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New Mission Control Room portends increasing pace of human space flight, rapid space station expansion

By James Hartsfield

In the next 18 months, the International Space Station will grow to be the largest spacecraft ever built, but before it is assembled in space, the station will be put together dozens of times by flight controllers in a new Mission Control training room opened in early August.

The new training flight control room, a replica of the control rooms used to operate the space shuttle and the International Space Station, has begun training teams to oversee upcoming station missions. The new room is located in the Mission Control Center building, adjacent to the most famous of all control rooms – the Apollo Flight Control Room from which controllers monitored the lunar landings.

“Opening this room is a milestone – it prepares us for the start of a new era in Mission Control beginning in just a few months.

It will be an era where 24 hours a day, seven days a week, year after year, teams in Houston will be working with astronauts in space,” said Flight Director Kelly Beck. “When a crew begins living aboard the International Space Station this fall, this new room will become our primary training ground.”

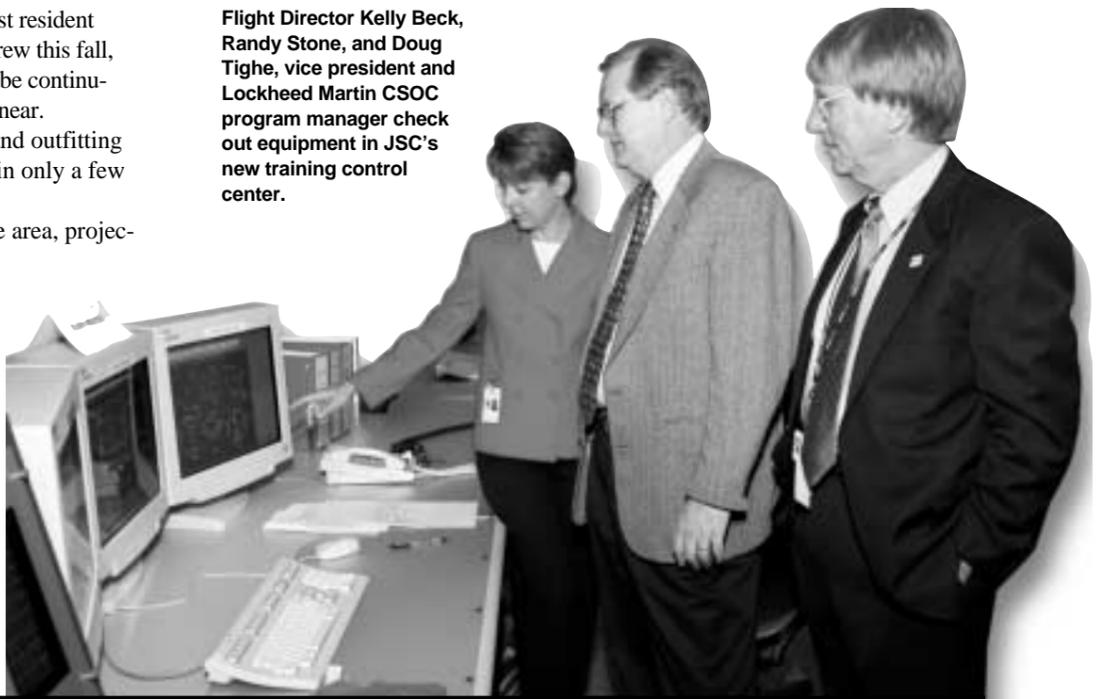
Several times during the past few years, studies of future mission training indicated another facility would be needed to train flight control teams when the Space Station Flight Control Room and the Space Shuttle Flight Control Room were occupied with flight activities. However, due to higher priority space shuttle and space station control center changes, a dedicated training facility was not pursued and interim solutions using existing facilities were used. As operations in Mission Control continued to increase, the need for a dedicated facility was addressed again last year. Like the previous studies, that study showed

that with the launch of the first resident International Space Station crew this fall, the time when all rooms will be continuously occupied was drawing near.

The actual construction and outfitting of the room was completed in only a few months.

“We had to take a storage area, projection room and project office located behind the historic Apollo control room and transform that space into a new training control center in just six months,” said Doug Tighe, vice president and program manager of Lockheed Martin Space Operations’ Consolidated Space Operations Contract. “That’s really operating at warp speed.”

Flight Director Kelly Beck, Randy Stone, and Doug Tighe, vice president and Lockheed Martin CSOC program manager check out equipment in JSC’s new training control center.



NASA JSC Photo 2000-05585. James Blair



JSC’s new Flight Control Center provides a venue exclusively for training.

NASA JSC Photo 2000-05586 by James Blair

Construction work in the new room was performed by BRSP, Inc., a task that involved designing and remodeling in a manner that ensured the changes did not interfere with the permanent preservation of the neighboring historic Apollo room.

In 1994, an entire new version of Mission Control was ushered in that replaced the antiquated, custom mainframe computer system with a new system of commercially available workstations. The new system increased the capabilities of the control center and reduced operating costs.

“Ten years ago, we could have never developed a new room so quickly,” said Lynn Vernon, project manager for the control center’s development. “The architecture we have now allows us to build and operate this training room without interrupting ongoing control of space shuttle flights or the space station in other rooms.”

The new room includes 17 consoles and large front projection screens, identical to those in the flight control rooms. Like the rooms used for flight operations, the training flight control room can be linked to astronaut training facilities around the Johnson Space Center and other space flight control centers around the world. The flight controllers that will use it helped lead the effort to develop the new room.

“We want to train the way we fly and fly the way we trained, so we needed a training room that was almost identical to the rooms we use during a flight,” explained Rick Gavin, who headed the Operations Cadre, a group that represents flight controllers and control room developers, during much of the room’s development. “The hard part was to determine where it would go and how we could put it together by the time it was needed.”

The team surveyed all of the floor space in Bldg. 30, and came up with a list of

almost 20 rooms. But virtually all of them already were in use for critical activities. With those eliminated, the list was narrowed to three or four possibilities, Gavin said. Of those, the Apollo control room’s “back room” was the leading candidate, but there were concerns about altering the historic preservation of the neighboring room. The group contacted the Texas State Historical Preservation Office for an opinion on a slight modification to one wall of the Apollo projection room.

“We contacted the office’s regional representative for southeast Texas, and they came to visit,” Gavin said. “After that tour, they came to the conclusion that the small alteration needed to create the training room would not affect the historical preservation of the Apollo landmark.” Permission to modify the room and begin construction work was granted in February of this year.

“I think a major part of the success in developing this room quickly was the work that was done to put the requirements for the room together and to stick with those requirements through to the project’s completion,” Gavin said. “Everyone, contractors, flight controllers and representatives from every directorate involved, has just done an excellent job.” ■



Dr. Robert R. Gilruth, center’s first director, dies at 86. Story on Pages 4-5

“Robert Gilruth was a true pioneer in every sense of the word and the father of human space flight. His vision, energy and dedication helped define the American space program. His leadership turned the fledgling Manned Spacecraft Center into what it is today, the leader in humanity’s exploration of outer space. He will be greatly missed.

—JSC Director George W. S. Abbey