duce certain types of accidents, I think we are not going to have much difficulty in selling the idea to the public. So far, too many of our installations have been made on straight stretches of highway where accidents seldom happen anyway. By carefully selecting particularly hazardous points where we have every reason to believe that lighting will reveal the hazards, we should ultimately accumulate an abundance of statistics as to what type of lighting is needed, what types of accidents can be prevented, and what general locations adapt themselves to this kind of treatment. I have in mind a location in the State of Oklahoma where night accidents were many times more predominant than day accidents. After careful study, all highway signs were reflectorized and properly relocated. The accident experience immediately took an enormous drop. Certainly we would not want to bear the cost of lighting this stretch of road when we were able to accomplish the same results through a much more inexpensive type of treatment. What we need to answer the lighting question is more "before" and "after" experience.

In closing, I want to stress the fact that Engineering, Education, and Enforcement are essential features in a safety program of traffic administration. In providing a balanced program we must see that sufficient time and thought are given to proper planning, through frequent reference to the accident experience, and that none of the major features are made less effective by subordination to the others. Concentrated drives may reduce accidents temporarily, but it takes the continuous program to bring permanent results, which after all are what we are looking for.

WHAT ARE WE DOING TO INCREASE SAFETY?
J. T. Hallett, Assistant Chief Engineer, State Highway Commission of Indiana, Indianapolis

Mr. Hayden has very ably presented this subject from the viewpoint of a traffic engineer. I am not a traffic or safety engineer, and therefore cannot discuss the subject from that viewpoint. The Indiana State Highway Commission has no traffic engineer acting under the usual conception of such a position. We hope to have one soon that will be a full-fledged traffic engineer. Therefore, speaking as a Highway Engineer, I shall attempt to describe the many things we as a state highway department are doing to promote and increase safety. Time will not permit my going into very much detail in these various activities. In making this inventory of the various things being done in the interest of safety, I was somewhat surprised at their number and magnitude. Because of the lack of sufficient information, some of the things we are
doing in the interest of safety may later prove to have the opposite effect. That is a reaction for which we should always be looking.

To illustrate, let us take a railroad grade-crossing which has a certain hazard factor. To eliminate this hazard, a separation structure is constructed. Creating a shorter sight distance over the structure due to vertical alignment may produce a greater hazard factor than the factor eliminated by the separation of the railroad grade from the highway. An important road intersection which requires the stopping of traffic on one road or another within or near the approach grades to a railroad grade separation perhaps would produce a greater hazard factor than the factor removed by the separation of grades. It is questionable if some things done or being done for increasing safety really accomplish the purpose. Many times STOP and GO lights are installed at street intersections to increase safety; yet a check on accidents before and after definitely proves that the light actually increased the hazard.

Nevertheless, here are some things we are doing in an attempt to increase safety; and, if they do not do so, we can only say we made a mistake and try again, benefiting by the knowledge gained from the previous trials:

1. Easing and banking turns and curves.
2. Lengthening vertical curves to increase sight distance.
3. Improving pavement surfaces:
   a. Late belting and brooming of concrete to produce granular, nonskid surface.
   b. Using great care in getting proper bitumen content in bituminous pavements to produce a gritty, nonskid texture in the surface.
   c. Removing the bituminous filler from the surface of brick pavements to prevent the slippery bituminous surface.
4. Building in traffic lines to divide traffic lanes.
5. Widening shoulders and roadways, and surface shoulders.
6. Widening bridges, culverts, and pavements at railroad crossings.
7. Building railroad grade separations and highway grade separations.
8. Building divided-lane highways.
10. Cutting down steep grades so that traffic can move more freely and sight distance will be increased.
11. Constructing guard-rail funnels at narrow bridges, and guard rails at hazardous places.
12. Building sidewalks on bridges and occasionally sidewalks along highways.
13. Mowing weeds to give better view of side ditches and roadways.
14. Constantly maintaining pavement surfaces to secure even, smooth-riding surfaces.
15. Painting center lines and traffic stripes, including yellow center lines over hills and places of short sight distance.
16. Removing snow and ice from the pavement surface to promote both convenience and safety.
17. Placing sand and cinders on the hills and curves, also some chemicals, to relieve the slippery condition of the pavement surfaces under sleety and icy conditions.
18. Placing traffic-control STOP and GO lights at important intersections.
19. Placing flashing lights at railroad crossings.
20. Placing all warning and information signs along state highways.
21. Standardizing all warning and informational signs so as to simplify them and make them readily recognizable by the motorists.
22. Reflectorizing a large number of warning signs on our principal highways to make them more effective at night.
23. Placing reflector buttons on bridge ends and other obstructions within the shoulder area.
24. Marking speed limit areas established by the Legislature.
25. Experimentally lighting sections of highway.

THINGS YET TO BE DONE

The following are a few things in my opinion we should do to increase safety on our highways:

1. Become safety conscious and place safety among the important problems.
2. Get more complete reporting of accidents and have engineering studies made to see what, if any, engineering means or devices can be used to correct the condition.
3. Really work at the job of safety.
4. Keep in mind that the highways should be constructed and maintained so as to provide a free flow of traffic at a reasonable speed, so as to keep the drivers in an agreeable state of mind, and so as not to surprise or frighten them.

Most accidents happen when the driver is in a highly emotional state, the most common, I believe, being that of fear. Therefore, anything that can be done to keep the surprise from the highway and the resulting emotion from the driver is certainly a safety device.

A RURAL DIRECTORY*

H. C. Grube,
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There is a growing demand for a simple system that will give rural homes an address that will make them as easy to locate as homes in the city. Improved facilities for travel have caused the lengthening of the RFD mail routes until they now cover wide areas. To locate a rural home is now more difficult than in the days of horse-drawn vehicles.

A rural directory system has been devised that gives every rural home a definite address (Fig. 1). The rural directory plan, as here outlined, would make every farm home in the United States easy to find, even on by-ways and winding roads. With such a system in use, a farm home might be spared from burning, or a life might be saved in an emergency.

Road intersections and houses would be numbered according to their relative positions with reference to a standard, known, central point. The numbers are self-explanatory and no mathematical calculations are necessary to locate any point in the county. Generally the county seat is the logical center point from which to start the numbering system, since in most counties it is the most prominent place in the county. If the county seat is not centrally located, it would have no effect on the working of the system.

The United States land-survey section lines that intersect nearest the central part of the county seat would be used as the east-west and the north-south base lines of the system. Each mile in any direction from either base line is numbered in units of 100.

HOW IT WORKS

A road 2½ miles east of the north-south base line would be marked 250-E, meaning 2.50 miles east. A sign post bear-

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