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The Story on Page 2

9/6 2013

IVES CONTROLOPHONE

By John Gray I-6662

In the early 20th Century, the IVES Company of Bridgeport, Connecticut, was probably one of the most innovative toy train manufacturers in the United States.

The IVES engineering department came up with some truly advanced products to enhance the operation of their new line of electric trains. One of these innovations was the “Controlophone”; a telephone-like device that responded to voice commands like “stop and go” to operate its toy trains.

Quite likely the device contained a very thin metal disk that would move, making contact with a magnet, thus opening and closing an electric circuit in its speaker phone, as it responded to the weak compression waves generated by a voice command.

But the device may have had design flaws, and it apparently did not sell well after being advertised in the IVES 1915 catalogue. It did not appear in any of the IVES’ subsequent catalogues.

However, it did represent an advanced engineering concept in the operation of electric toy trains at that time, and the idea was not used again until many years later by another toy train manufacturer, and it too was short lived.

Today, probably few of these IVES Controlophone still exist, since they were marketed for only one year, nonetheless it represented an engineering concept well in advance of its time; a fact that the IVES company was well known for.

The front cover depicts a 6 year old boy using his Controlophone to operate his toy trains, a proud distinction that few other boys of that era could claim.

PRESIDENT’S COLUMN

Don Lewis

TROUBLE SHOOTING THE IVES R-UNIT

By Phil Morris I-7042, TCA- 79-13340

On December 17, 1923, Harry P. Sparks of Pittsburg, Pennsylvania filed an application, Serial No. 681.216, for a controlling device specifically for the purpose of controlling an electric toy train. In 1924, the famed Ives Manufacturing Company successfully installed Spark's invention in their electric train line enabling the operator to distantly control the train in the forward, neutral and reverse directions and thereby opening up a new world of operational possibilities; the coveted device was called an R-Unit or reversing unit. Coincidentally, 1924 was the same year that The Lionel Corporation overtook Ives in sales. On July 31, 1928, Ives was purchased jointly by Lionel and American Flyer. I believe Lionel engineers marveled, tinkered and refined the Ives R-Unit and finally sometime in the early 1930's miniaturized the entire unit, redesigning the contact drum and pawl mechanism; this control unit was renamed the Lionel E-Unit (electric control unit) and remained unchanged for the next 50 years.

With the advent of better manufacturing techniques with greatly improved manufacturing materials, Lionel's refinements of the original Ives R-Unit produced a quiet, reliable and consistently flawless performing E-Unit. Presently, I do have a number of Ives R-units, in both wide and narrow gauges, that have stood the test of time and still perform well. However, in general, Ives R-Units do develop multiple problems over time and after repetitive use especially the 1924 and 1925 production pieces. It is my considered opinion that most Ives R-Unit problems are related to a breakdown of materials used rather than that of design flaws.

Since the Ives R-Unit and Lionel E-Unit are connected to the track circuit, if an unprotected short develops any place in the circuit (i.e. motor, illuminated coach, track, etc.) the internal control unit will suffer. In this instance, the Lionel E-Unit contact fingers and or molded contact drum is more susceptible to damage than the much beefier R-unit. Fortunately, most layouts include a circuit breaker to prevent any electrical catastrophes.

After years of tinkering with more than 100 Ives R-Units I have made the following observations:

1924 production: The R-Unit Coil has inadequate core support; the windings are started around layers of paper. As a result, repetitive up and down movement of the central plunger causes tearing of the internal paper and jams further movement, effectively disabling the R-Unit. (see the pictures below)



Other observations reveal moisture damage distorting the coil resulting in a badly rusted and frozen plunger. In the original patent, Sparks calls what I am referring to as a plunger, as " the movable electromagnet component or armature". (see pictures below)

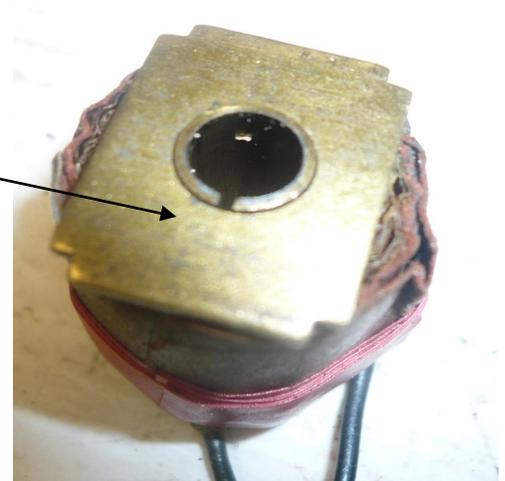


1925 production: Apparently realizing operational difficulties, 1925 saw the insertion of a heavy cardboard tube around which the coil was wound creating a much more rigid pathway for the central plunger to travel once the coil was energized or de-energized, and thus eliminating plunger jams caused by tearing paper; the cardboard tube did not solve the devastating functional effects of moisture damage described above.

1926/1927 production: I have observed the cardboard tube core sleeved with a thin mill of copper or brass and by late 1926 through 1927 the institution of a heavy brass tube, secured by a heavy brass base plate, inside the paper core. At this point, we had a very decent unit. (see pictures below)



Late 1926 - 1927
Bottom portion of Coil with Heavy Tube and Baseplate
Top portion of Coil



Late 1927 and later production revealed a much refined R-Unit with a better cantilever mechanism to insure the dropping of the plunger once the electromagnet was de-energized. I have a sneaking suspicion that Lionel engineers had a hand in this last production R-Unit that is truly a work of art and a consistent performer, barring the following observations of all Ives R-Units.

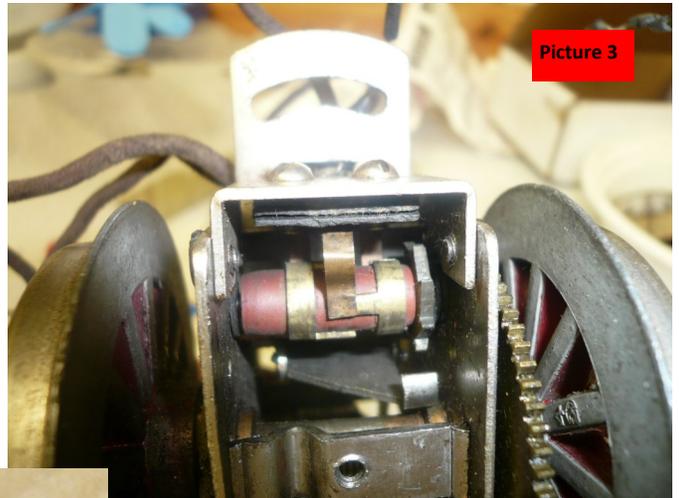
Other General Observations: In addition to the plunger problems which were seemingly eliminated by late 1926, the contact drum was made of a non-conductive red fiber material to which heavy brass contact fingers were applied in a very specific special pattern. (see picture 1) Moisture distorted this original red fiber cylinder causing the brass contact fingers to either slip and move out of phase, (see picture 2) or the drum swelled in spots raising a finger which in turn caused jamming and distortion of the stationary brass contact leafs. (see picture 3) Once the OEM specifications of this fiber drum changed, all bets were off creating an electrical nightmare. Additionally, through the use of both metal and fiber spacer washers, (see picture 4) the drum was purposefully spaced between the R-Unit side plates to create the optimum pick-up location with the stationary brass contact leafs; (see picture 5) once drum distortion was achieved either through moisture and or use, the drum would display sideways or lateral displacement periodically creating a dead short between a finger, the brass ratcheting gear or a metal spacer and the grounded side plate of the R-Unit.



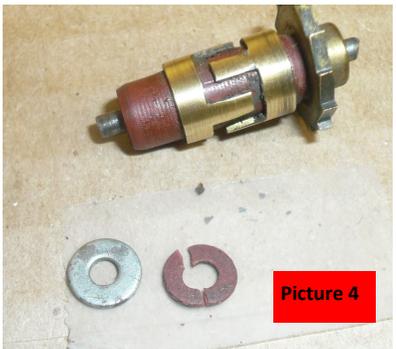
Picture 1



Picture 2



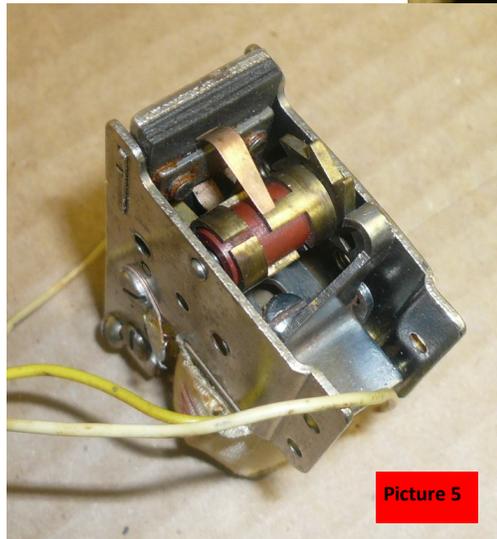
Picture 3



Picture 4

Picture 5

Later style O-Gauge R-unit with proper drum spacing and indexing for brass drum finger and brass contact leaf mating.



Picture 5



Picture 6

Picture 6 Adjustment screw sticking out of R-Unit Coil Top. This adjustment was eliminated by late 1926

Intrinsic in the pre 1927 R-Unit design, are specific coil adjustments which are critical for trouble free operation. (see picture 6) Many of the structural problems that developed over time were magnified manifold by well meaning and frustrated novices who in an effort to correct the problem made it much worse.

If enough interest is generated here, I can follow-up with a short article on proper wiring of the R-Unit and share the user friendly diagrams and narratives that I have generated for my personal use.

From Our Web Site: During the 1927-28 period the "Tomato Soup" car and others were shown in a 1929 IVES MINIATURE RAILWAY NEWS under an article called "Dinner is Served Via Ives Trains". It documented a special dinner held for the sons of railroad engineers where 12 boys were seated at a big table with track running from the kitchen to an oval of track around the table. Each boy had a semaphore (spelling from paper) that he would set when he wanted the food train to stop at his place. According to the article different freight cars were used to serve different courses, until the "ice cream, nuts, and raisins". The article actually showed the tank car below dispensing soup to a bowl and a line of Coke cars and what would appear to be a couple hoppers loaded with something edible. According to the article there were 12 of these tank cars that obviously had to be specially painted and fitted with a working valve. We've never seen any hopper or coke cars that would appear to have been made for this special diner.

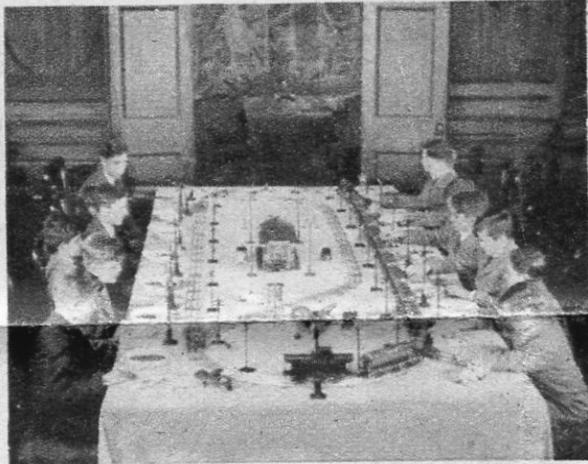
**IVES
TOMATO
SOUP
TANKER
CARS**

Dinner is Served Via Ives Trains

Perhaps one of the most unique ways that dinner has been served at a dinner party is through the means of Ives miniature trains.

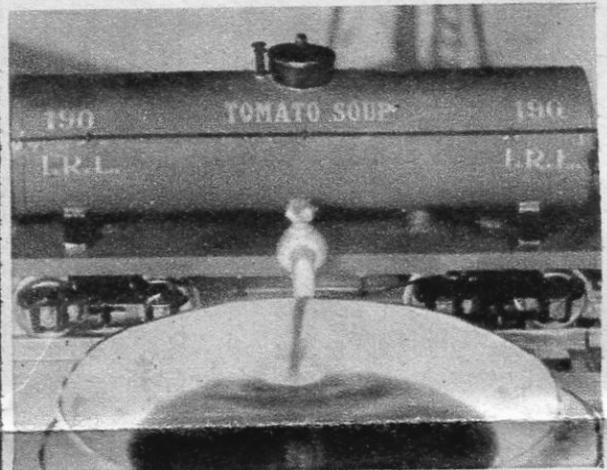
Ives trains have often been employed to give a novelty feature to a dinner on special occasions.

These unusual occasions have consisted of banquets at home, elaborate get-togethers of executives of large



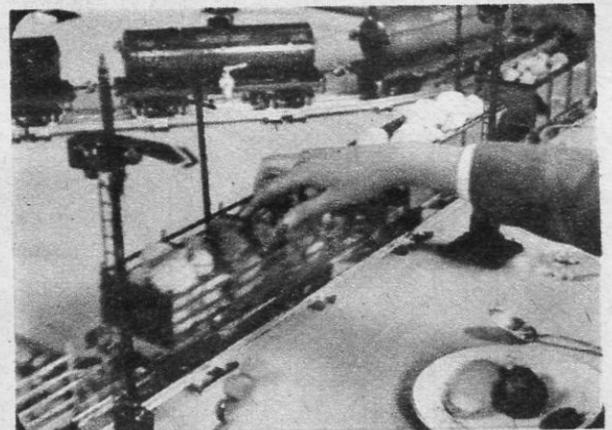
institutions, many banquets of railroad executives and railroad employees, and dinners of clubs and societies. Perhaps one of the most unique dinners was held not so long ago. The sons of railroad engineers had planned a dinner, and it was but fitting that the dinner should be surrounded with railroad atmosphere. A very clever table layout was arranged and opposite each of the twelve boys' places a semaphore was placed. The track ran from the kitchen to the table and as the boys were seated a train of twelve tank cars automatically was run in from the kitchen and stopped at each of the boys' places in turn. Each boy drew from the tank car red hot soup, and after each boy had been served, the train returned to the

kitchen automatically. Various courses were served in turn until the ice cream, nuts, and raisins. If the boy was anxious for a second helping, he merely had to set his semaphore against the train and it stopped for him to help himself.



The various types of freight cars can be used for the different courses, and as many cars in a train as there are guests at the table. Each car carries one course for each guest.

Hundreds of dinners have been served in this manner for various important occasions, and always the dinner has been voted a huge success.





**FAKE TOMATO SOUP
TANKER CAR**

The lettering "190" is too far above the tankers railing,
"TOMATO SOUP" Lettering is thicker than it should be
Paint Patina appears not to be correct.



**REAL TOMATO SOUP
TANKER CAR**

Missing Tanker Cap
which is correct

Correct Lettering

ISSUES: Missing Spout
Broken Top Vents



**REAL TOMATO SOUP
TANKER CAR FROM
OUR WEB SITE**

Correct Lettering
Correct Missing Tank Cap
Correct Top Vents
Correct Spout

issues: Condition is to good
but possible



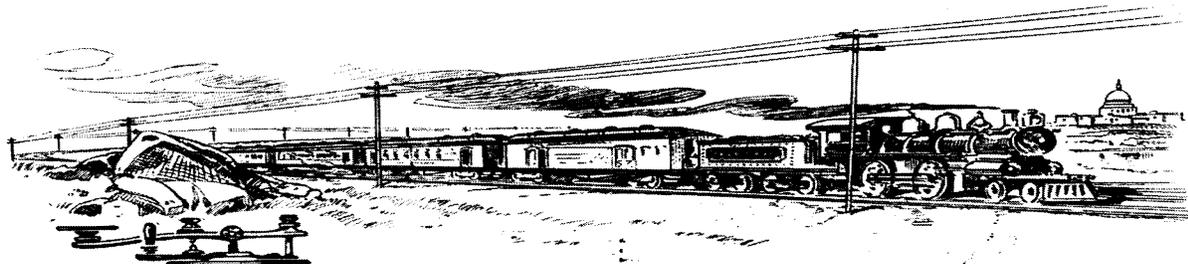
**REAL TOMATO SOUP
TANKER CAR**

Correct Lettering From Doc
Robbie Collection

issues: Top Vents Broken off
Marklin Spout Replacement
Tank Cap Replaced

<p align="center">KEY SOCIETY POINTS OF CONTACT</p>	<p>Donald J. Lewis, President 35 Harwood Drive Danbury CT 06810 (203) 792-5090 (203) 417- 7783 (Cell) dorfan@comcast.net</p>	<p>David McEntarfer Director Membership Chairman PO Box 72 Forestville, NY 14062 (716) 679-5782</p>	<p>Martin Fasack Director/Tracks Editor PO Box 937 Plandome, NY 11030 (516) 627-8804 Fax (516) 627-6632 fasttrack@rcn.com</p>
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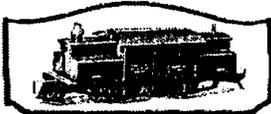


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Ives  **Toys**
Make Happy Boys