

Double-Filament Lamp With Dividing Screen Gives Burn-Out Indication

By Charles Adler, Jr.

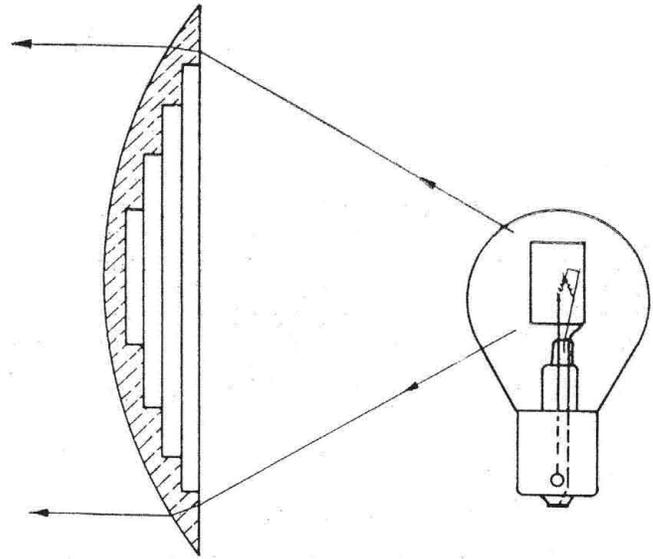
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THE almost universal use of light signals by the railroads of this country has brought to the fore the problem of guarding against failure of the incandescent source of illumination. When a failure of this nature occurs in a signal dependent upon a single incandescent lamp for the display of its aspect, two undesirable conditions are created: First, the possibility of a delay to train movements; and second, the potential danger of an engineman's failure to see the signal, in its unlighted condition.

One of the important functions of light signals is the protection of highway traffic at railroad crossings; and it is of paramount importance that the standard aspect of two red lights flashing alternately, be kept uniform at all times. The burning out of a lamp in one of the flashing units will cause this wig-wag form of indication to be changed to that produced by a single flashing lamp. Such an indication may at night be readily confused with the constantly flashing highway beacon lights which have a meaning foreign to that of the highway-crossing signal.

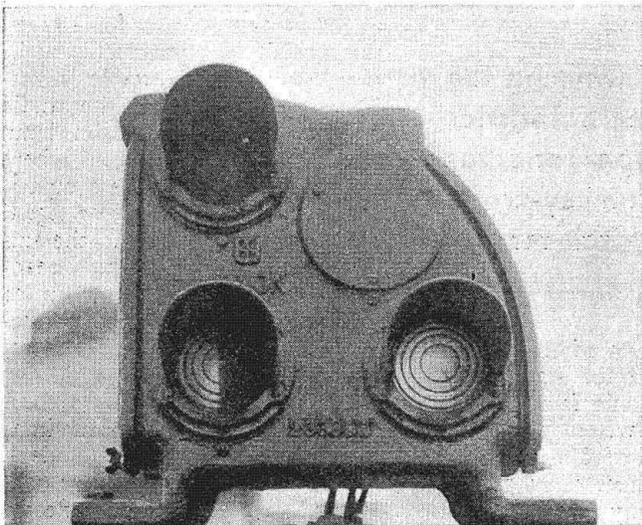
Recognizing the importance of the lamp-outage problem, the Maryland & Pennsylvania has installed in its alternate-flashing-light signal at Cold Spring Lane crossing in Baltimore, double-filament screened lamps recently developed and made available by the Union Switch & Signal Company. This type of lamp is constructed with two filaments placed parallel with each other and slightly spaced by a centrally located metal screen. Normally, both filaments are incandescent and

the signal to be read clearly. To guard against the possibility of the simultaneous failure of both filaments of the lamp, the filaments are constructed of slightly unequally rated life.



A small metal shield is mounted between the two filaments

While installing the screened lamps at Cold Spring Lane crossing, a sample lamp having one filament disconnected, was placed in one of the signal units, and the telltale failure indication produced on the lens was clear-cut and arrestive. The maintenance men were shown this indication and instructed to inspect the signal at regular intervals, replacing the lamp behind any lens showing the failure aspect. The sample lamp was then removed, and lamps having both filaments operative, were permanently installed. The illumination given by the new lamps was found to be equal in brilliancy to that afforded by those of similar wattage formerly used. Other light signals on the Maryland & Pennsylvania will be equipped with the screened lamps in the near future.



Position-light dwarfs signal—Note clear-cut division of light in left unit in which one filament is burned out.

the entire bulb is illuminated. However, upon the failure of either filament, the screen causes the lamp to be divided into contrasting bright and dark halves. This effect is reproduced on the signal lens and thus gives unmistakable notification that the lamp should be replaced. At the same time brilliant illumination is still provided on the bright half of the lens, enabling

Russian Signaling

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slowly learning that they cannot build up an industry over night, but must go through the same process of mistakes and experiences which was gone through in capitalistic countries.

The original five-year plan called for the construction of from 15,000 to 20,000 kilometers of automatic signaling on the Soviet railroads. What has actually been done is shown by the following excerpt from the report to the central committee of railroads by Comrade Andreyeff, minister of railroads, which was published in the Soviet Official newspaper, "Pravda," on December 14, 1932: "In the field of semi-automatic block signaling, the plan was fulfilled 201 per cent. Twelve-hundred five kilometers have been installed, and at last this year we have made a serious beginning in the field of automatic signaling. On the first of January, 1932, we had 195 kilometers of automatic block signaling. This year we evidently will have 700 additional kilometers of our own Soviet-made automatic block signaling."