

effective from the fact that the human eye is more sensitive to intermittent interruptions of a ray of light than to a steady gleam. In other words, a light which is caused to flash at regular and at comparatively short intervals will be detected more easily and from a greater distance than the steadily burning light. The value of the flashing light as a means of arresting attention is demonstrated every night in the busy thoroughfares of our big cities, where flashing advertisements have displaced steadily illuminated signs, merely because they catch the eye. Even if a flashing sign is surrounded by a number of constantly illuminated advertisements, no matter how brilliant the latter may be, the former with its alternating dark and light periods will strike the eye, while the others may be passed unnoticed. This is because the eye notices the flashing sign involuntarily.

When the first flashlight signal was applied to a railway, similar results were observed. The driver of a train detected the flashing signal, and realised its significance long before he recognised the stationary lights. Also he found it easier to individualise it from a bewildering array of warnings, and, what was more to the point, he was able to notice the light without particularly looking for it. Moreover, knowing that the flashlight mounted upon the distant signal guarded his train, he sought for that only. If he failed to find it, he became uneasy and at once slowed down his train until the home signal was picked up, and his confidence was restored.

A driver who is protected by flashlight signals suffers less physical and nervous racking. He has one character of light only to pick up, and he looks for it, ignoring all other lights which may be in the vicinity. His signal may be placed upon a gantry where perhaps fifty green and red steady lights are gleaming, but instantly he singles out the flashing light.

As the mariner, when feeling his way along a coast, is able to select his flashing light from the host of other land and ship lights, so is the railway driver able to find out his particular beacon. Even in misty and blustery weather, when a steady light can be picked up only with extreme difficulty, the flashing light is detected with extreme ease and from a longer distance. The possibility of confusion is eliminated entirely, while there is neither hesitancy nor doubt.

The preliminary tests on the private railways of Sweden having established the unquestioned value of the flashing light, the development underwent extensive application. It received a decided stimulus by the accident which happened at Kils Station on the Bergslagens Railway, owing to a driver misinterpreting a signal. The flashing light was installed to prevent a repetition of the disaster, and since this installation has been in service the drivers running through this junction have confessed that their labours have been eased very appreciably, and that they can approach the junction, even at highest speeds, with less doubt and hesitancy than was the case under the previous fixed light method.

In Sweden the flashing system is displacing the older method very rapidly, both upon the private and Government lines. The drivers of the expresses have urged the necessity of a distinctive class of signal for their particular work, and have stated emphatically that, in the protection of a high-speed train, the flashing signal is the most effective which has been evolved yet.

It is obvious that the flashlight system cannot be applied to all existing signals. It must be used in conjunction with the ordinary type of fixed light. If all signals were converted to flashing the plight of the driver would be worse than it is now. There would be as little, or even less, distinction between various signals; in fact,

Adoption in Sweden.