

Protection of Highway Traffic at Crossings*

Drastic Laws Called for; Crossing Problem Compared with the Demand for Automatic Train Control

By A. H. Rudd

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THE TROUBLE with this country is that we are in too much of a hurry. The only thing that I haven't seen in a hurry recently is the Bureau of Highways of the State of Pennsylvania. I have not yet got my license tags that I applied for in December. For the next safety campaign the American Railway Association has asked for a slogan. I think the best one would be, for highway crossings, the same picture that we had last year, and then put at the bottom, "Can you beat it?" I would like to assemble, if I can, a few facts which probably you all know, but which perhaps have not been collected together, to show the seriousness of the situation that confronts us. The automobile is with us, and it has come to stay. The rabbit is a wonderful breeder, but he has nothing on the automobile manufacturers. There are over fourteen million cars in the country today; and we have got to meet the situation. Automatic train control has a very considerable bearing on this subject: the automatic stop versus grade crossing protection. The Pennsylvania Railroad System in 1921 killed two passengers in train accidents; in 1922 it killed six, five of them in one collision on a road that had been recently taken over and had no block system. Last year the road didn't kill one, and in that time—three years, eight passengers killed—there were 711 people killed at highway crossings. That is an absolute proof of the necessity of the train stop!

In 1922 there were 11,000 deaths in the United States from automobile accidents. In that year the railroads killed in collisions 72 passengers. In 1923 there were 150 people killed hunting in the State of Pennsylvania, all of which leads us to the absolute unescapable conclusion that we need an automatic train stop.

In January 13 persons were killed on State roads in Pennsylvania, and 81 others injured in auto accidents. Carelessness of automobilists on highways where conditions are *least hazardous* caused most of these accidents. Of the accidents in which pedestrians figured, six occurred when the pedestrian was walking in the same direction as the motor vehicle. Five drivers involved in accidents were intoxicated.

The Pennsylvania Railroad has been ordered to install automatic train control on three passenger engine divisions. It will cost in the neighborhood of six million dollars. To equip our whole system with train control would cost 115 millions. For this sum we can protect 57,000 crossings with flashing lights, indicating the approach of the train, the new signal recommended by the Signal Section of the American Railway Association, and still have eighty millions left for separation of grades, if we didn't have to put in train control (and if we had the money).

Three big railroad systems went through 1923 without killing a single passenger. They make, says the press report, a roll of honor to be read everywhere with respect. The Santa Fe hadn't killed a passenger for more than a year and a half, during which time it carried sixteen million people an average of 152 miles; but in 1922 that road killed 27, and in 1923, 38, a total of 65 at grade crossings. The Chicago, Milwaukee & St. Paul has operated four years without passenger fatality, but in 1922 and 1923 it killed 46 on grade crossings. The Chicago & North Western hadn't

killed a passenger in two years, but during that time it killed 54 and injured 155 at grade crossings.

Each year it is thousands at grade crossings and less than 100 in collisions; yet the recent order of the Commission requires an expenditure which I think conservatively may be estimated at over \$200,000,000 for putting in train control on 141 divisions.

Grade crossing elimination is not the complete answer. We have had accident after accident after we put the highway above the railroad. Drivers run off curved approaches and get on to the tracks and we hit them. If we put the highway underneath, they run into the abutment. Our statistics show that only three per cent of automobile drivers are reckless. Oculists will tell you that four per cent of the male population is color blind.

Careless Drivers; the Stop Laws

The first point of attack, as I see it, to eliminate this terrible slaughter at grade crossings, is to eliminate careless, incompetent and unfit drivers. Our enginemen run trains at, say, 50 miles an hour, and they are examined for color blindness, color perception, for heart trouble and on other points. And then we efficiency test them. How many automobilists are examined for physical defects which may cause them to lose control at a critical moment? How many are checked up on stopping at the proper places or slowing down at the proper places? There are laws in some states requiring automobiles to stop before they go over a crossing. I understand there is an effort being made in Virginia now to repeal that law as burdensome to the drivers of the automobile. It is complained that we are killing these people all the time, or letting them kill themselves, and yet they object to stopping before they cross the railroad. With the Virginia law repealed they would force the railroads to place a watchman on each crossing 24 hours a day. Let us have stringent examination of the men who imperil our lives on the highway. The State of Pennsylvania has just passed a law that provides for the examination of automobilists. I am very strongly in favor of the new law—I don't know what the examination is, but anything is better than the present loose practice. We should have a rigid examination, and re-examinations. Every time a man scratches the paint on another car, or even on his own, give him a re-examination. I have been for a long time advocating yellow tail lights on automobiles, but have had to give up because there are fourteen million cars that have red ones, and the laws of all the states require them. I advocated yellow because during the time we had our safety-first campaign last year, we had 222 gates run through. I don't know how many trains were run into. I do know that in one instance a train was stopped on a crossing on the Northern Pacific, and while standing there a Ford ran into it on the left-hand side; and while they were cleaning up the wreck, a Buick ran into the right-hand side. The conductor said it was the first time that they had ever been attacked on both flanks at once. Of the 222 gates smashed 60 per cent occurred in the day time. Of the 40 per cent at night 95 per cent were broken to the left of the red light on the gate. You see, the red light on an automobile means, in effect, turn to the left, not stop; and that is what these drivers did. But I guess

*Abstract of an address given before the New York Railroad Club.

the red tail light is with us. A sub-committee of the American Engineering Standards Committee has recommended that head lights of automobiles, instead of being white, concentrated on a spot in the road, shall be yellow, and diffused, so that instead of driving practically through a dark tunnel, watching a white light in front, the eye of the driver may function more as it functions in the daylight. For three reasons: First, a driver coming in the opposite direction is blinded by the brilliant headlight. Second, the white light will not penetrate fog because the blue rays of the white light reflect back from the fog particles; and the yellow rays do penetrate. Third, the hypnotic effect on the driver sitting back of those bright lights. I believe that many accidents where men disregarded signals have been due to hypnotism. I heard of a man driving from Albany to Schenectady with his wife, with brilliant white headlights focused on the road, and he went to sleep three times at the wheel * * * he pulled his car to the side of the road and said to his wife, "Call me in fifteen minutes"; and he dropped off to sleep inside ten seconds.

Effective Roadside Signs

But there is the problem of the people who are good drivers that are fit and yet get killed. Fifteen or twenty states have provided for the disk caution sign. In most states the state puts them up. This has been a big help to tourists, and to automobile drivers generally. Almost universally the red light is used on crossing gates to warn team traffic. There are exceptions. We have in Pennsylvania green flashing lights which mean caution, because you are coming to a street intersection where you may meet a car, and we have yellow ones which mean something else, and we have a red light at a railroad crossing, whether there is a train coming or not. So there is confusion all around. The Signal Section, A. R. A., has approved the double red flashing light, but practice is still varied. All through the West they have wigwags; they have a disk that swings and shows a red light at night. Another signal consists of a series of lights, lighting successively to simulate a red lantern swinging. We have decided absolutely against the bell. It is the poorest thing that was ever invented. It rings when it should not and does not ring when it should. If it is loud, the neighbors put sticks in it, and if it is quiet the automobile drivers do not hear it.

The Western roads will not give up the wigwag. The Eastern people conferred, and we finally compromised on the proposition for a signal which has the appearance of a horizontally swinging red light or disk. [Two red lights side by side, flashing alternately.] Fifteen or twenty public service commissions have approved it, and we are trying to get it perfected. We cannot patent it because it was invented by a syndicate—that is, a committee. We cannot copyright it because we are told by the powers at Washington that it is not a work of art, although we claim that it is. But we can use it, because it doesn't infringe any known patent, as far as the principle of the flash is concerned. Now, what we want to do is to protect this light signal by a federal law that will forbid its use anywhere except at railroads, to indicate the approach of trains. We want it protected as the red cross is protected. It is unlawful to use the red cross except for certain purposes. In Texas they use the wigwag to advertise butter and cheese. Again they set up one near a railroad and put on it "Danger! Go to John Jones for gasoline." In Connecticut flashing lights for advertising purposes have been barred from the highways. Pennsylvania will not allow any advertising matter on the state highways. If we can confine these light signals to one particular use, that of indicating the approach of a train, we shall have made a long step forward.

There is no reason why the Highway Department should not put up signs and share in the cost of protection, just

as they put up signs for heavy grades, for sharp curves and for street intersections. The Public Service Commissions and the Interstate Commerce Commission should be given jurisdiction over the highway crossings just as they have over train accidents. When a person is killed at a crossing I would have them investigate the case just as they do a collision; and I would have them fix the blame and give it just as much publicity as they do a train accident, so that the people at large might know the proportion of accidents. And then I would insist that at the end of the report they be required to put in the stereotyped clause—"This accident again points to the necessity of the installation of some system of automatic control"—for automobiles. Let us have the control, instead of on the train, on the automobile.

The orders of the Interstate Commerce Commission call for hundreds of millions of dollars for a device that still is in the experimental stage, when the money could be spent to many times better advantage in protecting grade crossings. The train control idea is beautiful. It is the greatest thing you ever saw from an engineering standpoint. It will do everything but talk; but it is an economic crime as the matter stands today. Congress became impatient, and the easiest thing for the Commission to do was to say to the railroads, "Go ahead." They didn't have any responsibility except to tell the railroads to go ahead, so they told them; and I guess they are going ahead. But train control is an iridescent dream; while grade crossing accidents are a nightmare. We have got to get rid of the nightmare before we can start dreaming. The remedy, as I see it, depends upon organized public opinion.

First: Drastic examination of all drivers.

Second: Drastic enforcement of laws and rules of road.

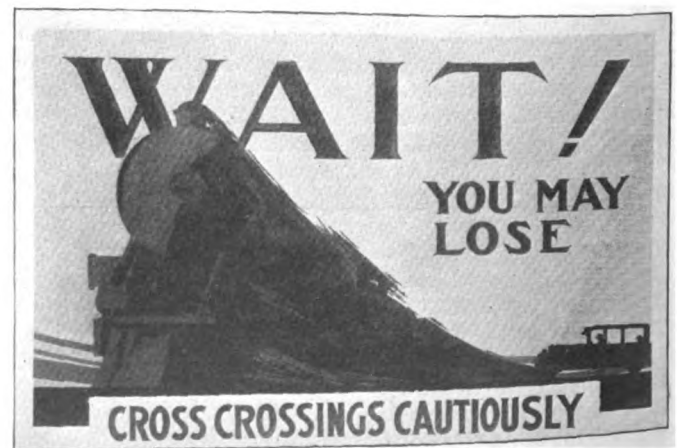
Third: Participation of national, state and municipal governments in the expense of (a) marking and protecting existing crossings, and (b) elimination of crossings or separation of grades.

Fourth: Action by such authorities to insure uniform and standardized indications of dangerous conditions.

Fifth: The prohibition of any new grade crossings over tracks where trains are run at speed.

Sixth: Elimination of the tremendous economic waste, in view of the comparatively small saving of life attained, which will result if the Interstate Commerce Commission continues to insist on the wholesale installation of experimental or inadequate train control.

Seventh: As most of these depend upon public opinion, the people should be educated, and I have already explained how I think they ought to be educated by the Commission.



Harris & Ewing

Careful Crossing Campaign Poster and Slogan Which Won \$600 Prize for Brooklyn Art Student