

tive house is complete unless with a hot water washout plant of sufficient capacity to take care of all the washouts. It does away with the breakages that are due from expansion and contraction, caused by the quick change of the temperature of a locomotive boiler when it is undergoing the washing process. It also tends to the conservation of fuel, as it takes about double the amount to get a locomotive up to the required steam pressure when cold water is used. It also enters into the time element.

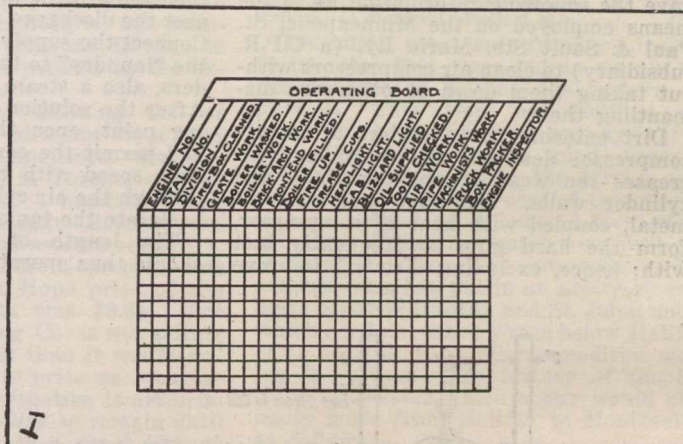
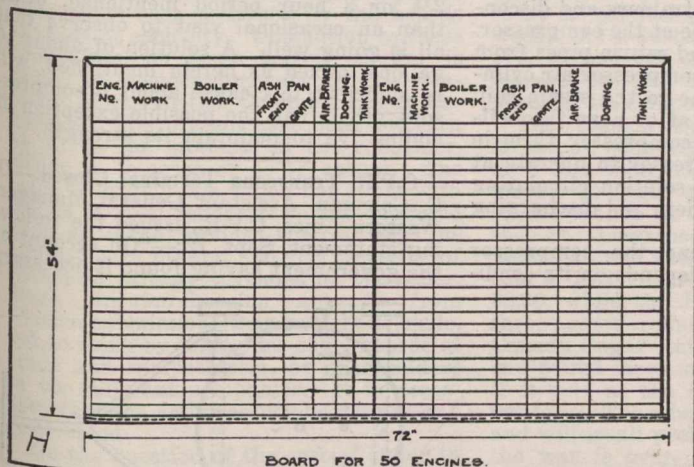
Electric and Autogenous Welding—No other appliance is of more assistance to

desirable on account of delays in coaling when the locomotives are being dispatched.

Locomotive Performance—The standard of comparison as to what constitutes a non-performance varies so greatly throughout the country, except within the boundaries of a state where the performance is based on rules laid down by a public service commission, that a conclusion cannot be drawn. As a rule, the performance of a locomotive depends upon the general conditions, so to speak, viz., shopping facilities for general repairs and properly equipped locomotive houses.

much as shrapnel. Ordinarily, 15% of all the locomotives on our railways are in the repair shop. By reducing that percentage to 10, we can add 3,325 locomotives to the number available for use. If we can keep more locomotives in good running order, we will help our country in the war with Germany."

Check up your locomotive houses at night, check up your locomotive houses in the morning and finish the day's work with as few locomotives held as possible. Go the limit on putting them into service. It may be that a tender from one locomotive can be switched to another and thus



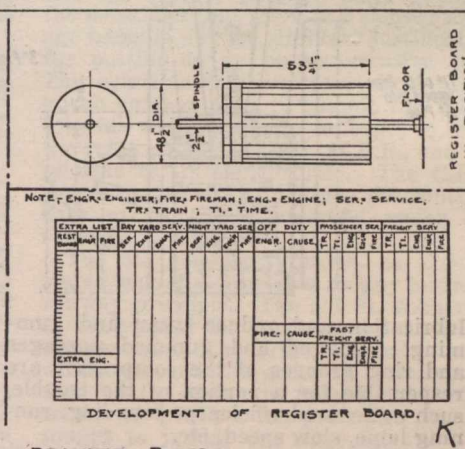
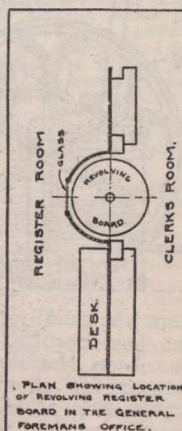
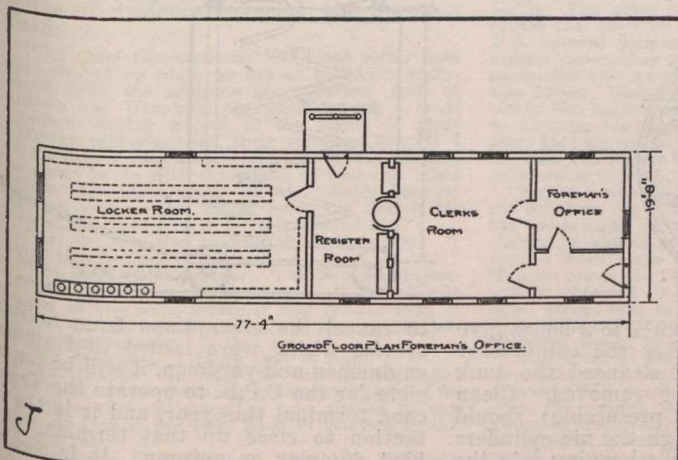
the prompt dispatching of power than electric and autogenous welding. It is a time saver and an increased boiler efficiency can be obtained by the welding of the firebox end of the flues as well as the time to be obtained in stripping or the removal of staybolts with the autogenous welding.

Drop Pits—Each locomotive house should have suitable pits for the removal of locomotive truck wheels, tender wheels and drivers. This pit should be equipped with a suitable jack of sufficient capacity to readily handle the heaviest pair of wheels. It does not seem that a suitable

Local conditions have a great deal to do with the performance from a boiler standpoint. Good performance is based upon proper inspection and the ability to make repairs and good operations.

Terminal Delays—A report should be made to the mechanical officer in charge, so that he can tell at a glance just what time a locomotive arrives and when it is again made ready to depart. This report should contain a column that will show the arrival of the locomotive at the cinder pit, when it is reported to the operating department as ready for a call and when it is ordered. It also should show the

a locomotive gained or, if you have two locomotives of the same class that are held over, maybe the switching of certain material from the one to the other will place a locomotive in service and hold out but one. Check up your shop locomotives and do not hold more of one class than is absolutely necessary to comply with the above request. In working your shops on a 10% basis the writer believes that at large railway centers great assistance can be rendered by all of the local mechanical men in keeping locomotives in service, hence the transferring of material and in that way helps to produce more loco-



jack has been designed for this purpose, or at least the writer never came in contact with one. This pit should have good drainage and proper lighting facilities.

Coaling Facilities—No part of the layout is more important than the handling of locomotive fuel at a terminal. There are many varieties of docks of the gravity and mechanical type. While there are a number of the latter that are highly successful, it seems to the writer that the least delays are incurred by the former. This coal dock should be located so that it will cover the locomotives as they approach the locomotive house, this being

mechanical department and the transportation department delays, separately.

Present Facilities—Of course, we all talk about ideal conditions, and there is no doubt that improvements are needed at almost every terminal, but they are harder to obtain now than at any other time, so we must take the present facilities and do the best we possibly can and speed up and take up the lost motion and follow the little things that go to bring about prompt dispatching and furnish the locomotives that the country needs.

The U.S. Railroad War Board said recently: "Our nation needs locomotives as

motive miles.

Questionnaire—The following questions should be carefully considered:—

Do you clean fires by day or piecework? Have you washed locomotives? Are you washing at present?

Do you approve of an inspection pit and where would you locate it?

Do you have drop pits and how heavy repairs do you recommend being carried on in the locomotive house?

Do you approve of air or hydraulic jacks for drop pit work?

What do you think of two motors on the turntable?