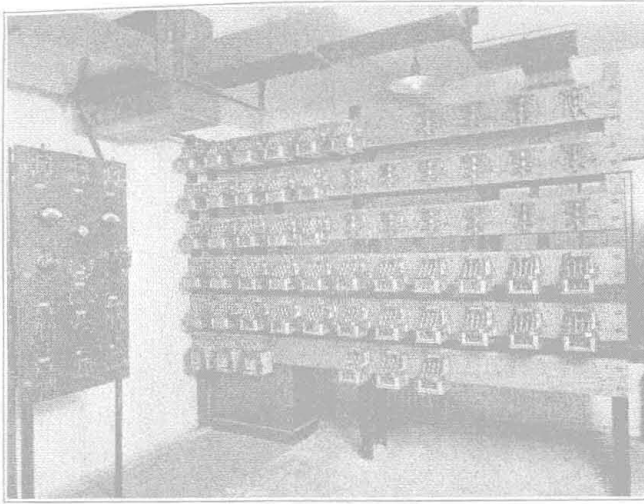


fed by a 110/12-volt transformer. The targets provide either a lunar white or yellow indication. Each switch is protected with a short track circuit, the condition of the track circuit being indicated on the control board by a red lamp near the control switch.

The operating officers of the Indiana Harbor Belt which operates this property anticipate that the new installation will eliminate a great deal of congestion at the throat of the westbound receiving yard by speeding up train and engine movements. In fact, the general superintendent contemplates connecting up four additional switches for power operation and control from the present tower. This proposed ex-



Byers charging panel at left and relay board at right—Solenoid relays for Model-6 yard switch machines are mounted in upper right corner

tension of the interlocking plant will eliminate three switch tenders at an approximate saving of \$500 a month. When this extension is completed, and when more operating figures are available, it is expected that a definite saving will be shown.

All the engineering work in connection with the plant at Gibson was carried out under the general supervision of F. B. Wiegand, signal engineer, New York Central, Lines West, Cleveland, Ohio. C. E. Rowe, signal supervisor, Illinois division of the New York Central, was in direct charge of the construction work, assisted by F. J. Fleming, construction foreman.

Preparation of Circuit Plans

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WHILE there has been progress in standardization of signal plans in the past few years, and many railroads have adopted "written circuits" instead of the older forms of circuit plans there are many who stick to the idea that nothing is quite as satisfactory as a track plan made to vertical scale (but not horizontally) showing the various units and the actual connection of the wires to the rails, signals, switch circuit controllers, etc. This type of plan is drawn for a certain job and can be corrected and filed as a record of what was approved for installation and what was actually installed, this by making a Van Dyke* of the plan after approval and another Van Dyke after the tracing has

* A brown print from which white prints can be made on blueprint paper.

been corrected in accordance with the marked print sent in by the engineer in charge of the work showing the work "as installed."

So-called "typical" circuit plans are frequently made with blanks left which may be filled in on the tracing (or with crayon or water colors on the blue print) to show the particular location to which that plan applies, such as: "DOUBLE SIGNAL LOCATION at Sta. 215 + 800" or "CUT SECTION at Sta. 230 + 825," the italics signifying the portion to be filled in by either of the methods mentioned above. The major use of the typical plan, or as it is sometimes called, the "standard" plan, is to establish a set of plans which will be a sort of an encyclopedia to those requiring such information. These show the approval of the responsible officers, or heads of departments, of combinations of units and accessories in a manner that will promote safety as well as provide the most economical arrangement; they are generally drawn to embrace various kinds of apparatus without specifically referring to the type, for instance, the controller contacts for a signal will be shown as "closed 0 deg. to 5 deg." or the resistance of a relay and number of contacts. The large circuit plan is therefore a combination of the typical plans, put together by a draftsman who possesses a good portion of common sense and ability to visualize the complete plan. Actually the circuit designer becomes so familiar with the typical plans that he needs only to refresh his memory occasionally.

Another type of plan has become quite popular which I will designate as the "book" type for want of a better name. These plans are prepared in convenient sized sheets, about 15 in. by 24 in., each class of circuits being set up together. At an interlocking plant all electric route-locking circuits would be on one sheet, signal control circuits on another sheet, etc. This scheme has the great advantage of incorporating the sketches of the circuits which are necessarily made by the designer, the checker, the field wireman and finally the inspector, into a plan, possibly avoiding errors in copying from another plan. It is an excellent plan to do wiring by and to check circuits with. It does not show, however, the assembly of units and wires that for certain purposes may be required. Also a sheet may be inadvertently omitted in sending out plans and the omission not noticed until the lack of the sheet will be bothersome if not expensive.

As to the actual drawing of the plans, the satisfactory method seems to be to use 10 by 10 cross-section paper, which is available in 50-yard rolls in different widths (20 in. is a convenient size), with the ruling in red, as it is easier to see through tracing cloth than green lines. The track plan is carried along at the top of the plan and the pole line, at the bottom. The ruling is particularly convenient as one space can be used for the width of the track, two spaces square for a relay symbol, etc. If there is much probability of important errors in the designer's work, a cursory check of the pencil detail work may be profitable. Usually the errors and changes are so minor that the tracing can be changed after the checker and circuit engineer have made their check. Clear separation of locations without a great waste of paper is important. Frequently it will be necessary to break the track plan at an interlocking plant and often also to break the pole line, otherwise the width would have to be increased. It is desirable to show only the cross-arms where wires on the line are broken or added. The size of plans will, of course, vary considerably, but it seems advisable to keep the width to a certain predetermined figure, increasing by multiples of say $7\frac{1}{2}$ in., the length depending on the general location.