

# Technology Notes

## RADIATION

### Shielding Troubles for SST

A supersonic transport plane with shielding to protect its passengers from secondary cosmic radiation may be more dangerous than one without it.

High energy particles caused by a cosmic ray hitting the nucleus of an atom of air would ordinarily pass right through the body without doing any harm. Shielding, however, intended to stop the particles, might only slow them down enough so that they would be "captured" by human protoplasm. Radiation injury, says the Federal Aviation Agency's Dr. P. V. Siegel, might be the result.

## CONSTRUCTION

### Trench-Blasting Tractor

An explosive-planting tractor being developed by the Southwest Research Institute for the U.S. Army will be able to blast out a 14-mile trench, 10 feet wide and 5 feet deep, in eight hours.

Hydrocarbon fuel and hot compressed air will be ignited in a combustion chamber and their explosive force directed into several "cells" along the front of the tractor. Each cell will be pushed into the ground to blast out the soil from underneath.

## METALLURGY

### Purest Uranium Ever

Uranium with impurities of less than 30 parts per million has been made by the Atomic Energy Commission at Oak Ridge, Tenn.

To achieve such purity, an 18-gram piece of uranium rod, which originally contained 900 parts per million total impurities, was passed several times through a standard electron-beam floating-zone refiner.

## AERONAUTICAL ENGINEERING

### USAF Fuel System for SE Asia

To handle the increased numbers of U.S. aircraft in Southeast Asia, the Air Force has developed a portable fueling system less than one-third the weight of previous versions.

The first units have already been rushed overseas and more are being sent as fast as they can be produced. Two 50,000-gallon plastic-coated nylon tanks in each unit fold into a tight bundle 13 by 2 by 4 feet. In use they are 66 feet long and 24 feet wide.

The 600-gallon-per-minute system was developed by the Air Force Systems Command at Wright-Patterson AFB, Ohio.

# Physical Sciences Notes

## PLANETARY ASTRONOMY

### Temperature of Uranus Measured

The temperature of Uranus, seventh planet out from the sun in the solar system, has been taken by radio waves. It is within 16 degrees above or below 159 degrees Kelvin, Drs. M. J. Klein and T. V. Selig of the University of Michigan's Radio Astronomy Observatory report in the November *Astrophysical Journal*.

They made a total of 593 scans of the planet between Jan. 24 and March 21, 1966, using the 85-foot radio telescope at a frequency of eight billion cycles a second. The temperature they obtained, in combination with a previous temperature measurement at 2.7 billion cycles a second, indicates that the microwave spectrum of Uranus, unlike that of Jupiter, does not have a strong component of synchrotron emission.

## HYDROLOGY

### Focus on the Great Lakes

A joint United States-Canadian effort to cast a scientific eye on the processes and problems of the Great Lakes—the largest system of fresh water in the world—is being planned for an 18-month period starting in April 1970.

The project will be known as the International Field

Year on the Great Lakes and will be a cooperative program of the Canadian and U. S. National Committees of the International Hydrological Decade, now in its second year. Only one of the Great Lakes, probably Ontario, will undergo intensive study, although the knowledge gained will have application to the other four.

## ENGINEERING SCIENCE

### Medical Engineering Committee

A U. S. National Committee on Engineering in Medicine and Biology has been established by the National Academy of Engineering. Its purpose is to enable engineers in the fields of medicine and biology to participate in the activities of international organizations, such as the International Federation for Medical and Biological Engineering.

Temporary chairman of the committee is Dr. Murray Eden, Center for Communications Sciences, Massachusetts Institute of Technology. Appointments to the committee are normally for three-year terms. An immediate task confronting the new committee will be to plan U.S. participation in the Seventh International Conference on Medical and Biological Engineering to be held in Stockholm next August.