

# Technology Notes

## NOISE

### Industrial Noise Dosimeter

An industrial "noise dosimeter" has been developed which keeps a cumulative numerical total of the amount of noise absorbed by a worker on the job.

About the size of a small transistor radio, the device can be carried in the pocket and warns when the danger level is approaching. This has been difficult to measure in the past, since the total effect of noise depends on its duration and regularity as well as its frequency and intensity.

The dosimeter was developed by Dr. Nils Gunnar Torealm, resident surgeon in the Ear, Nose and Throat Clinic at Malmö General Hospital, Sweden.

## CHEMISTRY

### Cheaper Acetylene

Blasting coal with laser beams may lead to lower costs for acetylene, hydrogen cyanide and other important chemicals.

Coal was vaporized more than 60 percent in experiments by the U.S. Bureau of Mines, forming products "in a matter of milliseconds" that would require minutes or even hours with conventional carbonization methods.

Laser-induced temperatures up to 1,800 degrees F. produced gases that were then quick-cooled to prevent their undergoing secondary chemical changes.

Laser treatment, said the Bureau, yields a gas and a solid residue, with no liquids or "tarry" components.

## COMMUNICATION

### Transatlantic Cable Survey

The U.S. end of one transatlantic cable has been surveyed by submarine to pinpoint possible trouble spots caused by fishing trawlers which have snagged the cable's protective shielding from time to time.

A tiny sub called the Cubmarine checked the cable in water up to 600 feet deep off Cape May, N.J., extending out 60 to 100 miles. Besides taking more than 500 pictures, which indicated that the cable is all right, the Cubmarine found that estimates of the cable's location were off by as much as one or two miles.

## COMPUTERS

### International Computer Chess

An electronic computer at Stanford University, Calif., is playing chess with one in Russia—four games at a time.

The U.S. contestant, an IBM 7090, is competing with an M-20 computer at Moscow's Institute of Experimental and Theoretical Physics. The match is expected to last a year and require about 40 moves.

## ROCKETRY

### Mini-skirts for Nuclear Rockets

Shorter skirts for atomic rocket engines will increase payload capacity, according to an Aerojet-General, Sacramento, engineer.

A rocket's skirt is the flared lower portion that forms the gas stream into the widest possible pushing force. Long and wide skirts are both heavy and expensive. D. F. Vanica solves the problem by pushing the hot rocket gas through many separate streams or "nozzles," shaping them in a shorter space. On a Mars mission using nuclear propulsion, the system could add 40,000 pounds of payload—equal to the weight of five Gemini spacecraft.

## GEOPHYSICS

### First ESRO Arctic Rocket

The first rocket has been launched from the European Space Research Organization's Arctic research station at Kiruna, Sweden.

Armed with a nosecone full of instruments, the 110-pound French Centaur rocket reached a height of 75 miles, investigating ionization and cosmic radiation during an appearance of the Northern Lights.

Data from the flight was sent to West Germany for analysis. The \$7.7 million station is supported by 10 European countries.

## ELECTRONICS

### Mortar-Spotting Radar

A radar system for locating enemy mortars over a wide area is being developed for the U.S. Army.

Instead of scanning back and forth as do present models, the new system will revolve continuously through 360 degrees. According to Emerson Electric Co., St. Louis, the radar will have enough range to include "all known mortars."

## BIOELECTRONICS

### Radio in a Rabbit's Eye

Perhaps the world's smallest complete radio transmitter—the size of a large pinhead—has been developed in the Space Science Laboratory of the University of California at Berkeley.

Crafted by graduate student Carter Collins, the radio can be implanted in the eye of a rabbit to send out information unavailable before.

Its developers hope that the new measurements of eye pressure will provide useful information in the fight against human glaucoma.