

the other end of this wire across the other rail; if a spark occurs, the system is shorted and each section must be removed and tested separately in the manner just described. Switches and crossovers can be tested in the same manner.

TO REPAIR A SHORT

By closely examining a shorted section of track, you will discover that one or more clamps on the sleeper is touching the rail. With a sharp screw driver, the clamp can be loosened and the fiber insulation piece shifted so that the rail is completely insulated from the sleepers (see Figure 4).

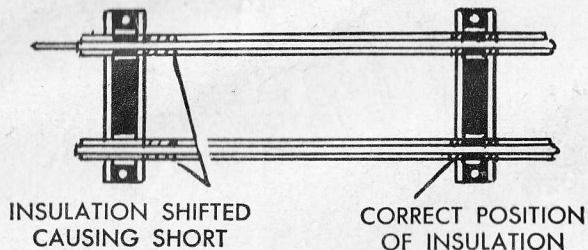


Fig. 4

TO TEST LOCOMOTIVE

Using the tested sections, reassemble your layout and place your locomotive and tender on the track. Be sure the cutout lever on a standard remote control locomotive is not locked in neutral position. If it has been in neutral, unlock it and move the transformer lever to full "on" position. Then raise and lower the handle several times. When placing the locomotive and tender on the track, be sure the metal wheels on the front tender truck are on one rail and the metal wheels on the rear tender truck are on the other rail.

CAUTION—Ninety percent of all transformer trouble is caused by permitting the train to lie across the rail and cause a short circuit when it jumps or is knocked off the track. If permitted to remain in this position, it will cause a short circuit and the circuit breaker will be making and breaking constantly until the short circuit is eliminated.

While American Flyer Transformers will easily stand 25 percent overload without harm, we recommend disconnecting the transformer from the house current immediately when you are not going to use your train for even a short period or when the train jumps the track.

GUARANTEE

American Flyer Transformers are guaranteed to be mechanically perfect when they leave our factory. Any transformer which will not deliver its rated capacity indicated on the name plate, or has defective terminal posts or switch, will be reconditioned or replaced free of charge for a period of six months after the date of sale to the consumer. If used in accordance with the instructions which accompany it, the transformer will not burn out. These transformers are given four separate tests or inspections before packing, so therefore, we cannot assume the responsibility for burned out transformers. The guarantee is void if any transformer is opened or tampered with or not used according to instructions.

ANOTHER **GILBERT HALL OF SCIENCE** PRODUCT
THE A. C. GILBERT COMPANY, NEW HAVEN, CONN., U.S.A.



INSTRUCTIONS FOR DUAL CONTROL TRANSFORMERS

Dual transformers are just what the name implies—two transformers in one. Each throttle can be operated independently from the other thus permitting the operation of two or more trains simultaneously on two layouts or two trains simultaneously on two sections of the same layout.

These transformers are designed specifically to operate electric trains and equipment and are not recommended for continuous or commercial use. They are to be operated on alternating current of 100 to 120 volts and will operate on frequencies of 50 to 133 Cycles.

Caution—These transformers should *NEVER* be plugged into 110 volt *DIRECT CURRENT*; if you are not certain of the exact type of current in your home, call your electric light or power company before attaching the transformer.

ASSEMBLY OF CONTROL LEVERS

The control levers for the transformer are packed in the box. To assemble the levers to the transformer, first loosen locking screw about three full turns; insert the cutout end of the lever rod, with the cutout section up, underneath the formed metal loop in the control section of the transformer (see Figure No. 1). Press lever down so it snaps into the spring lever holder. Next, fasten locking screw down so control lever will not come out when lifted.

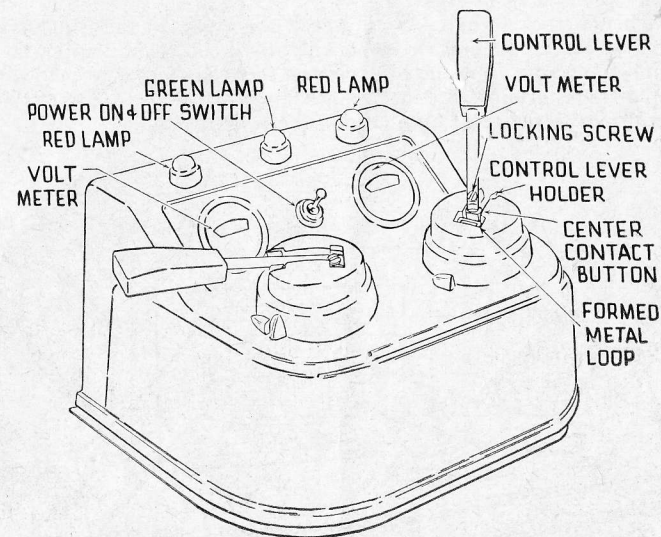


Fig. 1

VARIABLE VOLTAGE OPERATION

When the control levers are in position in the spring holders, they can be turned independently to vary the output voltage on either side which will be from 6 to 15 volts; when the control levers are all the way to the right, the voltage is on the low side at 6 volts and, as the control levers are moved to the left, the voltage gradually increases until the maximum of 15 volts is reached. This is clearly indicated by the voltmeters which are mounted on the transformer face directly underneath the red lights. To completely kill the track voltage, raise the control levers out of the spring control lever holders. This allows the center contact button to raise, breaking all current to the rails or if you so desire, you may shut off just one side by just raising the control lever on the side you wish to turn off.

DEAD MAN'S CONTROL

When these transformers were designed, a special feature—the American Flyer “Dead Man’s Control”—was built into the mechanism. Just as in real railroading where “Dead Man’s Control” is a fundamental safety feature on all trains, your American Flyer Transformer is now equipped to safeguard your passenger and freight train.

Here’s how it works. When the transformer control lever is held down but not locked into the spring control lever holder, current flows through the transformer to the tracks and your trains and accessories will operate normally. Just as your control lever is released, however, the current is broken and power is cut off. Just like a real railroad engineer, you have to be “on the job” in order to run your trains!

TO REVERSE LOCOMOTIVES

For reversing trains, the control lever is to be at the desired speed. Then the control lever is to be raised and lowered twice, which will operate the sequence reverse switch in the locomotive making your loco go backwards. Repeat same to have loco go forward.

ATTACHING TO TRACK

Assuming that you have your track all properly set up and are now ready, connect whichever side of transformer you wish to the track (see Figure 2) and proceed as follows:

Attach the track terminal to the track according to the directions furnished on the track terminal envelope which is included in your train set.

Connect one wire from the base post on the transformer to the base post clip on the track terminal. Connect another wire from the 7-15 volt post on the transformer to the remaining clip on the track terminal.

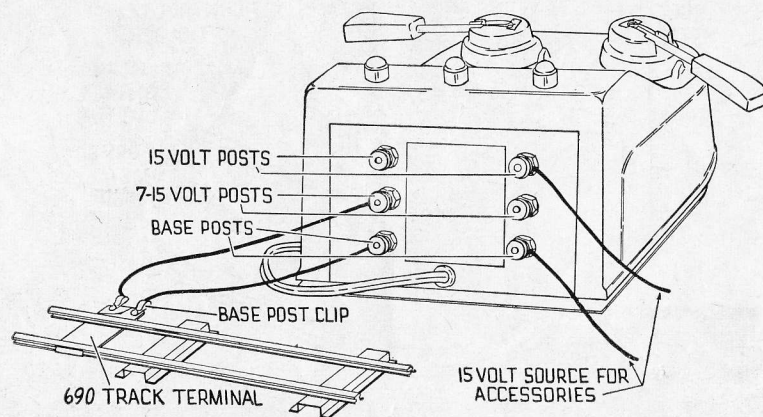


Fig. 2

ATTACHING TO TRACK FOR TWO TRAIN OPERATION ON SAME LAYOUT

As the base posts on your dual transformer are common, you can control either train independently from the other and have complete control of either one at all times. This means that you have to only insulate your inside rail with a fiber pin. You must however insulate your inside rail wherever you cross over from one loop to the other making sure your base post remains on the outside throughout the whole layout (see Figure No. 3).

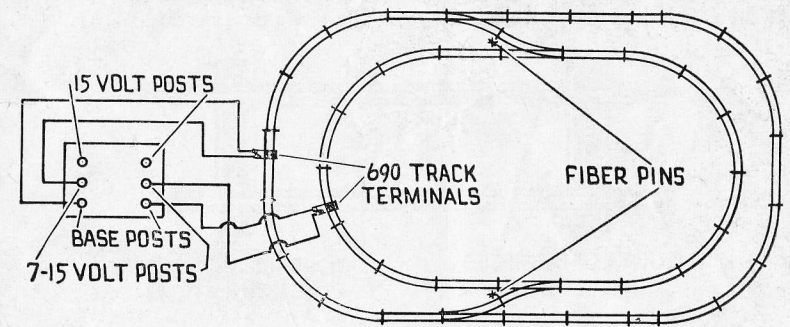


Fig. 3

ATTACHING EQUIPMENT

When connecting lighted and operating accessories, hook the wires to the base and the 15 volt post on either side of your transformer; this will allow them to work on a constant 15 volt current and will not be affected by the position of the control lever.

CIRCUIT BREAKERS

These transformers are equipped with (2) automatic self-setting type circuit breakers. In case of a short circuit or overload on either side of transformer, it will immediately break the circuit thus avoiding either side to burn out. As soon as the circuit breaks, the green light will dim and the red light will come on; when the over-load or short circuit is cleared up, the red light will go out and the green light will resume its brightness.

The 18B Dual Control Transformer has all the above features with the exception of your two volt meters shown on transformer face.

SPECIAL INSTRUCTIONS

During past years, transformers have been returned which owners claimed defective. In a large majority of cases we found, after investigating, that the transformer was all right and that the fault was with some other part of the train system. We give you, therefore, a few hints as to what to look for in case the train does not work when connections are made.

TO CHECK TRANSFORMER

Plug transformer cord in 110 volt A.C. outlet. Green light should now be on. Press control lever down so it is locked in the spring holder. Next fasten the bared end of a short piece of wire to the base post and lightly brush the other bared end across the 7-15 volt post. If a spark occurs, the transformer is putting out current, and you can read the amount of current delivered on the voltmeter. If the wire is held on the 7-15 volt post, the current breaker will open and the red light will light.

TO TEST TRACK LAYOUT FOR A SHORT CIRCUIT

Remove the train from the track and be sure there is no metal lying across the rails. Be sure all sections of track fit snugly; then connect a wire from the base post of the transformer to the base post clip of the track terminal. Connect another wire to the 7-15 volt post of the transformer. Brush