

25 Years Ago at MSC

Center gears up for lead role in developing space shuttle vehicle

Why does this nation need a space shuttle?

That question was posed last week to Robert F. Thompson, manager of the Space Shuttle Program here, a post he has held since April 1970.

As a sea-faring nation needs ships, so "if you postulate that we should be a space-faring nation, and I believe that we should be, then we must build something with the general capability of the shuttle," Thompson responded.

In the shuttle, he believes, this country is buying a general purpose capability, "a vehicle that, by its reusable nature, will be of relatively low cost in operation."

Thompson sees the shuttle as providing the opportunity and capability of performing many tasks in space, "everything from taking satellites into orbit and planting them, to going back to repair or retrieve those satellites, to conducting medical research programs in space, to conducting engineering experiments, to deploying and supporting space station-type flights, to conducting earth resources, missions for cataloging and understanding what is taking place on the Earth's surface."

MSC has been named the "lead center" in development of this reusable space transportation system called the shuttle.

In a press conference on Jan. 10, Associate Administrator for Manned Space Flight Dale B. Myers said, "The overall management (of the shuttle) on the day-to-day basis will be here at MSC. This would include technical management and responsibility for gathering cost estimates and for managing the cost balance against schedule and technical elements as we move forward in the program."

Of MSC's responsibilities as lead center for shuttle development, Thompson said, "We here will set up and staff to provide an integration or overview function of the program on a day-to-day basis, as well as day-to-day management of the detailed elements of the program assigned here, like development of the orbiter portion of the shuttle."

Current plans call for a small program office staff composed of MSC personnel and key individuals from other NASA centers involved in shuttle work. This group would, in Thompson's words, "be concerned about everything happening across the total program in the way that it should happen and whether the right coordination among the elements of the program—the orbiter, booster engines, launch site activities—is taking place."

A number of center organizations are already working on the shuttle project. During the current study and design phase, the great bulk of the work is being done within the engineering and development directorate, which has a staff co-located in the Shuttle Program Office under Milton A. Silveira.

The administration and program support directorate has provided a program control and contracts supply office, headed by R. Wayne Young, which is located within the structure of the shuttle office.

The technical services division in the center operations directorate is currently building a model of the shuttle cockpit. Divisions of the flight operations directorate are feeding information which will influence the design of the shuttle, such as trajectory problems, timeline analysis, and communication and tracking requirements.

The flight crew operations directorate has submitted data and pos-

sible requirements relative to the crews which will one day pilot the shuttle. The medical research and operations directorate last year completed a study on the influence of G-levels on passengers. There will be other investigations into medical aspects of shuttle flights.

As the shuttle development plan unfolds, more MSC organizations will find themselves involved.

The major milestone for the shuttle program this year will be the letting of a contract to industry for program design-identified in the NASA contracting effort as Phase C of the development program.

Requests for proposals are scheduled to be issued in the early spring, with an awarding of the contract set for early summer.

This reporter asked Shuttle Manager Thompson how he compared the feelings of people today as we move into the shuttle program with those of persons 10 years ago when the nation's goal was to land a man on the moon and return him safely to Earth.

"I think in a much more subtle sense, to people with backgrounds in aviation and airplanes as well as backgrounds in space, the shuttle is an exciting opportunity to combine those two.

"We have never before attempted to build an airplane-like rocket ship or space ship. This gives us a wonderful opportunity to blend our complete background and talent in this area.

"I think that in a much more subtle and professional way, there is an excitement about the shuttle, not as intense and emotional as for Apollo, but excitement nonetheless."

Thompson also believes that "unquestionably, the talent is here at this center which can meet the needs of the shuttle program."



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Above: This version of the space shuttle, one of several under study, shows a delta-wing orbiter riding piggy-back aboard a Ballistic Recoverable Booster. The first stage booster burnout occurs between 172,000 feet and 190,000 feet. The two stages separate, and the orbiter with hydrogen/oxygen tank, attached in tandem fashion continues into space. The booster is parachuted gently into a water landing, recovered, returned to the launch site, refurbished, and used again. The stack could be launched from modified pads at Kennedy Space Center—the same pads used for lunar missions. Below: This artist's conception shows the orbiter portion of the space shuttle as it approaches an airport runway in a conventional landing configuration.



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Gilruth Center News

Hours: The Gilruth Center is open from 6:30 a.m.-10 p.m. Monday-Thursday, 6:30 a.m.-9 p.m. Friday, and 9 a.m.-2 p.m. Saturday.

Sign up policy: All classes and athletic activities are on a first come, first served basis. Sign up in person at the Gilruth Center and show a yellow Gilruth or weight room badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

Gilruth badges: Required for use of the Gilruth Center. Employees, spouses, eligible dependents, NASA retirees and spouses may apply for photo identification badges from 7:30 a.m.-9 p.m. Monday-Friday; and 9 a.m.-2 p.m. Saturdays. Cost is \$10. Dependents must be between 16 and 23 years old.

Nutrition intervention program: Would you like to learn more about the role diet and nutrition play in your health? This six-week program includes lectures, a private consultation with the dietitian and blood analysis to chart your progress. Program is open to all employees, contractors and spouses. For more information call Tammie Shaw at x32980.

Defensive driving: One-day course is offered once a month at the Gilruth Center. Pre-registration required. Cost is \$25. Call for next available class.

Stamp club: Meets every second and fourth Monday at 7 p.m. in Rm. 216.

Weight safety: Required course for employees wishing to use the Gilruth weight room. The next classes are scheduled for at 8 p.m. Feb. 12 and 26 (must be on time to receive credit for class). Pre-registration is required. Cost is \$5. Annual weight room use fee is \$90. Additional family members are \$50.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is \$24 for eight weeks.

Aikido: Introductory martial arts class meets from 5:15-6:15 p.m. Tuesday and Wednesday. New classes begin the first of each month. Instruction is by a fourth-degree black belt. Learn to defend yourself and get a great aerobic workout. Cost is \$35 per month.

Step/bench aerobics: Low impact cardiovascular workout. Classes meet from 5:15-6:15 p.m. Monday, Tuesdays and Thursdays. Cost is \$32 for eight weeks. Call Kristen Taragzewski, instructor, at x36891 for more information.

Ballroom dancing: Classes meet from 7-8:15 p.m. Thursdays for beginner advanced classes and from 8:15-9:30 p.m. for beginner-intermediate and intermediate students. Cost is \$60 per couple.

Country and western dancing: Beginner class meets 7-8:30 p.m. Monday. Advanced class (must know basic steps to all dances) meets 8:30-10 p.m. Monday. Cost is \$20 per couple.

Fitness program: Health Related Fitness Program includes a medical screening examination and a 12-week individually prescribed exercise program. For more information call Larry Wier at x30301.

Gilruth Home Page: Check out all activities at the Gilruth online at: <http://www4.jsc.nasa.gov/ah/exceaa/Gilruth/Gilruth.htm>

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday and in the Bldg. 3 Exchange Store from 7 a.m.-4 p.m. Monday - Friday. For more information call x35350 or x30990.

Moody Gardens: Tickets are \$9.75 for two of four events.

Space Center Houston: Adults, \$10.25; children (4-11), \$7. JSC civil service employees free.

Movie discounts: General Cinema, \$5.50; AMC Theater, \$4.50; Sony Loew's Theater, \$5.

Shirts: International Space Station logo pique golf shirts, \$26 and \$28.

Stamps: Book of 20, \$6.40.

1998 Franklin Planners: Replacement refill orders being taken now.

Sweetwater Pecans: Orders are being taken now; cost is \$5.75 per pound.

Metro passes: Tokens and value cards available.

Book available: Suddenly Tomorrow Came: A History of Johnson Space Center.

Balloons: Balloon bouquets for all occasions, prices vary.

Houston Livestock Show & Rodeo: Tickets sales began Jan. 28.

Roundup Deadlines

The Space News Roundup is published every other Friday. Story ideas should be submitted as far in advance as possible, but no later than two weeks prior to the date of publication.

The deadline for Dates & Data calendar items is three weeks prior to the date of publication.

Stories and ideas should be submitted to Kelly Humphries in Bldg. 2, Rm. 180, or via e-mail to kelly.o.humphries1@jsc.nasa.gov