

SPACE

Nine New Astronauts

See Front Cover

► THE NATIONAL AERONAUTICS and Space Administration Manned Spacecraft Center has named nine new astronauts. They have been assigned to a comprehensive training program at the center designed to prepare them for possible space flight to the moon and beyond.

The new flight test personnel seen on this week's front cover include two civilians. They are reading from left to right: Neil A. Armstrong, Air Force Major Frank Borman, Navy Lt. Charles Conrad Jr., Navy Lt. Cmdr. James A. Lovell, Air Force Capt. James A. McDivitt, Elliot M. See, Air Force Capt. James A. Stafford, Air Force Capt. Edward H. White II and Navy Lt. Cmdr. John W. Young.

The group ranges in age from 32 to 35. They average younger than the original seven Project Mercury Astronauts at the time of their selection.

The qualifications criteria for the new astronauts were similar to those for the original selection for the Mercury space flight program. The new standards, however, allowed the candidates to be somewhat



SPACECRAFT FOR TWO—A mock-up of the new two-man Gemini spacecraft is shown at the St. Louis plant of McDonnell Aircraft, where the vehicle is being built for the National Aeronautics and Space Administration. Gemini is being developed for orbital flights of up to 14 days duration, and for rendezvous and docking missions with propulsion vehicles in orbit.

taller, reduced the age limit required, and opened the way for civilian volunteers.

Dr. Robert R. Gilruth, director of the Manned Spacecraft Center, who announced the names of the nine, stressed that the new test pilots will not all necessarily participate in actual space flights. "Assignment to flight crews," he said, "will depend upon the continuing physical and technical status of the individuals concerned and upon the future flight schedule requirements.

"The new flight test personnel will, however, have an important role in the manned spacecraft center space program in addition to any flight participation. This role will include contributions to engineering design, development of future spacecraft, monitoring of flights and to the development of advanced flight simulators," Dr. Gilruth said. Selection of the nine test pilots culminated six months of extensive evaluation of the qualifications of more than 200 volunteers from among military and civilian applicants.

The nine and the original seven astronauts will combine to form flight crew teams for future space missions.

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OCEANOGRAPHY

Russian Plan Jointly to Explore Oceans Favored

► THE UNITED STATES is reportedly in favor of a Russian proposal to launch the most ambitious international oceanographic expedition in history.

The proposal calls for a multi-nation full-scale study of the ocean currents and ocean bottom of the northern Atlantic and Pacific Oceans. A State Department spokesman said the "United States is generally in favor of the proposal but has specific reservations about some of the finer points."

The Russians envision 43 oceanographic vessels simultaneously cruising the northern Atlantic and Pacific at various periods from 1964 to 1966.

The study would be valuable for tapping the ocean's energy sources, creating new fishing methods and developing a system for using the ocean's mineral resources, they claimed.

The proposal was originally submitted last spring at UNESCO's Intergovernmental Oceanographic Commission meeting in Paris. Since then, its scientific aspects have been carefully studied by the national scientific academies of the 18 countries belonging to the international Scientific Committee on Oceanic Research. A full report was made at a fall meeting in Paris.

U.S. oceanographers discussed the Soviet plan with Russian scientists in Russia before the fall meeting.

U.S. representatives to the Paris meeting only said that the "U.S. has a constructive attitude" toward the proposal and discussed it in detail at the fall meeting.

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Nuclear Power Slated For Major Space Role

► NUCLEAR POWER is slated for a major role in space, but the question of when and exactly how the United States will use atomic energy for propulsion is not settled.

Nuclear rockets can boost much heavier loads farther with less fuel, but they are still a long way from development. The first use for propulsion could well be after a chemical first stage has boosted a rocket high above earth's surface.

Then nuclear power could be used for the second or third stages, Administrator James E. Webb of the National Aeronautics and Space Administration (NASA) said in Washington, D. C. The vehicles planned for manned landing on the moon in 1967 are being designed to use nuclear rockets, if they are available, for the upper stages.

The lunar launch facilities are also being designed so that nuclear rockets could be used, he told a subcommittee of the Joint Committee on Atomic Energy. Using a nuclear rocket for the third stage of the Saturn scheduled to make the first manned lunar trip could double the weight put into lunar orbit.

Dr. Hugh Dryden, deputy administrator of NASA, told the subcommittee that a ferry system between an earth orbit and a lunar orbit could be achieved with a nuclear-powered rocket if a way could be found to restart and reuse nuclear reactors in space. This would provide "very low cost transportation" between the earth and the moon.

Another essential use for atomic energy in space is to provide electrical power for instruments. Some isotope-powered generators have already operated successfully, as in the two Transit navigation satellites.

However, Dr. Dryden noted, nuclear sources with longer lives and capable higher power will be needed for communications satellites, as well as for the weather satellites.

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RADIOLOGY

Radiation Increases Egg Output of Chickens

► RUSSIAN scientists have claimed that radiation could increase egg output in chickens.

H. F. Kushner, I. G. Kostin, A. Ya. Dobrynina, L. A. Subareva, M. G. Salganik and A. I. Samoletov reported this finding to the World Poultry Congress in Sydney, Australia.

Experiments on poultry exposed to small doses of gamma radiation before hatching showed:

Irradiated chickens equalled normal chickens in weight and vitality.

Pullets produced from 9% to 16% more eggs than normal pullets. These hatched as readily as those pullets incubated without radiation and produced normal offspring. The fertility of roosters was not affected.

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