Foolproof Matches and Cigarettes

Economics

Discarded cigarettes and matches will cause fewer fires if manufacturers adopt the methods of fireproofing suggested by tests recently conducted at the United States Bureau of Standards.

Fire loss statistics collected by the National Board of Fire Underwriters attribute about one-sixth of the property loss from known causes to matches and smoking. If the same ratio holds for the loss from unknown causes, for the unreported loss and for the original cause of communicated fires, matches and smoking are responsible for a property loss near $90,000,000 per year. If some of the methods of making the cigarettes and matches go out sooner after they are thrown away are adopted, P. D. Sale, who conducted the experiments at the Bureau, believes that this loss might be reduced considerably.

Hundreds of cigarette butts were collected to determine what length is usually discarded unused. It was found that the average smoker throws his cigarette away with an inch and a quarter unburned, while less than two per cent. of the butts are smoked down to the last quarter inch.

Approximately 170,000 cigarette stubs are discarded every minute, and laboratory tests, duplicating as nearly as possible an actual condition that might occur, indicated that from 50 to 90 per cent. of the butts falling on readily combustible materials such as the dry or nearly dry grass pad used in the tests, would, with a slight wind blowing, cause fires. The percentage of ignitions varied with the dryness of the grass and the wind velocity.

Under actual conditions most cigarettes do not fall lighted on inflammable materials, but the 250,000,000 discarded every day constitute an enormous fire hazard. The government is particularly interested in the problem because of the vast losses caused in public parks, national and privately owned forests, and public buildings, by careless smokers. Over 30,000 fires are believed to have been caused by smokers in the public and private forests of the country in 1927, the latest year for which statistics are available, causing the burning over of 7,000,000 acres or more of land with a loss of more than $6,000,000. So great has been the public loss that the Government has closed extensive areas of National Forest land to smoking during the forest fire season, and many large timber operators rigidly prohibit smoking in the woods by employees and visitors.

The problem was attacked by the Bureau of Standards, and in tests made to simulate the fire hazard incident to discarded smoking materials it was shown that cigarette tips can be applied that will smother the fire soon after they are discarded. It was found by using a cork tip an inch long, either plain or coated on the inside with water glass, a sodium silicate (*Turn to next page*)

Health Field Open

Hygiene

"We have not scratched the surface of the possibilities in the public health field," declared Dr. Louis I. Dublin of the Metropolitan Life Insurance Co. at the recent session of the New York Health Conference. In spite of the splendid work that has been done by various health agencies both official and unofficial, only a beginning has been made.

One-half of our population still lives in rural areas and the majority of this rural population has no public health service available. So far public health activities have made their greatest strides in the cities. The Cattaraugus County Health Demonstration has demonstrated that what may be accomplished in the cities is just as possible when applied to rural life, Dr. Dublin pointed out. However, carrying out public health activities in rural areas is more difficult and requires more money and more educational activity.

We need a standard by which the adequacy of public health services can be measured, Dr. Dublin added. Until we have such a standard, we cannot definitely measure adequacy of public health services, Dr. Dublin declared.

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Airplanes Noisy if Engines Muffled

Aviation

By Thomas Carroll

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As a fast military airplane dives toward the ground with a great noise perhaps you feel that the science of aviation is very backward in not providing airplanes with mufflers on the engine to quiet the noise.

If it were as simple as that the problem would have been solved long ago. Only recently it was reported that a great European inventor had made an airplane noiseless with a simple muffler on the exhaust.

But the sound of the engine exhaust is only a part, and a small part at that, of the noise of the airplane. Engine mufflers have been used for years and are very effective in cutting out the noise. These are not only of the type used in automobiles which baffle the flow of gas in a chamber, but there are many types specially designed to use the rapid passage of the plane through the air to assist in the muffling. These are arranged so that the exhaust gas is directed into a chamber which in turn leads into a venturi or throat through which the air is passing at a rapid rate, thereby cooling the gas and muffling the noise.

But there are other sources of noises. The propeller for instance, makes as great a racket as the engine. Especially is this true of the newer metal propellers. Their howl or whine is deafening, like a sawmill sawing knotty boards. Here is a nice problem, one which has made the muffling of the engine look even easier than it is.

Some experimentation has been done. Manufacturing the propeller blades of some material which does not vibrate in the manner of metal has been tried. Wooden propellers make nearly as much noise and so do those of various compositions which have been in more or less general use. One solution of the propeller noise problem that has been suggested is the wrapping of the metal propeller with something like soft rubber. It appears to have some merit in stopping the noise but no one has come forward and shown us how to apply the rubber and make it stay on.

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