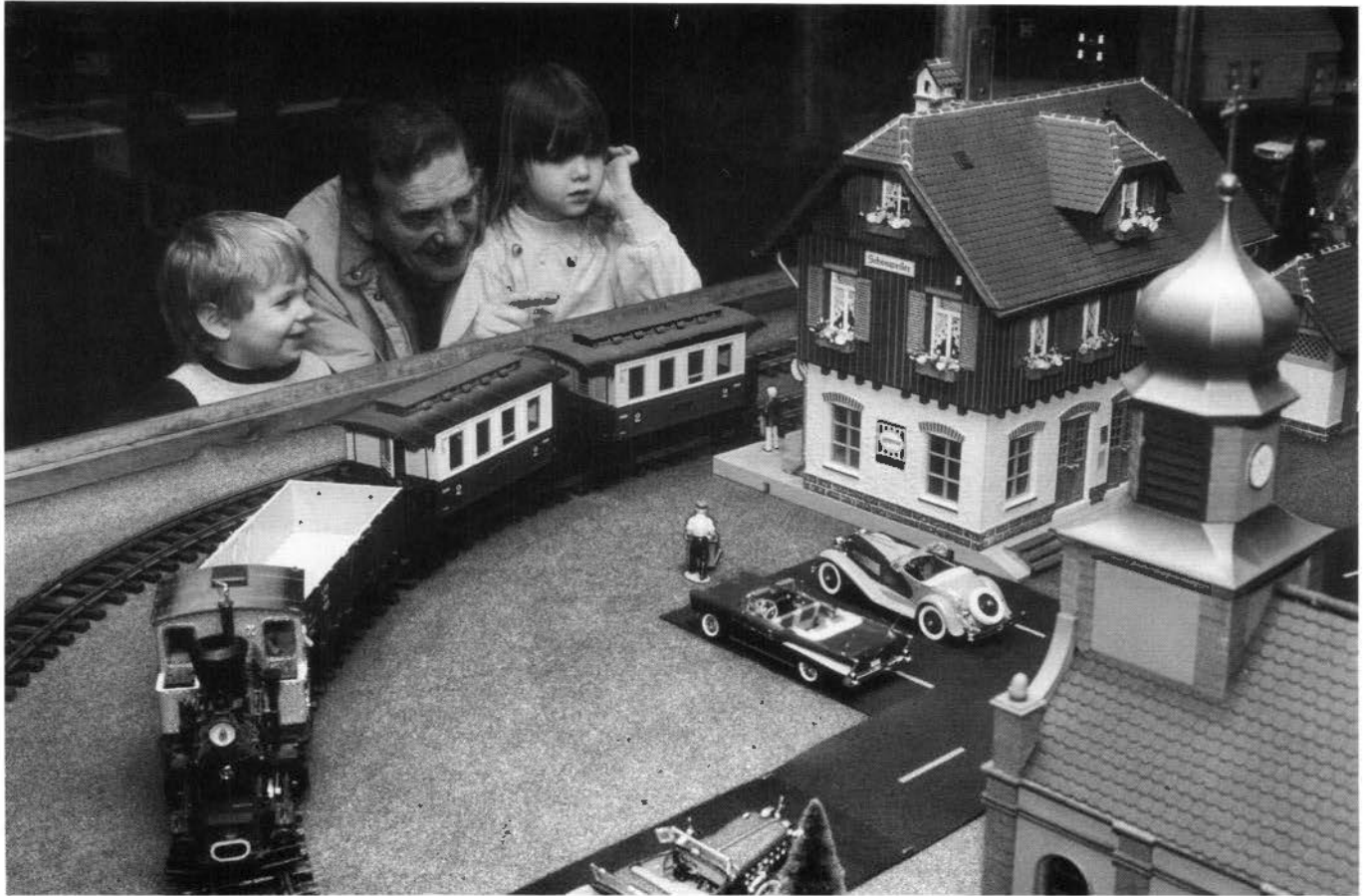


THE ATLANTIC DIVISION EXPRESS



WINTER 1993

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EDITOR

Charlie Weber

ATLANTIC DIVISION MEETS - 1993,94 - WESTOVER C. C. - NORRISTOWN, PA

SUNDAY, JULY 18, 1993
SUNDAY, SEPT. 26, 1993 (MEMBERS ONLY MEET)
SUNDAY, NOV. 21, 1993
SUNDAY, JAN. 16, 1994
SUNDAY, MARCH 20, 1994 (SPECIAL MEET - Details to follow)

ON THE COVER

Here we see a senior citizen with his grandchildren looking at the Atlantic Division 'G' gauge layout at the Campbell Museum this last January. The expressions on the faces of these people epitomizes why we continue to go to the trouble to put on this display for the Museum each year. They certainly look like they enjoyed their visit.

Thanks to Nick Ladd we again have an article regarding this annual project. It starts on P. 5 and a few pictures of the displays can be found on page #6. Also Nick discusses what is also becoming a yearly project, a visit to the Captain Noah show by the Modular Layout crew.

Bob Robinson has contributed another sage editorial starting on P. #3. Please do read it. Any coments you care to send will be appreciated. Bob is also working on an article involving what is thought to be the first electric light bulb used by Lionel. I am really looking forward to being able to publish this information. Unfortunately, (or fortunately, depending upon how you look at it,) Bob is involved in so many Division activities that he has not had time to finish it.

Appreciation and thanks must go to Hank Argue and the Rocky Mountain Division of TCA for permission to print Hank's article about using relays on your Lionel railroad. Hope you operators enjoy it. (pp. 7-16)

A Standard for "Standards"

By Bob Robinson

Any National or local organization must have reasonable rules for the conduct of its affairs and the protection of its membership. Rules establish the framework of the association and how it is perceived by both members and non-members alike. In order to provide guidance and protection, TCA adopted Standards for the marking of reproduction trains, train parts, and restorations. This identification program was a natural progression from our descriptive standards. These descriptive standards set the ground rules for transactions involving toy trains where the buyer and seller were distant (telephone and/or mail). The marking standards provide easy identification of the reproduction trains and their parts as well as the restorations. No intention was ever made to identify a fake or fraudulent item, and therefore, fakes and frauds are in a class by themselves. TCA's Membership Committee will take all appropriate action if requested by a member who feels that a misrepresentation has been made.

The system of marking reproduction parts and products got off to a good start. It was welcomed by the members and, after some experience with the system, was accepted

by the parts manufacturers and dealers. From what I have been reading lately, the marking program seems to be in peril and have become combative instead of an acceptance of fact in TCA. Let's put the Standards for Marking in proper perspective. No part that is missing from an item and would not seriously detract from the item's value or is too small to be marked without damaging the part need be marked. Reproduced parts that are major component parts must be marked to identify them as reproduction.

What is the marking utilized so a member can tell the reproduced item from the original? Either an embossed or cast in "R", no smaller than 3/16" high, or the manufacturer's logo must be present in a location that is visible on a cursory examination of the train (not hidden inside a cab that is screwed to a frame). This is a very simple non-cost step in any manufacturing process whether casting a 400E frame or injection molding a helicopter or plastic tender body. TCA's rules apply only to TCA meets and advertisements in TCA publications. The penalty for unmarked items is simple: It can't be brought into a TCA function for sale or display.

So, what is all the hollering, threats, and intimidation about? Some parts manufacturers evidently do not want to mark their parts.

Their reproductions appear to be excellent copies of the original item, they should be justly proud of their work and should have no hesitation in identifying it. But, alas, that apparently is not the case. Whatever motives these people have in refusing to comply with the rules are their own business. TCA's business, however, is the protection of it's members. Those persons who are in charge of the Standards Committee should not hesitate or debate. They should do what they are empowered to do - enforce the Standards, bar unmarked items from our events, and let the chips fall where they may.

When the Standards Committee was authorized and formed by TCA many years ago it was seen as a necessary, fair, and correct means of protecting it's 14,000 members. We now have 25,000 members. Has our growth changed our views, or do we not need Standards now more than ever?

(The Marking Standards were Bob Robinson's idea and he was the initial chairman of the Standard's Committee. Ed.)

MORE, (CWW):

Because I am again late in getting this issue of the *Express* to you, before going to press I received a copy of the minutes of the TCA Standards/Fraud Committee meeting that took place at the last fall York meet. The topic of

"marking of reproduction parts" was apparently discussed at great length. The final resolution basically reconfirmed what Bob mentions in his above editorial but allows for exceptions. It reads: "Any and all parts must be marked; exceptions will be submitted and determined by the proper Parts Subcommittee."

Another part of these minutes is worth quoting here. "Several parts available through *Parts for Collectors* were then discussed. The following PFC parts were then banned from TCA functions: Lionel 6414 Automobiles, Lionel 6520 Searchlight Car generators, and Americal Flyer bumpers"

I have seen some of these banned parts and can assure you that they are too good and unmarked. Buyer beware!! If you are in the market for any of the cars that hold these parts, contact a Standards Committee representative and find out how to identify them before you buy. (Howard Klumpp is one of our local representatives.) In particular, the cars with automobiles in rare colors and the searchlight car with the green generator will cost you a substantial amount of money. Don't get taken!

If you are a dealer who has these parts for sale, or if you have cars for sale with these parts already on them, please don't bring them to our Westover Meets. Your

BOD is committed to keeping this kind of junk out of TCA meets and either you, the parts, or both will be tossed out of the meet if we discover these parts on your table. Please don't force a confrontation!

"The Souper International Express"
(1992 Campbell Museum Report.)

By Nick Ladd

It was on ! Once again, for the sixth time, we were going to mount our educational exhibit at the Campbell Museum in Camden, N.J. After 1991's success, (the largest attendance ever) we had our work cut out for us.

It was decided to enlarge the 'G' gauge layout by adding a second level and to change the shape from a rectangle into an 'L'. This allowed us to run a third train and have a tunnel for the first time.

Also, publicity was greatly increased in the local papers and, thanks to Al Brodhag and his crew, we were able to present an operating layout on the Captain Noah show on channel #6. We mailed out (1000) thousand flyers to our own members as did Campbell's with their own local mailing list. The result was a record attendance and very satisfied visitors at the exhibit.

The theme this year was the "Souper International Express" featuring trains from around the world. We displayed many toy trains

from Germany, Great Britain, Spain, Italy, Japan, Russia and The United States.

The exhibitors included:

Bill Becker - Early windup trains

Ed Kapuscinski - Postwar Lionel

Charlie Weber - 6464 Heaven

Malcolm Kates - Comic Character Trains

Ed Pinsky - Comic Character Trains

George Kane - Lithographed Trains

Spencer Stoughton - Streamliners

Dick Heineman - Prewar Trains

Joe Fisher - 'S' (Superior??) Trains

Nick Ladd - European Trains & Stations

Phil Ritter - Tiny trains

Bill Wilson - Stations

"Prestige Pieces" were shown by:

Spence Stoughton - Marklin I ga. Prewar loco and station

Garry Spear - Carlisle & Finch loco

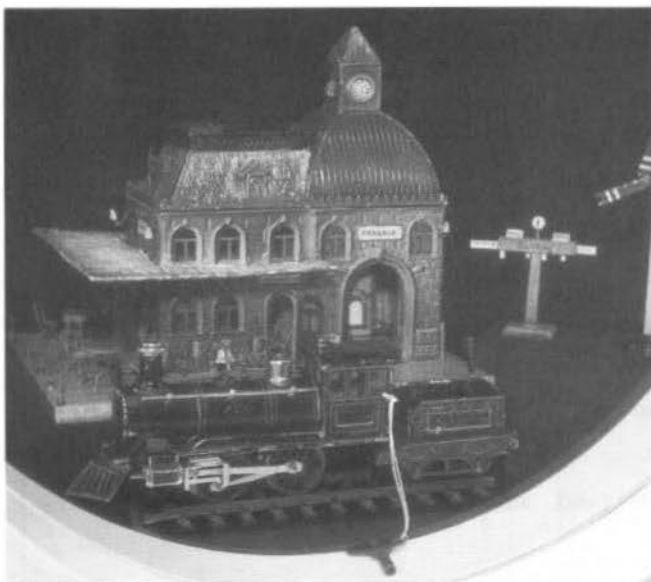
The layout was coordinated by Garry Spear who was helped by Bill Wilson, Bill Miles, George Kane, Charlie Weber, Dick Knowles, Neil Bradley, and the Elves at LGB who make their trains run so well. "TRAIN 99" lent us the track and we are most appreciative of their help.

If I have omitted anyone who helped make the exhibit and layout

so great, please accept my apology and sincere thanks. Thanks also goes to the Campbell Museum staff who helped us create this year's exhibit: Cathy Magee, Ralph Collier, and Bess Brock. They couldn't have been more helpful or accommodating. The food served during the set up was most appreciated and the cocktail party was a smash success. About 100 members and family attended and the food and wine were superb. If you did not come to the party, please plan to do so next year. You missed a real goody!

During the exhibition we gave out door prizes, showed videos and had brochures about the TCA museum, and had TCA applications available. I'm quite sure we will gain some fine new members as a result.

In all, it was a very big success. Everyone who participated deserves a big pat on the back. Without your blood, sweat and cheers this tradition would not be so popular. Now....about next year...



The article below appeared in the newsletter of the Rocky Mountain Division for Nov., 1991. The technology is quite old as relays were the devices used to provide signaling and train control when "scale" was in it's infancy in the 1930's and 1940's. Any number of articles discussed this topic in MR and RMC magazines, especially after WW II when war surplus stores really carried "war surplus" goods. Another source of relays at the time were scrapped pinball machines. In any event, I feel that this article may be of some interest to the operators in our club.

RELAYS AND THEIR APPLICATION TO LIONEL RAILROADS

By Henry (Hank) E. Argue

What's a relay? Why do I need one? Lionel never sold one so why do I need one? Where do I buy relays?

These are some of the questions we are asked when a Lionel train enthusiast is building a model railroad. Most of the functions that Lionel model railroaders want to have happen on their railroads can be done with relays.

Basically a relay is a switch that is electrically actuated. Why you need one depends on what you are trying to do. A relay is an excellent replacement for Lionel's 153C and 145C contactors and a lot more reliable. Relays may be used to operate 153 block signals, 151 semaphores or just about any Lionel accessory. The most convenient way to actuate a relay is to use an outside insulated rail track section. (Lionel part #OSS for straight and #OCS for curved. Maury Klein part #K-333 'O' gauge, K-233 for '027' gauge.) These are track sections where one of the outside rails is insulated from the ties the same as the center rail. Place a fiber pin in each end of the

insulated rail, install it in your layout, and you are ready to wire up our relays.

Lionel has indeed manufactured thousands of relays. It is the device (switch) used to actuate the older style whistles and horns. In this case the relay used is a D.C. (direct current) type controlled by circuitry in the transformer or whistle controller. Lionel has not made these relays for a long time. The newer Lionel whistle, horn, and rail sound units employ solid state circuitry to do the same thing. (No moving parts.) Both the old and the new are fortunately controlled by our existing transformers and whistle controllers.

RELAY TYPES

There are numerous different types of relays. This discussion will deal with the three types most commonly used by model railroaders. All of these types have moving parts; all have coils, all have switches or contacts.

GENERAL PURPOSE RELAY (Cheapest)

A general purpose relay is one that is electrically switched to one position and spring loaded to the other position. Voltage must be applied to the coil for it to switch. Voltage must be sustained to keep it switched. As soon as the voltage is removed the spring returns it to the other position.

LATCHING RELAY (More Expensive)

A latching relay generally has two coils. Applying voltage to one coil switches it to one position; applying voltage to the other coil switches it to the other position. It is a bistable device similar to an 027 track switch. The voltage need be applied for only a few milliseconds in order for it to

switch. Removing the voltage does not affect the switched position.

TIME DELAY RELAYS (Most expensive)

Time delay relays work two ways; "delay on operate" or "delay on release". The rate of delay is controlled by internal circuitry within the relay. The cheaper ones let you add a resistor to change the time delay. The more expensive ones use a built in potentiometer where the time delay is changed by simply turning a knob. The "delay on operate" means that the relay is actuated but the contacts do not close until the end of the timed delay. The "delay on release" means that the contacts close and remain closed until the end of the timed delay. The contacts then release. When purchasing one of these relays you must specify either "delay on operate" or "delay on release".

RELAY COILS

Since we deal with Lionel trains our control voltage is A.C. (alternating current). For simplicity, then, it is recommended that we use relays whose coils are wound for A.C. use. The three coils that are available for Lionel train use are 6 V. A.C., 12 V. A.C., and 24 V. A.C. I personally prefer the 12 V. A.C. since 12 volts is the easiest to obtain from any Lionel transformer. The impedance or resistance of the coil is also significant since the higher the resistance the less current is required. Ideally, about 75 to 125 OHMS would be nice. Unfortunately there doesn't seem to be any coils available in that resistance. Apparently the air gap between the movable contacts and the relay coil requires a higher current to actuate. The relays I've used have a resistance of between 20 to 75 OHMS and do the job nicely. Unfortunately they draw more

current than I would like.

RELAY CONTACTS

The relay contacts are the actual switches which move from one position to the other during actuation by the relay coil. These contacts are offered in the following contact arrangements.

SPDT (single pole double throw)
DPDT (double pole double throw)
3PDT (three pole double throw)
4PDT (four pole double throw)
MPDT (multiple pole double throw)

A pole is a switch or contact. A throw is the internal movable section of the relay which changes the poles.

I prefer to buy at least the D.P.D.T. contact arrangement since you can control the track voltage on one set of contacts and another voltage on the other set of contacts. This allows keeping the voltage for signal lights at a constant brightness regardless of the track voltage.

CONTACT RATINGS

The contacts (switches) are designed by the manufacturer to switch a certain amount of current. For Lionel train use I would recommend no less than a five ampere rating.

TYPES OF RELAY ENCLOSURES

The cheapest relay available is an open frame general purpose. The coil, contacts, and solder points are all out in the open making it easy to work on. Most include a #6-32 mounting stud or tapped hole where by drilling one hole the mounting problem is solved.

Enclosed relays are what the name implies. All working parts are enclosed within a plastic

or metal housing. Access to the contacts and coil is through pins projecting from one end. Some have a tube socket base that plugs into a mating receptacle. This makes changing a relay a plug in pull out operation.

LOGIC

Logic is defined in Webster's Dictionary as "The science of normative formal principles of reasoning". Any of us who has planned a model railroad has indeed used logic. When we talk about methods to control our trains we're using more logic. When we're considering using relays for control we must use a lot of logic. What do you want your trains to do? When do you want this to happen? How will you make it happen?

The best way I know to apply logic to your model railroad is to first make a sketch of your layout. Then list in order the events you want to happen in the order that you want them to happen. The position of the trains on your layout will actuate the relays. The relays will switch on or off other trains, accessories, track switches or control train routes.

Some practical applications of relays to Lionel railroading follow. Refer to figure 1. Let's say we want to run two trains on the same loop. We want to use a 153 block signal and a relay to assure that the trains never collide. To save money we'll use a general purpose relay. (Electrically switches to one position, spring loaded to the other position). Let's say we're using a ZW transformer. We want to keep the 'E' units in operation. We want to control each train independently. Let's list the steps in logic form.

A. Two train operation with

independent control.

B. Use relay to stop one of the trains to control the spacing.

C. Neither train shall collide with the other.

D. Use a 153 block signal for realism.

E. 'E' units shall remain operational.

F. Determine method of wiring.

CONCLUSIONS

Step 'A' tells us to split the layout in two halves. Control one half with handle A, the other half with handle D. Fiber pins are inserted at the mid point of the layout to isolate the two halves.

Step 'B' and 'C' tell us the relay must be actuated long enough to space the trains. The best way to do this, using a general purpose relay, is to use two OSS track sections (OSS optional) and wire them together. Since the train wheels complete the ground circuit to the relay, any engine or any car wheel on either OSS track section will close the relay, remove track power from the block, change green to red on the 153 block signal, and stop any train entering the block. The spacing between OSS 1 and OSS 2 is optional, however, the engine must be on OSS 2 before the caboose leaves OSS 1.

On large layouts a third or fourth OSS track section can be added and wired together to extend the separation. The only requirement is that the engine be on one OSS section before the caboose leaves the other.

Step D: The 153 block signal just adds realism and by itself performs no control function. In this example we've used the other set of relay contacts to switch the lights on the 153 signal. Doing it this way keeps the bulbs at a constant brightness regardless of track voltage.

Step E: Since we want to keep the 'E' units operational we'll switch in a resistor to lower the voltage in the block. This will stop the train, but not drop out the 'E' unit. A 10 OHM 50 watt resistor will do the job nicely.

Step F: The wiring and location of the OSS track sections fall into place using this logic approach.

Figure 2 shows an optional way to control the voltage in the block without using a resistor. As long as you have either handle B or C available on your transformer. This is a great substitute method. The control voltage in the block is right at your fingertips, a very convenient feature. Set handle B or C to about 6-8 volts. The 'E' unit will not drop out but the train will stop.

Figure 3 shows a loop and a siding. By using the relay method shown, one train will be in motion while the other is stopped. When the first train completes its loop it will stop and turn on the other. The trains run in opposite directions.

Lionel's Bantam book shows a method similar to what we've shown using fiber pins in both outside rails to control the trains ground circuit. However, their method does not have signals. Since signals add realism we've done a similar thing using relays.

For this operation we use three relays. One latching relay

and two general purpose relays. We've also included a single pole, double throw, momentary center off switch to set the colors on the signals correctly.

To start the cycle set the track voltage to zero (handle D on ZW.) Set the relay and 153 signal light voltage to 12 volts using handle B on ZW. Wire the 153 signals together as shown. The diagram assumes that the red bulb is in the upper socket, green in the lower socket. Check that the color light on signal 153 A is green and the color light on 153 B is red. If the colors are reversed push switch SW 1 one way or the other until the signal colors are as indicated. Manually place train 1 on block 1. This will close relay RL2. Note that the last car on this train must not be on the relay control track OSS 4. Position train 2 (facing left) on the top end of the loop. (At the train 2 arrow in the diagram.) Wire the O22 switches together as shown and with the switch controller set them in the straight position. You are now ready to start operation and the following sequence of events will happen.

Step 1. Open the throttle, handle D on the ZW, and get train 2 moving forward in a counter clockwise direction. While in motion push the 'E' unit lever on the engine and lock it out so the engine runs only forward.

Step 2. As train 2 passes OSS3 the latching relay is switched. This changes the color on signal 153 A from red to green. The track power is switched to relay RL3.

Step 3. Train 2 continues to OSS2 where it stops and relay RL3 is pulled in. This eliminates track power to block 2. Track power is switched on to block 1 and starts train 1. The last

car of train 2 must not be on the relay control track OSS3.

Step 4. Get train 1 moving forward in a clockwise direction. Lock out the 'E' unit on the engine so it only runs forward.

Step 5. As train 1 leaves OSS1 and block 1 relay RL2 drops out, nothing else happens.

Step 6. As train 1 passes over the left O22 switch both switches are thrown to the curved position.

Step 7. Train 1 proceeds in a clockwise direction and enters the right O22 switch.

Step 8. Train 1 passes over OSS4 which switches the latching relay RL1. 153A goes to green, 153B goes to red. Track power is switched to relay RL2 and removed from RL3.

Step 9. Train 1 continues to OSS1, block 1, where train 1 stops and relay RL2 closes. This starts train 2. The last car of train 1 must not be on OSS4.

Step 10. As train 2 leaves OSS2 and block 2 relay RL3 drops out. Nothing else happens.

Step 11. Train 2 passes the right hand O22 switch and switches both to the straight position.

Step 12. The cycle now repeats.

For simplicity we've elected to lock out the 'E' units. They could be kept active using the example of figure 2. In this case however, an additional set of contacts would be required on all three relays.

Figure 4 shows a schematic truth table of how the track power is switched as the trains progress

around the loop. Only the steps that affect the relays are shown. Breaking the logic steps shown in this way is a big help in determining whether you've accomplished what you set out to do. The second set of contacts on RL1, the contacts that change the colors of the block signals, is not shown.

There are many variations and alternates to the method shown. We could have used O22 switches and a general purpose relay in place of the latching relay to control the other two relays. However, this operator has had little success using this approach. It seems that the available relays draw too much current and affect the operation of both the O22 switch and the relay, and for this reason figure 4 completely divorces the relay operation from the O22 switches.

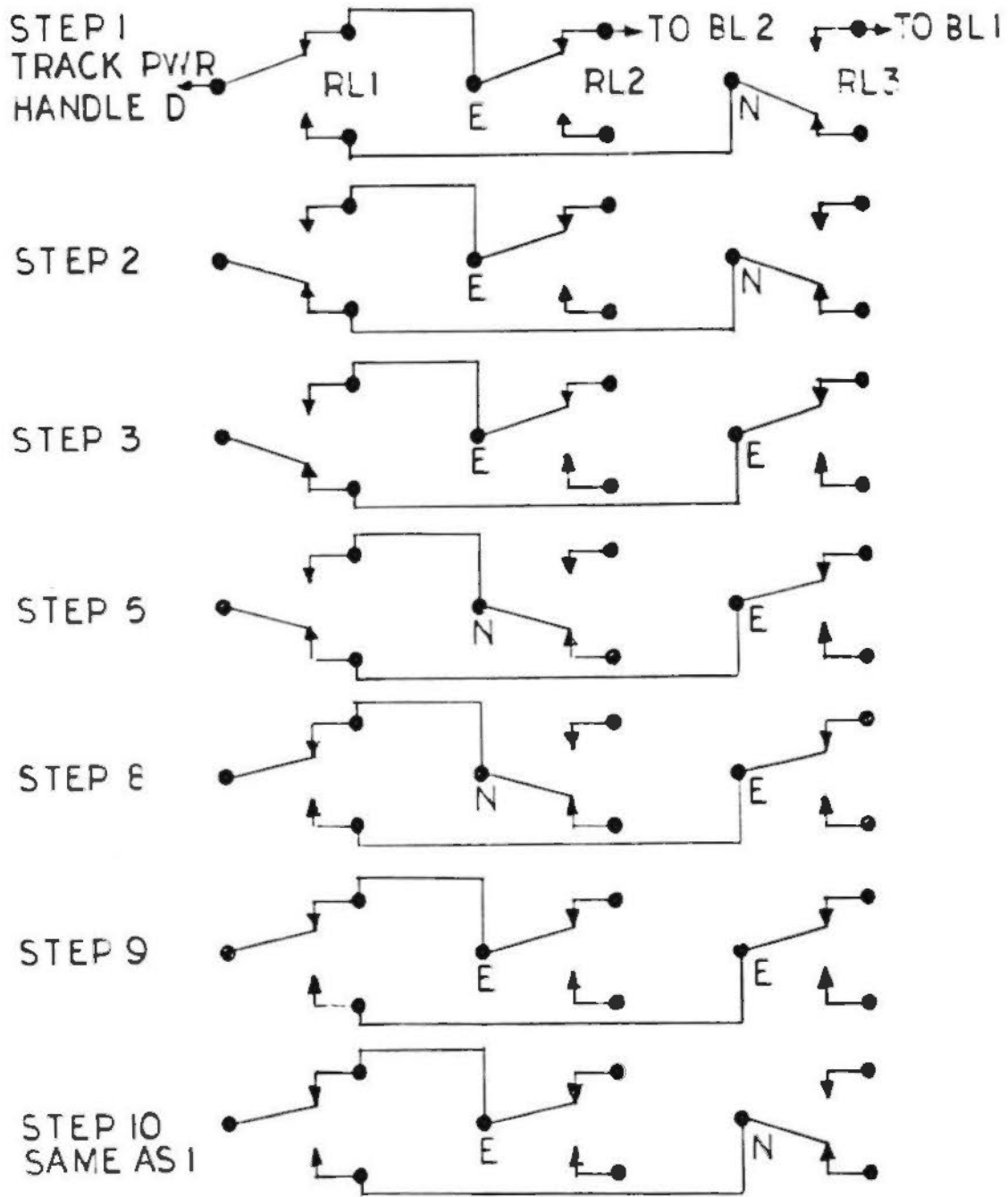
WHERE TO BUY RELAYS

There are two national distributors for electronic parts. Both companies have well illustrated catalogues that are yours for the asking. Both companies have regional offices in the major cities throughout the U.S. Write or call and get a copy of their catalogue. They are:

Mark Electronics
5875 North Lincoln Ave.
Chicago, IL 60659
(312) 989-7800

Allied Electronics
401 East 8th Street
Fort Worth, TX 76102
(817) 336-5401

FIGURE 4



E=COIL ENERGIZED
N=COIL NOT ENERGIZED

Suggest relay part numbers listed in Newark catalogue 10B.

<u>Relay Description</u>	<u>Stock #</u>	<u>Type #</u>	<u>Action</u>	<u>Volts A.C.</u>	<u>Contact rating</u>	<u>Price</u>
General Purpose	24F1308	KA5AY	SPDT	12	5 Amp	\$9.00
General Purpose	24F1309	KA11AY	DPDT	12	5 Amp	\$11.00
General Purpose	24F1216	KA14DY	3PDT	12	5 Amp	\$14.00
Latching	24F617	KB17AY	4PDT	12	5 Amp	\$35.00
Switch	65F1653	JMT-123	SPDT			\$3.00
Resistor	13F141	RH-50	10 OHM	50 Watt		\$5.00

In response to the recent requests by the Modular Layout Committee for various pieces of equipment to be used with the Modular Layout and/or the Gift Layout projects, a **very generous** donation of **many** items of Plasticville was given in memory of one of our departed Atlantic Division members, **Joe Lasota**, by Priscilla. You may remember Joe as the grey-bearded big bear of a guy who held a table out on the porch at our Westover meets up until last may. The Modular Layout Committee and all of the Division members wish to express our profound gratitude to Priscilla for remembering Joe in this very special way.

The Atwater Kent Museum in Phila. (15 S. 7th St.) has a tour this summer that I thought might be of interest to some of you:

Sat., August 28th, 11:45 a.m. to 5:30 p.m. "Riding the City Rails: The Development of Philadelphia's Transit System." This half-day tour will explore the historical development of the city's mass transit system from the post-Civil War decades to the present. Participants will tour a number of sections of the city and surrounding suburbs by riding on six different historical modes of urban transit that have made up Philadelphia's public transportation system: elevated, subway, commuter rail, interurban subway surface, and a special ride on the Erie Avenue streetcar, which is no longer in regular service. Registration fee: \$20. To register for tours, call (215) 922-3031. Tours meet at the Museum.

New Parts: #33 or 38 grill, \$1.75. #605-610 solder on piece to hold link coupler on pass. car, \$2.50. 226E-12 & 53 connecting rod with embossing, \$2. 221-33 lamp bracket, \$3. 364-48 lumber loader lite cover, \$5.75. 0209 'O' ga. 2 piece barrel, \$1. TC-120 shoe contact spring, \$1. 1130-20 2 wheel rear truck, \$5. SAE (52¢) for complete lists. All items plus shipping. George Tebolt, Box 149, Spencertown, NY, 12165.