

## Tar Derby Reopening

In a room where no one could smoke, the Federal Trade Commission last week heard expert testimony on methods for testing tar and nicotine levels in cigarettes.

Scientists and experts from the tobacco industry were there to help FTC come up with the best method for testing tar and nicotine levels to arrive at a reasonable, useful comparative measure.

FTC proposes to test and issue public reports on the tar and nicotine levels in all brands of U.S. cigarettes in an effort to force the tobacco industry to compete to get the levels lower and lower.

When the Surgeon General's report on smoking came out two years ago, no one said that tar and nicotine levels had any direct relation to health. And to prevent health claims, FTC had banned tar and nicotine competition.

But in a report issued last June, based on a review of the same evidence, official word from the Public Health Service was that "the preponderance of scientific evidence strongly suggests that the lower the 'tar' and nicotine content of cigarette smoke, the less harmful are the effects."

So FTC reversed itself and the push is on to figure out as nearly as possible how much tar and nicotine come from filter and nonfilter cigarettes, as well as any variations in brands.

The closer a smoker is to the end of his cigarette, the more tar and nicotine he is getting, and although such factors as the frequency and strength with which he draws on his cigarette significantly affect the levels he receives, these are practically impossible to measure statistically. Therefore, it is likely that FTC will measure tar and nicotine levels on the basis of a standard butt length to which the cigarette is smoked.

The question of filters versus non-filters is also a problem facing testers. And in some cases the nonfilter counterpart of a filter brand may actually produce less of the dangerous tars and nicotine.

"Tobacco itself is as good a filter as some of the dabs of cotton that have been put on in the name of filters," Dr. E. Cuyler Hammond of the American Cancer Society told the commission. The public is being deceived by information that implies filter cigarettes are safer than nonfilters, he said.

## Crash Heart Program Cut

The National Heart Institute has given up thought of pushing a crash program to design an artificial heart in favor of research to improve heart pumps and other assist devices.

One reason is that science is much closer to reaching a significant level of improvement in that field than it is in the realm of totally implantable devices. And since one of its major aims is to rehabilitate patients, it makes sense to follow the easier path, according to NHI spokesmen.

The Heart Institute program, which had been going slowly, now has a definite, three-step plan to follow beginning with efforts to create devices that will reduce the work load on a natural heart and increase coronary blood flow—a kind of booster heart. Step two looks to the day a device to assist the heart can be permanently implanted, and step three, in logical progression, is aimed at the spectacular—the totally implantable artificial heart.

The crash program, begun a few years ago to bring U.S. space efforts up to par with the Russians and beyond, was the inspiration for a matching effort in medicine, but the nature of the fields is different and the more logical, first things first procedure seems the better choice at this time, a spokesman said.

However, there is still a lot to be learned from the space scientists approach to things, Dr. Frank W. Hastings of NHI told a meeting of the American Institute of Aeronautics and Astronautics in Boston. Dr. Hastings is responsible for the workings of NHI's artificial heart program.

### Medical Control

It is important that the heart program be kept in the hands of medical science, Dr. Hastings believes, though the cooperation and skill of engineers is essential. The earlier push had been relying heavily on engineering methods put together by aerospace industries.

Basically, the answer to heart disease is not surgery and it is not a machine. The best solution will come when science understands what goes wrong in the human body in the first place, and is able to practice preventive rather than corrective medicine. And this answer requires the knowledge of the medical scientists, not the machine maker.

"We're not really in the 'hardware'

business," NHI's former director Robert P. Grant said before his death a couple months ago. "Our problem is to solve disease, and in this respect the artificial heart is a drastic solution. Part of our job is to reduce the need for such devices at all."

Now, for the first time since 1963, part of the program's treasury will go to basic research—the study of myocardial infarction. In other words, NHI scientists are going to try to find out why some cells in the heart wall die and what they can do to save them.

This does not mean by any stretch of the imagination that heart devices are not valuable and indeed, vital. It does mean, however, the NHI considers it a mistake to pour all its funds and all its talent in that direction.

A number of obstacles block the way to completely satisfactory heart devices and, likewise, to the total heart. It will probably take two years just to figure out what all the problems with present pumps are and then fix them, and this prediction assumes no new problems will show up along the way. Five years may be a reasonable goal for achieving a totally implantable device, but experts such as Dr. Michael E. DeBakey are quick to point out that predictions are not always useful or accurate.

### Energy Source

There is no satisfactory energy source for implantable hearts at the present time, nor any truly satisfactory material to make it from. If you use electricity, you end up with a little steam engine and have to get rid of the heat, a NHI spokesman commented. With atomic energy, problems of radiation protection crop up. The possibility of using electromagnetic energy is being investigated, but no sure results are available.

Then, once a highly efficient energy converter is found, it must be housed in a device gentle enough not to destroy the blood's red corpuscles coursing through it, and small enough to fit inside the pericardial sac.

To support its research, NHI asked Congress for \$3.8 million this year, and got \$13.8 million. Spokesmen for the National Institutes of Health said they do not expect the President's recent whack at the budget to cut deeply into funds allotted for medical research.

(See Public Policy, page 498.)