SPACEPORT NEWS

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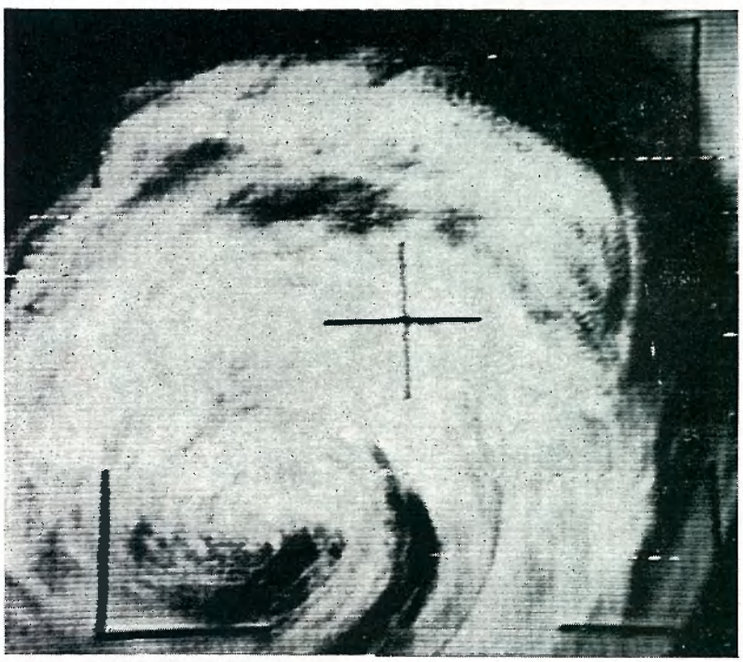


THE AWESOME, swirling vortex of a tropical storm is caught by the electronic eye of a TIROS meteorological satellite. For the facts on Florida hurricanes, and what to do when they hit, turn to Page 4.

CAPE BATTENS HATCHES FOR ONCOMING STORMS

September is smack in the middle of the hurricane season, and when a storm threatens the Canaveral area, the Cape buttons up tight.

A master control plan dictates an orderly list of steps for battening the hatches at all NASA facilities, particularly those at Launch Complexes 34 and 37.

When storm warnings are first sounded, 72 hours in advance of a storm's expected arrival, hurricane damage control condition IV — which corresponds to the Weather Bureau's small craft and gale warning—is declared in effect.

At the NASA complexes all loose materials, trash containers, tools and miscellaneous equipment are stored away. Windows, openings and duct entries are sealed, and switch boxes, electrical substation components and other nonweatherproof items are covered.

An emergency communications capability is established.

A "ride-out" crew is alerted, if necessary, and provisions are made for them. This crew remains at the Cape throughout the storm, makes last-minute preparations, records damage, and is ready to handle any emergencies.

All roofs, gutters, downspouts and lightening rods are inspected. Camera stands, ladders ,antennas, signs and awnings are dismantled. Emergency lights are checked.

The service structures are secured to piers at either the launch pedestal or at the park-

(See CAPE, Page 5)

REORGANIZATION AT MARSHALL TO KEEP PACE WITH GROWTH

Details of a major reorganization of the NASA-Marshall Space Flight Center, brought about by a shift in emphasis and an extensive increase in the Center's space programs, were announced Sunday by Director Wernher von Braun.

The reorganization is effective immediately. It comes slightly more than three years after the Center was originally organized, and is based on the following factors.

1. The workload of MSFC, NASA's largest organization, has more than quadrupled since 1960; the Fiscal Year 1963 budget was more than $1 billion and the budget for FY 1964 is expected to exceed $1.5 billion. This growth results from the establishment of the Manned Lunar Landing Program and the assignment to MSFC of the responsibility for developing the moon rockets.

2. In the past two years, the lunar landing has been selected and prime contractors have been named for the Saturn family of rockets. Other resources, including Michoud Operations in New Orleans and Mississippi Test Operations, have been established for carrying out this tremendous job. The resources buildup is now complete and the emphasis shifts to day-to-day management and integration of the entire effort.

3. The launch group at Cape Canaveral has been formed into a separate NASA Center because of the importance and scope of that work, necessitating certain realignments in the MSFC organization.

4. Industrial participation in MSFC programs has increased sharply, to 90 per cent of the budget.

Because of these changes, the need was felt to retain the closely-knit "in-house" R & D group and to strengthen it for its dual function of carrying out the Huntsville-based R&D operations while providing the required knowledge and penetration in depth to assist in

(See MARSHALL, Page 8)

Glubba, Glub, Glub – NASA's Turn In The Tub

Ever get the urge to throw cold water on the people you work with at NASA?

You can give in to the urge Saturday—and serve a good cause at the same time.

At least eight NASA employees will ride the Canaveral Press Club's "dunking machine" at Byrd Plaza Shopping Center in Cocoa Saturday night from 6:30 to 9 o'clock.

The eight (and possibly more) include Gerry Michaud and Joe Aurelio, P&C; Jim Russo, Technical Information; Paul Siebeneichen, Community Development; Jack King, Public Information; Dick Murphy, Photo; Walt Parsons and Ed Harrison, MSC.

To give vent to that old urge, you simply contribute to the Seven Astronauts Scholarship Fund and the Press Club's Mack Stamps Memorial Scholarship Fund. For the contribution you get to throw balls at a target; if you hit, into the drink goes one of the eight.

Come on in—from your viewpoint—the water's fine!

SPOTLIGHT

HURRICANE SEASON HERE

Forty years ago, approaching hurricanes were played down by the Florida press for fear they would scare tourists away.

Unfortunately, this policy, although it may have lured more dollars into state coffers, left many communities unwarned of the impending danger.

Today, of course, things are different. Hurricanes get front page play from their first huff until their last puff.

Since advance warning is ample, there is no need for last minute shuffling for supplies at the supermarket and hardware store, yet it invariably happens.

Why not stock up now on basic essentials so you won't have to fight the long lines. Next time you're shopping, add to your list the items you would need in time of emergency.

Such forethought will save you a lot of trouble.

LEADERSHIP INSURANCE

Dr. Hugh L. Dryden, NASA's Deputy Administrator has said a successful space program is essential to the maintenance of American leadership on earth.

Speaking before an American Legion Convention Dr. Dryden stressed the importance of NASA-Department of Defense cooperation in contributing to the rapid progress of the national space program. He praised the efforts of the military in providing NASA with launch vehicles, launch support systems and aiding in tracking and data acquisition.

Stating that our national security is closely linked with the progress of space technologies, Dr. Dryden added that "there is no doubt whatever that this nation and the Free World would face very somber consequences should another country . . . develop and apply superior space technology for aggressive purposes. Thus, a vigorous American space program is insurance which we dare not fail to take out or allow to lapse."

NASA's Deputy Administrator cited the 1957 Russian launching of Sputnik I as "not only a great scientific accomplishment, but a severe blow to our national pride."

By the end of the 1950's, however, America had increased its payload capacities, the level of technology had expanded, and our knowledge of the space environment had multiplied. Since that time, our national space program has rapidly progressed to its present status.

Dr. Dryden concluded by stating: "Some may believe that America may be able to survive as a second-rate power in space. I firmly believe, however, that passively accepting a secondary role is completely out of character with the traditions of this nation."

SPACEPORT NEWS

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

A 10-YEAR service award to Frances James, center, and a 15-year certificate to Ann Kuchta, both of LOC's Personnel Security Branch, were presented Friday by Branch Chief Gordon Robinson.

SPACE ALMANAC

A CHRONOLOGY OF EVENTS IN SPACE EXPLORATION AND RESEARCH.

3 Years Ago

September 8, 1960 — President Eisenhower formally dedicated NASA's George C. Marshall Space Flight Center at Huntsville, Ala.

September 13 - 14 - First meeting of the NASA Advisory Committee on Space Biology was chaired by Dr. Melvin Calvin.

1 Year Ago

September 6, 1962 — Telstar satellite was used to relay exchange of reports of action on New York and Paris stock exchange in 10-minute test transmission of a telephone call between the cities.

Announcer Bentley

Sports car buff John Bentley of LOC was the announcer at the Southeastern Divisional Championship sports car races at Daytona Saturday and Sunday.

The races were held at Daytona's International Speedway.

Industrial Engineers To Form New Chapter At Meeting Next Week

A new Cape Canaveral chapter of the American Institute of Industrial Engineers (AIIE), will be formed next Thursday night at the Crossway Inn, Cocoa Beach.

The organization's charter will be presented by Creed H. Reagan, AIIE Region IV Vice President and a member of the National Board of Trustees.

Florida Future

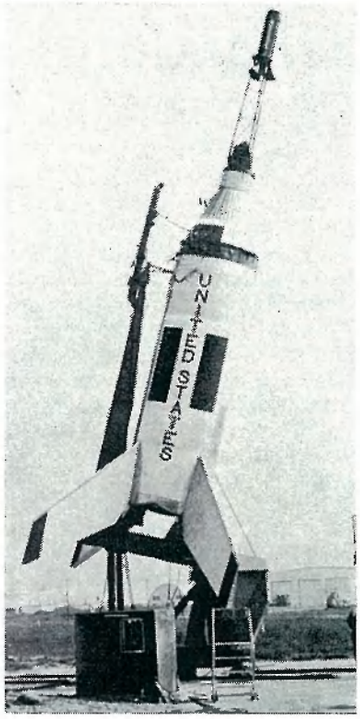
Bob Alligood, executive secretary of the Florida Engineering Society, will speak on the future of Industrial Engineering in Florida.

Officers to be installed include Major Harold Dillingham of the Air Force Missile Test Center, President; Bert Greenglass, Chief of LOC's Resources Office, Vice President; and Ed Walker, at Pan American's Guided Missiles Range Division, secretary-treasurer.

The 6:30 p.m. dinner meeting will be preceded by a social hour.

All area industrial engineers are invited to attend.

Security violations don't just happen—they are caused.



POSITIONED 85 degrees from horizontal, NASA's Little Joe II launch vehicle awaits final seconds of countdown last week at the White Sands Missile Range, New Mexico. Its payload — a dummy Apollo command module.

LITTLE JOE FIRED IN SPACECRAFT TEST

NASA launched its Little Joe II vehicle at the White Sands Missile Range, New Mexico, last week in the first of a test series in the development of Project Apollo spacecraft.

The solid fueled booster was built to test the structural design and escape system of the Apollo command module under maximum aerodynamic conditions.

The purpose of the test was to verify the performance of the Little Joe II vehicle during powered flight prior to employing it to test the command module. A dummy payload simulating the size and weight of the command module and escape tower will be mounted on the vehicle.

Little Joe II is next scheduled to boost two boilerplate (engineering models) Apollos and one flight configuration spacecraft for testing the escape system under maximum aerodynamic pressures which simulate abort escape conditions during launch of the Apollo using the Saturn launch vehicle.

Cooperative Space Study Pact Okayed

NASA and the Academy of Sciences of the USSR have given final approval to a Memorandum of Understanding which provides for implementing a cooperative space agreement reached in Geneva in June 1962.

The memorandum outlines procedures to be followed for carrying out a coordinated weather satellite program, joint experiments with communications using a passive reflector satellite (Echo II), and joint contributions of satellite data to the World Magnetic Survey to be conducted in 1965.

Basic to the coordinated meteorological satellite program is the scheduled establishment by early 1964 of a full-time telecommunications link between Washington and Moscow for the transmission of cloud photographs and other data from experimental meteorological satellites operated by each country.

Ultimately, this program is to involve coordinated launchings of operational meterological satellites.

The experiments with the Echo II passive communications satellite will involve transmissions between the Zemenki Observatory of the Gorky State University in the Soviet Union and the Jodrell Bank Observatory of the University of Manchester in the United Kingdom.

COCOA BEACH TO GET NASA SPACE EXHIBIT

The NASA space exhibit, viewed by thousands of New Yorkers in the Florida Showcase, will be exhibited at Schrafft's Carriage House in Cocoa Beach for two weeks, beginning Saturday.

Included in the exhibit are space booster models, spacecraft models, including a full-scale Telstar, and a display on Air Force Missile Test Center Range Safety.

Also included is a movie on NASA's Manned Lunar Landing Program, and a model of the Lunar Excursion Module.

WALDEAN SCHULTZ, one of 12 NASA Fair Award winners, peers into Mercury capsule at Hangar S. The youthful Colorado Springs scholar received a trip to Canaveral as reward for his Science Fair win.

Insurance Underwriter Now In Canaveral Area

Clifford Pratt of the Home Life Insurance Company, underwriters of NASA's group life insurance coverage, is now in the Cape Canaveral area full time to service employees.

Pratt

This month NASA's Employees' Benefit Association is sponsoring its annual insurance enrollment program, Pratt will be at the Cape and in Cocoa Beach every week to explain how the group coverage works.

On Tuesdays he will be at the Apollo Building, Cocoa Beach. Thursday mornings he will be in the E & L Building at Canaveral, and Thursday afternoon in the E & O Building.

Lewis Man On Job For Four Decades

How long have you worked for NASA?

Oscar W. Schey, Chief of Technical Services at the Lewis Research Center in Cleveland, has worked for the space agency and its predecessor, the National Advisory Committee on Aeronautics (NACA) for 40 years!

Schey began his career in 1923 when he joined NACA's first installation, the Langley Aeronautical Laboratory in Hampton, Va.

His work at Langley pointed out the advantages of turbo - superchargers over other types to gain high altitude performance in aircraft.

Later, his research in the piston-engine field led to numerous contributions towards reliable and efficient piston-engine powerplants.

He holds patents on three inventions — a diaphragm fuel injection pump and valve, and a fuel injection impeller.

Retirement? He has announced no plans for it as yet.

NUCLEAR PROPULSION STUDIED FOR 1970'S

Nuclear propulsion for 1975-1980 space rockets is being studied by Space Technology Laboratories, Redondo Beach, Calif., under a contract awarded by the NASA-Marshall Space Flight Center.

The company will recommend possible configurations and systems requirements for such hypothetical missions as delivery of passengers or cargo into lunar orbit.

Florida Has Rich Store Of Hurricane Folklore

FIERCE WINDS whip Miami palm trees during a hurricane. Gusts estimated at 250 mph have hit Florida.

Hurricane prediction has not always had a scientific basis. One of Florida's most devastating storms, in 1926, was actually forecast by an old Seminole Indian who hated the encroaching white man in the Okeechobee area. He prophesied in his broken English: "White man think him — smart. Just wait. Okeechobee will come back and kill hundreds!"

"His prophesy probably was based on native lore since several years of relatively light rainfall had lowered the lake level to a point where white settlers could establish farms. The old Seminole knew this was only a temporary condition—hence the prophesy and its fulfillment when the 1926 storm innundated the area.

Oddly enough no Indian was reported drowned during the 1926 and 1928 storms. Supposedly they can predict hurricanes by noting "when the sawgrass blooms," and seeking higher ground. Actually it is an atmospheric condition, rather than the providential blooming of the sawgrass, that foretells the storm by making the pollen visible several days before the big wind blows.

To the superstitious, the following clearly indicate an impending hurricane: animals become restless, sand crabs migrate from mangrove thickets, ants are usually busy storing food in their nests and invading houses, horseflies infest beaches in the spring, cats perch on high furniture or fences, the summer is wet, the summer is dry, there is a good mango crop.

Conversely, a good citrus crop is said to indicate there will be no hurricane. A popular bit of doggerel defines the hurricane season thus: June —too soon. July—stand by. August—look out you must. September—remember. October—all over.

After the onslaught, incredible tales of the hurricane's fabulous destructive feats abound. As the bean pickers in the 'Glades said about the big storm of '28: "It blowed a well up out of the ground, blowed a crooked road straight, and scattered the days of the week so bad that Sunday didn't get around 'til late Tuesday mornin'."

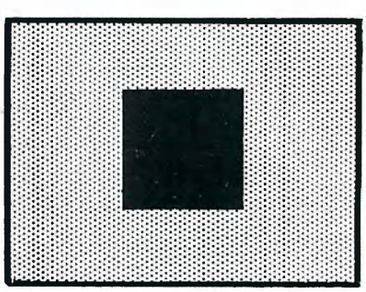
STORM-SPAWNING TIROS PHOTOS FORETELL APPROACHING 'CANES

On September 16, 1928, hurricane-driven water of Lake Okeechobee burst a dike and spread death by drowning more than 1,500 persons.

Hurricanes have, in fact, been a prime source of concern to Floridians since the earliest known storm of major intensity was recorded at Pensacola on September 19, 1559.

But thanks to modern day meteorology and communications, 'cane-probing aircraft and NASA's earth-circling TIROS satellites, no tropical storm will ever again sneak up on an unsuspecting populace.

TIROS VI and VII have already spotted the first two '63 season hurricanes — Arlene and Beulah — and are presently "looking" at the storm-spawning grounds of the Atlantic.



The hurricane season, which runs from June to November, is at its peak this month. One third of all Atlantic storms have occurred in September.

A hurricane is, essentially, a rotating cyclone of the tropical oceans with a wind circulation of 74 mph or higher.

They are neither the largest nor the most intense of storms. Temperate Zone storms are usually larger, and the hurricane cannot match the concentrated fury of the tornado.

Yet because of its considerable size and great intensity, the hurricane is the most dangerous and destructive of all storms.

A one-minute wind velocity of 155 mph was reliably measured near Pompano Beach during the September 1947 hurricane.

Engineers have calculated that winds up to 200 and 250 mph would have been required for some of the damage done in the Florida Keys during the September 1935 storm.

For all their awesome power, hurricanes are bascially delicate creatures, requiring just the right temperatures, moisture, pressure and wind patterns to form and stay alive. Their average lifetime runs nine days.

Some of Florida's most notorious 'canes have been:

—September 28-29, 1896, at Cedar Keys, which killed 100.

—September 18, 1926, which killed over 200 in the Miami area.

—September 2, 1935, which resulted in the death of more than 400 in the Keys.

Dollar - wise, nationwide, Diane (1955), caused the most damage — $800 million. Next were, Carol, 1954, $460 million; Carla, 1961, $325 million; Hazel, 1954, $311 million; and Donna, 1960, $300 million.

Florida's worst all-around storm was Donna, which cost the state $270 million and several lives.

The Cape area was only sideswiped, but no one here at that time will ever forget it.

A WILLY NILLY

The Atlantic hurricane is same kind of storm as the Pacific typhoon, the tropical cyclone of the Bay of Bengal and the willy-nilly of Australia. All are described as meteorological monsters of the sea.

PRETTY PHYLLIS Ogletree of P & C's Contracts Branch, with raincoat, hat and basic supplies, is ready for stormy weather.

What To Do When It Comes? Here Are 17 Sensible Tips

"Melbourne Damage Estimated at $150,000 — 100-Mile-An-Hour Winds Lash Central Brevard Area — Titusville Takes Heavy Pounding."

These were bold newspaper headlines Sept. 12, 1960, the day after Hurricane Donna slashed through Florida.

The following tips will serve as warnings for employees who have not experienced a hurricane and will remind others who recall the furious storm that it can happen again. Here's what to do before, during and after a hurricane.

1. Sterilize bathtub, pans, jugs, jars and bottles and fill with water.
2. Check first aid supplies.
3. Get in a food supply to last several days that won't spoil.
4. Stock up on candles.
5. Have available a supply of mops, rags and cloths to soak up water seepage around doors and windows.
6. Conserve refrigeration.
7. Stay indoors.
8. Open a window or door on the side of house not being hit by wind, so inside and outside air pressure are equalized.
9. Have a battery or transistorized-operated radio to keep up with progress and position of hurricane.
10. Don't go outdoors during a lull. It may be the calm center of hurricane passing and wind will come back suddenly from opposite direction.
11. Use telephone only in emergencies.
12. Be sure and bring in everything that may blow away — garbage cans, garden tools, lawn furniture, pottery.
13. Take down television antennas.
14. Put up storm shutters, close metal or wooden awnings, or board up windows and glass doors.
15. Keep car gas tank filled in case evacuation is necessary.
16. Stay away from places hard hit by storm.
17. Make a list of damage to your own property and report fallen wires and broken water and gas lines to proper authorities.

CAPE BATTENS HATCHES

(Continued from Page 1)

ing site. If a vehicle happens to be on the Complex, it rides out the storm in the safety of the service structure.

Hydraulic and gas systems are depressurized and the emergency generator fuel tank is checked to be sure it's operative. All handrails are removed and stored.

In the high pressure gas storage area, all tanks are inspected to insure secure emplacement. The open side of the building is blocked with sandbags stacked four feet high.

Damage control condition III—the equivalent to a whole gale warning—is sounded 48 hours prior to forecasted arrival of 57 mph or greater winds. This is a hurricane alert.

In the Operations Support Building, all batteries are disconnected and stored at least two feet off the floor. All roof vent covers are sealed, and all personnel are evacuated.

At the service structures, hydraulic pumps, and motors, diesel engines and motor generators are covered and sealed.

Gas storage tanks, safety showers and drinking fountains are tied down, and all TV and communications equipment is stored.

All personnel are evacuated above the 27-foot level. Elevators are locked out on the first floor. Electrical power is shut down.

Personnel are cleared from the umbilical towers and electrical power is shut down.

Other condition II precautions for the generator room, the high pressure gas storage area, fuel and lox storage areas, the pad-to-blockhouse cableways, the launch pedestals and the blockhouses, are similar.

Under condition II, 24 hours before the arrival of 57 mph or greater winds, (hurricane warning), all personnel not assigned to the ride-out crew are released.

The final hurricane warning, condition I, is sounded 12 hours ahead of the expected arrival of the storm.

During the critical phases of the hurricane, the ride-out crew will handle emergencies, and make observations of the pad area and service structure from the blockhouse by using binoculars and periscopes.

Attention is paid to areas likely to be flooded, the state of the sea is closely watched, and the general status of the complexes with regard to damage observed and conditions at the time of damage is recorded, so a documented record can be provided.

STORM GOD

The name "hurricane" comes from the Spanish "huracan," which in turn is thought to have originated from words in use among some of the Caribbean Indian tribes.

In the Mayan dialect "huraken" is the storm god. To other tribes "huracan" means evil spirit, "hyoracan" is devil and "huraken" is the thunder and lightning god.

SEEDED HURRICANES MAY LOSE SOME FURY

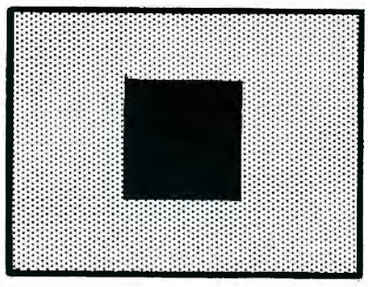
U.S. scientists are still hopeful to someday tame hurricanes.

Experiments two years ago suggested to Navy and weather bureau experts that seeding clouds with silver iodide crystals could soften the destructive winds.

For the next several weeks, 11 airplanes will seek out hurricanes and seed them and their outlying clouds for continued controlled study of the phenomena.

Silver iodide crystals are similar in structure to ice chrystals, and when they are ejected into clouds, moisture gathers on the crystals and freezes. In the process, energy is released in the form of latent heat.

The 1961 experiments produced dramatic changes in wind velocity, although they lasted only a brief time.



THESE FIVE Base Operations Division employees were presented certificates by Manager Sigfrid Carlson, seated. From left, summer employee Jim Thornton received a letter of commendation; Ray Daley, Estelle Coleman and Helen Egan were awarded one year service pins; and Nihla Dunham received a 10-year award.

Fuel Cells To Improve Performance

NASA scientists have been experimenting with "pulse operation" of all types of fuel cells to improve their performance.

This immediately prompts the question: What are fuel cells and what is pulsed operation?

Fuel cells are electro-chemical devices which generate electric power directly from chemical reactions. There are many types and they all produce DC current. Actually, the fuel cell is a promising improvement in spacecraft power sources, and this accounts for NASA's interest.

Pulsed operation, explains Ernest M. Cohn of NASA's Office of Advanced Research and Technology, "is accomplished by interrupting, or shorting, the DC current of the fuel cell. This produces a distorted AC, rather than DC current."

Acts Like AC

"The distorted AC," Cohn said, "acts like AC and is expected to be usable as such. Much of the equipment we have today is better suited to AC operation than to DC."

Other potential advantages of pulsed operation are that it may permit renewal of catalyst surfaces and will lessen the polarization which limits the operating life of the cells. Besides better circuit control and higher efficiency, the pulsed operation may avoid the sharp initial power drop of conventional fuel cells and thereby maintain a higher power rating for longer periods.

Important Role

Cohn said that the fuel cell has "an important potential role in space, not only as a power source, but also as an energy storage device and as a chemical reactor."

The bulk of NASA research and development work is concentrated in low temperature fuel cells which operate in a temperature range up to 150 degrees Centigrade.

The agency's total research and development work on all types of fuel cells in the 1963 fiscal year was $1.25 million.

Stamp Of Excellence To Insure Reliability Of Giant Saturn V

When the giant Saturn V rocket blasts off for the moon with its human passengers, it will bear a stamp of excellence which is the result of many years of exhaustive reliability and quality assurance effort.

Everything must work perfectly, and to help assure that it does, the Saturn rocket builders are doing everything possible to gain perfect knowledge of the machine and its dependability.

To assist with this big job, the NASA - Marshall Space Flight Center, manager of the Saturn program, has just hired a firm — the Arinc Research Corp. of Washington, D.C. The company, under a one - year contract costing $966,000, will provide technical support to the Saturn vehicle reliability program.

The work will include data processing and analysis and the preparation of mathematical models and reliability predictions.

Most of the work will be done at Huntsville on the Saturn I and Saturn V programs. Other work sites will be Michoud Operations, New Orleans; the Los Angeles area and Cape Canaveral.

MANAGEMENT Analyst Otis Leming, right, is awarded his 20 year service certificate by Alan Guthrie, Chief of the Management Analysis Office.

Lunar Forecasters

Weather forecasters of the future may look to the moon before predicting a rainy day, according to a study by the National Science Foundation.

A study report on a possible lunar rainfall correlation says the wettest days of the past 90 years were recorded near the middle of the first and third quarters of the moon's cycle.

The second and fourth weeks were considerably dryer.

ROBERT LONG NAMED CONSTRUCTION CHIEF

Robert W. Long, Kansas City, Mo., construction contractor and a nationally recognized figure in this field, has been appointed Director of the newly established NASA Office of Construction.

Both the office and appointment became effective last week.

Long will review and advise key officials on the adequacy of the agency's construction work and future plans to assure their timeliness, efficiency and economy. He will report to the Deputy Associate Administrator for Industry Affairs, Walter L. Lingle.

For the fiscal year ending last June 30, the NASA construction program amounted to over $735,000,000 and included major new projects and substantial additions to existing space research centers.

Long has served as consultant to Associate Administrator Dr. Robert C. Seamans for construction matters since June 27.

Viron E. Payne, on the Technical Staff of the Assistant Director for Instrumentation, has a new baby boy, Viron E. Payne, Jr.

'TWAS A HOT TIME ON THE OL' PRAIRIE

DRESSED LIKE A TEAM of Saudi Arabian camel drivers, ten of NASA's 16 astronauts took time off from their four-day desert survival training in Nevada a few days ago to pose for a "formal" portrait.

TIME OUT for a smoke. Astronaut Charles Conrad lights up, using a flashlight reflector.

FOLLOWING A SIMULATED landing in the desert, two astronauts use their parachute to set up a tent.

ASTRONAUT Edward White eyes his dinner — a tiny horned toad.

COOLING OFF under a homemade tent, the astronauts are given a lecture on desert survival procedures.

News Photos by Ed Harrison

MARSHALL

(Continued from Page 1)

and monitor the technical detail work at the many contractor organizations. And a new, strong industrial group has been formed to consolidate all industrial project management activities and place increased emphasis on relations with major contractors.

A broad objective of the reorganization is to relieve Dr. von Braun and other top management officials of the day-to-day detailed management of a greatly expanded operation and to permit them to concentrate on policy matters and major engineering and technical considerations.

Dr. von Braun's two deputies remain in the same general capacities, with changes in designations. Eberhard F. M. Rees will be deputy director, technical, and Harry H. Gorman will be deputy director, administrative.

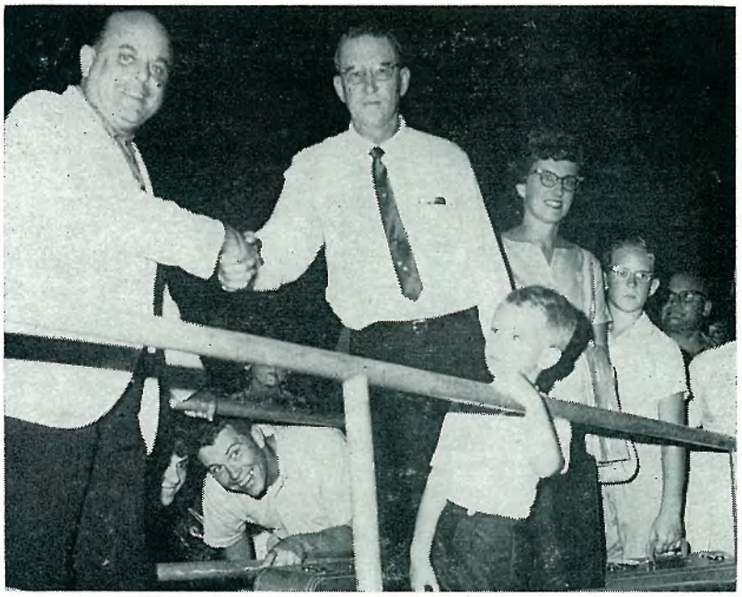
The Center's nine technical divisions have become Research and Development Operations. They are: Aero-astrodynamics (formerly Aeroballistics), Astrionics, Computation, Manufacturing Engineering, Research Projects, Propulsion and Vehicle Engineering, Quality Assurance and Reliability (formerly Quality Assurance), Test, and Launch Vehicle Operations.

The last group, Launch Vehicle Operations, is primarily based at Cape Canaveral, reporting to the director, MSFC R&D Operations, on technical and engineering matters and to the Launch Operations Center director on operational and administrative matters.

R & D Operations also includes four offices: Future Projects, Special Assignments, Systems and Resources Management.

The other major "mission" group is Industrial Operations, which will be headed, beginning November 1, by Robert B. Young, as announced by Dr. von Braun on August 15.

In announcing the changes to Marshall employees, Dr. von Braun said, "It is done in recognition of the Center's rapid growth in the past and in anticipation of modest growth forecast in the future."



FIRST TO BOARD the SS Yarmouth for the Labor Day weekend cruise to Nassau were R. H. Steadman of McDonnell, his wife, and their two sons, Bret, 5, and Randy, 10. They are greeted by Jose, the cruise director.

HASSAN Mohamed Salih El Mak, Commandant of Police of Khartown Province, Sudan, center, and his State Department escort, Kent B. Crane, left, received a tour of NASA facilities at Cape Canaveral and a briefing on the operation of NASA's security program by Security Chief Charles Buckley, right.

Dear Sir:

"Our class was talking about problems in space, and we came to this problem: what happens to an astronaut when he has to go to the bathroom?"

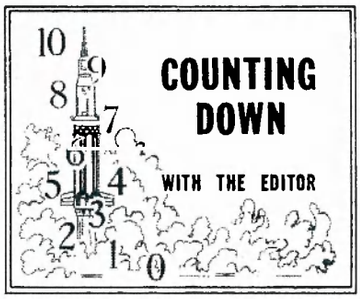
Margaret G.
Lancaster, Pa.

NASA NEWCOMERS

A dozen new employees have joined the NASA Launch Operations Center in the past week.

They are Alfred D. Willis, Argle C. Christlieb, Eugene E. Nye, Helen J. Calhoun, Walter J. Wagner, Leroy E. W. Brietzke, James C. Fulton, Joseph E. Luvanich, Lyman C. Blanchard, Stephen G. Pinney, Lansing E. Broadhurst, William J. Denson.

Use appropriate cover sheets on classified documents.



If you're named Cindy, Debra, Edith, Flora, Ginny, Hannah, Irene, Janice, Kristy, Laura, Margo, Nona, Orchid, Portia, Rachel, Sandra, Terese, Verna or Wallis, you may be in for some ribbing within the next few weeks.

For these are also the names to be designated to the as-yet unborn hurricanes of the '63 season. Arlene and Beulah have already passed.

Various methods have been used down through the years to identify tropical storms. The practice of giving girls' names to them originated during World War H, and has since became the accepted method of forecasters throughout the world.

No specific reasons are listed as to why girls' names were chosen.

Incidentally, next year look out for Abby, Brenda, Cleo, Dora, Ethel, Florence, Gladys, Hilda, Isabelle, Janet, Katy, Lila, Molly, Nita, Odette, Paula, Roxie, Stella, Trudy, Vesta and Winny.

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The World Almanac offers some interesting statistics on hurricanes. For instance, the worst recorded storm in terms of lives lost was in Bengal, India, October 15-16, 1942. More than 11,000 were killed.

The worst in the U.S. was at Galveston, Texas, September 8, 1900. This hurricane and following tidal wave claimed 5,000 lives.

Floods, however, are by far more destructive, and nothing on the books compares to the 1887 Hwang-ho River flood in China, in which an estimated 900,000 drowned.

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The highest wind speed ever recorded in the United States was 231 mph at Mt. Washington, New Hampshire. Miami's highest recording was 132, in 1926; Key West, 122 mph; Pensacola, 91 mph; Jacksonville, 72 mph.