

**KENNEDY** Space Center Disaster Control Officer Ralph Wilson plots course of Hurricane Betsy onto plexiglass board in the Hurricane Control Center of the Headquarters Building.

## KSC Hurricane Control Follows Fickle Betsy

Although everyone in the area kept track of Hurricane Betsy, particularly over the long weekend, no one at the Kennedy Space Center followed it more closely than Ralph Wilson of Base Operations.

Wilson is KSC's Disaster Control Officer and whenever a storm threatens NASA facilities at Cape Kennedy and the Spaceport he mans the KSC Hurricane Control Center along with Lex Clark and Russell Smith.

The Center is located in the second floor conference room of the KSC Headquarters Building.

"We've improved our capabilities greatly since moving to Merritt Island," Wilson said.

"For one thing, we've installed a Civil Air Patrol transceiver that ties us in on a communications line with the Brevard County Sheriff's Office, Civil Defense, the Red Cross and Patrick Air Force Base — all on the same frequency."

Wilson explained overall communications have been vastly improved.

"We now have point-to-point communication with the Hurricane Command Post at Patrick, with Central Control at the Cape, with Ernie Amman, Chief of the U. S. Weather Bureau's Office at KSC, and with the TWA Hurricane Command Post, located in the Kennedy Space Center firehouse."

Wilson said that he can receive, directly, wind velocity and direction readings from instruments on the roof of the Headquarters Building.

Also set up in the Hurricane Control Center is a teletype receiver linked directly to the weather station at Patrick. And, too, there is a large scale map displayed via view graph, on which a storm's path is carefully plotted.

Wilson said a regular television set will be used to monitor (See HURRICANE, Page 3)

## Flu Shot Schedule Announced

Kennedy Space Center civil service and contractor employees began receiving inoculations this week to ward off attacks of influenza.

TWA medical personnel were in the KSC Headquarters Building yesterday, and hundreds of employees were given injections of the flu vaccine.

This morning the vaccine will be distributed in the conference room of the Base Operations Building, and this afternoon it will be distributed at the conference room of the Materials Support Branch building.

Here's the schedule for other areas:

Tomorrow—first aid room first floor of the Manned Spacecraft Operations Building.

Monday—from 8 to 11 a.m. in the conference room, second floor of the Information Systems Building. Monday afternoon, 12:30 to 3:30 in the conference room of the Plant Maintenance Building.

Tuesday — from 8 to 11:30 a.m. in the Occupational Health Facility.

Wednesday — from 8 to 9 a.m. in the Vehicle Assembly Building area, Corps at Engineers resident office; from 9:15 to 10:00 a.m. in the Morrison-Knudsen-Perini-Hardeman conference room, VAB area; from 10:15 a.m. to 3:30 p.m., in the VAB high bay area.

Thursday — from 8 to 11 (See FLU, Page 3)

## NASA Goal — \$25,000 For '65 United Fund

Brevard County's 1965 United Fund Drive will get underway October 1, and the Kennedy Space Center's goal this year will be \$25,000.

Last year the NASA goal was \$18,000 and a total of \$23,000 was raised.

KSC Chairman John Donovan of Protocol said he was sure with enthusiastic support the Center would have little trouble reaching \$25,000 during the month-long campaign.

"We've got the full backing of top management on this," Donovan said. "Dr. Debus is 100 percent behind the drive, and he has urged all employees to participate."

The overall county goal for 1965 is \$458,000, a new record high.

Donovan said posters would be displayed at various areas of the Center to keep everyone informed of progress in reaching the goal.

"All you have to do is look at the list of organizations the

United Fund supports to see how worthy such a campaign is," Donovan pointed out.

The list includes the Arthritis Foundation, Boy and Girl Scouts, the Brevard Association for Retarded Children, Brevard County Guidance Center, Central Brevard Crippled (See UNITED, Page 3)



**JOHN DONOVAN** of Protocol will chair KSC's 1965 United Fund Drive. Goal for the Center has been set at \$25,000.





**TWA WORKMEN** boarded up large plate glass in front of the KSC Headquarters Building when Hurricane Betsy looked like it might sideswipe the area. In other areas throughout the Center windows were boarded and low ground areas were sandbagged.

## SPANISH VIPs TOUR KSC

Several high-ranking Spanish Government officials, in Florida to participate in the 400th anniversary celebration of the founding of St. Augustine, toured the Kennedy Space Center Tuesday as guests of NASA.

Heading the group of dignitaries were Lt. General Camilo Alonso Vega, Minister of the Interior; Mrs. Vega and Angel Sagaz, Director General of U. S. Affairs in the Foreign Ministry.

The group arrived late Tuesday afternoon and were greeted by Deputy KSC Director Albert F. Siepert. They were then taken to Launch Complex 34 where the first Saturn IB booster is on the pad.

Following a drive past other NASA complexes on Cape Kennedy, the officials were briefed on manned spaceflight operations at the Mission Control Center.

They then toured the Kennedy Space Center's Launch Complex 39, with stops at Pad A, the Vehicle Assembly Building, the Mobile Launcher and Crawler / Transporter

area, and the Launch Control Center.

Also in the party were: Jose Luis Morris Marrodan, Director General, local administration; Mrs. Marrodan; Alvaro Armada, Count of Bevilagigedo; Countess Armada; Fernando Suarez del Villar, Mayor of Aviles; Mrs. del Villar; Joaquin de Entrambasaguas, Chief, Research and Projects Department, Ministry of Information; Luis Lopez-Ballesteros, Counselor of Information; Javier Burroso Sanchez-Guerra, Architect of "Casa del Midalgo;" Carlos M. Fernandez-Shaw, Cultural Counselor; Mrs. Fernandez-Shaw; Vincent Ibarra Verge, aide to General Vega; and Mrs. Verge.

Representing the state of Florida were General McMillan, Adjutant General; Mrs. McMillan; John Bailey, Mayor of St. Augustine; Mrs. Bailey; and Earl Newton, Chairman of the St. Augustine Quadricentennial.

### Surface Exposure

NASA's Pegasus satellites expose about 80 times as much surface for micrometeoroid detection in space than the earlier Explorer satellites which also measured micrometeoroid density through contacts on their "skin."

# Gemini 6 Astronauts See Simulated Stars

Gemini 6 astronauts Wally Schirra and Tom Stafford will be able to view the breathtaking panorama of Earth and stars as seen through their spacecraft windows long before they blast off into orbit.

Providing this orbital "pre-view" is a new visual display device recently installed at the Gemini Simulator Operations Section in the Mission Control Center.

The device, which will be used to familiarize future Gemini pilots with celestial mechanics, simulates Earth and sky conditions for a full orbital period.

Star patterns and constellations are projected by means of a celestial sphere, controlled lighting and an intricate system of special mirrors known as beam splitters.

The celestial sphere, 20 to 30 inches in diameter and enclosed in a light-tight black box, is embedded with permanently fixed metal balls of varying colors. These colored balls are positioned and embedded in the sphere with an accuracy of 1/2 degree to tolerance and simulate stars down to the fifth magnitude.

### Controlled Light

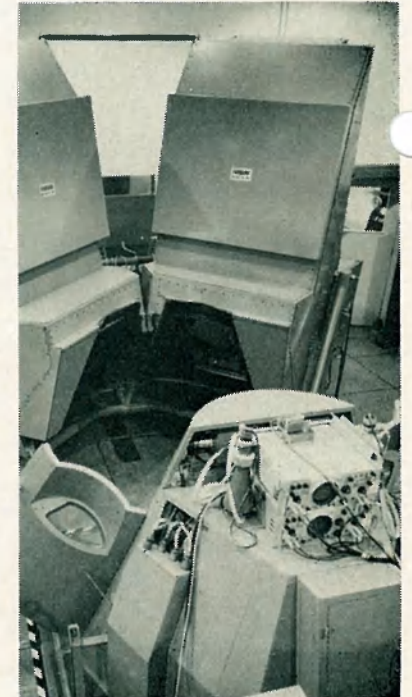
Projection is accomplished by a controlled light source which illuminates half the sphere at a time. The reflected star patterns are then channeled through a beam splitter which transfers the display onto a mirror-screen outside the spacecraft simulator window. The relationship of the spacecraft's attitude and the position of the stars can be varied by the pilot as he controls his craft.

Added realism is provided by a closed-loop television system which feeds scenes of the Earth into the display. Only at the period of dawn and dusk can both the Earth and stars be seen.

According to Riley McCafferty, Chief, Simulator Operations Section, MSC's Flight Crew Support Division, the new display is far superior to the Earth and sky display used for the Gemini 3, 4 and 5 training sessions. The pre-

vious display used only closed-circuit television.

The new display is now being checked out for the Gemini 6 mission.



**SIMULATOR** visual display modification equipment at the Mission Control Center's simulation room is shown above.

## Debus, Gen. Huston Co-Chairman Campaign

Kennedy Space Center Director, Dr. Kurt H. Debus, and Major General Vincent G. Huston, Commander of the Air Force Eastern Test Range, have been named co-chairmen for the 1966 Brevard County Savings Bond Drive.

The campaign will run from May 1 through July 4, 1966.

Dr. Debus has served as Brevard County Chairman for the bond drive for the past three years.

In a letter to General Huston, acknowledging his acceptance as co-chairman for the coming year, Dr. Debus said, "I am confident we will be presenting to the citizens of Brevard County a program that will be of mutual benefit to the individual participants, as well as our respective missile and space programs."

# SPACEPORT



# NEWS

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## Hurricane

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itor reports from local meteorologists.

All information received in the control center can be directly channeled two floors up to the KSC Director's Office.

If a hurricane hits the Center, Wilson noted, a crew of 18 people will ride it out in the Headquarters Building. Included will be mechanics, firemen, security people and maintenance men. Hourly inspections of the building will be made during the height of such a storm.

Other major buildings at the Spaceport will also have skeleton crews.

Plans call for all doors and windows on the first floor level of buildings to be either sandbagged or shuttered if a storm threatens. Sandbags will also be used in the Vehicle Assembly Building low bay area and at the Launch Control Center.

All facilities at the Kennedy Space Center have been designed to safely withstand winds far exceeding minimum hurricane force, (75 miles per hour).

TWA will maintain a force of 60 personnel in the firehouse. Included will be high voltage men, mechanics, maintenance specialists and others who will be on call to repair damage at the Center.

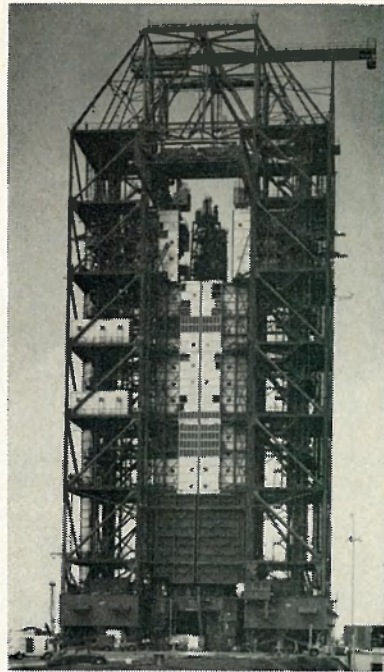
Other rideout crews will be assigned to blockhouses at NASA Launch Complexes on Cape Kennedy.

In the event of a storm carrying winds of 75 miles per hour or more, hurricane flags will be flown in front of the Headquarters Building, and at the main entrance to the Spaceport off US-1.

### United Fund Goal

(Continued from Page 1)  
Children's Clinic, Child Adoption Services and Community Services.

Also, the Damon Runyon Fund for Cancer Research, the Family Service Bureau, Home Nursing Service, Mental Health Association, National Travelers Aid Association, North Brevard Rehabilitation Center, North and South Chapters of the American Red Cross, the Salvation Army, South Brevard Charities, United Medical Research of Florida, the USO and the YMCA.



**HINGED hurricane doors on the revamped service structure at Launch Complex 34 have been shut tight the past few days to ward off any possible side winds from the season's second tropical storm, Betsy.**

## Saturn IB Vehicle Safe In Structure

The Saturn IB booster on the pad at Launch Complex 34 can safely ride out a hurricane now that the service structure is equipped with a new enclosure system.

The tower has been strengthened and the anchoring system improved to make it possible to leave an assembled Saturn IB on the pad during hurricane conditions.

Some 6,000 square feet of galvanized steel permanent siding have been added to the frame of the tower for wind protection, and two pairs of hinged hurricane doors have been erected.

The 10-month, \$7.5 million construction program to update Launch Complex 34 has been completed.

### QUOTABLE QUOTES

"Expeditions to the planets of our solar systems are the ultimate goal of manned space flight in this century, and will be an undertaking of immense significance."

Dr. Franklin P. Dixon, Director Manned Lunar and Planetary Mission Studies, NASA.

**Avoid loose talk.**

## Hurricane Conditions

There are four major conditions which may be declared when a storm approaches the Kennedy Space Center. These are listed in the KSC Hurricane Control Plan, and are condensed as follows for general information:

**CONDITION IV** (storm warning) will be declared 72 hours prior to the forecast arrival of 50 knot or greater winds. A "warning order" will be issued to all organizations that a hurricane may be expected.

Personnel will report to their normally assigned duties, but should remain available for duties in connection with hurricane preparations.

Certain instrumentation systems and facilities may be secured against damage.

**CONDITION III** (hurricane alert) will be announced 48 hours prior to the forecast arrival of 50 knot or greater winds.

Hurricane preparation work will begin. All loose objects in or near complexes, hangars and other facilities will be secured. Storm supplies — sandbags, tarpaulins, portable pumps and generators, etc. — will be drawn.

Launch vehicles should be secured or taken down at the decision of the launch director.

Classified material should be stored in approved safes. Storage containers should be moved away from windows and doors.

**CONDITION II** ((hurricane warning) will be declared 24 hours prior to the forecast arrival of 50 knot or greater winds. At this time final preparations for high winds and water are to be completed. Buildings will be shuttered and sandbagged, vans and vehicles, where required, will be moved into hangars, and other vehicles not required for storm preparation are turned into motor pools.

**CONDITION I** (final hurricane warning) will be announced 12 hours prior to the forecast arrival of 50 knot or greater winds.

All normal duties will be curtailed for the protection of personnel and property. Upon receipt of authority from the KSC Director's office, all personnel not required for "ride out crews" will be released.

All possible precautions should be taken to safeguard records and classified material.

## FLU SHOT SCHEDULE ANNOUNCED

(Continued from Page 1)

a.m. in room 220, Launch Complex 39, pad A. From 1 to 3:30 p.m. in the first aid station, Launch Complex 39 Pad B.

Friday, September 17 — from 8 a.m. to Noon, in room 1 P9 of the Launch Control Center.

Tuesday, September 27 — from 8 to 10 a.m., in conference rooms A and B of the District Corps of Engineers Office.

Dr. Kurt H. Debus, Center Director, has urged all KSC employees to participate in the flu shot program.

"I am particularly interested in preventing illness and lost time due to flu during the next few months when the performance of your job is so important," Dr. Debus said.

For those who miss their shots during the scheduled

times, makeup clinics will be held at the Occupational Health Facility on Merritt Island.

A schedule for KSC employees at Cape Kennedy will be announced soon.

Anyone with any questions on the flu inoculation program should call 867-2225.

### NASA Orders Stages

NASA has contracted with Douglas Aircraft Co., Santa Monica, Calif., for 15 improved Delta launch vehicle upper stages and associated equipment.

The fixed price, incentive fee contract is in the amount of \$16,200,000.

The improved Deltas have larger fuel tanks which extend the burning time to 400 seconds from 160 seconds for the standard Delta.





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