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.

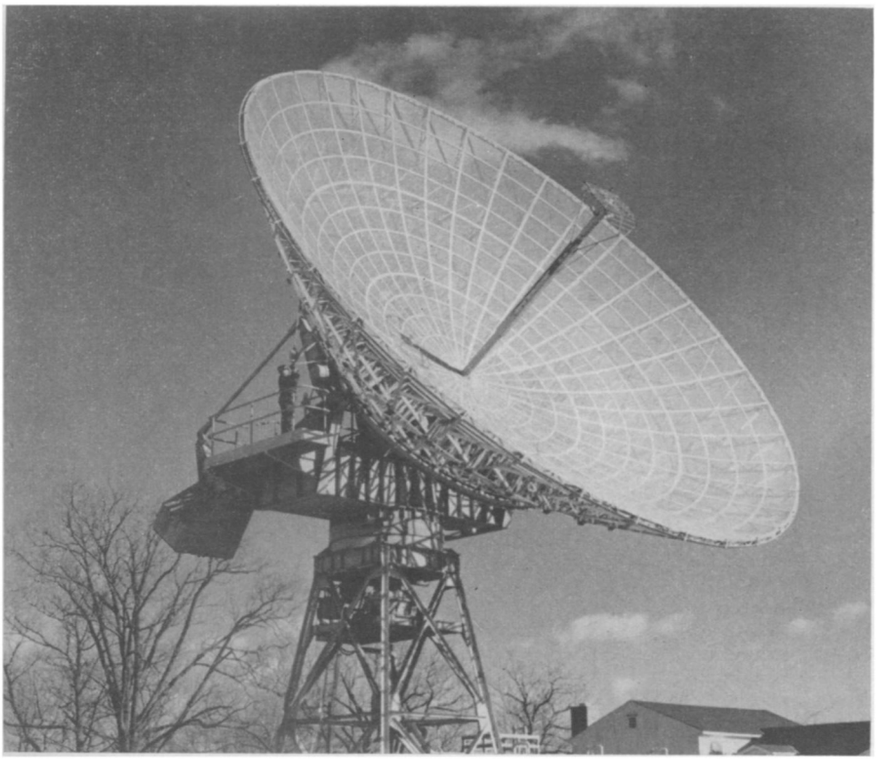
Present filters are somewhere between 15% and 30% effective in filtering out the total nicotine and tar. This would appear to be about the best balance between filtration and "flavor."

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