

THE
HORNBY
RAILWAY COLLECTOR



May 2011, No 463



A. OF
LING

THE FESTIVAL OF
RAILWAY MODELLING

London's Largest Loose-Lay Layout, p18

A Hornby-Dublo Magnetiser

David Neale (972, HRCAA 1)

First published in *The Australian Hornby Collector*, March 2011.



PLATFORM END
Douglas Baldock

A branch line that I have always found most interesting but along which I travelled very few times was the Great Western Railway's Bridport branch in West Dorset.

Originally built in broad gauge, it left the GWR Weymouth main

line at Maiden Newton. I first travelled the length of it in the summer of 1950. I remember coming down from Paddington behind what was I think a 'Castle' class loco, and having to cross a footbridge because the platform for the Bridport branch was on the 'up' side of Maiden Newton station.

There waiting in the bay platform was the little two-coach branch line train. The locomotive was a small Prairie tank in the 55xx series, no doubt shedded at Weymouth (although I don't think I checked that out at the time). The two coaches were of course compartment coaches of a type similar to Hornby No.2 Passenger Coaches and Hornby-Dublo D13s/D14s.

So away we went through the lush countryside of West Dorset. I remember that we stopped at the two intermediate stations: Toller (full name "Toller Porcorum", the Latin porcorum meaning 'of the pigs') and Powerstock; two small villages, but with names previously unknown to me.

Eventually we reached Bridport, the semi-fictitious 'Port-Bredy' of Thomas Hardy's Wessex. This had a small goods yard with appropriate sidings. However instead of the anticipated buffer stops at the southern end of the platform I noticed the tracks continued southwards along what must have been some freight only line which no doubt had carried passengers in earlier years. Subsequent investigations while on holiday at Bridport disclosed that there was a further station at Bridport: East Street (which was closed to passengers in 1930), and that the line continued southwards to finally terminate at a small station at West Bay (also closed to passengers in 1930). West Bay was and still is the seaside area of Bridport. Although passenger traffic had ceased at West Bay so many years earlier, this branch extension to West Bay nonetheless continued for freight only until 1963.

I remember seeing a GWR pannier tank pottering about at West Bay in the summer of 1958. After a short time it set off back towards Bridport with a small number of wagons. Indeed over the years the only steam locos I saw on the Bridport branch were 2-6-2 tanks of class 4575 (The 4575 and 4500 classes being favourite locos on GWR branch lines in Somerset, Dorset, Devon, and Cornwall) and the occasional pannier tank. So, not much there to remind me of Hornby-Dublo except of course the occasional 'Toad' GWR brake van. And 'Castles' were regular performers along the main line at Maiden Newton.

As with so many small branch lines, the Bridport branch eventually fell victim to the cuts prompted by the Beeching Report of 1963, and closed altogether in 1975. I last travelled along the branch in 1964; by then steam had given way to diesel and the train was a single unit 'bubble car,' but this of course had the advantage that by being at the front of the coach we had virtually the same view as the driver. When I was last in the area in the mid nineties there appeared to be the embryo of a small preservation centre at what remained of the station at West Bay.

(Ed: The Swanage Railway sells DVDs showing the Bridport and West Bay branch in the 1960s and early 1970s: an interesting line, with potential for someone to tackle in Dublo or Gauge O with the help of some neverwazzas and/or new compatibles, perhaps? A neat history can be found at <http://www.westbay.co.uk/bridport/railway.php>)

The following document is the instruction sheet for a Hornby-Dublo Magnetiser designed and built in 1982 by R. C. Wyborn (Meccano Electrical Engineer 1927 - 64). The machine is a masterpiece of electrical engineering both aesthetically and practically. The attention to detail even in these instructions shows the exactness he put into all his work, including Dublo. D.N.

GUIDE TO THE USE OF THE MAGNETISER

All magnetising equipment of whatever size or special purpose will embody fundamental functioning units such as a magnetising head, a DC supply source, and a means of control. It follows therefore that any such arrangement is capable of magnetising any magnetisable object, subject to the size and physical properties of the head, including the maximum intensity of the magnetising field.

In this equipment the magnetising head is separated from the control unit to assist portability. Electrical connection between the two units is effected by special plugs and sockets, making a wrong connection virtually impossible. The equipment is operated from a standard domestic 240V. 50Hz supply. Maximum loading is less than 300 watts.

Both magnetising and demagnetising functions are provided. Operation is initiated by push-button control. Visual indication of each control sequence is given by an illuminated indicator, and incorrect sequence switching is prevented by interlocking relays.

Control Circuit Protection

The mains lead requires the addition of a standard 3-pin power plug. If this is fused, the fuse rating should not be more than 5A. Further internal protection is afforded by a thermal switching device which interrupts all the switching circuits if the ambient temperature exceeds 35 deg C. Indication of this is given by the legend C/O on the indicator. The device will reset itself automatically on cooling. The low voltage circuits are also protected by a 1 amp. 20mm fuse. Both devices are mounted on top of the mains transformer.

Arrangement of Units

The head may well be to the left or right of the control unit according to preference. Stand the units on a reasonably level surface which is able to support their combined weights. The weight of the control unit is 32 lbs. (14.5 Kg.) and that of the head 30 lbs. (14 Kg.). Fig 1

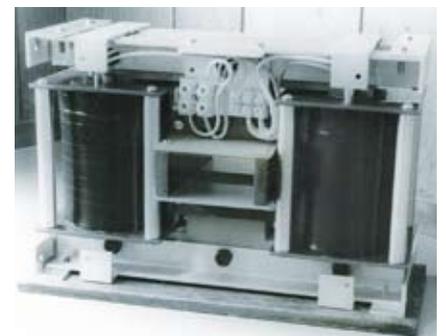


The Magnetiser Head

This comprises a gapped laminated soft iron yoke with excitation windings on each of its outer limbs, the winding being used for both magnetising and demagnetising functions. The gap dimensions are 75 x 35mm which is sufficient to enable a Dublo mechanism to be introduced with a minimum amount of disassembly. Fig 2

The head is enclosed in a polished wood panel assembly which is removable should it be necessary to gain access to the electrical terminations. The connecting leads are individually terminated at their free ends by special 8-pin plugs. The DC positive plug and its mating sockets are identified by red dot markings. Fig 3

During the very short time the head is energised an external magnetic field will be present in the vicinity of the gap. It is advisable to remove things such as watches and



The Wyborn Letters

Alan Middleton (1103)

The HRCA Hornby Railway Collector for December 2010/January 2011 included a supplement written by Ronald C. Wyborn, Head of Electrical Design and Research at Meccano Ltd. Wyborn retired in 1964 and wrote the story titled: *Binns Road: An Empire Fallen*, in 1982, four years before his death in 1986. The supplement provides an insight into, and answers many questions about, the Meccano operations at Binns Road between Wyborn's commencement around 1927 and his retirement in 1964. The following is a short correspondence between myself and Ronald Wyborn in 1981 and 1982.

Alan Middleton's first letter

August 25, 1981

Dear Mr Wyborn,

I would be very interested to read further details of your Dublo magnetiser. The probable cost of £300 would be out of reach for most of us, but the main section, the magnetising head, sounds like a possibility at approximately £50. However, I would have to see the completed design before considering construction. My present magnetiser consists of about 120 turns of B&S 18 enamel wire wound on an old electromagnet speaker cone with mild steel arms screwed to each end. With a 20 volt 5 amp supply, the thing certainly kicks life into the 3 piece magnet as used in the post-war 0-6-2 tank loco, but the ring field magnets are a bit dodgy. Kind regards,
Alan R. Middleton 1103

Ronald C. Wyborn's reply

29 September, 1981

Dear Mr Middleton,

Thank you for your letter. Your interest in the magnetiser has obviously arisen from the article written by Trevor Jackson in the HRCA journal. Unfortunately the information was not in my view presented in a sufficiently concise and accurate manner, and apart from the technical factors, details of cost were misleading inasmuch as they were based on my original estimate of materials and overheads. The final cost overall including delivery was £500. I fully understand the problem of cost to a prospective buyer, and I must right away point out that the cost of the equipment which was the subject of the article could be reduced by modifications such as deletion of instruments and the substitution of a fixed output auto-transformer for the infinitely variable type. The demagnetising function could also be deleted. These changes would not in any way detract from the performance of the equipment in terms of magnetising field strength. Technically speaking one cannot divorce the head from its supply and control unit. Beginning with the required physical and magnetic field intensity factors for the head, these determine the supply characteristics. The control circuit is also influenced by such factors as magnetising current and voltage, together with the type of circuitry, eg; whether constant current or impulse.

You mention using a magnetiser head of approx. 120

turns through which a current of 5 amps is passed. On the magnetiser which was the subject of the article more than ten times the number of turns required a current of more than 30A to achieve the necessary H value in the magnetising gap. To allow a current of this magnitude to flow required a magnetising voltage of 400V DC, and in order to control this degree of electrical energy in terms of switching and timing, modern electronic circuitry was employed. This illustrates the point I made in my fourth paragraph.

It may be of interest to you to know I have received another enquiry for magnetising equipment from a Mr. David Neale of French's Forest, NSW, who suggests his local HRCAA club may be persuaded to purchase one. I realise the distance that separates you, but at least it has possibilities of eventual contact.

I hope my letter has been helpful.

Yours sincerely,
R. C. Wyborn

Alan Middleton's second letter

October 19, 1982

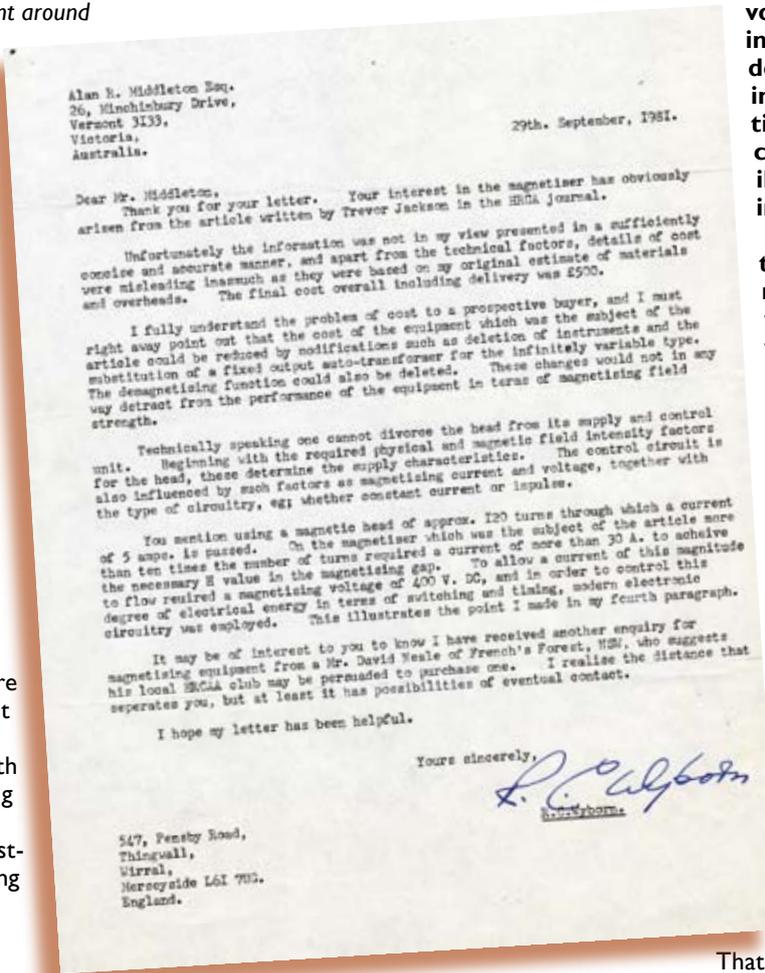
Dear Mr. Wyborn

Thank you for your letter of September 29, 1981. I have seen the booklet you sent to David Neale.

That is quite some device you are making for him. Hopefully I will see the Magnetiser in March next year at the H.R.C.A. Aust. meeting in Sydney. Douglas Baldock seems pretty impressed with his. Recently I wrote an article about Hornby Dublo electric motors and it was published in the H.R.C.A. journal. It was a very superficial article based on information obtained from advertising literature, Meccano magazines and my own experiences in repairing the motors. After writing the article, my attention was drawn to an armature with an offset commutator. At first I thought this to be a loose commutator, but now that I have seen several of these, I know they were made that way. As the designer of this motor, I would very much like to hear your views on this armature.

According to my text book from technical college days (Chester L. Dawes), brushes should be offset toward the direction of rotation to within a few degrees of the neutral plane, to reduce flux distribution. In a motor, it is necessary to move the brushes backwards with an increase in load, whereas in a generator the brushes are moved forwards. This is fine with motors drawing 30 amps or so and rotating in the one direction. What happens if the motor is reversed? I must get a few of the offset Dublo motors and see if they go better forwards or reversed. Could you tell me if the offset commutator motor was fitted to the horse shoe magnet only or was it used with the block magnet as well? The ones I have seen so far all have the coarse worm drive.

Brush tension seems to be a critical in the Dublo motors. Usually I start by placing the brush spring retaining lugs in their outermost position and push them inwards with the motor running, to find the position for maximum revolutions. Is there





A couple of identity crises: firstly, an LMS No. 1 Cattle Truck discovered by Nicholas Oddy in an assorted lot at Retford - but only after he had made the purchase! The door is slatted for use with a Milk Traffic van, but the grey colour shows that this was sprayed along with Cattle Truck doors.



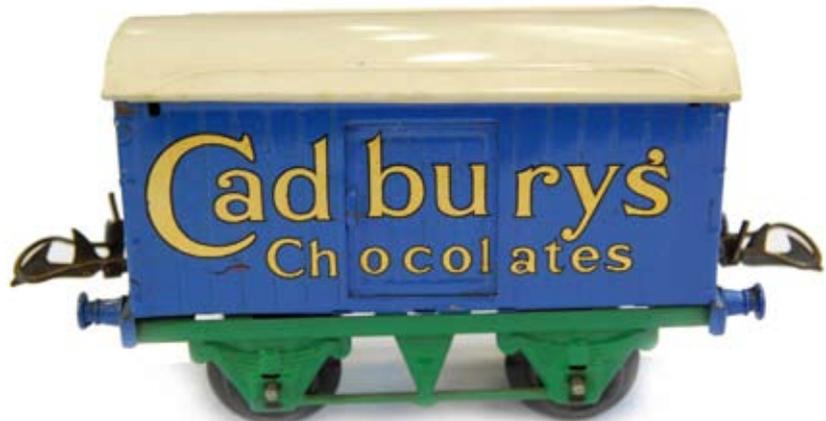
This post-war Cattle Truck, also has problems with slatting. In this case one body side has been left unslatted in the style of the Luggage Van, though bearing the Cattle Truck wagon number. The box is a common one, coded BW845 18M 6-49 and R152, indicating the date of the wagon itself as around 1949 or 1950.



Yes, this is a pair of Dublo points - bearing the green sticker with black rectangles that denotes production in the period of shortages caused by the Korean War. The interest here is that the piece of cardboard used to separate the two points seems to be made from the patterned card that had been used for O gauge set box bases in the period around 1948 and 1949. The card became obsolete for this purpose with the arrival of blue-based set boxes, hence this using up of surpluses.



This Cadbury's Chocolate Van has a couple of slight defects in its transfers: firstly, below the C is a splash of red, where the trademark transfer has been removed, to have an up-to-date style of transferring on the van end. Secondly, the apostrophe seems to have been added separately, but in the wrong place.



TELEPHONE: LIVERPOOL, STONEYCROFT STN (44th Stn)

TELEGRAMS: MECANO, LIVERPOOL

ASSOCIATED COMPANIES: MECANO (FRANCE) LTD., PARIS; MECANO LTD., TORONTO

INVOICE FOR REPAIRS R7/ 175

MECCANO LTD
BINNS ROAD,
LIVERPOOL, 13

Mr R Gilmour
Department Press Shop
Tally Ho, 369,
Liverpool

INVOICED BY: J. CROFT

ITEM NO.	YOUR REF.	ARTICLE REPAIRED	SUBJECT	NET
92302		EM320 Tank Loco		
		Parallels		
		Botax		

PLEASE QUOTE REPAIR NUMBER WHEN REFERRING TO ANY ITEM ON THIS INVOICE

WE HAVE PLEASURE IN RETURNING AFTER REPAIR YOUR

MECCANO LTD No. 92302

Article: EM320 Tank Loco LMS

Date Received: 2.2.50 Your Ref.

Name: R.W.

WITH THANKS

Mr. R. Gilmour,
Department Press Shop,
Tally Ho, 369,
Liverpool

Workshop and Repair Dept., LMS

COST: 4/3

PURCHASE TAX: 1/6

POSTAGE: 1/6

AMOUNT PAID: 6/6

DEALER'S INVOICE No. R7/ 175



It's not what you know, it's who you know! With Binns Road having refused to repair most pre-war locos after the war, Mr R Gilmour of Binns Road's Department Press Shop managed to wangle a repair for his LMS EM320 Tank Loco in April 1950. Thanks to David Ranson for allowing us to record the documentation of this repair, which saw 4/3d well spent.

The HRCA was again well represented at this year's London Festival of Railway Modelling held in Alexandra Palace on 26th and 27th March. On this occasion, members of the Chiltern Hills and Thames Valley groups were set the task of providing a very large loose-lay Hornby-Dublo 3-rail layout. The layout, measuring 36' by 24', was designed using Autocad by Terry Dyckhoff with input from other team members. As with all the best plans some changes were made on the day, but to Terry's credit these were minor in nature and generally restricted to adding additional loops and sidings. Twelve members took approximately seven and a half hours to build the layout on the day before the exhibition. We did not keep a count of the track pieces used but it is estimated to be in excess of 1,500.

The layout consisted of six running lines with a large through station at the front and storage loops at the rear for holding trains. In addition, the four outer running lines were connected to a large terminal station by a complex delta junction. A high level fully automated branch line linked the terminal station with a platform at the rear of the through station. A good selection of lineside buildings and accessories in both aluminium and plastic were incorporated into the layout including a number of Derek Smith's creations. The terminal station was built using six terminal station kits and ten canopy extension kits.

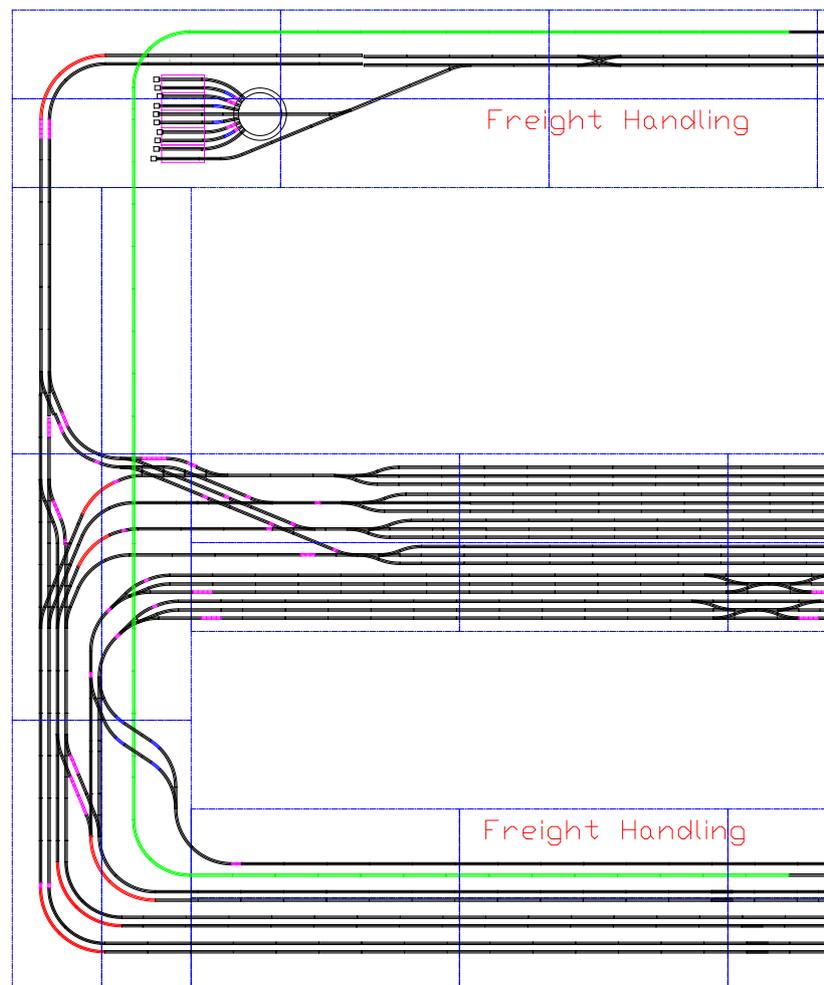
A good selection of Hornby-Dublo locomotives and rolling stock was on display. Wagons were generally super detail, augmented by a number of Wrenn equivalents. Coaching stock was almost exclusively Hornby-Dublo, with examples of most tinplate and super detail coaches in service. Examples of most Hornby-Dublo 3-Rail locomotives both steam and diesel headed trains at some point over the two days. Inevitably with such a large layout there was some duplication, and the range of locos was augmented by a number of repaints, conversions and Derek Smith specials. A converted RI did sterling work on the suburban service, Derek's Beyer-Garratt headed a coal train of 38 hopper wagons, and one of the engines sheds was well stocked with A4s ranging from Sir Nigel Gresley to Mallard plus a number of repaints including a super Silver Link in original 1930s livery.

We certainly created the wow factor both by the size and complexity of the layout. I overheard one member of the public waxing lyrical on a number of occasions about the junction which linked the main running lines to the terminal station. A frequently asked question was "How long did it take to build?" and quite a few people could not believe that we were able to create such a complex layout in the time available. Another member of the public who told me that she had built Hornby-Dublo 3-rail layouts while at school in the 1950s said that it was one of the best in the show. There was also considerable interest in the HRCA, so hopefully we will recruit some new members.

Peter Ingleton, our official photographer, recorded the event and will be producing a DVD which will be available later this year.

Ron McCaskie (3664)

London's Largest Hornby-Dublo Loose-Lay at the London Festival of Railway Modelling



The photos have caught the layout at a quiet time before opening. Clockwise from the right: a loco depot added to the plan below; a group of the Chiltern Hills and Thames Valley members who manned the display; the terminal station; the main running lines and storage sidings; and a high level line traversing between stations. The layout diagram below is colour coded: red for large radius curves, magenta for short straight rails, blue for quarter curves, and green for the high level section.

