

SPACEPORT



NEWS

Volume 2, No. 23

NASA Launch Operations Center, Cape Canaveral, Florida

June 6, 1963

EUROPEAN TOUR PLANS ORGANIZED

A 30-day European tour for NASA employees is now being organized, and will run from September 15 through October 14.

The tour will include visits to 10 countries; England, Holland, Belgium, Germany, Switzerland, Liechtenstein, Austria, Italy, Monaco and France.

Round trip economy jet air fare is \$339 per person, and the all-expense land tour will run \$560 each, for a total cost of \$899.

It is to be the seventh annual tour of Europe sponsored by the NASA Employees Association. All NASA employees are eligible, as are their spouses, dependent children and parents.

First Class

The tour includes first class hotel accommodations with private bath, continental breakfast and dinner daily, as well as luncheons while traveling.

Land transportation will be by deluxe motorcoach, and all sightseeing will be conducted by English-speaking guides.

Extra features include a theatre party in London, the Folies Bergeres in Paris, a luncheon at the famous Alfred's Restaurant in Rome, a cruise on Lake Lucerne in Switzerland, a cruise up the Rhine River, and a visit to the Isle of Marken in Holland.

A deposit of \$100 is required with each reservation. Applications should be sent to the NASA Employees Association, room 200, Universal Building, Washington 9, D.C.

Interested persons may call Ralph Harkness, UL-3-6833 for further information.



EXPRESSIVELY waving his arms in surveyor "signal talk," John Pomperoy was caught at MILA by photographer Russ Hopkins displaying all the finesse of an Arthur Fiedler.



RECOUNTING EXPERIENCES they shared at Normandy 19 years ago today are Dave Allen, left, and Ralph Siegel.



PAIR RECALL MEMORIES OF '44 BEACH LANDING

Two LOC employees are among the thousands of Americans who remember their "Longest Day" on the shell-torn beaches of Normandy 19 years ago today.

Ralph Siegel, Instrumentation Planning Administrative Technician, and Dave Allen, Chief, Mail Management branch, remember vividly their landing on the beaches in the D-day invasion of France during World War II.

Siegel, who was a corporal with the regimental headquarters company of the 116th Infantry's 29th Divi-

sion, recalls the channel crossing in an LCI this way:

"We thought we were just out for another maneuvers exercise, and were playing bridge and getting seasick. Then we heard President Roosevelt telling us this was it and wishing us luck.

"I Was Scared"

"We hit Omaha Beach at about 6:30 in the morning and I admit I was scared," Siegel recalls. "It was high tide and we waded in chest-deep water. The machine gun, mortar and artillery fire was quite heavy.

"You didn't have time to think of what kind of day it was, but I remember it being bright and sunny, and I kept thinking how hard it was to

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THE INSIDE STORY

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ALL ABOUT CREDIT UNIONS

A credit union is a group of people who agree to save their money together and to make loans to each other at low interest.

Such an organization is set up by members of a particular group, for instance, people working for the same employer. Membership is open to all in the group, regardless of race, color or creed.

Credit unions are democratic. The members elect their own officers and committeemen and set policies for the union at the annual meeting.

Regular Savings

Members are encouraged to save regularly. (Savings are called "shares" in the credit union.) From this accumulated capital, loans are made to members for practically any good purpose at low interest.

After expenses are paid and legal reserves set aside, the credit union's income is returned to the members in the form of dividends on their savings. Dividends are paid to encourage further thrift, and as a reasonable rental for the use of the members' money.

Funds Protected

Credit union funds are protected in many ways. (1) The union operates under law and is supervised by the government. Examiners inspect it regularly. (2) The supervisory (auditing) committee of members makes a constant check on the credit union's operation. (3) The law requires surety bonding and substantial reserves to protect the money against operational hazards.

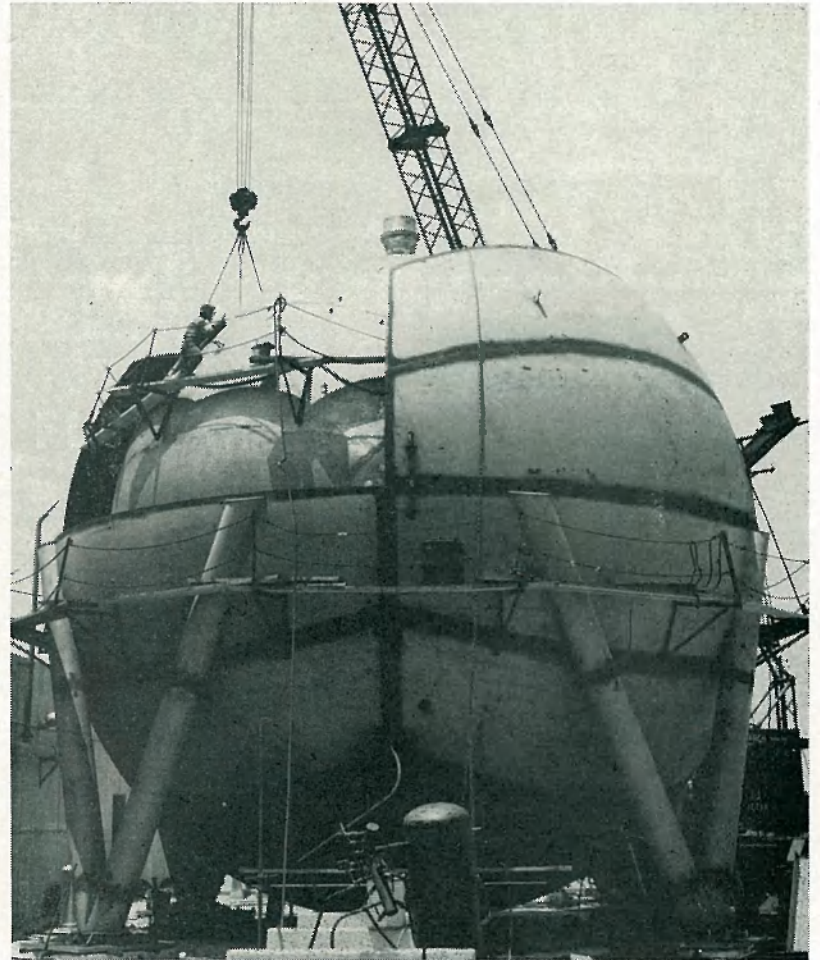
Credit union loans are personal loans, made for provident or productive purposes. Common reasons for borrowing include old bills, taxes, medical expenses, autos, vacations, home equipment, funerals, education, weddings, and family emergencies. The main function of credit unions is to meet their members' needs for consumer credit.

Low Interest

The interest on C. U. loans is never more than one per cent per month on the unpaid balance. There are no extra charges. Credit unions' lower interest rates save money for members, and make more money available for other uses. Each year, many credit unions are able to refund the borrowers a portion of the interest they paid on loans.

Loan Protection

Most credit unions provide loan protection insurance without extra charge for eligible borrowers. Under this plan, the borrower's loan balance is life-insured. The loan is automatically paid up in case the member dies or is disabled, so that his heirs do not inherit his debt to the credit union.



A LONE WORKMAN seems to be putting the "peel" onto this giant "orange" at Complex 34. Actually, he's applying a final welding touch to the "skin" of the new liquid hydrogen facility at 34.

BOEING RECEIVES SAVINGS AWARD

The U. S. Treasury Department's coveted Minuteman flag for outstanding participation in the purchase of Savings Bonds was presented to the Boeing Atlantic Test Center Tuesday.

Boeing personnel showed 97.25 per cent participation in the Savings Bond Drive conducted recently in Brevard County. The drive was headed by Dr. Kurt H. Debus, LOC director.

Douglas Graves, head of the Boeing operation here, accepted the Minuteman flag and raised it in ceremonies at the Boeing Building, Cocoa Beach.

The flag was presented by Michael J. Mainguth, area manager, U. S. Treasury Department Savings Bonds Division, Tampa.

This was the third Florida presentation of a Minuteman flag since World War II. Last year similar flags were given to the Martin Co.'s Cocoa and Orlando Divisions.

SPACE ALMANAC

A CHRONOLOGY OF EVENTS IN SPACE EXPLORATION AND RESEARCH.

4 Years Ago

June 12, 1959 — Scientific subcommittee of the U. N. Committee on Peaceful Uses of Outer Space proposed creation of a center to promote international cooperation in outer space research.

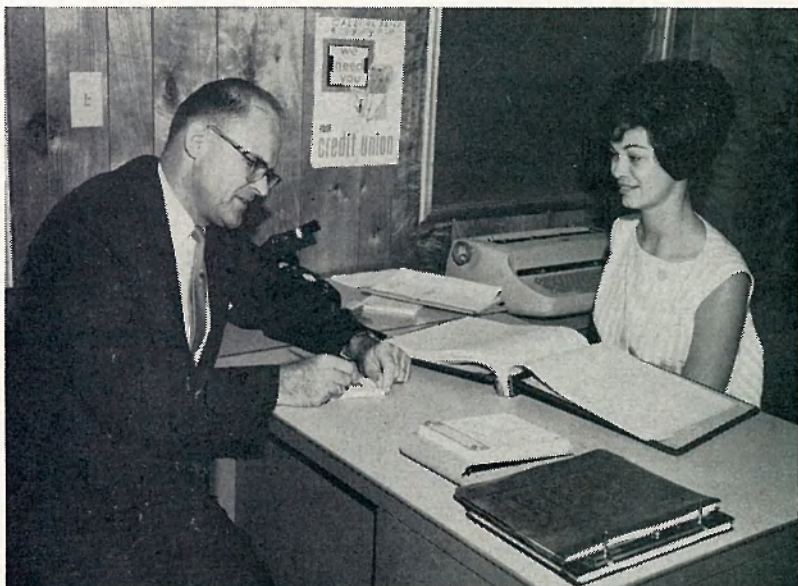
3 Years Ago

June 8, 1960 — Complete eight-engine static firing of Saturn successfully conducted for 110 seconds at MSFC, the longest firing to date.

1 Year Ago

June 9, 1962 — Astronaut M. Scott Carpenter received a B.S. Degree in Aeronautical Engineering from the University of Colorado, a degree he missed in 1949 by not taking the final examination in a course on heat transfer.





DEPUTY LOC DIRECTOR Albert Siefert transacts business at the NASA/MILA Federal Credit Union Office in trailer 855, inside Hangar D. Assisting him is C. U. Cashier Sandy Arnette.

MAYO ELECTED CREDIT UNION PRESIDENT; PONPONES APPOINTED ACTING MANAGER

Sam Mayo of Security has been elected president of the new NASA/MILA Federal Credit Union by the organization's board of directors.

Other officers elected at the board's first official meeting were Don Davidson, Support Services, vice president; Annie Taylor, Facilities, secretary; and Grogan Sewell, Financial Management, treasurer.

R. E. Ponpones of Brown Engineering was appointed acting manager of the Credit Union. Temporary offices are in Trailer 855, Hangar D, at Cape Canaveral.

In other action, William Darwin was named chairman of the credit committee, and

FIERY FINISH

Dottie Pullen, the pretty Graphic's secretary-turned stock car racer, had a close call recently at the Eau Gallie Speedway.

Her car blew a tire near the finish line, smashed into a retaining wall and burst into flames. Fortunately, Dottie scrambled out a window with only a "bump on the head," while fire extinguishing crews doused the flames.

Does this end her racing days? "No," she replies, "I'll be in the next one."

Conrad Hopton was appointed secretary.

The board of directors also named Charles Longacre, Ed Melton and Hyman Rosenstein to the Credit Union's supervisory committee.

Board member Herb Myers was appointed membership officer and Bob Mercer is education chairman.

GEOLOGY TRAINING FOR ASTRONAUTS

The first lunar astronauts will be trained in the scientific use of pick and shovel, NASA Administrator James E. Webb said recently in a keynote address at the third National Conference on Peaceful Uses of Space.

He added that the current crop of 16 astronauts are already receiving training in geology.

NASA's Dr. Eugene Shoemaker, a geologist who heads the manned space science working group, said he and the nine new astronauts selected last year recently completed the first of a series of geological field trips.

He said the men visited the Arizona meteorite center near Winslow, and the fresh basaltic lava flow near Flagstaff to acquaint them with the kind of features they are likely to find on the moon.

PRESTON KEYNOTES JAYCEE CONVENTION, M.H.S. GRADUATION

G. Merritt Preston, Manager of MSC's Atlantic Missile Range operations, completed a brisk week of speaking engagements Monday night with a graduation address to Melbourne High School seniors.

Friday he was at Jekyll Island, Georgia, as keynote speaker for the Georgia State Junior Chamber of Commerce convention.

Preston's talk at Melbourne was titled, "Age of Imagination."

"This is a great time to be finishing high school and planning for the years ahead," he told the seniors.

"It is a time in which Galileo and Franklin would have liked to have lived."

Outlined Programs

Preston outlined past, present and future space programs from the beginning of Project Mercury to Apollo.

"Your generation will be depended upon to carry out much of this work," he told the class, referring to the space age, "and develop our country by advancing technology.

"Yours is the generation that will undoubtedly find life elsewhere in the universe.

"You have been given a wonderful opportunity to excel in this technological world here at Melbourne High.

"You have a head start on your counterparts graduating from high schools in other parts of the country. Let's hope you will accept this advantage and provide leadership of this land in the future."

At the Jaycee convention, Preston listed Cape and MILA facilities, told of mission planning and outlined the history and future of manned space flight.

Lance Corporal

Thomas H. Sheldon, 16, son of Edward F. Sheldon of LVO's Networks Office, was promoted to Lance Corporal at the Florida Military School in DeLand. He will be a senior there next year.



Oliver E. Kearns

OLIVER E. KEARNS NAMED L R. OFFICER

Oliver E. Kearns has joined LOC as Industrial Relations officer.

Prior to accepting a NASA post, he served with the Federal Mediation and Conciliation Service in Toledo, and before that was a field examiner with the National Labor Relations Board in Seattle.

An alumnus of the University of Washington, Kearns also did graduate work at the University of Toledo.

He succeeds Joseph W. Bailey, who resigned.

Blanchard To Receive MA Degree Tomorrow

Robert Blanchard, Chief of LOC's Electromagnetics Branch, will receive a master of arts degree in business administration tomorrow from Rollins College.

He is one of 34 candidates for such a degree. It will be presented at the 74th annual commencement in the Knowles Memorial Chapel on the Rollins campus.

Blanchard's thesis topic was "Economics of the Cold War."

He received his undergraduate degree from Northeastern University and has done graduate work at Rutgers University as well as at Rollins, where he completed 10 semesters.



FOUR GIANT CONCRETE pillars, vaguely resembling an Egyptian pyramid, form the lower sections of a Saturn booster static test stand at MSFC. The legs will reach 144 feet in height and will be topped by a steel superstructure and boom crane. The \$30 million complex, which at its construction completion next year will stand 405 feet high, will be first used for a captive test in August 1964.

SATURN TEST STAND 'PYRAMIDING' AT MSFC TO HIT 405-FOOT HEIGHT

If Egyptian pyramid builder Cheops could visit the NASA-Marshall Space Flight Center he would be dazzled by a space-age "pyramid" rivaling his great tomb.

Four 100-foot high structures, vaguely resembling an ancient pyramid, jut out of the Center's West Test Area. They are uncompleted legs of a mammoth captive test stand.

The 405-foot stand will hold the Saturn V booster, a cluster of five F-1 engines, which will blast some 7.5 million pounds thrust.

Cheops spent about two decades putting up the greatest of the pyramids — a limestone block structure about 481 feet high, 768 feet square and having a base covering 13 acres — which is an engineering feat unequalled in the pyramid building set.

While the ancients poured measureless amounts of material and labor into their life's work, Marshall's space-age pyramid builders know how much of everything the job is going to take.

Concrete being poured into the booster (S-IC stage)

stand, center of a \$30 million complex, would make a standard size sidewalk from Melbourne to Miami, a distance of almost 200 miles.

2,000 Tons

Steel for the ferro-concrete and steel stand will total more than 2,000 tons.

The five-phase construction will be completed next year and the first booster captive test, probably of only a single engine, will be late summer or early fall, 1964.

Offices, shops and instrumentation rooms will be built in the four 144-foot high concrete legs. The hollow legs, having walls four feet thick, are 47 feet square at the base and 30 feet at the top.

A steel superstructure extends 122 feet above the concrete portions, to the 266 foot level.

A 135-foot long boom of a 200-ton crane atop the superstructure will make the 405-foot stand the highest "building" in Alabama.

Much of the stand, like an iceberg, is underground. The foundation walls are set into bedrock 40-feet below the ground.

The stand will take up to 12 million pounds thrust. Boosters 34 feet in diameter and 170 feet long can be fired there.

Water flow needed to quench the thirst of the mighty booster will be 320,000 gallons a minute.

Test engineers will be measuring 7.5 million pounds thrust during the normal 150 second tests.

Reduced into automobile terms, 7.5 million pounds converted into horsepower would be equivalent to a string of "average" 1963 cars lined bumper - to - bumper from Huntsville, Alabama, to Las Cruces, N. M.

The thrust figure would equal a string of horses hitched single file reaching 9.5 times around the earth or from the earth to the moon.

Heat produced by the five-engine cluster during a 150-second test is equivalent to the heat required in the same period of time to comfortably heat every home in the states of Alabama, Georgia, Tennessee, Florida, Mississippi, and Louisiana when the outside temperature is five degrees.

Sterilization Of Ranger VI Unnecessary

Sterilization of the Ranger VI spacecraft, scheduled for launching later this year, may not be necessary, according to JPL scientist Robert J. Parks.

He explained that while three previous Rangers aimed at the moon were sterilized, it is now believed that sterilization for lunar shots is not essential.

"It appears," he said, "that the intense ultraviolet radiation on the surface of the moon would kill any microorganisms that might be carried up from the earth.

"If a probe should dig beneath the surface, it is believed there would be no chance of contamination spreading.

"These factors coupled with the present lack of an assured method of achieving sterilization, make it appear that efforts to sterilize Ranger VI may be unnecessary."

In the past, America's Ranger vehicles have been subjected to two forms of sterilization — heat and gas.

Ranger VI may or may not be subjected to gas sterilization, depending on the outcome of present investigations, but the spacecraft will be hospital-clean in any case, Parks said.

Indian President Visits NASA's Cape Facilities

The President of the Republic of India is visiting NASA at Cape Canaveral today.

Dr. Sarvepalli Radhakrishnan and a dozen other Indian governmental officials arrived in the Cape area yesterday. The President was guest of honor last night at a reception and dinner given by NASA at the Cape Colony Inn.

Dr. Radhakrishnan's tour today was to include visits to Complex 37, the GSFC's Field Projects Branch and a drive-through of Pad 14.

The Indian President was scheduled to depart from PAFB at 12:40 p.m. today en route to New York City.

SPACECRAFT PROBLEMS EXPLAINED

Problems with two connectors to an electrical amplifier in "Faith 7" forced Astronaut Gordon Cooper to manually fly his spacecraft back to earth.

The two connectors are located in the amp cal (amplifier calibrator) where electrical signals of various spacecraft sensors are converted into commands. These commands cause actuation of the hydrogen peroxide jet thrusters in the automatic control system to maintain proper spacecraft position in relation to the earth. The spacecraft sensors include the gyroscopes and infrared horizon scanners.

First, the appearance of the .05g panel light and later the failure of the AC power from the inverters signaled the problems to Astronaut Cooper.

Careful detailed post flight examination of the spacecraft circuits revealed the following facts:

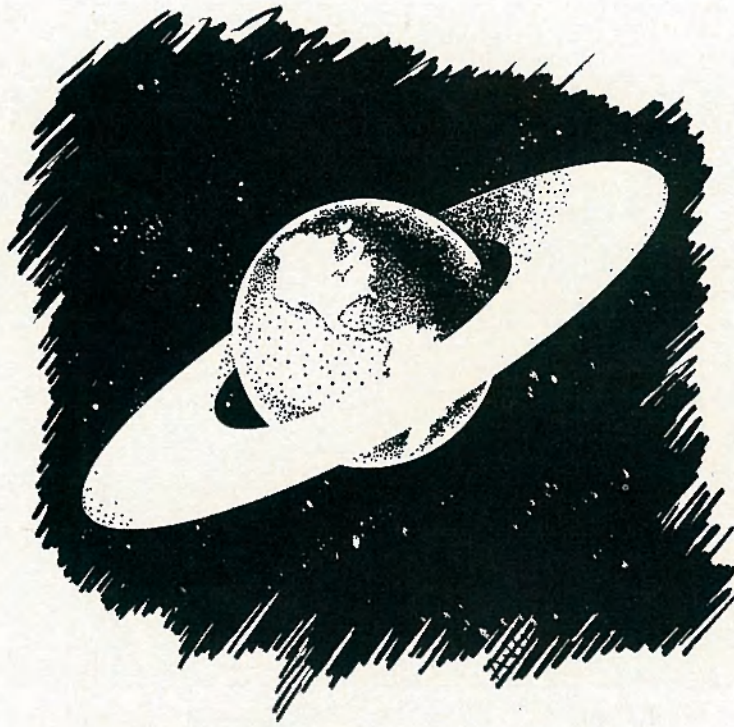
Trouble Traced

The inverter trouble was traced to an electrical power connector, which among other functions, passes the AC output from the inverter bus (ASCS) into the amp cal. The insulating qualities of the connector had failed and permitted the AC power line to find a ground, causing a short circuit.

The inverters will not operate in the event of such a malfunction in the circuits and the operating characteristics observed in flight were as expected for such an electrical fault. Post flight examination of the inverters showed them to be undamaged.

Corrosion was found in and around another electrical connector through which some of the .05g circuits passed. Presence of the corrosion indicated the possibility that moisture had collected in the area and resistance checks of the ground passing through the connector indicated changing resistance as though the systems were drying out.

Later, tests with completely dried circuits and a new



PANCAKE RING AROUND EARTH?

Soviet astronomer Pyotr Shcheglov believes the earth has a pancake ring around it like the planet Saturn.

In a report, released by Tass, the official Russian news agency, Shcheglov discovered a flat cloud of hydrogen about 6,200 miles above the earth.

The agency said a space-

man on the moon would be able to see the cloud using a special instrument. The cloud is about 1,000 times denser than "interplanetary gas."

Shcheglov made the discovery with new highly sensitive instruments. "The pancake ring is apparently stationary," he said.

Gadget To Vacuum Vittles In Space

You've got to prepare for any eventuality in space travel, little ones as well as big ones — including sloppy eaters.

Astronaut Gordon Cooper told how his water supply leaked, and the little globules floated around in the weightlessness of his space cabin. Scott Carpenter had similar trouble with cookie crumbs hovering around in front of him.

power connector showed satisfactory operation of the amp cal, including the .05g circuit. Introduction of small quantities of moisture into the plug resulted in actuation of the .05g circuit as it had done during flight. Thus, it is concluded from these tests that actuation of the .05g circuit during the MA-9 mission probably resulted from the effects of moisture in the connector.

So the Life Support Systems Division of Aerojet-General Corporation, which is engaged in the total field of sustaining man safely in space, or any other unusual environment, isn't overlooking the food fall-out factor.

They have designed a hand-gadget which neatly vacuums up the vagrant vittles. The device weighs less than a pound, is very economical to construct and requires no power but the squeeze of a hand.

When the astronaut finishes his meal, he picks up his little cabin-cleaner and squeezes the handle. When he releases it, a suction effect is created which pulls in the particles through the funnel mouth of the cleaner.

The particles are sucked into the "bag" of the cleaner, then disposed of in a closed container.

And that, in the world of space travel, is the way the cookie un-crumbles.

RCA Awarded Pact To Study Tiros Satellite

NASA has announced the award of a \$100,000 contract to the RCA Astro-Electronics Division, Princeton, N.J., for a four-month detailed engineering evaluation to determine whether the TIROS meteorological satellite can be modified to increase its earth cloud cover picture-taking capability.

RCA will evaluate modification of the TIROS into what is called a "Wheel Configuration." Under this concept, two TV cameras would be mounted so that they point in opposite directions through the side rather than through the bottom of the satellite.

The modified TIROS could then be launched into a 400-mile polar orbit spinning on its side like a wheel.

Since the side of the spinning satellite would be pointed toward the earth at all times, such a system, turning at 12 revolutions per minute, could provide one TV cloud cover picture every three seconds.

Complete earth coverage could be obtained every three days by the "Wheel" TIROS.

Present TIROS satellites are spin stabilized and space oriented which results in their cameras pointing toward the earth with proper sun illumination only about 25 per cent of the time.

TIROS has also been limited in picture coverage because of its angle of orbital inclination. The wheel configuration would theoretically overcome some of these limitations.

Orbits To Revolutions

In future flights they may call them revolutions rather than orbits. Inertial orbits refer only to the path around a body and return to the same point in space. Revolutions are counted with reference to a point on earth. Because the earth rotates 22 degrees while the capsule is making a 360-degree trip, a revolution takes some five and a half minutes longer than in inertial orbit because the orbiting body has to "catch up" with its point on the surface.



AMIDST A CROWD of dignitaries, President Kennedy, assisted by NASA Director James E. Webb, center, prepares to present an outstanding leadership award to G. Merritt Preston, right, Manager at the Atlantic Missile Range for NASA's Manned Spacecraft Center. Kenneth S. Kleinknecht, Manager of the Mercury Project Office, and Christopher C. Kraft, Jr., Project Mercury Flight Director for MSC, also were presented leadership medals by the President for their outstanding performance in support of the Project Mercury program.



GETTING BUSSED by Estelle Coleman is Ray Nething, Facilities Maintenance, who was given a surprise birthday party last week. Others wishing him well, are, left to right, Wihla Dunham, Millie Jackson and Annie Taylor.

Wilson Awarded \$200 For Steering Method

Dr. Raymond H. Wilson, Jr., Chief of Applied Mathematics in the Research Directorate of NASA's Office of Advanced Research and Technology (OART), has received a \$200 incentive award for invention of a method for magnetic steering of spacecraft by controlled spin-damping.

Dr. Wilson's work solved the problem of orienting satellites in the Earth's magnetic

field. His concept includes the addition of retractable rods to the spacecraft exterior.

The rods, constructed of highly permeable material are of relatively large length-diameter ratio. They are extendable on ground command. Variations of his method have been used in a number of NASA's scientific and meteorological satellites.

Engineers To Bring Space Down To Earth

Rocket engineers — unable to take every control device into outer-space for flight testing — are "bringing the environment of space down to earth."

The Marshall Space Flight Center's latest "bit" of outer-space is a space flight simulator facility being installed in the Astrionics Division.

Navigational and guidance and control devices will "fly" many hours in a 6 by 9 feet vacuum chamber before being chosen for future spacecraft.

This form of testing supplements actual flight tests of vehicles which is expensive and produces limited data in most cases.

The flight simulator, which is not "man-rated," will be used only to test individual components. Manned operation requires that a simulator be equipped with life support equipment.

The vacuum chamber will simulate the pressure and temperature of the "hard vacuum of outer space."

Components and systems will be operated in temperature extremes of plus 350 to minus 350 degrees Fahrenheit and pressures down to space conditions.

OFFICIAL DEFENDS RECRUITING PROGRAM

A NASA official in charge of recruiting scientists and engineers has said he does not think his effort has hurt industry, other government agencies or the faculties of colleges and universities.

Madison B. Smith, Chief of NASA's Recruiting and Examining Programs said that a recent study covering 3,348 scientists and engineers hired over a 15 - month period, showed that about one-third of that group came from industry.

Smith, in addressing a meeting of the Federal Personnel Associations of New York and New Jersey, pointed out that the bulk of those hired from industry were from firms that suffered cut-backs.

Smith expressed confidence that NASA would meet its next year requirement for 2,500 more scientists and engineers, but recognized that competition for this talent is getting tougher. During the current fiscal year (July 1, 1962 — June 30, 1963) NASA hired 3,123 scientists and engineers.

New Zealand Launches 1st Sounding Rocket

New Zealand's first sounding rocket in a cooperative program with NASA has been successfully launched from Birdling's Flat on the Canterbury Plains.

The purpose of the rocket flight was to measure the electrical characteristics of the lower ionosphere. While only electrical measurements were made in this flight, later sounding rockets are expected to include additional equipment to make simultaneous meteorological measurements.

The joint University of Canterbury-NASA project is sponsored by the National Space Research Committee of the Royal Society of New Zealand.

NASA supplied the Arcas rocket and the launcher. Two more Arcas rockets will be launched in the program with payloads which will also measure meteorological turbulence.



Gordo On The Beach

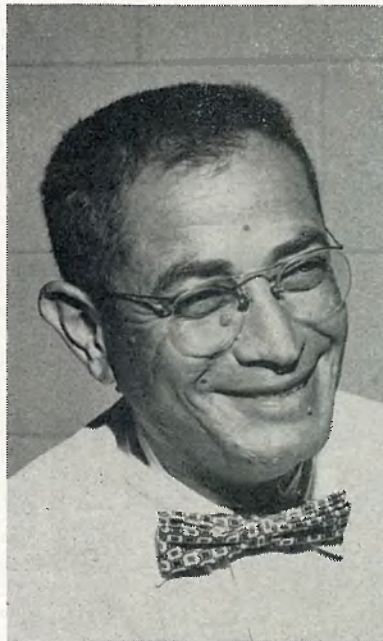
Radiation Damage In Space Studied

Westinghouse Electric Corporation's Astronuclear Laboratory in Pittsburgh has been awarded a contract by NASA's Ames Research Center to study potential physiological radiation damage to space. The contract, valued at about \$150,000, calls for a one-year study.

This life sciences study is an attempt to understand the basic phenomena of biological response to cosmic radiation, and to develop the means of preserving a man's well being and insure his survival during long periods of exploration in deep space.

At the present time, there is little known about the highly charged particles, known as cosmic primaries (and the type to which this particular study is directed).

Northern latitude — high altitude balloon flights have been conducted for the last three years studying this problem.



Sey Perlman



Tom West



Clarence Ferguson

CAPE-SIDE INQUIRER

Walking, Running, Golfing, Skating Rank As Favorable Waist-trimmers

Physical fitness is a prime conversational topic these days. President Kennedy's 50-mile-walk suggestion motivated hikers from coast to coast, and Astronaut Gordon Cooper's conditioning program (left) also received widespread attention.

Here at the Cape, the Inquiring Photographer asked half a dozen employees what methods they used to hold down the old mid-section bulge, and found a variety of answers.

If you're having trouble with an expanding waistline, read on to find the solution

that best suits you.

Sey Perlman, Safety Office: "Because of the loaded schedule here at work, I haven't time to exercise or participate in sports. Therefore, the walks between my office in Hangar AF and the E & L Building help keep me in shape."

Tom West, Vehicle and Missile Systems Office: "I love to water-ski and swim, and those long walks up and down Pad 37's service structure sure help out, too."

Clarence Ferguson, Supply: "I usually try to do some

heavy and long running, about three times a week. Most times I run down streets in my neighborhood."

Lloyd Padgett, Facilities Maintenance Branch, Chrysler: "There's only one way to keep in shape — golf."

Charles Lankford, Launch Facilities Service Group: "Hard work and good, clean living will keep you in shape. I roller skate every chance I get. Skating is good for your health."

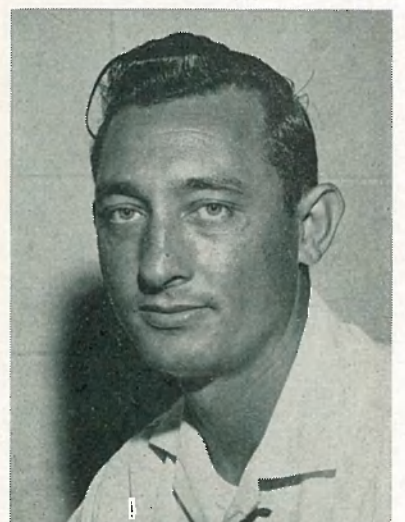
Russell Turner, JPL: "I play a game of volley-ball for 30 minutes each noon time to condition myself."



Lloyd Padgett



Charles Lankford



Russell Turner

24-wheeled Transporter Designed

NASA - Marshall Space Flight Center engineers have completed the design of a unique "truck" that will be used in transporting the first stage of the big Saturn V/Apollo moon rocket.

The S-IC land transporter will be used to move the huge rocket between various manufacturing, testing and launching sites.

The "truck" really consists of two "dollies" which are placed under the ends of the rocket. The S-IC stage is a structural brute, strong enough to serve as the backbone of the road assembly without center support.

Two Dollies

The two dollies have a total of 24 wheels — five feet tall with a 20-inch tread — of the type used on earth-moving equipment. The heavy (engine) end of the booster is attached to the towing tractor. The forward dolly has 16 wheels while the rear has eight.

The S-IC stage is 33 feet in diameter and 138 feet long. On the road, the vehicle will require a 38-foot overhead clearance. With tractor attached, the assembly will be 195 feet long, nearly two-thirds the length of a football field.

A two-mile heavy duty road is being constructed from the Center's manufacturing and checkout areas to the test area, where the booster will be taken for static firings.

In addition to its "road duty," the transporter will play a role in the assembly of the rocket stage. After the several elements of the stage tankage have been assembled in MSFC's vertical assembly structure, the tankage will be placed on the transporter and moved into another shop where the transporter will serve as an assembly fixture in supporting the stage while engines are attached.

The weight of the transporter will be about 105 tons, while the empty weight of the S-IC stage will be slightly less than 150 tons. The vehicle's road speed will be a maximum of five miles per hour.



SINGING A PARODY to Walt Barney, right, are, left to right, Ben Hersey, Don Hardin, Charles Buckley, Jim Russo, Ed Melton, Albert Siepert and Alan Guthrie. Seated are Mr. and Mrs. C. C. Parker and Mrs. Siepert. Barney, Chief of LOC's Program Coordination and Management Office, is leaving for a year's study at MIT under an Alfred P. Sloan fellowship. He was honored Friday night at a dinner dance at the Cape Colony Inn, attended by LOC administrative staff members and guests.



PAIR RECOUNTS

(Continued from Page 1)

believe I was in such a situation. It almost didn't seem possible — like a nightmare — with many of my buddies dropping all around me.

"We were pinned down on the beach and the firing continued to be heavy. I don't remember too much after that because I got hit by two mortar shells and was out of action from then on."

Siegel's body was literally sprayed with shrapnel, most of which he still carries today. He received the Purple Heart.

Unknown Destination

Allen, who was a PFC with the 4th Infantry Division, also didn't know his destination when he boarded an LCI for the channel crossing.

"I was pretty scared too," he said. "There was a heck of a lot of shooting going on. I was a gunner in a 60 millimeter mortar squad, and we set up our guns on Utah Beach to return fire."

Allen escaped injury the first day but was wounded six days later near a small French town. He received the Purple Heart, and the Bronze Star.

The booster will be pulled by a modified M-26 tank-retriever tractor. The weight of the tractor will be 50 tons, but more than half of this is ballast. The tractor develops 240 horsepower.



Dear Major Cooper:

"In arithmetic we figured you went around the earth at 17,544 mph. That's 44 miles per hour more than you were scheduled to go. Did you get a speeding ticket up there?"

Tommy T.
Sandston, Va.

"IMP" SATELLITE TO MONITOR SPACE RADIATION FIELDS

NASA has designed a satellite to serve as an interplanetary probe (IMP) to gather information about radiation and magnetic fields between the earth and the moon before Apollo manned lunar flights begin later in this decade.

A pair of atomic generators that turn heat from the radioactive isotope of non-fissionable Plutonium 238 into electricity, will power some of the IMPs.

Women's Club Meet

The June meeting of the NASA Women's Social Club will be held Tuesday at the Mayfair Cafeteria. Dinner at 5:30 will precede the 7:00 pm meeting.

NASA NEWCOMERS

Thirty-seven new employees have joined NASA in the past two weeks:

Facilities Office: Charles Hibbard, Henry L. Dowling, Denis A. DuVall, S. Arthur Duchaine, Mary V. L. Traeger, and Leland M. Hodgkins.

Reliability Office: Joel S. Blum.

Instrumentation Planning Office: Thomas G. Broskie, and Francis J. Hardin.

Support Services Office: Malvin C. Driver, Larry J. Williams, John B. Bassel, Jr., Madeline E. Volz, Joyce M. Phillips, Margie M. Persson and James M. Crisp.

Procurement and Contracts: Theodore Kafer, and William L. Gambel.

Financial Management Office: Joyce B. McCowan.

LVO, Electrical Engineering and Guidance and Control Systems: Richard E. De la Menardiere, Kenneth E. Koller, Mark S. Greenberg, and Lewis E. Coldren.

LVO, Electrical Engineering and Instrumentation Systems: Gary G. Routh, Ronald T. Smith, Jerry W. Raley, James A. Romine and Michael P. Ryan, Jr.

LVO, Mechanical & Propulsion Systems: LeRoy R. Sherer, and Leo J. Grumblatt.

Personnel Office: Lynette L. Cue and Helen Kay Melton. Goddard Space Flight Center: Robert B. Grigsby and James L. Womack.

Pre-Flight Operations Div., MSC: Paul K. Burdine, Ralph A. Yorio, and Raoul D. Smith.