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Above, astronaut Schweickart wears a broad grin as he watches a radiation counter float in front of him during a "slow scan" television transmission from the lunar module during the rendezvous flight on
March 6. Above right, this artist's impression represents the CSM
(right) about to dock with the LM at the beginning of the flight. The
S-IVB stage of the Saturn V is still attached. Right, a view of the com-
mand module as seen from one of the two triangular windows in the
docked LM

to think about this problem in some detail before the crucial landing flight. Illness in only one astronaut could mean the abandonment of a $160 million mission.
Later, NASA spokesman Paul Haney said that Schweickart's 2hr EVA mission—the only scheduled spacewalk on Apollo 9— would, after all, be cancelled on the recommendation of the spacecraft commander. A stopgap plan for an astronaut to climb out on to the ladder was adopted instead. Christopher Kraft said that EVA had a relatively low significance in the Apollo 9 mission in any case.
The SPS was operated to change the orbit once again— this time into a 148 X 143-mile path. The 18hr working day was one of the busiest in America's manned flight programme. On March 6 Schweickart had so recovered that spacecraft commander McDivitt consented to his performing a limited EVA. This was a last-minute decision; Houston gave McDivitt permission to decide what should be attempted while the hatch was open. So it came about that Schweickart and McDivitt entered the LM at about 1400GMT rather hurriedly— things were late for the second day running—and the LM was depressurised by I650GMT. The 32in square hatch in the LM was opened at about 1720GMT (coinciding with the depres-surisation and the opening of the CM hatch by CM pilot Scott) and Russell Schweickart climbed out and on to the LM ladder. The purpose of this exercise was to test the EVA suit under space conditions. He was attached to the lunar module by a 25ft nylon rope, with his feet in restraints (known as the "golden slippers"). For 37imin he made observations while outside the module; meanwhile Scott had reached out of the CM to retrieve the thermal samples which were to have been collected by Schweickart during the EVA.

The second and final telecast was made by Schweickart from the LM ladder, and was of far better quality than the first. Excellent views of the command module and the Earth, 145 miles below, were obtained. At one time all three astro-nauts were filming; as Scott reported, "We're all taking pictures of everybody taking pictures." Later he toured the inside of the LM with camera to show off the control panels and the communicating tunnel. This 14min broadcast ended the astro-nauts' activity and the astronauts again returned to the CM to prepare for Friday, March 7—on which day was planned the major event of the Apollo flight, a full Moon-landing rendezvous manoeuvre. i

So it was last Friday, March 6, that the most critical test yet in the Saturn V/ Apollo programme took place. Depending on the performance of the spacecraft during the rendezvous and docking of the LM and CSM in a simulated lunar mission would be the qualification of the largely untried LM for the Apollo 11 flight. Friday's test was in fact the separation of the LM and CSM by about 100 miles, followed by the tracking, rendezvous and link-up of the CSM by the

LM to exercise, particularly, the control and propulsion sys-tems in the LM.
After climbing into the LM for the day's work, McDivitt and Schweickart separated from the CSM at 1239GMT, The LM descent engine was fired once to place the craft into 167 x 137-mile orbit, and then again to circularise the orbit at 160 x 154 miles, about 12 miles higher than the CSM, so that it would gradually fall behind the CSM. Scott, in the CM, said: "I can see your jets firing as clear as a bell . . . ." Some 4hr later, when the horizontal separation had in-creased to about 113 miles, the descent stage was jettisoned and McDivitt and Schweickart fired, for the first time, the 3,5001b non-throttling engine of the ascent stage so as to lower the orbit by 11 miles. The burn was calculated to bring them 75 miles behind and 10 miles below the CSM, from which the simulated rendezvous orbit was begun. About six hours after beginning the manoeuvre the ascent stage was docked with the command module.

Some difficulty was experienced with the docking because of glare which obscured the sighting equipment in the LM. As McDivitt observed, "That wasn't a docking, that was an eye test." After McDivitt and Schweickart had climbed back into the CM, the LM was separated and commanded by Mission Control to fire its engine until the fuel had been exhausted— a6minburn—to remove it from the vicinity of the CSM and to see just how long the fuel would last.
While the detailed performance of the LM will not be avail-able for some time, it is clear that to the first order it has qualified in all important respects for the forthcoming flights, Apollo 10 and 11. Apollo 10 is scheduled to fly the LM to within 50,000ft of the Moon's surface in May, almost completely simulating the Moon landing.
At a press conference in Houston Lt Gen Samuel Phillips, Apollo Programme Director, said that the flight so far had gone extraordinarily well, and had exceeded even the most optimistic expectations on this, the toughest flight so far. Christopher Kraft, operations director, said that the performance of the LM was outstanding. "I don't think there was any life-risk problem on the LM's flight," he said. "We may have felt that way before the flight, but we certainly didn't when we decided to go ahead with the rendezvous."