SPACEPORT NEWS

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GEMINI 5 NEARS SPACE RECORD

KENNEDY Space Center Director, Dr. Kurt H. Debus, center, and Deputy Director Albert F. Siepert, left, hold conference with NASA Administrator James E. Webb. Webb was briefed on Center progress and operations during a visit here last week.

Gemini 5 astronauts Gordon Cooper and Pete Conrad were "doing fine," still whirling high over Earth at press time, and if all goes well they are expected to break the long-distance record for space flight shortly after 10:30 this morning.

At that time they will have entered their 82nd orbit of Earth, eclipsing the 81 orbit flight of Russian Cosmonaut V. Bykovsky set in June 1963.

America's space pilots are due back at the Kennedy Space Center early next week for a series of debriefings following their precedent-shattering mission.

If all goes according to plan the astronauts will land sometime Sunday and be brought back later to their quarters at KSC for detailed post-mission checks. They are scheduled to return to the Manned Spacecraft Center in Houston following this for more debriefings before a national press conference.

The astronauts were scheduled to be well into their sixth day of their planned eight-day mission this morning. They were launched from Complex 19 at 9 a.m. last Saturday.

Total flight time for Gemini 5 is planned to be about 191 hours and 53 minutes during which it will complete 121 revolutions of the Earth.

Landing is planned at the beginning of the 122nd revolution, about 500 miles southwest of Bermuda in the West Atlantic Ocean.

Although a low fuel cell power rating early in the mission cancelled the performance evaluation of a radar pod. most other flight objectives have already been met.

Of prime importance was to demonstrate and evaluate the performance of the Gemini spacecraft over a period of several days, and to evaluate the effects of prolonged ex-

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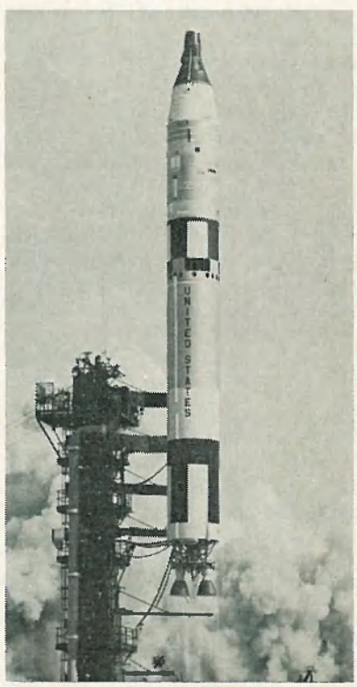

Gemini 5 Liftoff

Federal Funds Okayed For Road Improvements

The Bureau of Public Roads, NASA and the Air Force have agreed to assist the State of Florida in the continuing modernization of the Cape Kennedy access road complex.

At the present time there is serious congestion on both the Banana and Indian River Causeways. In the immediate future, unless these causeways are expanded from two to four lanes, the congestion will be impossible.

Already lives have been lost and many persons injured each year because of traffic snarls that result from four lane roads feeding into two lane causeways.

The total cost of the project will be approximately $4 million of which the Air Force and NASA will ultimately fund 80% or $3.2 million and the State of Florida will contribute 20% or $800,000.

The modernization will commence with the construction of a new twin lane westbound high bridge at Indian River Causeway and a new four lane Causeway for Banana River.

The total cost of these two projects will be $2.6 million. Air Force and NASA have assured the Bureau of Public Roads that their share of the funds for this project is immediately available.

The third project, the eastbound twin lane high bridge at Indian River will be funded in future Air Force appropriations and its construction cannot begin until the westbound bridge is completed.

THE INSIDE STORY
Astronauts As Bosses
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OSO EXPERIENCES PREMATURE BURNING OF STAGE ENGINES

A 620-pound, experiment-carrying solar observatory, OSO-C, was launched from Cape Kennedy yesterday morning.

At press time, indications were a premature burn of the launch vehicle's third stage may have cut the spacecraft short of orbit.

The OSO was not picked up by a tracking station in Johannesburg, South Africa, and officials presumed it had thus failed to make orbit and fell into the South Atlantic Ocean.

This was the third OSO in a series of eight solar observatories planned by NASA. The first two OSO satellites were launched from Cape Kennedy March 7, 1962, and February 3, 1965. OSO II is still operating.

IB Booster On Pedestal At Pad 34

The first Saturn IB booster has been erected on its launch pedestal at Complex 34 with no major problems.

"When you have newly designed facilities and a new vehicle, even if they have been meshed perfectly on paper, you're never sure everything will go smoothly until you put them in operation," said Al O'Hara, KSC's Launch Vehicle Operations Manager. "But this time it all fit well."

Senior technical representative Jack Humphrey of Mechanical and Propulsion Systems concurred. "Everything went very nicely," he said. "We started erection the first thing last Wednesday morning and had the booster on the launch pedestal by noon."

The vehicle arrived at the Kennedy Space Center August 14 and was off loaded and inspected in Hangar AF. Three swept-back fins were installed in the hangar before it was transported to the pad area.

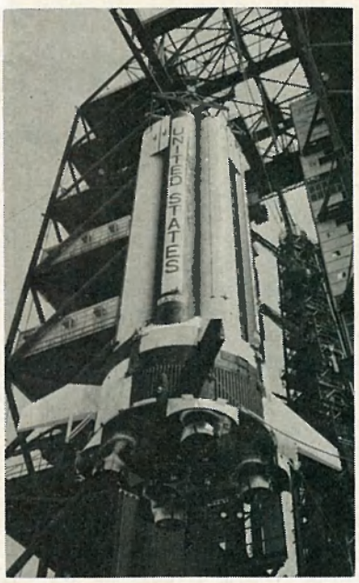
An S-IVB facility vehicle stage was attached to the booster Saturday. Facility vehicles are used only for checkout operations of launch equipment.

While technicians prepare the launch vehicle for tests, facility work at Complex 34 is continuing. The area is undergoing extensive modifications for the Saturn IB program.

IB is NASA's follow-on program to the Saturn I series. The first IB flight is scheduled for early 1966.

POWERFUL COMBINATION

By using its Centaur rocket as the upper stage of a Saturn IB launch vehicle, NASA will be able to lift a 9,000-pound spacecraft on a path to Mars.



Saturn IB Erection

Spacecraft RF Tests Scheduled This Week

The Gemini 6 spacecraft and an Agena target vehicle have been hoisted to the top of the 50-foot timber tower at the Kennedy Space Center's Radio Frequency Systems test site this week for a series of compatibility checks.

According to Don Cromer of KSC, Spacecraft Test Conductor for the Gemini 6 mission, the Agena was put in place Monday and the Gemini was due for erection yesterday.

Both vehicles will be checked out during the RF runs in docked and undocked modes. The Agena can move to and from the spacecraft via a special cradle.

Following initial checks, the Agena and Gemini will be demated and moved about eight feet apart for more RF tests.

An orbital simulation run, with Gemini 6 astronauts Wally Schirra and Tom Stafford participating, is scheduled for early next week. Docking and rendezvous techniques will be simulated at that time.

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Her Bosses -- In Orbit But She Has No Fears

Lots of girls say, for varying reasons, "my boss is in orbit," but for Lola Morrow, that overworked phrase has a literal meaning.

She is the astronauts' secretary when the space pilots are in training at the Kennedy Space Center. At the moment her bosses, Gordon Cooper and Pete Conrad, are, in fact, in orbit.

"Actually, I'm also secretary to Arthur Hand of the Manned Spacecraft Center's flight crew operations," she says, "but when the astronauts are here their work takes most of my time."

Lola's day-to-day duties run the gamut of the secretarial routine.

"I take care of their phone calls, keep up with their schedules and appointments and handle any correspondance they need while here."

There are also a lot of non-routine duties, which Lola classifies as "little brush fire type things."

One of these is providing a woman's touch to the astronauts' crew quarters, located on the third floor of the Manned Spacecraft Operations Building at KSC.

"During the Gemini 3 mission," Lola recalls, "backup astronauts Wally Schirra and Tom Stafford told me their quarters needed a woman's touch. So I did a lot of little things for them, like ordering bedspreads and linens—anything that could make them a little more comfortable."

How are the astronauts as bosses?

WHAT'S HER LINE?

Being a secretary for nationally known bosses, such as the astronauts, is not always a behind-the scenes job, as Lola Morrow can attest.

She was recently a guest on the nationally televised "What's My Line" program, for instance, and stumped the panel.

"I guess they got confused when I told them I was from Connecticut," she said.

ASTRONAUTS' secretary Lola Morrow discusses paper with one of her bosses, Gemini 3 veteran Gus Grissom.

"They're just wonderful," Lola exclaims. "They're considerate and helpful — I wish everyone could be like them. I have never seen them show any strain during their training. I can go directly to them if I don't understand something and they give me all the help I need."

A native of Windsor, Connecticut, Lola has been with NASA for three years and loves her work.

"It's an unusual job," she admits. "You have to be flexible, because I don't have anything like a routine day. New crews are always coming in and there is always something to be done. But it's challenging and I enjoy the work."

Lola has no particular anxieties about her bosses circling high overhead in space.

"I think it's just wonderful because this is what they've been working so hard for. Everybody has a job to do and the astronauts' safety comes first, so I have no worries about them, but I am glad to see them when they come down again," she said.

"Some people might think I get a lot of souvenirs by working so close to the astronauts, but I don't," Lola acknowledged. "They're too busy, so I don't ask them for any favors. But out of every launch I add a few more wonderful memories."

SHUTTLE SERVICE REVISED

The Kennedy Space Center Transportation Office has announced several changes in services, effective next Wednesday.

Shuttle bus route numbers one, three and four will be combined to service the E and L Building, Launch Complexes 34 and 37, the KSC industrial area and the Vehicle Assembly Building area.

All points will be served approximately every 15 minutes with no transfers necessary. This route will be designated number one.

Route number two, from Merritt Island to Launch Complex 19, will not be changed appreciably.

Route number five, from the E and O Building to Launch Complexes 11, 12, 13, 14, and 36, has been discontinued due to poor shuttle utilization.

Route number six, from Merritt Island to Cocoa Beach, will be changed from 45-minute service to 30-minute service between the E and L Building and Cocoa Beach. The Merritt Island to E and L Building portion of the route will be eliminated.

The cryogenics — fluid test area will continue to be serviced by an "on-call" shuttle bus, as will Launch Complexes 34 and 37.

The KSC industrial area on Merritt Island will be provided with a continuous shuttle servicing the area approximately every 10 minutes.

All shuttle buses will have color-coded signs designating the routes.

These changes were recommended following several weeks of close study of the new transportation system, and will afford improved service.

Dr. Adams Appointed

Dr. Mac C. Adams, a top executive and engineer in space-related work for the Avco Corp, will succeed Dr. Raymond L. Bisplinghoff as NASA's associate administrator for Advanced Research and Technology.

THESE FOUR members of the Job Corps volunteered to help the Kennedy Space Center's Public Information Office during the Gemini 5 mission when several hundred newsmen were in the area. The girls handled phone calls and performed various clerical duties at the press center. Left to right are Katherine Williams, Sandra Wade, Marguerite Comer and Shirley Ballard. The Job Corps is a program of basic education, skill training and useful work experience for young men and women between the ages of 16 and 21.

Siepert Lauds Community At Port Lock Ceremonies

Kennedy Space Center Deputy Director Albert F. Siepert was among the dignitaries who spoke Saturday at the dedication of the new Port Canaveral locks.

Principal speaker was Senator Spessard Holland. Congressman Edward Gurney of Florida's 11th district was Master of Ceremonies.

"This new waterway has special meaning for the nation's space program," Siepert said. "One week ago the first Saturn IB stage passed through the locks. This scene will be repeated many times in the next several years as stages of other Saturn IB and the Saturn V lunar rockets complete their journey from the point of manufacture to the launching site."

Siepert said the new facility was evidence of the brilliant teamwork of Government and industry that has characterized the evolutionary development of space exploration.

"Here three agencies of Government — the Port Commission, representing the community; the Corps of Engineers; and NASA — joined hands to create a facility which achieves the dream of a true seaport for central Florida," Siepert said.

He pointed out that NASA's involvement in the undertaking dated back to 1961.

"I believe the initiative displayed by the community in developing support for this undertaking is indicative of the continued imagination and spirit of its leaders," Siepert said.

He noted that the objective of space exploration is new knowledge of the Universe to enhance human understanding and to promote peace.

"These locks comprise an important link in that undertaking," Siepert said, "since they will function as part of the transportation system by which heavy space flight vehicles come to the Kennedy Space Center and are launched on their historic journeys.

Gemini Launch Vehicle

Erection of the Gemini 6 launch vehicle's first and second stage at Complex 19 is expected early next week—at a time when the Gemini 5 pilots are planned to be here for debriefings on their mission.

Spacecraft Contacted Via Radar

Although there was initial disappointment when the Gemini 5 pilots couldn't make use of their rendezvous evaluation pod (REP) due to low pressure in their fuel cells, there was a pleasant surprise this week when Kennedy Space Center engineers rigged up another REP on the ground and made radar contact with the spacecraft from a distance of 600 miles.

Purpose of the radar pod carried by Gemini 5 was to test equipment and provide practice in rendezvous techniques. Astronauts Gordon Cooper and Pete Conrad were to seek out the pod in space after they had ejected it as a test of their equipment. But loss of fuel cell power on the first day of flight terminated this experiment.

However, KSC engineers set up a duplicate pod before the launch using Agena equipment mounted at the Radio Frequency Test Facility.

KSC communications engineer Rocco Sannicandro explained how the duplicate pod worked:

"As Gemini 5 came over on its 17th revolution, the pilots orientated its nose to point to the ground during its pass over the Kennedy Space Center.

"They turned on their radar and we turned our pod transponder on," Sannicandro said. "At a distance of about 600 miles we began getting an intermittant signal which the transponder automatically transmitted back to the spacecraft.

"This intermittent signal became a solid one at a distance of 248 miles. We were locked on in a solid signal for about two and a quarter minutes and had an intermittent signal for five or six minutes."

This lock-on technique with radar pods will be all important when the Gemini 6 pilots seek to rendezvous in space with an Agena target vehicle.

Ron Shultz, a radad group supervisor for McDonnell Aircraft, said by using the designed antennas, radar lock-on in space between vehicles is expected to be 250 miles.

Among those here last week to see the Gemini 5 launch was an old hand at space flight — John Glenn.

Deeply tanned and looking trim, he renewed acquaintances, shook hands, signed autographs and chatted with people in the visitors' viewing area in front of Hangar T.

"I'm glad to be back," Glenn said, I've got so many friends here that I haven't seen in such a long time. It's hard to see everyone, but I hope to be coming down to the Kennedy Space Center more often in the near future."

* * *

What's the difference between an orbit and a revolution?

During Gemini flights the spacecraft's course is measured in revolutions around the Earth.

A revolution, simply, is completed when the spacecraft passes over 80 degrees west longitude — about once every 96 minutes.

Orbits are space referenced and take 90 minutes.

The six minute difference is caused by the Earth's rotation. As the spacecraft circles the globe, the Earth moves about 22.5 degrees in the same direction.

Although the spacecraft completes an orbit in about 90 minutes, it takes another six minutes for the spacecraft to reach 80 degrees west longitude.

For this reason it is simpler to record revolutions from fixed positions on Earth.

Gemini completes 16 orbits per day, but only crosses the 80th longitude 15 times — hence, 15 revolutions.

Anyone for a refresher course in physics?

* * *

Name a word in which all of the vowels occur, and in alphabetical order.

Stumped? Try abstemiously, or facetiously.

Redstone Veterans Recall First Flight

Several members of the original Missile Firing Laboratory team who helped launch the first Redstone from Cape Canaveral 12 years ago gathered at Kennedy Space Center Headquarters Friday morning for a small party honoring that historic occasion.

All are key NASA managers at the Center today.

Kennedy Space Center Director, Dr. Kurt H. Debus, who directed the Missile Firing Lab a dozen years ago, recalled the flight preparations leading up to the August 20, 1953 launch of Redstone I.

"At the time the vehicle arrived at the Cape we didn't even have a service structure to put it in," Dr. Debus said. "We worked on it in a hangar we shared with people readying a Snark for launch.

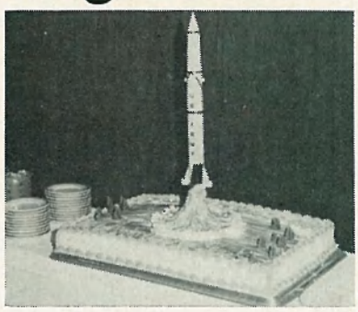
Couldn't Hear

"Everytime they ran a static test we couldn't hear anything. But all things considered, the Redstone worked relatively well," Dr. Debus said.

There were about 30 permanent members of the Lab who were in the blockhouse for the flight 12 years ago. Most of them are still together, now at the Kennedy Space Center.

Among those at the celebration Friday were Dr. Debus, Karl Sendler, Rocco Petrone, Ike Rigell, Andy Pickett, Bob Gorman, C. C. Parker, Rube Wilkinson, Carl Whiteside and Jim Finn.

Recalls Gorman, now Chief of the Center's Launch Support Operations Division: "We had to ship a lot of our equipment—eight flat cars of it—



down from Huntsville by rail. It was sent to Melbourne and then transported across the Melbourne Causeway because Cocoa and Eau Gallie had wooden bridges and couldn't support heavy loads. We had quite a caravan."

Andy Pickett, Chief of KSC's Mechanical and Propulsion Systems Division, also remembers that first Redstone flight well.

"The thing that's changed the most was back then at T minus zero everyone in the blockhouse looked at Albert Zeiler, who watched the vehicles through a periscope.

"If the color of the flame looked just right to him," Pickett said, "he would shout 'main stage,' and we could fire away."

Redstone I had a powered flight of about 76 seconds. It was programmed to go about 160 miles, and although it fell short, most of its test objectives were met. It proved the missile's structure was sound, that the propulsion system worked, and several other things.

More important, Redstone I paved the way for the advanced military and space exploration programs of today. The Redstone later became the first rocket to fly a nuclear warhead, and also, through subsequent re-entry payload investigations, led to the first successful American satellite on January 31, 1958. America's first two astronauts in space, Alan Shepard and Gus Grissom also rode atop Redstones.

Party arrangements were made by Robert W. Endsley, Manager of the NASA Exchange Council. A special anniversary cake was baked by L. C. Carniel.

Gemini Nears Record

(Continued from Page 1)

posure to the space environment of the two-man crew.

While the Gemini 5 pilots continue to circle overhead, engineers and technicians at the Kennedy Space Center are preparing the next manned spacecraft, Gemini 6, for flight.

Compatibility tests are being run this week on the spacecraft at the Radio Frequency Systems test facility.

Cape's MCC Kept Busy

Although flight and operations control of Gemini 5 is now handled from the Manned Spacecraft Center in Houston, a variety of key assignments are still performed at the NASA Mission Control Center located at Cape Kennedy.

Once the focal point of manned space flight operations, the Center now serves primarily as one of NASA's worldwide manned tracking network stations.

Mission Control transmits to the flight controllers at the Manned Spacecraft Center all radar, telemetry, command, and air-to-ground real time data during the flight that is acquired at the Cape and over the Air Force Eastern Test Range.

The data is acquired each time the Gemini 5 spacecraft makes a pass over the Cape, the islands of Grand Bahama, Grand Turk, Antigua and Ascension, and Pretoria, South Africa.

This information is used by the flight controllers in Houston to keep up to the minute on spacecraft and pilot performance.

Several other functions are performed at the Mission Control Center prior to a manned flight. Deputy KSC Director for Launch Operations, G. Merritt Preston, for instance, mans a console in the Center during the final phase of each manned launch countdown to coordinate spacecraft and vehicle checkouts.

Also, across from the Center's Operations Room is a Gemini simulator — a spacecraft that can do everything but fly. Astronauts use this trainer considerably during the weeks prior to their specific flight.

Various tracking instrumentation in the Mission Control Center at the Cape is also used on some unmanned flights.

REGISTRATION IS OPEN

Registration is now open for the Fall term at Brevard Engineering College. The college office is open for registration and counseling weekdays from 9 a.m. to 5 p.m. and from 7 to 9 p.m., and on Saturday mornings from 9 to 12.