Earth and Environment Notes

WEATHER

Nuclear Excavation Safety

A careful study of weather conditions at the sites of a proposed Atlantic-Pacific canal to be dug with nuclear explosives in Central America has been underway since last summer.

The Environmental Science Services Administration already has observing stations at both ends of a possible route in Panama. Two more stations in Colombia are scheduled to start operation this spring.

Using radar and sounding rockets in addition to regular weather study tools, the stations are trying to determine safety standards for digging a canal with nuclear explosives under Project Plowshare.

Two questions must be answered, the American Meterological Society reports; how big an area must be evacuated to insure safety of the population, and how often do safe weather conditions occur.

WEATHER

Northeast Drought Eases

More rain fell on the Northeast in 1966 than in any of the previous three years, but the total was still eight inches short of normal, according to the U. S. Weather Bureau.

Less than 37 inches of the normal 44-inch average fell in 1966, but that total ended a steady decline in precipitation that began in 1962.

For the time being, the Bureau says, there is enough water to hold the Northeast at least through spring. It is too early to predict whether drought conditions will reappear in summer, however.

CONSERVATION

Dredging Effects Studied

A detailed study of the effects of dredging on marine life is underway at Goose Creek on Long Island, according to a report from the Wildlife Management Institute of Washington, D.C.

Scientists from four local colleges are presently studying the normal bottom life of the area. After a year of study, the channel will be dredged. After another year, the scientists will return to see what permanent effects the dredging has.

Results may affect pending Federal legislation to protect the aquatic life in estuaries and coastal marshlands.

Space Notes

GEODESY

Number Four for France

France orbited its fourth satellite on Feb. 8, as part of a plan leading to super-accurate measurement of distances on earth.

The satellite was designed to reflect laser light beams from ground stations, thus providing pinpoint data on both the satellite's location and the distances between the ground stations. Launched by a three-stage, French-developed Diamant rocket, the satellite was the country's first in almost a year.

LUNAR EXPLORATION

Moon Hopper

Huge "pogo sticks" leaping across the lunar surface in 400-foot bounds have been proposed as a rapid transit system for getting around on the moon.

Just as a person's weight compresses a spring which then decompresses to propel a pogo stick and its rider for a short hop, the vehicle suggested by Dr. Howard S. Seifert of United Technology Center, Sunnyvale, Calif., would bound along on a steel pole containing a cushion of gas.

The lunar leaper would consist of two space cabins, straddling the 40-foot tube, with pilot and passenger in one and powerplant and life support systems in the other. The cabins would ride up and down the pole along with a piston device, which would compress the gas upon landing and be driven up the pole for acceleration.

Dr. Seifert predicts that in the moon's one-sixth-normal gravity, acceleration forces would equal one earth "g" for about 3 seconds, followed by 12 seconds of free flight.

POWER

Heat-Happy Batteries

Long-life silver-zinc batteries for space vehicles, capable of withstanding temperatures up to 100 degrees C., are going into production at Douglas Aircraft Co., Santa Monica, Calif.

Heart of the units is the separator, a device placed between the electrodes to permit ions to travel between electrode compartments, while blocking off the passage of material from the electrodes themselves.

The new batteries use separators made of a chemically inert, inorganic material called Astroset, which reportedly will not degrade in very high temperatures, unlike the organic, cellophane-like separators previously used.

Intended for space vehicles, satellites and military communications, the batteries have gone through more than 900 discharge-recharge cycles at room temperature and 400 cycles at 100 degrees C.