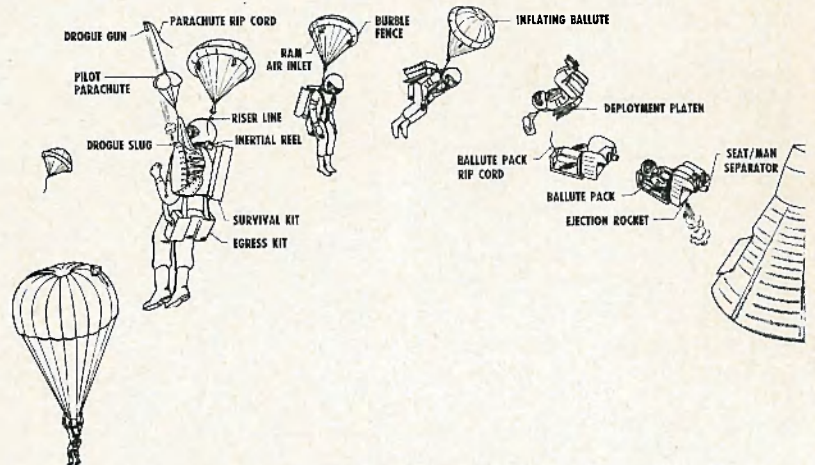
Since electricity is nothing more than a steady flow of electrons, a system that continuously boils off and collects electrons could be the heart of a lightweight, compact electric power plant.

A major research program in power generation at Lewis is concerned with applying this boiling off, or thermionic emission, to an operating system.

Lewis researchers are considering the possibility of building a thermionic converter in a nuclear reactor.

If successful, it ultimately will be possible to build a space — ready generator that can produce millions of watts of electricity without the turbines and boilers that characterize Earth — bound power-

BALLUTE DEPLOYMENT



Gemini Safety "Ballutes" Shaped Like Spinning Tops

A balloon shaped like a child's spinning top is being designed as a safety device for astronauts during the first and last stages of NASA's Project Gemini flights.

The drag balloon, called Ballute, is being built by Goodyear Aircraft Corporation of Akron, Ohio.

Ballute (BALloon - parachute), a system developed by GAC during 20 test programs in the past four years, would be used if astronauts were forced to use their ejection seats, the planned mode of escape for altitudes below 70,000 feet.

The inflatable rubberized

fabric structure would stabilize and slow their fall until conventional parachutes could be deployed at the lower altitude.

Because free fall descent above 35,000 feet could result in a tumbling motion greater than man can stand, Goodyear engineers are developing the stabilizing device as a precautionary measure.

Ballute will be packaged in a deflated condition in the ejection seat during flight. Soon after ejection from the spacecraft, the astronauts would separate from their seats and the drag balloon would inflate within a fraction of a second and trail above them.

The inflated Ballute is expected to be about 18 inches in diameter and two feet long, according to preliminary GAC designs.

During previous tests, the drag device has successfully stabilized the descent of payload weighing as much as 500 pounds.

BEC Term To Begin

Last day for winter term registration at Brevard Engineering College will be January 8th. Classes begin on the 2nd.

Tuition ranges from \$36 to \$48 depending on the courses.

For a complete listing of undergraduate and graduate courses, contact Jack Collins in LOC's Training Branch.

Buckley Guest Speaker At Investigators' Meet

Charles L. Buckley, Jr., NASA Launch Operations Center Security Officer, was guest speaker at the recent Atlanta Region U.S. Civil Service Investigators Conference.

The Conference had as its main theme, "A National Policy: Efficiency in Government".

Buckley spoke on the topic, "Security Aspects of the Federal Space Agency — Past, Present and Future".

Approximately 150 persons attended the Conference of the Atlanta Region, which is comprised of the states of Alabama, Florida, Georgia, Mississippi, North and South Carolina, Tennessee, as well as Puerto Rico and the Virgin Islands.

MYSTERIOUS NOISES TO BE STUDIED

The Goddard Space Flight Center has awarded an \$83,785 contract to Yale University, to design and develop a world-wide radio monitoring network for studying Jupiter.

The global network will maintain a 24-hour radio monitor of mysterious low frequency radio noises sporadically emitted from the planet and first noticed in 1955.

Information gathered will be used to reap further data about the planet's magnetosphere.

The four radio monitoring stations comprising the world-wide network will be located approximately every 90 degrees in longitude around the world.

One of the stations will be set up near Goddard in Greenbelt, Maryland. The remaining three stations will be located at U. S. satellite tracking stations in Hartesbeesthoek, South Africa; Carnavon, Australia; and South Point, Hawaii.

Although a number of observatories have been studying Jupiter's low frequency radio emissions since their discovery, none has been able to make uninterrupted observations.

'63 — A BUILDING YEAR

(Continued from Page 1)

ellites silenced in space, suddenly came back to life.

Ground was broken at MILA for the Manned Spacecraft Operations and Checkout Building.

February

ellite, was successfully launched into Earth orbit February 14.

Albert F. Siefert was named Deputy Director of the Launch Operations Center.

March

"Delta Day" was held at the Cape to honor the men behind the Delta project, which at that time had scored 15 consecutive successful flights.

Saturn SA-4 was successfully launched, making it four straight for the Block I configuration of vehicles.

April

Explorer XVII, an atmospheric structures satellite, was boosted into Earth orbit by a Delta rocket. The 405-pound spacecraft carried experiments to measure the density, composition, pressure, and temperature of the

atmosphere high above Earth.

May

A new "permanent" organization structure for LOC was approved, calling for 14 offices and divisions reporting directly to the Office of the Director.

Telstar II was launched into orbit May 7th.

Astronaut Gordon Cooper followed suit May 15th when he began a record 34 hour globe-girdling journey, climaxed by a "cliff-hanger" landing in the mid-Pacific.

June

LOC's Federal Credit Union opened. Within six months it had 500 members.

Hurricane hunting Tiros VII was launched on the 19th, equipped with two wide-angle weather eyes to spot spawning tropical storms.

July

Syncom II was launched into a synchronous orbit, 22,000 miles above Earth.

August

A complete organization structure was approved by LOC Director, Dr. Kurt H. Debus, to implement the "first level" structure announced in April.

Colonel Aldo H. Bagnulo was named Director of LOC's Facilities Engineering and Construction Division, succeeding Colonel Clarence Bidgood, who retired.

Work on the 52-story Vertical Assembly Building at the Merritt Island Launch Area began.

September

Several hundred local NASA employees took advantage of the Labor Day weekend for a special cruise to Nassau.

October

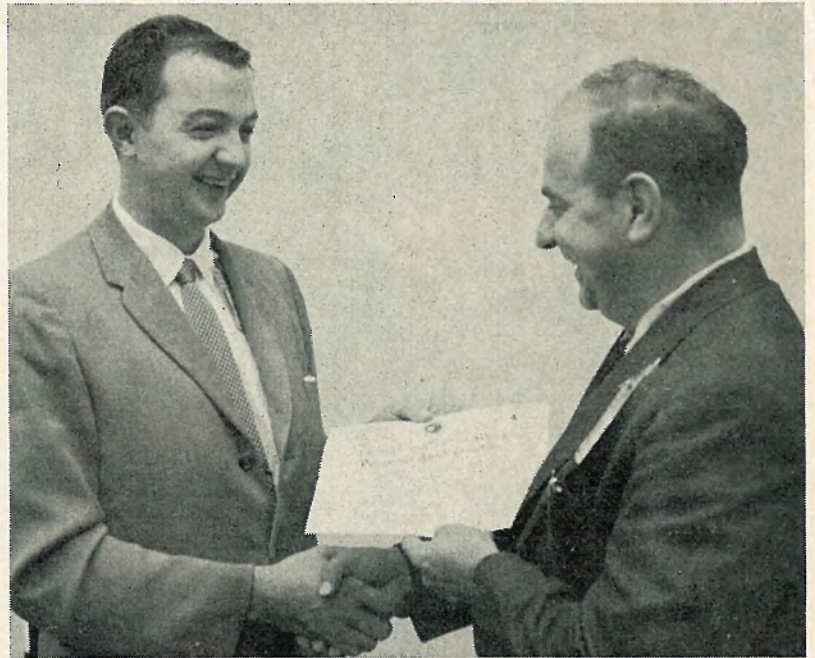
NASA observed its fifth anniversary.

November

The late President John F. Kennedy toured the Cape just six days before his death. He was particularly impressed with launch progress at Complex 37, where the SA-5 was being groomed for flight.

An Interplanetary Monitoring Satellite, IMP-A was launched into orbit on the 26th, and was followed in space the next day by a Centaur rocket.

Cape Canaveral's name was officially changed by executive order to Cape Kennedy.



RON CRAIN, Chief of LOC's Audio-Visual Branch received an early Christmas present last week from his boss, Jim Russo. It was a check and award for Sustained Superior Performance, from July 1962 through June 1963.

Rollins' Registration Opens At Patrick January 6th

Registration for Rollins College Extension courses at Patrick AFB, will be held January 6 through 8 in building 543 at Patrick. Hours are from 9 a.m. to 5 p.m. each day, and from 6 to 8 p.m. on the 7th and 8th only.

Classes will meet once a week from 5:30 to 8:30 p.m. Application fee is \$10, and undergraduate tuition is \$15 per semester hour.

Courses open include: Prin-

ciples of Accounting, Business Law II, Business Management and Research and Development Management.

Psychological Foundations, Teaching in Elementary Schools, and New Content in Elementary School Science.

Astronomy II, English Composition and Literature I and II, Introduction to Types of Philosophy, Philosophy of Religion, Elementary Spanish II and Fundamentals of Speech.

Introductory College Algebra, College Algebra, Trigonometry, Plane Analytic Geometry, Differential Calculus, Integral Calculus, Introduction to Linear Algebra, Calculus of Finite Differences and Partial Differential Equations.

Principles of Economics II, Geography of the USSR, Modern European History II, General Psychology, Social Psychology, Techniques of Counseling and Interviewing and Introduction to Anthropology.

All are three semester hour courses. New and former students are requested to come in prior to announced registration dates for counseling and assistance in program planning.



MISS USA, 19-year-old Marite Ozers of Chicago, (37-24-37), toured NASA Cape facilities Saturday while she was in the area for the Jaycees' annual Christmas parade in Titusville. Miss Ozers, her briefers said, was impressed with what she saw. So were her briefers.



BERNARD TORRENCE of the Electrical Shop, displays a suggestion award he won for his idea to develop aluminum pipe moulds for cables.

LING-TEMCO-VOUGHT TO NEGOTIATE PAOT FOR MILA SERVICES

Ling-Temco-Vought, Incorporated, Dallas, has been selected for final negotiation on a cost type contract with incentive fee provisions for Administration and Management Services at the Merritt Island Launch Area.

Ling-Temco-Vought will provide services in the areas of automatic data processing, technical information, photographic operations, and field printing plant operations.

The contract will be for three years divided into yearly phases. It is expected to exceed \$2.5 million dollars for the initial one-year period. The estimated cost and award fee provisions for each of the remaining two phases will be negotiated prior to the commencement of each phase.

Ling-Temco-Vought was selected from 23 companies which submitted proposals. These were narrowed last month to three companies with which competitive negotiations were conducted in a two-step selection process.

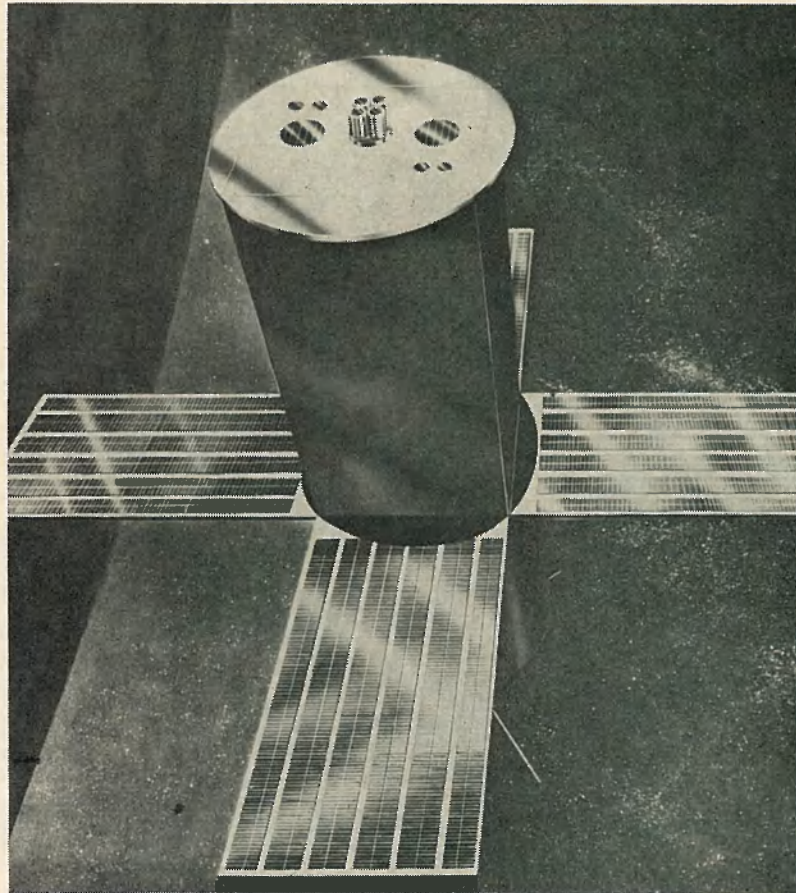
Administrative and Management Services is one of four major support services under which the MILA will be operated. The other three are: Communications, Base Operations, and Launch Support Services. RCA Service Co., Camden, N. J., previously had been awarded the Communications contract. Contractors still are to be selected for the latter two services.

Boxers' Bonanza

If the predictions of one ex-heavyweight champion come true, boxing may be in for a big comeback as a major sport — thanks to television relay satellites.

Rocky Marciano believes that when relay stations are available to bring title fights to every country's TV screens, there will be more money in the fight game than in almost any other business.

Consequently, more fighters with talent will stick with the sport instead of finding other means of livelihood.



NASA PLANS to build and launch eight of these Advanced Orbiting Solar Observatories (AOSO) at a rate of two per year beginning in late 1967. The satellite is designed as a stabilized platform for solar-orientated scientific instruments.

Christmas Fund Drive Honors' Names Listed

At press time more than \$400 had been donated by NASA employees who have foregone office exchange of Christmas Cards, to collect funds for needy Brevard families.

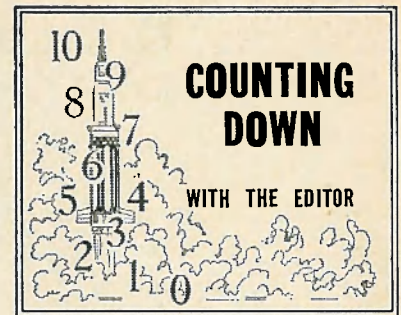
Among those who have contributed are: Lt. Col. Ralph L. Hicks, Dean R. Wood, John W. Donovan, U. Wright Kerns, Paul O. Siebeneichen, John Nelson, Richard E. Urrmann, Louise Goodman, Matoaka McDaniel, Thomas Michalek, Dr. Rudolf H. Bruns, Mr. Powers, Jacqueline Shockey, Herbert L. Tash, E. L. Green, Emily Watts, R. N. Green, Tom Strong, Frank M. Childers, Jay Viehman, Sigrid E. Carlson, John W. Ault, Jr., Raymond L. Norman, Anton Lohner, Leonard C. Colson and James H. Terry.

Isom A. Rigell, Thomas C. Ewounds, William Merchant, Robert Johnson, Edward Johnson, Henry Decker, John Twigg, Ralph Lotspeich, Frank Coppedge, Gladys Reed, Dr. Knothe, Charles Clift, E.

L. Holcomb, Robert Heiser, Frances Fellows, R. L. Body, J. L. Joyner, Majorie Holt, Mr. Christopher, Security Office, 100 per cent, Dr. Gruene, Natalie J. Spielman, and James Russo.

Mary Rutkowski, Richard Saieg, Safety Office, Milton Chambers, Ruth Bernstein, John & Phyllis Parks, Elmo Wisemant, Betty Jane McGuire, Gerard Fradette, Col. Bagnulo, Charles Hibbard, Nancy Butler, Prosper Fagnant, Mack Haworth, Albert Zeiler, V. M. Mitchell, Henry Illian, Theodore Kafer, Shirley Fortier, William McNeil, and Russell Clay.

J. C. Moser, Daisy Mikell, John T. Humphrey, George D. Ball, Vivian Payne, Jack Griffith, Robert Moser, Cyrus Q. Stewart, Charles Turner, W. H. Edmondson, Elizabeth P. Miles, Edna I. Stamp, Eleanor J. Crossman, William J. Holm, John N. Brewer, Frank Demchock, B. J. Smith, Mrs. Roy Curtis and Leroy R. Sherer.



In the third annual NASA issue of Missiles and Rockets magazine are some interesting predictions on possible advanced space missions and their target dates.

The editors speculate thusly:

A semi-permanent orbital base above the Earth, manned by a crew of 12 to 14, may be a reality by 1969.

A lunar base with a crew of 12 to 24 serving six-month hitches, is also predicted by '69.

A manned interplanetary exploration with a duration of from one to two years, and powered by a nuclear booster, is on the tentative timetable for 1971 to 1973.

Ten years off, according to the article, is a permanent orbital base with a crew of 50 serving six months at a time on it.

By 1975 to '77, according to the predictions, the U.S. will have planetary bases on Venus and Mars. Tour of duty for the astronauts will be one year, but it will take two years travel time to get there and back.

And, finally, 15 years from now, we can expect advanced planetary missions to Mercury and beyond Mars. Such voyages, the article states, will require rapid transit, and will last from one to two years.

* * *

Whether or not these predictions will be fulfilled to the letter is, of course, unknown.

However, as the new year approaches, the U. S. is well on its way toward these and other exotic goals. 1963 was an eventful year, but the foreseeable future looks ever more exciting.

Happy New Year.

NASA NEWCOMERS

Three new employees have joined NASA in the past week. They are: Clarence Fant, John Nelson, and LaWanda Ross.