TROLLEY FREIGHT SERVICE Part 2

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(Note, Part 1 of this series is not included in this reprint.)

In the first series of this article, we discussed the various types of motive power and rolling stock used in trolley freight service. Particular attention was paid to the steeple cab locomotive. This part, however, will describe the actual running of model trolley freight "trains."

The simplest form of this is the plain motor box car running on the same route as the passenger cars. In designing your layout, make an effort to have a special freight track at your main terminal for this car only, although it could be kept in the barn. Along the line, you can have special freight sidings, too, perhaps running to the rear or side of the interurban depot of the town. If these sidings are of the spring-switch back-in type as shown in Fig. 1, you will save a great deal of switch manipulation. The wire frog can usually be tilted so that even in backing, the pole will lead the car in the direction the switch is sprung. Even if you shouldn't have the double track required with this type of switch, you could have some one-way trackage most any place, such as at a passing siding or reverse loop, Fig. 2. One of my previous layouts had such a freight house track along with a complicated electrical set-up, which permitted me to control any of eight different track sections independently of each other. The motor box car would run ahead of a passenger car. As the passenger began to catch up, the motor box car would stop just past a back-in siding, reverse, back in and stop, with the passenger whizzing by. The wire over the siding was push-button controlled making certain that the car would stop when backed in under those split second circumstances.

In similar fashion, a coal motor could tote the black diamonds to your power house, and a stock motor could haul cows from a stock-pen to the packing house. Adding one or two trailers to accommodate extra traffic is about the same type of operation. Another variation is to operate two or more motor freight cars, "MU," as a train.

A freight train more or less implies the use of a locomotive such as a steeple cab, although a motor freight car could be used for your power. Unless you are operating on a layout of steam model standards (wide curves, gentle grades), the length of your train will be limited by the power of your engine, not on the straight-away, but on the sharp trolley curves and steep trolley grades. You will also be limited by the length of your passing tracks to a certain extent. Five to ten cars make a good length freight train, although some real lines run much longer trains. You can have a caboose or not, just as you please. You may also follow the custom of some electric lines and put the caboose at the front of the train, directly behind the locomotive.

This train can be operated as a through freight or as a local "peddler" freight. In the case of the latter, you will need several sidings along the right-of-way on which to set out and pick up cars. These

can be freight depots, factories, mines, packing plants, cattle pens, oil bulk plants, lumber yards, and many other different industrial units. In either case, you will need some point of origin and some point of destination for this train.

A through freight may originate from a hidden track siding, which is supposedly an interchange track to a connecting road. Such a hidden siding may run behind buildings along the wall or under mountains, Fig. 3. Because of the inherent dangers of backing into any track in model railroading, particularly so with a pole trolley, it would be a good idea to have this track double ended, so that the train can come in one end and stop, later to run directly out the other end. There is also the possibility of having a freight yard on a small scale of which more will be later described. As an alternate, you could have a large freight station with plenty of team tracks (i.e., widely spaced tracks with roadways for teams between). As in practically all model work, one facility may be made to suffice for both origin and destination.

There are two things to consider in model electric freight train operation. One is coupling, and the other is backing up. To date, I have never found an absolute foolproof method of automatic uncoupling in HO trolleys. To be sure, I have had success with steam outline trains, and have seen it on other model pikes, but the sharp curves of model trolley lines were apparently never cut out for auto-couplers. When the new couplers appear, perhaps there will be found a new method of making them work on short radius curves. Frankly, I use dummies — not that I like them! There is just not that automatic feature that makes the making and breaking-up of trains so easy

Backing up is a necessity in yard and other shifting operations. The one catch is that the pole on the trolley is then raked wrong and will snag on any imperfection on the overhead, and will get into trouble at any divergence such as a wire frog. Real trolley lines solve this problem in many ways. They sometimes have a pole man, whose job it is to guide the pole by means of a retriever rope when backing up. Some merely change poles. Others will use pantographs. This is the only real practical method to be used in models.

You can readily see that if you should run into a facing point Switch, Fig. 4, with the pole raked incorrectly, there is no guarantee that the pole will go the same direction with the wheels. Actually, the wire frog can either be tilted or biased so that the pole will always go one of the two ways, but that will again limit your choice. You can, however, run through a trailing point switch, either leg, with the pole raked wrong since there is then only one path for the shoe to follow, Fig. 5. To complete the picture, you should he able to go through either a facing or trailing switch in any way with the pole raked incorrectly, Fig.6.

As just described, in regard to the trailing and facing point switches, you can work a fairly simple trolley freight yard. All the yard switches should be facing one way. Have the trolley locomotive run with the pole raked correctly to pass through the facing point switches. When the locomotive backs up, the pole will be raked wrong, but will pass through the switches which will then be hit from the trailing side, Fig. 7. Through all of this, we naturally assume there is good track work and taut wirework. It is not the easiest thing in the world to erect wire frogs than can be smoothly backed through, but it can be done. Keep the overhead tight, and fasten the wire frogs directly to brackets or span wire to keep them exactly where you want them. There are many model trolley lines, HO gauge, too, where you could back anywhere on the line without dewirement.

The overhead work over the switches of a ladder track is bound to he somewhat complicated. Sooner or later you will have to make repairs and adjustments on those switches. This is not an easy job, primarily because the wire is up in the air. But it can be done, however, by reaching in under the overhead from the side.

Another possibility is to use third rail in your yards, which, of course, does away with the overhead at the expense of adding the snagging and shorting hazards of the third rail. Your motors then will need third rail shoes in addition to poles and perhaps pantographs. I once ripped down the trolley wire on one

of my layouts and equipped the yard with third rail. The sad mistake was made, however, of using regular running rail. mounted on blocks, for the hot rail. This definitely was an error, for the table-like surface of this rail made a resting place for plenty of dust and grease. The third rail shoe plowed this along in front, until the gum piled up and broke contact. If ever the opportunity again presented itself to me, I would use round wire for third rail and have a round third rail shoe so that there would be a needle point of contact with plenty of provision for the plowed up dirt to easily slide off.

Still another possibility would be to use steam or Diesel power in the yard. To do this, all trailer cars would have to be equipped for two-rail operation with insulated wheels, and, of course, all track and switches laid for two-rail. The yards would then be a separately controlled block. If there was a trolley wire over any part of the block, you would have to have a SPDT switch so that the block would run either two-rail or trolley, for trolley cars run best when all wheels are grounded and not insulated, Fig. 8. With this switch Set for trolley running, any two-rail motors would stop without harm. A non-insulated trolley entering a two-rail block, however, would throw the circuit breaker, which you should provide on this system.

Again, your main line may be equipped with a switch to throw it over from two-rail to trolley operation. In this case, you can haul your freight trains with Steam or Diesel engines, while trolleys run by electricity. Should you decide to give up the good ground provided by eight wheels, you can even operate trolleys and steam trains independently over the same track. You will then need two-rail insulated trucks on your trolley with all non-insulated wheels on the same rail. That rail with the overhead wire would then feed the trolleys, while this same rail with the other rail would feed the steam or Diesel units, Fig. 9. The two types of power can run from entirely different power sources, even using different kinds of power. One interurban pike operates steam-juice double headers on this scheme

Next month we'll build an actual freight layout to complete this series.

TROLLEY FREIGHT SERVICE Conclusion

By WILLIAM SCHOPP

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We have thoroughly covered the motive power and rolling stock used in freight service. Together with the mechanics of trolley freight applied to model lines. For a concrete illustration of a trolley freight layout, we will now describe the one shown here. Using an area of eight feet in HO gauge, it represents a small electrified industrial railroad which interchanges and connects with a "through" interurban or steam line looping the outside of the area used.

A through train, steam or electric, circles the Fast Line oval at high level. Here it sets off several cars on the interchange track at lower left. Soon we see a steeple cab engine cut off the street to pick up the interchange cars. Coupling is made and the local freight runs off round the inside industrial oval. Although this train is running with engine first, the sole is incorrectly raked. (Note train on bridge at upper corner.)

After making a few circuits of the loop clockwise, both in setting out and picking up cars, the local freight must still service the packing house and freight depot sidings which have switches for counter-clockwise trains. This requires complicated maneuvering as follows: Set Out all but the necessary one or two cars on the interchange track or the high level storage yard. Set the one or two cars on the right leg of the wye in front of the passenger depot and run the loco through the left leg of the wye. It will take the switch, for the pole is raked okay. Now back the engine through the strain leg of the wye with the pole raked wrong. Start up the right leg again and couple onto the train).. The local freight will then be able to go in counter-clockwise direction around the oval as before, with the engine pole incorrectly raked.

Running from the wye is another track which leads along the back to a hidden reverse loop, serving mainly as a place for storing cars completely out of sight. An entire freight or passenger train may lurk here until needed. Four tracks are shown on this loop, but more or less may be used. For sake of maintenance, expose your switches. If space permitted, this loop would be better placed in the Open, some distance from the rest of the layout.

While all this freight activity goes on, the passenger operation can still take place. Lurking in the hidden storage tracks, your passenger motors can venture nut to circle the high level fast line and return once again to hiding.

This layout could also be used for steam or diesel operation. Build it all two-rail, operating with dockside switchers and diesels until such time as the trolley wire is erected and perfected. This motive power would then be used for stand-by after the electric locomotive is placed in service. Wiith this layout or any other you may contemplate building, you no doubt will find improvements to be made as you go along. This will keep your interest from stagnating, however, and will tend to make a more efficient layout. At any rate, get ready for exciting times in your trolley freight operation!

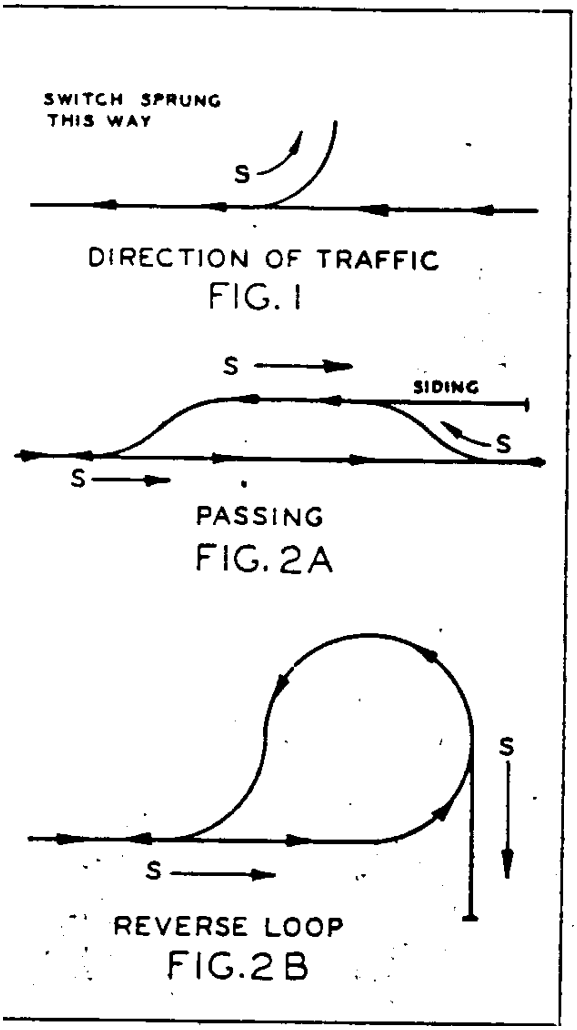


FIG. 1

PASSING

FIG. 2A

FIG. 2B

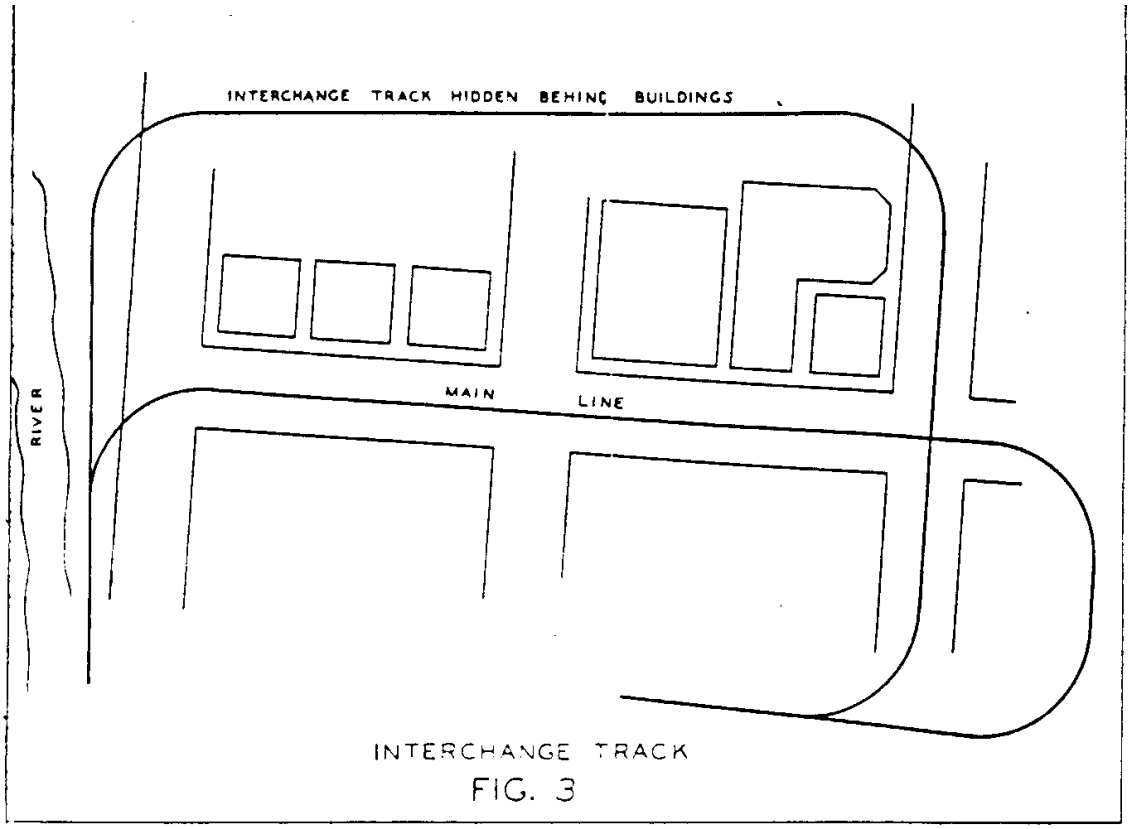
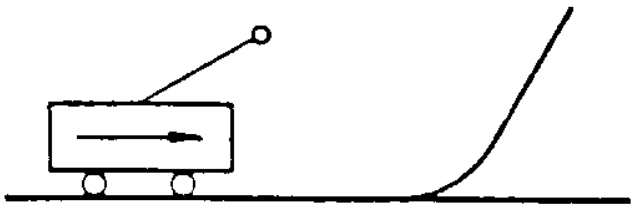
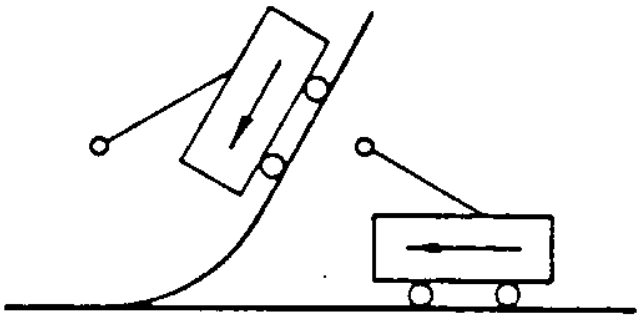


FIG. 3



POLE GOING SAME AS WHEELS

FIG. 4



POSSIBLE TO GO THIS WAY

FIG.5

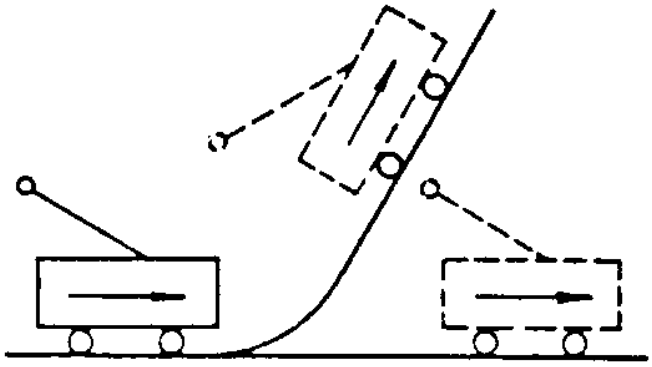


FIG.6

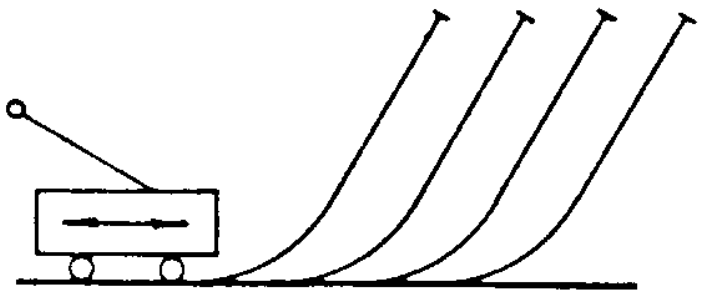
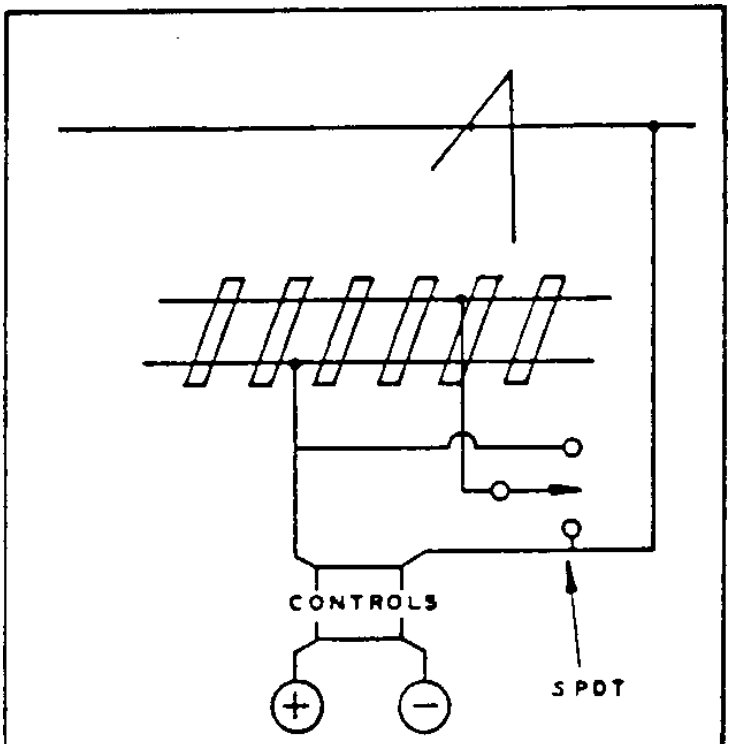


FIG.7



WIRING 2 RAIL TO TROLLEY

FIG.8

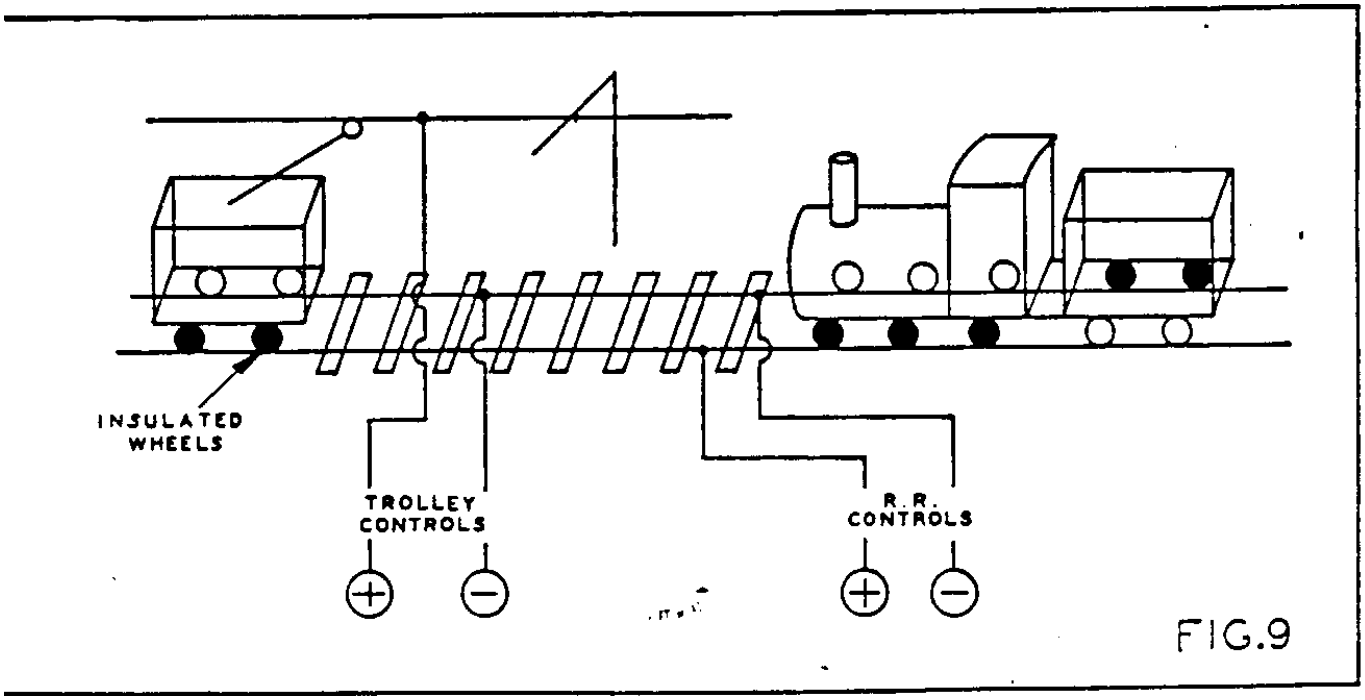
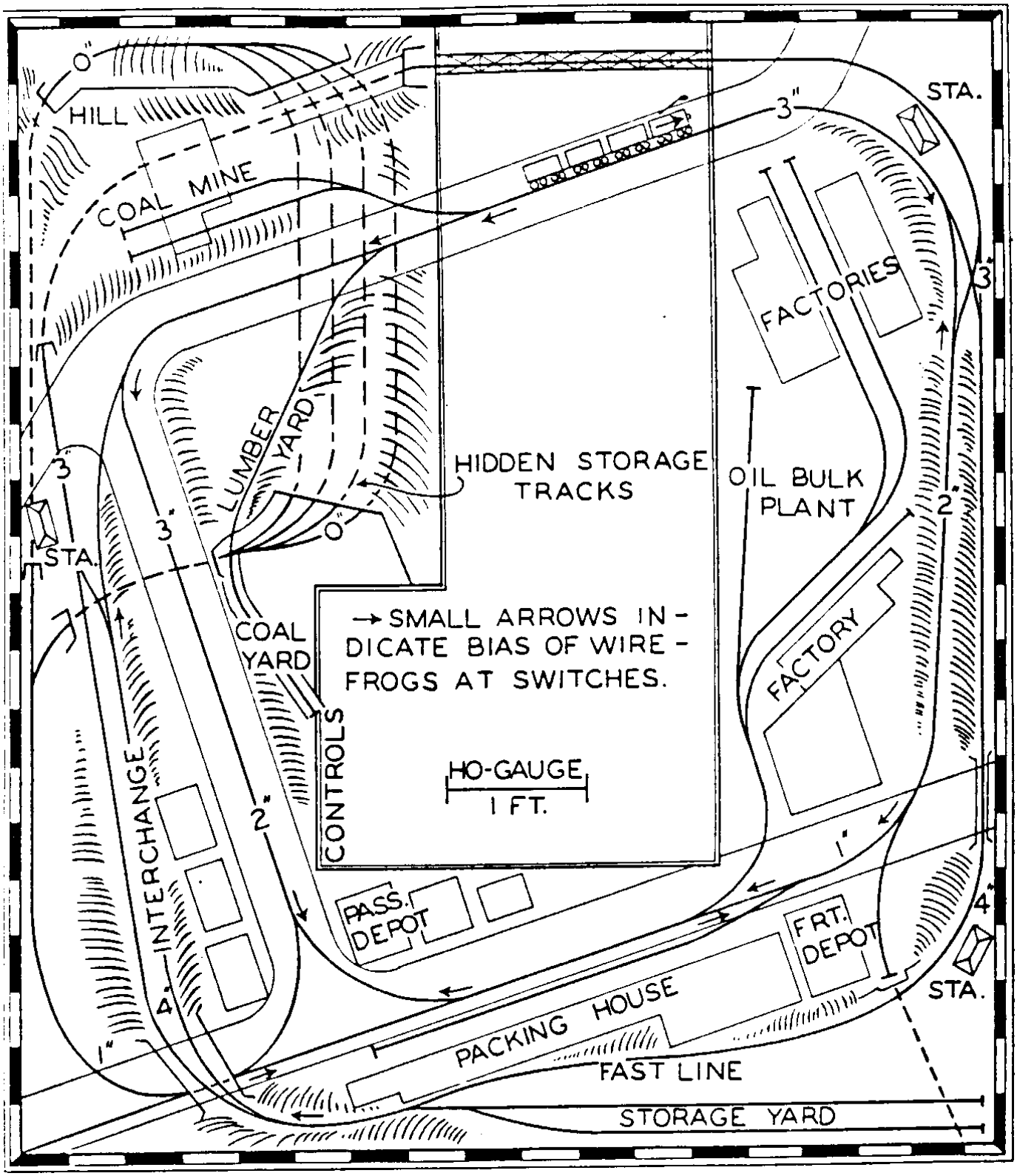


FIG.9


0"
HILL
COAL MINE
3"
STA.
FACTORIES
3"
LUMBER YARD
HIDDEN STORAGE TRACKS
OIL BULK PLANT
2"
3"
STA.
3"
0"
COAL YARD
→ SMALL ARROWS INDICATE BIAS OF WIRE-FROGS AT SWITCHES.
FACTORY
CONTROLS
HO-GAUGE
1 FT.
INTERCHANGE
4"
2"
1"
PASS. DEPOT
1"
FRT. DEPOT
4"
STA.
PACKING HOUSE
FAST LINE
STORAGE YARD