

## BRAKES

BY DR H C DICKINSON

*Chief, Division of Heat and Power, National Bureau of Standards*

About ten years ago the American Standards Association had a committee which was charged with the duty of determining and writing a safety code for brakes. That code was written. Of course, it is now obsolete, but that committee at the time did a very good piece of work on stopping distances. The A A A and the National Bureau of Standards about three years ago sponsored a campaign for determining stopping distances, reliability of brakes on the road, etc., with the assistance of various motor groups. In that campaign we collected several thousand cards giving the brake condition of cars brought into the station for test and also of the same cars as they were turned out after adjustment. We had no funds to analyze and summarize those cards. A few months ago word came from New York that Prof. Hamilton had a staff of subsistence workers who could be used on some work of that kind, so arrangements were made to summarize those thousands of cards and get the results together. That has been done and I understand at the present time several fairly competent people are securing more data of the same sort in and around New York City which will also be included. They are also going to include trucks and commercial vehicles in that survey. We shall have within a few months a survey of the condition of brakes on the road coupled with direct measurement of what those brakes are capable of doing when they are properly adjusted.

## DISCUSSION—TRAFFIC

DR H C. DICKINSON, *National Bureau of Standards*. I was very much interested in the discussion of the problem of alcohol. In this connection I want to tell you of a simple little tester that I discussed with a man whom you may know who said there was no doubt in his mind, if we really wanted to do it, we could make this simple little tester which a police officer could carry in his pocket and require the suspect to blow through it. It could then be sealed up and sent to the laboratory for test. That would be a test which would tell the amount of alcohol in a man's system approximately as well as the blood test. If that were done you would have not only testimony but a definite record of the man when he was taken up in an accident. It seems as if that would be a possibility if we were really interested in going after it.

MR SIDNEY WILLIAMS, *National Safety Council*. We all have been much interested in this subject of alcohol in relation to driving. There is a very definite medical literature on this subject, from which it is

clear that even a small amount of alcohol has an effect lasting over several hours, affecting the ability of the human mechanism to do delicate tasks like driving an automobile. That is a subject not open to argument.

When we come to study the statistical reports of accidents with alcohol reported as a factor, as we have done lately, we find that there has been unquestionably a material increase in the reported cases all over the country, in the neighborhood of 50 per cent, but that still leaves the cases in which alcohol is reported as a factor at a low percentage of the total cases, probably not over 10 per cent. In other words, so far as official reports go, alcohol is still a minor factor and could not be considered the major factor in the increase of accidents this year.

However, we do not know how great a factor there is of under-reporting. We do not know whether the reported cases represent 90 per cent or 50 per cent or 20 per cent of the actual cases. On the latter point some light is shed by the work done by Dr. Heise, a speaker at our Safety Congress at Cleveland. Dr. Heise has found in studies of the alcoholic content of body fluids of drivers brought into the Uniontown hospital following accidents, that more than half of them had enough alcohol in their systems to make it perfectly clear they had been drinking. So one task that presents itself is to check those results of Dr. Heise at Uniontown and find out whether it can be true that more than half or anywhere near half of all the drivers involved in accidents have been drinking enough, or recently enough, to have traces of it in their body fluids. If that surprising fact is true, it would certainly affect our whole attack on motor vehicle accidents. Dr. Heise's findings are very interesting, you can get them if you want them.

Assuming that alcohol is, at least, an important factor in the situation, the next question is "What are we going to do about it?" So far we seem to have at least three rather expert opinions on how the police and the courts should handle cases of drivers who have been drinking enough to make them unsafe drivers. Dr. Heise believes that each driver who is suspected should be given a test of his blood or urine. This has been done in certain counties in Pennsylvania. Others believe that every such suspect should be given a medical examination by a physician with regard to all the symptoms of alcoholic influence but not including an analysis of the body fluids. Finally, some competent police officials say that even that is not necessary, and that an ordinary police department, if the men are properly trained, if they are competent policemen, can handle alcoholic drivers perfectly well without medical assistance.

What we have to find out is which of these three methods is appropriate for use by the police and the courts in their attack on this problem. It must be attacked by the police and courts more successfully than it is being attacked today throughout the country.

The final thing I want to mention is that so far it looks to us as though

the best weapon after all for dealing with this type of driver is the license law. Mr Walter Matthews showed me yesterday a paper by the Secretary of Revenue of Pennsylvania showing what has been done in that State lately through the license law. This law permits the suspension of licenses by the State without establishing legal proof of intoxication, which is difficult to prove. A defense attorney can usually confuse a jury on the question of whether a man is legally and officially intoxicated. If there is a question whether the driver was legally "intoxicated," the Motor Vehicle Commissioner can still suspend the man's license for reckless or unsafe driving.

If we are interested in research on traffic accidents, there is no field that is more in need of this than that of alcoholic driving.

MR M O ELDREDGE, *Department of Vehicles and Traffic, District of Columbia*. We find it extremely difficult to convict a person for drunken driving, or even to take the permit away. About three years ago I was called to investigate the death of a little boy and I stopped at the police department to get a policeman to go with me. As we came along we saw a man staggering across the street and I suggested to this officer that he stop and see if the man was going to drive a car. We drove down the street and before we could get back to the man he had got into a car and started. The officer got him, searched him and found a bottle in his pocket. He was taken into court and the only witnesses we had were the policeman and myself. The attorney asked me what kind of liquor it was the man had been drinking. Well, I smelled of the bottle when we found it and I said it was gin. The lawyer asked the policeman what he thought it was and he said he thought it was corn liquor. So the whole question then was the dispute between the two persons who had made the arrest as to which it was—gin or corn liquor. The case was thrown out.

## TOLL BRIDGE TRAFFIC PATTERNS

BY N W DOUGHERTY

*Professor of Civil Engineering, University of Tennessee*

### SYNOPSIS

The complete daily traffic records for several years beginning in 1930 of 17 toll bridges in Tennessee have been studied. The hourly, daily, weekly, monthly, and yearly patterns are analyzed. The traffic on Tuesday, Wednesday or Thursday gave the best indication of the average weekly flow. A marked similarity was noted in the seasonal patterns for the different bridges.

The Tennessee State Highway Department has been making state wide short time traffic counts on the even years since 1924. To get comparable results, and to get peak flow the counts were made in the