What's the Answer?

If You Have a Question That You Would Like to Have Someone Answer, Or If You Can Answer Any of the Questions Shown Below, Please Write to the Editor.

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Purple Signal Glasses

"What information is available as to the use of improved types of signal glasses to provide a more satisfactory purple aspect?"

Red Center Purple

B. J. Schwendt

Assistant Signal Engineer, New York Central, Cleveland, Ohio.

We have solved our difficulty on color-light dwarf signals by using what we call a red-centered purple. With the regular full purple lens, even with the highest transmission, it was almost necessary to use a 40-watt instead of an 18-watt lamp to produce a daylight indication of sufficient range to cover the stopping distance under the permissible speed at such signals. This complicated the manner of supplying standby battery for such signals. After experimenting, in 1928, we hit on the idea of the red-centered purple, which not only made it possible for us to use the standard electric lamp on these color-light dwarfs, but also increased the range of visibility.

The following information states the details of this "more satisfactory purple lens" for color-light dwarf signals:

1. The red center is 1 15/64 in. in diameter and is applied to the 3⅝ in. inner unit of the doublet lens, which is the color unit.

2. This lens gives about 900 ft. daylight indication under the most adverse sunlight conditions, whereas our regular purple gives about 500 ft., wattage and other conditions remaining the same.

3. The electric lamp used is the standard for color-light dwarf signal, namely 8-volt, 18-watt, rebased PS-16 bulb, burning at 7.5 volts.

4. Under bright sunlight conditions, this particular lens looks like a poor red; that is, the purple portion looks bluish and is difficult to see. By night it looks like a real purple at 300 ft., the red becoming more predominant as the distance from the signal increases. By night the regular purple looks quite blue, the slight red showing up only at greater distances from the signal.

5. Tests were conducted on a similar purple unit with a red center, only 27/32 in. in diameter. This shortened the range slightly as compared with the large red center, reducing it from 910 to 730 ft. and reducing the predominence of the red previously mentioned.

6. On a cloudy day the comparative ranges are as follows:

Large red center purple—2000 ft.
Small red center purple—1600 ft.
Our regular all purple—1100 ft.

Comments of a Manufacturer

W. N. Manuel

Manager, Corning Glass Works, Railroad, Marine & Traffic Division, Corning, N. Y.

Purple, as a signal indication, will probably always be restricted to short range visibility. With a kerosene light source, purple is distinctive for a short range night indication but the same glass appears blue when used with a mazda lamp burning near normal voltage. Electric purple of much greater saturation may be successfully used as a short range night signal indication, but the range is not sufficient for a daylight indication.

A synthetic purple, for use with the doublet lens combination, as manufactured for the signal companies, is in use on the New York Central Lines West.

An electric purple disc, having a minimum transmission of 30 per cent, is used in the searchlight type signal, and its performance may also be obtained from the New York Central Lines East. The electric purples are included in the A.A.R. Signal Section Specification 69-35.

The synthetic purple consists of a red and purple glass combination, of a predetermined ratio of color area to produce the desired color and range within its limitation. This combination offers at present the best solution for improving the purple indication.

A Combination Satisfactory

F. C. Stuart

Signal Engineer, Elgin, Joliet & Eastern, Joliet, Ill.

We have never been able to secure a satisfactory purple for night indica-

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To Be Answered in a Later Issue

(1) On main-line high-speed automatic block-signal and train-control territories, is it necessary to install a mechanical facing-point lock separate from the switch stand on facing-point switches?

(2) Where it is likely that a pipe connection may come in contact with the base of a rail and cause a short on the track circuit, what preventative means can be used, other than inserting an insulator in the line?

(3) If the insulation of individual conductors in a cable is not protected by braid, what practical means can be used to protect the insulation from the point at which the outer covering is removed, to the terminal on which the end of the wire is attached?

(4) What are the advantages or disadvantages of aerial cable as compared with open line wires for line circuits on automatic signal territory or coded C.T.C. territory?

tion for dwarf signals; consequently, we resorted to the expedient of inserting a 1-¼ in. diameter red glass disc in the center of the 5-⅜ in. diameter purple roundel. We think this greatly improved our night indications and the enginemen liked the change.

On our first installation of color-light dwarf signals of the searchlight type, we found the stop indication to be very unsatisfactory, especially dur the bright daylight. We asked the manufacturers to provide red discs with ¼ in. horizontal purple glass strips through the centers and purple discs with ¼ in. red glass strips through the centers. The discs were mounted so that the ¼ in. strips would be horizontal when the signals were in the stop position. This practice greatly improved the stop indications, as the signal gave the appearance of a red light with a purple halo, or a purple light with a red halo. Either type gave a workable indication.

We do not believe that, in the present state of the art, a satisfactory purple indication can be secured and would prefer a dark red for the stop indication of dwarf signals.

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Night Check of Signal Lights

"Who in your organization makes a night check of signal lights by riding a locomotive, and how often is this done?"

Supervisor Makes Monthly Inspection

H. G. Morgan
Signal Engineer, Illinois Central
Chicago

On the Illinois Central the supervisor of signals makes a night check of the semaphore signal lights by riding a locomotive once each month.

Night Checking Unnecessary with Color-light Signals

F. H. Bagley
Signal Engineer, Seaboard Air Line
Norfolk, Va.

As all of our signals are of the color-light type, it is not necessary to ride a locomotive at night to check the indication. We have found a daylight check to be sufficient. Our inspections are not made periodically. However, they are made much more frequently than the old custom of periodic night checks.

Where color-light signals are used, it is the practice to change lamps periodically so that lamps are burned according to their rated life. Consequently, a reported "light out" failure rarely occurs.

With the modern color-light signal, means are provided for focusing the light in the daytime so that we are assured of good daylight and night indications.

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Maintainers' Tool Houses

"Do you use a standard plan for maintainers' tool houses? If so please furnish construction plan and details."

Standard on the Atlantic Coast Line

C. A. Williams
Assistant Engineer, Signal Dept., A.C.L.
Wilmington, N.C.

One of the first requisites on a signal maintenance section is a building of such design and size as to properly house all tools and supplies, together with a motor car. Before any such buildings were erected on the Atlantic Coast Line, we made a complete survey of suitable designs and finally decided on the frame-constructed, composite-roofed building, illustrated in the accompanying plans. The house is supported by concrete piers.

The inside furnishings of this tool house include a 5-ft. by 7½-ft. clothes locker, a wash basin, an 8-ft. by 3-ft. oil-drum rack with space for four drums, a desk with pigeon holes and a drawer, drip pan for the motor car, and a 2-ft. by 12-ft. by 2½-ft. work bench. In addition to the above, the house includes three units of all-metal shelving constructed of angles, bolts, special castings and wire netting.

In addition to the design of the building, we standardized on tool and

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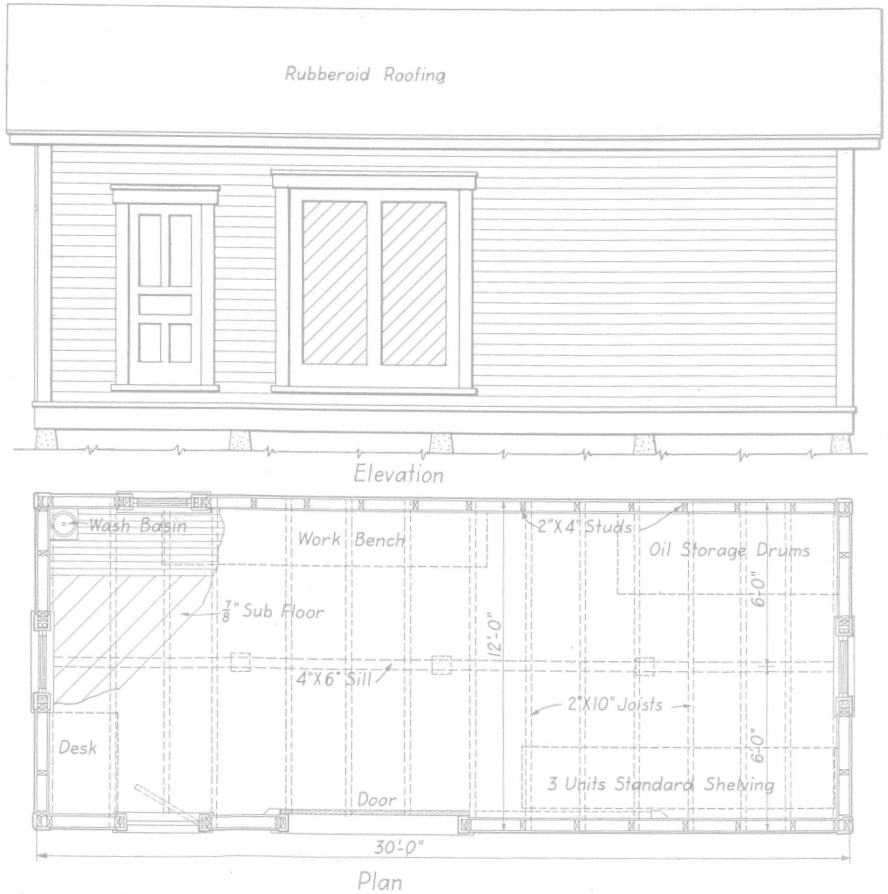
Other answers to this question will appear in subsequent issues. See also page 328 of June issue.



This type of tool house, in use on the Atlantic Coast Line, provides ample space for all storage, motor-car, and office requirements of the maintainer