



NASA

**HADRAMAUT PLATEAU**—Among the photographs of the earth taken by the National Aeronautics and Space Administration's Gemini 4 spacecraft during its orbital mission was this view of the Hadramut Plateau, the southern part of the Arabian Peninsula. The Gulf of Aden is in the background.

A dome design utilizing the principle of "truncability" that permits building domes of different sizes and heights without changing the material. Patent 3,203,144.

A rocket that can return to earth under its own flying power, thus saving 80% of the rocket's cost. Patent 3,202,381.

A helium-filled inflatable suit that can lift a survivor away from the danger of a ship or aircraft disaster. Patent 3,176,935.

An all-weather system of navigation-by-satellite that uses the Doppler effect. Patent 3,172,108.

A thermotunnel converter that changes heat energy into electric power, free from the inherent limitations of both thermionic and thermoelectric devices. Patent 3,169,200.

A coating for runways made of mesh plaster sand, asphalt emulsion, water, Portland cement and powdered wood rosin that slows jet planes three times faster than regular runways. Patent 3,168,019.

A method for making wood resistant to rotting and termites that leaves a solid crystalline preservative permanently in the wood. Patent 3,199,211 and 3,200,003.

Sheets made of pulverized egg shell membrane to which other substances may be added, which improve healing when applied to burns. Patent 3,196,075.

A circular airport runway system that would minimize the hazards of being unable to stop shortly before take-off and of overshooting a runway. Patent 3,173,634.

A method for marking fish in which scales are transplanted painlessly from one part of the body to another. Patent 3,174,458.

An electric eye device that can scan the road ahead and can keep a car in the same lane, along the straightaway or around curves without the help of the driver. Patent 3,172,496.

An alarm system that responds to a variety of conditions in a building on normal telephone circuits to relay coded emergency signals. Patent 3,206,551.

A giant disposal that destroys classified information once it has served its purpose. Patent 3,192,853.

A floating hydrofoil runway that the airplane would not overshoot because the runway would travel beneath the plane as long as needed for takeoff and landing. Patent 3,191,566.

A contact lens containing a special dye that lights up when subjected to ultraviolet rays but will not interfere with vision. Patent 3,189,914.

A battery-powered "cigarette" that would allow inhalation of medication. Patent 3,200,819.

A contraceptive intrauterine plastic coil, flexible enough to be straightened but strong enough to spring into place upon insertion. Patent 3,200,815.

A lock that "recognizes" the voice pattern of a particular person and responds by unlocking itself. Patent 3,184,937.

A colorless spray to protect plants from being smothered by oxidizing substances in the air. Patent 3,178,855.

A microphone that "listens" to the activity of the joint, enabling early diagnosis of joint disorders not detectable by X-rays. Patent 3,181,528.

A computer that answers inquiries verbally using bits of sounds stored in the form of coded signals. Patent 3,183,303.

A burglar alarm that telephones the police when someone is breaking in and automatically takes pictures of the intruder. Patent 3,188,392.

A concrete made of a special alumina cement and an aggregate of volcanic rock that can withstand the heat of a rocket at blastoff. Patent 3,188,368.

A miniature air raid alert that could be installed in individual buildings and is activated by general power reduction. Patent 3,187,139.

Clinistix, a test for sugar in the urine using a chemical indicator strip. Patent 3,164,534.

A method of building an automobile so that the force of a crash is absorbed by the movement of the passenger compartment. Patent 3,162,479.

A prefabricated platform for drilling oil from the ocean's bottom, usable at a depth of 400 feet. Patent 3,209,544.

The distillation process used to make 14,400 gallons of pure water a day from salty water in Puerto Rico. Patents 3,214,348 through 3,214,351.

An aircraft that will either loiter in the air like a family two-seater or streak across the sky at supersonic speeds. Patent 3,215,369.

A process for making stretchable metal fabric from aluminum. Patent 3,213,168.

A system that will allow transmission of pictures over ordinary telephone lines instead of coaxial cable. Patent 3,204,026.

1965 is the 175th anniversary of the U.S. patent system.

## SPACE

Mariner 4 passed within 6,118 miles of Mars and transmitted 21 pictures of the surprisingly moon-like planetary surface back to earth in July.

On March 18, Soviet cosmonaut Alexei Leonov spent 10 minutes outside his Voskhod 2 spacecraft, the first time any man had ever actually stepped into space.

While pilot James McDivitt flew the Gemini 4 spacecraft, co-pilot Edward White took the first U.S. "space walk," maneuvering himself around in space for 20 minutes with a compressed air gun.

France joined Russia and the United States as a participant in the space age when she launched her first satellite into orbit, a three-stage 18-ton rocket, on Nov. 26.

Astronauts Gordon Cooper and his co-pilot Charles Conrad set many records with Gemini 5, not the least of which was their eight days in orbit, proving that man can survive the lunar flight.

The first U.S. manned spaceflight in almost two years took place when Astronauts Virgil Grissom and John Young flew Gemini 3, the "Molly Brown," up, down and sideways, landing in the Atlantic after three orbits.

Ranger 9 in the 18 minutes prior to its impact on the moon transmitted some 5,814 pictures of the lunar surface of a quality exceeding the excellent records of Rangers 7 and 8 and bringing the total from the three Rangers to more than 17,700 photographs.

The search for extraterrestrial life, beginning with the unmanned investigation of Mars during the decade ahead, deserves the highest priority among all objectives in space science and the space program as a whole, a study group organized by the National Academy of Sciences concluded.

For the first time a man-made satellite, the Communications Satellite Corporation's Early Bird, was put into commercial service as a means of communication between continents, touching off a revolution that threatens the traditional communications methods of big countries and big companies.

Repeating the 1959 feat of Lunik 3, Zond 3 photographed some of the lunar surface