

PUBLIC SAFETY

Danger from Radar

► RADAR EQUIPMENT is now becoming so powerful it may present a serious hazard to man, Col. George M. Knauf, U. S. Air Force, Griffis Air Force base, reported to the American Medical Association meeting in New York.

Unfortunately, the Air Force, the principal producer and user of this form of radiation energy, is "practically destitute" in the matter of factual information about its biological effects, he reported.

Until now the power output of the equipment has been too low to be considered a serious hazard, but peak powers as high as 100,000,000 watts can be foreseen.

At present there are three supposedly safe levels of this type of energy. Each is sponsored by a different large producer or user of microwave equipment and, naturally, all of them cannot be right.

To determine what can be considered a safe level, the Air Force has contracts with

various university groups to study the effects of the energy on animals and man.

Past research has centered around only the radiation effects on selected organs or systems, and there has never been a good check on its effect upon man's entire body.

It is possible the energy may be causing changes in the body too subtle to show up immediately. These may affect genes and enzymes, Col. Knauf said, or the energy may possibly be releasing free radicals in the body.

Since the results of this research will not be known for some time, safety precautions must be taken now. Monitoring teams have been set up in radar laboratories to make spot checks of the power levels and keep them in the safe range. If radiation in space must be tested, the radiating device is located so that the beam is directed away from any inhabited buildings.

Science News Letter, June 22, 1957

CHEMISTRY

Low-Grade Gas Made Into High Octane Fuel

► A NEW PROCESS for upgrading low octane portions of gasoline by passing them over platinum pellets promises more high octane gasoline per barrel of crude oil.

The process is called hydroisomerization and was developed jointly by Gulf Research and Development Company and Universal Oil Products Company.

Hydroisomerization rearranges the molecules of the low-grade pentane and hexane portions of straight-run gasoline to form the more desirable isopentane and isohexane. The change raises the 88 research octane number of normal pentane to about 106 octane for the isomerized pentane. Hexane's octane number is raised from a low of 65 to a high of over 95. At present, pentane and hexane are added to a refinery's pool of gasoline fractions, increasing the amount of gasoline available, but pulling down the total octane rating, the scientists said.

They added that the increased octane numbers tell only part of the story. The hydroisomerized gasolines will contribute to even better auto performance because they possess superior "road" octane numbers.

Although hydroisomerization has long been possible as a laboratory process, it is only now being applied commercially to gasoline production.

The process, as described by the scientists, consists of passing the low-grade, light-weight liquids rapidly over a bed of platinum in the presence of hydrogen under moderately high pressure. The platinum acts as a catalyst, speeding the reaction without undergoing a change itself.

Science News Letter, June 22, 1957



PIPEFUL OF PLATINUM—Platinum catalyst is being loaded into a pipe for use in Gulf Oil Corporation's newly developed hydroisomerization process. Behind operator Eugene M. Gatty stands one of the experimental units at Gulf's Harmarville, Pa., research center. The bulk supply of high octane fuel could be increased by possibly 20% as a result of this process.

● RADIO

Saturday, June 29, 1957, 1:45-2:00 p.m., EDT. "Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Igal Talmi, professor of physics, Weizmann Institute, Rehovoth, Israel, will discuss "Within Atomic Hearts."

ENTOMOLOGY

Celebrate Centenary Of Father of Entomology

► LEADING entomologists paused on June 11 to recognize the centennial of the birth of Dr. Leland Ossian Howard, chief of the Bureau of Entomology of the U. S. Department of Agriculture for over a quarter of a century.

Dr. Howard's basic work made possible the anti-malaria campaign now being waged world-wide and also the fight against yellow fever.

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