

American Flyer

INSTRUCTION BOOK

FOR OPERATING
AND ASSEMBLING
 $\frac{3}{16}$ " SCALE TRAINS
AND ACCESSORIES



The A. C. Gilbert Company, Erector Square, New Haven 6, Conn.
another GILBERT HALL OF SCIENCE product

Instructions, Suggestions
and Helpful Hints
for Planning and Operating
your



Developed at
THE GILBERT HALL. OF SCIENCE

Copyright 1952 by
THE A. C. GILBERT COMPANY
Erector Square, New Haven 6, Conn., U.S.A.

M2984

Printed in U.S.A.

C O N T E N T S

Planning the Railroad	4
Suggested Track Layouts	6
Wiring Diagram for Train Layout	8
Preparing the Right of Way	10
Using Rubber Roadbed	11
Building Grades	13
Assembling the Track	13
Attaching the Track Terminal.....	14
Jumper or Feeder Lines	16
Reverse Loops	16
Building Scenery	18
Transformers	19
Locomotive Reverse Units	22
Switches	23
Uncoupler	26
Automatic Action Cars	27
Illuminated Equipment	31
Operating Equipment	32
Track Trips	33
Scenic Structures	52
The Airchime Whistle	53
Using Equipment with 3-Rail Track	54
Track Maintenance	54
Maintenance of Rolling Stock	56
Smoke and Choo-Choo Units	58
Testing the Locomotive	59
Miscellaneous Tips	60
Lamp Data	61
Dos & Don'ts	63

PICTURE YOUR RAILROAD EMPIRE IN ADVANCE

In all the world of playdom, Miniature Railroading offers a pastime of never-ending thrills and countless hours of pleasure.

There's something fascinating about our great railway systems and their charm reflects on the imagination and inventive genius of youngsters and grown ups with the resultant desire to imitate and reproduce. Such a desire can, and probably will, become an accomplishment with you now that you own an American Flyer Train, for you are actually at the very starting point to enjoy all the thrills that such a hobby presents.

Picture your train speeding over the rails, passing green lighted signals and semaphores — roaring through tunnels and over bridges, smoke streaming from its stack, the noise of its “choo-choo” beating against the walls, and finally slowing down with a grinding of couplers and screeching brakes, as your station looms into view. Picture a scenic background with green fields, winding rivers, waterfalls and lakes — big cities and little towns nestling in the foothills along the right of way — tree-studded slopes with towering mountains and passes, and you have a panoramic view of your railroad amid the scenic grandeur of the great outdoors. You have something tangible to exhibit to your friends, something to view with pride — an example of your skill and handiwork. Such an achievement can easily become a reality, for American Flyer engineers and technical experts of the Gilbert Hall of Science have created dazzling new features in scale model trains and equipment for the further perfection and realism of miniature railroading.

On the following pages you'll find suggestions and helpful hints for planning and operating your railroad empire. Whatever your plan may be, build carefully, for precision and realism. You'll soon realize your hobby has an ever-widening horizon, that there's always something new to add, always something to keep your interest at highest pitch. There's a never-ending fascination in a hobby that carries all the fun of railroading — its air of adventure — its soul stirring sounds — its sense of mighty power that you, as the owner — the big boss or “Brass Hat” as they say in railroading — can control with a finger.

THE ROMANCE OF MODEL RAILROADING

In a short time, if not already, you will find that the operating facilities of your railroad empire are too limited. Expansion is in order and the Board of Directors must be approached for funds. It will be much easier to obtain this appropriation if a fairly definite plan of operation is laid out. Your railroad must have work to do in order to exist and you should decide what type of service, passenger or freight, it is to give and what communities and industries it is to serve before **you** purchase new equipment or prepare your permanent right of way.

You now have a freight or passenger train. You can't leave the train on the main line so you'll need a freight or a coach yard. Leaving the station for a trip around town and back to the station is a rather aimless job for a railroad. Better lay tracks to the next town, at least. Keep in mind the fact that space must be allotted for future expansion.

The freight yard will eventually have a number of tracks and switches with an assortment of cars and a switcher scurrying back and forth picking up cars and backing them onto the make-up track where a transcontinental freight train is being assembled. A powerful locomotive steams up from the round-house and waits to be coupled to this freight. Over near the station a string of stainless steel coaches, headed by a sleek looking two unit Diesel, stands ready for a long journey. The train caller, baggage smasher and station hands become alert at the approach of the express. It stops at the station for a moment. Passengers board it while succeeding stops are announced and then, whistle blowing, away it goes with its club car and Pullmans to resume its race against time.

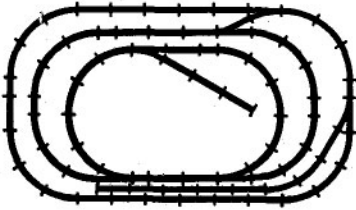
While it screams over a trestle and rushes through a tunnel, the block signals all show a green light indicating a clear road ahead. Meanwhile the freight gets a highball as the man in the signal tower clears it onto the main line. The signal lights, now red since the passing of the express, become green again and the freight train proceeds to a factory siding at the outskirts of town where it picks up a car of scrap iron just loaded by a magnetic crane. Thundering along, it crosses a highway over a massive girder bridge and pulls into an oil depot, uncoupling and leaving several tank cars of gasoline. As it travels on, it enters an open switch onto a passing siding. The switch is then thrown back to the main line leaving the train beneath a water tank, to fill its tender while the excursion train goes through to the Big City, drawn by a sturdy American Flyer K5-Pacific.

The excursion train finally reaches its destination. The express is now far out into the country whizzing by wayside stations and billboards, whistle blowing and smoke streaming from the stack. It cuts across the tracks of a branch line with a great clatter of wheels, while the local stops to allow it to pass, and on it goes over miles of rail to some distant city. Meanwhile the freight leaves the siding and continues its journey towards its western terminal.

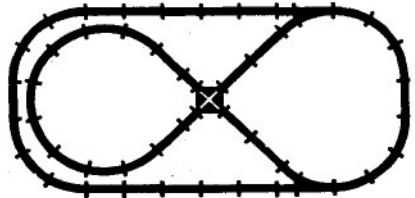
Every bit of this action is automatic or operated from a control board when you use American Flyer equipment. You sit in the dispatcher's chair with train orders before you and run your whole railroad system by simply pushing buttons and throwing levers. Of course, you probably won't be fortunate enough to have all this at once but you must start with a definite plan in mind, similar to the above system, and add to your present equipment, piece by piece, making each purchase increase **your** sphere of operations **along** the lines of your plan.

SUGGESTED TRACK LAYOUTS

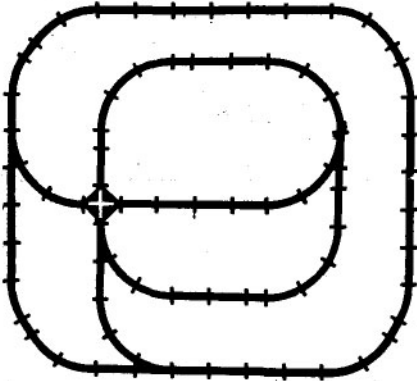
On this and the following pages are suggested track layouts showing the number of pieces of track and the size space needed for them. The size and shape of the space which is available to you for your railroading will determine what type layout you can use. It should be designed to provide for future additions. The more switches, track and equipment you add to your layout, the more interesting your railroad becomes.



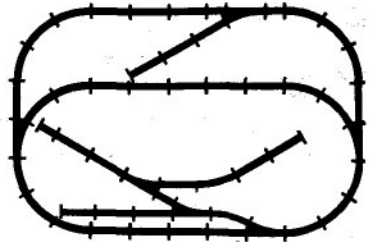
No. 4 — Space 5' x 9'. Requires 27 straight track, 36 curved, 7 half straight, 3 pair switches.



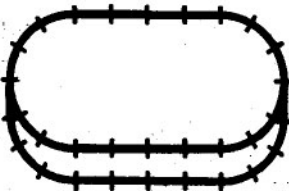
No. 5 — Space 52" x 108"
Track: 21 Curve, 18 Straight,
4 - 1/2 Straight, 2 - 1/2 Curve,
1 pair Switches, 1 Crossover



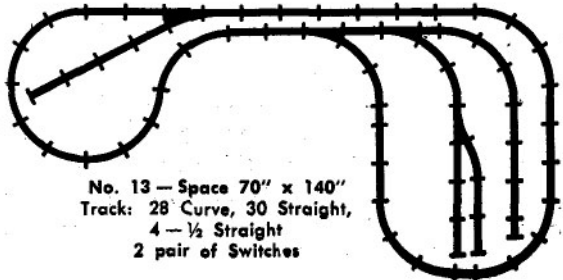
No. 29 — Space 100" x 106"
Track: 31 Straight, 29 Curve, 8 - 1/2 Straight
2 pair of Switches, 1 Crossover



No. 22 — Space 60" x 90"
Track: 23 Straight, 18 Curve,
4 - 1/2 Straight
3 pair of Switches



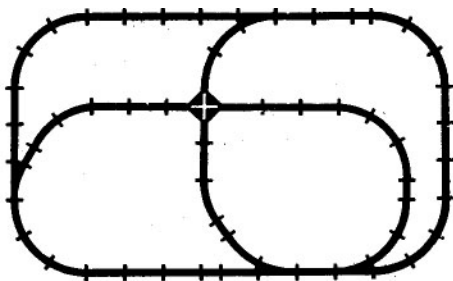
No. 8 — Space 50" x 80"
Track: 16 Curve, 12 Straight,
1 pair of Switches



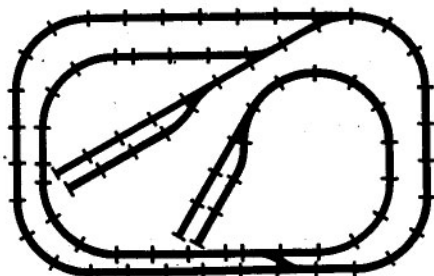
No. 13 — Space 70" x 140"
Track: 28 Curve, 30 Straight,
4 - 1/2 Straight
2 pair of Switches



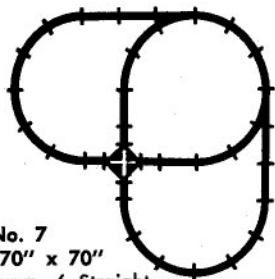
No. 6 — Space 40" x 96"
Track: 18 Curve, 4 Straight,
4 — ½ Straight, 1 Crossover



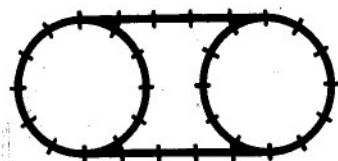
No. 4 — Space 70" x 115"
Track: 23 Curve, 22 Straight, 7 — ½ Straight
2 pair of Switches, 1 Crossover



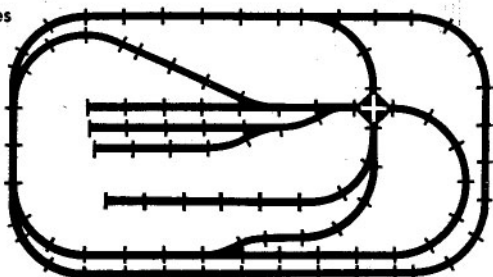
No. 18 — Space 70" x 110"
Track: 28 Curve, 41 Straight,
3 — ½ Straight, 3 pair of Switches



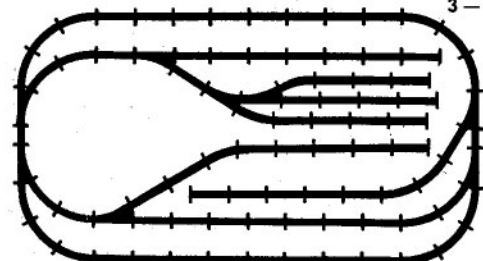
No. 7
Space 70" x 70"
Track: 19 Curve, 6 Straight,
4 — ½ Straight, 1 pair of Switches,
1 Crossover



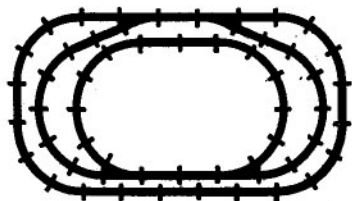
No. 2 — Space 40" x 90"
Track: 20 Curve, 6 Straight,
2 pair of Switches



No. 10 — Space 72" x 128"
Track: 30 Curve, 48 Straight, 3 — ½ Straight
3 — ½ Curve, 4 pair of Switches, 1 Crossover

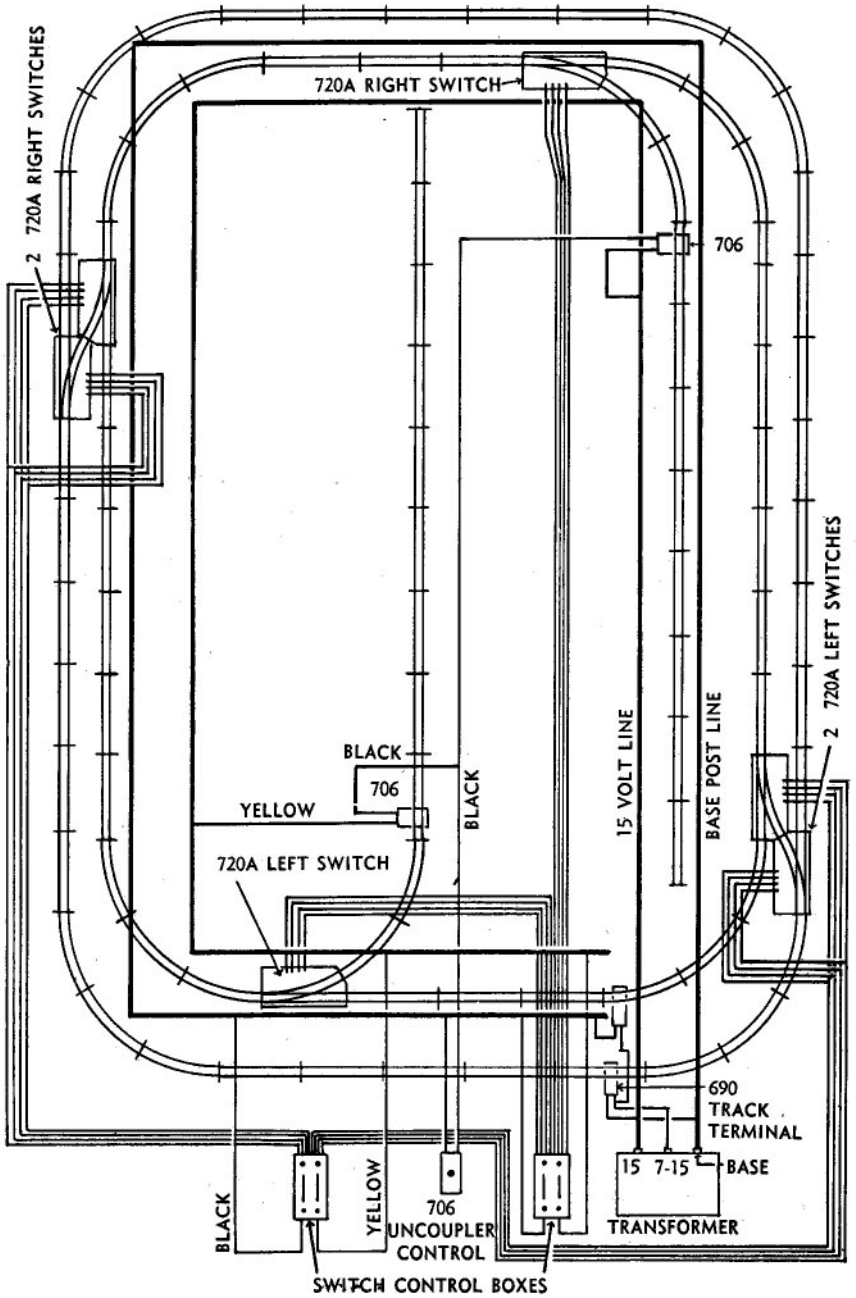


No. 30 — Space 65" x 120"
Track: 23 Curve, 58 Straight, 2 — ½ Straight
4 pair of Switches

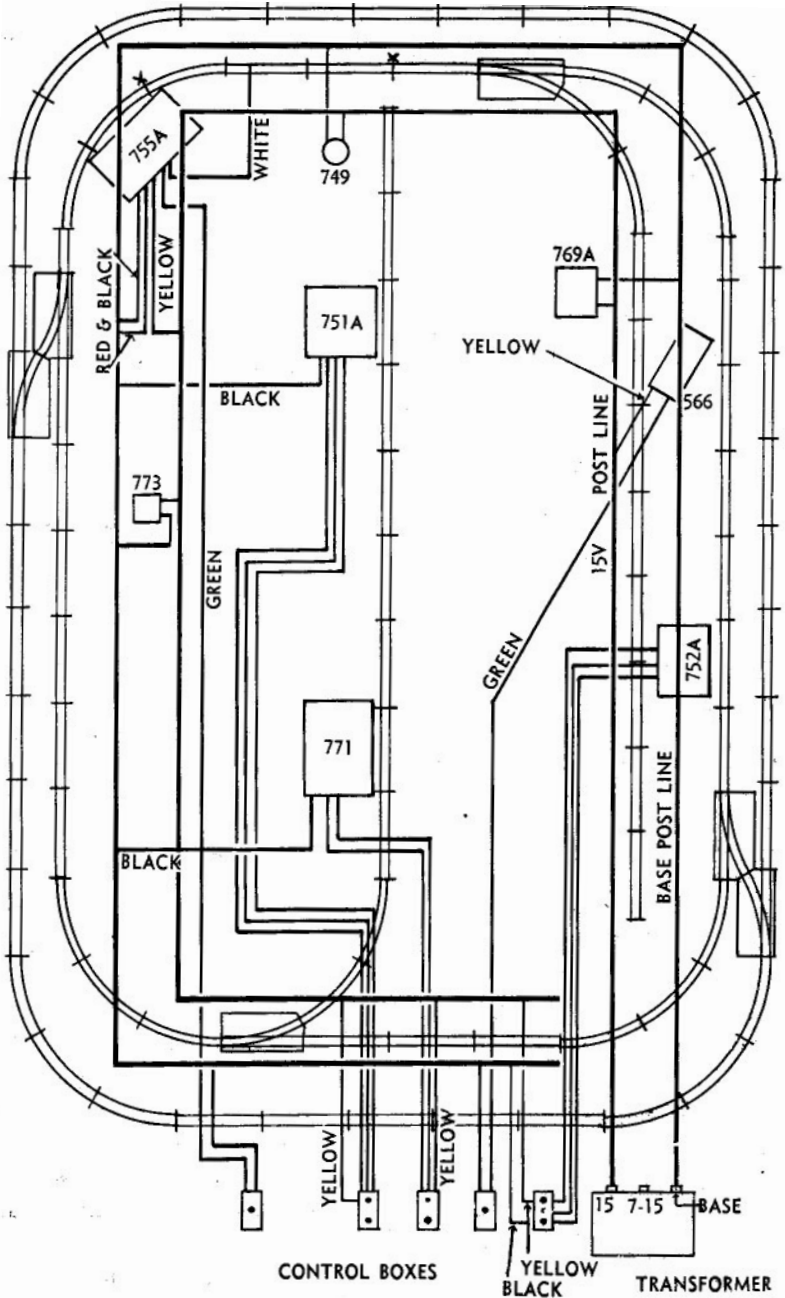


No. 9 — Space 50" x 90"
Track: 32 Curve, 18 Straight,
2 pair of Switches

METHOD OF WIRING TRACK



CONVENIENT METHOD OF WIRING EQUIPMENT

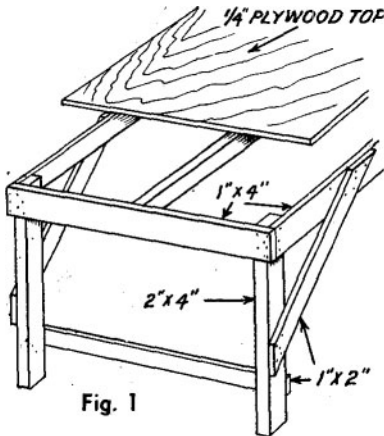


566 Whistling Billboard
 749 Boulevard Light
 751A Log Loader
 752A Coal Loader

755A Talking Station
 769A Aircraft Beacon
 771 Operating Stockyard
 773 Oil Derrick

PREPARING THE RIGHT OF WAY

Start your railroading on the floor. Quite a sizable layout can be used on the floor before the inconvenience of moving it outweighs the enjoyment. When your future layout is fairly well in mind commence looking for a place where it may be set up and left intact. The greatest pleasure is derived from your American Flyer Model Railroad when you have found a place in your home where your layout can be set up permanently. If there is a spare room available it makes an ideal location. The attic or cellar can be used provided there is a convenient electric light outlet. Room should be available for the expansion and development of your layout.



The first requirement of a permanent layout is a good substantial table. If the accompanying sketch (Fig. 1) is followed a firm table will result. The table top should be 30" above the floor and perfectly level and of an area that will provide space for the layout you intend to develop.

Most Ping Pong tables are satisfactory for use. Minimum track diameter being 40", table top should be not less than 44" wide. Note space required for different layouts as illustrated on pages 6 and 7. Size of table is determined by the layout you decide to make.

When permanent layouts are not practical — by permanent layouts we mean a complete layout on a solid table which will not be moved — it is a good idea to mount track layouts permanently to plywood panels so they can be picked up in sections and stored readily.

Plywood is the best material for the table top. It should be at least $\frac{1}{4}$ " thick. Plywood is sold in sizes 4' x 8' and 5' x 9'. Wherever a joint is made between two pieces of plywood, it is best to place a 2" x 2" cross member under the joint. Before nailing down the table top it should be checked every way to see that it is level.

Railroad right of way and sidings are usually covered with ballast (crushed stone, cinders, etc.). Slate covered roofing paper is a very suitable substitute in constructing your model railroad. It can be obtained from your lumber dealer. This paper comes in rolls and should be laid out so that it will flatten itself before working with it.

Rails can be fastened directly to table top, but rails mounted on road-bed strips, covered with roofing paper, give greater realism. Method of mounting sections of track is shown in Fig. 2.

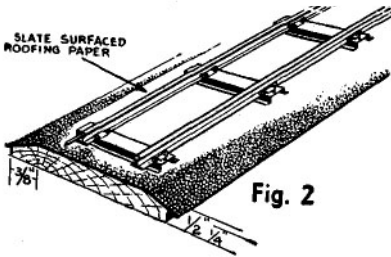


Fig. 2

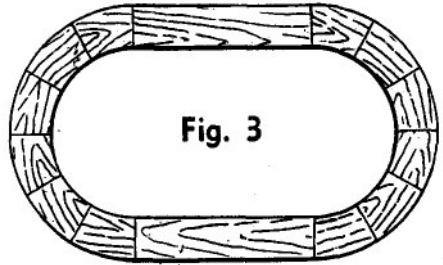


Fig. 3

The top surface of these boards should be $7\frac{1}{2}$ " wide for double track or $3\frac{1}{2}$ " wide for single track. The material used should be $\frac{1}{2}$ " thick, well seasoned white pine or spruce. When constructing the curved roadbed make it up of small segments $\frac{1}{12}$ of a circle as shown in Fig. 3. When laying out curved roadbed for double track operation, be sure to temporarily place your track so that you can cut your wood segments for the roadbed correctly. Cover the roadbed with grey slate surfaced roofing paper and you will have a Tru-Model roadbed. Illustrated on pages 6 and 7 are suggested $\frac{3}{16}$ " Scale track layouts and with each is given the table space required, track and equipment needed.

For best results the track sections should be fastened down with small nails or brads using the holes provided in the ties. Do not tighten down on the nails to the extent that the roadbed is distorted.

USING RUBBER ROADBED

The above-mentioned process of making a realistic-looking roadbed is one which takes considerable time and special tools to accomplish. Therefore, American Flyer engineers have developed a very realistic-looking rubber roadbed into which the track is nested firmly and gives the appearance of a real stone roadbed as used by all railroads.

This roadbed not only improves the appearance, but it helps deaden the noise so all you hear is the "clickety-click" of the wheels on the rails. The rubber roadbed comes in both straight and curved sections, and can be cut to be used in shorter lengths.

To cut for use with half-sections, just use a sharp knife and cut the roadbed in half, then move one of the crossties on the track to line **up with** the hole

in the roadbed. The tie can be moved by first loosening the metal clamps with a screwdriver and sliding the tie back on the rail. See Fig. 4.

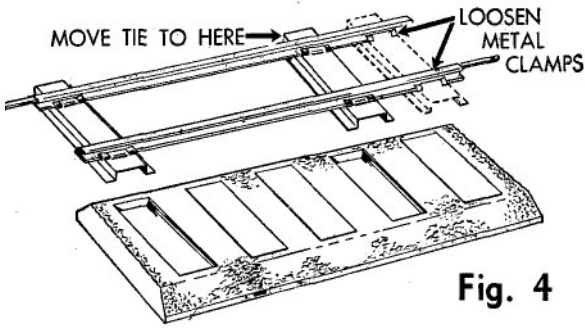
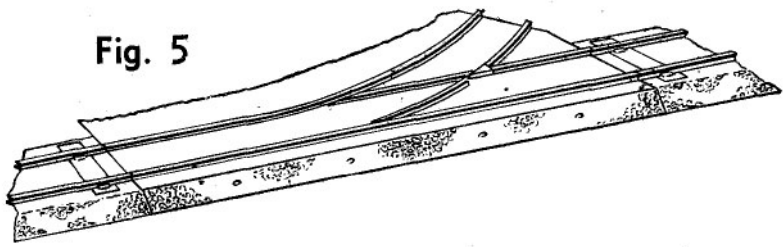


Fig. 4

To fill in edges along switches and crossovers, cut the imitation ballast edge from a section of roadbed and tack it to the table along the edge of the switch so it blends with the rest of the track roadbed as shown in Fig. 5.

Fig. 5

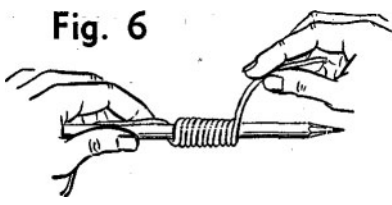


When fastening track with rubber roadbed to the table, do not nail through the track holes, but tack the edges of the roadbed with small brads or staples. This does not allow for a transfer of noise through the nails to the table top.

For additional realism, the built-in ties on the rubber roadbed can be blackened to match the ties on the track; this can be done with a black ink or a marking brush.

Where spaces are needed to locate special track trips or operating mechanisms, the rubber can be cut away. In cases such as the 697 Track Trip, it may be necessary to place a heavy piece of cardboard underneath the trip to make up for the difference in height.

Fig. 6



Along one side of your table top, space should be provided for a control panel upon which you should mount your transformer and controls. Lead wires from your control panel, if so desired, can be placed on the underside of the table, being led to the top sur-

face through holes at points where controlled equipment is placed. A good temporary arrangement for these lead wires is to wind them around a pencil. When the pencil is removed the coiled wire can be stretched between the two points to be connected without leaving a lot of slack wire on your layout. (See Fig. 6.)

BUILDING GRADES IN THE LAYOUT

When building a permanent type layout, you may desire to have more than just the flat table top, and want to incorporate some overhead passes or grades in the track system. This should be carefully planned as the grades should be gradual and not too high. Four and one-half ($4\frac{1}{2}$) inches should be sufficient for any overpass and this height should not be reached in less than about 12 feet. If grades are steeper, you will find that they are out of proportion to the rest of the equipment and that operation becomes poor. Grades can be built by making a series of "L" shaped blocks at varying heights, as shown in Fig. 7.

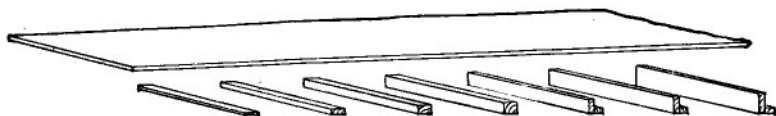


Fig. 7

Tack the two pieces of wood together, then mount them to the table top so that the gradual rise is accomplished; then fasten a strip of plywood across the top of the uprights; this will be used for the track bed. Screen can then be tacked from it to the table top, to build up the scenic effects as described on page 19. The steeper the grade, the greater the tractive power of the locomotive must be to pull a load up it; if more traction is needed to climb the grade, this can be accomplished by adding lead strips or weights of some sort into the locomotive boiler. When adding weight to the locomotive, care must be taken that no short circuits develop or that the moving parts are not restricted in any way.

HOW TO SET UP A TRACK LAYOUT

Having decided on the size and type of layout you wish to assemble, lay the separate pieces of track flat on table and join by inserting the pin of one section as far as it will go in the opening of the next section. CAUTION: Push together. Do not twist, bend or squeeze as this may distort the track and cause the wheels to bind, and result in uneven operation of the train.

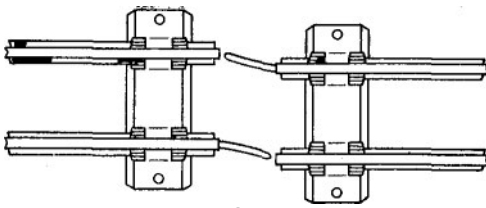


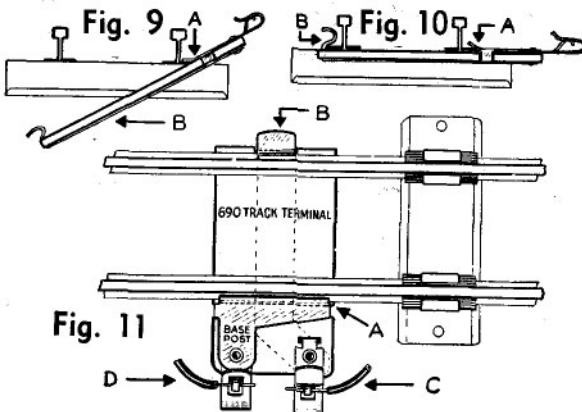
Fig. 8

fit together loosely this can be remedied by bending both pins outward about 1/16", as shown in Fig. 8, then when they are assembled, the results will be a good connection both electrically and mechanically.

For the purpose of holding the track together firmly, American Flyer has developed the No. 693 Track Lock, which is a spring clip, packed in most train sets for use when track is not to be fastened to a table or roadbed.

After assembling all the track for your layout be sure and test it both electrically and for operation before you fasten it down. To test it electrically, fasten one wire to the Base Post of the transformer and one wire to the 7 to 15 Volt Post, turn the handle half way open. Be sure that transformer is plugged into a regular 110-120 Volt A.C., 60 Cycle outlet, brush the bared ends of the wires together and see that you get a small spark. This indicates the transformer is alive. Now hold the bared end of one of the wires on one rail and brush the bared end of the other wire on the other rail. If a spark occurs, there is a short somewhere in the layout and it will have to be located by following the procedure described on page 55. If no spark occurs, it is o.k. Now fasten the No. 690 track terminal to the track as described below, and hook the transformer wires to the terminal clips. Place the locomotive and tender on the track and allow it to run slowly around a few times and if it works o.k. then fasten the track to the base.

WOW TO ATTACH-NO. 690 TRACK TERMINAL



When attaching No. 690 Track Terminal to a section of track, put shoulder shown as "A" against bottom of outside rail as in Fig. 9. Press spring shown at "B" up and around bottom of other rail as in Fig. 10. Take wires shown as "C" and "D" in Fig. 11, cut off about $\frac{1}{2}$ " of insulation from each end of wire. Connect **BLACK** wire from clip marked **BASE POST** on the track terminal to the **BASE POST** on the transformer. Connect the **WHITE** wire from the remaining terminal clip to the **7-15 VOLT POST** on the transformer as shown in Fig. 12, below. If the terminal is used to supply track current to a piece of equipment, the wires "C" and "D" are connected to the two terminals on the equipment unless equipment instructions read otherwise.

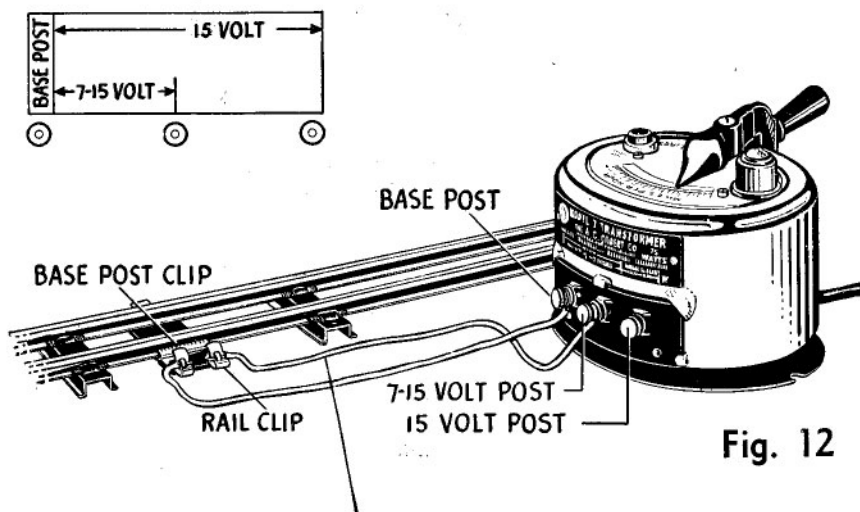
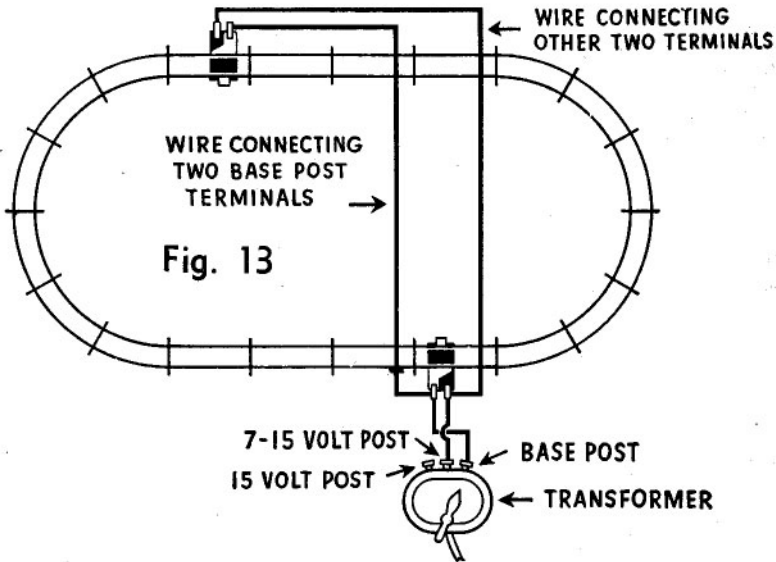


Fig. 12

When wiring the air chime whistle control unit, do not use this wire from 7-15 Volt Post, but follow the wiring diagram on page 53.

JUMPER OR FEEDER LINES

In many large layouts it is frequently found that the train slows down when it reaches the part of the track which is farthest from the transformer. This can be remedied by using another track terminal at that point and



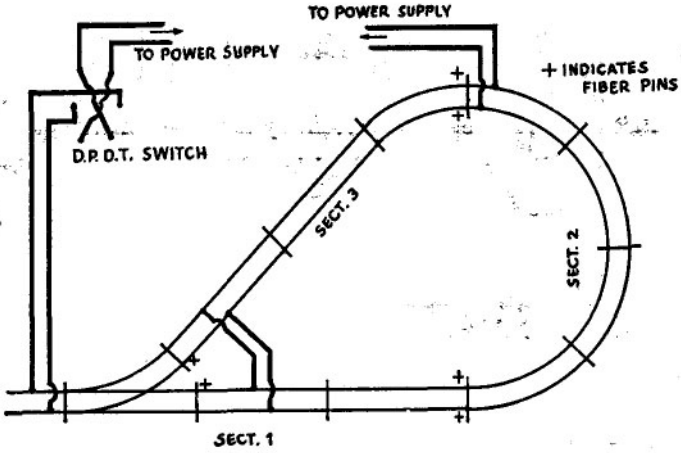
running feeder wires from the one terminal to the other, being sure that the **BASE POST** clips are connected with one wire and the other two clips are connected together with a second wire. See Fig. 13. Be sure both **BASE POST** clips are fastened to the same rail.

Be sure this method is used when using an airchime whistle control box and do not run jumper wires direct from the transformer.

REVERSE LOOPS

In designing and wiring layouts, some people have encountered difficulty in the attempt to incorporate a reverse loop. This is a convenient method of reversing the direction of travel of the train. Therefore, we have packaged a **No. 698 Reverse Loop Kit**, which contains the necessary double pole, double throw switch, terminals, fiber pins, and wires to conveniently wire up a reverse loop. Note Fig. 14 for wiring diagram. It is necessary to remove the steel pins from the six places marked "X" and replace them with fiber pins; then wire according to the diagram, Let us now assume the train is running forward

Fig. 14



on the straight track, which is section 1. As it passes through this section, and into section 2, the double pole, double throw switch is thrown, which changes the polarity of both section 1 and section 3 and the track switch is then thrown to receive the train from section 3. When the double pole, double throw switch is thrown, it does not affect the current in section 2 on which the train is operating at the time the changes in polarity are made.

In cases where the track forms two reverse loops as in diagram No. 15 the hook-up should be made as shown and while the locomotive is in the insulated section the double pole double throw switch should be thrown.

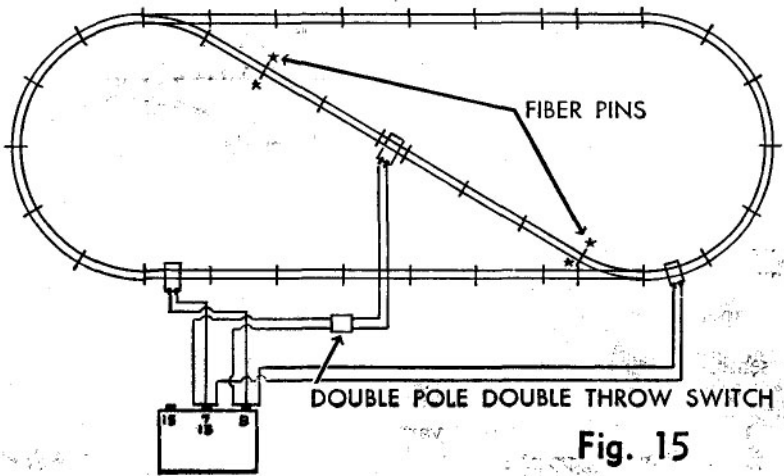


Fig. 15

SCENERY ALONG THE RIGHT OF WAY

With the expenditure of a small amount of money an astonishing variety of scenic effects can be constructed. Railroad yards, highways, farms, forests, and mountains are easily built with ordinary household materials.

Additional realism can be obtained by adding train and station figures, highway and railroad signs, park benches, mail boxes, etc. around your layout. For this American Flyer has a complete line, consisting of **No. 578 Station Figure Set**, **No. 30 Highway Signs**, **No. 31 Railroad Signs**, **No. 32 City Street Equipment** and **No. 33 Station Figures**. They are all hand painted miniatures of the real thing.

In one section of your layout you will want your railroad yard with its **No. 593 Signal Tower** and **No. 774 Floodlight Tower** commanding a view of your switch layout. On sidings you can have your steel scrap yard and a **No. 583A Electromatic Crane** for loading your Gondola Cars. Several large oil storage tanks can be made from sections of round cardboard boxes used for oats or salt. This set up against a background of tenement houses should make a realistic setting.

By the use of several **No. 773 Oil Derricks** along with the **No. 768 Oil Supply Depot**, a real oil field scene can be built up. Have this on one section of the layout and use a long string of tank cars hauled by a **No. 370 General Purpose Diesel** switcher, and the scene cannot be beaten for realism.

On the highway leading out of the railroad yard where it crosses the tracks a **No. 592A Crossing Gate** could be used, blocking the path of small automobiles, such as are found in any Toy Store, while your train passes.

With the help of log and coal loaders, automatic dump cars, stock yards and loading platforms, stations, bridges, various types of semaphores, miniature diners, watertanks and tunnels, an actual working scene can be built which can match even the most vivid imagination. The highways are made of strips of wood painted a grayish white, its seams marked off with black paint, representing tar.

Country roads, driveways, and paths can be made by applying a coating of glue or shellac to the surface, and sprinkling American Flyer's **No. 22 Scenery Gravel** on it. Along the highway a fence can be constructed of thin wood shaped up with a penknife and glued together.

The highway could lead to a rural section, where trees and foliage can be assembled, using a supply of twigs and dry weed roots. These pieces should be dipped in shellac and, when tacky, shaken around in a cardboard box containing finely chopped-up yarn of suitable shades of green.

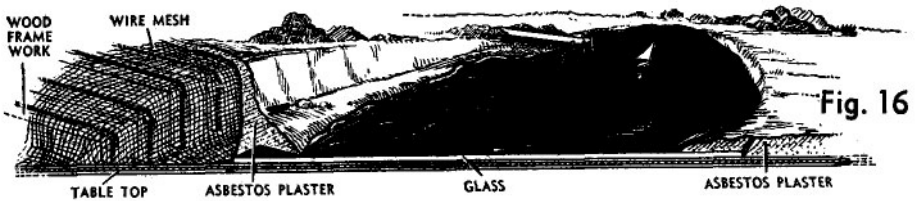
Beautiful green fields and lawns are quite easy to make when using American Flyer's **No. 21 Imitation Grass**. Just paint the surface to be covered

with a green paint, and shake the grass on through a sieve. Allow the paint to dry, then remove the excess grass with a light brush or with a vacuum cleaner attachment.

For weeds, select a good variety of weeds from the nearest vacant lot and dip them in green paint of varying shades.

A cornfield can be accomplished by removing one side of a piece of corrugated board, such as packing boxes are made of, exposing the ripple surface. To represent earth spread a thin mixture of crack filler over the entire surface. Small pieces of grass stalk should be inserted to represent stubble, and bundles of longer pieces of grass will represent shocks of corn.

A piece of window glass, painted blue-green on the underside to represent water, makes an excellent river or lake, (See Fig. 16). A realistic shoreline may be obtained by spreading crack filler around the edges, or by cutting an irregular shaped hole in the table and fastening the glass beneath it. A small boat and a wharf or bridge will complete this interesting feature.



Mountains serve as a most suitable background for your rural scenery. They are not too difficult to make. A rough frame covered with paper or wire mesh, or even heavy sheathing paper purchased from any lumber company and crumpled into a satisfactory shape supplies the foundation. Over this pour a mixture of asbestos plaster or of crack filler and mold it into the desired contours. Allow a day for it to dry before applying paint. Water colors or artists oil colors may be used. Choose shades of green, brown, yellow and blue which fit the scene you wish to reproduce. By copying nature's color-scheme and blending carefully where two colors come together a very real and satisfying effect will be obtained.

POWER SUPPLY— “SAFETY FIRST” TRANSFORMERS

Before purchasing a transformer, it is necessary to know the type of current which you have in your home. If you are not absolutely sure of this, your electric light company will be only too glad to tell you the voltage and whether it is Direct Current or Alternating Current and if A.C., the number

of cycles. This information is important in order that you may select the proper transformer for your train operation.

While these factors determine the type of power supply you need, the wattage is determined by the size of your electric trains and the number of accessories you have. The wattage of a transformer is a measure of its capacity. The higher the wattage, the larger the train and the more equipment it will operate.

AMERICAN FLYER Transformers are manufactured in four wattages - **25, 75, 100 and 250 watts**. Consult the latest American Flyer catalog or your dealer for full information as to the proper transformer to be used with your train layout. It is always best to purchase a transformer with greater wattage than the one required to operate the train alone. In this way, you will be able to provide adequate current for the operation of any additional equipment which you may later decide to use on your railroad. All American Flyer Transformers have a 15 volt maximum output. In determining what transformer to use, make your selection based on the amount of wattage and not on the voltage.

All American Flyer Transformers **except** the No. 1 and No. 2 are equipped with an Automatic Circuit Breaker. **When** a short circuit or overload occurs the red pilot light lights and the breaker opens the circuit to prevent damage to the transformer. When the short or overload has been cleared the breaker is reset by simply pushing the "Reset Button" located on the top of the transformer.

The **No. 48 and 19B** Transformers are not equipped with the reset button, but have a built-in thermostatic circuit breaker which automatically resets itself when the short circuit has been corrected. **If** the short is not corrected it will continue to go off and on until the short is removed.

The Circuit Breaker protects both the 7 to 15 volt circuit and the 15 volt constant circuit against short circuit or overload.

The No. 8B and 12B Transformers are equipped with a green "Power On" indicating pilot light and a press-type reverse switch.

The No. 19B Transformer is equipped with power-on switch, green power-on light, red warning light, and a voltmeter to show how much voltage is being supplied to the track; and an ammeter to show how many amperes of current are being drawn by the equipment used.

The No. 19B Transformer has the new and exclusive "Deadman's Control" handle, which can cause train to stop as soon as the throttle is released by the operator.

The No. 12B Transformer has a line switch which can be used instead of pulling the plug to shut off the power supplied to the transformer when it is not in use.

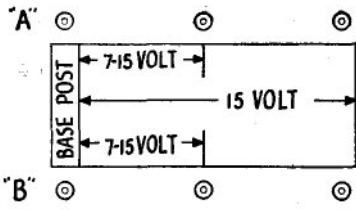
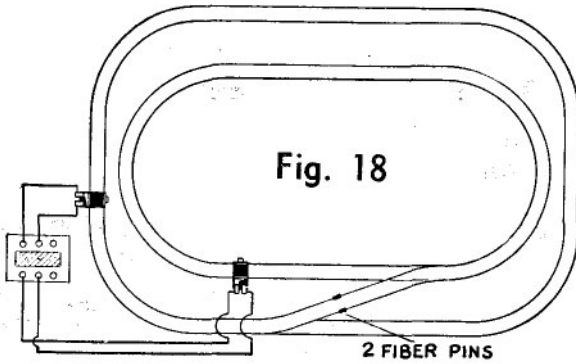


Fig. 17

The No. 12B Transformer is a Dual Transformer. It has two control levers and two corresponding sets of three terminals, as shown in Fig. 17. Each throttle operates separately, thus permitting the operation of two or more trains simultaneously on two sections of "A" layout as shown in Fig. 18.



AMERICAN FLYER TRANSFORMER DATA

Transformer No.	A. C. Voltage	Capacity	Frequency	Variable Voltage Range	Fixed Voltage
1	115	25 Watts	60 Cycles	7-15 Volts	
2	115	75 --	60 --	7-15 --	15Volts
4B	115	100 --	60 --	7-15 --	15 --
8B	115	100 --	60 --	7-15 --	15 --
12B	115	250 --	60 --	7-15 --	15 --
19B	115	300 --	60 --	7-15 --	15 --

TO CHECK THE TRANSFORMER. Press Reset Button to be sure it is down. Turn the lever half on. Connect one end of a piece of wire to the Base Post and touch the 7 to 15 volt Post very lightly with the other end. (DO NOT HOLD THE WIRE ON THE 7-15 VOLT POST. JUST TOUCH IT LIGHTLY.) If a spark occurs the transformer is O.K. If no spark occurs the transformer is defective unless the fault is at the wall socket which can be checked by plugging in a bridge lamp.

CAUTION: Ninety per cent of all transformer trouble is caused by permitting the train to lie across the rails and cause a short circuit when it jumps or is knocked off the track. If permitted to remain in this position the cars or locomotive cause a short circuit and the transformer will burn out.

While American Flyer Transformers are built for safety, 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.

LOCOMOTIVE REVERSE UNITS

The Locomotives have universal type motors and can be operated on either direct or alternating current and have a sequence reversing switch which performs a cycle of four steps, forward, neutral, reverse 2nd neutral. If the Locomotive is moving forward and the current is turned off, then on, the train will stop with the lights illuminated. If the current is again turned off, then on, the train will go in reverse. To make the train go forward again, it is necessary to repeat these operations. In other words, the current must be turned off and on twice. To make the control inoperative, that is, to make the train continue in the same direction, irrespective of the number of times the current is broken, shift the locking lever on the control unit. On some Locomotives, this protrudes from the top of the Locomotive and on others it protrudes from the bottom of the tender. This locks the control. The lever must be moved into the locked position while the current is on and the locomotive is proceeding in the desired direction.

DIESEL LOCOMOTIVES

Locking Lever

To make control inoperative, that is, to make the train continue in the same direction, irrespective of the number of times the circuit is broken, the following procedure should be used.

Have the locomotive on the track running in the reverse direction. Then shut off current and turn it on again. The remote control unit of the locomotive will now be in a neutral position.

Then with one hand tilt locomotive slightly to one side so a finger of the opposite hand can be inserted underneath the locomotive to close the locking lever.

The movement of the locking lever will have moved the remote control unit from the neutral position to a forward position and locked it in place.

EQUIPMENT

American Flyer Trains can be coupled, uncoupled, reversed in direction, stopped and started again in the same direction, switched from one track to another, caused to operate on a Dead Block System with one or more trains on the same layout; all this can be controlled from a central point any distance from the tracks.

On the following pages you will find complete instructions for the hook-up and use of all American Flyer equipment and operating cars.

NO. 720A REMOTE CONTROL AND NO. 722A MANUAL CONTROL TRACK SWITCHES

After you have acquired a train set and ran it for a while, you soon will want to do more than just run it around a circle or oval. You will want to be a “dispatcher” and shunt your train onto sidings, have double layouts and run trains from one layout to another, have double lanes of traffic and switching yards. You will find after checking over the various track layouts shown on pages 6 and 7, that most of them require switches. These are only suggested layouts and most railroaders would rather design their own layouts to fit their respective needs.

American Flyer switches are very simple to hook-up and operate. Just set the switches in the track layout the same as a piece of straight or curved track and hook up the wires from the control box as shown in Fig. 19 on Page 24.

For Use With Transformer

Hook the single **YELLOW** wire from the control box to the **15 VOLT POST** on the transformer and the single **BLACK** wire to the **BASE POST**. The two 4 wire cables go to the two switches and the various colored wires are attached to the corresponding colored terminals. With this hook-up the switch and control box lights are always lighted and you know at any time which way the switch frog is set.

These new **AMERICAN FLYER** switches are really two kinds of switches in one, that is, they can be used in the conventional manner or by simply moving a button, two or more trains can be operated at the same time without the use of special control buttons or block signals.

To use the switches in the regular manner, move the button toward the position marked regular operation as far as it will go.

To operate two or more trains on the same layout at the sametime, move the button to position marked 2-train operation. With the button in this position trains will operate only on the loop the switch is set for. **If** the switch is set for the inside loop, any train which happens to be on the outside loop will stop. When the switch is reset for the outside loop, the train in this loop will start and the train in the inside loop will stop.

The No. 722A Manual Control switch is used the same way as the No. 720A Remote Control switch with the exception that it operates with a manual lever instead of electricity, and is not lighted. Also, there are no wires to hook up.

THE USE OF THE NO. 697 TRACK TRIP FOR THROWING TRACK SWITCHES AUTOMATICALLY

Switches can be thrown automatically by the locomotives so that there is no chance of running into a switch which has been thrown against the oncoming train and causing a derailment. This is accomplished by hooking the trip as shown in Fig. 20.

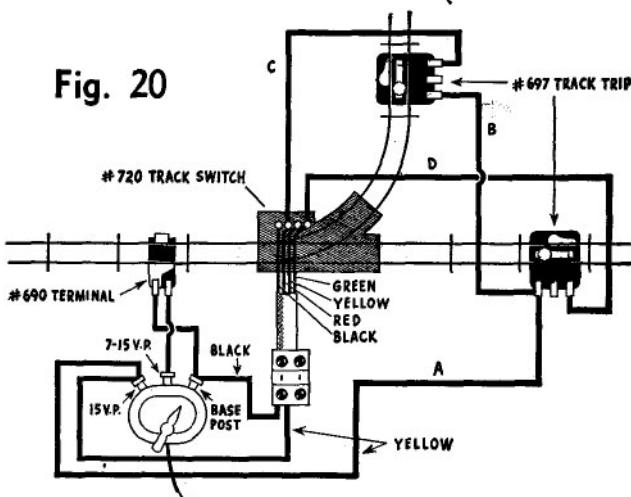
Place a No. 691 Trip ahead of the switch on both the curved and straight sections. Keep the trip about two sections of track from the switch. Hook the control box to the switches as instructed.

Next **hook** wire "A" from clip 1 on the one track trip to the **15 VOLT POST** on the transformer.

Connect the 2 No. 1 clips on track trips with wire "B".

Connect wire "C" from the No. 3 clip on the track trip which is on the curved rail to the **RED** post on the track switch.

Connect wire "D" from the No. 3 clip on the track trip which is on the straight rail to the **GREEN** post on the track switch.



Adjust the trip so only the locomotive will actuate it, then when the train approaches the switch and it is set against it, the trip will automatically cause the frog to throw open and the train will pass through without derailing.

The use of track trips to throw switches is not recommended on small layouts where the train is constantly passing over the trip, as this may result in over-heated switch coils.

Additional information on the 697 Track Trip can be found on page 33.

COUPLING AND UNCOUPLING OF CARS

American Flyer cars couple automatically on curves, sidings, switches or anywhere on your layout and do so without the use of clumsy and unsightly coupling devices. By simply backing your train to the car you want to pick up, the couplers snap together and if you reverse your locomotive to move forward you have your train assembled. To uncouple cars automatically is just as simple.

INSTRUCTIONS FOR OPERATING REMOTE CONTROL AUTOMATIC UNCOUPLER NO. 706

The operation of the Uncoupler is very simple. With it you can uncouple cars on a curve as well as on a straight track. It can be attached anywhere along the track simply by placing it underneath the track between two ties so that the lower edge of one rail rests under the raised portion of the metal strip with the U-Shaped cutout. Turn the locking lever so it clamps over the lower part of the other rail. Note figure 21.

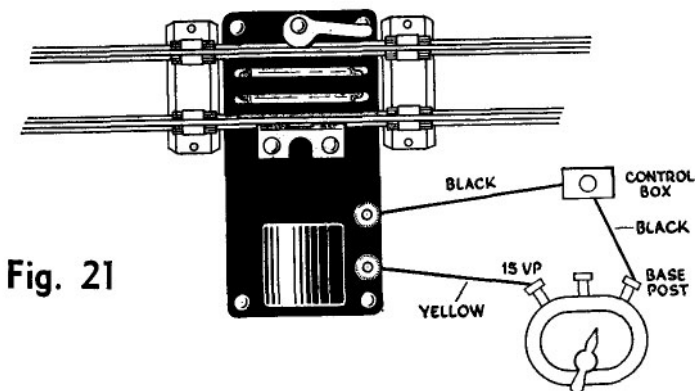


Fig. 21

Connect the **YELLOW** wire from the uncoupler to the **15 VOLT POS-** on the transformer.

connect the long **BLACK** wire from the uncoupler to a clip underneath the control **box**.

Connect the short **BLACK** wire from the other control **box** clip to the **BASE POST** on the transformer.

The uncoupler is now ready to operate. **As** the cars **pass** over the uncoupler, press the button, the ramp will snap up and uncouple the cars.

The couplers on American Flyer cars are adjusted and tested before packing. The correct adjustment is to have the curved or lowest part of the coupler even with the top of the rails. **If** the cars do not couple or become uncoupled by themselves while running, the coupler may be out **of** adjustment. It can be corrected by placing the car on a section of track and bending the coupler either up or down to put it in the correct position.

AUTOMATIC ACTION CARS

The **use** of automatic action cars greatly increases the enjoyment of model railroading. You can drop a load of logs, coal or scrap metal, then load the cars again by means of automatic loading units operated by remote control. You can unload armored cars and pick up and deliver mail bags on the fly.

All this can be done by using the automatic cars made by American Flyer, and they are easy to hook up and operate.

Each car comes equipped with a special rail section (which clamps on the track), control box and wires.

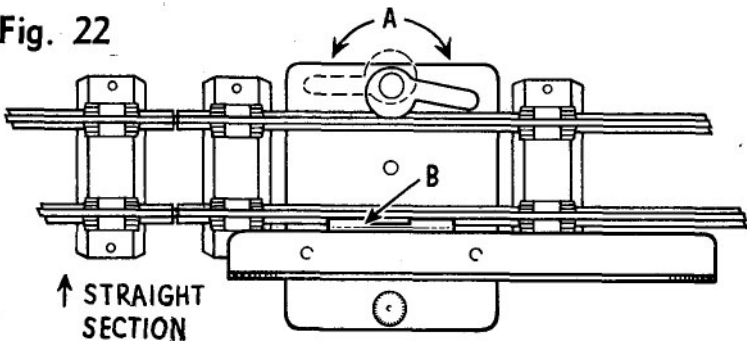
Attaching the 712 and 713 Special Rail Sections for the Operation of Action Cars

The No. 712 special rail section is used to operate the No. 715 Automatic Unloading Car, the No. 719 Coal Dump Car, the No. 714 Log Unloading Car, the No. 732 Operating Baggage Car and the No. 734 Operating Box Car,

The No. 713 special rail section is used to operate the No. 718 Mail Pick-Up Car. They are the same, with the exception that the No. 713 has a post attached to hold the mail bag and wire connections are different.

They are attached to the track in the following manner:

Fig. 22

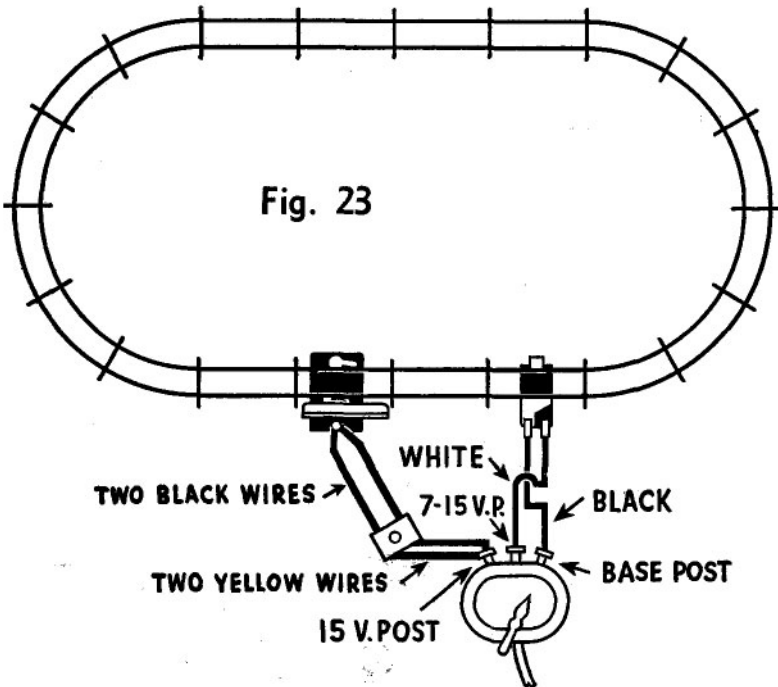


With the locking lever "A" facing left, as shown by the dotted line in Fig. 19, insert the fiber base of the special rail section between the first and second ties on the desired section of straight track, at a point in your layout where you want the car to operate.

NOTE: It is important when operating the automatic action cars that the metal wheels on the one truck should ride on the rail which has the base post current. In some hook-ups it may be necessary to change the location of the metal wheels on the truck. This can be accomplished by spreading the truck slightly taking the wheel and axle assembly out and changing the wheels to the opposite side.

See that the bottom portion of the outside rail rests underneath the raised part of the metal strip "B," then turn the locking lever "A" to the right as far as it will go, so it clamps over the bottom part of the inside rail. As shown in Fig. 22, there must be at least one section of straight track in front of the special rail section so that any rolling stock coming out of a curve will not overhang enough to cause interference.

The cars should be placed on the track so the small metal contact shoe which protrudes from one of the trucks, is on the same side as the special third rail on the No. 712 or No. 713. Then when the train is run around the track and the car is stopped so the contact shoe rests upon the contact rail and the button is pushed, the car will operate.



Directions for Wiring No. 712 to a Transformer

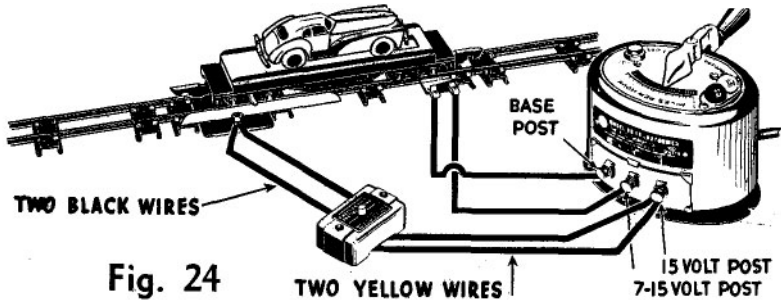
Connect the wires from the transformer to the track terminal, as described on the No. 690 Track Terminal envelope.

Connect the **TWO YELLOW** wires from the Control Box to the **15 Volt Post** on the transformer.

Connect the **TWO BLACK** wires from the Control Box to the Terminal Post on the No. 712 Special Track Section. See Fig. 23.

No. 715 Automatic Unloading Car

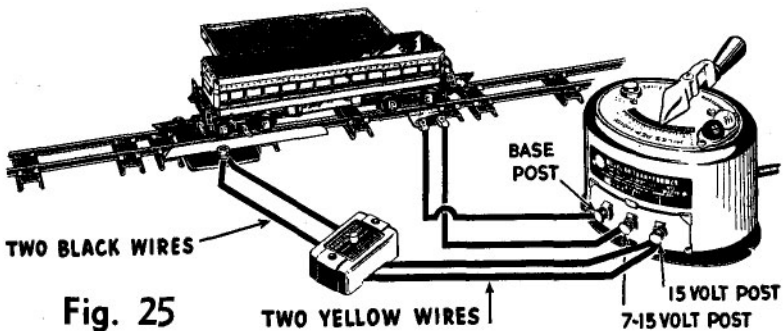
Place the car on the track, place the auto on the car so that the rear axle fits into the two slots in the upright piece and the front wheels are over the long slot in the platform. See Fig. 24.



Run the train around the track, and stop it so that the Contact Shoe, which protrudes from the truck, is resting on the special contact rail. Press the Control Button until the platform swings out and the auto rolls off the car. Then release it and the platform will swing back into place automatically.

No. 719 Dump Car

Place the car on the track and place the tray opposite the special rail so that it will be underneath the door of the car when it is stopped. Then the coal will not spill out on the floor when the car body is dumped. See Fig. 25.



Place a small amount of coal in the car, run the train around the track stopping it so that the contact is on the special contact rail. Press the button and the car will tilt, allowing the coal to drop into the tray. Release the button and the door will close.

To add much more fun and realism to the train, the cars can be loaded by Remote Control by using the No. 752A Seaboard Coaler.

No. 714 Log Unloading Car

Place the car on the track, place the three logs on top of it, then run the train around the track, stopping it so the contact shoe is resting on the special rail. Press the Control Button and the platform will tip, unloading the logs. Release the button and the platform will drop back in place. See Fig. 26.

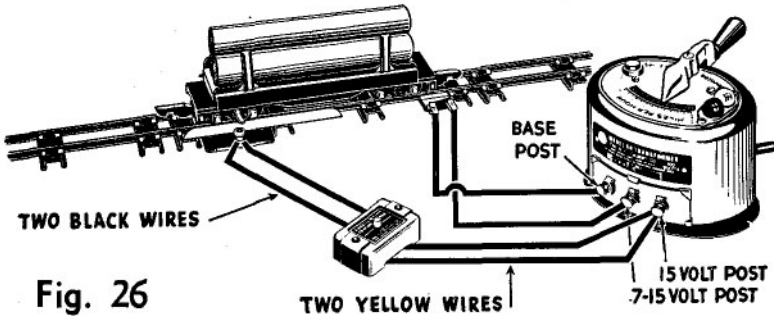


Fig. 26

One of the greatest play value pieces of train equipment is the No. 751A Log Loader which will load logs onto the above car by remote control, and the log car can also be used to dump the logs onto the log loader for reloading,

No. 718 Mail Pick-up Car Directions for Wiring to a Transformer

The No. 713 Special Track Section is used to operate the No. 718 Automatic Mail Pick-Up Car and wires are connected as follows:

Connect the wires from the transformer to the track terminal as described on the No. 690 Track Terminal envelope.

Connect the **LONG YELLOW** wire from the **Terminal Post** on the No. 713 Special Rail Section to a clip underneath the Control **Box**.

Connect the **SHORT YELLOW** wire from the other clip underneath the Control **Box** to the **15 Volt Post** on the transformer. See Fig. 27.

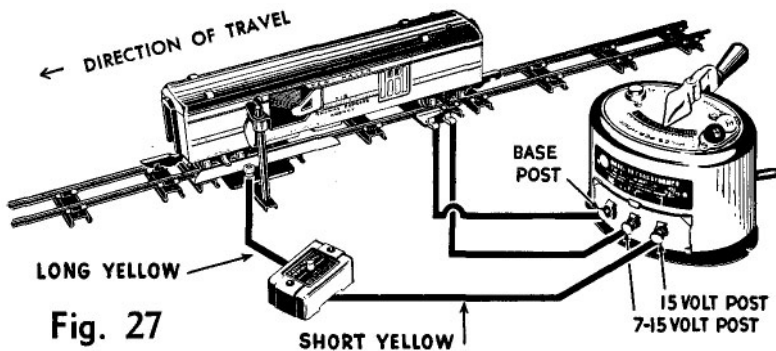


Fig. 27

Place the car on the track so that the opening and hook on the car are toward the front of the train, on the same side of the track as the special contact rail No. 713, and the train should be run in a forward direction. See Fig. 27.

Hang one of the mail bags on the standard, start the train and as it approaches the special track section, press the button and hold it down. When the mail car passes over the special track, the hook will swing out and pick up the mail bag.

After the car has passed, release the button. Hang the other mail bag on the standard and repeat the operation just mentioned, and the car will automatically pick up the mail bag and deliver the one it picked up on the first trip.

ILLUMINATED EQUIPMENT

American Flyer offers a wide variety of illuminated accessories to help make your railroad more realistic. You will find listed in the American Flyer Catalog, Stations, Signal Towers, Street Lights and various other items which are lighted. These all come equipped with wires and can be attached anywhere along the train layout, but if connected direct to the track, they will not light when the transformer is shut off. So, to keep them lighted at all times they should be connected to the **BASE** and **15 VOLT POSTS** on the transformer. In this way they will get a constant 15 Volt Current irrespective of the position of the speed control lever. To do this it is advisable to run two wires from the above named posts around your layout and connect the signals to them as shown in Fig. 28.

Since all American Flyer transformers and rectifiers have a maximum output of 15 volts, there is no danger in wiring lighted accessories and the chance of burning out lamps by high voltage is eliminated.

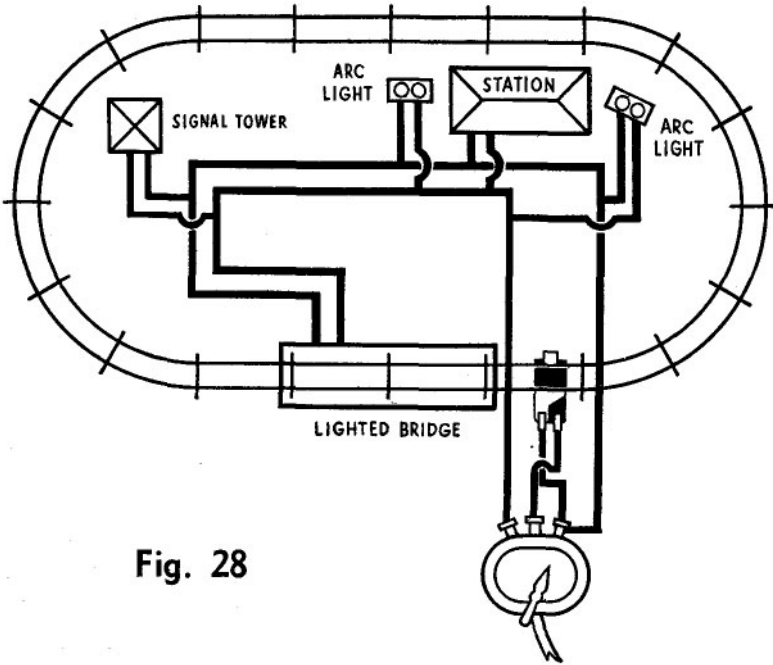


Fig. 28

OPERATING EQUIPMENT

Equipment such as the No. 592A Crossing Gate and the No. 761 Automatic Semaphore are operated by the No. 697 Pressure type track trip. This trip can also be used to BLOW WHISTLES, CONTROL BLOCK SIGNALS, OPERATE TRACK SWITCHES AUTOMATICALLY, or build a controlled block system in your layout. It can also be used to actuate lights and circuits. This track trip can be adjusted to be operated by the Locomotive only or by the entire train.

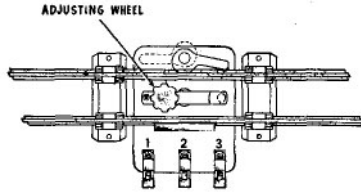
It has no electrical connection to the track and is wired direct to the power source and to the accessory it is to operate, then the weight of the passing train closes the circuit just as if you were to push a button on a control box, so in the case of a whistle or crossing gate where you would want the entire train to keep the circuit closed the trip would be adjusted so that the lightest car would close the circuit. In the case of a semaphore it would be adjusted so only the locomotive would actuate the trip and the following cars would not affect it.

The trip can be attached to any section of track and THE TRACK ON EACH SIDE OF THE TRIP SHOULD NOT BE FASTENED DOWN SOLID FOR SEVERAL SECTIONS as the track must be free to move up and down to allow the contact to make and break.

The trip has three terminal clips marked 1, 2 and 3. Number 1 and 2 are a normally closed circuit when the train is off the trip. As the pressure is applied by the weight of the train it breaks the contact between 1 and 2 and closes the circuit between 1 and 3.

TO ATTACH THE NO. 697 TRACK TRIP TO TRACK

Insert the track trip under the track between two ties so that the bottom of one rail nests under the raised flange on the trip base, then close the locking lever so it clamps over the bottom of the other rail.



ADJUSTING THE NO. 697 TRACK TRIP

In the above diagram you will note the adjusting wheel. If the trip is to be set lighter so every car will actuate it, turn the wheel COUNTER CLOCKWISE until the desired results are obtained. If the pressure is to be increased so only the locomotive will cause it to function turn the wheel CLOCKWISE until the cars do not affect it as they pass.

Do not allow the train to stand on the trip for any length of time, even with the transformer handle shut off, as the 15 volt current will still be supplied to the accessory and may cause overheating or burn-outs.

“PROTECT THOSE HIGHWAY CROSSINGS”

At practically every point where the highways cross a railroad track, the railroads have placed a safety warning device of some type. One of the most common in use is the double highway flasher which American Flyer Engineers have designed in miniature to add realism to your pike.

At the more dangerous crossings the railroads have provided gates operated by a watchman who stays either in a small shanty at the crossing or in a tower overlooking several crossings and when a train approaches he lowers the gates to prevent pedestrians and motorists from entering upon the tracks, thereby, saving many lives and lots of injuries. This very action can be had by using American Flyer's No. 592A Crossing Gate which has a double gate to protect the roadway and the sidewalk and has a red lantern which lights when the gate is down.

OPERATING THE NO. 592A CROSSING GATE

The No. 592A Crossing Gate is operated by a pressure type track trip No. 697. See information on attaching and adjusting the No. 697 Track Trip on page 33. Study Figure 29 and connect as follows:

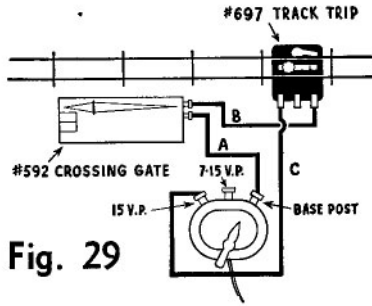


Fig. 29

Connect wire “A” from one of the terminal posts on the Crossing Gate to the **base post** terminal on the transformer.

Connect wire “B” from the Crossing Gate to **number three terminal** on the Track Trip.

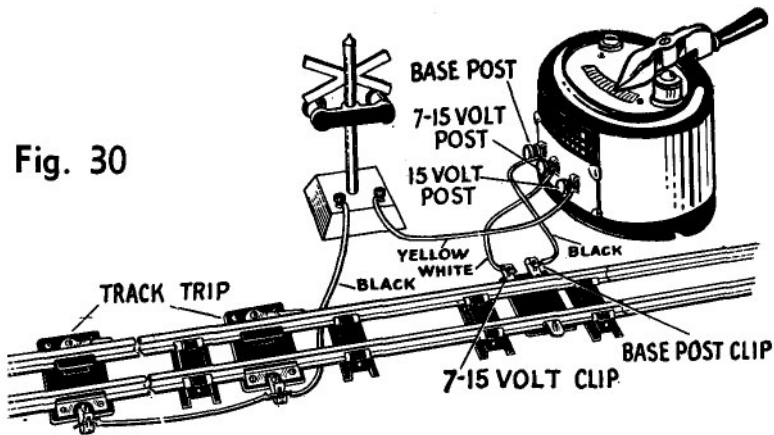
Connect wire “C” from the **number one terminal** clip on the track trip to the 15 volt post on the transformer.

The gate is now ready to operate — when the train crosses the portion of track to which the track trip is attached — the gate-arms will go down and the red lantern will light.

INSTRUCTIONS FOR SETTING UP AND OPERATING NO. 760 HIGHWAY FLASHER

To hook up the No. 760 Highway Flasher, first determine the approximate location in your layout where you wish it to operate; then attach the two No. 696 Track Trips to the track one on each side of the highway which is to be protected, and have the trips about 2 feet apart. To do this, first place the trips under the track so that lower flange on one rail nests under the raised portion of the metal strip with the “U” shaped cutout and the locking lever locks on the same rail as that to which the **BASE POST** wire connects. Note Fig. 30.

Fig. 30



When Using A Transformer

Attach the **SHORT BLACK WIRE** from one terminal post on the signal to the terminal clip on the track trip.

Attach the **YELLOW WIRE** from the other terminal post on the signal to the **15 VOLT POST** on the transformer.

Next attach the **LONG BLACK WIRE** between the two clips on the No. 696 Track Trips.

The signal is now ready to operate. When the train passes over the track trip the red lamp will flash on and off to warn any motorist of the approaching train.

AVOID COLLISIONS

Using No. 761 Semaphore To Create Dead-Block Systems

It is now possible to create a system of dead-blocks which will protect your trains from rear-end collisions just as they do on all major railroads today. You will find the No. 761 Semaphore is not only colorful and unique in operation but a very worth while piece of equipment on your pike.

Connecting The No. 761 Semaphore

At the desired location in your layout remove a section of track, with a pair of pliers remove the metal pin on the outside rail and replace with one of the fiber pins which you received with your Semaphore. Replace the track in your layout, two sections away remove another section and replace the metal pin in the outside rail with the other fiber pin. You should now have

two fiber pins separated by two sections of track. This is called the controlled section because the signal controls whether or not this section has current supplied to it. If after you have the signal set up and operating you find that the locomotive coasts through the block, increase the distance between the fiber pins.

Next snap the No. 707 Track Terminal into the controlled section. Be sure that the base post clip is connected to the insulated outside rail.

Then snap the regular No. 690 Track Terminal in a section of track anywhere outside the controlled section, WITH THE BASE POST CLIP CONTACTING THE OUTSIDE RAIL.

Next attach the two 697 track trips to the track at approximately the location shown in Figure 31. Information on attaching and adjusting the No. 697 Track Trip will be found on page 33.

In every case when using the No. 761 Semaphore it is necessary that the Base Post of the transformer be connected to the Base Post clip of the No. 690 Track Terminal.

Hook Up of No. 761 Semaphore To A Transformer

Connect the **YELLOW** wire to the **15 VOLT POST** on the transformer.

Connect the **BLACK** wire to the **BASE POST** on the transformer.

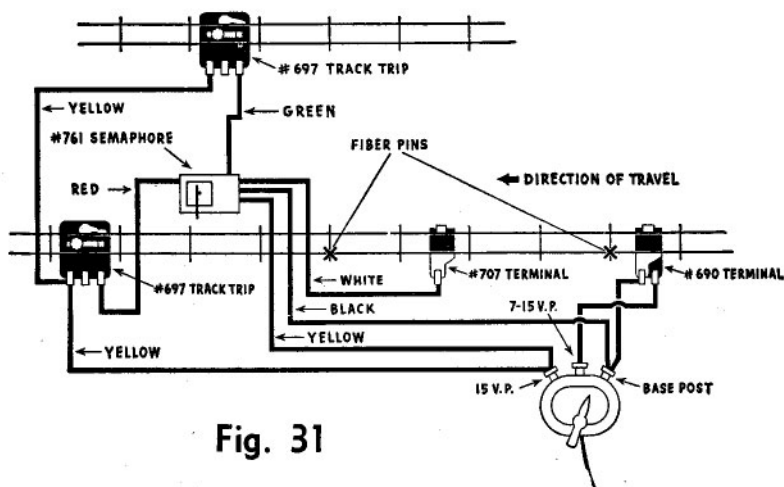


Fig. 31

Connect the **WHITE** wire to the **707 TRACK TERMINAL**.

Connect the **RED** wire to the **#3 CLIP ON THE NO. 697 TRACK TRIP** which is about 2 ft. in front of the Controlled section.

Connect the **GREEN** wire to the **#3 CLIP ON THE OTHER TRACK TRIP.**

Connect the two No. 1 clips together on track trips with a wire.

Connect a wire from the **#1 CLIP** on one track trip to the **15 VOLT POST ON THE TRANSFORMER.**

When the train crosses the trip with the green wire attached, the semaphore arm will go up, the green light will show and the controlled section will be alive.

When the train crosses the trip with the red wire attached, the semaphore arm will go down, the red light will show and the controlled section will be dead.

If you are operating 2 trains on the track the one train will stand in the controlled section until the other train throws the arm up, thus forming a controlled block system to protect your trains.

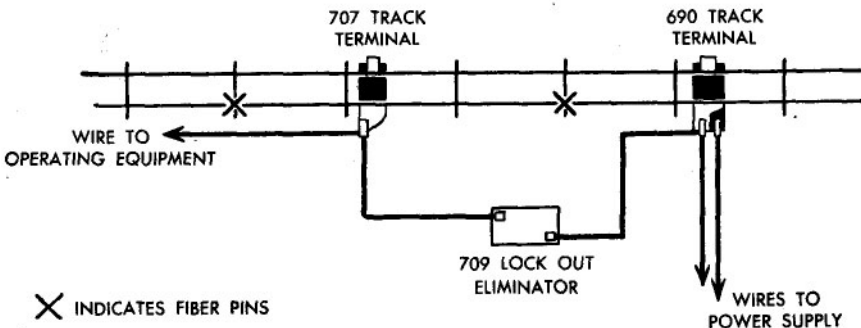
NOTE — When using a locomotive with a regular sequence reverse it will be necessary to lock the remote control unit in a forward position unless a No. 709 Lockout Eliminator is used.

NO. 709 LOCKOUT ELIMINATOR

This unit is designed to supply a very low voltage to a normally dead block in the track, which enables the locomotive to stop at the desired location and start in the same direction without locking the remote control unit in an inoperative position.

This unit is to be used with the No. 761 Semaphore, and the No. 755 Talking Stations or No. 758 "Sam" the Semaphore Man, which were built without a resistor unit in them.

Since each of the above items use a dead block system to stop a train, the hook up in each case is the same.



Connect the two wires which are included to the clips underneath the Lockout Eliminator **Box**, then hook the other end of one of the wires to the clip on the No. **707 Track Terminal** which is located in the dead block.

Connect the other wire to the Base Post Clip on the No. **690 Track Terminal** which is supplying current to your track.

This will now allow about **3** or **4** volts to filter into the dead block, which is not enough to run the train but will be just enough to keep the Remote Control unit from becoming disengaged, thus allowing the train to start up in its original direction when the equipment causes the block to become alive.

INTRODUCING "SAM" THE SEMAPHORE MAN

This ingenious little fellow is about the most active signal man we have ever seen, always on the job and popping in and out of his shanty, starting and stopping trains. You will get thrills galore with "Sam" and his semaphore.

First determine the approximate location in your layout where you wish the Semaphore to be stationed. Remove a steel pin from the outside rail in front of the place you want the Semaphore stationed, and replace with a fiber pin; several sections of track from this fiber pin repeat this operation. This will give you two or three sections of rail which are completely insulated from the rest of the track.

Fasten the **No. 707 TRACK TERMINAL** on the track so the **BASE POST CLIP** is connected to the outside rail in this insulated section.

Connect one end of the separate **WHITE** wire which comes with the unit to the clip on the **No. 707 TRACK TERMINAL**. Connect the other end of the **WHITE** wire to the clip on the back edge of the semaphore base.

Study figure 32, and proceed as follows:

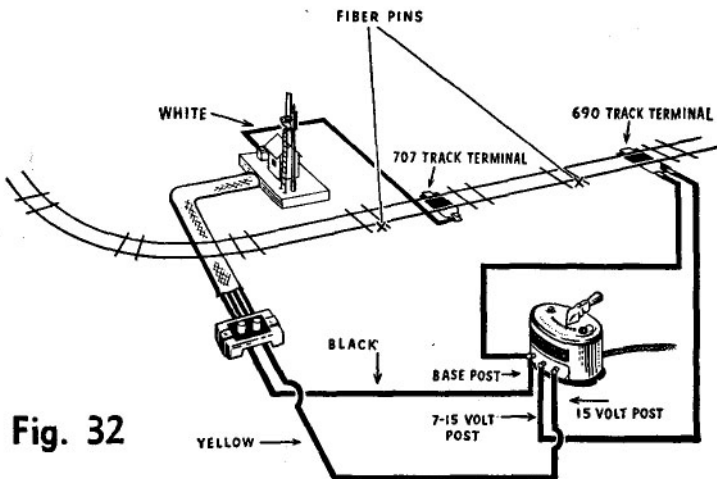


Fig. 32

Connect the **BLACK** wire from the Control **Box** to the **BASE POST** on the transformer.

Connect the **YELLOW** wire from the Control **Box** to the **15 VOLT POST** on the transformer.

The Semaphore should now be ready to operate. Turn on the current and allow the train to run around the track.

Press the red button on the Control **Box**; the door will open and “Sam” will come out of the house, at the same time the Semaphore arm will go to a down position and the red light will show. When the train enters the insulated section, the train will stop.

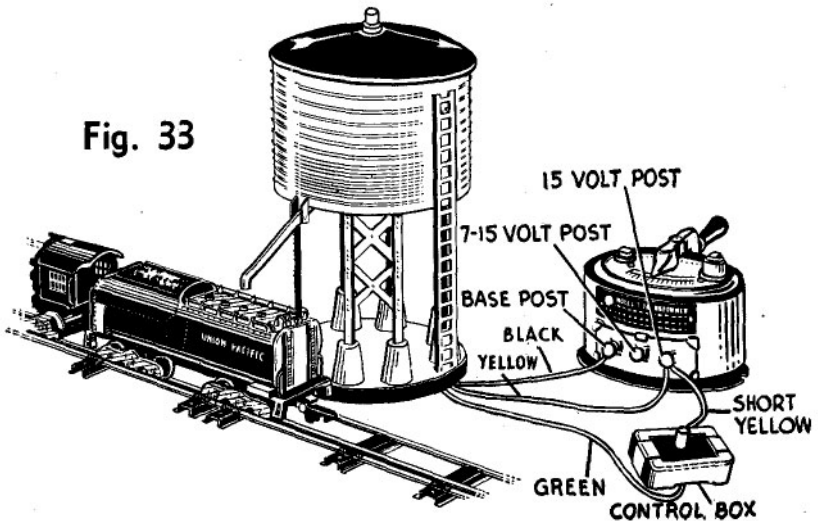
Press the green button and “Sam” will go back into the house, the door will close, the signal arm will go to an upright position, and the train will start again.

NOTE: To change the lamp, loosen the small set screw in the lamp housing which will allow the socket to be pulled out to remove the lamp. Use American Flyer Lamp No. 452 for replacement.

ATTACHING THE NO. 596 WATER TANK

All steam locomotives have to replenish their supply of water every so often and the railroads have water tanks situated along the right of way at various points so this water is available. An addition of one of these units adds to the realism and play value of your layout.

It is simple to connect. Study the wiring diagram in Fig. 33 and proceed **as** follows:



Place the water tank alongside the track so the spout can be lowered over the center of the track.

Then connect the **BLACK** wire to the **BASE POST** on the transformer.

Connect the **YELLOW** wire to the **15 VOLT POST** on the transformer.

Connect the **GREEN** wire to one of the clips underneath the control box.

Connect the **SHORT YELLOW** wire from the other control box clip to the **15 VOLT POST** on the transformer.

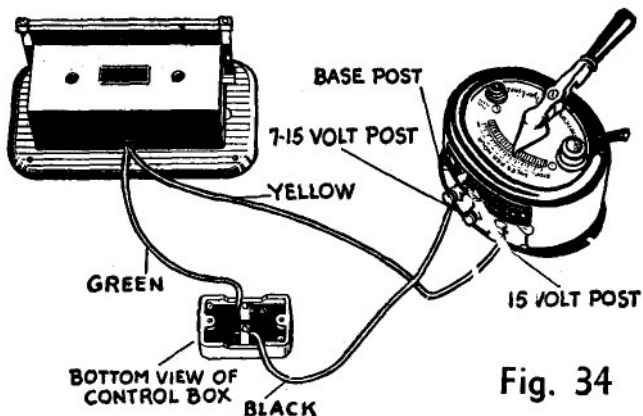
If instructions have been followed the Air Beacon Light should be lit and the spout should lower when the control button is pressed.

If lamp should loosen in its socket or if it should burn out, it can be replaced or tightened by removing the top of the tank. Use either American Flyer No. 440 or 453 Lamp for replacement.

JUST LISTEN TO THAT WHISTLE BLOW!

To every railroad man that deep throated tone of the locomotive whistle is real music, and American Flyer engineers have made it possible for you to reproduce that very soul-stirring sound in your own train layout. The No. 566 Whistle serves two purposes — it is both billboard to add realism along the track, and a real toned whistle on which you can blow either short or long blasts and reproduce any signals used in real railroading.

Note the wiring diagram in Fig. 34:



Connect **YELLOW WIRE** to **15 VOLT POST** on transformer.

Connect **GREEN WIRE** to one of the clips underneath the control box.

Connect **BLACK WIRE** from other control box clip to the **BASE POST** on the transformer.

The whistle is now ready to operate. Press the button on the Control **Box** and the whistle will blow.

OILING. To lubricate the motor, place a few drops of oil on the shaft bearings. Top bearing can be reached through a hole in the top of the housing and bottom bearing is covered with a felt wick which can be saturated with oil. Do not get oil on the motor brushes as this will cause commutator to get dirty and gummed up and slow down the motor.

Hook Up of the No. 566 Whistle to Blow Automatically

Connect the GREEN wire from the whistle to the No. 3 clip on the 697 Track Trip.

Connect a wire from the No. 1 clip on the track trip to the BASE POST on the transformer. In other words the No. 697 Track Trip acts the same as a control button and should be wired the same.

The No. 697 track trip is not standard equipment with the No. 566 Whistle but can be purchased separately. Information on hooking up and adjusting the No. 697 Track Trip is shown on page 33.

Standard Whistle Signals Used Throughout the Country by all Railroads

Approaching public grade crossing —Two long, one short, one long.

Approaching station, junction or railroad crossing —One long.

Alarm for persons or animals on track—Succession of short toots.

Apply brakes, stop —One short.

Release brakes, proceed —Two long.

Flagman protect rear of train— One long, three short.

Flagman return from west or south —Four long.

Flagman return from east or north —Five long.

Call for signals —Four short.

Back up (when standing) —Three short.

Stop at next station (when running) — Three short.

To another train: A second section is following —One long, two short.

Engineer's answer to most signals from other trains —Two short.

NOW, WE'LL LOAD SOME STEEL SCRAP!

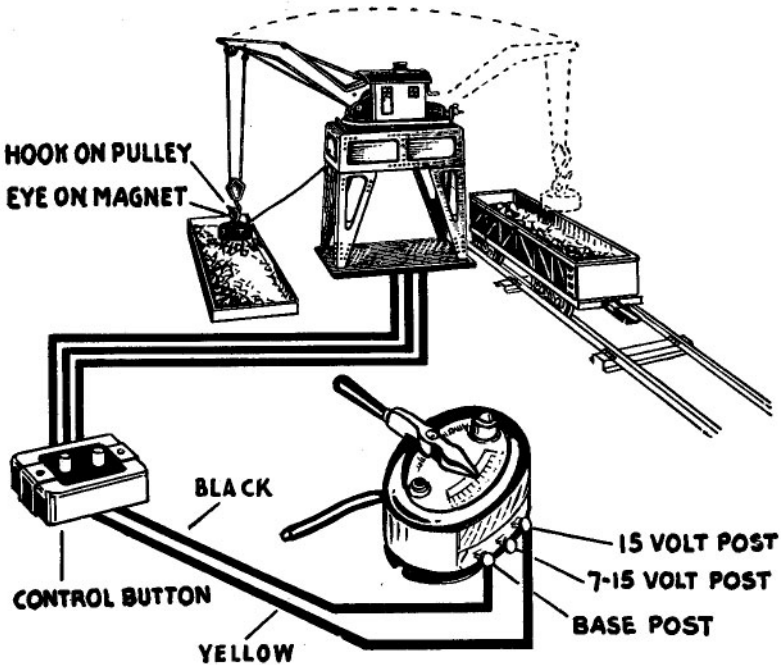
Many large companies load and unload tons of steel and scrap by use of powerful electric magnets operated by a crane. This, too can be done on your railroad by use of the No. 583A Electromatic Crane which your American Flyer dealer has for YOU.

You can load steel scrap into a car or out of it by simply pressing a button.

WHEN USING A TRANSFORMER

Connect **YELLOW** wire from control box to **15 VOLT POST** on transformer.

Connect **BLACK** wire from control box to **BASE POST** on transformer.



The crane is equipped with a two button control box and a double wound motor.

Pushing the red button will cause the cab and boom to rotate in one direction. Pushing the green button causes the motor to run in the opposite direction. Pushing either button will cause the electro magnet to be energized to pick up steel scrap. When button is released the motor will stop and steel scrap will be released.

In operating do not allow crane to revolve more than one half revolution.

After you operate the crane once you can place it the proper distance from the rail to obtain the best position for picking the load up from the tray and dropping it into the car.

The hand wheel at the rear of the cab raises and lowers the boom for placing magnet at the proper heights over the load of scrap iron in the tray.

NEXT, WE ADD A LUMBER CAMP

Logging, lumber camps and the handling of heavy timber all enter into railroading and make it still more fascinating. This can now be added to your own railroad. By using the No. 751A Log Loader you can load logs onto the log car automatically, haul them around your layout and dump them at the sawmill or back on the log loader for reloading.

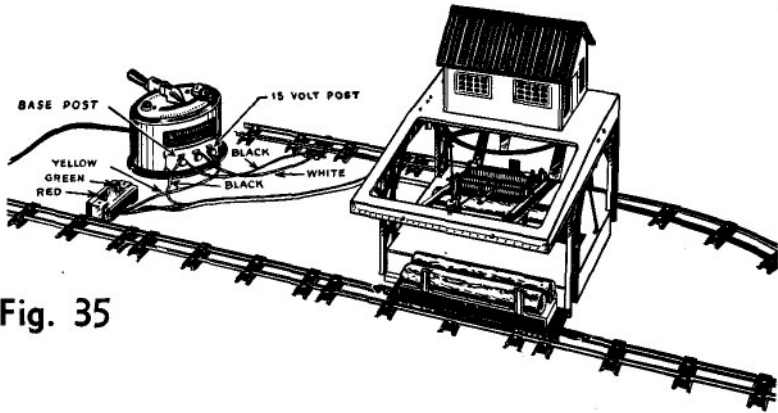


Fig. 35

To Hook up to a Transformer – see Fig. 35

Place the Log Loader in front of a section of straight track.

Connect the **BLACK** wire of the **RAINBOW CABLE** to the **BASE POST** on the transformer.

Connect the **YELLOW** wire from the Control Box to the **15 VOLT POST** on the transformer.

Place three logs on the Log Loader platform and start operation.

Press the **GREEN** button on the Control Box and a hidden elevator lifts a log up to the jaws of the overhead conveyor.

Press the **RED** button on the Control Box and the carriage will convey the log to the end of the arms and deposit it automatically into the empty car below, then return for a repeat operation.

A spur track can be run to the back of the Log Loader and logs can be dumped by remote control using the No. 714 Log Unloading Car.

HOW ABOUT A COAL YARD ALONG YOUR PIKE?

As we travel about the country on our large railroads, we see many coal yards, and many types of equipment for handling coal. American Flyer's No. 752A Seaboard Coaler is a towering, coal loader with a giant clam shell

type bucket. **By** just pressing a button on the Control **Box** you drop this bucket onto the coal pile with open jaws. Press another button, the jaws snap shut. The load is hoisted to the top of the tower and a moment later the coal is rattling down the chute to the waiting car below. Endless hours of fun can be had and the coal is clean, will not dirty the hands or mother's rug.

To Hook up the Seaboard Coaler see Fig. 36.

After unpacking the No. 752A Seaboard Coaler, untie the string which holds the chute and track in place for shipment, then lift the track and truck assembly forward and insert the ends of the formed wire brace into the holes in the side of the upright. See that the cord is running through the various pulleys.

Now place the Coal Loader in the desired position in your track layout so the chute is over the track and coal will fall into the car below.

See diagram and hook-up as follows:

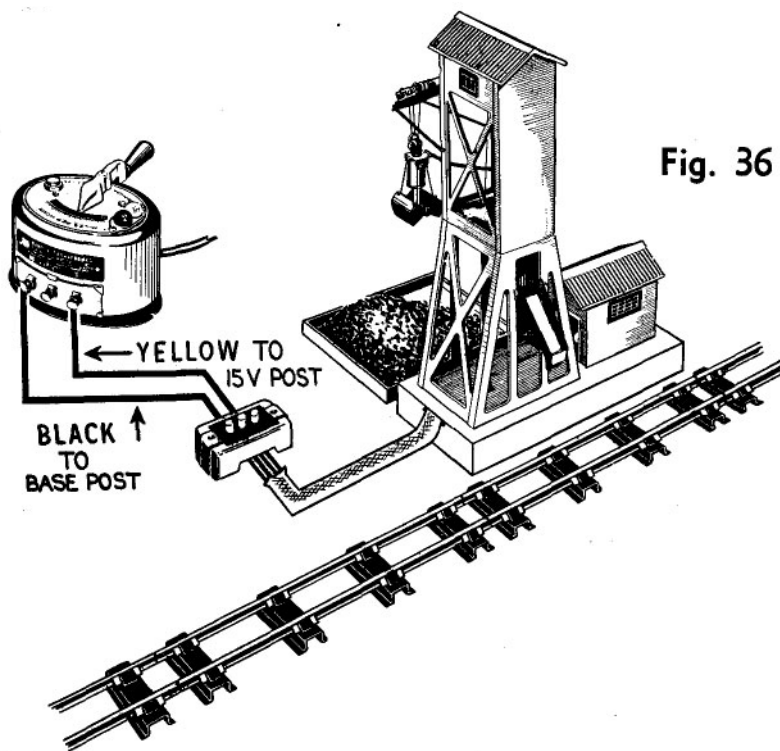


Fig. 36

If you are using a transformer.

Connect the **BLACK** wire to the **BASE POST** on the transformer.

Connect the **YELLOW** wire to the **15 VOLT POST** on the transformer.

Now press the **GREEN** button, on the Control **Box**, and the bucket will be lowered to the coal pile.

Press the **RED** button partially down and the jaws will clamp together. Press it all the way down, and the bucket will be elevated to the tower. Release the button and the coal will fall down into the hopper. Press the center button and the hopper will release the coal into the car below.

OILING — Bearings and gears on the motor located in the engine house can be oiled by removing the **roof** and through the door, **A** few drops of light oil is all that is necessary.

HOW TO RESTRING NO. 752A SEABOARD COALER

If the string on the Seaboard Coaler should tear or break, the following directions should be followed in restringing.

First, procure a piece of good flexible cord or light-weight fish line, 5 ft. long. (Do not use a stiff or waxed cord.) Tie a knot in one end.

Fig. 37—Remove the house (#1) over the motor by straightening the 4 nibs which protrude through the slots in the base, then lift house off the base.

Thread the unknotted end of the string through the hole in the side of the brass spool (#2) from the outside to the inside. Next, lead the string through the bracket and underneath the pulley (#3) mounted on the base.

Then, thread the string up the side of the tower and through the bracket over back of the pulley (#4) mounted on the side of the tower.

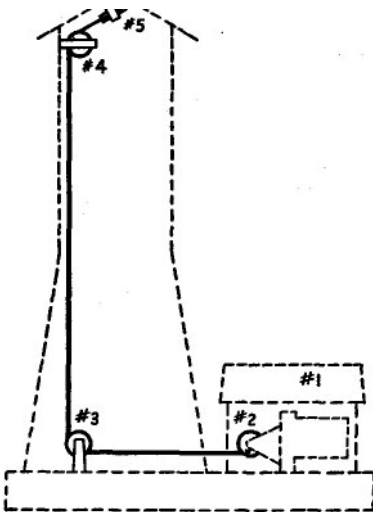


Fig. 37

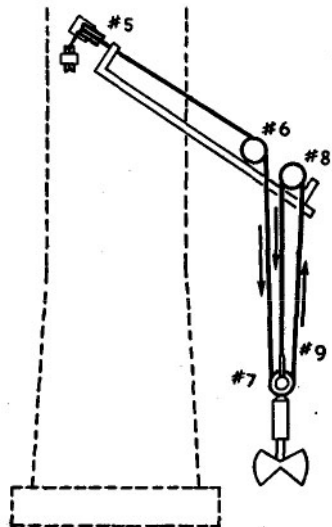


Fig. 38

Next, Fig. 38, run the string around the pulley (#5) mounted on the bracket which is welded to the track, then down over the first pulley (#6) on the truck and through the pulley (#7) on the bucket from the back to the front, and up and around the second pulley (#8) on the truck from the front to the back, then down to the handle (#9) on the bucket. Tie string on the bucket handle so when the string is taut, the bucket hangs all the way down, but do not leave any more string on than is actually needed.

NOW - A STATION THAT ACTUALLY TALKS

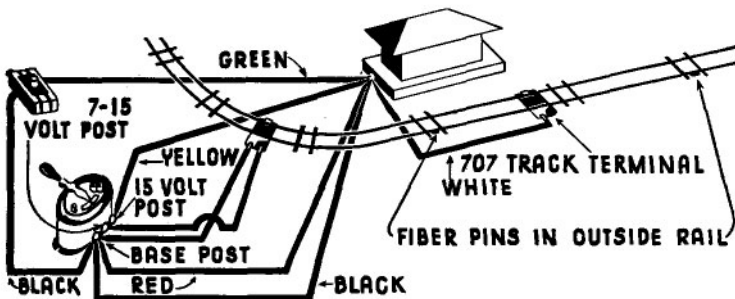
American Flyer Engineers have developed a prize winning feature of the year when they brought forth new 755A Talking Station. It stops the train, announces the stations and with a great array of real railroad sounds, it again starts the train on its way.

INSTRUCTIONS FOR SETTING UP AND OPERATING NO. 755A TALKING STATION

This Talking Station is designed to operate on 60 cycle current only. It will operate from a transformer running the train on alternating current or from a transformer and rectifier running the train on direct current.

First determine the approximate position in your layout where you want the station located. Then remove a steel pin from the outside rail and replace with a fiber track pin. Several sections away repeat this operation. This will give you two or three sections of rail which is completely insulated from the rest of the track.

Now clip the **No. 707 TRACK TERMINAL** on the track so that the **BASE POST CLIP** is connected to the insulated rail.



See the above diagram and proceed as follows:

Connect the **WHITE** wire from the Talking Station to the **707 TRACK TERMINAL**

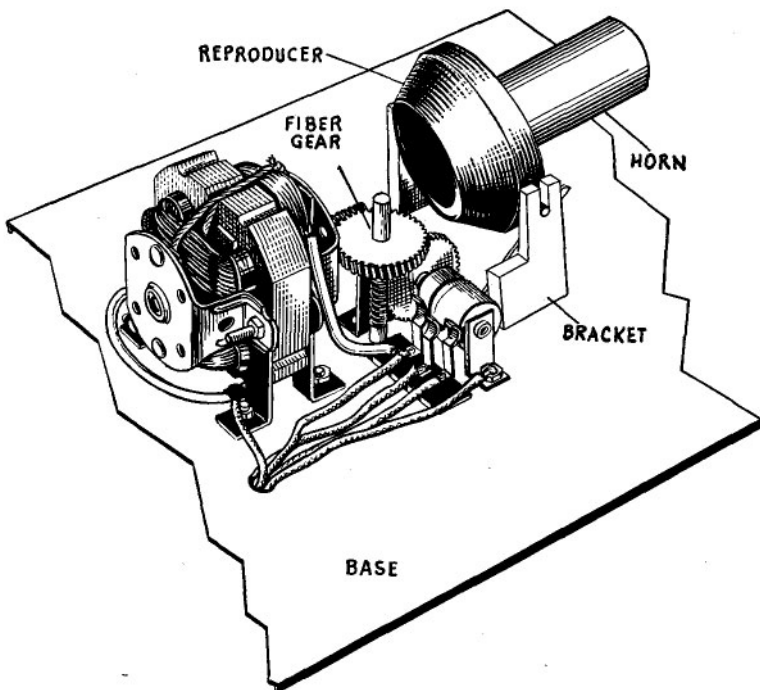
Connect the **BLACK** and **RED** wire from the Talking Station to the **BASE POST** on the transformer.

Connect the **YELLOW** wire to the **15 VOLT POST** on the transformer.

Connect the **GREEN** wire to one of the clips underneath the control box.

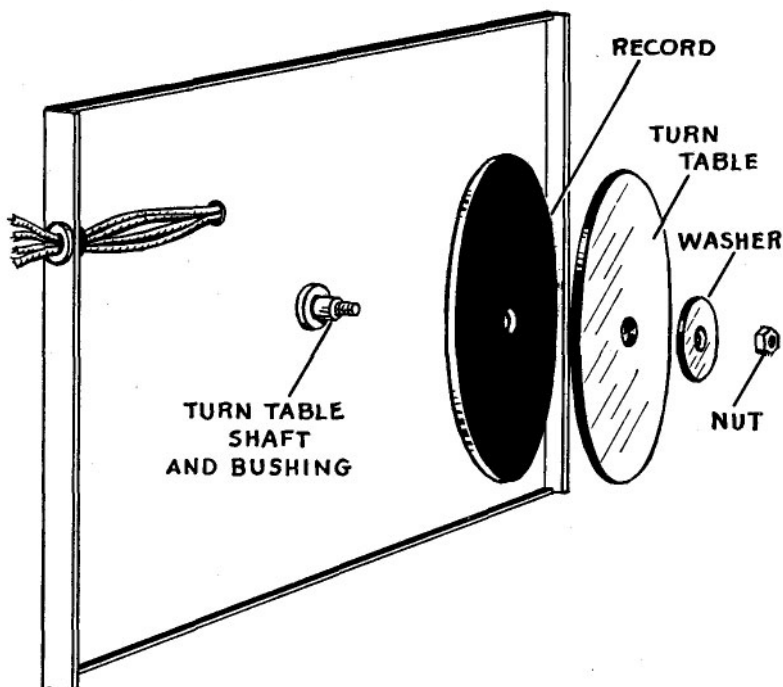
Connect the **SHORT BLACK** wire from the other clip underneath the control box to the **BASE POST** on the transformer.

Next, remove the cork from the needle in the reproducer and attach the horn to the reproducer neck. Then insert reproducer into the unit. (See the following diagram) so the horn faces away from the motor and the two pins fit into the slots on the upright brackets and the needle is resting on the record.



Now start the train, and as it approaches the station and the insulated portion of the track, press the control box button, the train will stop at the station while the train announcer makes his announcement, then with a series of train noises, the train will automatically start and run until **you** again press the button for a repeat performance.

NOTE: On a small oval of track do not press the button a second time until the train has made several revolutions and the motor in the station has come to a stop.



CHANGING THE RECORD

To change the record remove the nut on the end of the turntable shaft. See the above diagram. Slide the turntable and the record off the shaft, turn the record over and replace on the shaft with the turntable and washer, tighten up on the nut. Replace the needle with any chrome-plated needle. No. 598 replacement records are available at your dealer,

OILING

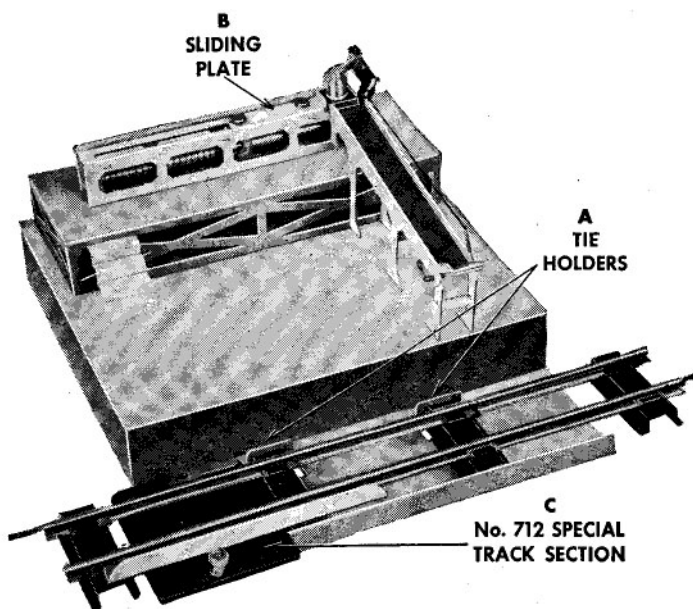
Keep all bearings well oiled. Lubricate the gears with a small amount of Vaseline or thin grease.

If the lamp should burn out, replace it with either a 14 or 18 volt lamp. For a maximum amount of sound open the station doors.

MECHANIZED FREIGHT HANDLING

Have you ever been around a large freight or express handling station? Did you notice how mechanized these places have become? Most of the merchandise now moves on conveyors directly into the cars, to eliminate many of the costly manual operations.

This same type of action can be duplicated on your layout when you use the new No. 770 Loading Platform. See the freight handler shove the packing boxes down the conveyor chute and into the waiting car.



To install this unit place it in the layout so it is along a straight portion of the track. Then nest the track between the tie holders, "A" as shown.

HOOK UP TO A TRANSFORMER

Connect **YELLOW** wire to the **15 VOLT POST** on the transformer.

Connect the **BLACK** wire from the platform to one of the clips underneath the control box.

Connect the **SHORT BLACK** wire from the other control box clip to the **BASE POST** on the transformer.

The unit is now ready to operate and you will find by pushing the button on the Control Box that the man on the platform will go forward. When button is released the man will return to his original position and be waiting for work

Next pull back the sliding Plate "B" in Figure 1 and place the four boxes or milk cans on the runway. They will be fed automatically to the man by spring pressure. Each time the button is pushed he will shove one of the units down the chute and onto or into a car which is waiting to receive the merchandise — when the man shoves the unit down the chute he automatically lowers

the chute end. When the man goes back to his original position he raises the chute end so it will not interfere with any passing rolling stock.

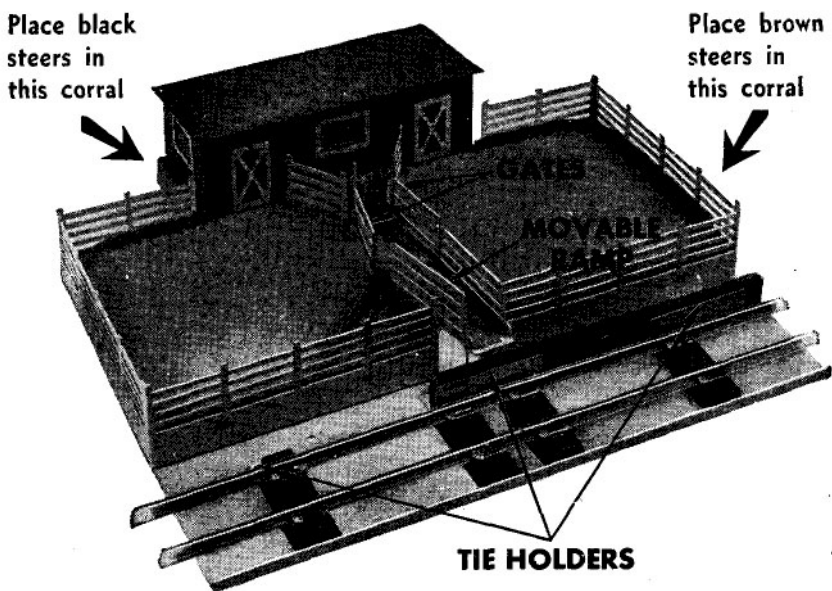
To get the maximum amount of play value from this Loading Platform it should be used with the No. 732 or No. 734 operating cars — when doing so be sure that the No. 712 special track section is positioned on the track as shown at “C”.

MOO! MOO!

Well, not exactly that real, but, they do practically everything else. The No. 771 Stock Yard and Car is undoubtedly the most fascinating piece of equipment ever made for model railroads. The real lifelike little critters mill around, and troop up the ramp into the car just like their big brothers at the stockyards all over the country.

This foolproof unit can run continuously and not get out of order, and is very simple to install.

NO. 771 STOCK YARD AND CAR



To install this unit, place it in a portion of the layout so there is at least 2 straight tracks to mount on the stock yard base — nest the straight track between the tie holders as shown in Fig. 39.

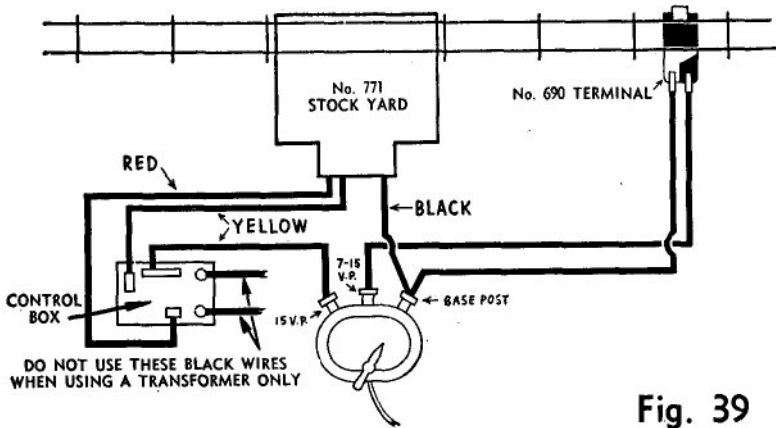


Fig. 39

HOOK UP OF NO. 771 TO A TRANSFORMER

Connect **BLACK WIRE** from Stock Yard to **BASE POST** on transformer.

Connect **RED WIRE** from Stock Yard to wire clip under the red button on Control **Box**.

Connect **YELLOW WIRE** from Stock Yard to remaining spring clip on Control **Box**.

Connect **YELLOW WIRE** from Control **Box** to **15 VOLT POST** on Transformer.

OPERATING INSTRUCTIONS

Place the steers in the corral — 4 on each side, then turn on the rotary switch on the Control Box. This will cause the floor mat to vibrate and the steers will then mill around the corral and they can be left to mill continuously.

RAMP INSTRUCTIONS

The ramp on which the cattle travel to go into the car is movable up and down. It should always be raised into the up position when not being used. If left down the cars will strike it as they pass. Therefore, to load or unload the car, stop the train at the stock yard and position the stock car so one of the doors line up with the ramp. Then lower the ramp to the door entrance. After car is loaded, raise the ramp before starting the train.

LOADING INSTRUCTIONS

When car is in position for loading, open one of the corral gates by pushing it toward the other gate and allow the cattle to go up the ramp. Press the red button on the Control Box—this will energize the vibrating mechanism in the car and allow the cattle to proceed into the car. At times you may find these little critters will get just as stubborn as real cattle in a stock yard and need a helping hand — justprod them a little and they will keep moving.

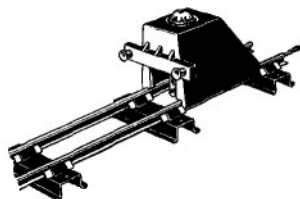
CAR INSTRUCTIONS

The car should be placed on the track so the side with the two doors faces the stock yard, and the metal wheels on the one truck are to ride on the rail which has the Base Post current. If for some reason your layout is wired so the base post current is in the other rail than that which the metal wheels are on, just spread the truck slightly, remove the wheel and axle assembly, and reverse the position of the wheels. The cattle can enter either door but must leave the car from the opposite door from which they entered.

When loading the cattle into the car be sure the second door is closed or the animals will travel right through the car and out the door.

ADD A BUMPER TO THE END OF THOSE SPURS

The No. 730 Bumper is designed to snap onto the end of a spur line of track and keep cars from running off the end.



The Bumper is very easily installed: —

Just place it at the end of the track so the flat part which projects down from the slanted surface rests against the end tie on the track and the two contact springs go down between the rails and lock on the bottom of them.

When the Bumper is snapped in place and the transformer is turned on, the red lamp will light.

SCENIC STRUCTURES

Four scenic structures in the American Flyer Line, which add much to the realism of any train outfit, are:

769A Revolving Aircraft Beacon

773 Oil Derrick

772 Water Tower

774 Floodlight Tower

These are all very easy to connect as the two wires leading from the base of the unit connect to the base post and 15-volt post on the transformer.

The Aircraft Beacon is balanced on the top of a lamp bulb and rotates very slowly by the heat generated by the lamp. Lamp used is No. 461.

The Water Tower and Oil Derrick have liquid filled glass tubes, which rest on a No. 455 lamp. The heat generated by the lamp causes the fluid to bubble after a few seconds and gives the illusion of water or oil flowing up the center standpipe.

The No. 774 Floodlight Tower has four floodlights on top, which are used to light up a switch yard for night operation. Lamp used is No. 442.

THE AIRCHIME WHISTLE

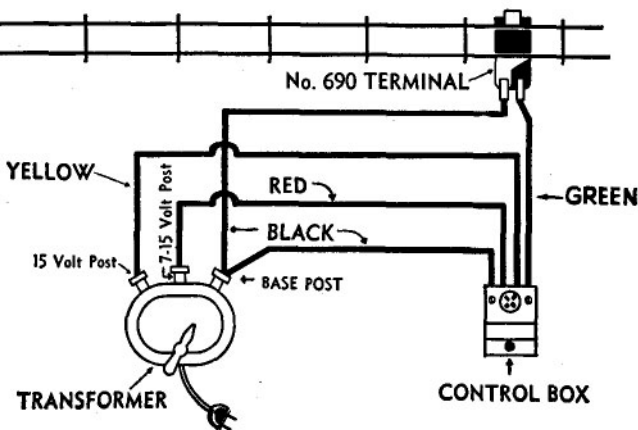
Since the great trend toward dieselization of the railroads, there has been a hue and cry set up by the public, complaining about the harsh sounds of the diesel horns. This caused the railroads to start looking for some type horn or whistle with a more melodious tone. The result was the airchime whistle, which is now being used by most railroads. It is fast replacing all other types of horns.

The American Flyer engineers acquired a recording of the famous Nathan airchime whistle, and duplicated it in miniature for the users of American Flyer Trains.

The working principle is to send oscillations into the track by means of a vibrator. These are picked up and emitted by a speaker in the train.

INSTRUCTIONS FOR HOOKING UP AND OPERATING THE AIRCHIME WHISTLE CONTROL

To install the airchime whistle control first study the following diagram.



NOTE: Be sure no other wires run direct from the transformer to the track. Do not have a wire from the 7-15 Volt Post direct to the track terminal. If jumper or booster wires are to be used on large layouts to give an even flow of current, be sure wires are run from the No. 690 track terminal shown in the diagram to another track terminal. Do not run wires direct from the transformer to the track.

WIRING INSTRUCTIONS

Connect the **BLACK** wire from the Control Box to the **BASE POST** on the transformer.

Connect the **RED** wire from the Control Box to the **7-15 VOLT POST** on the transformer.

Connect the **YELLOW** wire from the Control Box to the **15 VOLT POST** on the transformer.

Connect the separate **BLACK WIRE** packed with the track terminal from the **BASE POST** on the transformer to the **BASE POST CLIP** on the 690 Track Terminal.

Connect the **GREEN** wire from the Control Box to the other clip on the 690 Track Terminal.

OPERATION

Next, place the generator on the Control Box, inserting the 4 prongs into the holes. This can only be installed one way. There are two large and two small prongs which fit into their respective holes.

The whistle is now ready to operate; place the locomotive on the track, then turn power on, press the Control Box button and whistle should blow.

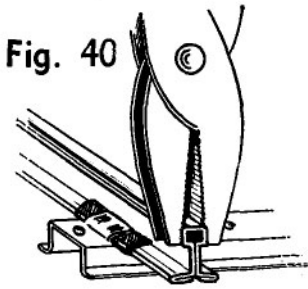
If whistle is to be blown while locomotive is standing still, the power should be on and locomotive reverse control should be in neutral position.

THE USE OF AMERICAN FLYER EQUIPMENT WITH 3 RAIL TRACK

Most all American Flyer equipment can be used with layouts having 3 rail track. Any information needed on the hook up of the equipment to 3 rail track will be supplied by the Company at your request.

MAINTAINING THE TRACK AND RIGHT OF WAY

One of the most important and costly items in the operation of any real railroad is its maintenance. Track must be kept level with a good ballast foundation, rail joints are kept tight, rubbish and weeds removed from the right of way, switches, blocks and all operating equipment must be in perfect working order at all times. To do this the railroads employ thousands of men to constantly check and repair every foot of trackage and all rolling stock.

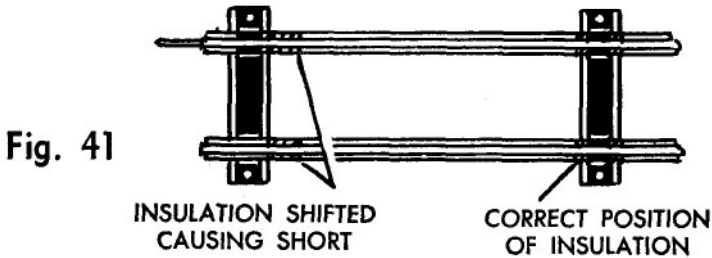


To have your train in perfect working order you must have a regular system of maintenance. It is necessary to see that the track is level and all track joints are tight. After the track has been taken apart a few times, the openings in the rails become enlarged, causing the pins to fit loosely. To insure tight connections and proper electrical contacts, reduce the rail openings by slightly pinching the rail ends with pliers as shown in Fig. 40, and adjusting track pins as shown in Fig. 8.

REPAIRING SHORTS

You will find sometimes, due to rough handling or excessive use, the insulation between the rails and ties has shifted or been cut through, causing a short circuit. This can be remedied by loosening the clamp with a sharp screwdriver, and adjusting insulation to remove the short.

Position of insulation is shown in Fig. 41.



After testing your layout as described on page 14, and you find it shorted, but are unable to locate just where the trouble lies, each piece of track must be tested individually; following the same procedure, crossovers and switches can also be tested the same as track.

KEEP TRACK FREE FROM OIL

It is important to keep track clean and free of oil. Clean the running surface regularly with a fine sandpaper, then clean rails with a rag dampened with **NON-INFLAMMABLE No. 27** American Flyer Track Cleaning Fluid. This will insure a good electrical contact to the pick-up wheels on the tender at all times, Always make sure transformer **is** turned **off** before cleaning track with cleaning fluid.

LUBRICATION OF YOUR ROLLING STOCK

In this age of machines, everyone is familiar with the importance of proper lubrication. Every garage and gas station has complete facilities for lubrication of automobiles, and we know if the auto is not kept well lubricated, it soon will be in the scrap heap. This same thing applies to the railroads. They have their big sheds and shops where cars and locomotives are taken for regular cleaning, oiling and repairing. It is a familiar sight to see the men on the train crew with their big oil cans oiling the locomotives when they stop for a while at a station.

This Train of yours, like its prototype, must be kept well lubricated at all times to insure perfect performance, long life, and to be maintained at proper operating efficiency. To do this we recommend that your locomotive and cars should be oiled every 4 hours of actual operation; also, before operating when YOU first get the train, and after it has been put away for any length of time.

A small drop of oil is all that is necessary. Apply oil with a toothpick or needle. Always keep in mind the fact that too much oil can be just as harmful as no oil at all, as it will run into the brush tubes and onto the commutator and cause the motor to "gum up." It will also run down onto the wheels and track resulting in a loss of traction and poor electrical pick-up.

STEAM TYPE LOCOMOTIVES

Study Figs. 42 and 43, and using a small bottle of high grade fine oil (Sewing Machine Oil) and some vaseline, proceed as follows:

Oil the car axles and the Locomotive at the following points:

1. The rear motor bearing wick reached through the rear of the locomotive cab. See Fig. 42. (Be careful not to get oil in the brush tubes.)

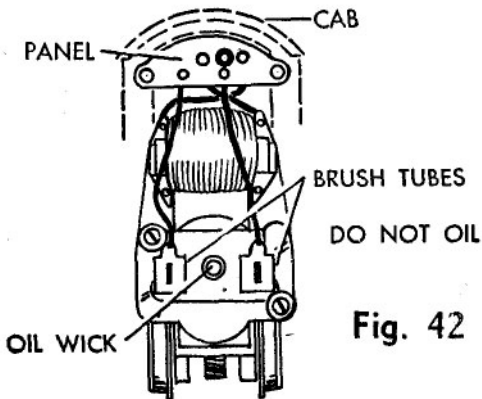


Fig. 42

2. Turn the locomotive on its back. Back of the rear axle is a steel cover plate that can be removed by unfastening one screw. This exposes a drive gear which should be lubricated with a small amount of vaseline. The cover plate should be replaced to keep dust and dirt out of gears.

3. Oil the wheel bearings, the side rod bearings and the valve rod linkages. See Fig. 43.

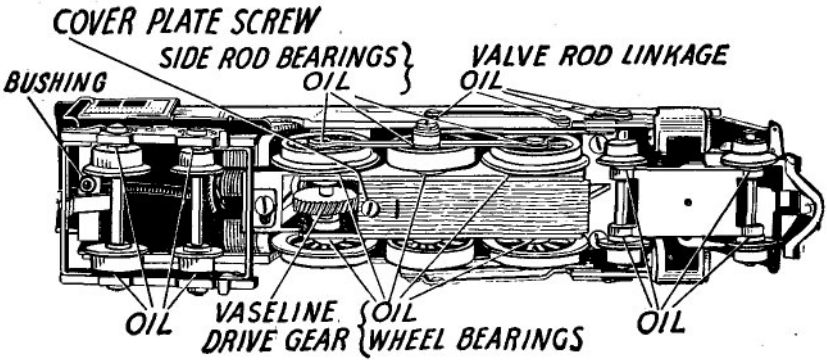
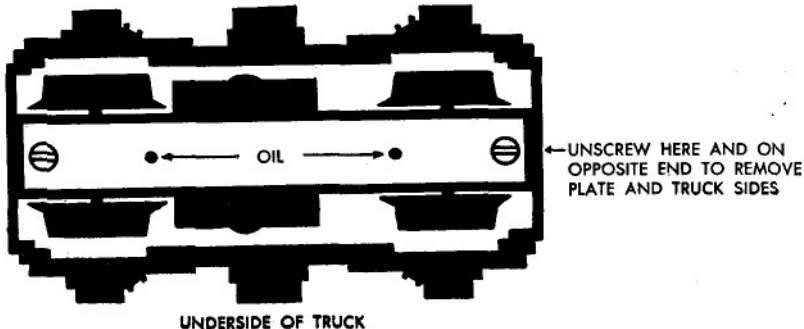


Fig. 43

DIESEL LOCOMOTIVES

1. Turn locomotive on its back and put about two drops of oil in each hole in bottom of power trucks. Do not place oil in the holes on the non-powered trucks.

2. On bottom of truck is a steel cover plate and truck side assembly that can be removed by unfastening two screws. This exposes the drive gears which should be lubricated with a small amount of vaseline. Place a drop of oil on the axle at the axle bearings. The cover plate should be replaced to keep dust and dirt out of gears.



UNDERSIDE OF TRUCK

After oiling, run train around track a few times and then wipe the rails to remove any oil that might have run down on them. This not only keeps the rails bright and shiny, but provides a good electrical contact and prevents the drive wheels from skidding.

HOW TO OPERATE AND MAINTAIN YOUR CH00-CH00 AND SMOKE UNIT

When the word “locomotive” is mentioned, the mental picture which most of us visualize contains not only the locomotive, but the puffs of smoke belching from its stack, and roaring “choo-choo” sound it makes. To make your train even more realistic, American Flyer has added smoke and choo-choo sounds to some of its trains.

The smoke and choo-choo unit in the American Flyer trains is a gear driven piston located in the front part of the locomotive boiler and forces the smoke directly out of the stack. See Figure 44.

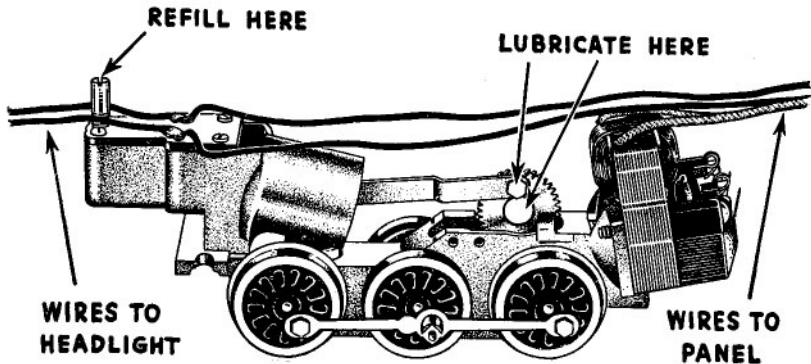


Fig. 44

TO REFILL THE SMOKE UNIT

When the smoke in your locomotive diminishes and a refill is needed, insert the small funnel which is packed with your locomotive, into the tube in the smoke stack. Then cut off the end of a nozzle on a smoke cartridge tube and squeeze the liquid into the funnel. Be sure to use only the No. 25 Smoke Cartridge which is designed to be used with this unit.

NOTE: An excess of liquid may cause the passage-way to be blocked in your smoke unit. Therefore, it is wise to use only a part of a capsule of fuel at one time. If the unit should become blocked with excessive fluid, it is easily removed by inserting a pipe cleaner into the stack and absorbing the excess fluid,

TESTING THE LOCOMOTIVE

If a locomotive refuses to run, first see that current is being supplied to the track. After checking the track for shorts as described on page 00, and it is o. k., be sure all connections from transformer to track are correct and firmly fastened. See that all track pins are firmly inserted into the track openings. Turn the transformer on and hold a screwdriver blade on the outer rail and lightly rub the end of the screwdriver on the other rail. **If** there is current in the track, a small spark will be seen.

If the spark is evident at the rails, be sure all wheels are in place on the rails. The locomotive will not run without the tender as the current for the locomotive is picked up by alternate metal wheels on the tender. Be sure the metal wheels on the front truck are on one rail and those on the rear truck are on the other rail. The plugs on the ends of the wires protruding from the front of the tender are inserted into the socket holes in the panel on the rear of the locomotive. In the event these plugs are disconnected, either plug can be inserted in either hole.

If power is being picked up by your locomotive, the headlight will light. Considering that this is the case and still your locomotive will not run, turn your transformer lever off then on several times to actuate the control on the locomotive.

Check the various piston and valve rods to see they are not bent and binding.

Look for loose or broken connections in the locomotive. Examine the brushes to see that they are not worn out and that they make good contact with the commutator.

If the wheels move, but slowly and a higher voltage than is customary is required, simply cleaning and lubricating the motor may be all that is necessary.

The commutator is the copper surface on the armature, on which the brushes make contact. **If** it is dirty, it will also tend to slow down the motor and will cause the brushes to wear out faster.

TO CLEAN THE COMMUTATOR ON A DIESEL LOCOMOTIVE

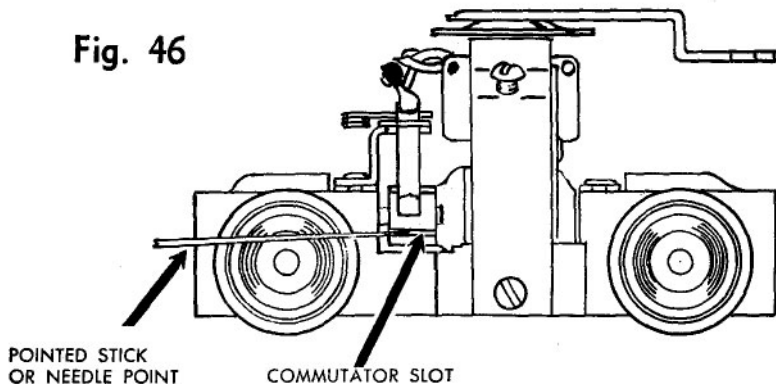
First, remove the truck sides on the power truck by taking out the two screws in the bottom plate. When screws are removed, the entire truck side unit slips off. This will expose the commutator and brushes.

Brushes can then be lifted lightly to see that they have spring tension. Next, block entire locomotive up so wires can be attached to the two trucks. You can then turn current on and, with motor running slowly, hold a very fine

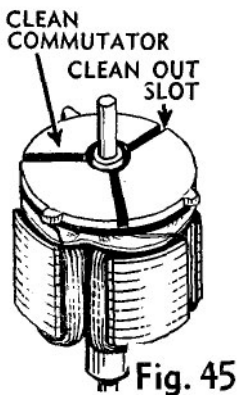
piece of sandpaper on the commutator until all the dark film has been removed. Then, with the current turned off, clean the slots with a needle point.

Rotate the commutator manually to reach all three slots.

See diagram below:



TO CLEAN THE COMMUTATOR ON A STEAM TYPE LOCOMOTIVE



(Fig. 45) — Remove the rear locomotive truck, fasten the two wires from the transformer to the two metal truck frames on the tender, start locomotive running, turn it on its back and press a piece of fine sandpaper (“00” or finer) against the commutator. Press lightly until the whole surface of the commutator is smooth and bright. Then stop the motor and with a pointed tool such as a needle, clean out the slots between the segments of the commutator. It is essential that the copper dust from worn brushes or commutator be thoroughly cleaned from the slots between the segments.

MISCELLANEOUS TIPS

TRACK LOCKS: No. 693 Track Locks are packaged with most trains and, if the track is not mounted permanently, they should be used to keep the track from loosening or separating while train is running.

MOUNTING CONTROL BOXES :

All units that operate from Control Boxes have a package of wood screws included. These screw are to be used in mounting the Control Box to the panel board, the control section of the layout.

WIRE CONNECTORS:

Various types of wire connectors are used on American Flyer equipment. One type is a threaded post and knurled nut, another type is the Fahnstock clip, and still another is the Zip Clip. These are all pictured below, showing how to fasten wires to them.



Fig. 47

LAMP DATA

Have A Few Extras On Hand

Lamps are Used as Follows:

No.	Volts	Glass	Color	Diam.	Lamps in Pack- age	
440	14	Round	Clear	7/16	3	Used on all locomotives and on No. 502 Crossing Gates
442	6-8	Round	Clear	7/16	3	Used on No. 774 Flood Light Tower
441	18	Round	Red	9/16	3	Used on switch control boxes
443	18	Round	Green	9/16	3	Used on switch control boxes
451	14	Round	Frosted	5/8	1	Used on No. 579 and 580 Street Lights
452	14	Round	Clear	5/16	1	Used on No. 758 "Sam" The Semaphore Man
453	18	Round	Clear	7/16	3	Used on No. 720 Switches
444	18	Round	Clear	9/16	3	Used on all cars and stations
454	6-8	Bayonet	Clear		3	Used on 8B and 12B transformers
455	14	Round	Red	7/16	3	Used on No. 730 Bumper & No. 760 Highway Flasher
456	18	Round	Red	5/8	3	Used on 17B, 18BW, 19B, 20BW transformer
457	18	Round	Green	5/8	3	Used on 17B, 18BW, 19B, 20BW transformer
461	14	Round	Clear	9/16	3	Used on No. 769 Aircraft Beacon

Replacement of Lamps

STEAM TYPE LOCOMOTIVES —

Some locomotives have separate boiler fronts, which are held in place by spring clips. To change lamp, remove boiler front by pulling it straight out of the boiler. You will find the lamp socket fastened to the boiler front.

Other locomotives have solid boilers, and the lamp bracket is mounted to the underneath side of the pilot by a screw. Remove the screw, pull the bracket down, and out of the boiler. The lamp can then be changed.

DIESEL LOCOMOTIVES —

The lamp on the Diesel "A" unit is mounted to a bracket in the front part of the car and is held in place by one screw. To replace this lamp, first remove the truck side unit by taking out the two small screws. Holding the truck frame in place, you then have access to the bracket screw, which can be removed, allowing the bracket to swing down and out.

To change lamps on the Diesel Switcher Locomotive, the four body mounting screws must be removed. This will allow the body to be lifted off so lamp can be replaced. If the truck side assemblies are removed from the trucks first, the body mounting screws will be easier to remove.

CARS —

With thumb and first finger on the two wings at the edge of the lamp bracket, in the chassis, turn $\frac{1}{4}$ turn counter clockwise, remove bracket and unscrew bulb.

FLOODLIGHT CAR —

Remove snap ring and glass and unscrew bulb.

NO. 758A "SAM" THE SEMAPHORE MAN —

Loosen the small set screw at the top of the semaphore and then the socket with the No. 452 light bulb can be pulled out.

NO. 761 SEMAPHORE —

To change the bulb in the No. 761 Semaphore, turn the bottom portion of the lighted section counter clockwise and the entire bottom part of this head with the light bulb in it will drop down so that bulb, can be changed.

TRACK SWITCHES —

Remove screws from lamp housing, lift off color shutter and unscrew bulb.

IMPORTANT THINGS TO REMEMBER

- DO — Read carefully the instruction sheets packed with each train and item of equipment.
- DO — Oil locomotive and equipment bearings frequently.
- DO — Wipe the tracks regularly with American Flyer Track cleaning fluid and fine sandpaper.
- DO — Clean wheel rims and tires regularly with rag and American Flyer Track cleaning fluid.
- DO — Clean metal tender wheel rims and flanges so they do not become pitted or dirty, using No. 27 American Flyer Track Cleaning Fluid.
- DO — Make sure track layout is level.
- DO — Run additional wires or feeders from the Base and 7-15 Volt Posts **of** the transformer to a point in the track farthest from the transformer in large layouts, to prevent trains from slowing down.
- DO — Attach the track terminal in a section which will not become dead if between two Remote Control Switches.
- DO — Set the Remote Control Switches for “Regular Operation” unless a dead siding is desired.
- DO — Remove the transformer plug from outlet when through operating your train.
- DO — Make sure you have proper electrical current before plugging in transformer.
- DO — Make sure all wire connections are clean and tight.
- DO — Make sure any article which is being returned for repair is well packed and correctly addressed, and a letter of explanation accompanies it and a return address is inside as well as on the outside **of** the package.
- DO — Send or take articles for repair to your nearest American Flyer authorized service station.

KEEP THESE TIPS IN MIND

- DON'T--Over oil your locomotive or smoke unit.
- DON'T —Put oil on commutator.
- DON'T —Put oil on the brushes.
- DON'T —Get sand or dirt into the locomotive.
- DON'T —Store the train or equipment in damp places.
- DON'T —Get water on the train or tracks.
- DON'T —Step on the track.
- DON'T —Bend or distort the track.
- DON'T —Drop pieces of metal or Christmas tree tinsel across the tracks, as it causes shorts.
- DON'T —Place locomotive or cars on the track while current is turned on.
- DON'T —Run trains at full speed around the curves or through switches.
- DON'T —Use a transformer of less wattage than recommended in the catalog.
- DON'T-Attempt to use 110 volt current without the transformer.
- DON'T —Plug transformer into Direct Current or any current not specified on the item.
- DON'T —Connect equipment or lamp to a higher voltage than recommended.
- DON'T —Clean track with transformer turned on.
- DON'T —Use anything but No. 25 Smoke Cartridges to refill your smoke unit.
- DON'T —Allow trains to stand on track trips.

