

many of the highly complex problems confronting its operation and maintenance. The real test, however, of the adequacy of the laboratory investigation is service in or on the highway of the material, machine, or practice recommended by the laboratory. If, in this paper, you find I have unduly emphasized the rôle of the Bureau of Standards, you will appreciate that I have limited my remarks to that laboratory and those problems with which I am best acquainted.

Finally, I would call your attention to the fact that the Bureau of Standards in celebrating its 25th anniversary on December 4, and I extend to you, one and all, a most cordial invitation to visit the Bureau on that day and see for yourselves what we are doing of interest to highway engineers.

CHAIRMAN JOHNSON We shall now hear the report of the Director of the Highway Research Board, Mr. Charles M. Upham.

## REPORT OF DIRECTOR

CHARLES M. UPHAM

*Highway Research Board, Washington, D. C.*

The year now closing has been a very active one for the Highway Research Board. Through its publications and the work of its research committees as well as of its special investigators, the contacts of the Highway Research Board have been greatly broadened, and it has become evident that the Board is occupying a place in the highway engineering field that cannot be filled as well by any other organization.

During the past year the number of State contact men has been increased from 44 to 48, thereby making 100 per cent representation from the State highway departments.

The great demand for the publications of the Board continues. These publications are unique in that they represent the combined research thought of all the State highway departments and all the universities of the country engaged in highway research.

The finances of the Board have been sufficient to meet the immediate needs of the organization, but it has been felt that it might be desirable to receive contributions in the form of a membership fee or service fee from the State highway departments who are directly the recipients of the benefits arising from the work of the Highway Research Board. These funds would enable the Board to continue the work it has already begun and to enlarge its field of service. No definite amount of contribution has been decided upon nor has the manner of payment been definitely determined. This matter

is still an open question and the Board will appreciate a full discussion of this topic by the representatives present from the State highway departments. It may be necessary in some States to have enabling legislation passed to make possible contributions to the Board of the nature mentioned. We trust the representatives of the State highway departments present at this meeting will give this matter mature deliberation and join in the discussion of this important topic.

It is gratifying to note the interest of various highway associations in the work of the Highway Research Board. This interest has been manifested not only in the form of moral support, but in some cases has been shown by generous contributions of money to help finance some of the special investigations being undertaken under the auspices of the Board.

During the past year the Society of American Military Engineers was admitted to membership on the Board. The members of this Society total about 6,000 active engineers practicing in practically every State in the Union, in all Territories, and all overseas possessions and in twenty-five foreign countries. They are all vitally interested in highway research not only from the standpoint of national defense, but in the conduct of the affairs of our military establishment.

During the year the investigation formerly known as the Earth Roads Investigation has been actively under way under the Chairmanship of C. N. Conner, formerly Construction Engineer of the North Carolina State Highway Commission, and more recently Chief Engineer of the Mexican National Highway Commission. In order to make the name of this investigation conform more closely to the objects of the study there has been adopted for it the name of "Low-Cost Improved Road Investigation." This problem is a very important one confronting highway engineers. During the year considerable additional funds have been secured for carrying it on. An important progress report on this investigation will be presented at this meeting.

It is hoped that during the coming year sufficient funds will be secured for continuing the Investigation on Culvert Structures. Since the progress report presented at the Annual Meeting last year a proposed rating scheme for culvert structures has been prepared. This will be discussed at one of the sessions of the present meeting.

The study on Reinforcement in Concrete Roads, conducted last year under the auspices of the Board, has proven of great interest not only in this country, but abroad. Although an insufficient time has elapsed for the findings of this investigation to be placed

into active practice by all the States, yet it is noted that many State highway departments have been modifying their specifications in connection with plain and reinforced concrete roads in the light of the conclusions reached as a result of this exhaustive study. Plans are under way which may result in the construction of an accelerated test road embodying the recommendations made as a result of this investigation.

Highway accidents continue to increase at such an alarming rate that it was felt by the Highway Research Board that the time has come when it should interest itself in the causes of such accidents and attempt to find the methods whereby these may be prevented so far as highway engineering is capable of doing it. The Board has therefore decided to appoint a special committee on Causes and Prevention of Highway Accidents, which would take up this study from all angles, focus the attention of engineers and highway officials upon this important problem and, in cooperation with other national organizations interested in highway safety, determine how to eliminate the hazards that confront the motorist on the highway. At the present meeting a special report regarding the formation of this committee will be presented by Dr. H. C. Dickinson, of the U. S. Bureau of Standards, who is a member of the Executive Committee of the Highway Research Board. We feel that this problem is one of the most important confronting highway engineers today and hope you will join in the discussion in order that we may be benefited by your opinions, representing as they do all sections of the country.

CHAIRMAN JOHNSON: Before calling on the next speaker, I will take this opportunity to name a Nominating Committee, which will report at the business meeting tomorrow afternoon. H. E. Bieed, Chairman, Pievost Hubbard, R. Keith Compton, C. R. Ege and C. J. Tilden (representing W. P. Eno).

We shall now hear from Dr. H. C. Dickinson, who will present a report for the Executive Committee of the Highway Research Board.