

Now I would like to move on very briefly in the interest of time and talk just briefly about our lighting program. The remaining portions of our lighting research have two phases. First is continuous lighting; that is, lighting along our Interstate facilities so that you have a continuously lighted area. The Texas Highway Department was much concerned a few years ago over the existing standards for lighting. They felt that they were insufficient, so we entered into this research to arrive at a satisfactory and safe nighttime driving environment. The first phase was to investigate and to develop criteria for a more functional and economical lighting design.

(Mr. Blatnik assumed the chair.)

Dr. ROWAN. This research resulted in increasing the mounting heights of luminaires from 30 to 40 feet and in some cases to 50 feet, where we used 1,000-watt luminaires. This was a new innovation, the use of higher intensity sources to provide better lighting.

Now the result of increasing this mounting height was to obtain better uniformity of light distribution—you know, the better the uniformity, the less work the eye has to do.

A second feature that was improved was reduction of glare. Reduction of glare improves visibility.

The third was to increase the longitudinal spacing between these poles mainly in the interest of safety, but a byproduct was economy; a reduction in the cost.

There have been several installations of this new design. Incidentally, Texas adopted our research findings as standard design for illumination. Several of these have been installed and already they feel that they have paid for the research several fold.

Mr. MAY. How high are the poles?

Dr. ROWAN. For a 400-watt luminaire, it is 40 feet. For a 1,000-watt luminaire, it is 50 feet; or 60 feet where maintenance can service them.

Mr. MAY. And those poles can also be breakaway types?

Dr. ROWAN. Yes, sir; you saw in the film 40-foot poles. Well, the addition of 10 more is incidental.

Mr. MAY. Thank you.

Dr. ROWAN. Now the third phase of lighting deals with the lighting of interchanges. One of the big problems in lighting interchanges, where you have several turning roadways, is the number of poles—I will put it as “the forest of poles” in order to light them in the conventional manner. This represents an unsafe condition, so what we are currently working with is a concept by which we can create a panoramic view in our interchange area, one which closely approximates that of daylight driving conditions. If the driver can see the entire interchange area, he can make his decisions in a systematic and orderly manner and will naturally conduct his driving in a safer manner.

Now, the way that we are attempting to obtain this driving environment is by fewer poles, and from 100 to 150 feet in height, each supporting a cluster of floodlights. They will light the area in low intensity condition, but the driver will be able to see the entire interchange in an approach. We have facilities for mounting these, and are studying the photometrics and so on. There are four experimental installations that are now in the design stage. These will be completed