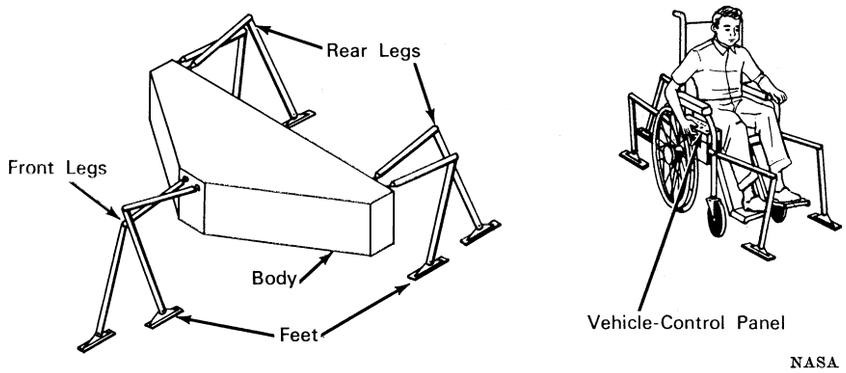

NASA

ADAPTABLE WHEELCHAIR—A battery-powered vehicle designed by the National Aeronautics and Space Administration for unmanned moon exploration may be adapted in the future as a walking wheelchair, capable of crossing uneven ground without assistance.

TRANSPORTATION

Test High-Speed Rail

High speed commuter rail transit, supported by the President in his State of the Union address, will first be tested in the so-called Boston-Washington corridor.

➤ TESTS TO PROVE the practicality of high speed commuter rail transit are expected soon using existing track and roadways but with new rolling stock.

With the impetus of President Lyndon B. Johnson's support behind it, as stated in his State of the Union address, the program should get off the drawing board and into actual operating experiments in the near future. The so-called Boston-Washington corridor has been selected as a testing area but the findings would be applicable to most of the country.

One concept finding wide acceptance as worthy of further study is a network of tubes in which jet cars would be propelled at more than 200 miles per hour. This program was the subject of a report submitted to the Administration by a study group at the Massachusetts Institute of Technology.

Present plans call for tests to begin sometime this year. The Pennsylvania Railroad has volunteered a 25-mile section of its main line between Trenton and New Brunswick, N.J.

Exact timing depends upon available funds. Since the President paid specific attention to this subject in his message, he is also expected to call for the specific allocation of funds in his budget message.

The money, if forthcoming, will be included in the budget of the Department of Commerce. Officially, no one will comment on the size of the expenditure prior to the submission of the budget.

Unofficially, there is expected to be an item of $20 million for advanced transit programming. This sum probably will be divided about equally for research and for testing.

In another phase of the subject, Sen. Claiborne Pell (D.-R.I.) introduced in the Senate a proposal for an eight-state public authority to operate rail passenger service between Boston and Washington.

In introducing his resolution, the Senator, a long-time advocate of improved commuter rail service, said that it would "authorize a new public agency to finance railroad rehabilitation in the northeast megalopolis when it came time to implement the Administration's proposed research and development program."

• Science News Letter, 87:34 January 16, 1965

SPACE

English-French Satellite Planned for 1967

➤ GREAT BRITAIN and France are teaming up to develop the first research satellite for the European Space Research Organization (ESRO).

England's Hawker Siddeley Aviation Ltd., London, will run the show for ESRO, but design and development of the satellite will be a joint project between Hawker Siddeley and the French company, Engins Matra.

Called ESRO II, the 175-pound satellite will monitor cosmic rays and make observations of solar flares and other phenomena. It will be launched by a U.S. four-stage Scout rocket from the U.S. West Coast early in 1967. Nearly 6,000 solar cells will supply power to the 12-sided probe, which measures about 30 inches in diameter.

ESRO plans to use four satellites in the program. Two will be earth-bound prototypes, used for testing individual components. The other two will be identical flight models, one of which will be launched.

• Science News Letter, 87:34 January 16, 1965

SPACE

Six-Legged Moon Vehicle Could Be Wheelchair

➤ A SIX-LEGGED VEHICLE designed for lunar exploration may be the wheelchair of the future.

The big mechanical grasshopper, developed under the auspices of the National Aeronautics and Space Administration, was constructed as an instrument carrier for unmanned exploration of lunar and planetary surfaces. Slight modifications in its body would make it suitable as a wheelchair.

The vehicle's locomotion is accomplished by three pairs of legs, one pair in the front and two in the rear. Each leg consists of an upper horizontal portion, a middle vertical portion and a foot.

Two cams connected to the drive mechanism control the motion of the legs. The two outer rear legs move in unison with the right front leg, and the two inner rear legs move in unison with the left front leg.

Each set of three legs is lifted to clear or rest on any expected obstacle on the ground and advance a fixed distance for the succeeding step.

A small motor steers the vehicle by swinging the front pair of legs to the desired angle. The rear legs are connected by a differential linkage to compensate for the required variation in step length or speed between the right and left pairs of rear legs when turns are made.

Unlike a motorized perambulator, this vehicle could traverse sand, street curbs and uneven terrain without assistance. Moreover, the basic design could be adapted as an auxiliary means of locomotion for existing motorized wheelchairs.

NASA spokesmen envision still other uses for the mechanical walker. For example, with appropriate instrumentation to permit remote control, it could be used for detection of land mines, for civil defense operations and for rescue work.

• Science News Letter, 87:34 January 16, 1965

PHYSICS

Newest 'Echo' Is From Photon, Not Satellite

➤ THE NEWEST "ECHO" is not from a satellite, but from a photon, the tiny unit used to measure electromagnetic radiation, whether light, radio waves or cosmic rays.

The photon echo had not previously been detected and its existence had been seriously doubted. Now, however, it is believed to promise wide application in the field of solid-state physics and in computer work.

The photon echo was found in an intense burst of radiation emitted by a ruby crystal that had previously been subjected to two short, intense light pulses from a ruby laser.

Drs. Sven R. Hartmann and Isaac D. Abella, with graduate student Norman A. Kurnit, all of Columbia University, New York, reported details of their 18-month search for the photon echo to the American Physical Society.

• Science News Letter, 87:34 January 16, 1965