

### TRAIN SIGNS ON THE SANTA FE

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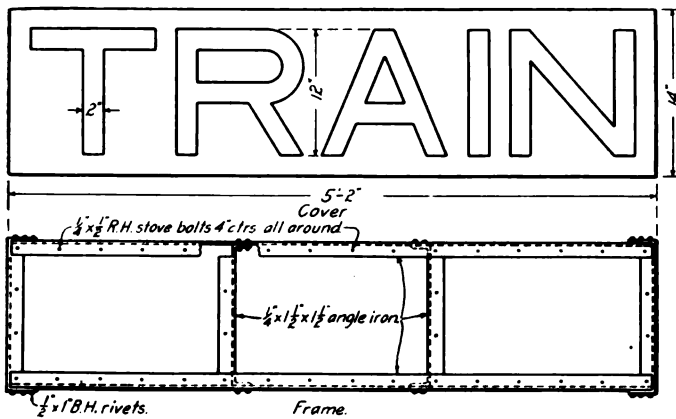
The illuminated train sign, which has been used in a number of places by the Atchison, Topeka & Santa Fe, was first designed for application in a yard within or at the end of an automatic block section to take the place of switch indicators, it being possible to install the sign at a cost equal to that of four indicators. Up the present time, this sign has been built up of illuminated sign letters, fastened securely to an angle-iron frame



One of the Train Signs Mounted on a Signal Bridge.

work, supported in a bearing on one end and direct-connected on the other end to a style T dwarf signal mechanism. With this class of construction, it has been necessary to provide a background for the sign, to make it more easily seen in daytime, and where it is mounted on anything other than a signal bridge, the cost of construction ran very high on account of this one item.

The accompanying sketches indicate the type of construction recently adopted for this sign, which is a radical departure from the former practice and effects a material reduction in the cost

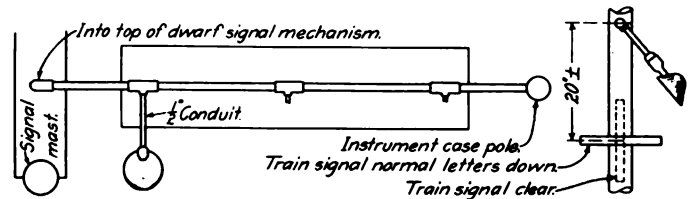


Details of Angle-Iron Frame and Galvanized Iron Cover for the Sign.

of construction, maintenance and operation. At the point where the sign was to be installed, there was in service a model 2-A ground signal, and in connection with the installation of the train sign, a number of relays were to be housed. A U. S. & S. instrument case and pole were set up opposite the ground signal, the instrument case being used to house the relays and track instruments, and the post used as a support for the end bearing of the train sign.

The style T dwarf signal was mounted on strap-iron cleats,

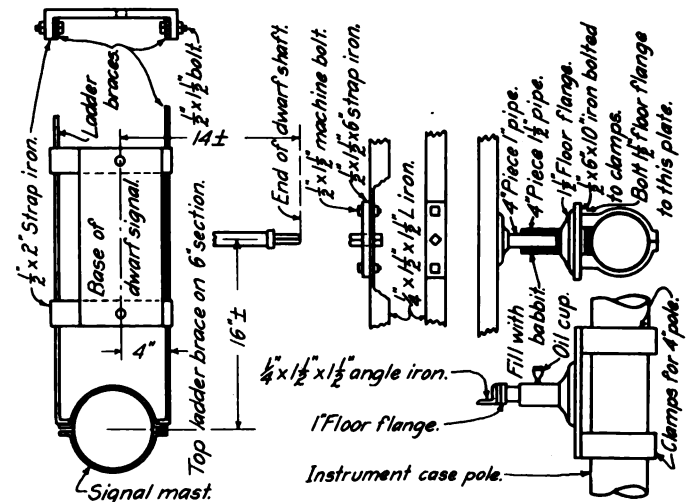
on ladder braces of the ground signal for horizontal support, the train sign frame being directed-connected to the signal motor. The frame is built up of 1/2-in. by 1 1/2-in. by 1 1/2-in. angle-iron, and the cover is a single piece of No. 26 galvanized iron. The surface is enameled, the letters being white on a dark blue background. The entire surface of the sign is varnished. It is illuminated by three lights mounted under reflectors, as



Arrangement for Illuminating the Train Sign.

shown in the sketch. The two light wires are brought through the top of the operating mechanism case in 1-in. conduit, and across to the pole on the instrument case, the pole being drilled to provide entrance and the conduit being fastened in securely with a lock nut and bushing.

The normal position of the train sign is with the lettered side down. The motor operating the sign is controlled through a relay, which in turn, has the same control that the switch indicators replaced by the sign would have. The lights for illumination are energized through a circuit breaker on the operating mechanism, so as to light just before the sign is in the full clear position; that is, when the word "Train" is visible.



Details Used in Mounting Sign on a Ground Mast.

It might seem that snow and ice would make the train sign an objectionable piece of signal apparatus on account of the large surface exposed to the weather. However, as the operating motion is in a rotating arc instead of a vertical arc, which is the case in a signal blade, the additional weight does not increase the torque sufficiently to injure satisfactory operation. It is practically impossible to give any cost data for these train signs, either of the old type or of the new, illustrated here-with, since this cost varies considerably with local conditions.

ACRES OF TRACING CLOTH AND HOGSHEADS OF INK.—The roadway maps and profiles which the valuation division of the Interstate Commerce Commission has required from the rail-ways will require 537,000 sq. yds. of plain tracing cloth and 67,000 sq. yds. of profile tracing cloth, according to an estimate in the "Engineering News," based on a recent statement as to the requirements of the Boston & Maine. The statistician who made this calculation further estimates that 11,300 quarts of drawing ink will be consumed on these maps and profiles.