● RADIO

Saturday, August 3, 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. James Watt, director, National Heart Institute, will discuss "America's Greatest Killer."

GEOPHYSICS

Radar Bounced Off Moon Tests Satellite Radio

➤ THE RADIO tracking stations for the satellites to be launched during the International Geophysical Year can be tested by bouncing radar signals off the moon.

Beams from the powerful radar antenna at the Army Signal Corps Engineering Laboratories, Fort Monmouth, N. J., were picked up by the Navy's Minitrack facility at Blossom Point, Md., after being reflected from the moon, the two services have announced.

Purpose of the tests is to perfect a technique by which the operation of all the satellite tracking stations in the Western Hemisphere, planned as a line of eight stretching from Maryland to Santiago, Chile, can be tested as soon as they are in operation.

The equipment was modified to operate at 151 megacycles instead of the 108 megacycles on which the satellite's radio will operate.

Science News Letter, July 27, 1957

PUBLIC HEALTH

No Sale on Safe Cigarette

The "clean" cigarette is as controversial as the "clean" H-bomb. Manufacturers want further proof their product causes cancer. Smokers want a cigarette that is "safe," has "flavor."

➤ FILTERED CIGARETTES when they were first introduced blocked more cancer-causing chemicals. But they also blocked sales.

A filter on the end of a cigarette can reduce the amount of nicotine and tars to a point below the dangerous level. In fact, it could take out 100% of these two substances. But no one would smoke it.

The reason is simple. The cigarette would be too hard to draw on and would reward the smoker's efforts with little more than hot air.

A cigarette appeared in 1952 with a highly effective filter that knocked out a good percentage of the cancer-suspect tars found in smoke. But the public did not like them, so the cigarette company had to downgrade the filter until it was similar to that of the other companies.

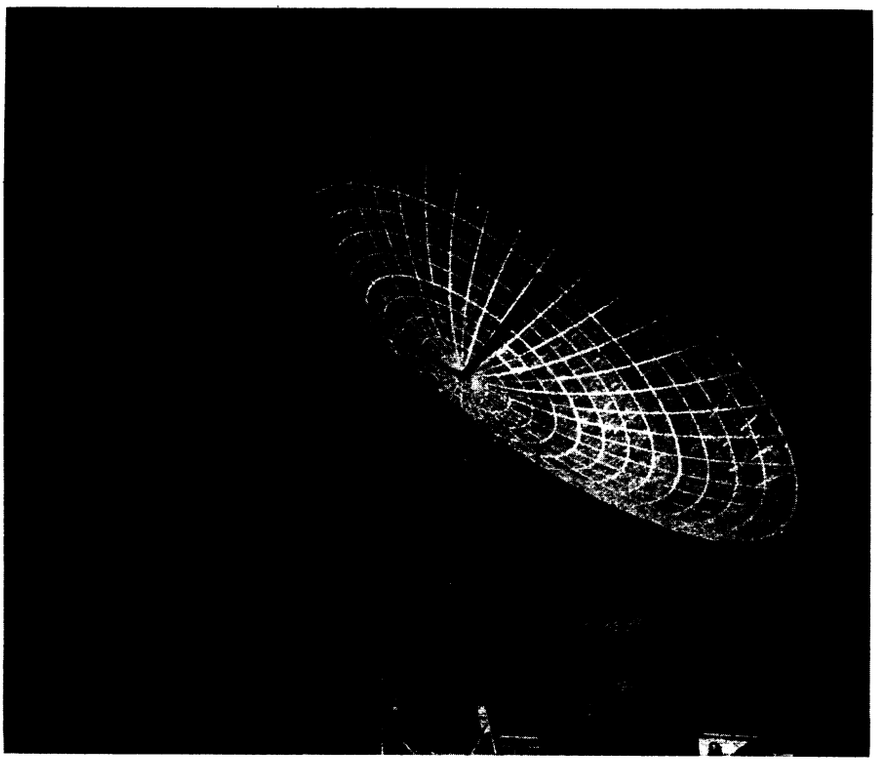
Present filters are somewhere between 15% and 30% effective in filtering out the total nicotine and tar. This would appear to be about the best balance between filtration and "flavor."

There is no complete agreement as to what, if anything, is the cancer-causing substance in cigarette smoke. Most heavily indicted at the present is 3,4 benzpyrene, a substance chemically termed an aromatic polycyclic hydrocarbon, believed to be produced in the burning process. It can be found in the soot of industrial cities, the exhaust of internal combustion engines, in petroleum and in the atmosphere itself.

As early as the 1930's, 3,4 benzpyrene had been isolated from coal tar and found to be a potent cancer-causing chemical when applied to the skin of laboratory animals.

Even injections of an extract of atmosphere, however, were able to produce skin cancers.

Proving that this is the agent responsible for human lung cancer is something which no scientists have yet been able to do. Many still question whether the 3,4 benzpyrene in cigarettes could actually cause the cancer. Others believe that even if it could, there is too little present in cigarette smoke to make a difference. (See SNL, July 20, p. 38.)



MOON BOUNCER—The Diana moon radar antenna, a development of the Army Signal Corps Engineering Laboratories, Fort Monmouth, N. J., is being used to calibrate equipment for the Minitrack stations in preparation for tracking the earth satellites. It "illuminates" the moon, which means the huge radar is hitting the moon with a very strong signal.

Tobacco Industry Waits

➤ THE RESEARCH directors of America's leading tobacco companies are taking a "wait-and-see" attitude about the possibility of making a "clean" cigarette.

Without exception they maintain that there is no proof whatsoever of anything carcinogenic or cancer-causing in cigarette smoke. Until someone can show them that there is, there is nothing they can take out of or put in the tobacco.

At least one company, however, the American Tobacco Company, is making radioactive smoke studies in anticipation of the big day when something may be found.

Tobacco is being broken down into all its chemical parts which are then made radioactive and traced through the burning process, Dr. William R. Harlan, assistant director of research of American Tobacco Company, told SCIENCE SERVICE.

In this way the building blocks of all possibly dangerous compounds can be studied. If and when a cancer-causing substance is found, the compounds making it up can be eliminated, he said.

The research directors or other responsible officials of the leading cigarette companies were queried in a telephone survey on the possibilities of an anti-cancer cigarette. This is the result: Dr. Harris Parmele, director of research at P. Lorillard Company, Inc., said, "We feel sure that if and when a carcinogen is actually found

in tobacco, there will be ways of taking it out."

Either filtration or chemical means could probably be used to remove it, he added.

All the tobacco researchers agree that 3,4 benzpyrene, one of the most heavily indicted possible carcinogens, is not worth worrying about at the present time.

Dr. Robert Du Puis, research director, Philip Morris & Company, said that there is no proof that 3,4 benzpyrene is actually in a cigarette. All the evidence has been based on interpreting the findings of analytical instruments. The interpretations are open to question themselves, he stated.

Lorillard's Dr. Parmele noted that most labs have written off 3,4 benzpyrene long ago.

Another researcher, Dr. William W. Bates, Liggett & Myers, reported that scientists have been trying to isolate 3,4 benzpyrene and prove that it is there for years, but with no success.

Making the "clean" cigarette involves increasing the combustion by some method until there is only carbon dioxide and water in the smoke. But then the things people look for in smoking would not be there, Dr. Bates said.

Dr. Kenneth Hoover, research director for the R. J. Reynolds Tobacco Company, said that the company did no research on the "health angle." Its contributions for research go to the Tobacco Industry Research Committee, New York, which allocates funds from the major companies to independent researchers in the U. S.

"We do not want to give out any public information at this time," Dr. Hoover said.

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AGRICULTURE

Watch Out For Witchweed

➤ A SMALL, bright green weed with small flowers, usually brick red or scarlet, is on the rampage, warns the U. S. Department of Agriculture.

Witchweed is the name of the parasitic plant that is destroying crops.

Its roots attach themselves to the host plant's roots and penetrate them so that the host—corn, for example—no longer can get food and water.

Witchweed-infested corn fields were complete failures in 1956. Crops of sugarcane, sorghum, many grasses, including crabgrass, and some sedges and broadleaved plants have been attacked.

The danger of the weed spreading and attacking crops throughout the nation is so serious the Department of Agriculture has issued a warning asking farmers to notify their county agricultural agents if witchweed is found or suspected.

Farmers are especially asked not to move machinery root crops, hay or transplant crops from infested to uninfested land. Witchweed can be spread by the movement of soil—even in the cuffs of pants, reports the Department.

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PUBLIC HEALTH

Label Protects Shopper

Labeling laws established by the Federal Government assist the individual to make an intelligent choice, based on facts, in buying foods, drugs and cosmetics.

➤ THE DAYS of the open cracker barrel in the country store are over for most Americans. Then, it was easy to inspect the wares and even sample them, but nowadays most food comes sealed up against dirt and spoilage. Even so, there is one dependable guide—the label on the package.

Labels help the purchaser get his money's worth and protect his family's health, but if he fails to read them, he loses that protection.

Today's food producers who obey the label laws give necessary information for intelligent buying. Here are some of the things a legitimate label tells.

First, it gives an accurate description of what is inside. When the can or package contains more than one ingredient, they are listed in the order of predominance in the food.

Secondly, exactly how much food is inside is specified since the law requires producers to specify the amount in common units of weight and measure. Also, the law requires that the stated amount has to fill the package.

When vitamin content is claimed on the label, it has to be in the food. The label must give the percentage of the minimum daily requirement of the vitamin that a reasonable amount of the food will furnish.

It is equally important to read carefully the label on drugs and cosmetics.

Legal drug labels give adequate directions for use and must also warn when the drug should not be taken. Regardless of sales promotion, do not expect any more from a drug than what is printed on the label. Wild claims on labels are much less frequent than they were years ago, but old-time quack remedies have a way of turning up in new disguises. Sometimes the labels are perfectly "clean" but the wild claims are made in booklets or advertising.

Of course, a label is not required on prescription drugs. Here, the doctor is the purchaser's safeguard.

Every year Americans use tons of toothpaste, hand cream, hair dressing and other cosmetics, and these, too, are protected by labeling laws. Cosmetic labels do not have to list the ingredients but those that are listed must not be misleading.

Coal-tar hair dyes are one cosmetic that the law exempts from the provision that no cosmetic can contain a poisonous or harmful substance. If the dye does contain such a substance, the label must warn that the skin of some people sensitive to the dye may be irritated by the dye and must caution the user to make a preliminary test.

The pamphlet "Read the Label," available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 20 cents, contains more suggestions on how the individual is able to select products by reading their labels.

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