SPACE

Gemini 11 Breaks Records

By Jonathan Eberhart

➤ "THIS is absolutely your last chance," said the sign held up by technicians to Gemini 11's crew, Astronauts Charles Conrad and Richard Gordon.

The astronauts took the chance. In addition to a spacewalk, two "space stands," the first docking maneuver ever carried out on the initial orbit of a flight, and a "tether" maneuver in which two spacecraft whirled around each other at opposite ends of a 100-foot line, Gemini 11 set an altitude record almost three times greater than that of the Soviet Union.

The launch, delayed for three days, finally got off perfectly, although there were some nervous moments when an apparent cabin pressure leak was discovered. After the hatch cover was resealed, the leak failed to reappear, so the flight got the official OK.

Scarcely an hour and a half after launch, Gemini II was docked with its waiting Agena target. "Beautiful," said ground control.

The pilot, Conrad, then pulled away from the Agena and docked again. Things were going so smoothly that even Gordon had a try at it, and did perfectly. All three docking maneuvers were controlled completely from the spacecraft.

Charles Conrad, now a veteran astronaut, had been in space once before, on the eight-day Gemini 5 flight last August, when he was co-pilot to Gordon Cooper.

Gordon, however, was a rookie. Though he has been an astronaut since 1963, the closest he had ever come to space before Gemini 11 was as part of the back-up crew for Gemini 8.

Gemini 8 was the first spacecraft to dock with an Agena, though Gemini 6 and 7 had previously faced each other nose to nose in orbit. Gemini 9 rendezvoused three times with a substitute "target docking adapter," but was unable to dock because the clamshell doors covering the docking collar failed to jettison completely. Gemini 10 was more successful, docking with one Agena and rendezvousing with another.

The most spectacular part of the Gemini program has been not the dockings, but the spacewalks. Only hours before Gordon was to have stepped out of Gemini 11 for a 107-minute walk, the astronauts noticed their first mechanical hitch.

At 6:00 a.m. on the second day in orbit, Conrad reported to ground control in Houston that No. 8 thrustor (out of 16) was "not up to snuff."

There are thrustors all over a Gemini spacecraft, and they have accounted for considerable trouble in the past. Gemini 5 (Conrad's first flight) had thrustor problems, as did Gemini 8, which had to come down two days early because of it. Also on the flight, David Scott's spacewalk was greatly curtailed due to a malfunctioning thrustor in the OAMS (Orbital Attitude Maneuvering System).

No. 8, a tiny rocket engine controlling the role of the spacecraft around its long axis, did not present a critical problem since the spacecraft was still locked to the Agena and would remain so throughout the spacewalk.

Nevertheless, the spacewalk had its own problems.

Two flights ago, Gemini 9 spacewalker Eugene Cernan found himself virtually unable to see, due to the perspiration from his body which fogged the inside of his faceplate. To remedy the situation, the National Aeronautics and Space Administration installed a more efficient air conditoning system in the suit of Gemini 10 spacewalker Michael Collins. Apparently it worked.

Gordon, however, evidently found his workload greater than did Collins. The result was that perspiration running into his right eye made Gordon unable to see with it, and Conrad called him back into the spacecraft rather than risk having a temporarily blind copilot on his hands. Total time elapsed: 44 minutes, instead of 107.

Astronaut flight surgeon Dr. Charles Berry said that compared to some of the other astronauts Gordon perspires "very freely." The discovery that work may be more difficult in the weightlessness of space rather than on earth came as a shock to NASA scientists, and proposals for the remaining Gemini spacewalk have included ideas ranging from lightening the workload to picking the crew by their physical reactions to heavy work.

On the third day, Sept. 14, Conrad fired the main engine of the Agena, to which Gemini 11 was still attached, cried "Whoop-de-doo," and shot up to a new record altitude of 850 miles. After exclaiming about the view ("just fantastic") and taking some radiation measurements, he flew the spacecraft back down to a 180-mile-diameter circular orbit, where Gordon stood up on the seat for 128 minutes taking pictures.

Splashdown was a dream. When the spacecraft landed in the Atlantic, less than 2½ miles from the recovery ship, NASA described the feat as "the best landing we've ever had."

Gemini 12's flight, tentatively set for Oct. 31, has been lengthened from three days to four, NASA officials announced after the recovery of Gemini 11. However, they said the decision had been made a month before.

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