MEDICINE

Use Deaf Near Jets?

➤ THE ARMED SERVICES may in the future employ totally deaf individuals to work at jet air fields.

This "practical possibility" is suggested by Dr. H. E. Page of the Office of Naval Research in *Research Reviews* (Jan.).

Today's jet planes are so noisy they are beyond the endurance of human ears, Dr. Page reveals.

Scientists measure sound intensity by decibels. In the average living room, the sound level is 40 decibels. A private business office has a noise level of 50 decibels. At a busy street corner in traffic the noise measures 80 decibels. The proverbial boiler factory has a din of 100 decibels. Standing 150 feet from the tail of a DC-4 plane during take-off exposes a person to 120 decibels.

Any noise beyond 120 decibels in intensity produces pain. For the average person, noise above 140 decibels is intolerable. Noise levels of 160 to 170 decibels are greater than human beings can stand.

Yet most planes now in use create sound levels around 130 decibels. Others in production will produce 160 to 170 decibels. On drawing boards are more powerful engines that will be still noisier.

Scientists know practically nothing about the possible effects of such a racket on the human organism, Dr. Page indicates.

How intense a noise and what length exposure will make a man deaf? Is the deafness temporary or permanent? If temporary, how can hearing best be restored?

These are some questions for which the Office of Naval Research is seeking answers.

Another problem is how to communicate with people in such intense noise. Flashing lights can sometimes be used to signal in noisy places, but during a blackout, lights must be turned off.

Dr. Frank A. Geldard of the University of Virginia has been experimenting with the possibility of communication by using vibrators placed on a man's chest. With five such vibrators, he has developed a special alphabet, or "Vibratese," that a man can learn in 30 lessons.

It is unlikely, Dr. Page believes, that such a complex system would have much use under routine circumstances, but it could be used to send a single vital message to a man unable to hear. A pilot could be warned his landing wheels were up.

Science News Letter, January 28, 1956

RAGWEED POLLEN MEASURED—Horizontal distribution of ragweed pollen in the air in relation to weather factors is being investigated at the University of Michigan. Student assistants are shown operating automatic volumetric samplers and a precision anemometer for the study, which is financed by the National Institutes of Health, Bethesda, Md., to investigate air pollution.

CYTOLOGY

Life-Essential Enzymes

➤ PARTICLES in living cells that presumably house some life-essential chemicals have been discovered by Dr. Alex B. Novikoff of the Waldemar Medical Research Foundation, Port Washington, N. Y., the American Cancer Society announced.

The hitherto unknown particles showed up in electron microscope pictures of cell material, made at magnifications from 50,000 to 125,000. The new particles are about a one-hundred-thousandth of an inch long and contain dense dots, each a five-millionth of an inch in diameter.

The particles are important because they probably are the home for wrecker chemicals, including two that become highly concentrated in some cancers.

The wrecker chemicals are hydrolytic enzymes. They are helpful because they wreck cells and tissues after these have done their job and become old. The wreckers also break down food for cell use.

The two wreckers that become concentrated in some cancers are acid phosphatase and beta-glucuronidase. Other wreckers are desoxyribonuclease and ribonuclease, which act on nucleic acids. These acids in cell nuclei are intimately related to hereditary units and to protein synthesis.

The wrecker chemicals were discovered in a small fraction of material spun out of cells by Dr. Ch. de Duve of Louvain University, Belgium.

The wreckers were not found in either of the two well-known cell particles, mitochondria and microsomes. So last summer Dr. Novikoff turned the electron microscope on the cell material Dr. de Duve had. Although the two think the newly discovered particles are the site of the wrecker enzymes, more highly purified material must be studied before definite conclusions are drawn.

In doing the electron microscopy, Dr. Novikoff had the collaboration of Dr. W. Bernhard at Villejun near Paris.

Science News Letter, January 28, 1956

STATISTICS

Foresee No Leap Year Marriage Rate Leap

➤ THE MARRIAGE RATE this leap year 1956 will not leap very much above the 1955 rate, in the opinion of statisticians of the Metropolitan Life Insurance Company in New York.

"After the early 1960's, however, there should be quite an upsurge in marriages as the large numbers of babies born during the war and postwar years enter the marriageable ages," the statisticians comment.

They estimate there were 1,532,000 marriages in the United States in 1955.

Science News Letter, January 28, 1956

MEDICINE

Heart-Disabled Veterans Return to Work

➤ LIKE the nation's No. 1 heart patient and veteran, 38,000 other veterans with heart and circulatory ailments are now back on the job.

About 40,000 veterans suffered from heart and circulatory disabilities, the Veterans Administration reports. Of these, 95% are working as productive, wage-earning citizens following rehabilitation through Public Law 16 training.

"Only a few doors to employment have been barred to these veterans because of their disabilities," the VA report states.

They are working on farms and in factories, offices and laboratories. Most of them, 98%, like the kind of work they are doing. More than four-fifths are using skills they acquired in training. Most, 90%, are working full time and the other 10% are working part time. They average more than $70 per week.

The findings are from a study designed to find what happened to disabled veterans after they finished or stopped Public Law 16 training and started making their own way in life.

Science News Letter, January 28, 1956