Supplemental Notes on Drafting Practice

A Detailed Explanation of Some Points Previously Touched Upon in These Columns

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In the February issue of The Signal Engineer, there appeared an article on "Drafting Room Practice" which has aroused considerable interest in the line of office systems and

be overestimated. In making the survey, the necessary articles required are a 100 ft. steel tape, a 25 ft. or 50 ft. steel tape in leather case, a field book, a hand level and a crayon

INSTRUCTIONS FOR MAKING SURVEYS OF INTERLOCKING PLANTS.

The extreme frog points of the crossing to be the zero stations.

Locate the following:-

- 1. Switches and derails, Freeland, split, Morden or otherwise (interlocked and outlying).
- 2. Signals (interlocked and block).
- Depots and other buildings.
- 4. Stand pipes and water tanks.
- Railway crossings. 5.
- Street crossings, with sidewalks. 6.
- 7. Highway crossings.
- 8. Crossing bells and crossing gates.
- 9. Track centers.
- 10. Track curvatures.
- 11. Distance of signals from track.
- 12. Location of tower from tracks.
- 13. Location of pipe line and distance from rails.
- 14 Detector bars.
- 15. Bolt locks.
- Switch boxes. 16.
- Insulated joints. 17.
- 18. Outlying switch locks.

19. Annunciator starts.

- Secure:-
 - 1. Angle of crossing.
 - Size of steel (base, height, drilling, size of bolt). 2. (Allow 1/2-inch between ends).
 - Cross sections along main track (for pipe line, 3. signal buildings, and signals).
 - Size of tower, inside and outside. 4.
 - Floor plans of tower. 5.
 - Numbering of interlocking plant. 6.
 - 7. Spare spaces.
 - Spare levers. 8.
 - 9 Size of machine.
 - Kind of machine. 10.
 - Dog chart of locking. 11.

 - Location of time locks, screw releases, and elec-12. tric locks.
- 13. Description of route locking, power distants, fixed blades, slotted signals, three-position signals, etc.
- 14. Classification of side tracks.
- 15. Condition of plant.

Fig. 1.

has called for many answers to various questions in this connection.

With the idea more definitely to define some of the drafting room practice of the Illinois Central this supplemental article has been written. It is the desire of the writer that the article may be taken for just what it is worth and that those who are interested in this subject will express their ideas and set forth their systems in subsequent issues.

The chief requisite for satisfactory work is the completeness of the survey. If a layout of tracks for either interlocking, or block signals is measured in a superficial manner, the development of the plans, the ordering of material or the making of the estimates is very likely to be an unsatisfactory

or two of chalk. The color of this, of course, is a matter of choice, but it will be found that yellow is far superior to red, blue or any other color, for marking on the top of



the rail. It can be seen as far as 50 feet away while red or blue is hard to distinguish 15 feet from the mark. Yellow crayon has not the permanency that red has for mark-





ing on the web or flange of the rail, and it therefore may be well to carry two colors in laying out new work or in making changes.

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In making notes in the field book, the notes are started in the usual manner at the bottom of the page and worked up to the top. Thus one is able to look forward in the work and in the notes, and not backward. The notes are taken on of two or three roads while the other roads have no permanent station marks closer than the mile posts. It is our practice, therefore, to start the measurements for interlocking from the nearest fouling point, usually the intersections of

SURVEYING LIST FOR AUTOMATIC BLOCK SIGNALS.

- All surveys must be started on the northern or the western end of the signal territory.
- All notes must be started in the front of the book at the bottom of page, making notes read from bottom to top.

Measurements to commence at the first mile post, preceding the block signal territory.

- Title, date, and scale.
- Profile and alignment.

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Locate the following:

- 1. Mile posts.
- 2. Readings.
- 3. Switches (Interlocked position of).
- 4. Derails (Interlocked position of).
- 5. Crossovers and turnouts.
- 6. Insulated joints.
- Signals (Block and interlocked—normal position of blades).

one side of the page, only, for reasons that will be stated later. The liability of overlooking some measurements or taking some notes is so great that the list called the "Surveying List" is used and a print is pasted in the back of the field book for reference, see Fig. 1.



Fig. 5,

Each item, in turn, is taken into consideration and the notes scrutinized while on the ground. If any item is not covered by the list, it is secured at once and in this way the information is complete and satisfactory. On a few roads, there are 500 ft. stations established and all measurements are made by starting from the nearest station. This, however, is only true



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- 10. Indicators, bells, or outlying switch locks.
- 11. Relay boxes-number of relays.
- 12. Battery wells-number and kind of cells.
- 13. Battery boxes-number and kind of cells.
- 14. Battery chutes-number and kind of cells.
- 15. Telegraph poles.
- 16. Stub poles.
- 17. Trunking runs.
- 18. Road crossings.
- 19. Crossing bells and crossing gates.
- 20. Railroad crossings and name.
- 21. Points of curve.
- 22. Points of tangent.
- 23. Depots, towers, water tanks, and stand pipes.
- 24. Bridges and trestles.
- 25. Track centers.
- 26. Destination of line.

the gauge lines of the acute angle of the crossing frog, as in Fig. 2.

There is a standing rule on the Illinois Central which applies to profiles, division plats, etc., that the north or west shall be the left hand end of the plan. This applies to block signal plans, so the north or west end is always the beginning of a block signal survey and the zero is taken at the first mile post preceding the block signal territory, while plus readings are taken up to and including the second mile post. At the second mile post a new zero is taken and so on through the entire territory. For illustration see Fig. 3.

A "Block Signaling Reminder List" is shown in Fig. 4. This insures that nothing will be overlooked while on the ground.

As it is frequently necessary to go back over the work and locate track cuts, etc., the even stations are marked on the base of the rail, thus making it easy to tie them in the regular measurements. If any extensive measurements are to be made, a motor car is taken along, with a man to run it. In this way, to look up any location for a track cut is not a laborious matter and when eating time comes around one is "right on the job."

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The notes, taken on the ground and returned to the office to be worked up, are handled in the following manner: A drafting requisition is issued, as illustrated in Fig. 5. The pages of notes are cut out of the field book and as they have been taken on only one side of the page, it is possible to paste these on sheets of paper the size of the requisition. The arrangement of the notes is such that the tracks fit together and everything appears as natural as possible. The notes are not transferred, but the original notes illustrated, thus avoiding errors in such transferring. These large sheets of notes, together with letters to the drafting room, numbered or marked plans and all information bearing on the work, are pasted to the drafting requisition in a permanent manner. It is, therefore, possible at all times, both "day and night," to tell exactly what has been done, and why, and on whose authority. These requisitions take the number of the drawing and the date of the requisition for the development or revision of the plan, as shown on the plan. The development and changes are kept in chronological order in the file, under the number of the plan. Under this system of requisitions, with all information permanently attached, there is always present the opportunity of looking up any previous change or revision back to the beginning of the work.