

VOL 2
MODELLER'S
GUIDE

FROM THE MAKERS OF

HORNBY
magazine

KEY
PRESENTS

MODELLING BRITISH RAILWAYS

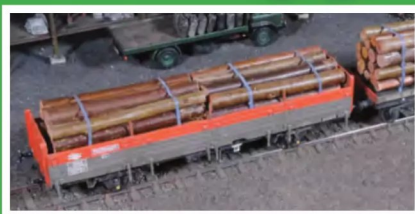
Wagonload Formations



Profiling and modelling goods formations



CLAY MOVEMENTS



TIMBER WAGONS



SCRAP WORKING

PLUS Nuclear and Cargowaggon Modelling



BUILD YOUR OWN WAGON
FORMATIONS WITH

accurascale

VIEW THE COLLECTION AT
accurascale.co.uk



Welcome

Welcome to the second in the series of modeller's guides from Key Publishing that aim to take a look at a diverse range of topics from the diesel and electric era. The first volume released in December 2020 covered part of British Rail's engineers' wagon fleet, specifically the unfitted and vacuum-braked designs. For this next instalment, it is time to give the revenue-earning wagon fleet some attention with a look at a selection of designs used to carry several different commodities.

The theme running loosely through this edition is that of wagonload, this meaning commodities that have traditionally been moved in lower volumes and mixed in with other traffic as opposed to lengthy bulk loads such as coal, aggregates, and iron ore. It is not a perfect description as even the selected commodities of china clay, timber and scrap have, and still do, move in uniform trains but it serves as a useful means of categorisation.

The term also tends to be associated with shorter train formations, something that is always welcome where space-starved modellers are concerned!

Also included in this edition is a look at the multi-bogie nuclear flask wagons used for both civilian and military purposes along with a profile of the long-lived and well-travelled Cargowagon vans in their various designs. Future volumes will aim to tackle other commodities that fall under the wagonload banner as well as covering the trains associated with heavy industries. As to why these five subjects have been chosen first, all have benefitted in recent years from the release of high quality wagon models or kits in one or more scales, making them much easier to portray. In some cases, further new models are due in the coming months, all aiding the accurate portrayal of these commodities.

With all of these new wagons has come

an increased appetite to recreate their use as prototypically as possible, be it with information on their history and areas of operation, correct motive power or designs of terminal. Most commonly, modellers are seeking details of real train formations and what other rolling stock can be accurately run alongside. This publication aims to provide all of this information through detailed text and high quality photographs, this covering all of the relevant eras and regions. I hope you find it a useful reference source for many years to come.

I am once again indebted to David Ratcliffe and Trevor Mann for their invaluable contributions and knowledge along with the modellers and photographers whose high quality work can be seen across the pages that follow.

Simon Bendall
Editor

BELOW: Providing a perfect example of how diverse a wagonload service could be, the 8M46 13.55 Whitemoor-Toton ambles through Frisby on the Wreake, to the west of Melton Mowbray, behind 40177 on May 2, 1984. The five 16-ton mineral wagons heading the train are carrying scrap turnings while the Interfrigo vans would be conveying frozen produce. Next in the train are three Warflats carrying substantial crated loads rather than the more common military vehicles, a pair of brand new and sparkling Railasee POAs loaded with scrap and then a number of sheeted open wagons, quite probably air-braked OBA. Just visible on the rear is a BR brake van as the train would be running only partially-fitted with a maximum speed of 35mph. The mineral wagons and possibly the refrigerated vans if from the dual-braked batch are providing a vacuum-braked fitted head with all of the air-braked stock behind running unfitted. Simon Bendall Collection



COVER IMAGE: Recalling the fondly remembered days of Class 37s on Cornish china clay, Transrail-liveried 37695 departs the china clay dries at Crugwallins with a train of CDA hoppers bound for Fowey, where the clay would be loaded onto ships for export. Neil Higson

The best choice for electronic parts and spares



Cable single and Bi Colour



Multicore



Diodes



Pushbuttons



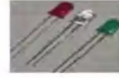
Nylon fixings



Resistors



LED'S



Crimps

DCC Decoders



ET 203 6 output

The decoder is fully NMRA compatible.
Dimensions: Length 1.1" (28mm) Width 0.6"
(15.5mm) Thickness 0.2" (5mm)
DCC standard decoder suitable size for OO/HO scale locomotives
Motor current 1.5 Amp continuous and 2 Amp peak
Motor overload protect adjustable
4 or 6 x 100mA function outputs
Back-EMF with silent motor control

Offer price Single £21.99
Packs of 5 £99.99

8 Pin version



ET 201 6 output

Offer price Single £21.00
Packs of 5 £95.99

3 year warranty on all decoders

Lighting systems !



Lighting system for DMU & EMU
multiple units DCC compatible can also
be used as coach lighting

LED.s

Light Emitting Diodes
Many other types Available

LD1 - 1.8mm (red, green, yellow)
LD1 - 1.8mm (white)
LD3 - 3mm (white, red, green, yellow, amber)
LD14 - 3mm 12V (white, red, green, yellow)
LD8 - 3mm Bi-Colour (rd/yl, gn/yl, gn/rd)
LD10 - 3mm Tri-Colour
LD12 - 3mm Flashing Red
LD5 - 3mm Flickering Orange
LD17 - 5mm (red, green, yellow, amber)
LD15 - 5mm 12V (red, green, yellow)
LD9 - 5mm Bi-Colour (rd/yl, gn/yl, gn/rd)
LD11 - 5mm Tri-Colour
LD13 - 5mm Flashing Red
LD4 - 5mm Flickering Orange

DCC Decoder Test Board



DCC Decoder Tester
for 6, 8 and 21 pin socket
also 9 pin JST connector.

With Motor £28.99
Without motor £27.99
18 pin next adapter board available



Grain of Wheat Bulbs
colours & clear
£0.40
100 clear £30

Din Plugs & Sockets

£0.30	CDP3 3pin.....65p	CM3 3pin.....65p
£0.70	CDP4 4pin.....65p	CM4 4pin.....65p
£0.20		
£0.40	CDP5 5pin...180...70p	CM5 5pin...180...70p
£0.40	CDP5 5pin...240...70p	CM5 5pin...240...70p
£0.75	CDP6 6pin.....75p	CM6 6pin.....75p
£0.50	CDP7 7pin.....80p	CM7 7pin.....80p
£0.60	CDP8 8pin.....85p	CM8 8pin.....85p

Tiny Connectors

Used with our ultra fine wire ideal for
joining engine to tender or other
micro use

CMP 100 2 pin
CMP 101 3 pin
CMP 102 4 pin
From £0.60 pr single
10+ from £5.50 pr

Snap Lock Connectors

10 for £2.00

Tag Boards & Terminal Blocks

CTB2
CTS1
CTS2
CTB4
CTB5
CTB6
CTB10

Automatic wire
strippers
was £6.95
Now £6.25



Mini Tag strip 2 rows of 18 117 X 38...£2.46
Standard Tag strip 28 way x 267m...£2.56
Mini Tag strip 28 way x 194mm...£1.90
Screw Terminal Block 3 amp...£0.80
Screw Terminal Block 5 amp...£0.95
12 way Plug and Socket 6 amp...£5.50
12 way Plug and Socket 10 amp...£6.95

Layout Wiring

* colours RD YL BL BK WH GN VI OR GY PK BR

	10m	100m
EW7/02	£1.60	£11.40
EW16/02	£2.30	£17.99
EW24/02	£3.29	£26.25
EW32/02	£4.29	£36.00
EW01/06	£1.60	£10.95
EW10/01	£1.50	N/A

Multicore Wire
£3.20 per m



Ultra fine wire
£3.50 per 2m

Miniature Toggle Switches

SMT1 on/off	SPST	£1.20	£1.12
SMT2 on/on	SPDT	£1.20	£1.12
SMT3 on/off /on	SPDT	£1.25	£1.12
SMT4 on/off or on/on		£1.30	£1.12
SMT5 on/off /on	DPDT	£1.40	£1.12
SMT6 [on]-off-[on]	SPST	£1.60	£1.12
SMT7 [on]-off-[on]	DPDT	£1.90	£1.12



Lever covers 20p each CC5 no solder connectors 8p each
See our website for the full range of switches and push buttons

www.dmgelectech.co.uk

E-mail: Sales@dmgtechnical.co.uk

Tel: 02920 813136

Remember advice is free and just an e-mail or phone call away

Prices Valid until 31/03/2021 E & O E

Telephone orders
welcome

P & P £3.50
Free on orders over £100

Scrap yards, particularly those of a compact nature, have long been popular with modellers as they offer great scope for short trains and a high level of detail. Built by Richard Coleman, Albion Metals is a relatively recent example and measures just 4ft long by 14 inches wide. The centre of the layout is seen as 20023 removes two HSA hoppers from the yard following loading. Dennis Taylor



Contents

6 CHINA CLAY

Rail has played a role in the transportation of Cornish china clay for some 200 years, the diesel era seeing traffic within the West Country along with trains running the length of the UK, particularly to the Midlands and Scotland. In addition, there were exports to Europe.



- 14 PRA wagon modelling
- 16 Clay slurry in profile
- 22 Terminals and models
- 26 Formations pictorial

35 TIMBER

After initial small scale workings, the movement of timber grew rapidly in the second half of the 1980s, bringing the conversion of specialist wagons. Running particularly from Scotland, these helped serve the needs of major paper mills for two decades.



- 42 Timber on the Southern
- 44 OTA wagon modelling
- 47 Formations pictorial
- 52 Terminals and models
- 54 Modern timber trains
- 60 A Scottish timber trial

64 NUCLEAR FLASKS

Not often seen but attracting attention whenever they do leave the depot are the multi-bogie nuclear flask wagons. Existing in various styles over the decades, these can be used for civilian traffic to and from Sellafield along with military purposes.



- 70 Formations pictorial
- 72 Escort coaches in profile
- 74 Terminals and models

76 SCRAP METAL

The movement of scrap by rail became a notable traffic from the start of the 1980s with many

different types of box wagon duly being provided by both BR and private firms. Although much reduced nowadays, such workings still provide some interest.



- 84 Scrap terminals
- 86 Modelling a scrap yard
- 90 Formations pictorial
- 98 POA wagon in O gauge
- 101 Scrap wagons in 4mm

104 CARGOWAGGONS

Operational in the UK for over 30 years, the fleet of German-registered vans have been an unremarkable but vital part of the freight scene, carrying everything from white goods to fertiliser bags and mineral water while also coming in several different variants.



- 110 Formations pictorial
- 114 Modelling options

Editor: Simon Bendall

Main contributor: David Ratcliffe

Senior editor, bookazines: Roger Mortimer

Email: roger.mortimer@keypublishing.com

Design: Julian Jefferson

Cover: Steve Donovan

Advertising Sales Manager: Brodie Baxter

Email: brodie.baxter@keypublishing.com

Advertising Production: Rebecca Antoniadis

Email: rebecca.antoniadis@keypublishing.com

Subscription/Mail Order

Key Publishing Ltd, PO Box 300, Stamford, Lincs, PE9 1NA

Tel: 01780 480404 **Fax:** 01780 757812

Subscriptions email: subs@keypublishing.com

Mail Order email: orders@keypublishing.com

Website: www.keypublishing.com/shop

Publishing

Group CEO: Adrian Cox

Publisher: Mark Elliott

Chief Publishing Officer: Jonathan Jackson

Head of Publishing: Finbarr O'Reilly

Key Publishing Ltd, PO Box 100, Stamford, Lincs, PE9 1XP

Tel: 01780 755131 **Website:** www.keypublishing.com

Printing

Precision Colour Printing Ltd, Haldane, Halesfield 1, Telford, Shropshire. TF7 4QQ

Distribution

Seymour Distribution Ltd, 2 Poultry Avenue, London, EC1A 9PU **Enquiries Line:** 02074 294000.

We are unable to guarantee the bonafides of any of our advertisers. Readers are strongly recommended to take their own precautions before parting with any information or item of value, including, but not limited to money, manuscripts, photographs, or personal information in response to any advertisements within this publication.

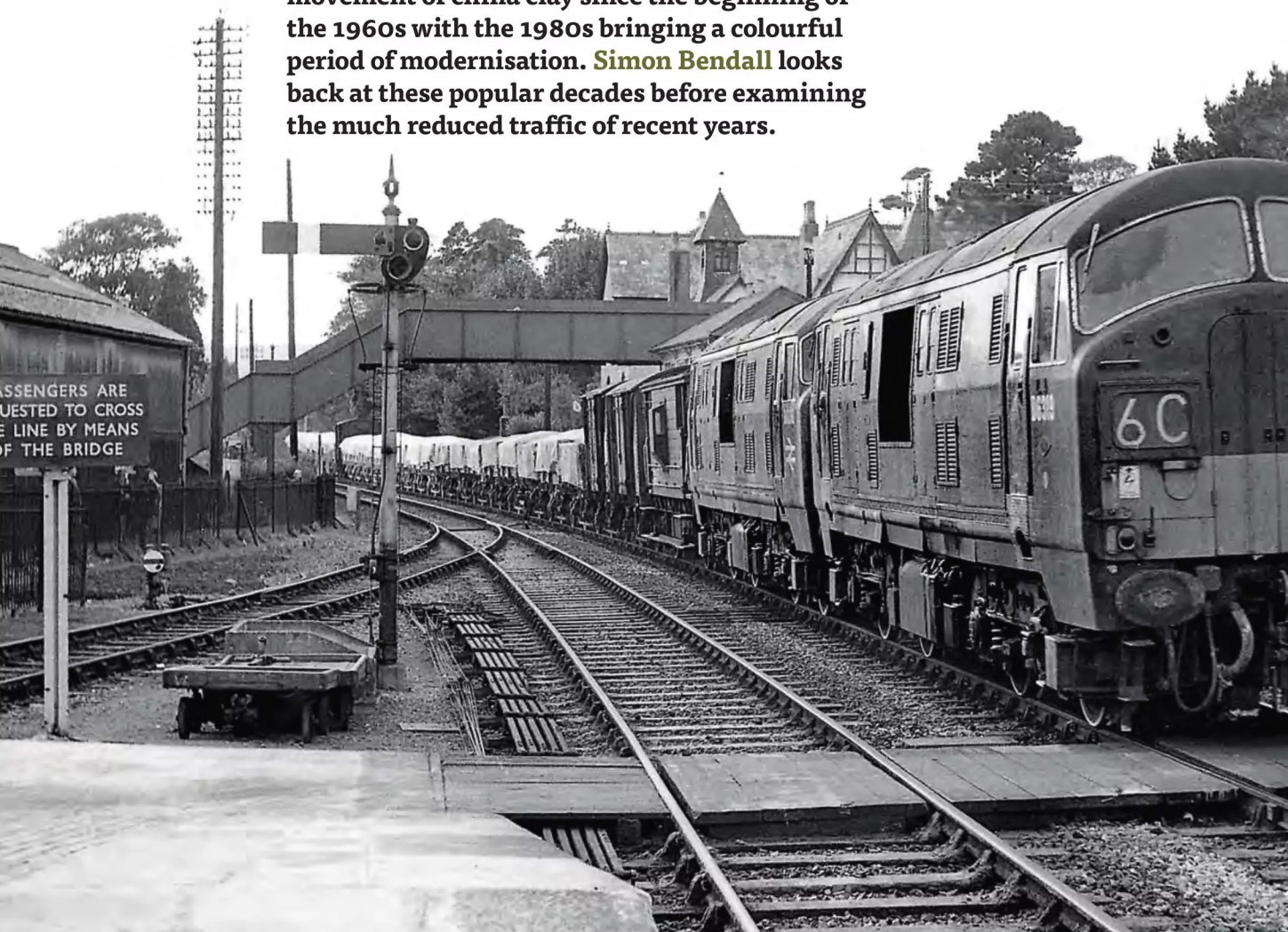
© Key Publishing Ltd 2021

All rights reserved. No part of this magazine may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without prior permission in writing from the copyright owner. Multiple copying of the contents of the magazine without prior written approval is not permitted.



China clay

Diesel traction has been involved in the movement of china clay since the beginning of the 1960s with the 1980s bringing a colourful period of modernisation. Simon Bendall looks back at these popular decades before examining the much reduced traffic of recent years.



The railways have been synonymous with the transport of Cornish china clay since the middle of the 19th century. Previously dependant on canals and horses, the railways allowed the clay companies to move greater tonnages more rapidly to the local ports as well as to the Staffordshire pottery factories.

Throughout the first half of the 20th century, the wagon fleet was modernised with the motley collection of private owner and railway-owned vehicles giving way to Great Western Railway 13-ton wooden-bodied opens equipped with an end door. This allowed the wagons to be tipped, one at a time, on arrival at the docks at Fowey or Par to speed discharge into the waiting ships. All of these wagons were sheeted over to protect the clay from contamination

and the weather, something that was all important to maintain the purity of the 'white gold'.

Upon nationalisation, British Railways inherited this GWR wagon fleet, which was rapidly becoming life-expired. It duly began the construction of replacements in 1954 with a total of 875 being built at Swindon over the next six years. Constructed to diagram 1/051, the wagons were a virtual copy of their forerunners, partially because they had to fit the existing unloading equipment at the docks. Numbered B743000-874, the first 300 examples were built unfitted but soon modified while the rest had vacuum brakes from new. They were later coded UCV under the TOPS system. These wagons were not confined solely to Cornwall and Devon either as they

ABOVE: A pair of North British Class 22s amble through St Austell on October 8, 1968, with a lengthy up working of loaded clay opens. The formation also includes three 12-ton vans, quite possibly conveying bagged clay, while a LMS brake van is directly behind the locos. The hydraulics are in mixed liveries with D6319 still in BR green with yellow panels while D6336 behind carries BR blue with full yellow ends and cabside BR arrows. Rail Photoprints/Richard Lewis

were used on long distance clay flows to Stoke, Strood, Fort William and Aberdeen.

Clay hoods

During the early 1970s, experiments were conducted with new coverings for the wagons as the existing tarpaulins were not



Proving that you do not need a big space to model a traditional clay dries was Wheal Elizabeth; this being built to 4mm scale with P4 gauge track by Andrew Ulllyott. With a scenic section of just five feet, this allowed part of the dries to be modelled along with pointwork, three sidings and a through line. The layout was also multi-period allowing everything from BR steam to privatised traction to feature. On this occasion, it was the 1960s with D6342 awaiting departure with BR clay wagons while the Peckett W4 industrial steam loco pulls GWR versions clear following loading. Andrew Ulllyott

satisfactory. Eventually, a nylon canopy supported by a fixed bar was settled upon as the ideal cover, these being finished in blue with the logo of the English China Clays (ECC) company emblazoned on them. Around 700 of the BR clay opens were fitted with these canopies during 1973/74 at St Blazey wagon works, creating the Clay Hood. The new conversions were restricted solely to Devon (for ball clay) and Cornwall (for china clay), ferrying clay from the various dries to Fowey docks.

The long distance runs to Staffordshire, Kent and Scotland remained in the hands of the few unmodified clay opens, which had been supplemented for many years by a quantity of standard Highfit open wagons (TOPS code OWV), these being drawn not only from BR designs but also pre-nationalisation examples from all four companies. Only Highfits with wooden bodies were used on the traffic as the steel-bodied versions would contaminate the clay.

BELOW: Both forms of the BR clay open are seen in their final decade of operation. On the left, B743194 stands at Bristol Parkway on April 11, 1981, while waiting to head north with another load of china clay for either Staffordshire or Scotland. Not all of the clay wagons received the hoods during the 1970s, some seeing out their days still with flat tarpaulins. Meanwhile, the right hand image shows B743592 in the celebrated clay hood form at St Blazey on October 22, 1980 and carrying the original UCV TOPS code. Displaying the end door, this allowed the wagons to be end-tipped at Fowey for unloading, while the canopy was supported on a fixed and basic wooden bar. Both wagons retain split plate axleboxes as was typical of the fleet. Simon Bendall Collection



China Clay

47347 opens up as it powers through Exeter St Thomas on its way to Cornwall on April 22, 1978. In tow are the empty wagons of the Clayliner, these working back west after delivering another load of clay to the Potteries. When running empty, the tarpaulins were not put in position. As can be seen, clay carrying wagons always stood out on account of the white weathering rather than the usual grot brown! Colour-Rail



Those OWVs with corrugated metal ends had them faced with wood on the inside to stop contamination occurring while the lack of end doors on these wagons was not an issue as they were not subject to tipping during unloading. Many of the wagons allocated to these Clayliner flows were modified with roller bearing axleboxes during the early 1970s, the original split axleboxes

having proved a liability on such long runs. In contrast, only a handful of Clay Hoods ever received roller bearings as they were not necessary for the short and slow journeys undertaken.

By the dawn of the 1980s, the unmodified clay opens and the Highfits were life expired, their limited capacity, maximum speed of just 45mph, and inadequate load protection

counting against them. They were also incompatible with the recently introduced air-braked Speedlink wagonload services as they were vacuum-braked only. The decision was therefore made to replace them on the long-haul services with new high capacity air-braked wagons during 1982. The clay hoods, now with the altered TOPS code of OOV from late 1983, continued to ply their trade until the mid-1980s when they too were deemed to be past their best and were replaced by air-braked hoppers, the final examples being withdrawn on February 11, 1988.

Also, during the 1970s, a number of Boplate E wagons were modified to carry containerised china clay from Cornwall to Avonmouth. Drawn from the diagram 1/492 batch with vacuum brakes and Davis & Lloyd bogies, the Conflat Clay conversions featured locating points for the ISO-based



The Clayliner fleet made considerable use of OWV Highfit wagons of varying vintages. Seen at Longport on August 15, 1980, E276024 had been built 35 years earlier by the LNER at Faverdale, it being a 13-ton six-plank design to diagram 185. Wagons featuring entirely wooden bodywork were preferred as these reduced the risk of contaminating the clay but as can be seen to the right, steel-ended opens were used as well, these having the inner faces covered with a wooden lining. Simon Bendall Collection



containers. Two were carried per wagon, being low in height and with tarpaulins to cover the top opening.

White tigers

The 1980s saw a raft of new air-braked wagon designs introduced to make the transport of clay more efficient, this allowing an increase in both capacity and speed. First to appear in 1982 was a new bogie hopper design to replace the elderly opens on the Clayliner services. Built by Fauvet-Girel in France and owned by leasing company Tiger Rail, the distinctive, white-painted PBA Clay Tigers were numbered TRL11600-34 and proved to be an instant improvement on what had gone before.

Introduced from August 1982, they were primarily intended for the Stoke china clay flows, these now running to a newly constructed discharge terminal at Cliffe Vale in block trains of 10 or 11 wagons. However, with some spare capacity in the fleet, 1983 saw the PBAs begin to work in Speedlink services to Scotland, most commonly heading to the PD Stirling distribution depot at Mossend but also in later years to the Tullis Russell paper mill at Markinch, Fife. The PBAs also appeared in small numbers on workings from Heathfield in Devon and Furzebrook (Dorset) conveying ball clay.

With the cessation of Speedlink services in July 1991, the PBAs ceased to run to Scotland but continued to serve Cliffe Vale directly

BR clay open models

In OO gauge, Bachmann produces a ready-to-run model of both the clay open and clay hood. Although a reasonable if elderly model, the cloth representation of the hood on the latter really does not work while the clay open is usually supplied without a tarpaulin. On the kit front in 4mm, Ratio has offered a nice plastic kit for many years and it holds the edge over the Bachmann model, especially in the underframe department. It does however suffer from the same problem of an unconvincing hood, which this time is made of paper. The kit has now been absorbed into the Parkside range as both brands are owned by Peco. The RTR model and kit also share another fault, both having the rarely seen roller bearings instead of the far more useful split axleboxes. Parkside also offers the wooden-bodied Highfit for the Clayliner.

For once, N gauge modellers have an advantage with Bachmann having tooled up a clay open with both styles of covering in its Graham Farish range several years ago. Initially released as triple packs with Kernow Model Rail Centre, both styles feature more convincing plastic canopies. The clay hood is due a re-run as a singleton later this year with all retailers. The N Gauge Society also offers the former Parkwood Models kit for the clay opens along with



The Bachmann 4mm clay wagon in both its forms.

the Highfit. In O gauge, kits have been available for the clay wagons in the past, but all are now obsolete while the popular RTR model offered by Skytrex is sadly just a Highfit with a hood on rather than an accurate depiction.



Both varieties of Farish 2mm clay wagon.

from Cornwall. The collapse of Tiger Rail saw the fleet pass to the ownership of Tiphook Rail, bringing the introduction of a new blue livery from 1994, while the TOPS code had already changed from PBA to JAA as part of a reorganisation that commenced in 1990.

Additionally, during 1994, 24 of the hoppers were modified to work to the continent, receiving chaining-down lugs for the train ferry, the amended TOPS code of JIA and new international numbers - 33 70 9382 059-082. Soon switched to using the newly-opened Channel Tunnel, the wagons ran to ECC customers in Switzerland and Italy, although these long distance adventures were relatively short-lived. By the turn of the century, most of the wagons were back on the Stoke circuit and had regained their domestic identities. Withdrawal came in

2004 and, after several years in store, all were scrapped.

HAA derivative

The replacement for the clay hoods was a clay-carrying version of the successful HAA merry-go-round coal hopper. Following trials in 1986 with two specially cleaned HAAs (351403 and 354765), 353224 was converted into a prototype example early in 1987 to prove the concept, most notably receiving a roller canopy, side and end alterations, and a ladder at each end. Coded CDA, its success led to an agreement being reached between BR and ECC for a fleet of 124 new wagons to be built at Doncaster Works with ECC also modernising the discharge equipment at Fowey to accommodate them.

The production CDAs, numbered 375000- ➤

123, were delivered during 1987 and early 1988, their look having some minor refinements compared to the prototype, mostly notably in the omission of the ladders. Problems were initially encountered with their internal finish preventing a clean discharge of the china clay, but rapid modifications saw the fleet in squadron service by February 1988. A further 14 wagons, 375124-137, were provided a year later, these being converted from surplus HAA coal hoppers rather than new builds.

Like their predecessors, the CDAs were restricted to Cornwall and Devon, having no need to work any further afield. The distinctive ECC logos were removed from the wagons during overhaul in 1993 while the ECC blue hopper framework was

progressively changed to EWS maroon from 2000, although not every wagon was fully altered. At the same time, the blue Easysheet canopies were replaced with new maroon ones, although again it took some years to complete. With the decline of rail borne china clay in the past decade, part of the CDA fleet has been scrapped as a result, leaving enough wagons available to form one operational rake along with maintenance spares. Some of these have received red-backed DB logos, these replacing the previous EWS markings.

Other air-braked types

The early 1980s also brought the introduction of two other air-braked wagon types, both being dedicated to specific china clay

flows. First to appear in 1982 was a small batch of PAA two-axle covered hoppers built by Standard Wagon and hired to paper manufacturer Tullis Russell by Tiger Rail. Numbered TRL12800-07, the hoppers carried clay from Cornwall to the company's paper mill at Auchmuty, Fife. Conveyed via Speedlink services, they were tripped to the paper mill from Thornton Yard by a Class 08 due to restricted clearances on the branch line from Markinch. A further PAA, TRL12300, was added to the fleet in 1989, this featuring a squarer hopper shape and a plain blue livery.

The second wagon type debuted in 1983 in the form of 14 clay hoods, these featuring a box body and a retractable canopy similar to that used on the CDAs. Coded PRA, they



ABOVE & LEFT: The Fauvet-Girel-built Clay Tigers are seen in both of their principal liveries at Cliffe Vale just three years apart. Carrying the original white scheme during March 1991 is TRL11617, the wagon being nine years old at this point and by now officially recoded as a JAA, even if this was not always actually carried by the wagon. Moving forward to June 1994, TRL11616 had been overhauled, repainted, and fitted with ferry lashing rings along the edge of the solebar to allow its use on international clay traffic, this bringing the application of the new RIV number 33 70 9382 072-4 and TOPS code of JIA. However, as evidenced here, they could still work domestic services as well. The blue livery did not weather anywhere near as well as the white and the wagons were all-over dirty brown by withdrawal. David Ratcliffe

were used to carry china clay from Ponts Mill to the Wiggins Teape paper mill at Corpach, Fort William, until 1989 and were numbered RLS6303-16. A full history of the design can be found on pages 14-15. Meanwhile, another air-braked hopper design to be found in clay traffic during the 1980s was a handful of ex salt traffic PGAs from the PR8201-55 series, these carrying both china and ball clay under a tarpaulin cover.

Polybulks and bags

During 1976, an export flow of china clay to the continent began via the Dover train ferry, initially to Italy but later Switzerland. This was one of the earliest workings in the UK for the high capacity PIB Polybulk covered hopper wagons with Traffic Services Ltd providing 65 examples for the contract. The outward loaded working generally consisted of two sets of 11 wagons, which were combined into one train on reaching France. However, the empties returned to Cornwall as one mammoth 22 wagon train! Finished in either Traffic Services or Polybulk-branded green/grey and later recoded as JIA/JIB, they continued on the working until around 2000. From the latter part of the 1990s, the Polybulks were supplemented by some of the previously mentioned Clay Tigers running under their JIA international identities, while it was common for the Polybulks to turn up on domestic clay duties, such as to Cliffe Vale, in their later years.

From the summer of 2000, a new fleet of Nacco-owned covered hoppers arrived, these being finished in mid blue with Imerys logos, which was the new name for the recently taken over ECC. Coded JIA and numbered 33 70 0894 000-025, the 26 wagons were built by Arbel Fauvet. Principally intended for export flows, including destinations in Italy, they ousted the Polybulks and Clay Tigers on the workings while also seeing use on domestic working to Cliffe Vale. The export workings ceased in 2005, leaving the Imerys JIAs to be focussed on the Stoke traffic, which they still work today in absolutely filthy condition.

Clay has also been moved in bagged form for many years. During the traditional era, 12-ton vans of both BR and ex company origin were used for this before giving way to air-braked vans during the 1970s and early 1980s with VAA, VBA, VCA, VDA and even VGA seeing use. Bagged clay was also exported to the continent in ferry vans, these initially being the two-axle wooden or steel bodied varieties. However, these were soon largely superseded by the modern high-capacity, sliding wall bogie vans to a variety of designs, including the fleets



Only ten months old at the time, CDA 375098 was already showing the effects of the daily grind when recorded at Lostwithiel on October 16, 1988. In a comparatively unusual move, BR agreed for its wagons to carry the logos of a private company, although this was not without precedent. The logos were dispensed with in 1993 but the rest of the blue trim remained. From 2000 onwards, EWS added maroon paint and ownership brandings to most but not all of the CDAs, although it was already obsolete when 375016 was recorded at Goonbarrow Junction on September 1, 2015. By the following year, some CDAs had begun to receive DB logos on a red background, these contrasting somewhat with the frames, which remained a mix of maroon and the odd blue example. Paul Bartlett/Nathan Stockman

belonging to Tiphook, Cargowagon/GE Rail Services and Italian State Railways (FS). The Cargowagon IZA twin-vans were similarly utilised alongside their bogie cousins.

Operations

As indicated above, china clay trains fall into two categories, local trip workings and long distance services. The pattern of the local workings changed little over the years, until the decline of recent times, with clay wagons being collected from the dries and largely taken to Fowey for onward shipping. While some trains would run direct, others would be staged at Lostwithiel where the various trips would be combined before continuing on to the docks. Train lengths could therefore

vary dramatically, ranging from a mere handful of wagons, occasionally even just one, to long rakes of clay hoods or CDAs.

With the introduction of the modern air-braked wagons in the early 1980s, the long distance movement of clay switched to the Speedlink wagonload network. This saw the wagons tripped to St Blazey from the various dries and assembled in one train, along with any other non-clay traffic. The first leg of the trip was to Severn Tunnel Junction (later changed to Gloucester when the former closed), stopping at Tavistock Junction and Exeter Riverside as booked. From there, the clay wagons would be re-marshalled with other Speedlink traffic and sent on their way to Bescot, where those for



The Tullis Russell PAAs made one of the longest journeys of all the clay wagon types, running from Cornwall to the firm's paper mill at Auchmuty, Fife, via the restricted clearance branch from Markinch. On April 15, 1987, an empty TRL12807 brings up the rear of a Speedlink working at Warrington Bank Quay on the long journey back to the southwest. David Ratcliffe



The PRA clay hoods also racked up huge mileage on their trips from Pontois Mill, near St Blazey, to Corpach, a short distance from Fort William, to supply the Wiggins Teape paper mill. With the latter having no hopper discharge facilities, a grab-unloaded box wagon design was necessary. The first of the build, RLS6303, is seen at Mossend during July 1984. Trevor Mann

Scotland would be forwarded on yet another service to Mossend and then onto their various destinations. The workings from St Blazey to Cliffe Vale were also incorporated into Speedlink but with them already being quite long, they tended to attract less other traffic. That said, they could still convey other clay traffic and commodities into and out of the West Country with stops at the same intermediate yards.

This style of operation brings vast potential for the modeller as it enables clay wagons to be run with a considerable variety of other types and behind a wide range of locomotive classes. Other Speedlink services conveyed clay to and from the southern destinations of Quidhampton and Sittingbourne, while some direct services did remain, including the Dover Polybulks and the Burngullow-Irvine 'silver bullets' - see the clay slurry section on page 16 for details of these.

The demise of Speedlink in July 1991 put in jeopardy a large number of long distance clay flows but much of this initially remained

on the railways thanks to the introduction of Tiger Rail's replacement Freightways network. China clay from the West Country along with slurry from Quidhampton formed a large proportion of this privately-funded venture with BR merely providing traction and other operational resources. However, the spring of 1992 saw Freightways collapse amid financial difficulties for Tiger Rail, bringing the end for the Tullis Russell traffic to Auchmuty that April. However, much of the other clay traffic was ultimately retained by reorganising services to fit in with Railfreight Distribution's trainload operations. In the run up to privatisation, the majority of Railfreight Distribution's clay services passed to the control of Transrail with the long distance workings duly being absorbed into its Enterprise wagonload network, which subsequently passed to EWS operation in 1996.

Rationalisation

Throughout the 1980s and early 1990s, there

was a steady stream of dries closures in Cornwall as the clay industry underwent rationalisation, these including Wenford Bridge, Carbis Wharf and Pontois Mill, while Heathfield in Devon also ceased to dispatch ball clay. By 1996, the ECC dries using rail in Cornwall consisted of a cluster on the Drinnick Mill branch near St Austell (these including Parkandillack, Treviscoe, Kernick, and Crugwallins), ECC Rocks on the Newquay branch, the modernised facility at ECC Blackpool, and Moorswater. Clay was also loaded at Par Docks and, in Devon, at Marsh Mills near Plymouth.

Further losses would follow, such as Moorswater, Crugwallins and Marsh Mills, while late 2007 would see EWS secure a new five-year haulage contract with Imerys, this seeing tonnages increase but at the expense of the number of locations served. Today, DB Cargo's rail operations are centred on Parkandillack, Treviscoe and Rocks (Goonbarrow) for traffic to Fowey in CDAs and Par Docks for movements to Cliffe Vale.



Built by Damian Ross, the popular OO gauge layout Diesels in the Duchy is heavily based on the depot and yard at St Blazey. Depicting the years around 1990, it is brimming with Railfreight sub-sector motive power and air-braked rolling stock. Two such Class 37s arrive in the yard with a Speedlink working, 37670 St Blazey T&RS Depot and 37671 Tre Pol and Pen heading up a selection of clay-carrying wagons. The Railfreight Metals badge on the latter Type 3 was carried for much of 1989 after it was incorrectly applied at Crewe Works following a year-long repair to collision damage. Dennis Taylor

RIGHT: The Polybulks with china clay for export to Switzerland power past the loops at Woodborough on June 20, 1984, in the care of 47240. Forming the 06.15 Tavistock Junction to Dover for loading onto the train ferry, the 11 hoppers make up only one half of this working, it being split due to length and weight considerations. The wagons carry a mix of the Polybulk and Traffic Services liveries, although both are well hidden under the grime. Martin Loader

Such is the low level of local clay traffic in Cornwall nowadays that one Class 66 is normally sufficient to cover all CDA workings - a far cry from the previous decades!

Traction

Locomotive types employed on clay trains have varied enormously over the decades. During the 1960s, Class 22s and Class 42/43 Warships handled the local trips in the West Country until they were replaced by Class 25s from 1971. The Sulzer Type 2s dominated for much of the 1970s but Class 52 Westerns also put in appearances as they were displaced from their frontline passenger work while, from 1978, a design that would become synonymous with clay trains began to arrive in the form of the Class 37s. The early 1980s saw an influx of the type to the area, several having their blue bodywork adorned with Cornish Railways lettering or 'lizard' logos, while supplementing them were examples of Classes 45, 46, 47 and 50. Class 08s were also used on specific duties, particularly the Wenford Bridge and Pontois Mill branches, while Class 31s were not unknown in Devon on ball clay workings.

The late 1980s arguably saw the heyday of rail borne clay in Cornwall, beginning with the appearance in 1987 of the first refurbished Class 37/5s at St Blazey. Finished in Railfreight Red Stripe (37670-72/74/75) or Railfreight Distribution (37673), they replaced the remaining Class 37/0s, although a shunting accident put 37670 and 37671 out of action for all of 1988. To cover, 37669 was drafted in from Scotland while experimental Railfreight Class 50/1 50149 was also brought in. *Defiance* was far from the only member of the class to see action on clay trains during this period, as '50s' fresh off repair at Laira depot or on



restricted duties were often sent to the area, this including Network SouthEast liveried examples!

However, the Class 37s retained their dominance of the local trips throughout the 1990s, 37669-75 being supplemented by surplus Class 37/4s from Scotland, including 37411-13/16/17/20, and Trainload Petroleum-liveried Class 37/5s 37521 and 37668 at various times. During the early years of EWS, many other English Electric Type 3s could be found working in Cornwall as the loco fleets became common user. Inevitably, the Class 66 takeover began in January 1999 with the arrival of the first example in the area, the GMs ousting the Class 37s from all work within a couple of years. The early 2000s also saw Class 67s occasionally feature on CDAs as a means of getting them from St Blazey after servicing to Plymouth for use on Royal Mail duties.

The long distance flows originating from Cornwall were initially in the hands of the Warships and Westerns but, by the late 1970s, their place had been taken by Class 45 and 46

Peaks and the ubiquitous Class 47s. Indeed, 'Brush 4s' had been associated with clay trains since 1967, the class having reigned supreme on the Bowaters slurry train to Kent. All three classes dominated the Speedlink trains from Cornwall throughout the first half of the 1980s until the Peaks were banned from going west of Bristol in October 1985. This left the Class 47s to work most Speedlink services although, once again, Class 50s in a variety of liveries assisted as they had done throughout the decade. By the 1990s, the additional Class 37s brought into the area were handling most services, but July 1995 saw Class 60s take over the Burngullow-Irvine 'silver bullet' workings from the previous double-headed Type 3s.

Away from Cornwall, the clay wagons saw haulage by most types of locos on their way to destinations in Staffordshire, Kent, and Scotland. This included AC electric haulage on the West Coast Main Line as well as Class 33s on the erstwhile Southern Region while Class 56s and Class 58s would also become involved during the EWS era. ●



Providing a closer look at the state the Polybulks got into, the original grey and green livery is largely obliterated on 21 70 0999 035-9 at Watford Junction on July 25, 1981, as it rather intimidates the HTV hopper on the right. Simon Bendall Collection



Brand new Imerys JIA hopper 33 70 0894 020-3 stands in Didcot Yard during July 2000, where it was being held pending display at the Old Oak Common open weekend the following month. Initially brought for use on export traffic, the demise of this means that the wagons are today used on the Cliffe Vale duty, not that you could tell they were ever painted blue! Simon Bendall

Weathering the PRAs



The last decade has seen Kernow Model Rail Centre make considerable investment in Cornish-themed models, most notably wagons. Alex Carpenter describes how to add the distinctive china clay weathering to the most recent releases, the PRA clay hoods.

The PRAs are undoubtedly a classic 1980s Speedlink-era vehicle, after all, there are not many private owner wagons that can be used on layouts set from Cornwall right up to the West Highland line with either just a single wagon or a rake of up to six or so mixed in with suitable other stock.

I was very pleased when Kernow Model Rail Centre announced these in OO gauge, and I have to say they are beautiful models. Not only are they really nicely made and put together but also display a wealth of detail



The weathering certainly brings the detail of the PRAs to life, helping to highlight the narrow side walkways and handrails that were used to tie the roller cover in place.

and separately-fitted parts. I knew they would look great with weathering applied and I think you would agree that they do!

There are four colours used here with fresh china clay spills adding the finishing touch.

The first stage is an overall blow-over of the underframe and wheels using frame dirt; this extra first stage is due to the chassis being finished in the same light grey colour as the body and needing a bit more weathering





The PRA clay hoods by David Ratcliffe

The decision by BR to transfer all wagonload revenue freight to the air-braked Speedlink network by May 1984 created a problem for the paper makers Wiggins Teape. At the beginning of the 1980s, the Wiggins Teape mill at Corpach, near Fort William, was still receiving deliveries of china clay in the vacuum-braked open wagons and as the sidings at Corpach were not equipped for hopper discharge, a new fleet like the Tullis Russell PAAs was not an option. In 1982, Standard Wagon had commenced a programme of fitting redundant vacuum-braked 16ft wheelbase underframes, recovered from withdrawn bagged cement palvans, with open box bodies for hire to the aggregates industry. As a test, one of these was fitted with a roll-over cover and sent to the Derby Railway Technical Centre. After a successful trial, Wiggins Teape opted to lease ten of the rebuilt wagons, which were also given air brakes to allow their use in Speedlink services. Coded PRA, the order was soon increased to 14 wagons with RLS6303-16 all entering traffic by the end of 1983.

The PRAs were almost exclusively loaded at ECC's Ponto Mill clay dries, near St Blazey, although they did very occasionally venture further along the Newquay branch to be loaded at Goonbarrow Junction and, on at least one occasion, to the dries at Parkandillack. Normally, the wagons would run in small groups of between three and five and, with their carrying capacity of 25 tonnes, the paper mill at Corpach would usually receive eight or nine PRAs each week.

In 1987/88, their original 13-leaf laminated spring suspension was replaced by parabolic springs but use of the PRAs in china clay traffic came to an end in 1989 when the mill at Corpach switched to using china clay slurry. Five of the PRAs, RLS6303/06/07/09/12, were then withdrawn and their underframes reused as the basis for new scrap wagons, while the other nine, after having their covers, ladders and walkways removed, were leased to Boothferry Borough Council. They then spent a couple of years carrying minestone from Hatfield Colliery to a landfill site at Glews Hollow, near Goole, working alongside the council's four side-tipping bogie wagons.

As supplied, the canopies are a bright red so the weathering tones this down nicely, this example having also received heavier attention on the underframe.

effort than the traditional black. The last four PRAs, RLS6313-16, were delivered with black frames and have been modelled by Kernow, although none are featured here.

This initial stage is then followed by the usual dose of sleeper grime, which goes slightly up onto the bodysides or, for a grubbier example, the entire bodysides. I like to vary the level of grime between wagons as there is usually always one that is cleaner or more heavily weathered. It is quite unusual to find a uniformly dirty rake of wagons, especially Speedlink stock as by their nature they covered different mileages and encountered varying conditions, all of which would have varied the levels of dirt accumulated.

Adding the washes

The third stage is a light grey all-over wash, this is quite thin and is left to run off the wagon rather than be rubbed off. This

represents traces of older china clay deposits that have been baked on by the sun and stuck firm in various places on the wagon. The final stage is adding the fresh china clay deposits and spillage. I used matt white for this, being very careful not to overdo it. Again, being conscious that every wagon is different, some have more spillage than others. Time was taken to get the clay deposits running down the red roof canopies in a prototypical manner and this was removed and reapplied a few times to create the desired effect.

All in all, I am really pleased with how these came out, especially as it was my first attempt at properly weathering china clay stock. These particular five were done for a customer who is recreating the Highland Main Line in a large garden railway in Bulgaria, hence the tension lock couplings have been left on for ease of use. When I do my rake, they will be fitted with air pipes and Instanter couplings, which will improve the overall effect even further. ●



LEFT: Awaiting the road south, 37175 pauses at Crianlarich on July 16, 1985, not that the weather reflects the summer's day! Stretching behind are seven PRAs, precisely half the fleet, while a couple of maroon-liveried OBA open wagons make up the rest of the train. Simon Bendall Collection



Clay slurry tanks

ABOVE: The movement of china clay slurry began on February 23, 1967, with the first running of the Clayfreighter between Burngullow and the Bowater's paper mill at Sittingbourne. Seen rolling through Dawlish, D1670 *Mammoth* leads the inaugural working complete with headboard. Much fanfare accompanied the train's launch, it epitomising the modern company working that the rebranded British Rail was seeking to run. Somewhat amusingly, the rake of shiny TTAs could not escape having a traditional BR brake van hanging almost apologetically off the rear! Colour-Rail

Although first seen in the 1960s, it was another two decades before the use of clay slurry really grew in popularity and remains that way today. David Ratcliffe recounts the history of the traffic and the many tanker designs that have been employed over the years. All photographs by the author unless stated.



ABOVE: China clay slurry tank 1019 was a little over two years old when photographed alongside the Bowater's unloading shed in Sittingbourne during April 1969. Owned by STS, it was fitted with double-link suspension while the two white stars beneath the Bowaters logo indicated it was permitted to run up to 60mph. David Larkin

The transport of china clay slurry from Cornwall commenced in February 1967 when a weekly company train began running from English China Clays' Burngullow works, near St Austell, to Bowater's paper mill at Sittingbourne in Kent. This was formed of 18 air-braked 32-tonne capacity tank wagons, the two-axle design being purpose-built for the traffic at Linwood by Rootes Pressings Ltd.

Leased from Storage & Transport Systems (STS), the wagons were fitted with double-link suspension and, as china clay is very susceptible to contamination, the tank barrels had an 'Epimastic' lining with glass fibre insulation beneath the outer cladding to protect the slurry from freezing. Externally, the barrels were painted blue with a black and white Bowater logo and fleet numbers in the series 1011 to 1028. Two additional tank wagons were built for the Bowater's service by IMC at Hartlepool in 1971 while in 1974 the fleet was renumbered on TOPS as STS53111-



One of the former ethylene glycol 40t tank wagons to be used in china clay slurry traffic from Burngullow to Warrington, TRL51229 is seen at St Blazey in August 1981. Trevor Mann



Until 1981, three ferry tanks were also used on the slurry traffic from Burngullow. After this ceased, all were stored with TIX 21 70 0780 419-8 seen at Railcar Services, Stoke in June 1985.



30, becoming TTAs.

During the 1970s, the wagons were all repainted in plain blue with just an STS badge and, as other tank wagons were introduced to carry china clay slurry, they were subsequently reassigned to the chalk slurry traffic from Quidhampton before being withdrawn in the early 1990s.

Crosfield and Inveresk

With the Sittingbourne service proving to be a success, discussions took place with other customers and from the mid-1970s, china clay slurry began to be railed to the Joseph Crosfield & Sons chemical and soap works at Warrington and to Stirling for Inveresk Paper at Denny.

Both flows were forwarded by the wagonload network and initially utilised three Tank Rentals 40t GLW ferry-fitted diagram E311 Class A tanks, these being numbered 21 70 0780 419-8, 420-6 and 421-4 and which had previously been used by

the Distillers Co. to carry various solvents. Also employed were a handful of TRL 40t GLW ethylene glycol 'G' tanks that were no longer required by ICI. However, neither wagon type was ideal for slurry traffic; the former ethylene glycol tanks being vacuum-braked and fitted with eyebolt and auxiliary rubber suspension so could not be sent via Speedlink services while the ex-ferry tanks, although dual-braked, lacked insulation. Furthermore, both types could only carry 25 tonnes, so if the traffic was to continue long-term other wagons would need to be provided.

For Inveresk Paper, this saw two former 45t GLW glycol tanks, TRL51408 and TRL51409, being air-braked, fitted with pedestal suspension and additional barrel insulation. Finished in blue with Inveresk Paper lettering in white, the pair went into china clay slurry service in 1979, operating between Burngullow and Stirling goods depot from where the slurry was roaded the

ABOVE: The first of the two china clay slurry TTBs leased to Inveresk Paper, TRL51408 is seen at St Blazey on October 22, 1980 in company with TRL51227, which at the time was one of several TTVs being used to carry china clay slurry from Cornwall to Warrington. Simon Bendall Collection

short distance to Denny.

At Warrington, in addition to china clay slurry, Crosfield also wanted to start receiving deliveries of ball clay slurry by rail; ball clay being a somewhat stickier form of kaolin than china clay. As a result, a pool of five air-braked 60-tonne capacity bogie tank wagons was provided. Numbered TRL78800-04, these five tanks, which had been built in 1975 by CFMF to carry sulphuric acid from St. Helens on behalf of Leathers Chemicals, were converted for slurry in 1980/81 by fitting additional barrel insulation and modified discharge pipes. They were also finished in Crosfield's livery and would spend the next



TCA TRL78804, one of the five former sulphuric acid tanks that were converted to carry clay slurry in 1981, is pictured at Warrington on January 12, 1987, having arrived a few days earlier loaded with china clay slurry from Burngullow. These tanks could carry 59 tonnes.



Tiger Rail modified 20 45t caustic soda tanks to carry clay slurry via Speedlink by replacing their leaf springs with parabolic suspension. TTA TRL51634 passes through Warrington Bank Quay in September 1985 while en route from Burngullow to Stirling.

seven years working from the West Country to Crosfield's private siding at Warrington Arpley before being repainted in ECC blue and transferred to Quidhampton.

In addition to these dedicated fleets, Tank Rentals successor Tiger Rail also modified ten air-braked 45t caustic soda tanks during the early 1980s for slurry traffic via Speedlink, fitting them with parabolic springs. Most of these modified wagons, which comprised TRL51631/33-36/42/44/45/47/48, were allocated to the movement of chalk slurry from the Blue Circle Cement works at Swanscombe but during the mid-1980s, TRL51633/34/48 also spent some time in china clay slurry traffic to both Stirling and Warrington.

More conversions

As the 1980s progressed, the transport of china clay slurry for use by the paper and pottery industries grew considerably with more oil and chemical tank wagons being modified for the traffic. These included five TIA 80t bogie tanks built for STS by Arbel Fauvet in 1987, which utilised the underframes from four withdrawn liquid petroleum gas



TIA 83 70 7895 201-2 was one of the four 50ft long STS bogie slurry tanks built using underframes from withdrawn LPG tanks. Although ferry fitted, they rarely, if ever went abroad and this tank was returning to Cornwall from Aberdeen when seen at Warrington in May 1989.



By 1988, Tiger Rail's batch of 51t caustic soda tanks were no longer required by ICI and many of the 28 wagons were reassigned to clay slurry traffic. TUA TRL70705, one of a dozen to be repainted in ECC colours, was spotted at Warrington Arpley yard in July 1990.



The Tiger Rail TUAs assigned to the Crosfield slurry traffic had to settle for having their ICI symbol painted out, as shown by TRL70726 at Warrington in June 1987. By this date, the chemical company no longer possessed its own industrial shunter and BR would leave the loaded tanks outside the gate, on the line next to the wagon repair sidings, from where they would be hauled into the Crosfield works by a tractor.



By November 1990, the Crosfield's pool contained just four 45 tonne tanks including TTA TRL51644, which had arrived with a load of ball clay slurry from Watts Blake Bearne at Newton Abbot when recorded inside the Crosfield works at Warrington on January 19, 1991. Despite suggestions that the slurry traffic to Warrington would continue, it ceased in May 1991, a few weeks prior to the end of Speedlink.



TTAs CAIB51957 and CAIB51954 (in faded ECC blue) were returning from Aberdeen to Burngullow when recorded at Exeter Riverside on the rear of the Newport-St Blazey Enterprise working on June 4, 2001.



One of the three former solvent tanks to be transferred to slurry traffic that had a barrel recovered from the E311 Class A ferry tanks, CAIB51963 heads through Par on its way to Aberdeen on June 7, 2001.

tanks, STS78650-53, and former Class A tank STS86000. Fitted with new lagged and sloping barrels, the five TIAs, now numbered 83 70 7895 200-204, were leased by ECC and worked from Burngullow to both Aberdeen Guild Street and Sittingbourne until 1997 when they were moved to the Croxton & Garry/Omya chalk slurry pool.

In 1988, a dozen Tiger Rail 51t caustic soda tanks that had previously been in service with ICI were also modified for the Burngullow to Aberdeen traffic. Repainted in ECC livery, they also worked to the PD Stirling distribution depot at Mossend which, since 1987, had replaced Stirling as the trans-shipment point for slurry bound for Inveresk Paper, while from 1990 the 51-tonners were joined on the Scottish flows by a dozen 45t solvent tanks that had previously been hired to either BP or Shell Chemicals. These former solvents tanks, TRL51954/56/57/59-65/67/68, were themselves rebuilds utilising various second-hand chemical tank barrels and air-braked underframes, which were updated with parabolic springs.

In a neat twist of fate, three of these tanks, TRL51961-63, had the barrels previously fitted to the three E311 Class A ferry tanks which had already found themselves in china

clay slurry traffic over ten years earlier. The collapse of Tiger Rail in 1992 saw ownership of the wagons transferred to Caib but they would remain in slurry traffic out of Burngullow for another decade.

The traffic to Warrington also switched to using ex-caustic soda tanks with the five TCAs in the Crosfield pool being replaced in May 1987 by ten Tiger TUAs, TRL70718-27, although none would be repainted in Crosfield's livery. However, the next few years saw this traffic go into decline, the last delivery of china clay slurry to Warrington arriving in December 1988 and, although the ball clay slurry from Newton Abbot continued to arrive by rail until May 1991, by then it had reduced to no more than one or two tank wagons a week.

New bogie slurry tanks

During 1989, two new batches of ferry-fitted bogie slurry tanks had arrived in Britain from French builders and these gradually replaced the earlier wagons on most of the remaining flows. Fitted with Y25C bogies, the most numerous were the 69-tonne capacity tanks built by Arbel Fauvet to diagram E719 of which 120 were constructed. Numbered 33 87 7898 000 to 119, ownership of the

batch was split between Locatransport (000-039), Nacco (040-079/100-119) and Österreichische Eisenbahn (080-099). Those owned by Locatransport and Österreichische Eisenbahn initially handled continental slurry flows from a loading point at Vise, north of Liege, although they would also occasionally visit the ECC terminal at Cliffe Vale (Stoke) with a load of imported chalk slurry from Belgium, while the 60 examples owned by Nacco were divided between Burngullow, Quidhampton and Vise.

A TOPS enquiry for the 120 E719 tanks dated February 24, 1999, revealed that 76 of them were on the continent, which included seven that had gone abroad via the Channel Tunnel with china clay slurry from Burngullow, while of the 44 in Britain some 22 were empty, five at Burngullow and 17 at Quidhampton. Of the 22 loaded tanks in the UK, nine were to be found in Scotland: three at the Wiggins Teape paper mill in Corpach, two of which had arrived from Quidhampton and the other from Burngullow, and six at PD Stirling's Mossend railhead, three each from Quidhampton and Burngullow. There were also four loaded tanks at Workington, all from Quidhampton, and three at Sittingbourne, all from Burngullow, while



LEFT: Over a dozen former Ermewa bogie wine tanks were transferred to slurry traffic during the 1990s and although the majority were used to carry chalk slurry, five of them spent a couple of years in china clay slurry traffic from Burngullow. These included ICA 33 87 7890 590-5 pictured at Warrington when heading to Irvine on October 8, 2000.

BELOW: Amply illustrating where the name 'silver bullets' came from for the ICA, TEA and TIA bogie slurry tanks, a recently cleaned Nacco example 33 87 7898 051-0 is pictured at ECC's Cliffe Vale terminal in May 1999.



the final six were to be found at Cliffe Vale, which held two from Burngullow, two from Quidhampton and two from Vise.

At that date almost all this traffic was being forwarded by EWS' Enterprise services with china clay slurry also being railed to the Shotton Paper factory at Dee Marsh. However, that flow ceased during 2001 while the traffic to Mossend would dwindle away following the closure of Inveresk Paper in 2005, with the wagonload movements to Aberdeen, Corpach and Sittingbourne ending a few years later.

'Silver Bullets'

The other batch of bogie slurry tanks introduced in 1989 comprised 27 British-

registered and Tiger Rail-owned 90t GLW vehicles built by ANF Industrie to diagram E708. They were required for a company train working from Burngullow to the newly-opened Caledonian Paper mill at Irvine, in southwest Scotland, being coded TIA and numbered 33 70 7890 100 to 126. Ownership of the wagons switched to Nacco in 1992 but they remained on the Irvine service, at the time the longest through freight working in Britain, until 2002 when they were withdrawn and replaced by a fleet of 30 new Nacco 102t GLW TEAs. Capable of carrying an extra 11 tonnes compared to their predecessors, the 2002 batch, numbered NACO89100-29, were delivered sporting the Imerys logo, the company having acquired English China

Clays in 1999. They were also fitted with the relatively rare Probotec straight-frame TF25 bogies.

In the late 1990s and early 2000s, other tanks to see brief use in china clay slurry from Burngullow were five former Ermewa bogie wine tanks, a pair of 80t GLW ex-Nacco/Polysar tanks that had been built by CFMF to diagram E496 in 1979 for the carriage of latex, and a couple of the 90t GLW Tiphook tanks built to diagram E686 in 1987 by Arbel Fauvet.

In addition to the Burngullow to Irvine train, the Nacco TEAs had also taken over the chalk slurry traffic from Quidhampton but after the cessation of slurry traffic from Burngullow in 2008 and Quidhampton



LEFT: Showcasing the more typical condition of how the three fleets were to be found, Nacco E719/ICA 33 87 7898 103-9 was bound for Aberdeen from Burngullow as it passes Par on June 7, 2001.

RIGHT: Bogie slurry tanks await unloading at Cliffe Vale, Stoke in March 1999. The OEVA-lettered E719 tank (one of the 20 owned by Österreichische Eisenbahn) and the two former Ermewa wine tanks, which had both been repainted white, had all arrived with chalk slurry from Belgium, while the two Nacco E719 tanks were loaded with china clay slurry from Burngullow.



LEFT: One of the original 'silver bullets,' diagram E708 TIA 33 70 7890 122-6, previously owned by Tiger Rail, is pictured at Warrington when en route from Cornwall to Irvine on 16 April 2000.

BELOW: The current batch of TEA tanks are easily distinguishable by the unusual barrel shape as demonstrated by NACO89120 when recorded at Warrington Arpley bound for the Caledonian Paper mill at Irvine with a load of china clay slurry on June 1, 2003.

in 2009, they were then concentrated on the imported chalk slurry movement from the Aberdeen Waterloo docks branch to Workington. During 2020, they also worked alongside some of the Ermewa (formerly Locatransport) E719 tanks in an infrequent service from Aberdeen to Spalding, from where the imported slurry was forwarded by road to a paper mill near King's Lynn.

To replace its Burngullow facility, Imerys opened a new distribution depot at Antwerp, which was designed to handle imported clay slurry from South America. From 2008, the Nacco-owned E719 tanks, now renumbered under German registration, began working a weekly block train from Antwerp to Irvine via the Channel Tunnel. ●



Terminals and models

Having looked at the wagons and operation of china clay services, **Simon Bendall** turns his attention to the models available as well as providing some pointers on terminal design.



The track layout of several Cornish clay dries was quite straightforward, being no more than a single track with a loop to allow the loco to run round. This arrangement could be found at the now closed Moorswater and Crugwallins Sidings (Burngullow) for example. Other dries, such as Parkandillack and Drinnick Mill, offered a slightly more complex arrangement with additional sidings and run rounds to allow for shunting and the presence of more than one rake of wagons. The sites were generally compact as well, lending themselves to adaptation for a medium sized layout or something smaller if compression is applied.

One of the most interesting aspects of the dries though was the architecture. While some sites featured relatively modern buildings, others adapted and extended the old 19th century stone-built buildings, creating a highly modellable juxtaposition of old and new. The surrounding landscape also played a part as, while the likes of Moorswater and Crugwallins were in leafy surroundings, others such as Parkandillack and Treviscoe were in the middle of the white, mining landscape.



ABOVE: Once a major hub of china clay rail operations, by June 2004 Burngullow was in decline with it and the adjacent Blackpool Dries closing some three and a half years later. The other Class 08 owned by ECC and then Imerys, P400D *Susan* (ex 08320), stands by the slurry loading area with assorted TEA slurry tanks and JAA Clay Tigers dotted about. The shunter would be scrapped in 2010. On the right, sleepers are laid out ready for the redoubling of this section of the Cornish main line. Simon Bendall

ABOVE: In superb evening light, ECC-owned Class 08 P402D *Annabel*, better known as 08398, shunts two JIA Polybulks at Rock Dries for loading on May 27, 1993. In railway parlance, the location is Goonbarrow Junction on the Newquay branch, which can be seen in the background along with a rake of stabled Clay Tigers. This expansive site still dispatches clay by rail today, but the shunter is long gone. Acquired in 1986, it was sent for scrapping in September 2010 after a period out of use, being replaced by an industrial. Simon Bendall Collection



LEFT: Just a stone's throw from Burngullow Junction along the Parkandillack branch was Crugwallins Sidings, this serving the adjacent works, which was very much of traditional architectural style to the end. The site was still regularly loading CDAs for Fowey in June 2004 with the resident shunter, Sentinel 0-4-0 P403D *Denise*, seen lurking under the far canopy. With a simple run-round loop track plan, the site is perfect for space starved modellers with the connection to the adjacent branch being just behind the photographer. Simon Bendall

China clay models

With the classic china clay opens already covered, we will start this survey of available models with their replacements, the CDA hoppers. In OO gauge, Hornby released a new version of the wagon in 2003, which was based on the similarly updated HAA tooling of the same period. This replaced the company's original CDA model of the late 1980s, which was just a HAA with a canopy on it and none of the other defining features. The modern rendering at least made some concessions in this area, such as adding the two vents at each end of the hopper body, modifying the hopper door actuators to have a flat top and smooth surface, and mounting the brake distributor above the underframe.

Details that were still omitted on the CDA though included the drainage slots in the ends and one side, the air reservoir tank alongside the distributor and the canopy winding gear. Additionally, the model carried a second brake distributor on the underframe, behind one bufferbeam. While the few CDAs converted from HAAs do carry a distributor in this position, they do not have the one above the underframe. It is a case of one or the other, not both as Hornby have portrayed. The canopy of the wagon remained the biggest disappointment though, it being just a re-use of the moulding from the original 1980s model with no alterations whatsoever. This meant it was still too long and too high as it sits on top of the hopper, rather than recessed inside it as per the prototype.

Happily, last year brought the news that Cavalex Models is working on a new CDA with all the correct features for release



Hornby's more recent attempt at the CDA improves on what went before but still lacks a number of key details and the use of the old canopy detracts from much of the good work.



Kernow Model Rail Centre scored a major win with the PBA Clay Tigers in their original white livery, the OO gauge models selling out rapidly. A second batch in partnership with Bachmann under the EFE brand followed last year with similar high demand. Beautifully decorated, they capture the look of the French-built wagons very well.

during 2021. To be finished with both ECC blue and DB red/maroon framing, the OO gauge models will only be available from Trains 4U and KMS Railtech. For N gauge modellers, a ready-to-run CDA is produced by Peco.

Private owner types

As already shown with the PRAs on pages 14-15, the models commissioned by Kernow Model Rail Centre have really driven forward the range of available OO gauge wagons, these beginning with the modern day Imerys JIA hoppers and then the PBA/JAA Clay Tigers. The pair are very nicely executed with both previously released in pristine and weathered forms while the Clay Tigers have appeared in both the white ECC livery and later Tiphook blue. The duo has now been re-released under Bachmann's EFE brand as part of an agreement between the companies. Also, under the EFE brand, the Imerys JIA will appear in N gauge for the first time during the course of this year but its predecessor remains a significant gap.

Bachmann scored a notable hit several years ago when the Polybulks were released in both scales and in the required original grey/green and Traffic Services liveries for clay workings. The 4mm scale versions were particularly popular and now much sought after. The many varieties of clay slurry tanker are not well represented in either scale but Dapol does produce the most important and widespread, this being the ICA in both 2mm and 4mm. The most useful and widespread of the slurry types, the models have appeared in slightly garish pristine condition with a highly reflective appearance and, in contrast, with a superb, weathered look that really captures the in-traffic appearance of the wagons. It's also worth noting the long out of production Triang/Hornby



As this special was compiled, the new Cavalex Models CDA had reached the first sample stage but showed huge promise with all the necessary parts in place and even featured etched components on the canopy. While livery samples were awaited, this render shows how it will look in current DB condition.



For the Tiphook blue Clay Tigers, Kernow went to the trouble of having alternative tooling to add the ferry tie downs along the solebar. This allows the wagons to be correctly portrayed in their international condition when carrying RIV numbers and coded JIA.

Bowaters TTA slurry tank in OO gauge, which is relatively easy to find second-hand and detail up to acceptable standards.

For bagged clay traffic, Bachmann offers the VAA/VBA, VDA and VGA vans in 4mm while Heljan produces the IWA Cargowaggon in this scale as well as O gauge. The IWA has also been offered in EFE packing in recent times as part of a sales strategy with Bachmann. A new arrival is Kernow Model Rail Centre's IZA Cargowaggon twin-vans and there is also the forthcoming IWA 'hold-all' Cargowaggon design from Revolution Trains. In N gauge, Bachmann's Graham Farish brand includes the BR-owned VAA/VBA and VGA vans and Dapol manufactures the IWA Cargowaggon.



For many wagon modellers, the Polybulk has been a particular highlight of Bachmann's freight output in recent years, the tooling and decoration really capturing these models to a tee. Those in Traffic Services colours were used on clay workings for some three decades, although the green soon disappeared under grime.

Dapol struck white gold when it chose to portray the ICA slurry tanks. Although different from the TIA tankers used on the iconic flow from Burngullow to Irvine for which the 'silver bullet' tag was coined, their use across the UK for over 30 years makes the model extremely useful. Although produced in several different finishes and brandings, the key release was the batch of weathered ECC examples. For a mass-produced ready-to-run model, the weathering has yet to be bettered. S Kits offers an etched kit to replace the walkway and ladders if a finer finish is desired.



Kernow's first venture into OO gauge clay wagons was the Imerys JIA, as introduced in 2000 and still working today. An N gauge version will be in the shops this year and mirror its cousin in having pristine and weathered versions.



The main missing link for OO gauge modellers now is the Tullis Russell PAA covered hoppers, while they would doubtless be useful in 2mm scale as well. Several modellers have had a go at scratchbuilding them over the years, such as this example seen on Ringburn Yard. Employing the chassis from a Hornby PGA hopper, the bodywork was partly built from Plasticard by Dave Roome before Alex Hall finished it off and then painted and weathered it. The logos were homemade from self-produced artwork. Ian Manderson

hobby TRAX

Innovators not imitators!

We stock a huge range of model railway products including our exclusive own brand range! Shop online now for fast delivery or call us for free help and technical advice. Visit our website for details of free-to-enter competitions or join our mailing list to be the first to find out about our innovative new products before they are released!



**"A model shop like you've never
scenic before!"**

Hobby Trax, Ford, Lochgilphead, PA31 8RJ

0345 065 4472

www.hobbytrax.co.uk



Clay formations

China clay workings were among the most diversely formed trains of the 1980s and 1990s, the array of wagon types bringing colourful consists and that was before the locos were added to the mix. **Simon Bendall** takes a pictorial look across the decades and details what is on show.



Change was coming to china clay operations in the summer of 1982 as 37203 rolls into Par with a brand new Tullis Russell PAA hopper behind the loco. Although the details of the working are unknown, the uncovered clay opens, which are identifiable by the hinge atop the end door, would be working back into Cornwall and may well have collected the newcomer on the way. With the PAA having no vacuum pipe, the train would be running unfitted. Simon Bendall Collection

ABOVE: With a defunct marker light, 45022 *Lytham St Annes* catches the late evening shadows as it descends Dainton Bank at Langford Bridge with a working from Plymouth Friary to Exeter Riverside on June 30, 1978. The china clay portion of the train consists of nine sheeted open wagons bound for Scotland, the number suggesting they are destined for either Corpach and Wiggins Teape or Cadder Yard for onward road transport to Inveresk Paper at Denny. Also making up the train are cement Presflos, two discharged liquid petroleum gas tankers returning to Stanlow from Cattewater (Plymouth) and an assortment of 12-ton vans and a Highfit open. Bringing up the rear is a VAB air-braked van in original freight brown while a bolster wagon is hidden in the shadows in front of the brake van. Heading up the formation is a Mk1 BSO converted to an Enparts coach, the Western Region operating several of these to move locomotive parts to and from Swindon Works. Simon Bendall Collection

RIGHT: The flagship of the Cornish Railways-branded Class 37s, 37207 *William Cookworthy*, powers across Burngullow Junction on July 22, 1986, as it leaves the Parkandillack branch bound for Lostwithiel with a rake of clay hoods. The chimney of the Crugwallins dries can be seen while Blackpool Dries is the other side of the bridge. Three locos carried the popular lizard emblem, the others being 37181 and 37185, but only 37207 had the nose end brandings. The main line would be singled here for seven miles to Probus later in the year as a short-sighted cost-cutting measure. Simon Bendall Collection





LEFT: With the majestic Moorswater Viaduct looming large, 37196 *Tre Pol and Pen* had not long departed the clay works of the same name on July 21, 1986, with 15 OOV hoods bound for Fowey Docks. Heading for Coombe Junction, the loco would soon tackle the punishing circular climb up to Liskeard. This was one of only two Class 37/0s to carry the original Railfreight grey livery without the red stripe, having been painted at St Blazey 13 months earlier. Simon Bendall Collection

RIGHT: Moving well away from the West Country, 47113 blasts through the centre road at Stafford with Clay Tigers bound for Cliffe Vale, Stoke, on May 9, 1986. The modernised Clayfreighter was now in its fourth year of operation with a standard rake of 11 PBAs in tow. Simon Bendall Collection

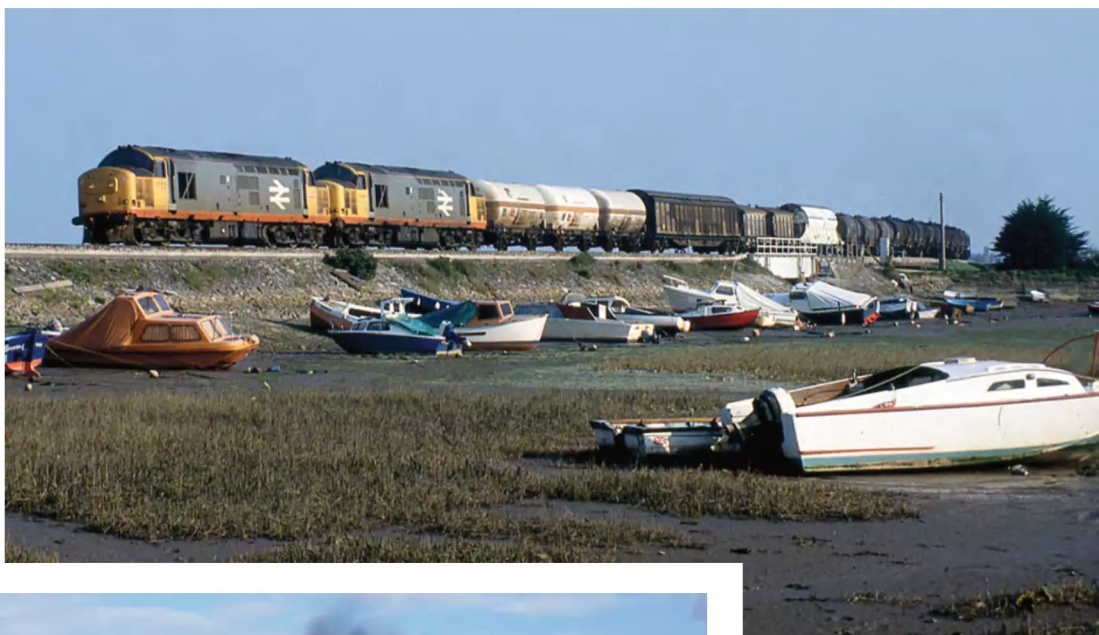


Sadly, freight trains do not come like this anymore as a spruced-up 45013 arrives at Severn Tunnel Junction during October 1985 with the 7V79 08.56 Speedlink from Eastleigh. While the clay content amounts only to the two Clay Tigers returning loaded from Furzebrook, it amply illustrates just how diverse the trunk workings could be and the sheer variety of wagons that can be run together. From the front these include a YGH Sealion ballast hopper, VBA van, two SPA steel opens transferred into departmental stock as ZAA Pike and two different PCA cement Presflos, these being a French-built STS example and then a straight-barrelled 'Metalair'. These would most likely be returning empty to Aberthaw cement works from Hamworthy while the HEA coal hoppers are also empty from the PD Fuels coal concentration depot at Southampton Dibles Wharf. The VGA and two VDA vans on the rear may well have come from the Royal Naval Armament Depot at Dean Hill, near Salisbury, where 7V79 was booked to pick up traffic with the SPA on the rear maybe serving as a barrier. This entire formation can be modelled in OO gauge using Bachmann, Kernow and Accurascale products and, with the exception of the PBAs, in N gauge as well from Farish and Realtrack models. Simon Bendall Collection



LEFT: The Class 50s enjoyed relatively good usage on West Country clay trains throughout much of the 1980s, it being a good place for Laira depot to send a loco on restricted duties or one fresh off repairs for testing. In the case of the unique but unsuccessful freight conversion 50149 *Defiance*, it was a year-long association in 1988 after it was drafted into Cornwall to help cover for two collision damaged Class 37/5s. This coincided with the first year of operation of the CDA hoppers to give a pleasing pairing. On August 3, at least 13 hoppers were in tow as the Type 4 passes the picturesque surroundings of Golant bound for Fowey. Bob Lumley

RIGHT: At the classic location of Cockwood Harbour, 37674 and 37669 head out of Devon with an up Speedlink from St Blazey on April 25, 1988. Once past the three liquid petroleum gas TTAs, the early pattern Cargowaggon van would be carrying bagged clay while the two PRAs would be Corpach bound once again. Next comes a PBA and then three TTAs in clay slurry traffic followed by a good set of bitumen tanks. Simon Bendall Collection



LEFT: In contrast to the Cornish china clay workings, the ball clay traffic over the border in Devon received rather less attention. On November 1, 1990, 37412 opens up as it passes through Newton Abbot with a Heathfield to St Blazey trip working. The PBA and four CDAs would all be carrying ball clay while the two VDA and three VAA/VBA would be loaded with bagged clay. The last two VAA/VBA are in the then relatively new sub-sector livery of dark grey with yellow ends and Railfreight Distribution logos. Simon Bendall Collection



LEFT: You could be forgiven for thinking that Speedlink still existed in this October 9, 1993, view of the 6V70 08.20 Bescot to St Blazey working at Standish Junction. Powered by 37416 *Mt Fuji* and 37674, the head of the train is formed of empty Polybulks and Clay Tigers returning from Cliffe Vale for another load as were the assorted clay slurry tanks and Cargowaggon vans. With such a lengthy load, the approach of the Type 3s was not subtle.
Martin Loader

RIGHT: The TIA 'silver bullets' were losing their lustre by March 17, 1994, as the classic St Blazey pairing of 37671 *Tre Pol and Pen* and 37672 *Freight Transport Association* slog along the down relief line at Pilning. Forming the heavy 6S55 09.40 Burngallow to Irvine, 12 tankers make up the long distance working to the Caledonian Paper mill.
Martin Loader



LEFT: With the division of the various freight flows under the shadow privatisation process, the majority of china clay workings were transferred from Railfreight Distribution to Transrail. However, the export flow to the continent remained under RfD control as it was international traffic. On July 22, 1996, 47338 and 47375 *Tinsley Traction Depot* look rather fine as they power the 6092 10.35 Exeter Riverside-Dollands Moor past Great Cheverell, to the east of Westbury. Amongst the Polybulks, at least two of the internationally-registered JIA Clay Tigers can be detected.
Mark Few

RIGHT: On July 8, 1988, it was 37410 *Aluminium 100* in charge of the short trip working from Corpach to Fort William, this conveying various wagons from the Wiggins Teape paper mill. Leading the formation is a Tiphook Rail-branded IHA covered wagon, this carrying reels of paper as were the four VGA vans in the train. The quartet of empty PRAs were on their way back to Cornwall while the six BP Class B TTA tankers would also be empty, having come north from Grangemouth with fuel oil for the paper mill. These tanks were common on the West Highland line at this time as fuel oil was also delivered to the aluminium works at Fort William.

Simon Bendall Collection



LEFT: Under the recently installed electrification, 26038 arrives at Millerhill Yard on August 9, 1989, with a trip working from Thornton Junction. This includes an empty PBA and PAA from the Tullis Russell paper mill at Auchmuty, VEA vans in military traffic from Rosyth and both Grainflow and Scottish Malt Distillers Polybulks returning from the distillery at Cameron Bridge. Simon Bendall Collection

RIGHT: 37409 waits to head south at Spean Bridge during September 1992 with a Corpach to Mossend working, this consisting of two empty ICA slurry tanks and five Tiphook KFA flats, all loaded with 30ft 'Lancashire flat' containers, these having a solid panel at one end and stanchions around the other three sides. The first three are loaded with paper reels from Wiggins Teape under heavy tarpaulins while the rear pair have aluminium ingots from the smelter at Lochaber. Hornby produces the KFA in OO gauge. Simon Bendall Collection





Class 60s were introduced on the long distance china clay workings under Transrail, the type displacing the pair of Class 37s on the Burngullow-Irvine 'silver bullets' from July 1995. They also took over the Stoke workings later that year as illustrated by 60036 *Scurr Na Ciche* atop the 6V70 07.45 Bescot to St Blazey empties at Rangeworthy on January 13, 1996. The train had left Cliffe Vale the previous day and overnighted at Bescot where further traffic bound for Cornwall was added, including an early Cargowaggon and assorted slurry tanks. Martin Loader

Almost three years later, the 6V70 08.57 Cliffe Vale-St Blazey is seen again at Yate Common on November 4, 1998, this time headed by 37674 *Saint Blaise Church 1445-1995*. Although in Transrail colours, this was now an EWS loco and train, but the wagons remained as diverse as ever, just even more dirty! Once again there are Polybulks and Clay Tigers returning empty along with an ICA slurry tank and Cargowaggon van. Mark Few





LEFT: The new look for local clay services at the end of the 1990s as 37668 departs from Parkandillack with the morning trip to Fowey on April 21, 1998. While the loco has received EWS colours, it would be a further two years before any attempt was made to rebrand the CDA hoppers, these still carrying the blue-framed livery they were delivered in ten years earlier, albeit without the ECC logos. In the background, Cargowaggon bogie vans are being loaded with bagged clay. Martin Loader



ABOVE: For a short time, the CEA covered hoppers converted from HEAs were trialled on clay traffic, these having been modified by Loadhaul and painted in the company's orange and black livery. Now in EWS ownership, 37042 leads a rake of 30 past Cockwood Harbour on May 3, 1999, formed of the 6V70 08.57 Cliffe Vale to St Blazey empties. Also in the consist but out of sight on the rear were three Cargowaggon vans. Bachmann has produced the CEAs in both 2mm and 4mm, covering both the Loadhaul and later EWS maroon liveries. Martin Loader

RIGHT: Class 58s did not become involved in clay traffic until the EWS era and then typically only on workings to the southeast. On June 15, 1999, 58037 rumbles north at Culham with the 6S65 15.19 Eastleigh to Mossend Enterprise working. The traffic on this service could be highly diverse but, on this occasion, just had ten loaded ICA slurry tanks, two of them being rather cleaner than the rest. Martin Loader





LEFT: With 12 of the then five year old TEA slurry tanks in tow, 66035 passes Closeburn, south of Cample, on the Glasgow and South Western route with the 6S55 22.27 Burngullow to Irvine in tow. After the best part of 19 hours travelling from Cornwall, the train was now not far from the Caledonian Paper mill on June 9, 2007. This traffic would end within a few months upon the closure of Burngullow, having lasted some 19 years. Martin Loader

RIGHT: The last 15 years have seen china clay workings decline notably as Imerys rationalised its operations. For a number of years, there has only been enough local work in Cornwall to keep one Class 66 employed with 66027 seen at Treviscoe on March 18, 2016, while shunting the CDAs ahead of departure to Fowey. The rudimentary bufferstop of two concrete sleepers is notable! Nathan Stockman



BELOW: Nowadays, the only china clay working out of Cornwall is that to Cliffe Vale, which utilises a rake of Imerys JIAs. On March 26, 2015, 66101 had previously arrived at St Blazey with nine wagons from Treviscoe, seen on the left, and was now waiting to work a further eight forward to Exeter Riverside, these having been loaded at Par Harbour the previous day. Once this was completed, the GM would return to St Blazey and collect the other nine, the train having to be worked in two portions to Exeter due to the gradients over the Devon banks. Nathan Stockman



China Clay



LEFT: With the closure of Burngallow, Caledonian Paper switched to receiving its china clay slurry from Antwerp in Belgium, this initially being worked by a DB Class 92 through the Channel Tunnel and on to Carlisle before a Class 66 handled the final trip over the Glasgow and South Western. With the subsequent decline of the dual voltage electrics, a pair of Class 90s took over on the West Coast leg. From January 4, 2017, GB Railfreight began resourcing the contract and reinstated a Class 92 as traction, 92032 IMechE Railway Division being seen on the company's inaugural 6S94 02.03 Dollands Moor-Irvine at Shap Wells with 20 ICA tanks in tow. However, a spate of disruptive and costly failures in West London when changing from DC to AC power saw the Class 92s soon accompanied by a Class 66 as insurance and for the diesel leg in Scotland. This proved to be a waste of resources though with electric haulage abandoned and a GM used throughout from the tunnel. Happily, this train can be recreated using the Dapoli slurry tank model. Dave McAlone

RIGHT: Today, much of the clay slurry traffic is centred on the docks at Aberdeen, from where it is railed to both Irvine and Workington. However, this is chalk slurry imported from Norway rather than china clay, although it is worthy of mention as not only does it employ the same tanks, but it is also worked by the colourful Colas Rail fleet. On June 24, 2020, 70815 approaches Kinbuck, north of Dunblane, with the 6M84 Aberdeen Waterloo to Workington, this featuring four Omya-branded ICAs and two TEAs. Guy Houston



LEFT: For part of 2020, an occasional flow of chalk slurry ran from Aberdeen to Spalding, from where it was transferred to road tankers and taken to King's Lynn for use in paper manufacturing. Proving that modern freight operations do not need sprawling multi-million pound terminals, this just used two existing sidings with road access alongside to connect the discharge pipe and air compressor supply. On July 28, 70801 is stabled and shut down while its nine TEAs are emptied with 156413 passing by. The traffic was suspended in the wake of the ScotRail HST derailment at Stonehaven and subsequent lengthy closure to repair the line but did not restart once this was completed. Rob Higgins

One of the earliest timber services run by BR was in the Bristol area, this conveying wood pulp from Portishead Docks to a terminal at Marsh Ponds, where it was taken to St Anne's Board Mill. On November 3, 1971, Warship 832 *Onslaught* waits for departure from Marsh Ponds after unloading with a rake of the diagram 1/420 timber wagons. Andy Kirkham



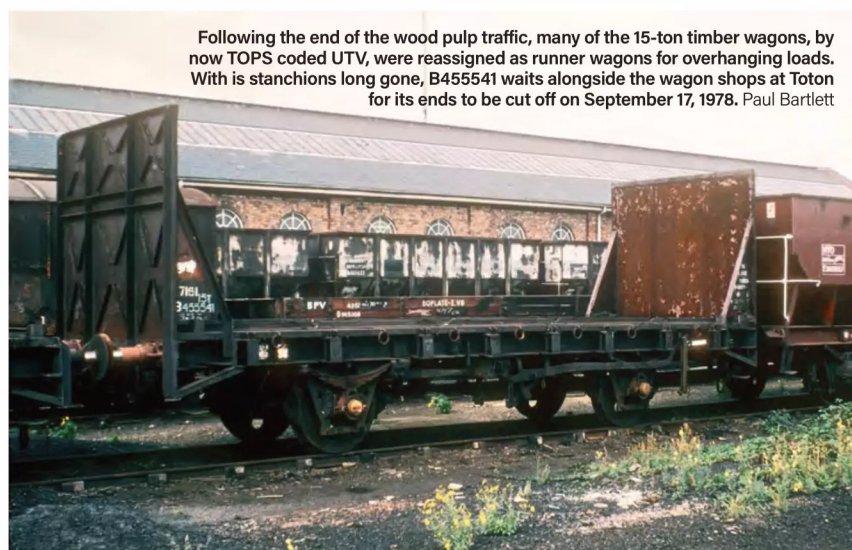
After little traffic in previous decades, the movement of raw timber by rail flourished in the second half of the 1980s. However, a change of direction by EWS early this century almost saw the traffic lost for good before a resurgence under Colas Rail, as **Simon Bendall** details.

The movement of timber by rail has always been a relatively small volume traffic, however it is traditionally a popular choice for modellers looking to fill a corner of a layout as it has frequently operated on a wagonload basis from the most basic of facilities. Regular points of origin for raw timber over the years have included East Anglia, the Scottish Highlands and Central Wales but flows from other parts of the country were not unknown.

Prior to the mid-1980s, the movement of timber by rail was very much a niche traffic, so much so that BR provided only two fleets of wagons for its carriage. First to appear in 1962/63 from Ashford Works were 80 wagons to diagram 1/420. Numbered

B455500-79, they had a 14ft wheelbase and featured high ends and stanchions, giving a 15-ton capacity. While some initially worked from East Anglian ports carrying packaged softwood, many later found employment between Portishead and Marsh Ponds in Bristol carrying wood pulp, this being loaded in strapped bundles with the wagons running without their stanchions. Coded UTV under TOPS, they were removed from timber traffic around 1978 and converted to runner wagons with their ends being cut away. Power for the Bristol workings was initially diesel hydraulics but later it was often a Class 45 or Class 46 laying over at Bristol Bath Road between northeast-southwest passenger duties.

During 1965, a second design of timber wagon appeared, some 50 wagons being introduced to carry logs from Crianlarich Lower to the newly opened pulp mill at Corpach, near Fort William, from June that year. Allocated diagram 1/439 and coded Timber P, they were mainly converted from redundant 'Condor' Conflat P wagons, which had started life as 22-ton plate wagons. The conversion entailed the fitting of high wooden ends and a central partition along with girder work down the sides to retain the logs. Eventually coded UUV, the wagons saw intensive use along the West Highland line until June 1980 when the closure of the pulp mill due to financial problems brought about their demise. As might be expected, given their dominance on the West Highland line during the 1970s, Class 27s were the normal traction, but Class 20s also appeared as did Class 29s in the late 1960s.



Following the end of the wood pulp traffic, many of the 15-ton timber wagons, by now TOPS coded UTV, were reassigned as runner wagons for overhanging loads. With its stanchions long gone, B455541 waits alongside the wagon shops at Toton for its ends to be cut off on September 17, 1978. Paul Bartlett

Traffic expansion

By the mid-1980s, the recession had begun to ease and rail freight consequently increased. This included an unforeseen surge in demand for raw timber with principal destinations including the mills at Shotton and Workington while loading points outside of the Scottish Highlands included Lapford, Exeter and Carmarthen. However, with the vacuum-braked UUVs having been scrapped following the end of the Corpach traffic, BR found itself without any specialist timber carrying wagons.

To fill this gap, surplus OCA open wagons were rebuilt from mid-1985 onwards as timber carriers, being coded OTA. This involved the removal of the drop sides and their replacement by stanchions while the original ends were extended upwards. On the first 50 or so conversions, the ends were



Following its closure in September 1965, the site of the former Callander and Oban Railway station at Crianlarich Lower was turned into a timber loading terminal to serve the pulp mill at Fort William. This consisted of two sidings, a run-round loop between the former platforms and a headshunt. Amidst the detritus of loading operations, Class 27 5396 awaits departure during September 1972 with a well-loaded rake of Timber P wagons. After running round, the train would make its way to Crianlarich Upper before heading north across Glenbruar Viaduct in the background. Colour-Rail

doubled in height and retained a horizontal top edge, but the next batch of wagons saw the ends extended even further upwards with the corners angled at 45 degrees. Those with the flat-topped extensions had 11 stanchions while the angled end variant had provision for 13, although the full complement was not carried. A total of 100 OCAs were converted as part of this first wave.

By late 1986, a further 25 OCAs had been rebuilt into OTAs, these having the angled end extensions but only nine stanchions. They were also finished in the blue and white livery of Thames Board Ltd, to whose Workington traffic they were initially dedicated, instead of the red ends and light grey or pale green stanchions of the first 100.

Other wagons

The OTAs were augmented in timber traffic throughout the late 1980s, as well as occasionally in later years, by the wooden-bodied OBA open wagons. To increase their capacity, these were sometimes seen with their short retractable stanchions extended from the door pillars. Steel-bodied OCA opens could also be seen at times on the West Highland line in the mid-1980s but typically only loaded with small diameter logs up to the top of the doors.

Also drafted in for a short period around 1985 while the OTAs were undergoing conversion were BTW pipe wagons, these being former Bogie Bolster Cs, while 20 diagram 1/484 Gloucester-bogied Bogie Bolster Ds were converted into BSWs and

deployed into timber traffic in the second half of the decade. Featuring modified bolsters and stanchions, they remained vacuum-braked but with a through air pipe, although some would later become BSRs with through air and vacuum pipes only. Many BSWs were treated to a repaint of grey sides and red ends, sometimes with Railfreight lettering, while at least one would go on to receive the Railfreight sub-sector livery of dark grey sides and yellow ends.

Sheeted OBAs were also finding employment in the conveyance of wood pulp throughout the 1980s, a significant flow being from Methil Docks to Corpach. Other wagon types found on this traffic included OAA opens (again with the load tarpaulined over), VAA, VDA and VGA vans and the unique OEA sliding hood prototype.

More conversions

Largely without exception, timber traffic during the late 1980s was moved via the Speedlink network with Mossend, Warrington Arpley and Severn Tunnel Junction being notable hubs. The Great Storm of October 1987, which brought down millions of trees



LEFT: The Timber P wagons started life as 22-ton low-sided plate wagons, many subsequently being rebuilt as container carriers before further alterations to carry logs. B93233 had previously been a Conflat P, as used on the celebrated 'Condor' fast container service between Hendon in London and Gushetfaulds, Glasgow, that began in 1959, the modified 'eye-bolt' or J-hanger suspension being the tell-tale sign of this previous life. Seen in 1966 and soon after conversion, the wagon is awaiting loading at Crianlarich Lower, this being before the station building in the background was demolished and the sidings remodelled. Simon Bendall Collection

RIGHT: Another batch of OCAs were rebuilt into OTAs during 1986, these receiving the blue and white livery of Thames Board Ltd along with accompanying lettering on the ends. They also only had nine stanchions, a reduction from previous conversions. These were initially allocated to workings to the company's paperboard mill at Workington but would become common user during later years. During August 1990, two unidentified OTAs stand in Inverness Yard during loading. The start of that year had seen Thames Board taken over by the Iggesund Group, the upper notice on the end having been updated to reflect this. Simon Bendall Collection



across southern England, generated much timber traffic from unusual locations for a couple of years, loading points including Crawley, Chichester, Ashford, Hoo Junction and Plumstead with movement again being via Speedlink. January 1989 saw timber board manufacturer Kronospan open its new rail connection at Chirk, thereby allowing direct timber deliveries from East Anglia, the Scottish Highlands and Kent, while the same year, Caledonian Paper also began to receive timber for use in its paper mill at Irvine.

To cater for this extra demand, further OTA conversions were implemented from 1988, the donors this time being VDA vans, many of these having been made redundant following the withdrawal of Rowntree's confectionery traffic the previous year. Entailing the removal of the doors and roof, the original ends were retained with their curved profile easily marking them out from the earlier OCA rebuilds. While many were given the same livery of red ends and light grey sides, others

received Kronospan blue while the provision of eight stanchions was the norm, although some later gained a ninth. The unique VHA curtain side prototype, 201070, was also rebuilt into an OTA for a few years, retaining its modified ends during this time.

IGA Cargowaggon flats were also in use on timber traffic, being used to convey finished timber on international services via the train ferry while they were not unknown on raw timber flows either. During 1989, six IGAs

were fitted with side screens, these being a combination of mesh and canvas, to carry transversely-loaded raw timber from the northeast of Scotland to Irvine. The following year saw two experimental conversions appear on trial but neither resulted in a production batch. Placed into traffic early in 1990 on Kronospan traffic between Brandon and Chirk was Prorail-built PNA CAIB4800. Constructed on the underframe of curtain-side PVB van BRT6900, it featured mesh

Six OTAs are prominent in the formation of the 12.23 Corpach to Mossend Speedlink service on September 29, 1987, as 37412 *Loch Lomond* heads south at Inverhaggernie, near Crianlarich. All of the timber carriers are ex OCAs, five being from the second batch with taller, angled ends with the fifth in the formation being an original low-ended version. The VGA van behind the loco is spotless after overhaul while two PRA clay hoods are discernible after the OTAs along with a VDA, VGA and another VDA. Bob Lumley





One of the original OTA conversions from 1985 is seen at Warrington in September 1999, ex OCA 112263 retaining the lower flat end. Surprisingly, these wagons were never altered even though it reduced the number of logs that could be carried. David Ratcliffe



Another of the original OTAs seen on the same day, 112347 displays the pale green livery that appeared in the early 1990s. When converted, this batch had 11 stanchions but both wagons were down to nine positions by this date, losing two outer pairs. David Ratcliffe



112372 shows the most common variant of ex OCA conversion with the taller angled ends at Warrington Dallam in April 1986. Livery is the original red/grey with 13 pockets provided for 11 stanchions to theoretically cater for different lengths of log. David Ratcliffe



Another OTA in the revised green livery, 112272 is again seen at Warrington in September 1999 and with its original 13 stanchion pockets now reduced to just nine, of which eight were in use. This brought the ex OCAs into line with the former VDAs. David Ratcliffe



One of the OTAs converted by EWS from an OBA, 110381 is seen at Warrington in September 2001. The stanchion design of these was distinctive with their tapering shape, although only seven of the nine positions were in use on this occasion. David Ratcliffe



An unsuccessful prototype was PNA CAIB4800, which is seen shortly after delivery at Warrington in May 1990. Featuring mesh sides, the timber was loaded transversely but this limited the length of logs that could be carried. David Ratcliffe



With some of its door pillar stanchions raised, OBA 110691 stands at Middlesbrough Goods Yard on April 9, 1990, loaded with substantial logs. Unlike the OTAs, timber loaded in OBAs was not always strapped in place. Adrian Nicholls



The BSW bogie bolsters were a useful addition to the timber fleet, being vacuum-braked and air-piped. B928188 is seen at Workington in March 1986 carrying two long bundles of logs but three piles could also be accommodated. Dave McAlone

sides. Also trialled on the same flow from late spring was IOB 33 87 4737 015-7, this being a conversion from a curtain sided bogie van with 18 stanchions being fitted per side. Although it remained a one-off, it was still in timber traffic in the late 1990s, working between Crianlarich and Chirk.

Fluctuating fortunes

The demise of Speedlink in July 1991 hit timber traffic particularly hard with most flows being lost. Only Shotton Paper continued to use rail, receiving timber variously from Elgin, Keith, Huntly, Stirling, Swansea Burrows, Carmarthen, and Exeter in sufficient quantities to make the movement economic. It was only with the rebirth of wagonload

RIGHT: Kyle of Lochalsh was an occasional loading point of timber over the years, both for BR and EWS. Before the withdrawal of the loco-hauled services, the wagons were moved to and from the picturesque terminus on the rear of passenger trains. On April 22, 1987, 37420 *The Scottish Hosteller* powers away from Inverness with the 2H83 10.15 departure with two OTAs on the back. Roddy MacPhee



To move OTAs from the exchange sidings to its paper mill, Shotton Paper purchased a Mercedes Benz-built road/rail Unimog in 1989. This four-wheel drive vehicle could haul at least nine wagons with effort, although on February 15 that year, the brand new machine had a more manageable three in tow. Simon Bendall Collection

traffic in 1994 under Transrail's Enterprise network that the mechanism was put in place for timber to return to rail, the shadow privatisation freight company having received some 165 OTAs under the carve up of the BR wagon fleet. During Transrail's short tenure, Shotton remained the principal destination for timber with flows again coming from Inverness and points in northeast Scotland.

It was under EWS ownership that raw timber once again flourished in the late 1990s as the Enterprise network was extended to cover the remainder of the country. New loading points, albeit some of a short term nature, were established across the country between 1997-99, these including Beattock, Carlisle Upperby, Eastleigh, Hexham, Kyle of Lochalsh, Stirling and Thurso. Meanwhile, with Enterprise services now reaching East Anglia, Kronospan resumed the use of rail to receive timber at Chirk from Brandon once again. A new receiving point was also

Motive power

Being predominately wagonload traffic, haulage of timber trains in the mid-1980s was generally the preserve of the lower-powered diesels such as Classes 20, 26, 27, 31 and 37 with Class 47s becoming more involved as the dedication of resources under Sectorisation was tightened. AC electrics were also involved with trunk movements under the wires on the West Coast Main Line.

With Transrail not receiving any electric locos from the 1994 motive power break-up, it was left to Class 56s and Class 60s to work over the northern WCML and trip the wagons to Shotton and elsewhere, while Class 37s still dominated north of the border through to the early 2000s. In the early days of EWS, an array of traction was used on many freight services but workings out of East Anglia typically had Class 31s and Class 47s, while the Type 4s could also be found in the west along with Class 37s and Class 56s. The long hauls over the West Coast could still produce Class 60s but with the merging of the freight companies under one owner, AC electrics were once again available as well. Naturally, Class 66s became involved as they arrived but by this time, many timber flows had already disappeared for good.



ABOVE: In the midst of a snow storm, preserved Class 27 D5394 (27050) stands at Aviemore waiting to depart for Boat of Garten with loaded OTAs on February 16, 1999. These had been detached from the 6D46 13.30 Inverness-Mossend southbound Enterprise, which is seen in the adjacent platform, with 47584 visible in the background about to return to its train over the main line connection. The timber had originated from Wick and Thurso and was destined for the BSW Group sawmill at Boat of Garten, the through working over the Strathspey Railway having commenced in the autumn of 1998. For a year or so previously, the logs had been railed to Huntly and then moved by road from there. Roddy MacPhee



In its original Railfreight colours, OTA 201040 stands at Warrington in April 1989. Converted from a VDA van, this is from the batch fitted with the unusual and somewhat experimental Taperlite suspension. Eight stanchions are carried.



Some of the VDA conversions were repainted into Kronospan blue and white with company lettering running vertically on the edges of the ends. Again with eight stanchions, a freshly completed 200945 stands at Warrington on May 6, 1989.



Some of the ex VDA OTAs were modified with a ninth stanchion, this being located in the centre of the wagon, curiously directly adjacent to another. Repainted in EWS colours, 200746 is seen at Crewe Gresty Lane on October 31, 1999.



An example of a VDA converted in the late 1990s by EWS, 210185 was at Warrington on April 16, 2000. Just six stanchions are fitted while the placement of the data panel on the ends was commonplace on the EWS livery. All: David Ratcliffe

established at Pontrilas in South Wales with the reactivation of a disused siding to allow raw timber to be delivered to a local company, the wagons being tripped from Newport Alexandra Dock Junction, usually behind a Rail Express Systems Class 47/7. Initially unloaded at Hereford before Pontrilas was ready in June 1997, the flow ran until November 2001.

With the OTA fleet stretched to the limit, EWS authorised a further 90 conversions, donors including both VDAs and OBAs. Appearing between late 1997 and early 2000, this was the first use of OBAs as conversion fodder, being rebuilt in the same manner as the former OCAs with high ends and angled corners. All 90 of the wagons were given distinctive tapering stanchions, these

being finished in bright red with the wagon ends in EWS maroon and the frame in black. Put to work alongside the earlier OTAs, this led to formations consisting of a variety of batches and liveries. Around the end of the century, MBA monster box wagons were also deployed on timber duties as they offered considerable payload advantages thanks to their cavernous interiors.



In 1989, to cope with a shortage of wagons suitable for carrying short lengths of round timber, six Cargowaggon flats (five Type 1 and one Type 3) were fitted with side sheets. Leased by BR, they ran from loading points at Huntly, Inverness, Inverurie and Keith to the Caberboard factories at Irvine and Stirling. However, this use proved to be short-lived and all had been returned to their original condition by the end of 1990. IPB 33 80 4742 041-3 is pictured at Mossend in July 1990 while en route from Inverness to Irvine; it would receive the more familiar IGB TOPS classification the following year. David Ratcliffe



By now owned by GE Rail Services, IGA 33 80 4736 022-1 is pictured at Longport in August 1998 carrying a consignment of substantial tree trunks from France. Other raw timber traffic for the Cargowaggon flats included the movement of tree trunks felled by the Great Storm of 1987 from Crawley and Chichester to Leeds Whitehall Road freight depot for use by a local furniture manufacturer, while in the 1990s there were occasional workings between Longport and Breteuil, near Amiens. David Ratcliffe



LEFT: Mid-2005 saw a five-week long Freight Multiple Unit (FMU) trial to promote a cost-effective and environmentally-friendly alternative to road transport for Welsh timber. Organised by the Forestry Commission, First Class Partnerships and INBIS, 19 trains ran between March 3 and April 1 carrying 2,842 tonnes of timber in total. On the first day, EWS added 37427 *Bont Y Bermo* to the formation as insurance and to test the MPV's haulage capabilities on the stiff climb up to Talerddig. The loco is seen on the rear of the 6Z21 11.50 Aberystwyth to Chirk at Belle Vue. Bushcutta

Bubble bursts

The boom in raw timber in the late 1990s was matched amongst other forestry products flows. This included wood pulp from Sheerness to Workington and Barrow along with similar consignments to Corpach from Aberdeen, Dundee, and Grangemouth.

However, with the controversial departure of chairman Ed Burkhardt from EWS in 1999, the company re-focused on its most profitable flows and looked to eradicate trip workings and time consuming shunting. In a repeat of

the demise of Speedlink, wagonload traffic was shed at an alarming rate as services were withdrawn or recast. Within just a couple of years, all of the pulp traffic had gone as had a large proportion of the raw timber, leaving Ardlui/Crianlarich/Carlisle-Chirk as the principal flow.

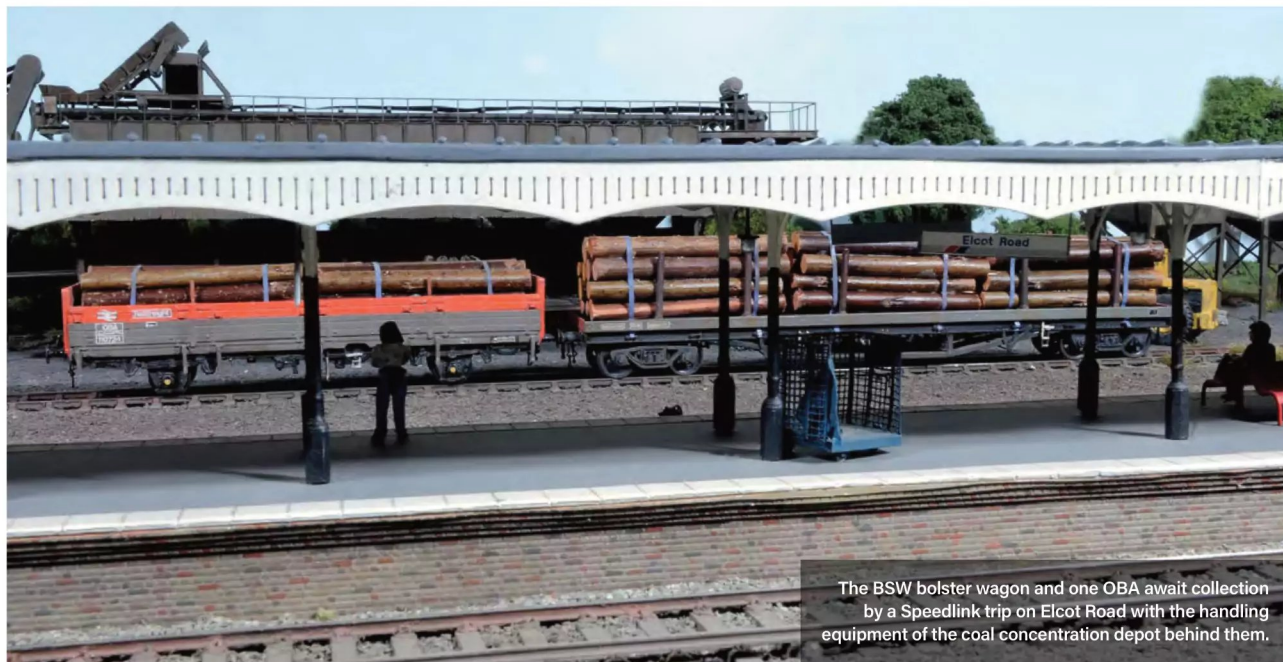
During March and April 2005, a five-week Freight Multiple Unit trial was undertaken from Aberystwyth to Chirk, moving logs from the Central Wales forests to Kronospan at Chirk. Intended as an experiment to assess

the viability of such a service, the train consisted of seven EWS-converted OTAs (ex OBAs) with power coming from two Network Rail MPV 'master' vehicles, DR98916 and DR98919. For the duration of the trial, the former carried a specially designed timber-carrying module while the latter had its water tank on board to act as ballast. Ultimately, the trial did not progress further and EWS' involvement with timber traffic came to an end in January 2007 as the Kronospan contract was lost to Amec Spie Rail. ●



Illustrating the kind of timber traffic attracted to rail by EWS in its earliest years was this working from St Blazey, the logs being ultimately destined for Chirk. On May 9, 1998, 37667 *Meldon Quarry Centenary* was in charge of the initial leg, the 6B99 04.56 to Newport Alexandra Dock Junction Enterprise, as it passes the site of the Malago Vale carriage sidings in Bristol. The train also demonstrates the harsh reality of making such wagonload traffic economic to operate, something which ultimately saw it abandoned by EWS. The first and second OTAs are both newly converted EWS examples from an OBA and a VDA respectively while at the rear is an ex OCA rebuilt by BR. Martin Loader

Modelling Southern



In the aftermath of the Great Storm of 1987, BR operated timber trains from Kent and Sussex to remove the millions of felled trees. Making perfect wagonload traffic for any Southern layout set in this period, Terry Bendall describes how to model two suitable wagon types.

Many will remember the Great Storm of October 16, 1987, when largely un-forecast hurricane strength winds struck the southeast of England, resulting in the deaths of 18 people, widespread structural damage, and the felling of some 15 million trees across the region.

The clean-up operation to remove the trees would take some two years with British Rail becoming involved to remove the timber from a region that had rarely seen such traffic before. Yards more used to dealing with aggregates and departmental traffic suddenly found themselves loading logs to head north to the likes of Shotton and Chirk. Wagons for this literal windfall of unexpected traffic were also a problem as the OTA fleet was largely engaged in Scotland, leading to OBA opens being drafted in and some BSW bogie bolsters heading south

from the Highlands. OTAs would become more involved as the clear-up continued throughout 1988, brand new ex VDAs being sent to the Southern as they emerged from conversion.

An open choice

For modellers with a layout set on the erstwhile Southern Region in 1988 and 1989, these events provide useful inspiration for a potential traffic from a local yard. With Elcot Road being set in the Croydon area during this period and featuring a coal concentration depot, it is assumed siding space was 'borrowed' to allow timber from the surrounding area to be removed by rail. Fancying something different from the ubiquitous OTAs, it was instead decided to model a couple of OBAs and a BSW for use on the layout.

For the OBA open wagons, the obvious starting point in 4mm scale is the Bachmann model, this being a very solid recreation of the wooden-bodied design. However, this portrays the initial batch of 500 wagons that were built by Ashford Works between 1977-79 as 110001-500, pretty much all of which were transferred to departmental stock in 1982 as they were surplus to revenue earning duties. Therefore, if you want to accurately depict Railfreight OBAs after this date, the Cambrian plastic kit is the option to go for. This covers the 300 additional wagons that followed from Shildon in 1978/79, 110501-800 having more noticeable square doorstops, some of which were in different positions along with the corresponding underframe door bangers.

The first job on the Cambrian OBAs was to dispense with the swivelling axle assemblies and replace them with BR heavy-duty compensation units from MJT to allow conversion to P4 gauge, the underside of the floor requiring some modifications in order to recess these to get the correct ride height. Other additional parts included 12mm wheelsets from the Alan Gibson range with stainless steel brake discs coming from Stenson Models along with new BR hooded style axleboxes by Wizard Models. Additionally, whitmetal Oleo buffers from Lanarkshire Models and Supplies replaced those provided in the kit, while the air pipes were made from 0.45mm brass wire with thin



The Cambrian BSW bolster in its finished form, this being a wagon which is more at home in the West Highlands than southeast England but a welcome bit of variation.

timber

strands of copper wire from electrical cable soldered on and then filed to shape to make the tap.

The inside of the wagons was painted by hand using a variety of browns from the Humbrol range, these being mixed together in varying amounts to give different tones. Externally, the Railfreight grey came from the Railmatch range and the red from Phoenix Precision with Railtec transfers completing the look.

To make the OBAs suitable to carry timber, the pull-up stanchions in the door pillars had to be modelled in the raised position, as was usually the case when carrying logs. An examination of photos gave an idea of the height and a check of a works drawing helpfully supplied by a contact confirmed the guesstimate was spot on at 1ft 5in. Using scrap brass etch, the stanchions were filed to the correct size and one end was then filed square to form a spigot to fit into a hole drilled in the top edge of each door pillar.

The prototype stanchions have a handle on the top so they can be pulled up and some time was spent in trying to create these using thin wire soldered to the brass. However, the very small size of these meant that nothing close to scale size could be formed so these were left off. The stanchions were glued in place and painted with a mix of rust colours before a thin wash of track colour to tone them down.

Bolster building

The BSW is also from the Cambrian Models range, this being an option included as part of the kit for the Gloucester-bogied vacuum-braked 42-ton Bogie Bolster D wagons (reference no. C85). This follows the company's usual style for long wagons with the floor being moulded in two parts along with the sides. As such, the wagon was largely assembled in line with the instructions.

With several Cambrian BDAs in exhibition use, this has shown the underframe trussing to be rather fragile and prone to damage. Therefore, the BSW trussing was strengthened from the outset to avoid this. While plastic strip could be used for this,



The Cambrian OBA is the best option to depict Railfreight examples from 1982 onwards, this having the correct positioning of door furniture for the Shildon-built examples.

brass was the preferred option for extra strength. Before the outside trusses were fitted in place, a length of 0.45mm brass wire was bent to shape and glued along the inside of the angle section using super-glue.

For the inner trusses, which are the opposite way round with the angle section facing outwards, brass strip from etch offcuts was cut to size and glued on. One of the tricky parts of constructing the bolster wagon kits is to make sure all four truss beams are in line and extensive use was made of a small engineer's try-square to check that these lined up.

Other alterations included new buffers from Lanarkshire Models and Supplies while the ratchet strap tensioners were also replaced by spares from Cambrian's own Sturgeon kit as they were crisper mouldings. The vacuum pipes were taken from the Heljan detailing pack for its Class 47 while the air pipes were again homemade, with painting using the same colours as above. With the BSWs having an unusual style of condensed lettering which appears not to be available from any of the usual sources for wagon

decals, temporary transfers were assembled from Modelmaster sheet 4858 until such time as something more appropriate can be arranged.

The wagon's floor was initially painted with Phoenix Precision's track colour (P977) and then extensively weathered using the dry brushing technique, while the sides and underframe were treated using Railmatch sleeper grime applied with an airbrush. The slight rusting on the sides in line with the stanchions was also produced by dry brushing while the stanchions received a mix of Phoenix Precision rust colours.

Loading up

The timber loads came from Goodwood Scenics, which produces a range of very nice loads of different types. On the basis that nothing looks more like wood than actual wood, the company's 64mm long timber logs were used but different lengths are available. Two piles of these fitted nicely into the OBAs and three could be accommodated on the bolster wagon.

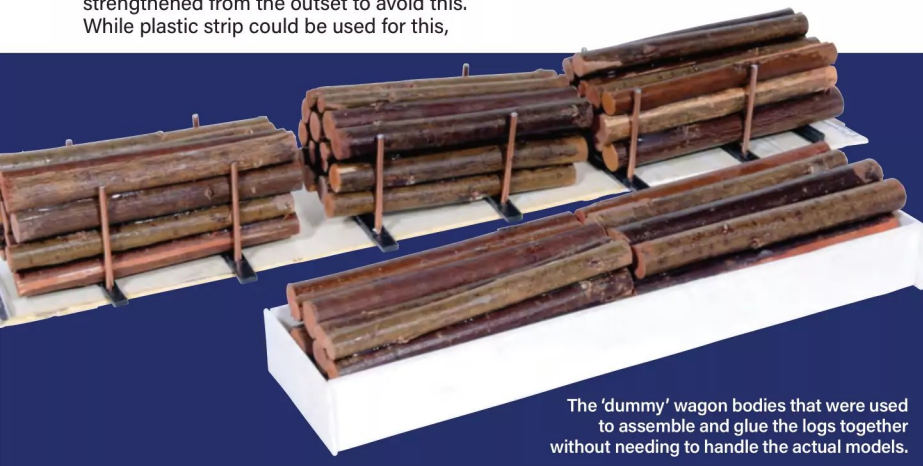
Unlike a cast resin load, the use of individual logs allows a realistic stack to be built up. In order to avoid any damage to the wagons' paintwork by glue, the stacks were built up away from the models using simple mock-ups. For the OBA, a box was made using 40 thou styrene sheet while for the bolster, a length of 40 thou styrene formed the base with pieces of 60 thou glued across to make the bolsters and some 1.5mm diameter steel rod to represent the stanchions.

As supplied, the logs were fairly pale on the cut ends and in a few places had lost part of the bark so to remedy this, a thin wash of matt enamel paint of a suit able colour was applied. The loads were assembled using PVA woodworking glue with a couple of layers being glued and then left to dry. After everything was dry, the piles were removed from the formers and placed on the wagons, checking the height of the stacks against the sides and stanchions. Once happy with the look, they were taped in place on the floors, although they could be glued if preferred.

The ratchet straps were made by cutting strips from a plastic carrier bag that had seen a piece of double sided tape applied on one side before the strips were cut. This allowed the strips to be stuck to the load with varnish applied to any that proved stubborn. On many bolster wagons, the straps go through slots in the floor to reach the tensioners. With the kit not having these slots, the strap ends were stuck to the wagon floor and a separate tiny bit of strapping wrapped around each ratchet tensioner and again held in place with varnish to finish loading the models. ●



ABOVE: One of the door pillar stanchions can be seen in the raised position as can the straps made from slithers of carrier bag. The Railtec transfers are also crisp and easy to use.



The 'dummy' wagon bodies that were used to assemble and glue the logs together without needing to handle the actual models.

Modelling the OTAs



Two of the Hornby models converted into the original batch of OTAs by shortening the ends and adding a new capping strip. Additional stanchion pockets have also been added made from styrene and the models repainted.

Seeking something a little different to run on his under-development model of Didcot Parkway, James Makin describes how he assembled a diverse rake of battered OTAs in OO gauge to depict EWS-owned examples at the turn of the century.

For many years, the only real route to an OTA wagon in 4mm scale was the venerable Cambrian kit. More recently though, budding timber train modellers have benefitted from three different ready-to-run models released by Hornby and Bachmann, although the latter is not featured here.

Hornby's OTA releases to date have included the 'classic' ex OCA design with high angled ends and wooden-planked decking, the first release carrying an interpretation of the 1990s green livery. The manufacturer has also produced the EWS-converted ex OBAs with heavy duty tapered stanchions and chequer plate decking. Both of these models, while nicely tooled, are rather garish out of the box and ripe for weathering and customising to replicate real world examples.

Modelling the late-1990s early privatisation period means that it is possible to include a variety of different OTA types and liveries in a single train as, by this time, the wagons had been placed in a single pool for use across the network. Therefore, a variety of prototypes were chosen including Thames Board blue and plain red examples alongside weathered teal green and EWS maroon.

Modifications

A pair of the original OTA rebuilds with low ends were chosen to give some further variety in the train, these having acquired red stanchions at some point to go with their Railfreight red ends. Using a Hornby teal green example as the base model, the angled portions of the ends were cut down with a razor saw and the cut edge sanded smooth. To make the new horizontal top lip, 1mm thick styrene strip was added to the ends using prototype pictures as a guide.

This first batch of wagons, coded OTA-A, also had additional stanchions on each side, 11 as opposed to the nine featured on the Hornby model. These were fabricated from 1.2mm square styrene strip with small triangular sections cut to replicate the lower support bracing. Subtle underframe differences such as to the handbrake levers were incorporated as well.

The original factory-applied liveries were retained where feasible with the exception of the Thames Board blue versions being painted in Railmatch's British Steel blue and

the all-red examples gaining a pre-faded shade to aid weathering later on. Once painted, a layer of gloss varnish was applied, and decals added as required from the Railtec and Fox Transfers ranges. The OTAs had a varied mix of boxed and unboxed lettering that adds further interest. Depending on the prototype being modelled, it may be useful to retain some of the original Hornby printing on the ends and underframe if required. With decals applied, each wagon was coated with Railmatch matt varnish and left to harden before weathering commenced.



A comparison of different weathering on the outer ends shows how dirt and rust can be added in varying amounts. The Thames Board blue example also illustrates how the outline of the removed logo can be replicated. With the red OTA nominated as the rear vehicle of the set, this has received a tail lamp, screw coupling and brake pipe.

Two Thames Board examples show of their general weathering, but it is the inner ends that are of particular interest. The one on the left has blue-painted faces with weathering over the top while the nearest has its inner end fully painted with a mix of browns and a small amount of grey.



The stanchions show how rust effects can be built up to represent damaged paintwork, especially on the edges, while a fully rusty stanchion represents an unpainted replacement.

Outer ends

The weathering is the point at which these Hornby wagons can be transformed from their shiny toy-like appearance into something looking much more realistic, just by focussing on the right areas. The outside of the ends were tackled first and prototype observations show many OTAs with ageing, faded and battered paintwork, often with grime and rust particles washed downwards through the capillary action of rainwater.

Where needed, the paintwork can be faded either by repainting in a faded shade or through applying a layer of matt varnish. Once the latter is hardened, it provides a good key for a paint-on/wipe-off application of light grey to stain the factory colour into a more muted shade.

To replicate grime and dirt caught in the outer ends, neat paint was applied using brown shades, such as Humbrol Nos. 62, 186, 113 and 251 and applied from light to dark. The paint is then removed with cotton buds and enamel thinners, working in a downward motion to replicate the effect of rain.

Repeating the process builds up layers from light to dark brown until you are satisfied that the effect matches prototype photographs. These are easy to find on the likes of Flickr, Smugmug and Google Images by searching for OTA wagons.

The raised detail on the outside of the ends can be highlighted by dry brushing shades of brown across the edges of the ribs, creating a representation of exposed metalwork corners as they are damaged in everyday use. The key to building a really effective finish here is in varying the tones of brown, gradually building up multiple layers of different colours on top of each other. Small chips and damage can be added at this stage using a fine 00000 paintbrush by dotting and touching in areas where required, and again working from light to dark brown. Where undercoat is visible, light and medium greys can be mottled on too.

Some of the Thames Board examples also had ghost markings of previously removed company logos on the ends. Fine paintbrushes can be used to create where

the edges of the signage was along with any other weathering related to their removal.

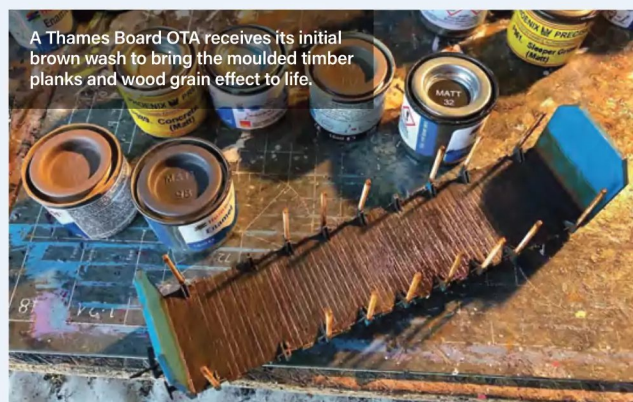
Inner ends

The inner ends of the OTAs are very visible, especially if modelling them without timber loads as here. There was much variety on the prototypes with some ends being painted in body colour while others were either light grey or combinations of unpainted metal and wooden sheeting. The inner ends also received considerable damage from timber loads knocking against the surface, not to mention the grabs striking them during loading and unloading. All of this makes weathering essential.

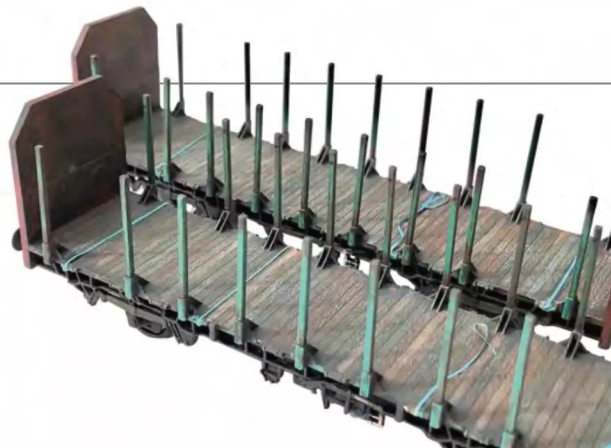
Referencing photos, each wagon first had the appropriate base colour applied to the inner ends and left to dry. Then using a larger paintbrush, shades of browns and greys were mottled on repeatedly from a semi-dry brush. The shades should vary from light to dark brown and light to dark grey. Once the variety starts to build up, this gives an appearance akin to a battered end while photos should be constantly checked throughout the process for comparison.

The stanchions on an OTA bore the brunt of the timber load so as one might expect, they are ripe for weathering. This meant not only damaged paint but also bent at slight angles and, sometimes, missing altogether. Although many stanchions started with a white finish, they soon became heavily paint-chipped and rusty while replacements were sometimes in different colours. Similarly, on the rebuilt EWS versions, the chunky red stanchions sometimes faded to a more orangey appearance, so this can be incorporated before weathering.

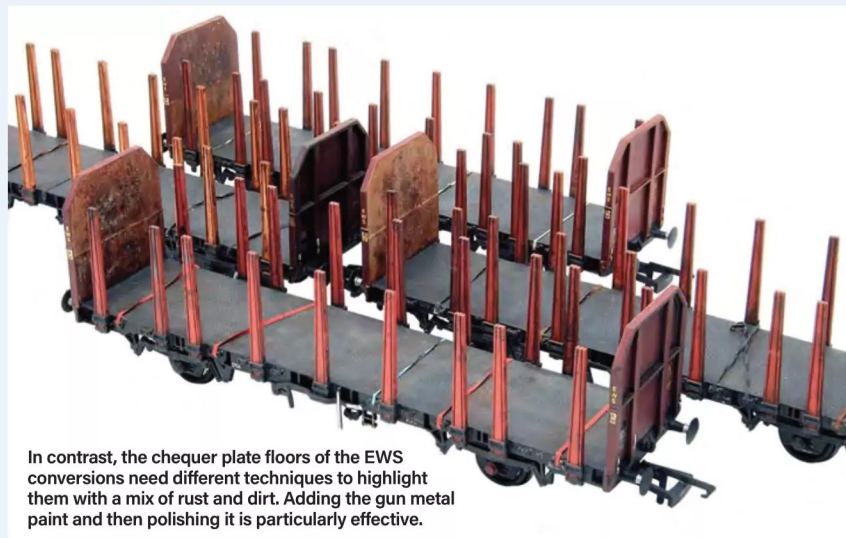
The stanchions were mainly dry-brushed in a similar manner to the wagon ends. A brush, dipped in paint and nearly all wiped off, was then run gently over each stanchion to build up layers of light and darker browns on the raised edges of the posts. By focusing the darkest shades on the most exposed edges, you can get the appearance of peeled paint and the resulting rusting of the exposed steel below. Where required, rusty patches and spots were added with a 00000 paintbrush to finish off the look.



A Thames Board OTA receives its initial brown wash to bring the moulded timber planks and wood grain effect to life.



Highlighting some of the planks in different colours and then adding further washes is an effective way of making the wooden flooring look realistic, while the discarded strapping adds another level of detailing.



In contrast, the chequer plate floors of the EWS conversions need different techniques to highlight them with a mix of rust and dirt. Adding the gun metal paint and then polishing it is particularly effective.

Wagon floors

From the outset, a choice was made to model these OTAs unloaded as, while often seen with attractive timber loads, the wagons would frequently appear empty too. This would allow the lesser-modelled details to be visible, such as the decking and discarded load strapping.

Hornby's ex OCA model has a wooden deck with a moulded grain effect, which can be highlighted through careful painting. A layer of mid-brown was painted across the entire wagon floor and individual planks picked out in red-brown, mid-grey and earthy shades before being left to dry. A layer of Humbrol No. 32 dark grey was then painted across the floor and wiped off with cotton buds, this highlighting the plank gaps and some of the wood grain recesses. Later, a range of matt earth and light grey shades were dry-brushed across the moulded planks to build up a range of tones.

The rebuilt EWS wagons had metal floors so Hornby's chequer plate moulding was first repainted in a dark grey shade and then shades of dark brown and earthy brown were mottled onto the flooring. Prototype pictures were again followed as a guide as these showed some markings left by the timber load and the effects of dried rainwater highlighting where a wet load had been stood. To finish, the deck was given a dry-brushing in Humbrol 27004 gunmetal grey, which was then rubbed

over with a cotton bud to give a sheen on the raised chequer plate surface.

The lashing straps are a distinctive feature to model and were created from strips of painted masking tape cut into 1mm widths and glued to the deck of each wagon. These were frequently seen on unloaded OTA wagons, sometimes curled around stanchions, or loosely secured to the deck. The strap colours varied hugely from light blue to reds, yellows, greys, and darker shades. To fix them in place, one side of the strap was secured with

superglue and left to dry, and then teased into the required position or tensioned before the other side was glued down.

Underframe

The underframes of each wagon were mottled in a range of shades with medium and dark browns alongside light grey, dark grey and a touch of neat black. All of these colours were put into a foil dish and mottled on the wagon, often mixing and blending to reach the required prototypical appearance. Cotton buds can be used to wipe away paint from areas where solebar-mounted data panels appear as these would generally be kept clean.

The wheel faces received etched disc brakes from the Stenson Models range, which were glued in place with PVA, before the entire wheel was painted in browns and greys. The disc brakes were then wiped clean to leave a toned-down stainless steel effect to the face. The final tasks included highlighting the silver on the buffer shanks and picking out any coloured axleboxes where required before coating each wagon in Testors Dullcote for a flat finish.

Overall, it is a fairly straightforward project to take the Hornby OTA wagons from a bright, colourful toy-like appearance and turn them into something much more realistic and representative of the timber traffic seen in the late 1990s. More photographs of the OTAs can be found on the author's Didcot Parkway layout project pages at www.facebook.com/didcotparkway and www.instagram.com/didcot.parkway.



A green-liveried OTA receives its underframe weathering using a mix of Humbrol colours, this being essential to tone down the garish colour employed.

The appeal of Scottish timber trains in the 1980s is perfectly encapsulated by this view of 37401 *Mary Queen of Scots* shortly after leaving Crianlarich on June 3, 1986 bound for Taynuilt on the Oban line. In tow are eight empty OTAs, six of the original batch with low ends and two of the recently converted second lot with high ends. John Whiteley

Timber formations

With the development of the OTA fleet in particular now detailed, **Simon Bendall** takes a look at some timber train formations during both the British Rail and EWS periods.



LEFT: On an unrecorded date in 1986, a Class 25 has arrived at the former Workington motive power depot with the afternoon Target 57 trip working from Carlisle. On this occasion, this consisted entirely of loaded OBAs and OTAs, which were in the process of being shunted into the Workington Freight & Coal Depot behind the shed, this now seeing use as a wagon repair facility. Many of the OTAs are the recently converted Thames Board examples in their distinctive colours.

Dave McAlone

Timber



LEFT: On June 10, 1988, 37109 and 37175 power into a glorious Highland evening as they head towards Dalwhinnie with the 18.45 Inverness to Mossend Speedlink. The diverse load includes empty PCA cement wagons returning to Oxwellmains, two FPA containerised coal carriers, a Scottish Malt Distillers Polybulk and discharged TTA tankers. The timber traffic consists of three loaded OTAs and two OBAs.

John Whiteley

RIGHT: Now in Mainline colours, 37401 was on the Oban line again on November 4, 1988, as it crosses Awe Viaduct with the 09.30 Oban to Mossend Speedlink working. Making up the head of the train are at least five BSW bolster wagons, which would have been loaded at Taynuilt, and are displaying their smart Railfreight grey and red colours. Visible through the trees are TTAs returning from the Shell terminal at Connel Ferry.

Rail Photoprints/Brian Robbins



LEFT: Carrying the Tinsley painted name of *Mentor*, 47630 slogs up Ashley Down Bank, Bristol, and across Narrowways Hill Junction on April 16, 1991, with a lengthy 6B97 12.10 Tavistock Junction to Gloucester Speedlink. The OTAs had been loaded at Lapford on the Barnstaple branch and were initially destined for Warrington with the IWA 'hold all' Cargowaggons returning empty to Ince after delivering bagged fertiliser. Also included are empty Silcock Express cartics from Exeter to Halewood, a single PBA Clay Tiger and a VEA van and two VGAs in military traffic. Martin Loader



LEFT: Despite the demise of Speedlink, the needs of Shotton Paper meant that logs could still be economically moved to its paper mill on Deeside. On May 12, 1993, 47281 had 20 OTAs in tow as it headed north at Woofferton, near Leominster, the train having originated at Carmarthen. Featuring a mix of ex OCA and VDA types, most if not all of the latter are in the Kronospan blue livery. The seven OCAs at the rear, which includes one low end example, are all newly repainted in the green and white livery. Rail Photoprints/ Brian Robbins

RIGHT: With the shadow freight companies less than four months old, 60057 *Adam Smith* heads south at Winwick Junction on July 16, 1994, with timber from Elgin bound for Shotton. At the time, this was Trainload Freight West's premier traction for services on the West Coast Main Line as it owned no AC electric locos. The company's future name of Transrail had only been unveiled two days earlier and would not be formally launched until that September. Neil Harvey



LEFT: The Mossend to Aberdeen Enterprise consisted entirely of empty OTAs on the morning of September 18, 1996, as 37156 and 37261 *Caithness* thrashes north past the site of Inverkeilor station. The mix of liveries now carried by the wagons is evident with repaints mixed in with tatty original schemes. The two ex VDAs at the front of the train are both Kronospan examples but the second one has received new grey stanchions with yellow bands, there being two more on the rear of the formation. Rail Photoprints/Brian Robbins



LEFT: Under EWS, a new destination for timber was Pontrilas, this being to the southwest of Hereford and on the border with Wales. With a siding reactivated to serve local firms, it received short cuts of OTAs for a few years. On November 10, 1999, 47732 *Restormel* approaches Caerleon with the 11.27 Newport Alexandra dock Junction to Bescot Enterprise, which would stop at Pontrilas to drop off its seven OTAs and pick up any empties. Two English China Clays ICA slurry tanks are marshalled up front. Rail Photoprints/John Chalcraft

RIGHT: On the other side of the country, the reactivation of the small yard at Brandon for the movement of timber from Breckland Forest was another success for EWS. On February 23, 1999, 47741 *Resilient* was in charge of the 6E77 13.07 Ely-Doncaster Enterprise at Turves, the nine OTAs having previously been tripped to Ely from Brandon. Bill Atkinson



LEFT: North of the border, timber traffic was equally buoyant, illustrating why EWS needed to convert extra wagons in its early years. On September 6, 2000, 37405 hurries south at Forteviot with another Enterprise working, this being an early-running 6D53 12.20 Perth-Mossend formed of 12 OTAs. Martin Loader

Bound directly for Kronospan at Chirk, 60066 *John Logie Baird* rumbles past Rowell with a well-loaded 6M33 service from Mossend on July 13, 2001. As well as 17 OTAs, the working also features a set of five MBA 'monster box' wagons, the still relatively new vehicles being loaded to the brim with timber. Although the MBAs offered obvious payload advantages over the OTAs, their use was relatively short-lived. David Dockray



Just six months before EWS lost its last timber contract, 92001 *Victor Hugo* glides south at Lambrigg in its fetching application of maroon and gold on July 14, 2006. Heading the 4M63 Mossend-Warrington Arpley, the nine OTAs were again heading for Chirk. Notably, the wagons are all high end ex OCAs converted by BR with no ex VDAs or EWS rebuilds to be seen. David Dockray

Terminals and models

A timber loading site is one of the easiest freight terminals to model. **Simon Bendall** provides some inspiration while he also takes a look at the available wagon models that have not been illustrated so far.

Included in the pool of Brandon OTAs was the unique 200944, this being finished in dark green with Forestry Commission branding on the ends. A former VDA, it was rebuilt with six heavy duty stanchions and curved inboard supports that went underneath the timber load. The design was not perpetuated but it remained in traffic with EWS, being recorded at Brandon on March 11, 1999. Tim Horn



ABOVE: About as simple as it comes for timber sidings, 31233 stands in Brandon Yard, on the border of Norfolk and Suffolk, on March 11, 1999, as it waits to depart for Ely with six OTAs. Loading was achieved using the somewhat rudimentary grab mounted on the trailer of the articulated Renault lorry in the background. The road access to such yards was invariably not tarmacked and peppered with potholes, puddles, and mud. Tim Horn

The timber loading yard at Crianlarich Lower is seen again on September 11, 1989, as 37410 *Aluminium 100* waits to collect a train of BSW bolsters for movement to Mossend. Within two years, the yard would be closed and later cleared with the land now mostly built on. On the left is four-wheel Schoma trolley DX68100, which was equipped with a hydraulic bucket and small trailer for carrying out light maintenance work along the West Highland line. Simon Bendall Collection





With the closure of Crianlarich Lower, the loading of timber switched to the rather more cramped site adjacent to Crianlarich station. The former goods yard featured two sidings either side of the muddy loading area, one being alongside the former loading platform. These three views taken on July 10, 2003, show the general site with random logs scattered around while a small pile was neatly stacked by the buffer stop, adjacent to the vehicle entrance. Only a solitary wagon was present, this being EWS-liveried 112385 with traffic levels only sufficient to produce one stack of logs, it being quite unusual to see an OTA with just a single central pile. Simon Bendall



Timber models

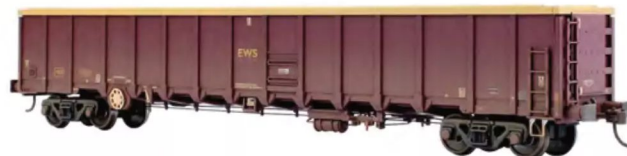
Bachmann's OTA is a nice recreation of the ex VDA van conversions.



With the OO gauge Hornby OTA already featured, the Bachman version is illustrated here, this covering the ex VDA batches that appeared from 1988, specifically those that had nine stanchion pockets. To date, it has appeared in Railfreight colours along with EWS maroon and Kronospan blue and is supplied with a one-piece resin load. As for the Cambrian OTA plastic kit, two

versions are available, one portraying the early ex OCA batches with provision for the different ends and stanchion numbers while the other makes the Thames Board examples.

Also in 4mm scale is the Heljan IGA Cargowaggon flat for early Colas Rail operations, with an O gauge version also existing, which is pictured here. Due for release from Revolution Trains later this



Bachmann's sizeable MBA complete with factory weathering.

year is the IWA bogie timber carrier in both 2mm and 4mm, which will cater for some of the stanchion variations currently sported by the Colas fleet. Both Bachmann and Dapol produce the MBA box wagons in OO while the BR diagram 1/420 timber wagons are a possible scratchbuild project using the Judith Edge Kits Conflat P chassis as a basis.

In N gauge, the OTA (ex OCA type) is available as a plastic kit, this originally being part of the Chivers Finelines range but now available from spin-off operation Five79. The Graham Farish range includes the OBA and MBA while the Colas KSA timber wagons are available from the N Gauge Society in kit form. In O gauge, PR Model Railway Products offers kits for the OTA (ex OCA) and OBA.

BELOW: The N Gauge Society's kit for the KSAs is simple to build and quite impressive, this one being the work of Grahame Hedges.



The immense 7mm version of Heljan's IGA Cargowaggon flat.



Pre-production decorated sample of Revolution Trains' 4mm scale IWA.



Colas Rail timber



Since 2007, the remaining flows of raw timber have been operated by Colas Rail, these almost entirely going to the Kronospan wood panelling plant at Chirk in North Wales. **Simon Bendall** details the history of this traffic and the variety of wagons employed.

January 2007 saw EWS' last involvement in the timber transportation business as its final contract, with Kronospan, was taken over by Amec Spie Rail. As a result, the OTAs still remaining in traffic were all put to store and eventually sent for scrapping in 2013. The initial five-year contract awarded to Amec Spie covered the movement of raw timber from Carlisle to Chirk, initially on a weekly basis but this soon increased to daily. With the operation barely two months old, the

French infrastructure firm Colas stepped in to acquire the entire company in April, merging it with its own embryonic UK operation Seco Rail to create Colas Rail.

With no locomotives of its own, the timber trains had been inaugurated using Class 57/3s that were surplus from West Coast 'Thunderbird' duties along with IGA Cargowagon flats that were hired from GE Rail Services. The spring saw the workings expanded to Arrochar & Tarbet and then

ABOVE: After nine months of operation, this was the look of Colas Rail's timber trains with a hired-in Class 57/3 still providing the traction. On September 12, 2007, it was the turn of 57311 *Parker* to do some freight work at Docker, doubtless due to its missing Dellner coupling rendering it unsuitable for 'Thunderbird' standby duties. The 6J37 13.27 Carlisle-Chirk was made up of five 'stop-gap' IGA flats and then at least seven newly-converted KFAs. Bill Atkinson



Exactly two years later, it was a different flavour of Class 57 in charge of 6J37 as Direct Rail Services' 57012 powers the loaded wagons south through the Lune Gorge on September 11, 2009. At this time, the KFAs were the dominant wagon type with 13 examples making up the train on this day. David Dockray

Crianlarich by the end of 2007, bringing the sight of Virgin-liveried 'bodysnatchers' on the West Highland line using portable RETB cab signalling equipment. The revitalisation of Scottish timber traffic was unfortunately short-lived, the Arrochar workings ending in December 2008 while those to Crianlarich petered out soon afterwards.

From April 2007, the IGAs were progressively replaced by newly converted KFA timber carriers, these dedicated wagons having been rebuilt by WH Davis from ex Tiphook bogie ferry vans by removing the doors and roof and fitting stanchions. Initially working alongside the IGAs, the KFAs ultimately displaced them from January 2008 as the last of the 30-strong fleet were delivered.

New traction

From August 2009, Direct Rail Services began to assist with motive power for the trains as service frequency was stepped up, DRS providing Class 57/0s in particular, while it was not unusual to find one of the Arriva Trains Wales-liveried Class 57/3s in use during the same period, be

it a fully-branded or plain blue example. DRS assumed total control of locomotive provision three months later, still using its Class 57/0s with the odd appearance of a Class 47.

From February 2010, Colas' own Class 66s began to appear on the timber workings although, as the small fleet was largely engaged on infrastructure workings in the south, DRS still assisted with its Class 66/4s displacing the Class 57s in early spring. This arrangement continued throughout the year with DRS-owned but Fastline Freight-liveried 66434 being a regular choice for the duty.

A new source of timber was opened up in August 2010 with the loading of trains commencing at Ribbleshead. Still destined for Chirk, this saw a Colas Rail Class 47/7 employed initially, invariably 47739, before Class 66s took over. The end of 2010 also saw Kronospan invest in lengthening the sidings at its Chirk plant to allow train lengths to increase to 21 bogie wagons.

More wagons

To provide more capacity, the summer of 2011 saw a new batch of 10 converted timber wagons arrive. These were rebuilt from redundant KSA 'cube' wagons, best known for their days carrying Rover car components between Swindon and Longbridge. Converted by EG Steele, the sliding canopies were removed, and the loading well filled in before stanchions were fitted. Leased from Nacco, they received an attractive red, black, and white livery.

December 2011 saw a new Colas timber flow commence, this running from Teigngrace on the reactivated Heathfield branch. Loaded with timber sourced in Devon and Cornwall, the train length progressively increased from 14 to 18 wagons while the initially used Class 66 gave way to a Class 56 for most workings thereafter. At times in 2012-13, the timber was not destined for Kronospan though, it instead heading to Carlisle for the BSW Timber Group. With the washout of the Dawlish sea wall in February 2014, Exeter Riverside served as an alternative loading point for four months

and thereafter both locations could be used depending on requirements. The Teigngrace workings ceased to run in 2015 with those from Exeter following in April 2016, by when Colas Class 60s and Class 70s had visited both locations.

A fourth, and currently the latest, batch of wagons to be used by Colas arrived in August 2012, this being 30 IWA timber carriers converted from ex Cargowaggon 'hold-all' vans. Leased from GE Rail Services (now Touax), these are unusually registered in the Netherlands, bringing a rare sighting of stock with the 84 country code operating in the UK. Before they could be used, all received modifications at Cardiff Canton, which included the fitting of additional stanchions recovered from withdrawn KFAs, these still being painted red and rather standing out on the otherwise mid-blue wagon!

A further timber loading point joined the Kronospan network from May 2012, this being Baglan Bay, near Swansea. Like the workings from Devon, the loadings on this train soon increased to 20 wagons with examples of Classes 56, 60, 66 and 70 all seeing use over the years.

An established service

Following the addition of the Welsh loading point, subsequent years saw the Colas Rail timber services stabilise. The workings from Ribbleshead would eventually go the same way as those from Devon, leaving the Carlisle to Chirk trains as the core service and supplemented by timber from Baglan Bay. The Class 60s would be sold to GB Railfreight in 2018, leaving the Class 70s to reign largely supreme with some support from Class 56s; the small fleet of five Class 66s again being required in the south of the country most of the time. The most notable traction development in recent years has been the occasional use of a Freightliner Class 70 if availability of the Colas machines is poor.

The wagon fleet has also remained stable since the arrival of the IWAs, these typically shouldering the bulk of the work from both Chirk and Baglan Bay. At times, trains from Carlisle have been solely formed of IWAs but typically they work from Cumbria intermingled with the KFAs that remain. In contrast, the KSAs, few as they are, are most common out of Baglan Bay and mixed in with IWAs. ●



The principal loading point for Kronospan's timber workings has always been Carlisle Kingmoor Yard, specifically the B Group Sidings. On June 8, 2014, 56094 needed maintenance next to the loading area while the lorries were awaiting the new working week to transfer their loads to the wagons, all having their own grab equipment. Adrian Nicholls



LEFT: All of the timber loading sites were basic, with a siding or two, compacted ground, piles of logs and room to get a lorry and its grab alongside. On October 20, 2010, 47739 Robin of Templecombe awaits departure time atop the 6Z41 14.10 Ribbleshead-Chirk as the log piles are replenished for the next working. Neil Harvey

Timber

RIGHT: The Colas Class 56s have enjoyed a long association with the timber workings, although this is much reduced nowadays with the expanded Class 70 fleet. On September 22, 2012, 56094 was in charge of the 6J37 12.44 Carlisle-Chirk at Dunham on the Hill, near Chester. Nine of the ten KSA timber wagons are formed in the train, their red and white livery contrasting noticeably with the five black and red KFAs. Terry Eyres



LEFT: On July 25, 2012, the 6Z52 08.13 Chirk-Teigngrace empties had gone one better with all ten KSAs in tow along with five KFAs as 66846 heads for Devon at Undy. With no logs aboard, the large holes cut in the ends of both types can be seen. These were designed to reduce the wind resistance of the tall ends with bars across them to retain the logs. Inevitably though, timber would get lodged in the ends and then during unloading by the powerful grabs, be forcibly pulled out. This inflicted heavy damage on the wagon ends with the section above the top hole regularly ripped away completely. Charles Woodland

RIGHT: All three types of Colas timber wagon featured in the formation of the evening 6Z51 Baglan Bay-Chirk loaded timber on July 29, 2013, as 56087 headed north at Whitchurch and onwards to Crewe and Chester. The recently introduced IWAs stand out in their striking blue livery while only two KFAs are visible, one being right at the back, compared to the eight KSAs. John Eyres



RIGHT: The Class 60s were a welcome sight atop the timber workings in their all too brief time with Colas Rail. On August 15, 2016, it was 60002 in charge of the 6J37 11.59 Carlisle-Chirk as it traverses Balshaw Lane Junction. Making up the head of the loaded train are eight now somewhat less blue IWAs and then 11 KFAs.

Mark Few



LEFT: Providing a welcome change of colour for 6J37, not to mention modelling justification, hired-in Freightliner machine 70015 powers over Ais Gill summit on October 2, 2019, en route to Chirk. A fairly even split of IWAs and KFAs is evident with the respective stanchion colours providing splashes of colour in the jumbled up formation.

Dave McAlone

RIGHT: The pandemic saw the timber workings suspended during the spring and summer of 2020 with the wagons placed in store. The first train after this enforced hiatus was on September 1 with 70810 seen bowling along the S&C at Greengates en route to Chirk once again with a mix of IWAs and KFAs.

John Eyres



RIGHT: Relatively fresh from conversion at WH Davis earlier in the year, KFA GERS97166 stands in the centre roads at Carlisle waiting for a path south on October 2, 2007. Owned by GE Rail Services at the time, 30 of these wagons were converted from redundant Tiphook Rail ferry vans by January 2008, being renumbered as GERS97106/09/12/26/38/47/48/51/53/58/61/62/66/68/70/71, GERS97211/14/16/20/21/29/33/35/36/47/66/68/76 and GERS97309. As Colas Rail's first dedicated timber carriers, they ousted the IGA flats from their temporary role. One of the latter can be seen to the right with the deficit in carrying capacity clear to see. Martyn Read



LEFT: The ten KSAs converted to timber carriers are still quite imposing wagons, even if the loss of their hoods has reduced their bulk somewhat from their Rover car component days. These were rebuilt by EG Steele of Hamilton, Glasgow, in 2011. Owned by Nacco, the wagons retained their numbers of 33 70 4739 003/10/26/65/66/72/74/76/78/79. On September 4, 2012, 33 70 4739 078-2 brings up the rear of a Baglan Bay working at Newport, this allowing a clear view of the aerodynamic cut-outs in the end along with the considerable damage to the top section. Martyn Read

RIGHT: The most recent wagons to join the Colas fleet are the Dutch-registered IWAs, 83 84 3523 048-0 being recorded in Carlisle Yard on May 15, 2013, while also in the UK are 83 84 3523 011/17/19/22/23/25-47/49. When delivered in August 2012, the wagons were fitted with eight bifurcated, blue-painted stanchions on each side but before they entered service, modifications were undertaken. The initial wagons to be completed retained all of the blue stanchions but also gained four sets of red ones recovered from KFAs: two sets towards the middle and one pair at each end. Examples of this arrangement were 83 84 3523 028 and 041. Subsequently, the layout pictured here was adopted for further wagons with only four bifurcated stanchions retained and eight sets of red ones put in place, this being the most common layout. Curiously though, another arrangement is fitted to some wagons, seemingly those that were introduced to traffic last. These have lost all of their original stanchions and have 14 of the KFA style per side, those on 83 84 3523 025 and 039 being painted in red suggesting they were recovered while those on 83 84 3523 019/22/23/35/38/43 are blue to match the wagons. Adrian Nicholls



GRIMY TIMES

MODEL RAILWAYS

The Specialist Shop in the North West



187 Orford Lane, Warrington, Cheshire WA2 7BA
Tel: 01925 632209



- Excellent range of products attractively displayed.
- Advice from professional railway modellers.
- Displays of pre-weathered locomotives for sale.
- DCC fitting service / Repairs & Servicing.
- A warm welcome awaits you.

Open daily 10am-5.00pm - Closed Sunday & Mondays



www.grimytimes.co.uk
WEATHERING SPECIALIST



Weathered locos for sale - SEE WEBSITE

ALL SCALES CATERED FOR RENUMBERING & RENAMING

Tel: 01925 632209 Mobile: 07921830484

Email: grimytimes66@yahoo.co.uk

EXCEPTIONAL
QUALITY &
PRICE

Sankey Scenics

Over 1,000 different packs of
Quality Signage & Train Packs

NEW
ITEMS

COACH DESTINATION BOARDS



THE MOST
COMPREHENSIVE
RANGE OF
MODEL
SIGNAGE

www.sankeyscenics.com



Hertfordshire's Leading Model Railway Specialist



www.ks-models.co.uk



Wagonloads of Model Railway Stuff!



- ✓ All Major Manufacturers & More!
- ✓ N Gauge to O Gauge
- ✓ Tools, Paints & Materials

- ✓ Plastic Kits & Diecast
- ✓ Pre-owned
- ✓ Mail Order



Best
Traditional
Model Shop
in the
Home Counties

Email: russell@ks-models.co.uk

Shop: **01438 746616**
Thurs, Fri, Sat, 10:00am - 5:00pm
19 Middle Row, Stevenage SG1 3AW

Helpdesk: **07858 546855**
Mon - Sat, 10:00am - 5:00pm
Phone - Text - WhatsApp

A Scottish timber trial



As part of a trial exploring the possibility of once again using rail to move timber in Scotland, the summer of 2020 saw Class 37-hauled log trains on the Far North line as **Simon Bendall** explains.

Timber traffic made a welcome return to the Far North line from the beginning of August 2020 with the commencement of a trial flow between Georgemas Junction and Inverness Milburn Yard. Funded by a £195,000 grant from Transport Scotland, the workings continued until mid-September and were staged to assess the viability of once again moving timber by rail in the north of Scotland, thereby allowing a reduction in lorry journeys and carbon emissions.

The trial was headed up by Victa Railfreight with the timber sourced from forests in Caithness and destined for the Norbord Europe processing plant at Dalcross, around

six miles to the east of Inverness. The cross-industry experiment also involved Network Rail and the Highlands and Islands Transport Partnership while DB Cargo supplied 14 BTA bolster wagons on hire, these being 950187, 950246, 950514/34/48/81/88, 950629/54/64, 950734/36, 950862 and 950984. These are designed to carry pipes from Hartlepool for use offshore by the North Sea oil industry but can be loaded with timber, although the stanchion arrangement is not optimal for this purpose. In a rare foray into freight work, West Coast Railways supplied RETB-equipped Class 37/5s as the traction along with drivers.

ABOVE: Few would have predicted that Class 37s would see use on Far North timber trains during 2020 but it was a welcome development nonetheless. On August 8, in the first week of the trial's operation, 37516 *Loch Laidon* and 37669 were working hard to bring the 6269 17.35 Georgemas Junction-Inverness Yard south at Kilmote, between Helmsdale and Brora. In tow were 13 EWS-liveried BTAs, although only 12 were loaded, the seventh wagon in the formation being empty. Jonathan Lewis



With the timber laid out in neat piles alongside each wagon, loading was well underway at Georgemas Junction on August 11, 2020, using a lorry-mounted grabber. These sidings have been used to load and unload many types of traffic over the years, including Safeway refrigerated containers. Arran Aird

The locos and wagons arrived at Inverness on August 1 with 37669 and 37516 heading up the BTAs from Mossend with 37685 on the rear. With the latter Type 3 removed to act as a spare loco, the rest of the train continued to Georgemas Junction just after midnight on August 3 with loading then taking place, ready for the Class 37s to power the 6269 17.35 to Inverness on August 4. This pattern of working was then repeated during the rest of the month and into early September, although the 14 wagons were soon reduced to 12. September 17 saw the locos and stock depart from Inverness to take the BTAs back to Tees Yard.

The various parties involved subsequently described the trial as satisfactory, although regular workings seemingly depend on a rail connection being provided to the Norbord plant at Dalcross, which is alongside the Inverness-Aberdeen line, rather than moving the logs by road from Inverness Yard. Better wagons would also be needed to increase the payload but if it does develop, further loading points at Thurso and Lairg are also under consideration. ●



LEFT: With the grab loading one BTA, Victa Railfreight ground staff get to work lashing the timber in place on the previous bolster wagon, this including the all-important ladder to get the straps over the pile. The load would also be examined as part of this process to mark sure no logs were likely to be dislodged in transit.

Arran Aird

RIGHT: West Coast's 37685 Loch Arkalg and 37516 Loch Laidon wait to be called into action later on August 11, 2020. The unsuitability of the BTAs for the job is amply illustrated as, with only four stanchions per side, just two bundles of timber could be carried. In BR days, the same type of bolster wagon with a different stanchion layout could have accommodated three stacks. In the background, the crane of the nuclear flask terminal on the other side of the bridge can be seen

Arran Aird



An overview of the yard area provides a considerable amount of inspiration for a layout as the Class 37s get ready to fire up and combine the wagons into one train with 158705 arriving from Wick. The compound on the left is where the pipes are usually unloaded using a mobile crane with the train standing on the running line.

Arran Aird

HORNBY

magazine

GET GREAT
SAVINGS WHEN
YOU SUBSCRIBE

Published monthly in print and digital format and featuring exclusive Hornby Hobbies content, *Hornby Magazine* takes a unique approach to model railways with the novice, returning and seasoned modeller in mind.



FOR THE LATEST SUBSCRIPTION DEALS

 www.keymodelworld.com/hornby-magazine

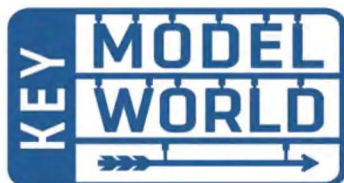
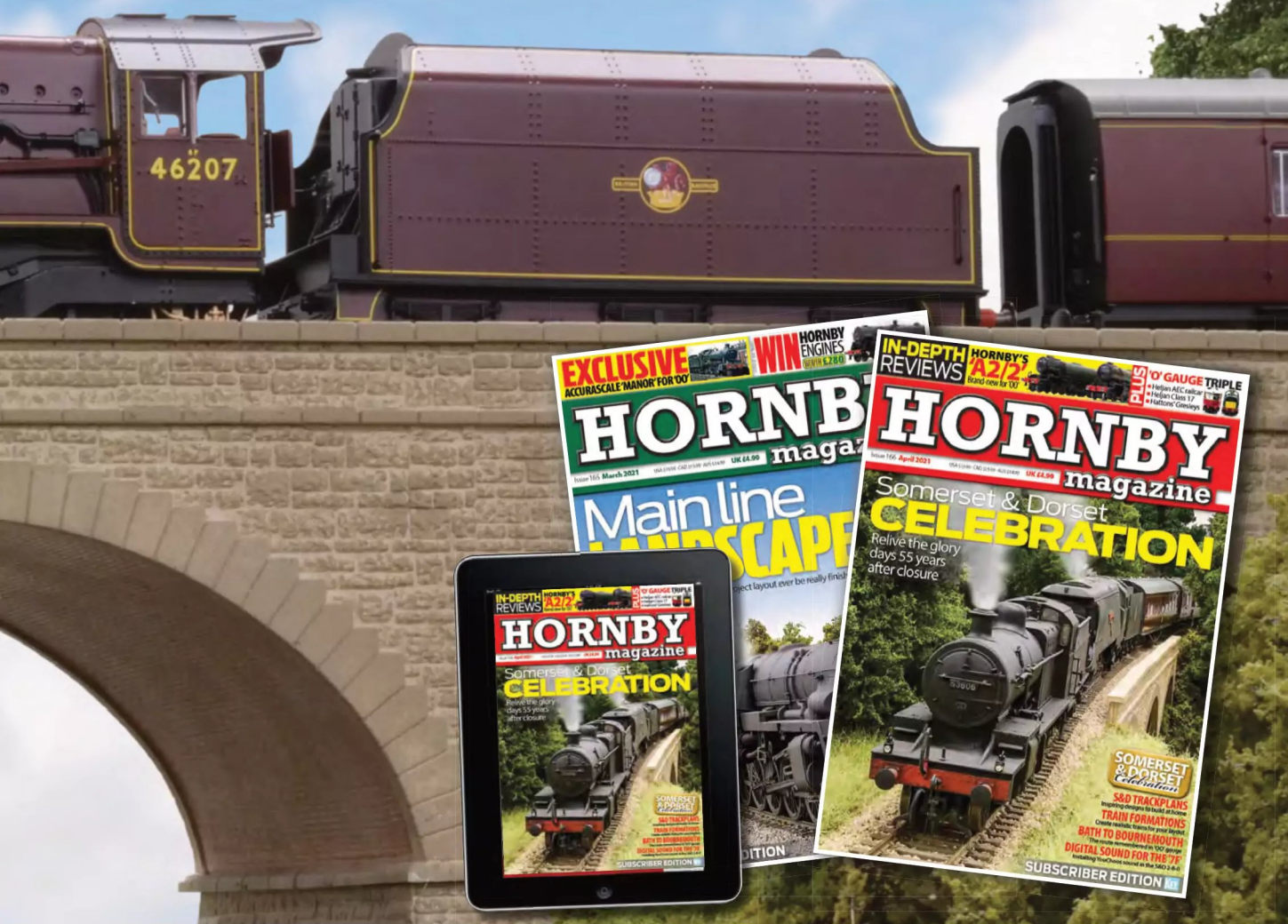
 UK: **01780 480404** | OVERSEAS: **+44 1780 480404**

*We will replace any lost or damaged copies when claimed within 3 months of on-sale date.

SUBSCRIBE TODAY!

RECEIVE

- **HUGE SAVINGS** - Compared to newsstand cover price
- **PRIORITY** and **GUARANTEED DELIVERY** - Subscriber copies go first and we will replace any missing issues*
- **EXCLUSIVE DISCOUNTS** - On our railway special magazines
- **NEW! EARLY DIGITAL ACCESS** - Subscribers can now read each new issue online as soon as it leaves the Editor's desk!



Key Model World is your online home for railway modelling.

Visit www.keymodelworld.com today!



Carrying spent submarine reactor fuel, MoD flask wagon MODA95780 makes the long journey from Devonport Dockyard to Sellafield at a stately 35mph maximum speed on June 22, 1989. Accompanied by escort coaches MODA99150/51, the working had reached Narrows East Junction, Bristol, by late afternoon with 31414 still having a long journey ahead of it. Mick Page

Nuclear flasks

While the movement of nuclear flasks between power stations and Sellafield is a familiar traffic, less well known are the other traffics that involve the large multi-bogie flask wagons. David Ratcliffe looks at the different types that have been used in civilian and military roles over the decades.

Since the 1960s, a number of different wagon types have been used to transport irradiated nuclear fuel from power stations and military establishments to the British Nuclear Fuels Ltd (BNFL) works at Sellafield for reprocessing. Most numerous have been the various designs of six and four-wheel Flatrols built primarily to carry flasks of irradiated fuel from Britain's Magnox and AGR power stations. But a number of larger wagons have also been used to handle the traffic moving to Sellafield from reactors in Japan and Europe, the latter are the focus here.

Imports of irradiated nuclear fuel from Magnox, pressurised water, boiling water, and research reactors have arrived in Britain by various means over the years. These have included arrivals by sea freight either through the docks at Barrow, Leith, or Immingham or via the Zeebrugge to Harwich and Dunkerque to Dover train ferries. Among the first wagons to be used for this traffic



The first of the 1977-built well wagons, BNFL95600 is pictured at Sellafield in August 1993 when fitted with a cradle designed to accommodate two cuboid Magnox flasks. In addition to handling the traffic from Japanese and some of the European pressurised water (PWR) and boiling water (BWR) reactors, all of which arrived in cylindrical flasks, these wagons were also used to carry the flasks that were shipped to Barrow Docks from the Magnox power stations built at Latina in Italy and at Tokai in Japan. David Ratcliffe Collection

The last of the three 116t BNFL KYAs 33 70 9986 008-8 arrives at Sellafield from Barrow Docks in June 2005 carrying a NTL11 81t flask. This type of flask was used for European shipments, this consignment having originated at Beznau, Switzerland. The silver shock-absorbers would sit in the cradles over the bogies while moving internally around Sellafield. David Ratcliffe



RIGHT: Current day KXA BNFL96905 is seen near Barrow in February 2014 while loaded with a TN28VT flask being returned to Japan, this carrying vitrified waste. Reflecting modern construction methods, these flask wagons are much less bulky than their predecessors but able to carry heavier flasks. Examples have also visited Eastleigh Works in the past for maintenance work, taking them well out of their usual operating area. Dave McAlone



were two BR Rectanks that were modified to carry 'Unifetch' flasks from Leith Docks to the United Kingdom Atomic Energy Authority's (UKAEA) site at Dounreay, the flasks being loaded with irradiated highly-enriched uranium fuel elements that had been shipped to Leith from nuclear research reactors in Denmark and France.

Another early wagon type assigned to nuclear flask traffic were three six-axle 108t Flatrol ELL hired by BNFL in 1972 to work from Beznau nuclear power station in Switzerland to Sellafield via Zeebrugge. However, towards the end of the 1970s, several small batches of multi-bogied

flask carriers were introduced to handle the increasing traffic from the new commercial reactors being built on the continent and in Japan.

BNFL designs

The first of these new vehicles were six 101t capacity well wagons built for BNFL at Ashford Works in 1977. They measured 24 metres over headstocks and were mounted on two pairs of Y25C bogies. These eight-axle wagons could accommodate either a single cylindrical or two cuboid flasks within their central well and in 1982 they were joined by three similar wagons built to a strengthened

design, giving them a capacity of 116t (see table).

All nine of these wagons were fitted with ferry chaining down lugs and initially carried 12-digit UIC numbers but aside from the occasional visit to works for repair, when they were moved in wagonload freights, they spent most of their time running between Barrow Docks and Sellafield. In 1988, when industrial action briefly closed the docks at Barrow, they were used to carry a consignment of Japanese fuel from Devonport Dockyard to Sellafield, while in March 1990 two of these vehicles visited the UKAEA facility at Winfrith to collect a



Railfreight Distribution's 85106 heads the 6F86 Speedlink from Willesden to Warrington past Hamstead on February 16, 1990, with one of the two German-registered IQAs in the short train. This also includes a VEA and VDA while the CAR brake van on the rear is in sub-sector grey and yellow with Distribution logos. David J Hayes



LEFT: The eight French-registered NTL flask wagons were re-coded on TOPS from IPB to IQB in 1991. 33 87 9985 004-9 is pictured at Dover Town Yard in June 1994 after arriving on 6O38, a European 'Connectrail' service which, on Tuesdays, ran with a brake van on the rear as the 05.26 from Willesden. David Ratcliffe

couple of discharged flasks that required maintenance at Sellafield. In addition, in 1994 they were used to carry a number of empty and redundant Magnox flasks from Sellafield to the nuclear repository at Drigg.

By 2007, Japan's own nuclear reprocessing plant had come fully on stream, while at Sellafield the emphasis was switching from reprocessing imported fuel towards the return of the resultant high level waste

RIGHT: The first of the two German-registered IQAs, 33 80 9987 000-2 is pictured at Sellafield in October 1993 after recently arriving from Gundremmingen. The distinctive angular shape of the cover makes for an interesting comparison with the more rounded style used on the other NTL flasks. David Ratcliffe Collection



(HLW) material to its country of origin. The HLW, vitrified by mixing it with molten glass which when cooled formed an immobile and impermeable block, was to be carried in 120t flasks and consequently during 2007, BNFL began replacing its existing fleet of well wagons with a batch of six new KXA flask carriers.

Built by WH Davis at Shirebrook, these six wagons have a 53.5t tare, 180t GLW (22.5t axle load), and run on four SCT Barber BER22.5 'Easy Ride' bogies. Painted in turquoise, they can carry a load of 126.5t and, like their predecessors, they rarely stray from the Cumbrian coast. However, it is now the workings from Sellafield that convey loaded flasks, as most northbound trains seen carrying flasks have been moving new empty HLW flasks that have been manufactured in France or Germany.

NTL wagons

Nuclear Transport Ltd, a subsidiary of British Nuclear Fuels, Transnucleaire SA and Transnuklear GmbH, also operated a small fleet of 16-wheel flask wagons, which were built to carry traffic between Europe and Sellafield via the train ferries. The first batch of NTL wagons comprised eight 105t capacity French-registered vehicles, which were built by Fauvet Girel between 1977 and 1981 and measured 19.46 metres over headstocks. They were fitted with a two-piece sliding flask cover and worked to Britain via Dunkerque or Zeebrugge from power stations in Italy, Switzerland, and the Netherlands. They could also very occasionally be seen running from the east coast ports of Immingham or Lowestoft carrying flasks destined for Sellafield that had arrived by sea from the Oskarshamn nuclear power station in Sweden.

A further four 16-wheel flask wagons,

Multi-Bogie Nuclear Flask Wagons				
Numbers	TOPS code	Diagram	Builder	Notes
21 70 0998 000-005	PIA	E474	BR Ashford, 1977	1
21 70 0998 006-008	PIA	E529	BR Ashford, 1982	2
BNFL96901-06	KXA	KX053A	WH Davis, 2007/08	
21 87 0998 991-93/95-99	IPB	E475	Fauvet Girel, 1977-81	3
33 80 9985 000-001	IPA	E697	Waggon Union, 1989	4
83 70 9985 001-002	KYA	E779	Bombardier, 1992	5
MODA95780	PXV	PX010A	Head Wrightson, 1963	6
MODA95782-83	KXA	KX052A	Bombardier, 1994	
33 70 9985 003-004	KYA	E848	Bombardier, 1997	7

Notes

- Initially renumbered 33 70 9986 000-005, then BNFL95600-05 as PXA, later became KXA to design code KX039A.
- Renumbered 33 70 9986 006-008 and recoded KYA.
- Renumbered 33 87 9985 000-007 and recoded IQB.
- Renumbered 33 80 9987 000-001 and recoded IQA.
- Renumbered 33 87 9985 008-009, recoded IQA and reallocated to diagram E902.
- Recoded PXX to design code PX010B, and then KMX to design code KM010B.
- Renumbered MODA95770/71 and recoded KUA to design code KU001A.

two German-registered and two British-registered, were subsequently built for NTL, primarily to carry irradiated nuclear fuel from the German light-water reactors at Gundremmingen and Unterweser to Sellafield. The two German-registered vehicles, built by Waggon Union in 1989, had more angular sliding flask covers than the earlier NTL wagons and could carry 90t flasks. In contrast, the British-registered pair, which were built by Bombardier Prorail at Horbury in 1992/93, were similar to the

earlier French-registered vehicles. However, this pair, with a 176t GLW were somewhat longer at 21.26 metres and, although initially used to carry the monolithic 102t 'Excello 6' flasks, they were capable of handling a 120t load.

Unlike the BNFL flask carriers, the NTL wagons were usually moved in wagonload services, being marshalled ahead of the train's brake van, which until 1997 every train conveying nuclear flask traffic was required to have at the rear. From 1987, almost all

The two flask wagons built by Bombardier in 1992 moved to the continent following the withdrawal of the Dover train ferry three years later. Somewhat surprisingly, the now French-registered 33 87 9985 008-0, TOPS coded IQA, returned to the UK in 2011 and is seen on April 2 that year at Rugby while being transferred from Dollands Moor to Crewe by 66432. After a couple of years in store in the 'coal sidings' compound, it would be scrapped. Andy Jupe





When running empty, the two KUAs can sometimes be found intermingled with regular flasks. Such was the case on July 15, 2011, when MODA95770 was captured at Workington with three FNAs in front and one behind, power coming from two DRS Class 57/0s. John Dedman



flask traffic from the continent was routed via Dover with the NTL flask wagons going forward on the 6M57 00.57 Speedlink to Willesden. Here, they would be remarshalled into the 6F86 09.10 Willesden to Warrington, and from Warrington, make the final leg of their journey north to Sellafield in the consist of the 7P85 04.10 to Workington, which called at Sellafield and Corkickle en route.

Unfortunately, the closure of the Dunkerque to Dover train ferry in 1995 brought an end to this cross-Channel traffic and subsequently confined to the continent, some of the NTL

flask carriers were used on workings to the Cogema Amec reprocessing plant near La Hague. However, the general decline in nuclear power generation saw the Bombardier-built pair of NTL flask wagons, which in 2002 had been renumbered under French registration, returned empty to Britain via the Channel Tunnel in the early 2010s to be scrapped.

MoD flasks

In addition to spent fuel from nuclear power stations, Sellafield also reprocesses irradiated

With the release of Bachmann's Class 20/3s, this formation can now be recreated in OO gauge. On May 1, 2012, 20303 and 20312 pass Stonycombe and start the climb to Dainton with the 6Z40 0510 Crewe-Devonport with an empty KUA and the DRS Mk.2a coaches. Charles Woodland



fuel from the pressurised water reactor units fitted to the Royal Navy's nuclear-powered submarines. This traffic was first transported from the naval dockyards at Chatham, Devonport and Rosyth by a specialist road/rail flask carrying wagon, which soon became known as the 'Hot Core'. Built by Head Wrightson in 1963, MODA95780 ran on two 12-wheeled bogie assemblies, which were detached when in road mode, with the special flask being slung between the wagon's massive sideframes. Its length over trailers when in road mode was 98ft, giving it a 168t

Showing its massive size, the 'Hot Core' wagon, otherwise known as PXX MODA95780, awaits attention at Carlisle Currock wagon shops in September 1993. When not in traffic, the wagon was usually to be found at MoD Longtown in its later years. David Ratcliffe



GLW compared to a length of 89ft 5in and a 191t GLW when on rail. The wagon is known to have traversed the Far North line to Thurso as well before moving by road to Dounreay, its bogies being left under the station roof!

When empty, the 'Hot Core' would often be moved in wagonload freight services but when carrying a flask, it invariably ran as a special train accompanied by a contingent of military police and dockyard workers who travelled in two escort coaches converted from Mk1 BSKs and renumbered MODA99150/51. Only vacuum-braked when

BNFL Internal User wagons

After arriving at Sellafield, loaded nuclear flasks are transferred onto one of BNFL's internal user wagons for movement around the site. This fleet has previously included former BR armoured plate carriers, Flat ET, and EQ along with the ex-LNER Flat EU, but they were eventually replaced in the early 1990s

by a number of purpose-built internal user vehicles. These included eight 130t capacity wagons fitted with four Gloucester RC&W bogies, which were designed to carry the large cylindrical 'Excellox' and NTL11 flasks, along with 14 shorter 100t wagons fitted with a cover under which a flask is carried vertically.

BNFL No. INT27, one of the 130t internal user wagons, waits outside the Thermal Oxide Reprocessing Plant (THORP) at Sellafield in October 1993. David Ratcliffe Collection



Newly built BNFL internal user No. 2 is pictured at Procor's Horbury Works awaiting road delivery to Sellafield in May 1991. David Ratcliffe

built, 1984 saw the wagon have air brakes fitted at Doncaster Works. However, whether loaded or empty, its maximum speed was only 35mph and in 1994 it was replaced by two new flask wagons built for the Ministry of Defence by Bombardier Prorail.

The two new KXA vehicles, MODA95782/83, had a maximum speed of 60mph and were 74ft long. Similar in appearance to the NTL eight-axle flask carriers with two-part sliding covers, they had a capacity of 99t. As submarine decommissioning increased, they were

joined in 1997 by a further two 16-wheel flask wagons again built by Bombardier. Initially given 12-digit UIC numbers and coded KYA, this second pair were slightly longer at 81ft over headstocks and carried 80t, the duo soon being recoded as KUA after being given the private owner numbers of MODA95770/71 and upgraded to 83t capacity. They also incorporated various improvements to the previous pair with regards to their flask covers, end platforms and walkways. Since 2011, these two have been the only MoD flask wagons in traffic. ●

Nuclear flask formations



With the multi-bogie flask wagons falling into three distinct group, **Simon Bendall** provides some notes to go with a selection of train images.



ABOVE: During the 1980s and early 1990s, the flask wagons owned by NTL were typically moved from and to the continent in regular freight services. During July 1995 and just before the wagons ceased to visit the UK with the end of the train ferry, the 6F47 12.34 Workington-Warrington Arpley had an added extra as 47308 powered south at Seascale. Apart from the empty flask, which had been added to the consist at Sellafield, the train features YLA Mullet bolster wagons carrying new rails from Workington. Dave McAlone

RIGHT: When empty, MODA95780 did not need to run with its escort coaches and on the odd occasion could be included in the consist of general freights. Such was the case on July 9, 1985, when it was to be found stabled in the sidings at York Holgate with Railfreight grey-liveried 31110 on the front. Somewhat randomly, a single empty YGH Sealion ballast hopper is coupled behind the flask wagon. Simon Bendall Collection



ABOVE: On a cold day in February 1985, 25325 gets underway at Salthouse Junction, Barrow-in-Furness, with two of the heavyweight PIA flask wagons in tow. Two BR ferry vans are in use as barriers together with a Railfreight red/grey-liveried brake van. Owned by BNFL, the two well wagons were each loaded with an 'Excellox' flask, these carrying irradiated nuclear fuel from Japanese pressurised water reactors. The loco had collected the wagons from the specialist import terminal at Ramsden Dock earlier that day and had just completed a run-round and propelling manoeuvre in order to access the main line and head to Sellafield. Dave McAlone

RIGHT: Regional Railway-liveried 31465 had a heavy load in tow on July 19, 1996, as it rounded the curve at Millom with a 6T60 Barrow Docks-Sellafield transfer. Although Direct Rail Services had been operating from the start of that year, the import flask traffic had yet to be transferred from the newly created EWS. Separating the three KXA/KYA well wagons are PFA barriers, these being used to spread the weight of the train over a greater length to reduce the loadings on bridges. These were previously OBA open wagons that had been sold to BNFL for carrying skips of low level waste to Drigg. As was required at the time, a brake van is present on the rear and again painted in Railfreight sub-sector colours. David Dockray



LEFT: Seen during 1998, 37510 powers through Motherwell station with a MoD flask working from Rosyth Dockyard to Sellafield. In tow is one of the two KXAs built by Bombardier in 1994, MODA95782/83, along with inspection saloons DM45020 and DB999509, the latter sporting a new coat of EWS maroon and gold. Rosyth ceased to receive rail traffic around 2010. Tom Smith

RIGHT: The MoD flask workings transferred to DRS operation in 2006 and have remained irregular traffic ever since. As well as the spent submarine fuel from Devonport, the pair of KUA wagons have occasionally visited Georgemas Junction in connection with the decommissioning of the Dounreay nuclear site and the removal of some of the more hazardous material that was kept there. On August 5, 2020, 66305 and 66302 Endeavour were in charge of the 6S99 05.26 Kingmoor-Georgemas Junction, which had been diverted via Alloa and Ladybank due to swollen river levels causing concern about a bridge at Dunblane. Seen at Culross, the flask was MODA95771 with Mk2a escort coaches 9419 and 9428. Guy Houston



Nuclear escort coaches

Given the sensitive nature of the radioactive material moved by the MoD flask wagons, they always run with escort coaches when loaded.

Simon Bendall takes a look at the vehicles employed over the years.

The movement of irradiated fuel from the Royal Navy's nuclear-powered submarines posed obvious security issues to the authorities, especially with the growth in terrorism from the mid-1970s. With such concerns still prevalent today, a series of escort coaches have been provided over the years to carry armed police and other personnel to ensure safe transit of the flasks through to Sellafield.

Naturally, few details of the precise modifications exist, particularly on the current vehicles, but easily discernible alterations include the removal of one or both gangway connections where fitted, and the installation of end windows to allow the flask to be observed in transit. Internally, there is seating along with messing facilities and communications equipment while a diesel generator set is normally fitted to supply power along with gas bottles for the cooker.

Initial conversions

During the mid-1970s, two Mk.1 BSKs became the first coaches to be converted to work with MODA95780, 35153 and 35212



ABOVE: The original MoD escort coaches MODA99150 and, behind, MODA99151 are seen at MoD Bicester in April 1995, from where they would soon be withdrawn. The modifications to the brake end are evident as are the bodyside vent recesses. The generator exhaust is also visible on the roof along with small louvres in the former luggage door. David Ratcliffe

being renumbered as MODA99150 and MODA99151. Regarded as freight stock, they were coded PPX, which was changed to KCX at the beginning of the 1990s. Modifications included the removal of the gangway connection at the brake end only and the fitting of three end windows, the outer two having wipers. As well as vents for the generator, recesses for heating vents were provided largely down one side. Otherwise, the door and window layout were left largely

unaltered with both retaining BR blue/grey through to withdrawal, which was in the mid-1990s. MODA99151 went for scrap in 1998 while its sister was initially sold to the East Lancashire Railway but disposed of in 2005.

Two replacement escort coaches appeared in 1995, MODA99152 and MODA99153 being converted from BSKs 35478 and 35481 at Rosyth and again coded KCX. Eagle-eyed visitors to the Crewe Works open day in 1996 may have noticed them stored in a fenced



Carrying Regional Railways colours, BR inspection saloon DB999509 stands in Didcot Yard circa 1996 engaged in Ministry of Defence work. This was one of three saloons built on a 57ft long underframe in 1963 by Swindon Works and today is owned by Locomotive Services and stored at Margate. Brian Daniels



LEFT: On August 15, 2002, DM45020 and DB999509 were both recorded at Bristol Temple Meads while heading for Devonport behind 66115. Built in 1944 by the LMS, the saloon was modernised in the early 1990s with new hopper windows and B4 bogies while one end window was plated up for escort use. Simon Bendall

compound finished in dark grey but largely impossible to photograph. These again lost their brake end gangway connection in favour of two sizeable observation windows while this time most of the doors were sealed. Despite the investment, the pair were never brought into service and were eventually sold into preservation for use as stores vehicles, MODA99152 being at the East Lancashire Railway and MODA99153 at the Avon Valley.

Saloons introduced

The reason for abandoning MODA99152/53 may well have been due to the decision to use inspection saloons as escort coaches instead, these after all having pretty much all of the required equipment already fitted. First noted in use in 1996 when Railfreight Distribution held the flask duty as part of its wider MoD contract, the two saloons to be employed were DM45020 and DB999509, both in Regional Railways livery. When EWS acquired RfD at the end of 1997, it took over the contract and the saloons, both receiving a repaint into maroon and gold but otherwise they remained in use until 2006.

In preparation for taking over the work, DRS had prepared its own escort coaches by converting Mk.2a BSOs 9419 and 9428. These lost their gangway connections at both ends in favour of a single observation window, which reputedly uses a Class 56 windscreen frame as the basis. The fitting of a generator set in each coach brought the addition of a grilled window on one side of the former brake area and an exhaust port on the roof. The pair have subsequently seen a fair amount of use with DRS, both on flask workings and escorting other sensitive loads, such as containerised waste out of Barrow. They have also been used on occasions as a load on driver training runs and remain in traffic today.

During 2016/17, DRS converted a second pair of escort coaches using air-conditioned Mk.2e BSOs 9506 and 9508. Modified with the same external features, the saloon windows were also altered to feature small hopper ventilators. First released in plain DRS blue, they were fully branded by mid-2017 and work alongside the Mk2a pair. ●



ABOVE: Carrying plain DRS blue, escort coach 9428 with 9419 alongside is seen at Langstone Rock, Dawlish, on June 17, 2008, while being moved from Crewe to Devonport Dockyard behind 66420 and 66430. They would return north the following evening with two flasks. When first noted in 2005, at least 9428 was carrying the original DRS logos but these did not last long. As pictured on page 71, they would gain 'compass' vinyls by July 2009. Nathan Williamson



ABOVE: The latest escort coaches to be converted by DRS are a pair of Mk2e BSOs, 9506 being newly completed when recorded at Carlisle on May 22, 2017, behind 68008 *Avenger*. It was coupled to an empty IKA Megafret intermodal twin with 88001 *Revolution* on the rear as part of a turning move from Kingmoor TMD. The modified saloon windows with their hopper ventilators are a notable addition while the generator grille is at the far end of the vehicle. Nathan Williamson

Terminals and models

Not surprisingly, models of the multi-bogie flask wagons have traditionally not been high on the 'to do' list for ready-to-run UK manufacturers but this has now changed as **Simon Bendall** explains.



There is no doubt that the OO gauge model by Accurascale has an imposing presence, which is only enhanced by the fine detail and printing.

Until last year, modellers seeking to portray the operation of any of the multi-bogie nuclear flask wagons had two choices. You could scratchbuild the likes of the BNFL well wagon or the MoD 'hot core' carrier, as several have to a very good standard, or make use of the HO scale continental models that bore some resemblance to the NTL and later MoD flasks.

Happily, two of the newer entrants to the world of ready-to-run manufacturing have partly resolved this issue by releasing the current pair of Ministry of Defence flasks, MODA95770/71. First to reach completion was Revolution Trains' N gauge version while Accurascale's 4mm recreation arrived in the spring of 2021, both receiving great acclaim for the detail included on the sizeable models.

The two KUAs are arguably the best choice for ready-to-run production, having been in existence for 24 years and seen use with both EWS and Direct Rail Services traction. When the contract was held by EWS, they worked with both of the former inspection saloons, or sometimes just one of the pair, and were around early enough to see haulage behind Class 47s at least before the Class 66s took over.

Following DRS' acquisition of the contract, both flasks worked to Rosyth with 'blue team' traction before the branch shut, adding to Devonport and Georgemas Junction as locations for modelling inspiration. The KUAs have also seen haulage by most types of DRS traction, including Class 20/3, 37, 47, 57 and 66 while a visit of MODA95771 to MoD Bicester in February 2019 not only brought the flask to some highly unusual territory, but also involved haulage by 68033 and 88002.

In terms of escort coaches, Bachmann has previously produced the pair of DRS Mk.2a BSOs in OO gauge as a limited edition while they also appeared in the Graham Farish 2mm range. As would be expected, these were standard models without any of the modifications to the ends. Electra Railway Graphics produces full body vinyl overlays for both the Mk.2a and Mk.2e sets in both scales.

RIGHT: Bachmann has produced the Mk.2a escort coaches in two scales, although they are representations rather than fully accurate due to the alterations made. These can be added though with some careful work. Image courtesy Hattons Model Railways



LEFT: Revolutions Trains released its N gauge version of the KUA, again as a twin-set, towards the end of 2020, it has proven highly popular.

A new flask terminal was constructed at Georgemas Junction in the early 2010s as part of the ongoing project to decommission the nuclear site at Dounreay. The raised area was built on and expanded from the former loading dock while the leg of the crane and perimeter fence sit on the former second platform. Arguably over-sized for its role, especially given the rural nature of the area, it periodically receives an empty flask wagon from Sellafield for loading, which then departs the day after. Normally, this is a regular FNA but a KUA will appear every now and then. On June 16, 2018, 158709 arrives with the 07.00 Inverness-Wick. Richard Allen



00 GAUGE MODEL RAILWAYS

2021 Hornby Wagons

The tremendous selection of wagons available from this year's Hornby range covers many of the past and present periods of Britain's transportation of rail freight.

Hornby Main Range Wagons



R60022 3 Plank Wagon, LMS



R60023 4 Plank Wagon, F. Wilkinson



R60026 7 Plank Wagon, Lowe & Warwick



R60038 14T Tank Wagon, Trumulsion



R60036 20T Tank Wagon, Cosco Products



R60037 20T Tank Wagon, ESSO



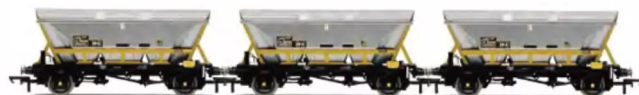
R60071 CDA Hopper Wagon, Three Pack, EWS



R60069 HFA Hopper Wagon, Three Pack, EWS



R60063 HAA Hopper Wagon, Three Pack, BR Railfreight



R60067 HFA Hopper Wagon, Three Pack, BR Coal Sector



R60065 HAA Hopper Wagon, Three Pack, BR Coal Sector

RailRoad Wagons



R60049 PO, A & H Betts, Plank Wagon



R60050 PO, Fothergill Brothers, Tank Wagon



R60052 LNER, Cattle Wagon



R60048 Three Pack, Various



R60047 Three Pack, Various

To view the full range of Hornby wagons visit www.hornby.com or contact your local Hornby stockist. The range is also available to view in the 2021 Hornby catalogue.

Scrap metal

Much like timber, the movement of scrap metal evolved dramatically during the 1980s, with the use of BR wagons largely giving way to new private owner fleets. Three distinct groups of workings would emerge before the privatisation era brought the advent of bulk movements as **Simon Bendall explains.**



As the late 1970s approached, the movement of scrap metal by rail remained a rather under-developed traffic. While it was widespread, it was very much of a wagonload nature with small groups or even just individual wagons moving around the country between scrapyards and steelworks in either vacuum-braked or unfitted freights. Unlike other industries that were beginning to see the benefits of investing in modern air-braked and high-

capacity wagons, scrap was still moved in a motley collection of 16-ton and 21-ton mineral wagons, 27-ton tipplers and 21-ton hoppers, some having vacuum brakes while others had none. With yields low, there was no great desire to invest in similar new rolling stock.

In the event, it was British Rail that was the driving force behind the modernisation of scrap traffic as it sought to rid the network of slow and low-capacity wagons. These were incompatible with the planned Speedlink

air-braked network, where wagons would move quickly between regional hubs and generally increase the efficiency of the fleet. Consequently, 1976 saw two air-braked prototype scrap wagons built at Shildon Works using underframes taken from the HBA domestic coal hopper programme.

Numbered 390000/01, the pair featured high-sided box bodies and were coded MFA. Once completed, they went sent out on tour to many rail-served scrapyards to



Vacuum-braked and re-bodied 16-ton mineral wagon B68990 (diagram 1/114) is seen at Central Wagon, Wigan Springs Branch, on August 10, 1982. It is carrying the remains of other newly-scraped wagons! Trevor Mann



Showing how diverse scrap loads could be, 16-ton mineral B571887 was recorded at Tinsley Yard on July 8, 1984, loaded with turnings from the Ford plant at Halewood and destined for Aldwarke or Stocksbridge. Trevor Mann



ABOVE: Hopefully, the load was inspected before 21-ton mineral B310872 was sent on its way from Wednesbury Steel Terminal on September 25, 1985. Loaded at Norton Barrow, Bilston, it was destined for Allied Steel & Wire at Cardiff. Trevor Mann



ABOVE: To allow late surviving 21-ton minerals to work amongst air-braked stock, a number were given a through air pipe and recoded MDW. B312194 is seen at Tinsley on July 20, 1986, and they were also found in Scotland and on Teesside. Trevor Mann



LEFT: The mighty had well and truly fallen on July 6, 1976, as 1021 *Western Cavalier* eked out its final few weeks on a down mixed goods outside Reading. This includes five 16-ton mineral wagons piled high with scrap amongst the more usual selection of vans and opens, although the former 'blue spot' fish van behind the loco is notable as is the ballast cleaner at the rear. Fast approaching from behind on the down fast is one of the Western's replacements. Rail Photoprints/Dave Cobbe Collection

ends, while they were also slightly longer. The initial batch of 20 were numbered as RLS5901-20 and sported a striking if impractical light blue and yellow livery. This was due to Standard Wagon being ultimately owned by Barclays Bank, with the blue being the company's house colour.

A further 160 POAs followed in 1984 but again with changes having been made to the body design. Most notably, the small door on each side, which had originally been intended to allow internal access for sweeping out but was rarely used, was omitted, while the corner and rib design was amended. Finished in the same livery, RLS5921-80 were built from new, but RLS5000-99 utilised the underframes of redundant British Steel PGA hoppers. As a consequence, there were differences

between the two batches, such as the latter having handbrake wheels rather than levers.

Yorkshire roots

Unlike the first 20 POAs, these were all delivered bearing SR lettering, this standing for Standard Railfreight - a scheme set up by Standard Wagon, British Steel, and local scrap merchants with the assistance of government funding that saw the POAs concentrated on workings to the Sheffield and Rotherham areas to reduce road movements. They still worked widely though to collect scrap for processing at the United Engineering Steels plants at Stocksbridge and Aldwarke, ranging from Newcastle to Workington and down to Corby and Silvertown in East London. Most flows were from the Midlands though along with other parts of Yorkshire.

demonstrate the advantages of the design. The decision proved to be a success in persuading private firms to invest in a new fleet of wagons, which was very much BR's policy of the time rather than providing them itself. With their job done, the two MFAs faded into obscurity, spending much of the 1980s in the departmental fleet and working between Ashford Works and the steelworks at Sheerness with wheel lathe swarf. They were withdrawn in 1991 following a return to the revenue fleet and a couple of years carrying scrap between Tube Investments at Chesterfield and the steelworks at Stocksbridge, Deepcar.

A standard fleet

Clearly influenced by the BR prototypes, wagon manufacturer Standard Wagon unveiled its own demonstrator in 1978, this being finished in all-over yellow and branded Railease, which was the company's wagon leasing division. Numbered as POA RLS5900 and with a 56-tonne GLW, its design owed much to the MFAs but with strengthened ribbing and the fitting of ESC primary suspension. It too was subsequently sent out on trial to assess the design.

Construction of a production batch commenced in 1982 to an amended design, the wagons now having extra horizontal strengthening ribs on the sides and



LEFT: Prototype air-braked scrap wagon 390001 is seen at the end of its career in Tees Yard in August 1991, awaiting repairs at nearby Thornaby that were not sanctioned, it being condemned instead. By this time, it had gained a though vacuum pipe as part of a trial on South Wales coal trains with a view to replacing the remaining 21-ton minerals with a new build. Unlike the HEA hoppers, the two demonstrators retained their original leaf springs to the end. David Ratcliffe

RIGHT: The battered and bent Railease POA prototype RLS5900 stands in the Heywood yard of Standard Wagon awaiting repairs in December 1986. Built eight years earlier, there is not a straight panel to be seen, illustrating the harsh environment that scrap wagons had to endure. By the end of the decade, it would have a much more substantial body in place, this being based on the POA 'blackadder' design and would become SSA 470100 in the 1990s. David Ratcliffe





Loaded with scrap aluminium, the striking blue livery of the Railfreight Metals POAs did not stay that way for long as seen in this 1989 view. Unlike the other wagons, the third POA in the formation has yet to receive the angled plates on its horizontal ribs and may well be one of those that escaped this modification altogether. Judging by the bored driver hanging out of the cab window, 37668 *Leyburn* and its unidentified sister had been waiting for a path through Chesterfield for a while. Simon Bendall Collection

During the mid-1980s, the vast majority of the POAs progressively received angled plates on their horizontal side and end ribs to prevent small pieces of scrap accumulating on them. An obvious exception was vertically-ribbed prototype RLS5900 while some production examples also escaped the modification. During 1990, Railfreight Metals purchased all 181 wagons outright, this bringing renumbering as 470000-180 and a new TOPS code of SSA. In most cases, the SR lettering was also painted out using two black rectangles while the sale ended their dedication to South Yorkshire traffic, some finding their way to Scotland for use on coal slurry workings to Methil Power Station.

By the time EWS acquired the fleet in 1996, the SSAs were battered and scarred after years of abuse by grabs and electro-magnets. A re-bodying programme was carried out during 1997-98 at RFS, Doncaster, which saw the old bodies cut off and replaced by new ones finished in EWS maroon. While the sides retained the familiar look but with upgraded ribbing, the pattern of the ribs on the ends was

changed completely. Not included was the prototype wagon, now numbered 470100, as this had received a new body in the late 1980s to a much more substantial design, although it was repainted in EWS colours. Over subsequent years, the SSAs travelled far and wide in scrap traffic and also found use carrying other commodities, particularly on short-term flows. Today, the fleet is much reduced following the disposal of stored examples while their scrap carrying days petered out in 2015.

Sheerness goes large

Based in north Kent, Sheerness Steel opted to invest in its own fleet of scrap carriers from 1981 to serve its steelworks, it went for high-capacity bogie designs from the start. Its first box wagons were rebuilds of previously-employed bogie bolsters, these received distinctive bodywork with angled reinforcing ribs and retaining the previous sloping ends. All eight of the fleet, PR3000-07, were eventually converted by 1985 and featured an attractive light blue body with darker blue solebars.

Two further batches of scrap wagons arrived in 1982-83 and 1986 from Procor, these being of more traditional box construction with ribbed sides. Numbered PR3100-39 and PR3150-59, they featured the same livery but differences between the two builds included body length and bogie type, some of the latter featuring a Gloucester design instead of the original Schleiren type. Most of the Sheerness wagons were initially coded as POA but this was officially changed to PXA in the middle of the decade, albeit not physically altered on many wagons, and then JXA with the 1990 TOPS reorganisation.

The Sheerness steelworks received scrap from Willesden and Snailwell from the 1980s to the 2000s along with imported scrap from the nearby Ridham Dock for many years. During the BR era, small quantities of Sheerness wagons also worked in from further afield, such as Beeston, Kingsbury, and Shipley.

Blackadders for Wales

The last group of scrap services to see investment in new stock were those running to the Allied Steel & Wire (ASW) works at Tremorfa, near Cardiff. Vacuum-braked stock was still in use in 1988, including 16-ton and 21-ton mineral wagons (MCV/MXV and MDV) and 21-ton hoppers (HTV) but replacements had begun to arrive in 1987 in the form of two-axle box wagons, again coded POA.

These were all built on underframes reclaimed from other wagons, particularly



One of the original Sheerness Steel POA (later PXA) scrap wagons is seen at 'home' on March 27, 1988, while it waits to be unloaded. Like its seven sisters, PR3003 was built as a bolster wagon by Procor in 1974/75 before being converted into a scrap carrier during 1981 with new sides added to the original ends. The fragmented scrap load suggests it was either loaded at Ridham Dock or the 600 Ferrous Fragmentisers Ltd plant at Willesden.

Adrian Nicholls



The first production batch of Railease POAs featured an access hatch for internal cleaning and thick corner posts without ribs. After a year in traffic, RLS5907 was still in good shape at Tinsley Yard on November 6, 1983.

Simon Bendall Collection



Built on the underframe of a British Steel PGA hopper, RLS5040 consequently inherited its disc handbrake equipment. The wagon is seen at Standard Wagon's Heywood workshops in October 1985 waiting for its rib plates to be fitted. David Ratcliffe



In contrast, RLS5921-80 were built from scratch and featured handbrake levers. On August 28, 1993, the former RLS5958 was stabled at Ayr, it now being numbered 470158 and coded SSA following its acquisition by BR.

Adrian Nicholls



Following re-bodying at RFS Doncaster some five years earlier, SSA 470151 was stabled in Tees Yard during May 2002. While retaining the previous general look, the ends and ribs were of a more substantial construction.

David Ratcliffe



The transfer of HEA hoppers to scrap use as HSAs was only ever a stop-gap measure as they were ill-suited to the task. During September 1994, a battered 360850 stands in Garston Yard and still in its original freight brown livery. David Ratcliffe



The use of Railfreight red on the three SJA prototypes was surprising, given the sub-sector grey and yellow scheme had already appeared on the MEA coal boxes. 360040 is seen in Tees Yard in May 1994 nearing withdrawal.

David Ratcliffe



Representing the Powell Duffryn POAs, PDU4538 was residing in the yard at Cardiff Tidal on October 20, 1993. Built on a Shell TTA underframe, this example was rated to carry 33 tonnes with a GLW of 46 tonnes.

Adrian Nicholls



The striking livery on the 'blackadders' was soon lost under the grime but RLS5225 was showing traces of it at Cardiff Tidal on the same day. An example of the Standard Wagon build, it had a 51 tonne GLW and lasted longer. Adrian Nicholls

RIGHT: Sheerness Steel eventually leased a fleet of 58 bogie scrap wagons from Procor by 1986. After taking delivery of an initial batch of box wagons in 1982/83, a further ten were added in 1986 to cater for traffic growth. The penultimate wagon, PR3158, is seen two years after delivery at Hoo Junction on November 6, 1988, following arrival on a Speedlink service and waiting forwarding to Sheerness on a trip working later in the day. Adrian Nicholls



TTA tankers, PEA Tip-air presflos and some of the PRA clay hoods. Construction was split between Powell Duffryn, which provided PDU4500-59/80-84, and Standard Wagon, the latter firm contributing RLS4560-79/85-4608 and RLS5214-33. Due to the use of so many different underframes, there were numerous detail differences between the batches, including fundamentals such as suspension type, length, and body style.

In traffic, all carried a black livery with ASW logos and yellow hatchings around the top lip, which earned them the universal nickname of 'blackadders'. Many had quite short lives in this form, being sold to ASW for internal use in the mid-1990s, while the rest being withdrawn in the mid-2000s. The sizeable works at Tremorfa and the adjacent Tidal Sidings received scrap from many locations during the lifetime of the POAs, particularly the Midlands but also Exeter, Snailwell, Swindon, Hamworthy, Hartlepool and Trafford Park.

Making up the numbers

With a need for further scrap wagons to see off the remaining vacuum-braked stock, 1987 saw BR transfer 131 redundant HEA coal

hoppers to scrap services, these seeing their hopper doors plated up and recoding as HSA. With comparatively lightweight bodies, they did not fare well against electro-magnet unloading but examples remained in use into the early 1990s.

As an experiment, in 1989 three of the hoppers were rebuilt at Cardiff Cathays with sturdy box bodies, these again featuring an access hatch in the sides. Repainted in Railfreight red, the trio of 360040, 360761 and 361486 were recoded SJA and widely trialled on scrap services. This included working between Trafford Park and Tremorfa for ASW and later serving Aldwarke and Stocksbridge from a variety of locations, including Corby, Hartlepool, Shipley, and many Midlands yards. Although successful, no more were converted as a number of bogie box wagons had become available for scrap traffic and they were sold into internal use at Aldwarke.

During 1989, Railfreight Metals had set up its own wagonload service, taking much steel and scrap traffic away from Speedlink in the process. This resulted in scrap wagons running alongside other types carrying finished and semi-finished steel on long

distance routes. However, this network proved just as uneconomic to operate and was abolished in May 1993. At the same time, Tinsley Yard was also abandoned on cost grounds in favour of Aldwarke and the number of scrap workings generally contracted as smaller scrapyards either closed or abandoned the use of rail in the face of bulk workings being introduced. The end of the BR era thus saw Cardiff, Sheerness, Stocksbridge and Aldwarke as the main receiving points for scrap, traffic arriving daily at each steelworks from a different scrapyard on a weekly rota.

Big boxes arrive

Under the break-up of BR, Transrail served ASW, Loadhaul covered the duties to the Yorkshire plants and Mainline Freight worked to Sheerness, only for them to be amalgamated again under EWS from 1996. While bulk workings remained, the Enterprise wagonload network allowed some flexibility to be reintroduced and it was not unusual to see scrap wagon portions mixed in with other traffic in some locations. For example, workings from Corby to Washwood Heath could see loaded SSAs running with cartics

Despite the eradication of vacuum-braked wagons in scrap traffic elsewhere, examples survived in use on Teesside until 1989. These were deployed on short distance scrap workings between Skinningrove and Lackenby and typically featured 16-ton minerals, 21-ton minerals and 27-ton tippers. On September 18, 1987, 37516 and 37505 British Steel Workington sweep round the curve at Cargo Fleet on such a trip, this featuring some of the air-piped MDWs along with four air-braked SPAs and a couple of BDA bolsters, not to mention three brake vans. With no new stock available, the traffic was lost to road transport at the end of the decade. Chris Addis



carrying new cars. Coupled with all this was a move towards using high-capacity bogie box wagons, following the lead set by Sheerness Steel 15 years earlier.

Indeed, it was the Sheerness JXAs that were the first to be replaced in 1995 by a new batch of bogie scrap wagons built by RFS. Numbered TIPH3008-24/42-62 and again coded JXA, these featured a dark blue body and yellow bogies with Co-Steel branding, which was the new name for the company. These remained in use until 2004 or so when the company was beset by a period of financial problems and takeovers.

The displaced JXAs found a new career in the spot hire market, this initially including scrap workings to European Metal Recycling's new terminal at Alexandra Dock, Liverpool, from where the scrap was exported to the Far East, supplying yards including Swindon, Handsworth, and Attercliffe in Sheffield. During 1995-96, 15 JXAs were modified with covers for a new working from Shotton steelworks to Port Talbot, this conveying steel coil off-cuts. As these were relatively lightweight and prone to wind displacement, lids made from the upper sections of TEA barrels cut into three sections were added, these being removable using electro-magnets. With the fleet passing to the ownership of hire company VTG at the end of the decade, most were repainted into a light grey livery with white logos. Thereafter they were used to carry spoil and new ballast along with scrap at various times.

The two-axle POA 'blackadders' were largely replaced on workings to Cardiff Tidal by a bogie variant in 1997, 36 of these JNAs being built by Marcroft Engineering

Traction

With such a diverse range of scrap workings during the corporate era, pretty much any loco class can be employed, be it Class 08s on trip workings, such as the Cattewater branch in Plymouth, to Class 76s over the Pennines. Local trip workings like those around Sheffield were typically the domain of low-powered locos, so the likes of Class 20s, 25s and 31s, while the long distance workings were in the hands of Class 37s, 40s, 47s, and Peaks. Sectorisation brought the use of both Railfreight Metals and Distribution traction, the former usually being Class 20s, 37s and 56s as the loadings typically did not require a Class 60. For Speedlink, Class 37s and 47s dominated while scrap wagons were also moved on the West Coast Main Line by AC electrics.

The move to bulk trains in the mid-1990s brought the Class 60s into the mix with Transrail and Loadhaul also employing Class 56s while Class 58s were common for Mainline Freight on the workings between Snailwell and Sheerness. Under EWS, it was the usual free for all before the Class 66s took over, although Class 60s have still appeared in recent years. The other operators have naturally employed their own fleets, which normally go 'ying ying'.



ABOVE: With the run down and cessation of the vacuum-braked fleet, the volume of scrap traffic in the Scottish Central belt disappeared as road haulage became the preferred option. One company that bucked this trend though was D Christie of Camlachie, which had a rail-connected scrapyard in Glasgow's east end at Parkhead. In 1989, Christie's bought 29 MDV mineral wagons from BR and had them registered as private owner wagons, numbered as PMVs CHR4609-37. They were used between Camlachie and British Steel Ravenscraig, but this flow lasted less than a year. Most of the fleet ended up redeployed as internal user wagons at Ravenscraig but nine received a coat of grey paint and were lettered MC, these last few seeing use from MC Metals' scrapyard at Springburn to Ravenscraig. This traffic ended in 1992 upon the closure of the steelworks. CHR4634 is seen at the MC Metals yard on August 24, 1991, at a time when numerous BR locos were being scrapped there. Adrian Nicholls



ABOVE: The first of the new generation of box wagons to be delivered were those for the rebranded Co-Steel at Sheerness. Built by RFS, they received the dark blue livery of Tiphook Rail along with Co-Steel lettering. These worked into Kent from Snailwell and Willesden in particular, with TIPH3051 seen at the latter during October 1996. David Ratcliffe



ABOVE: Displaced from Sheerness traffic, 15 of the JXAs received covers made from recycled TEA barrels to carry lightweight scrap from Shotton to Port Talbot, this being conveyed as part of existing services between the two locations. On August 10, 1997, PR3110 displays the unusual looking result while laying-over at Dee Marsh. David Ratcliffe



ABOVE: The POA 'blackadders' were largely replaced on ASW workings in 1997 by these Marcroft-built JNAs. With its distinctive livery obliterated, TIPH9806 is seen at Warrington Arpley on July 16, 2019. The type also later saw use to Sheerness in the early 2000s and subsequently found work in various aggregates and spoil traffic. Adrian Nicholls



ABOVE: The last of the new box wagons were the WH Davis-built JNAs, these again serving ASW/Celsa when first delivered in 2002. Built using the bogies and running gear from withdrawn TEA tankers, they have subsequently seen use on other traffic as well with GERS4414 pictured at Peak Forest on May 16, 2012. David Ratcliffe

using the frames of withdrawn PDA Clyde Cement tanks. Numbered TIPH9800-35, they retained the same livery and the same nickname. A final batch of bogie scrap wagons appeared in 2002, JNAs GERS4400-25 being built by WH Davis using parts recovered from TEA tankers. Again initially working to ASW in Cardiff, this company was taken over by Celsa in 2003, which continues to operate to this day despite a few rocky patches and is nowadays one of the principal destinations for domestic scrap workings.

Following the construction of the MBA 'monster boxes' in 1999, these were regularly deployed on scrap workings by EWS, including the rapidly growing export traffic bound for China and South Korea, which was variously shipped out of Tilbury, Newport and Tyne Dock. The MBAs have continued to be used in scrap traffic by DB, although the once bright maroon is invariably just grungy grey and mottled brown now. The smaller MEA boxes are also common in scrap workings, despite their comparatively limited capacity, the varied Railfreight grey, Mainline blue, Loadhaul black and EWS maroon wagons making a colourful sight, not forgetting the solitary DB red example.

Competition develops

EWS' ten year traction monopoly on scrap traffic was broken in 2006 when Freightliner commenced hauling scrap trains from Hitchin and Beeston to Cardiff Tidal. These used the VTG-owned ex CAIB JNAs that were originally built by Marcroft Engineering in 1998 for Railtrack virtual quarry ballast traffic. Painted in green, VTG3400-3519 have gone on to feature regularly in scrap workings. This was the tip of the iceberg as the past 15 years have seen GB Railfreight, DC Rail and Direct Rail Services all involved in scrap traffic at some point or another along with the defunct Advenza Freight.

Other Freightliner workings of note have included a scrap flow from Dagenham to Cardiff Tidal around 2012-14 that used the ex-Sheerness JXAs along with the similar KEA boxes that were originally employed on Channel Tunnel concrete segment traffic. The company's locos have also hauled trains of scrap rails from the Network Rail track recycling centres at Crewe Basford Hall and March Whitemoor to Aldwarke and EMR, Liverpool. As well as the aforementioned JXAs, these workings have on past occasions utilised MBAs and SSAs, giving the sight

of green traction atop maroon boxes. Even more colourful was the very occasional use of a Colas Rail Class 70 when new and on hire to Freightliner, the only time that Colas locos have seen use on scrap trains.

The freight arm of the ill-fated Cotswold Rail began running scrap trains in March 2008, Advenza Freight utilising 57005 and 57006 in the main but with support from 47237 and other Cotswold Class 47s when required. The bulk of the workings were to Celsa at Cardiff with scrap dispatched from the Stockton yard of TJ Thomson, Crossley-Evans at Shipley and EMR's Beeston yard near Nottingham. The wagons were initially KEAs, which were later joined by the odd ex Sheerness and Foster Yeoman JXA and some of the GE Rail Services-owned JRAs, which were originally owned by Tiphook Rail. These workings continued into the first half of 2009, including the introduction of the short-lived Advenza Class 66s, before the company collapsed in the summer.

More operators

In a rare venture into heavy freight, DRS provided the motive power for a variety of scrap workings during 2010 and 2011 that



The turn of the century saw an interesting but rather short-lived experiment with skip carrying wagons. Seven PFAs, BRT92603-09, were fitted with a Translift turntable that allowed the skip being carried to be pivoted out and transferred to a lorry or vice versa within a few minutes. Painted blue and given EMR logos, they worked into Liverpool Docks in the early 2000s but did not progress further. On June 13, 2001, 08703 is seen with three of the wagons loaded with aluminium under the tarpaulins at Warrington Arpley. Trevor Mann Collection



ABOVE: Following the closure of Llanwern, some of the redundant JTA/JUA iron ore tipplers were briefly used in scrap traffic, such as between Beeston and Cardiff Tidal in 2004. These had their British Steel lettering crudely painted out in black. On August 8, 2010, VTG26575 is seen in store at Long Marston. Simon Bendall



ABOVE: Initially built to serve the virtual quarries set up by Railtrack, the Marcroft-built JNAs have seen considerable use in scrap and other traffic following their replacement. Now owned by VTG, they retain the green livery under the grime. VTG3460 is seen at Doncaster on July 14, 2006, although not in scrap traffic. Martyn Read



ABOVE: The former Sheerness JXAs have proved to be extremely useful wagons following their displacement in the mid-1990s, being hired out regularly for scrap and other traffic. Another fleet to now come under the ownership of VTG, the company's grey livery is carried by VTG3157 at Tavistock Junction on May 1, 2006. Martyn Read



ABOVE: Scrap transport has been one of the primary roles of the MBA 'monster boxes' since they were built for EWS by Thrall Europa at York Works in 1999. Now operated under the DB Cargo banner, 500127 is seen at Washwood Heath, Birmingham, on April 23, 2005, with its maroon paint having seen better days. Martyn Read

served either Sheerness, which was now owned by Thamesteel, or Celsa at Cardiff. Invariably powered by pairs of Class 37s or a Class 66, the scrap variously originated at Hitchin, Shipley, Stockton, or Tyne Dock.

Wagons were the VTG grey-liveried JXAs, which meant the former Sheerness fleet was once again serving its former home, although the Kent steelworks finally closed for good in 2012 after more financial problems.



The JRAs were originally built for Tiphook Rail in 1988/89 for aggregates use but have found several roles over the years. One of the more recent was the DC Rail scrap traffic to Cardiff Tidal, for which they received somewhat obvious height extensions during the course of the operation. Now owned by Touax after its acquisition of GE Rail Services, 33 70 6790 040-3 is seen at Kings Norton on June 15, 2015, while returning empty to Stockton. Dan Adkins

GB Railfreight entered the scrap market in 2011 for a couple of years, replacing DB Schenker as the traction provider for Celsa Steel, this seeing Class 66/7s working to Cardiff Tidal from the likes of Handsworth, Beeston, Stockton, and Exeter. The wagons employed were the green former Railtrack JNAs along with, inevitably, the JXAs and KEAs, these continuing to earn their keep. During 2018 and 2019, GBRf was also responsible for the flow between EMR at Swindon and Liverpool, still with the same mix of wagons.

Lastly, DC Rail took its turn on scrap trains from 2011, once again heading for Cardiff Tidal from the likes of Stockton and Shipley. Utilising its small fleet of Class 56s, these much photographed workings continued until the end of 2016 and largely employed the JRA box wagons, these gaining noticeable side and end extensions during the duration of the workings to increase their capacity. All the while, DB has continued to operate various other scrap flows, such as from Rotherham Masborough and the EMR yards at Attercliffe, Saltley and Swindon to Cardiff Tidal amongst others. This pattern of chop and change has long characterised scrap traffic, driven as it is by both domestic and international demand, all of which is good for modellers seeking to justify a scrap train or even a yard on a layout. ●

Scrap terminals

Rail-served scrap yards came in many different sizes, from a couple of sidings with a grab to large terminals with loading gantries. **Simon Bendall** describes a selection of sites to give some prototype inspiration.



LEFT: Depicting a scrap yard in its simplest form, the former goods yard at Tiverton Junction had been given over to a scrap merchant by May 26, 1971. D6343 is seen shunting the yard, having arrived with the 7B74 Hemyock-Exeter mixed freight, this conveying milk tanks from the former along with a variety of opens and vans. A 16-ton mineral laden with scrap has been added behind the tanks with the train now being reformed. Tavistock Junction was closed almost exactly 15 years later upon the opening of the new station at Tiverton Parkway. Rail Photoprints/John Medley

RIGHT: At the opposite end of the scale was the Ferrous Fragmentisers plant at Willesden, which was sited alongside the West Coast Main Line. During 1985, resident shunter 03018, now numbered 600-2, stands by as the electromagnet loads two Sheerness Steel PXAs, the scrap being well and truly fragmented. The Class 03 was sold to the company in 1980 but survived its industrial career and is today based at the Mangapps Railway Museum. Trevor Mann Collection





ABOVE: Another sizeable scrap plant could be found at Ridham Dock, on the south bank of the River Thames in north Kent. Here, Sheerness Steel wagons were loaded and then tripped all of four miles to the company's steelworks, these workings happening on a daily basis such as the throughput. On June 29, 1991, a set of brim full and re-coded JXAs, headed by PR3100, await movement along the Sheerness branch. David Ratcliffe



ABOVE: On a miserable April 2, 1998, 37518 departs from the busy Swindon yard of European Metal Recycling (EMR) and back along the Highworth branch with eight loaded POAs bound for Cardiff Tidal. In the background are the Rover Group sidings with two Class 47s waiting to depart for Longbridge with car components. Simon Bendall Collection



LEFT: Many scrap yards had their own industrial shunter to move wagons around, even if the yards were not overburdened with trackwork. Seen at EMR, Kingsbury, around 1990, this former National Coal Board Sentinel had found a second industrial career and could be easily reproduced in 4mm scale using the Hornby model. Simon Bendall Collection



BELOW: A different era of the London Docklands is recalled in this view of the Ward Ferrous Metals scrapyards at Silvertown in November 1989. Originally with the National Coal Board, Thomas Hill-built diesel hydraulic shunter *Susan* (works no. 176V/1966) is seen atop four Railease POAs, waiting to trip them to the BR exchange sidings. The yard would close two years later and with it the Silvertown Tramway, which linked the North Woolwich branch with the remains of the industrial area alongside the Thames. Simon Bendall Collection

Modelling scrap terminals

Relatively new to the exhibition circuit, Crossley Scrap depicts a small scrapyards in the early 1990s and has earned much praise for its superbly recreated piles of write-offs, junk, and other scenic features. **Barrie Jones** and **Joshua Lovell** detail some of the techniques employed on the OO gauge model.

There must be a number of modellers who have looked at the Crossley Evans scrapyards in Shipley, West Yorkshire, and thought it would make a great basis for a layout. Shoehorned in alongside the electrified Leeds-Bradford route, it remains rail-connected and last received scrap by rail in 2016. With a road bridge crossing the middle of the yard, this makes it an easy place to photograph with plenty of images to be found online.

Suitably inspired, the location was used as the basis for a compact layout plan, the scenic section measuring 4ft long by 18 inches wide. Studying other scrapyards, this



ABOVE: An overview of Crossley Scrap shows 37514 getting ready for departure to Tinsley with a solitary SSA, such meagre loads not being unusual in this period and the reason why so many yards ceased to use rail. The resident shunter, which is the Hornby 0-4-0 Sentinel, is busy repositioning two POA 'Blackadders'. The lighting tower is handmade from brass 'L' section, brass wire, and staples for the platform handrails, with the lights made from brass tube and the ends of plastic forks for the lamp heads. The large scrap skips to the left were hand built from CD cases with plastic strip added for the bracing and brass ladders, these then being painted blue and loads added. The sizes of these can be found online and scaled accordingly. All photos courtesy Trevor Jones/Hornby Magazine

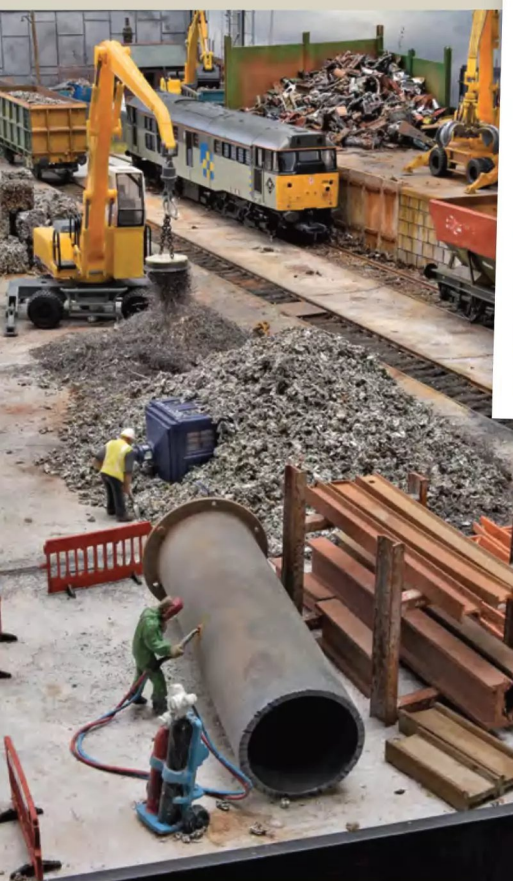


LEFT: The centrepiece of the layout is the raised loading dock area, which is constructed from 4mm PVC board with 4mm paving glued on to represent a breeze block wall. The wall was then painted in various grey tones using a sponge. Starting with the darkest colour first, some paint was applied to the sponge and most of it dabbed off on a piece of card before randomly dabbing it onto the plastic sheet. Using different shades of grey, the layers can be built up until happy with the result. The mortar lines were then painted in a dark grey using a fine brush. The concrete pad atop the wall is made from thick card and painted in the same way, while the upright concrete slabs reinforcing the wall in front of the grabber are again from card. The metal brackets on these were formed from thin and hexagonal plastic and then rust weathered.



LEFT: A closer look at the loading dock shows the scrap pile, which is made from old bits of kits, plastic offcuts, bits of wire, small electrical pieces from computers, swarf and much more. Basically, anything we could find and suitably cut up into small pieces, all weathered in rusty tones. The pile has grown since this picture was taken but the washing machine made from square plastic section retains pride of place! The green retaining wall is made from old plastic CD cases with 'H' section strip added for uprights while the Liebherr 934 grab handler is the plastic Kibri kit.

RIGHT: The concrete pad is made from thick card and painted with various tones of grey using the sponge method again. This was then weathered using real rust, which was made by adding vinegar to wire wool and letting it rust for a few days until it became a powder; we also used watered down tea, coffee, and gravy browning! The DAF tipper lorry is from the Oxford Diecast range while the trailer laden with scrap atop the dock is an HO Herpa chassis kit with a scratchbuilt plastic body fitted onto it.



brought up further details to include with the overall plan offering plenty of potential for shunting along with scenic touches. Despite its cramped nature, the Shipley yard could receive the various bogie designs of scrap wagon along with the familiar HSA, POA and SSA two-axle designs.

In the early 1990s motive power was also diverse with Class 31s, 37s, 47s and 56s

appearing while Crossley Evans had its own industrial shunters to move wagons from the reception sidings into the loading dock. Here, they would be filled with scrap and forwarded on to steelworks for melting down. Wishing to do the subject justice, careful observation of the prototype allowed the various features of the layout to be built up and weathered. Over the following photos, the methods employed are described.

LEFT: The large pipe being cut up is made from a plastic till receipt tube with a circular plastic piece added for the flange, this having bolt holes drilled through and a large stubborn nut added from hexagonal plastic section. The rough flame-cut end was represented by using a fine-toothed saw blade to cut into the surface with the figure and cutting equipment being from the Langley range and the barriers from Scale Model Scenery. The girder rack is made from Plastruct section with various lengths cut into small pieces and rust weathered using the sponge once more.





ABOVE: The scrap bales are made either from shredded small pieces of aluminium foil (from yogurt pot lids and similar) or small wood shavings. The foil pieces are mixed with PVA glue and then using the square end of a McDonalds' ice cream spoon cut to about 15mm high, the mixture is pressed tightly into a square mould and allowed to dry. They can then be pushed out and washed with various greys and rust colours to suit. If using wood shavings, these should be sieved first to get pieces of a workable size and then repeat the same process as for the foil. The method is probably easier to do than describe! Some of the other bales on the layout are cast resin examples.

BELOW: Other details scattered around the layout include oil barrels from Bachmann, plastic tyre mouldings from old kits and even a flame-cut Class 47 number panel, which is just a photo resized and printed out with the edges of the paper ripped and then rust weathered. The grass is from Peco using 2mm and 4mm spring grass along with some Busch wild grass and Woodland Scenics fine green turf. A few bushes are made from small pieces of seafoam with added flock. The fencing on the layout is the Wills palisade type with some Scale Model Scenery temporary fencing as well. The road bridge is again made from 4mm PVC board with the concrete panels scribed on and then painted and weathered in the same way as the loading dock. Finally, the smaller skips are a mixture of scratchbuilt and Modelscene (Peco), all with added loads.

LEFT: The POA wagon loads are made from a piece of 4mm PVC board with some bracing pieces glued underneath to stop warping. Some wagons received shredded aluminium scrap, which was glued on with UHU glue, allowed to dry and another layer built up until the desired look was achieved. This was then weathered with rust and grey washes. Other POAs saw the piece of PVC board receive offcuts of Plastruct section ('H' and 'I' beams for example) along with old parts from plastic kits, small pieces of metal, cut up straws, bits of wire and anything else found, all being glued to the base in layers. This was then sprayed grey followed by washes of blacks and greys, with some individual pieces being picked out in other colours. The one thing about scrap is that it is so random, you cannot really make mistakes!



Scrap formations



LEFT: With a lengthy Class 8 mixed freight in tow, 40003 rumbles off Dandry Mire Viaduct as it approaches Garsdale on May 25, 1978, with a Carlisle to Healey Mills working. Most of the train is formed of 16-ton minerals, many of which are clearly carrying scrap and doubtless bound for steelworks in Yorkshire. Rail Photoprints/Dave Cobbe Collection

With scrap workings first being modernised from vacuum-braked to air-braked stock and then upgraded to high capacity wagons, Simon Bendall takes a look at some formations from across the decades.

RIGHT: Tinsley-allocated 45006 *Honourable Artillery Company* was on home ground on January 18, 1984, as it heads the 8J11 Healey Mills-Tinsley past Little Houghton. Making up the short trip are six well-loaded 16-ton minerals and an empty HAA merry-go-round coal hopper, the latter's presence requiring the use of a brake van as it would be running unbraked. In the background is Houghton Main Colliery with a set of HAAs having been drawn through the loading bunker using a rope-worked 'mule', which can be seen on the front of the set. 53A Models of Hull Collection/Garry Cartwright



LEFT: On August 3, 1984, 33201 departs from Hoo Junction with a London-bound Speedlink working, this conveying an empty Sheerness Steel POA (as they were coded at the time) as the lead wagon. The train had likely originated at Dover and already called at Paddock Wood to collect the white-roofed VDA vans, these being empty after delivering Rowntree's confectionery. The leading ferry van is a VTG example but two Cargowaggon vans follow after that, both carrying the 'Great Britain-Continent' livery. Simon Bendall Collection



LEFT: When first delivered, the Railease POAs worked alongside the old order for a time, bringing a marked contrast in both size and colour! On April 12, 1985, 20066 and 20068 traverse Tinsley South Junction with the returning 9T35 British Steel Aldwarke to Tinsley Yard empties, where the train would be split up and the wagons sent out to collect more scrap. The Tinsley Viaduct of the M1 dominates the background along with the cooling towers of the Blackburn Meadows power station. 53A Models of Hull Collection/Garry Cartwright

RIGHT: Illustrating a mix of steel and scrap wagons, 47379 passes through Nunnery, Sheffield, with the 8T30 Deepcar to Tinsley trip on February 14, 1985. Although entirely formed of air-braked stock on this occasion, other days could see it run with vacuum-braked wagons in the mix, hence the provision of a brake van and the Class 8 headcode. The seven POAs are sandwiched between empty SPAs, six at the front and seven to the rear. 53A Models of Hull Collection/Garry Cartwright



LEFT: Despite its *Cricklewood* name, 31309 was now a Tinsley-based loco and far from London as it rolls through Goldthorpe on July 3, 1989, with the 6J35 14.22 Leeds Hunslet-Tinsley Yard Speedlink. As well as the four loaded Railease POAs, it was conveying an OBA and a solitary tanker. The second POA in the formation is from the RLS5901-20 batch with the access hatch. 53A Models of Hull Collection/Garry Cartwright

RIGHT: Some 16 months after its heavy general repair, refurbished 37704 could be found back in Crewe at the head of a working bound for Cardiff Tidal on May 19, 1988. Pictured at Gresty Lane, the mix of still-new POA 'blackadders' and recently recoded HSAs would have been loaded at Ardwick West freight depot in Manchester. Simon Bendall Collection



LEFT: In the drab departmental grey livery, 37025 had not long departed from the Crossley Evans scrapyards at Shipley in June 1990, having collected a Sheerness JXA and an SSA. The difference in size and therefore payload is interesting, while the bogie wagon displays the larger style of Sheerness Steel lettering that was introduced toward the end of the 1980s. 53A Models of Hull Collection/David R Vickers

RIGHT: In mint condition following overhaul and repainting at Doncaster Works, 56044 Cardiff Canton rumbles along the Great Western Main Line at Cholsey on August 16, 1991, with the 6V37 10.23 Sheerness to Cardiff Tidal. This was one of the wagonload services set up by the Metals sub-sector and resulted in the strange sight of Sheerness Steel JXAs running empty to Cardiff so they could be included in another service to go north, there not being an abundance of steel trains in the southeast to otherwise achieve this. Four BDAs make up the rest of the working. Martin Loader



RIGHT: With three new designs of bogie scrap wagon appearing between 1995 and 2002, examples of all of them were to be found in the formation of this Kingsbury-Cardiff Tidal working on July 3, 2002. Seen directly behind 60056 *William Beveridge* at Newport is one of the JNA bogie 'blackadders', this still carrying its original Tiphook Rail owner's board. Behind that is a brand new WH Davis-built JNA from the GERS4400-25 series followed by one of the Tiphook JXAs built for Co-Steel workings to Sheerness but subsequently displaced. The mix of types then continues along the train. Steve Clark



LEFT: The Class 56s were the perfect motive power for many of the bulk scrap workings that appeared from 1993, the trains being heavier enough to require Type 5 power but not so taxing that a Class 60 was usually needed. Typical of the scrap flows worked by the re-bodied SSA fleet, Romanian-built 56018 passes through Loughborough on September 21, 2002, atop the loaded 6E97 15.50 Corby-Aldwarke with 20 matching wagons in tow. Martin Loader

RIGHT: Mixed consists were not uncommon in the earliest years of EWS, the Enterprise network allowing such portions to be easily moved around between trains to reach their destinations. On October 5, 1999, 60030 rumbles through Denchworth with the 6V99 12.43 Hamworthy-Cardiff Tidal. Six JNA 'blackadders' look the part behind the Brush machine with the bogie bolsters returning empty. Martin Loader



The modern face of DB scrap workings as 66096 approaches Tackley on June 29, 2015, with the 6Z71 1716 Swindon Cocklebury to Aldwarke with 20 well-loaded MBAs in tow. While the Class 66 retains EWS colours, it has lost the bodyside lettering and gained DB logos on the cab fronts and second man's cabsides. While the MBAs have proved to be just too big for some jobs, their capacity for moving scrap is undoubted. Martin Loader



Advenza Freight was an all too brief part of the UK freight scene, debuting in the spring of 2008 only to collapse along with parent company Cotswold Rail just over a year later. On March 4, 2008, newly-repainted 57006 had charge of the company's first working, the 6Z71 10.05 Gloucester-Stockton empties, which employed a set of KEA box wagons. The train would return loaded from TJ Thomson's scrapyard to Celsa the next day. Matt Clarke







key
SHOP

For a great selection
of books, DVDs,
magazines and
models visit:



www.keypublishing.com/shop

CAMBRIAN 16mm Narrow Gauge

Cambrian Models is now Cambrian Model Rail Limited. There is a new website at www.cambrianmodelrail.co.uk with fully integrated online shop. Delivery is from £1.45.

Axleguards

NA1 Talyllyn Wagon
NA2 Record Skip Wagon
NA8 Welshpool & Llanfair Wagon
NA22 Sandy River Track Auto
NA26 Simplex Loco
NA27 Fowler Loco
NA28 GVT Coach
NA34 Simplex 20/24HP Loco
NA38 GVT Wagon



Brakegear

NA9 W&L Brakeshoes
NA10 GVT Coach



Detailing parts

NA3 Coach Doorhandles
NA4 Hooks, Eyes & Coupling Hooks
NA5 Nut and Bolt Heads
NA6 Handwheels and gauges
NA7 Rivet Heads
NA11 Centre Buffers
NA12 Coach/Wagon Sprung Buffers
NA13 Handrail Knobs
NA14 L&B Style Loco Headlight
NA15 GVT Coach Door Vents
NA16 Simplex Type Radiator Front
NA17 Louvres for detailing Locos
NA18 Box 70mm x 50mm x 35mm
NA19 Box 100mm x 60mm x 25mm
NA20 Ford "A" Type Radiator
NA21 Details for Simplex Locos
NA23 Radiator Panel
NA24 Diesel Horns
NA25 Pressed-Type Loco Seat
NA29 Railcar Headlight
NA30 Cowcatcher
NA31 GVT Coach End Steps
NA32 Loco Brake Standard
NA33 Guard's Brake Standard
NA35 Ruston Loco Radiator Grille
NA36 Verandah Coach Roof Brackets
NA37 Platform Canopy Valance



Bogies

NB1 L&B Wagon 4ft
NB2 L&B Wagon 3ft
NB3 Fox Wagon 3ft 3ins
NB4 L&B Coach 4ft 4ins
NB5 Rye & Camber Coach 3ft 6ins



Wheels

NW3 24mm Curly Spoke
NW4 20mm 5 Spoke
NW5 25mm Disc
NW6 Faller 21mm (0-6-0)
NW7 Excelsior (0-4-2)



Signals

NS1 Ladder
NS2 L&B Style Signal Parts
NS3 Bracket



4mm Wagon Kits are also available. For details of both ranges go to www.cambrianmodelrail.co.uk
01322 515672 PO Box 85, Greenhithe, Kent. DA10 9DN
cmr@cambrianmodelrail.co.uk

BRITAIN'S BEST MODEL RAILWAYS

NEW



Hornby Magazine presents the third volume of its popular Great Layouts series which brings together a selection of the very best model railways to feature in the magazine in one volume. In this third issue of Great Layouts we showcase some of Britain's best loved model railways including John Ryan's Over Peover in 'O' gauge as well as exhibition favourites like Grindley Brook and Whiteacres together with home based layouts that can only be seen in print. Each layout is illustrated with the best photographs from the Hornby Magazine archive including previously unpublished material while we guide you through the story of their conception and construction.

132 pages - special magazine

ORDER DIRECT

£7.99 PLUS FREE P&P*

*Free 2nd class P&P on all UK & BFPO orders. Overseas charges apply.

Free P&P* when you order online at www.keypublishing.com/shop

OR

Call UK: 01780 480404
Overseas: +44 1780 480404

Monday to Friday
9am-5:30pm

171/20

• SUBSCRIBERS CALL FOR YOUR £2.00 DISCOUNT! • SUBSCRIBERS CALL FOR YOUR £2.00 DISCOUNT! •

An impressive POA in 7mm

A new name in O gauge is Impressionist Models, the company producing an ever increasing range of wagon kits depicting BR and private owner types. Terry Bendall describes how to build and enhance the kit for the POA/SSA.



Launched last year, Impressionist Models is rapidly assembling an interesting range of wagon kits in O gauge. As the name suggests and the box label confirms, these are not full kits containing every single detail but rather an aid to scratchbuilding. This means you get many of the major elements of the particular wagon, such as body and underframe, suspension units and etches for things like handbrakes, walkways, and ladders. Other components, such as wheels, bogies, buffers, brake equipment and the like, need to be sourced from separate suppliers, these typically being GJH Plant and PR Model Railway Products. If you want a fully-detailed model then this is where the scratchbuilding comes in to add details like full brake rigging, brake shoes and other little details. If you are comfortable with this rather than a 'shake the box' kit, some interesting models can be made.

The kit built here is for the initial production batch of Railease/Standard Railfreight POA scrap wagons, these being RLS5901-20 and the ones fitted with the side access hatch. The body comes with the angled rib plates moulded in place so is suitable for the period from the mid-1980s through to the late-1990s EWS re-bodding and covers both the POA and SSA designations during this period.

1 Illustrating the components in the kit and the added extras required, the body is supplied as a one-piece resin moulding that certainly captures the chunkiness of the real thing. Also included are whitmetal pedestal suspension units and a stainless steel etch for the handbrake levers and door bangers. The wheels and bearings can be supplied by the company but are a separate purchase while the resin air tank and brake actuator are from GJH Plant. Couplings and buffers are also needed from your preferred O gauge source.

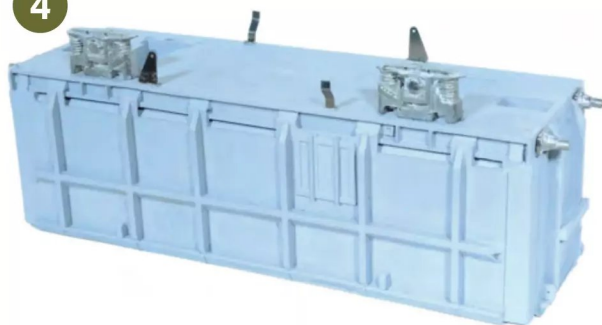


2 The body casting is well made and very little cleaning up was needed; the small amount that was required was carried out using a flat needle file. The suspension pedestals needed some filing to remove flash and the holes were then drilled out to take the brass bearings, which were fixed in place with superglue. The pedestals have fixing lugs to fit into holes cast in the underside of the body, so the next job was to file the lugs to ensure a good tight fit into the holes. A test fit with the wheelsets in place should then be carried out to check that everything is square and lined up correctly. The wheels have to be fitted when the pedestals are secured so those on one side were fixed in place with superglue and the other pair left until later. It is important to check that the pedestals are at right angles to the floor when glued in place.



The next stage was to mark out the positions of the buffers and couplings with pilot holes drilled for these and the ones for the buffers are then opened out to the required size. At the same time, the lifting brackets around the tops of the sides and ends had the holes drilled in them, although the ribs make it difficult to fully form these as they get in the way of the drill.

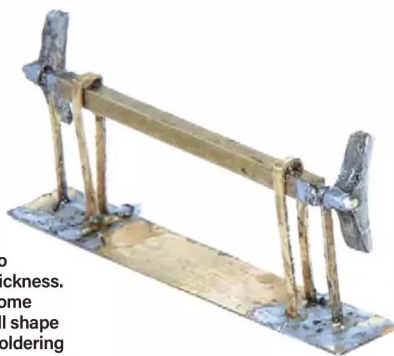
4



Taking the stainless steel etch, the door bangers and brackets for the handbrake levers were cut out, cleaned up and then folded into shape. The pivot holes in the latter were also opened up to 0.5mm diameter before all four components were glued in place. The bangers have a little moulded square indicating where they should go.

6

A closer look at one of the four required clasp brake assemblies. The brake shoes employed are an Ambis Engineering product, which is available from Hobby Holidays, and take the form of etched nickel silver parts that are designed to be soldered together to give the required shoe thickness. The shoes also needed some filing to modify the overall shape and this was done after soldering together four layers. The mounting bar was made from a piece of 2mm square brass with the ends filed circular to fit in the holes of the brake shoes while the safety loops and mounting plate were made from brass scrap.



7

With the wheels and suspension in position, the handbrake levers can be added, these seeing the pivot hole enlarged to 1.2mm and track rivets used to represent the pivot. Comparing the actual levers to pictures, one was felt to be a little on the short side so this was replaced by a new one formed from brass strip and profiled to shape.



5



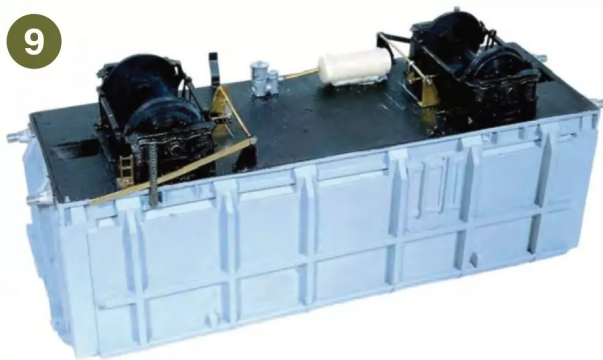
At this stage, the floor and the various parts were sprayed using Railmatch black (no. 205) before returning to the wheels and the two remaining suspension units. Checking for clearances and free running, it was found that the axles needed to be shortened by about 0.5mm to allow the wheels to rotate correctly. Once happy with the running, the two pedestals were glued in place to secure the wheels in position. As this batch of POAs were fitted with clasp brakes, these need to be scratchbuilt as they were rather prominent, and this area will otherwise look rather barren without them. Referencing what photos could be found that showed this area in any clarity, an initial test assembly was made in order to judge sizes and positions. After a bit of trial and error, something acceptable was arrived at with this shown Blu-tacked in place for assessment.

8



An air brake distributor was sourced from PR Model Railway Products (PRMRP) by request, it not being a listed accessory. Good quality photos of the air brake layout on the POAs are hard to find, it all being in gloom and tucked up behind the solebars, so a best guess was made as to the position of the distributor and air cylinder. As the kit has a solid floor, the components sit lower than they ideally should but short of cutting recesses in the floor, this is difficult to avoid.

9



The rest of the brake equipment was then added on the same best guess principal and what could be seen in photos. This included inner supports for the handbrake linkage made from scrap brass with 0.75mm brass used for the rods themselves. More could certainly be added if desired, but it at least gives an impression of something going on under the model!

10



One feature of these wagons was a 'ladder' arrangement that could be used with a shunting pole to assist in applying pressure when operating the handbrake lever. Seen in place behind the lever, these were made from a section of 4mm scale etched brass signal ladder available from Wizard Models, which happened to be the correct size.

11



The POA stands in a largely completed state ready to be masked up for painting. A few details still remained to be added but these would go on after painting. At this stage, the wagon was given a careful clean to remove any dust and debris lodged in the recesses, particularly along the lower body.

12



The first stage of the painting was to do the inside, which received a spray of Phoenix Precision light rust (P950) using an airbrush. This gives a nice base colour onto which weathering can be applied at a later date.

13



Once the model was painted, the sprung buffers were assembled, and the screw couplings put in position. The twin air pipes again came from PRMRP, the brass castings requiring painting in black and then the tap colours added. A final touch was to add the protective cover over the brake pipes that was intended to protect them from falling scrap, this being fabricated from more scrap brass.

14

The completed POA is seen in all its unmistakable glory but with weathering yet to come! The ends were painted first, receiving a coat of white as a basis before Railmatch warning yellow was applied with an airbrush, this still needing several layers to give good coverage. The Barclays blue was from the Phoenix Precision range (P223), again being sprayed on with an airbrush. The transfers came from Railtec, being specially commissioned to accompany the kit and providing all the necessary elements for the wagon. As per the real thing, no SR lettering is supplied or applied as this was not carried by this batch of POAs. While the 'aid to scratchbuilding' approach of Impressionist Models will not be for everyone, the POA certainly delivered a favourable impression to this builder.



Making scrap loads

With scrap loads coming in a number of different styles, there are a variety of ways in which they can be modelled. **Terry Bendall** provides a few hints and tips in 4mm scale using wagons from the Ravenscroft Sidings fleet.

These Sheerness Steel PXAs are built from the sadly long-discontinued Appleby Model Engineering resin kits, covering the original batch with angled bodywork and the main build of box wagons where the body was slightly shorter than the underframe. Although the original PXA has yet to be loaded, those for the two box wagons were made from the Ten Commandments stonecast load designed for the MBA. These were too long for the Sheerness wagons, so the castings were cut down in length but making the cuts at different ends to introduce a bit of variation. In the same vein, the cast load was modified by cutting away parts with a scalpel and adding a few new bits instead. Strips of 40 thou styrene were glued along each edge to widen the castings slightly as they were a bit narrow in the PXAs. The strips were then painted with a suitable rust shade to make



them blend in, while two small blocks of wood were made to support the loads in the required position in the wagons. The loads were then painted with a mixture of Humbrol colours to represent scrap steel in various stages of decay. Small amounts of colour were placed on a pallet and used in turn with the brush not cleaned between each refill, which varied the shades. When dry, the loads were given a thin wash of track colour to tone everything down.

This Bachmann POA has been renumbered with Appleby transfers and then weathered using a mix of Humbrol brown and rust colours, these being applied with a brush and mottled into the ribs and over the panels to recreate a late 1980s look. The Bachmann HEA has also been renumbered to give it the correct TOPS code of HSA while the bright red upper body has been repainted to give the paint a faded look, this using the Railmatch faded red colour as the starting point. The basis of the loads for these wagons was a piece of 40 thou black styrene sheet cut to fit into the wagons. For the HSA, this rested on the sloping sides of the hopper but for the POA, a



small block of wood was used to maintain the plastic at the required height. The actual scrap itself was formed from swarf; the scrap material left after a steel bar has been turned in a lathe. This was glued down to the plastic using diluted PVA glue as might be done when ballasting and then painted. This began with a coat of Phoenix Precision dark rust (P951) applied with an airbrush and when dry, a mix of colours was applied with a brush to vary the tones. Colours used included Phoenix Precision light rust (P950) and Railmatch sleeper grime (406). When dry, a thin wash of Railmatch 406 was again applied.



ABOVE: Built from the rather nice Wizard Models/51L kit, the load for this POA 'blackadder' was made using the scrap metal material available from Goodwood Scenics. This is actually made from fine chips of a dark coloured timber, which when formed into a load gives a good representation of shredded rusty scrap steel. The large size was used for the bulk of the load with some of the finer type employed to fill in the gaps. The base was again a piece of black styrene as used for the POA wagons with a generous layer of PVA glue painted on. The large material was then sprinkled on and pressed into the glue. When dry, the loose pieces were shaken off and further PVA painted on to fill any bare patches with some of the finer material then applied. This was repeated as required while it was found that the various cut surfaces gave sufficient variation in colours that no painting was required, making it a quick and easy way of building up a range of scrap loads.



ABOVE: The three prototype SJA scrap wagons can be produced using the Bachmann MEA and the neat little conversion kit from Stenson Models. This includes etches to add the bodyside inspection hatches, covers over the brake pipes and other small parts. It is worth noting that more recent MEAs are the best donors as these have a retooled chassis, the earlier releases having very chunky handbrake levers amongst other issues. The same goes for the HEA hoppers.

Scrap models

In comparison to the other commodities featured in this guide, air-braked scrap wagons have yet to generate much in the way of interest from the new, smaller ready-to-run manufacturers, at least publicly. This is not helped by most of the private owner types being limited in both numbers and liveries, although the Sheerness JXAs would seem to be the most deserving of RTR production.

For now though, in OO gauge, two sources exist for the Railbase/Standard Railfreight POA/SSA. There is the ready-to-run Bachmann model, which depicts the RLS5000-99 (later 470000-99) batch with disc handwheels, along with the Cambrian Models plastic kit. Thanks to the variety of parts included in the latter, this will build both of the main batches of POA/SSA, leaving just the first 21 wagons uncovered. Notably, when the Bachmann model first appeared many years ago, it lacked the angled deflectors on



Accurascale's new 21-ton mineral wagon in vacuum-braked form with MDV TOPS code.



Rails of Sheffield is offering a limited edition pack of the MC Metals PMV mineral wagons.

JRA in original non-extended form and ex Railtrack JNAs. The Wizard Models kit for a batch of POA 'blackadders' is currently out of stock though and it remains to be seen if it will reappear, while the Accurascale model of the JTA/JUA tipplers can be used to depict the type's limited use in scrap traffic.

The situation is perhaps worse in N gauge where no POA/SSA exists in ready-to-run form, nor in fact do any of the other private owner designs. The EWS/DB era can at least be modelled with the Graham Farish MBA and MEA while it also offers the HEA and 16-ton minerals. It is kits all the way in O gauge, at least until Dapol's long in gestation HEA finally appears. PRMRP produces the HEA and POA/SSA in etched form, MMP1 Models offers the former Just Like the Real Thing MDV while Impressionist Models covers both the two-axle POA and bogie JNA 'blackadders', two types of Sheerness PXA/JXA, the Tiphook JRAs and the short-lived PFA skip carriers. It also has the former Channel Tunnel KEAs and another kit for the POA/SSA covering RLS5921-80.



Bachmann's POA/SSA in one of its more recent forms with original numbers and factory weathering.



The HEA hopper has also been produced by Bachmann as an HSA, this being a freight brown example.

the ribs, but the tooling was soon modified to depict the later look. The HEA hopper has been widely available over the years from the likes of Bachmann, Hornby, Replica and Dapol.

Bachmann also offers the 16-ton mineral wagons, but a better range of diagram options exists in the kit range of Parkside. The larger 21-ton mineral wagons are also now well catered for after being ignored for so long with the kits from Parkside and Five79, the latter previously marketed under the Chivers Finelines brand. A ready-to-run model will appear from Accurascale later this year with both unfitted and vacuum-braked variants due while Rails of Sheffield is offering an exclusive triple pack of the short-lived MC Metals examples. For EWS and DB operations, the MBA has been produced by both Dapol and Bachmann, the latter also offering the MEA.

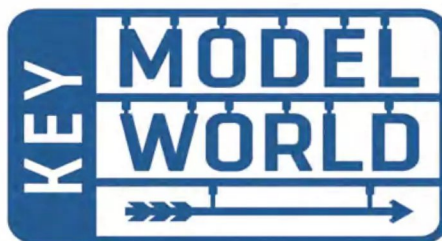
The loss of the Appleby Model Engineering kit range is still felt even after all this time, but S Kits provides some compensation with its resin kits for the likes of the KEA,



Impressionist Models offers O gauge kits for both the bogie and two-axle 'blackadders'.

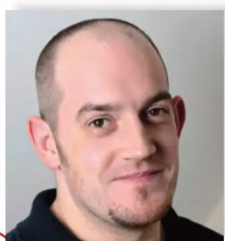


YOUR ONLINE HOME FOR RAILWAY MODELLING



575/20

Key Model World is **THE** online home of railway modelling, brought to you by Key Publishing, publishers of *Hornby Magazine*



You'll find an array of railway modelling content on Key Model World - including feature layouts, the latest reviews, step-by-step guides, premium videos and Key Model World exclusives.

UNLIMITED access to this exciting online content from our dedicated team starts from just £41.99/year for UK customers. And registering couldn't be simpler. For instant access to the latest *Hornby Magazine* features and hours of modelling inspiration and other premium content, visit:

www.keymodelworld.com

FREE ACCESS
FOR ALL **HORNBY** magazine
SUBSCRIBERS*

Visit
www.keymodelworld.com/subscribe

***Free access available
for a limited time only
- sign up today!**

We value your feedback!

Let us know your thoughts on Key Model World
- drop us a line at subs@keypublishing.com today

Mike Wild Editor - Hornby Magazine & Key Model World

Visit www.keymodelworld.com today!

Cargowaggon

Three-door Cargowaggon bogie van 33 80 2797 503-0 is pictured at Dover on April 25, 1995, while heading from Marsh Mills to the continent loaded with bagged china clay. All photographs by the author



For over four decades, various designs of Cargowaggon van have been seen across the UK in a wide variety of domestic and international traffics. With several models now available, David Ratcliffe profiles the history of the types and what they have carried.

Given that so much of the rail traffic between Britain and the continent comprised consumables and manufactured goods, it was not surprising that by the 1960s over half of the wagons carried on the cross-channel train ferry routes were vans of various types. Provided by many of the European railways as well as British Rail, all were two-axle vehicles with payloads

of up to 27-tonnes. This was to change in 1977 when the German wagon leasing companies Cargowaggon and VTG introduced their 55-tonne capacity (80t GLW) air-braked bogie ferry vans for services between the continent and the UK.

For the time, then new German vans were real monsters, the 80t GLW VTG design being 62ft in length while the first batch

of 80 bogie Cargowaggon vans, built by Waggonfabrik and allocated to diagram E476, were even longer at 71ft 5in over the buffers. The sides of the 'Habfis 1' E476 vans featured three lightweight sliding doors while the ends were reinforced by heavy diagonal, horizontal and vertical bracing. Running on DB Talbot bogies, they had a cubic capacity of 113m³ with load-securing steel eyelets



ABOVE: Still in its original 'Great Britain-Continent' livery, diagram E512 van 33 80 2797 602-0 was at Cowley on September 21, 1991. By this date, these vans had been re-coded from IPB to IWB and their exchange code altered from 83 to 33.



ABOVE: Many diagram E512 vans eventually had their through vacuum pipe removed with some also later repainted in standard Cargowaggon livery. IWA 33 80 2797 594-9 was recorded at Longport freight depot on September 19, 1998.

vans

built into the floor. Fitted with a through vacuum pipe in addition to air brakes, they were coded IPB on TOPS.

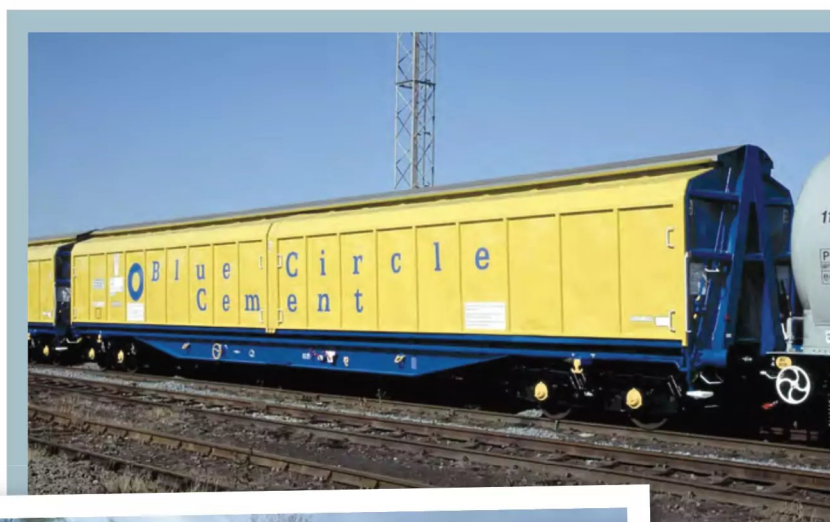
Originally numbered 21 80 0298 000 to 079, the wholesale renumbering of ferry wagons that took place in the early 1980s saw these three-door vans become 33 80 2797 500 to 579. When new, both the ends and solebars of the E476 vans were painted brown with the doors left unpainted but sporting large Cargowaggon lettering in blue on a yellow panel. Other lettering was in black while in the 1990s, some had the ends and solebars repainted blue.

More bogie vans

With the 80-tonne vans proving a success, a 90-tonne GLW design was introduced by Cargowaggon in 1979. Similar in size to the E476 batch, the new vans differed in having their sides formed of just two sliding walls, these being extended at the top to form part

RIGHT: Six of the E551 vans carried Perrier livery including IWA 33 80 2797 712-7 pictured at Tees Yard on November 1, 1997. Most, if not all, of them retained the Perrier logos long after they had transferred to carrying other traffic.

RIGHT: Between 1983 and 1989, vans 83 80 2797 664-9 and 687-0 carried Taunton Cider colours and worked from Norton Fitzwarren to distribution depots at Law Junction and Stranraer. The second of the pair is seen at Warrington in May 1987.



In 1999, bagged cement began to be railed from Hope to Moorswater with 16 bogie vans allocated to the traffic although not all of them were repainted in the attractive Blue Circle Cement colours. Pristine IWA 33 80 2797 613-7 is pictured at Warrington on July 11, 1999, while work-stained 33 80 2797 688-9 is seen at Earles Sidings, Hope, on May 6, 2001.

of the roof profile and giving an increased cubic capacity of 116m³. The end bracing was also modified while load-fixing points were additionally provided on the inside of the doors.

Built by Waggonfabrik, the first 120 vans to this new design, allocated diagram E512, were numbered 83 80 2797 580 to 699 and coded IPB. A further 50 numbered 83 80 2797 700 to 734 and 83 80 2798 000 to 014 followed from Waggon Union in 1983, these being allocated to diagram E551 and coded IPA.

With the new design came a new livery, the E512 vans having blue ends and solebars while the side lettering, now all in black, included the wording 'Great Britain Continent' within a stylised double-ended arrow in addition to the Cargowaggon name. However, over subsequent years some would be repainted with just the Cargowaggon name in blue on a yellow panel while a few received customer-related liveries, including Perrier, Taunton Cider and Blue Circle.

All batches of bogie Cargowaggon vans were used to transport a wide range of different commodities, ranging from animal feed and aerosols to sawn timber, soap powder and television sets. The most common imports carried included chipboard, fertiliser, mineral water, paper, and wine. Bagged clay from the West Country and spirits from Scotland were their most frequent exports but other goods railed to the continent in the vans included aluminium ingots, non-dangerous chemicals, refractory bricks and washing machines. They were also used on a number of domestic freight flows such as car parts from Cowley to Longbridge, cider from Taunton to Scotland, and paper from Corpach to Cardiff. Handling such a wide portfolio of traffics meant that the vans were to be seen working in every corner of Britain (see tables).

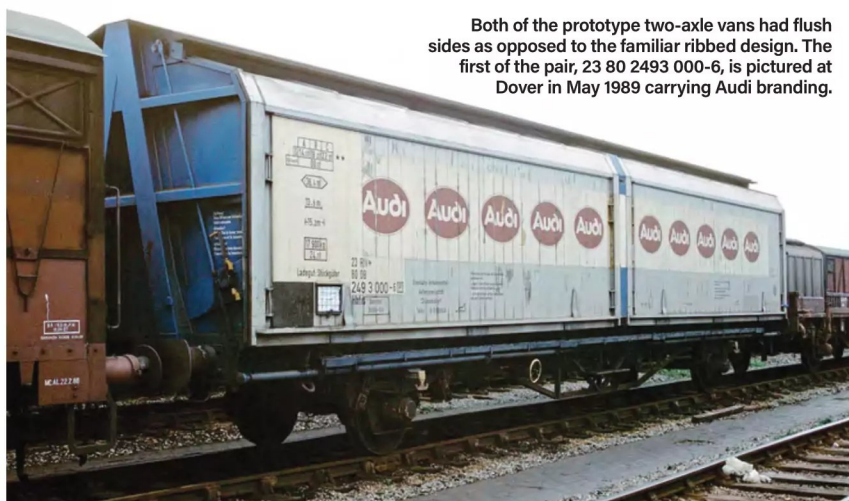


The cavernous 116m² capacity of the bogie Cargowaggons vans is demonstrated by one of the last of the fleet, 33 80 2798 008-9. Previously in beer traffic from the Guinness brewery at Park Royal, it had been transferred to general ferry service in 1991 and was recorded at Longport on June 21, 1998, waiting to be loaded with refractory bricks to be exported to Germany for use in night-storage heaters.

Two-axle vans

Cargowaggon also introduced a fleet of two-axle sliding wall air-braked ferry vans with two 24-tonne capacity prototype vehicles being built by Duwag in 1982. These were originally numbered 43 80 2492 000 and 001, later to become 23 80 2493 000 and 001. This pair was followed by a production batch of 146 examples, 43 80 2398 502 to 647 being delivered between 1983 and 1985. Fitted with double-link suspension, all were 49ft 10in long with two sliding walls each side while the production batch could carry 28-tonnes. Recoded from IPA to IVA in 1991, their exchange code had already been altered from 43 to 23 and they would subsequently be renumbered as 23 80 2398 502 to 647.

Eighty-eight of these vans replaced BR long-wheelbase palvans in moving automotive components between the Ford plants at Bridgend, Dagenham, Halewood, and Swansea, with many remaining in Ford



Both of the prototype two-axle vans had flush sides as opposed to the familiar ribbed design. The first of the pair, 23 80 2493 000-6, is pictured at Dover in May 1989 carrying Audi branding.



LEFT: The two-axle vans that were leased to the Ford Motor Co. to carry automotive components had a small Ford logo on the right-hand sliding door on each side. IVA 23 80 2398 575-3 was recorded at Swansea Burrows Sidings in August 1991.



ABOVE: IVA 23 80 2398 637-1 was loaded with washing machines for Harris Distribution at Trafford Park when photographed in the New Admiralty Sidings, Dover, in April 1995. It had just come off the train ferry from Dunkerque.



ABOVE: Cargowagon twin-vans were a common sight in Speedlink and later Enterprise wagonload services. From the first batch, IZA 23 80 2794 010-1 was en route from Hereford to Glasgow with a load of cider when recorded at Warrington Walton Old Junction yard in March 1987.



ABOVE: When photographed at Ellesmere Port in September 1994, IZA 23 80 2793 137-3 had just been cleaned ahead of an upcoming rolling stock exhibition to be held in Trafford Park, Manchester.

Sample of imported goods carried in Cargowagon bogie vans during 1980s and 1990s

Commodity	Destinations supplied
Aerosols	Wolverton
Animal feed	Ely, Kennett, Law Jn, Selby, St Margaret's (Derby)
Automotive parts	Birtley, Bridgend, Longbridge, Wolverton
Beer	Derby, Liverpool, Luton
Bricks	Liverpool, Worksop
Beds/carpets	Barrow, LIFT
Chemicals	Bamber Bridge, Bristol, Carlisle, Duxford, Exeter, LIFT, MIFT, Round Oak, Sittingbourne, Stafford
Chipboard	Avonmouth, Birmingham, Blackburn, Cardiff, Cowley, Crawley, Leicester, Mossend, Pensnett, St. Margaret's
Clothing	MIFT
Detergents	MIFT, Selby, West Thurrock, Wolverhampton
Domestic appliances	MIFT, Paddock Wood, Wisbech
Dyestuff	Ardwick, Bolton, MIFT
Fertiliser	Aberdeen, Barnstaple, Chichester, Dereham, Evesham, Lugton, Plymouth Friary
Furniture	MIFT
Glass sheets	Warrington
Machine parts	Bolton, Swansea, TCFD
Metallic compounds	Wrexham
Mineral water	Ashford, Barking, Cowley, Crawley, Ely, Gidea Park, LIFT, Longport, Neasden, Wakefield, Widnes
MoD supplies	Bicester, Swansea
Paper	Barking, Birkenhead, Cowley, Dundee, Ely, Grimsby, Liverpool, Ordsall Lane, Wellingborough
Petfood	Melton Mowbray
Plasterboard	Avonmouth, Bridgwater, GIFT, Leeds, Letchworth, Longport, Walsall
Plastic goods	Ardwick, Didcot
Preserves	Grahamtham
Railway equipment	Radstock
Roofing felt	Ordsall Lane
Roof tiles	Bridgwater
Sugar (raw)	Barking
Wine	Birkenhead, Gloucester, LIFT, Norwich, Wakefield

traffic until 2019, while in their early years they also occasionally worked to and from the Ford plant at Dillengen, Germany. In contrast, the other 60, which were initially leased by Volkswagen, worked from Kassel, in Germany, to the VW spares depot at Wolverton. However, when the Volkswagen traffic came to an end in 1991, they were reassigned to general ferry service, proving particularly popular for the carriage of domestic appliances, which was becoming an increasingly important import traffic. During the 1990s, the IVAs, including some no longer required by Ford, were also increasingly used on domestic freight flows within Britain, such as the movement of reeled paper from Sittingbourne to Barrow, sawn timber from Huntly to Warrington

Dallam, and wood pulp from Sheerness Docks to Workington.

Twin-vans

In 1986, Duwag built two more two-axle vans but with an increased payload of 30-tonnes and that same year saw the design developed into the twin-van. In effect, these were a pair of permanently-coupled two-axle vans that dispensed with conventional buffing gear at their inner ends, thus bringing down the tare to give a combined payload of 62.5 tonnes. Overall length was 27 metres with a cubic capacity of 151m³.

Built in 1986-87, the first 100 twin-vans (diagram E668) were originally numbered 23 80 2794 000 to 099, although they would later become 23 80 2793 000 to 099. At least

three of this batch were delivered in Perrier livery while the rest, in common with the next two batches of twin-vans, numbered 23 80 2793 100 to 149 (diagram E710) and 23 80 2793 150 to 199 (diagram E753), were finished in the usual unpainted stainless steel with blue underframes and yellow/black Cargowagon logos.

All were initially coded IPA, later changed to IZA, and in international service, the twin-vans carried many of the same commodities handled by the bogie Cargowagon vans with paper and drinks being common loads and for several years, block trains of Evian water ran from France to Neasden. Export traffics included bagged clay from the West Country, paper and spirits from Scotland, and earthenware and pottery from Longport. ➤



A third batch twin-van, 23 80 2793 183-7 is pictured outside the Stora Enso paper warehouse at Immingham Docks on July 27, 1992.



ABOVE: IZA 23 80 2793 192-8 had been split for maintenance when recorded at Immingham Yard on October 9, 1995. These vans lacked conventional buffing gear on the inner end.



ABOVE: One of the last batch of IZAs, 23 80 2929 218-8, is pictured at Warrington Arpley on February 17, 2002, while moving from Irvine to Shotton with a load of coated paper. These vans were delivered under the ownership of GE Rail Services, which was formed after the merger of Cargowaggon and Tiphook Rail, so lacked the previous large branding

Sample of exported goods carried in Cargowaggon bogie vans during 1980s and 1990s

Commodity	Loading points
Aluminium ingots	Cardiff, Holyhead, Lynemouth
Automotive parts	Halewood
Ball clay	Furzebrook, Heathfield, Exeter
Beds/carpets	LIFT
Chemicals	Falkirk, Grangemouth, Maxwelltown, MIFT, Wilton
China clay	Drinnick Mill, Marsh Mills, Par Harbour
Detergents	Whitehaven, Warrington
Domestic appliances	Merthyr
Furniture	Aylesbury, High Wycombe
Glass bottles	Barking
Hypochlorite solutions	LIFT
Machine parts	Doncaster
Magnesite refractories	TCFD
MoD stores	Bicester, TCFD
Paper	Aberdeen, Dee Marsh, Irvine, Sittingbourne
Petfood	Shieldhall
Pesticides	King's Lynn
Railway brake blocks	Horwich
Refractory bricks	Longport
Rod coil	Cardiff, Scunthorpe, Sheerness
Spirits	Barleith, GIFT, Kilmarnock, Markinch, Perth, Shieldhall
Starch	Trafford Park
Steel bar	Cardiff
Tinplate	Velindre
Waste paper	Blackburn

Notes: All chemical traffic conveyed was non-dangerous types.
Abbreviations: GIFT - Glasgow International Freight Terminal, LIFT - London International Freight Depot, MIFT - Manchester International Freight Depot, TCFD - Tyneside Central Freight Depot.



ABOVE: The prototype 'hold-all' van 83 80 4741 000-0 is seen at Cardiff Tidal on September 27, 1991. It had a series of narrower ribs along the sides than the production batch and had arrived empty in South Wales to be loaded with rod coil for export.



ABOVE: The 'hold-all' vans were popular for carrying big bags of fertiliser with many leased to Norsk Hydro and UKF Fertilisers. Most of those working for Norsk Hydro were devoid of the large Cargowaggon lettering on their sides and instead carried logos for both Hydro and Isis Link. IPA 83 80 4741 001-7 is pictured at Immingham in September 1990.

The IZAs also found use in several domestic flows, including beer from Park Royal, cider from Hereford and Taunton, and light fittings from Bodmin, while the third batch were initially all allocated to the Stora Enso paper traffic from Immingham Docks. The Spillers block train, which conveyed petfood from Glasgow Shieldhall to Wisbech, also went over to IZAs in the late 1980s while from 1990 to 1996, Austin Rover leased a large pool of twin-vans to carry car body panels from Swindon to Longbridge.

A fourth and final batch of 100 IZAs was built by Waggon Union in 1999-2000, these having a more rounded roof profile than earlier vans which resulted in an increased payload of 63-tonnes. Numbered 23 80 2929 200 to 299, they were initially intended to carry automotive components from Germany to a BMW engine plant at Hams Hall but when that traffic failed to materialise, some were hired by VW to supply their new depot at Birch Coppice while others went into paper traffic for both Stora Enso and UPM-Kymmene.

Hold-Alls

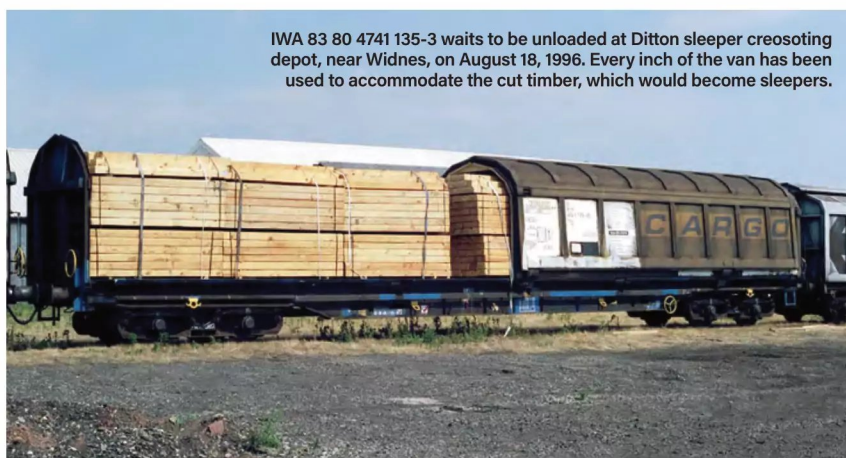
Another innovative Cargowaggon design was the 'hold-all' in which the body comprised two hood sections, either of which could be lifted vertically and then slid back over the other, thus providing unrestricted access to half of the wagon from either side as well as from above.

A prototype 80-tonne GLW 'hold-all', allocated diagram E576 and fitted with DB WU83-1 bogies, was built by Waggon Union in 1984, this measuring 71ft 2in in length and capable of carrying 51.5 tonnes. After extensive trials, a 160-strong production batch of 90-tonne GLW vans followed in 1987, although these were only 68ft 2in long, ran on DB642 bogies and could carry 63.5 tonnes. Initially coded IPA, they became IWAs in 1991.

From new, almost 100 'hold-all' vans were used on domestic freight flows with 50 allocated to bagged fertiliser traffic from the Norsk Hydro factory at Immingham, while a further 36 were leased to UKF Fertilisers to carry large bags of fertiliser from its chemical works at Ince & Elton. Wiggins Teape also hired eight examples to carry reeled paper for print works from its mill at Corpach to warehousing and distribution depots at



Each half of a 'hold-all' was opened and slid up and over the other by means of a mechanical transmission operated by large wheels fitted on the ends. Now recoded IWA, 83 80 4741 151-0 was also photographed at Cardiff in September 1991 and illustrates the standard Cargowaggon livery carried by the majority of the fleet.



IWA 83 80 4741 135-3 waits to be unloaded at Ditton sleeper creosoting depot, near Widnes, on August 18, 1996. Every inch of the van has been used to accommodate the cut timber, which would become sleepers.

Oxford and Wellingborough.

The remaining IWAs went into cross-channel service, carrying a range of goods that included paper to Blackburn, Ely, Gidea Park, and Ordsall Lane (Manchester); mineral water to Warrington and Wakefield; wine to Avonmouth, and paint to Exeter. As they could be loaded from above by crane, the type was particularly popular in metals traffics and saw extensive use on several

export flows, including aluminium billets from Holyhead and Lynemouth, rod coil from Cardiff and Scunthorpe, and special steel bar from Aldwarke. In more recent years, some of the IWAs have been seen in the daily service that runs between Nievenheim in Germany and Ditton, these conveying aluminium coils, while others have been converted into timber carriers, with some being leased to Colas Rail. ●

RIGHT: On a bright November 26, 1982, 40074 was captured powering through the Suffolk countryside as it climbs Belstead Bank with the previous night's 6E86 21.35 Mossend-Harwich Parkeston Quay Speedlink. Leading the short but diverse train are two of the original three-door Cargowaggon bogie vans, these dwarfing the more traditional wooden-bodied ferry van next in line and almost certainly carrying whisky for export via the train ferry. Up next is a four-element Freightliner set, consisting of two FGA outers and two FFA inners, with a mix of 20ft and 30ft containers for shipping overseas. Finally, the empty Cartic-4 set will be loaded with newly imported cars upon reaching Harwich. Bill Atkinson



Cargowaggon formations

With the five principal types of Cargowaggon van having seen widespread use across the UK, **Simon Bendall** provides more details on the diverse range of workings.



LEFT: A notable working out of East Anglia for many years was the Spillers train from the company's plant at Wisbech to Deanside Transit, Glasgow. Although often referred to as the petfood train, it just carried empty cans for filling at a sister factory in Barrhead, while the train also sometimes conveyed cartons of fruit juice as well. 47003 is seen arriving at a rationalised March Whitemoor Yard on September 6, 1989, only a short way into its journey with 6S93. For much of the 1980s, the train was formed of BR VGA vans, one of which can be seen mid-train with red ends, but by the end of the decade, the Cargowaggon IZA twin-vans were in the ascendency. Mick Page

RIGHT: A tatty 47098 was in charge of the 6M29 14.00 Taunton to Bescot on March 13, 1989, with the Speedlink service conveying an eclectic range of wagon types as usual. Seen at Charfield, to the north of Yate, the solitary Cargowaggon twin-set and two VDA vans would likely be conveying the produce of Taunton Cider. Also included in the formation are a VAA and a very clean VGA with the five HEA hoppers thereafter most likely carrying calcified seaweed from Drinnick Mill to either Carlisle or Mossend. Half of the train is made up of air-braked Civil Engineers' stock including ZDA Bass (ex OBA and OCA) and ZAA Pike (ex-SPA) carrying castings from the works of Taunton Concrete while the empty Silcock Express Cartic-4 set on the rear is returning from Exeter. Martin Loader



RIGHT: Upon delivery, many of the IWA 'hold-all' vans went into fertiliser traffic, where they were the perfect size to carry the large bags that had become increasingly popular. Norsk Hydro took around half of the fleet with seven examples seen formed in the 6E48 07.40 Hallen Marsh-Immingham empties at Ashchurch on May 6, 1989. Although a Railfreight Distribution duty, Petroleum-liveried 47336 was covering on this occasion. Three of the French-registered IUA curtain-hood wagons that worked alongside the IWAs are also in the train. Martin Loader



LEFT: With their sliding hoods giving access from above, the IWA 'hold-all' vans found popularity in the steel sector where products often needed weather protection. On May 16, 1989, Thornaby's 37514 and 37517 were working back to Teesside from South Wales at Clay Cross with a mixed selection of wagons. Besides the two vans, there are seven BDA bolster wagons loaded with bales of steel rod, 12 SPA opens and a pair of VTG telescopic hood PIB (later KIB) wagons on the rear. John Whiteley

RIGHT: A long-standing duty for the IZA twin-vans was to transfer car components between the Rover Group plants at Swindon and Longbridge, Birmingham. During May 1996, 47200 *Herbert Austin* was only a short way into its journey as it powers away with the 6M03 Swindon-Longbridge, this being mostly formed of IZAs with a couple of Tiphook IWA bogie vans also in the consist. However, bringing up the rear are four of the then new KSA 'Rover cube' wagons, which would soon completely replace the vans. Simon Bendall Collection



Cargowaggons



LEFT: Freight traffic on the West Highland line had a very different look following the demise of Speedlink with the diversity of wagon types reducing considerably. On May 17, 1999, 37410 *Aluminium 100* was in charge of the 06.36 Mossend-Fort William Enterprise on the approach to Torlundy. In tow are seven empty IWA bogie Cargowagon vans to collect paper reels from the Wiggins Teape plant followed by an ICA clay slurry tank and then a Tiphook IWA ferry van. Dean Cornthwaite

RIGHT: The enlargement of the Enterprise network by EWS provides plenty of inspiration for modellers of the period, for example by allowing short formations of Cargowaggons to be modelled! On June 17, 1999, 47737 *Resurgent* is seen near Calder Bridge Junction with the 6D37 13.30 Wakefield to Doncaster after departing from the nearby Cobra Railfreight terminal. Rail Express Systems-liveried Class 47s were common on freight work in this period with the arrival of the Class 67s to take over mail duties. The train is formed of four Cargowagon IWAs, the leading trio being 'hold-alls' that may well have delivered steel bar or rod, this being a regular traffic for the type to the Cobra warehouse. In contrast, the standard IWA would have delivered mineral water or wine. Neil Harvey



The Stora Enso newsprint traffic was a popular feature of the early EWS era, providing gainful employment for Class 56s in particular and bringing them to the southern end of the East Coast Main Line. The bulk working from Immingham to Ripple Lane involved a long rake of IZA twin-vans laden with paper reels, while further vans were distributed via Enterprise to Selby, Knowsley (Merseyside), Deanside Transit at Glasgow and Avonmouth. On May 15, 1998, 56105 rolls past Claypole with the returning 6E86 09.59 Ripple Lane-Immingham empties. Bill Atkinson



LEFT: For a time in the second half of the 2000s, the Saturday working from the Anglesey Aluminium plant outside Holyhead became the photographers' train of choice as it regularly featured one of the ever-dwindling fleet of EWS Class 37s. On April 24, 2007, 37405 prepares for departure with the 6F18 14.50 Holyhead-Warrington Arpley, the eight IWA 'hold-all' vans carrying aluminium ingots for export to the continent. The smelter would close in the autumn of 2009. Terry Eyres

RIGHT: A key traffic for the IZA twin-vans throughout their existence has been the conveyance of mineral water from France. Previously delivered to distribution terminals in London at Barking and then Neasden, the train has run to Daventry for many years from Dollands Moor using both electric and diesel traction from EWS and now DB. On June 30, 2006, 92012 Thomas Hardy glides through Kensington Olympia with the 6O67 Daventry-Dollands Moor empties. The lengthy train can often contain all four batches of IZA as well as both standard IWA Cargowaggons and the 'hold-all' variety. In this view, the first nine wagons encompass four different types of van. Tim Easter

LEFT: The two-axle IWA Cargowaggon vans enjoyed a long association with the movement of automotive components, both internationally and domestically, and particularly with Ford. With DB struggling to resource the Ford contract, Colas Rail took over the workings between Dagenham and Bridgend from January 2018, the next 18 months seeing the use of orange and yellow Class 56s, 67s and 70s, not to mention Class 37s! However, June 2019 saw Ford announce the closure of the Bridgend plant, bringing the trains to an almost immediate end. On one of the final workings, 56087 powers the ten filthy IVAs past Rodbourne on May 31, forming the 6Z30 15.35 Dagenham Dock-Bridgend. Mark Few

Cargowaggon models

Despite their vast range of uses, the various Cargowaggon vans have largely been ignored in model form over the years. Thankfully, this has now changed thanks to Revolution Trains. Simon Bendall details what is available.

For many years, modellers looking to recreate Cargowaggon van operations in OO gauge had to be content with using HO scale models from continental manufacturers and hoping that the scale difference was not too noticeable, while the same was also true in N gauge.

Fortunately, the usefulness of the wagons was finally recognised in 2007 with Heljan producing the standard IWA sliding wall van in 4mm scale, liveries across a couple of production runs including the regular Cargowaggon colours as well as Blue Circle Cement yellow and blue, among others. After a long period when the tooling went unused and demand grew, further Cargowaggons were released last year. Some of this new batch were produced in conjunction with Bachmann and therefore arrived in EFE Rail



In the unmistakable Blue Circle Cement colours, Dapol produces the IWA in N gauge.



In the attractive Taunton Cider livery, this 4mm IWA was released in 2020 under Bachmann's EFE Rail brand.



The model that started Revolution Trains on the path to Cargowaggon dominance, the N gauge IZA twin-set.



The Heljan Cargowaggon dwarfs not only most other wagon types in OO gauge but locomotives as well. In the 'Great Britain-Continent' livery, an IWA awaits unloading on Longcarse West as 26028 deposits an OBA loaded with two compressors, the latter being exclusive to Kernow Model Rail Centre. Simon Bendall

branded boxes while others were part of the normal Heljan range.

For N gauge modellers, Dapol produced a fine model of the same wagon in 2008 and has progressively worked through the various liveries as new batches appear from time to time. Heljan returned to the subject in 2014 with the unveiling of an O gauge version, although it was perhaps not quite as popular as hoped due to its considerable size! An etched brass kit also exists in 7mm scale from PH Designs.

Other types

With the most common Cargowaggon van produced, it was not until the summer of 2017 that there was news regarding the other significant types with newcomers Revolution Trains unveiling the IZA twin-vans in N gauge. Released just over a year later, its pre-order success prompted a tie-up with Kernow Model Rail Centre to scale up the wagon to OO gauge as an exclusive release. Although the development took longer than expected, the 4mm IZAs appeared in February 2021, the releases covering the Cargowaggon livery in both its 'as delivered' form and recent condition, there being a variety of lettering differences between the two.

In a further piece of good news, Revolution Trains then turned its attention to the IWA 'hold-all' bogie vans, this being the type with the sliding hoods. With the OO gauge version announced first this time around, livery samples of the Cargowaggon and



Released early in 2021, this is the OO gauge IZA produced exclusively for Kernow by Revolution Trains.



A key release later this year will be the IWA 'hold-all' vans, the Norsk Hydro version offering all sorts of possibilities for modelling fertiliser traffic in the sectorisation era.



Similarly, the Cargowaggon-liveried 'hold-all' will look good in not just Speedlink workings but also steel trains as well.

Norsk Hydro schemes are illustrated here with the models due for releases later in 2021. Not far behind in the development process are the N gauge versions, which will be equally welcomed by modellers for all the opportunities they open up in terms of commodities and formations.

With three of the key types now covered in two scales, this represents a remarkable turnaround on the situation that existed just 15 years ago. While the IWA two-axle vans along with the original three-door bogie vans would be nice to have, the latter especially for recreating bagged china clay workings, it is perhaps best not to be too greedy for now!

LEFT: The O gauge Heljan IWA is a sizeable model and may find a new audience now that the manufacturer is producing more recent locomotive liveries.



RAILS OF SHEFFIELD

railsofsheffield.com



WE VALUE YOUR



PRE-OWNED & SECOND HAND

ALL BRANDS

FOR CASH

MODEL COLLECTION **VERY HIGHLY!!**

WANTED

CASH OR EXCHANGE

WE WANT **ANYTHING** MODEL RAILWAY RELATED, ANY AGE, ANY GAUGE, FROM A SINGLE ITEM TO A LIFETIME COLLECTION.
DECEASED ESTATES - EX SHOP STOCK A SPECIALITY. FAST SERVICE WITH COMPLETE DISCRETION ASSURED. **ANY DISTANCE.**
PLEASE TELEPHONE, OR EMAIL YOUR LISTS TO SECONDHAND@RAILSOFSHEFFIELD.COM

BUY · SELL · EXCHANGE · ANY GAUGE · ANY AGE

LOCOS - WAGONS - DIE-CAST - LORRIES - BUSES - PLANES - SOLDIERS
TRACK-WORK - CONTROLLERS - ACCESSORIES - RAILWAYANA - AND MORE

CONTACT US

get in touch by email,
phone or post with
your list of items

**STEP
01****STEP
02**

WE MAKE AN OFFER

our friendly, experienced staff
review your list and make an
honest valuation and offer

BRING, SEND OR COLLECT

either visit the shop, send us your
items, or for larger collections we will
arrange collection for you

**STEP
03****STEP
04**

PAYMENT MADE!

we confirm the offer and make
a fast, secure payment via your
choice of payment method

Telephone our Second Hand team on: (0114) 255 1436 or email: secondhand@railsofsheffield.com - Ref: MBRWF21

21-29 Chesterfield Road Sheffield South Yorkshire S8 0RL UK Tel: (0114) 255 1436 Fax: (0114) 255 5982

✉ info@railsofsheffield.com

▶ [railsofsheffield](https://www.railsofsheffield.com)

f [railsofsheffield](https://www.facebook.com/railsofsheffield)

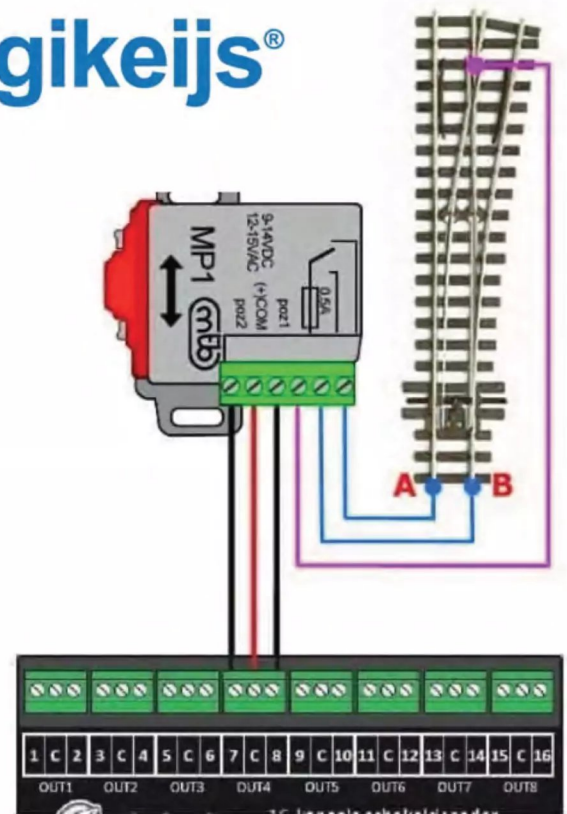
🐦 [railssheffield](https://twitter.com/railssheffield)

📷 [railsofsheffield](https://www.instagram.com/railsofsheffield)

Corporate Partners of

**RAILWAY
MUSEUM**

digikeijs®



The image shows a grey MP5 module with a yellow terminal block on the left and a black 16-pin connector on the right. The MP5 module has a label with 'MP5' and a logo. The 16-pin connector has a label with '16-pin' and a logo.

