

PRIVATE-OWNER WAGONS

in Colour

For the Modeller and Historian



David Ratcliffe

1

fg 50
m

PRIVATE-OWNER WAGONS

in Colour

For the Modeller and Historian



David Ratcliffe

Ian Allan
PUBLISHING

First published 2009

ISBN 978 0 7110 3365 8

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without permission from the Publisher in writing.

© David Ratcliffe 2009

Published by Ian Allan Publishing

an imprint of Ian Allan Publishing Ltd,
Hersham, Surrey, KT12 4RG
Printed in England by Ian Allan Printing Ltd,
Hersham, Surrey, KT12 4RG

Code: 0904/B2

Visit the Ian Allan Publishing website at
www.ianallanpublishing.com

Previous page: Following its purchase of ICI's quarrying interests Buxton Lime Industries obtained a Section 8 grant towards a fleet of twenty 67.5-tonne-capacity air-braked hoppers. Although to a Powell Duffryn design they were built abroad by Tatrasroj Poprad of Slovakia, a trend that would continue in future years. BLI 19200-19 took over the Tunstead-Hindlow traffic in 1995. They have also been used to carry limestone to the flue-gas desulphurisation plant at Ratcliffe-on-Soar Power Station and to a Tarmac stone terminal at Pendleton, in west Manchester. The Hindlow trains must reverse at Buxton and BLI 19212, coded JGA, was seen in the overgrown Up Reversing Sidings on 25 July 1998.

CONTENTS

Introduction	3
1. Aggregate hoppers	7
2. The 'Beasties'	12
3. Bogie iron-ore and limestone hoppers	14
4. Ilmenite and iron-ore tipplers	16
5. China clay and chalk	20
6. Lime and dolime	26
7. A variety of vans	29
8. Military manoeuvres	32
9. Cement	38
10. Sodium tripolyphosphate and starch	42
11. Soda ash	46
12. Bread and butter	47
13. Containerised coal	48
14. Scrap metal	50
15. Radioactive waste	56
16. Car-carriers	57
17. Weedkillers and water cannons	60
18. Chemicals from Immingham	63
19. Industrial acids	66
20. Cyclohexane tanks	72
21. Associated Octel	73
22. Van den Bergh & Jurgens	76
23. Jake RTCS	77
24. Traction gas oil and lubricating oil	80
25. Aviation fuel	83
26. Fuel oil, motor spirit and DERV	84
27. Bitumen and petroleum coke	88
28. Shell Chemicals	90
29. Carbon-dioxide tanks	92
30. LPG tanks	94



Left: The 35-ton 15ft-wheelbase vacuum-braked tanks played an important part in the story of the private-owner wagon and numerous examples were built not only by Charles Roberts but also Metro-Cammell and Powell Duffryn. When larger tanks were introduced Esso sold some of its Class B 35-tonners to the Central Electricity Generating Board. Renumbered as CEGB 48500-49 they were then used to carry fuel oil from Lindsey refinery to the power stations at Drakelow, Meaford and Willington. However, by February 1988 many were to be found in store at Castle Donington including CEGB 48548, a Powell Duffryn-built example, previously ESSO 43931.

INTRODUCTION

In this book I have considered some of the non-ferry registered privately owned (PO) wagons that came to play such an important role on Britain's rail network in the last quarter of the 20th century, with particular reference to the various commodities they carried and the traffic flows that they operated.

The heyday of the private-owner wagon had appeared to be over when, at the beginning of World War 2, the control of all wagons capable of general use passed to the Ministry of War Transport in an attempt to improve utilisation and eliminate the unnecessary movement of empty vehicles. The majority of those taken over were the traditional five- and seven-plank opens used to carry coal and coke, and as hostilities dragged on their colourful liveries gradually weathered and faded. Those that survived the rigours of wartime conditions passed into British Railways ownership at Nationalisation in 1948 to eke out their few remaining years anonymously in common use, renumbered in the 'Pxxxxxx' series.

The PO wagons to escape wartime pooling and subsequent nationalisation included types such as tippers, which required special unloading facilities, and tanks, built to handle specific commodities, such as oil or acids. However, during the war years there had been few opportunities to repair existing stock, let alone purchase replacements, and so most remaining fleets were composed of elderly vehicles, many built before the 1923 Grouping, and which were rapidly approaching the end of their useful lives. Furthermore, in the early 1950s, as the railway system slowly recovered and BR began developing new and innovative wagon types, the private ownership of all but tank wagons was discouraged.

Fortunately in 1957 came the first of a number of changes which were to lead to the private owners' renaissance when a new, 35-ton-glw (gross laden weight) tank wagon design was developed as a result of collaboration between Esso Petroleum, British Railways and the long-established wagon builder Charles Roberts. Three prototype wagons were built: Class A and Class B tanks, both for Esso, and a creosote tank for BR, all incorporating many of the developments which BR had begun adopting as standard for its own fleet under the 1955 Modernisation Plan. The tanks not only had an increased capacity over earlier types but, more importantly, were fitted with roller-bearing axleboxes and automatic vacuum



brakes, which, combined with their 15ft wheelbase, enabled high-speed operation in block-train formations. The design was an immediate success and quickly went into production not just for Esso but also for several other petroleum and chemical companies.

In 1962 the axle-load limit was raised, first to 20 tons allowing a glw of 40 tons, and, shortly thereafter, to 22½ tons with concomitant minor increases to the loading-gauge. However, the size of tank needed to accommodate such loadings made it necessary to adopt a new 'monobloc' design whereby the chassis cross-members dropped below solebar height, and in place of the anchor or saddle mountings, as used on earlier vehicles, the barrel was secured to the underframe by means of wing plates riveted to the top of the solebar.

This continuous mounting gave extra rigidity and reduced barrel stresses while riveting allowed the tank to be removed from the chassis if necessary. The first monobloc tanks had 10-plate bearing springs, but in 1963 BR decided to introduce the *Union Internationale des Chemins de Fer* (UIC) double-link suspension. At the time this suspension was considered the only one capable of 60mph running at a 22½-ton axle load and accordingly, the growing numbers of 45-ton monobloc tank wagons were so fitted, albeit with 13-plate bearing springs to handle the higher load.

For many years the potential superiority of bogie wagons had been recognised for high-speed operation but it was not until BR raised its permitted axle loading again to 25 tons per axle in 1966 that the higher cost, when compared with a two-axle vehicle, could be justified. Consequently it became possible to design a bogie Class A tank capable of carrying 20,500gal compared with the 17,280gal capacity of two 45-ton

Above: Aggregate companies were amongst the most successful in obtaining grant aid towards new freight facilities and equipment, and also introduced many colourful and attractive liveries to the freight scene. One of the author's favourites was that adopted by Bardon Hill Quarries Ltd as seen in this view of BHQ 17110 taken at Bardon Hill on 17 September 1993. This was one of 21 90-tonne-glw bogie hoppers, BHQ 17101-21, TOPS code PHA, purchased from W. H. Davis in 1986 to replace the ageing fleet of BR 27-ton MSV wagons on the thrice-weekly working to Thorney Mill (West Drayton).

Class A four-wheelers, and it was not long before the oil companies were investing heavily in these new, 100-ton wagons.

The improved economics of rail transport made possible by larger wagons and faster transits were further enhanced by the negotiation of long-term contracts with BR. In return for a highly competitive rate the oil companies agreed to place a minimum level of traffic on rail each year, but this proved to be no burden as demand for petroleum products soared by well over 100% in less than a decade. With hindsight one might question the value of such deals to BR, for while the tonnage of petroleum products carried by rail rose from 4.8 million in 1961 to over 15 million in 1968, revenue per ton was halved. However, when placed within a wider context the development of a nationwide network of about 300 rail-fed oil terminals, supported by more than 400 block trains running every week, changed the perception of railfreight and helped encourage other companies, particularly in the construction industry, to invest in their own wagons.

By the early 1970s British Rail policy had come full circle and from then on it would



Left: While the TOPS system proved to be a godsend to both private wagon owners and BR in improving the operation of the freight network, there were the odd anomalies. When they were first rolled out the decision to differentiate 51-tonne-glw tank wagons had not been made and as a result several fleets were lettered 'TT' before the 'TU' coding was decided upon. Over time as the wagons went through works this was changed but some carried the 'TT' coding all their lives and 51-tonners TRL 70726 and TRL 70717 were recorded at Immingham Reception Sidings in March 1991 still coded TTA. Built by Standard Wagon in 1977 to carry caustic soda from the ICI works at Runcorn they were, by this date, in Atochem caustic soda traffic from Immingham Dock Tank Farm.

only provide wagons for general-merchandise traffic and for the other nationalised industries and government departments. Other customers would now be expected to provide their own vehicles, not only for new traffics, but also to replace life-expired railway-owned wagons used to carry existing flows. Naturally this about turn was not welcomed by everyone and some freight was lost to road, although in many instances these were short-distance workings for which an investment in new rolling stock could not be justified.

A further boost to the PO wagon came with the Transport Act 1974, which provided for direct Government support in the form of Section 8 Grant aid where the use of rail would result in significant benefit to the environment. A maximum grant of 60% of the approved capital cost of new freight facilities and wagons was available and successful applicants could claim Corporation Tax relief on their share of the costs. Grants ranging from as little as £9,000 to over £2 million were awarded, and in the 10 years following its introduction it was estimated that the scheme was responsible for an additional 35 million tonnes of rail-borne freight.

Although many companies purchased their own wagons another option was to lease vehicles from one of the major hire companies such as Algeco (the Belgian subsidiary of German firm VTG), BRTE (British Railway Traffic & Electric, subsequently part of Procor), E. G. Steele & Co Ltd, Railease (a subsidiary of the Standard Wagon Co), STS (Storage & Transport Systems) or Tank Rentals Ltd (a Charles Roberts subsidiary, later spun-off as Tiger Railcar Leasing). Apart from the smaller initial financial outlay involved in

leasing, another advantage was that the hire companies made all the arrangements for the maintenance of their wagons. Indeed, following various takeovers and mergers Procor acquired Charles Roberts, while STS owned Marcroft Engineering, a wagon-repair company with shops at Coalville, Radstock and Burry Port. Furthermore, when the terms of a lease extended beyond that of the vehicle's full 15-year depreciation the rental was reduced to a peppercorn figure, sometimes as low as £1 per wagon per annum.

The interests of the private-wagon industry were represented by the Private Wagon Federation, an umbrella organisation of six autonomous bodies — the Association of Private Railway Wagon Operators, the Association of British Railway Carriage & Wagon Manufacturers, the Wagon Repairing Association, the Wagon Hirers' Association, the Oil Industry Association and the Chemical Industry Association. Members of the Association of British Railway Carriage & Wagon Manufacturers, which included all the established builders, were required to design and manufacture vehicles in compliance with regulations issued by British Rail, while members of the Wagon Repairing Association undertook to carry out maintenance, repair and modification along similar lines. The most important companies involved in the maintenance of private-owner wagons were C. C. Crump & Co at Connah's Quay, Railcar Services Ltd, which had its major works at Horbury, Stoke and Swansea, the aforementioned Marcroft Engineering, Powell Duffryn at Cardiff, and E. G. Steele & Co at Hamilton. The Central Wagon Co at Wigan and South Staffs Wagon at Tipton also undertook a limited amount of repair work, as did W. H. Davis at Shirebrook.

By 1984 there were approximately 15,000 PO wagons in use — roughly 20% of the total freight stock. However, in terms of tonnes per mile they accounted for around 40%. When coal and coke were excluded from the reckoning then two-thirds of all tonne-mileage was in private-owner wagons, and by the end of the decade PO stock accounted for more than 50% of all freight tonnage.

Changes in operating methods also made wagon ownership a more attractive proposition. The introduction of fully fitted block workings resulted in considerably improved utilisation and from the early 1970s company trains for the aggregate and chemical industries had begun appearing in the Working Timetables alongside the established petroleum services. Smaller wagonload flows were not overlooked, for in 1972 the British Railways Board had introduced its 'Air-braked Network' of high-speed, exclusively air-braked, overnight trunk services, which was to be expanded and rebranded as 'Speedlink' in 1977.

In contrast to the old-fashioned wagonload freight system, which had suffered from problems of low speed, frequent remarshalling and unreliable service, the Speedlink network was based on a number of carefully monitored trains linking no more than a dozen or so main yards where they exchanged traffic. There was no marshalling in the traditional sense *en route*, trains stopping only to exchange pre-formed sections, so that a wagon would only be shunted twice, once in its originating area and again at its destination. Such was the success of Speedlink that many customers, including household names like Campbell's Soups, now considered Railfreight as an attractive

proposition for small-volume flows. Indeed, some operators found it worthwhile to place a single vehicle on rail.

Another development of considerable benefit to the wagon operator was the adoption by BR of a real-time computer system to regulate its entire operations. Developed from a system pioneered by the Southern Pacific Railroad in the USA, it was gradually introduced in Britain from 1971, spreading to include the entire network by 1975. Known by its acronym TOPS, the Total Operations Processing System recorded each event affecting a vehicle as it happened, allowing for the constant monitoring of an individual wagon's movements and availability.

In order to provide information in a straightforward and uniform manner compatible with the needs of a computerised system of control every freight location was allocated a five-digit numerical identity, while a new set of wagon codes was devised to replace the antiquated telegraphic codes formerly in use. The new TOPS codes were based on a four-letter code in which each letter conveyed information, and which, when taken together, provided a detailed description of the vehicle. The first letter defined the broad wagon type to which the individual vehicle belonged while the second letter defined more exactly the wagon type in question (see Table 1). The third letter indicated the brake type of the wagon, referring to the fitting of through pipes where appropriate, as well as to the provision of full automatic brakes (see Table 2). The fourth letter referred to sub-divisions within each type.

To assist rail staff the first three letters of the TOPS code were included on a wagon's information panel, normally to be found painted on the side of the vehicle. The panel would also carry details as to the tare weight of the wagon, expressed in kilograms, and its capacity as measured in metric tonnes. The bottom line of the panel carried the wagon's unique TOPS number. This consisted of a four- or five-digit number (i.e. a figure between 1000 and 99999), prefixed by an abbreviated form of the owner's name, consisting of up to four letters.

Before the introduction of TOPS each wagon owner had allocated their own numbering policy with the result that some numbers, particularly those below 100, were repeated over and over again. Therefore, all existing wagons had to be renumbered to comply with the new system, which in part accounted for the time taken over its introduction, while all new stock built after 1975 was allocated a previously unused number. A wagon's TOPS number was also

carried on small plastic plates fixed to the solebar.

The opportunity was taken to group together different wagon types within certain number ranges, with most open wagons given numbers below 10,000 while tank wagons of less than 45 tons found themselves numbered between 40xxx and 48xxx and bogie tanks occupied the 7xxx and 8xxx ranges. However, over time as certain number blocks became full this was not always possible to sustain. To ensure the integrity of the system each number was unique and until the late 1990s there were no cases of a number being reused, let alone duplicated. Initially, the only alteration to a wagon number would occur in the case of major rebuilding, when a fresh four- or five-digit number would be allocated, or in the case of a change of ownership which would normally be reflected simply by a change of prefix. A number of wagons acquired by both Shell and British Petroleum also saw a change to their TOPS numbers so as to conform to the number coding used by those companies.

Initially, non-ferry PO wagons were coded in the 'P' and 'T' groups, but as new types were introduced it became increasingly difficult to reflect the various differences. This was particularly true with regard to British-registered international ferry wagons, all of which had been lumped under the 'PI' coding. However, by 1991 the withdrawal of BR's vacuum-braked steel carriers had freed up the 'J' and 'K' groups and so a wholesale recoding exercise was undertaken. Since rail privatisation the distinction between formerly railway-owned and PO stock has become somewhat blurred. For example, one batch of bogie tanks introduced by EWS and given six-digit numbers (traditionally allocated to railway-owned stock) were classified 'TEA' (a private-owner coding), while the renumbering of PO stock after a change of ownership has become more commonplace.

Of course, the introduction of TOPS not only made life easier for wagon owners; it was also a great boon to the lucky enthusiast, with access to the system and tracking down the whereabouts of specific fleets became relatively straightforward. Furthermore, TOPS could also provide details of a wagon's lading, originating point and destination and so over time the diligent researcher could build up a comprehensive picture of freight flows throughout the country.

My own serious interest in rail freight began in the spring of 1982 while waiting on Edge Hill station with my fiancée for a delayed multiple-unit to Manchester. As the

time passed we watched as a Class 40 shunted back and forth with a long line of mixed stock including several oddly shaped wagons lettered 'PRESTWIN' and 'TRIPOLY' that had clearly seen better days. Although I had been a rail fan in the broadest sense for as long as I could remember, having grown up with a view of the old LNWR Eccles Junction-Springs Branch line from my bedroom window, and within earshot of Patricroft shed, I was no wagon expert, so when Ruth innocently asked me to explain these markings I was stumped.

The following week, with help from the Head of Chemistry at the college where Ruth and I both taught, I discovered that sodium tripolyphosphate was a constituent of washing powder. Then, later that month, on a visit to the Sherratt & Hughes bookshop in St Anne's Square, Manchester, I chanced upon David Larkin's Bradford Barton volumes *BR Standard Wagons* and *Private Owner Freight Wagons*. Not only did David explain what a Prestwin was, but his books also opened my eyes to the immense variety of rolling stock and to the diverse commodities they carried.

I was hooked, and later that year, when Ruth and I were on holiday in Scotland, I purchased my first decent camera and began to record the freight scene, the beginnings of a collection that at the last count numbered well over 20,000 prints and slides. It was a good time to begin, coinciding as it did not only with the arrival of increasing numbers of private-owner wagons, but also reasonably affordable colour film.

Producing this book — hopefully the first in a short series covering different aspects of the wagon fleet — would not have been possible without the considerable help afforded me by numerous organisations and individuals. In particular, I should like to thank fellow Railfreight Archive members Trevor Mann, David Monk-Steel, Mark Saunders and Hywel Thomas, for permission to include photos from their own extensive collections, and also to acknowledge the contribution of the late Colin Wright, whose enthusiasm kept me going at the end of many a long day's 'wagoning'. I should also like to thank all those railway staff that I have met, the length and breadth of the country, for their kindness in granting me access to their yards and goods depots. Sadly, a road accident many years ago means that Ruth is no longer with me to share in the fruits of my labours, and it is to her memory that this book is dedicated.

David Ratcliffe
Swinton
January 2009

Table 1: Private-owner wagons (TOPS code groups 'J', 'K', 'P' and 'T')

Code	Description	Pre-1991 code
JA	Bogie Covhop	PB
JB	Bogie Covhop	PB
JC	Bogie Presflo	PD
JD	Bogie Bolster D	PX
JE	Bogie hopper	PH
JF	Bogie hopper, aluminium/prototype	PH
JG	Bogie aggregate hopper	PH
JH	Bogie limestone hopper	PH
JI	Bogie Covhop, <i>RIV</i>	PI
JJ	Bogie steel	PX
JK	Bogie Lowliner	PF
JL	Bogie two-tier car carrier	PL
JO	Bogie open with cargo winches	PN
JP	Bogie open, pallet	PN
JQ	Bogie side tippler	PT
JR	Bogie open, general/aggregate	PI/PX
JS	Bogie coil	PX
JT	Bogie ironstone tippler outer	PT
JT	Bogie in-line tippler	PT
JU	Bogie ironstone tippler inner	PT
JV	Bogie Carflat	PF
JW	Bogie Palvan	PW
JX	Bogie open, steel scrap	PX
JY	Bogie open	PH
KA	Two-axle special flat	PF
KB	Match/barrier	PX
KC	Escort/weedkilling train coach	PP
KD	Two-axle flask/Trailer-Train	PX
KE	Bogie container flat	PF
KF	Bogie flat/Warflat	PF
KG	Two-axle container flat, <i>RIV</i>	PI
KH	Two-axle Presflo, <i>RIV</i>	PI
KI	Bogie steel coil, <i>RIV</i>	PI
KJ	Self-discharge train transfer vehicle	PX
KK	Two-axle Covhop, <i>RIV</i>	PI
KL	Two-axle open high side, <i>RIV</i>	PI
KM	Match/barrier/hot core	PX
KN	Dummy flask	PX
KP	Two-axle hopper, <i>RIV</i>	PI
KR	Ramp	PX
KT	Mobile tank training vehicle	PX
KV	Large van, <i>RIV</i>	PI
KW	Warwell/Weltrol	PF/PX
KX	Bogie flask/Flatrol	PX
KY	Bogie flask, <i>RIV</i>	PI
PA	Two-axle Covhop, china clay/dolime/sand	PA
PB	Two-axle Covhop, grain/lime	PA
PC	Two-axle Presflo	PC
PD	Two-axle Cemflo	PC
PE	Two-axle Tip-Air	PE
PF	Two-axle container flat	PF
PG	Two-axle hopper	PG

Code	Description	Pre-1991 code
PH	Self-discharge train hopper	PG
PJ	Cartic	PJ
PK	Three-axle Comtic	PK
PM	Two-axle mineral, no doors	PM
PN	Two-axle open, aggregate/blocks/coal	PO
PO	Two-axle open, steel scrap	PO
PQ	Three-axle Autic	PQ
PR	Two-axle china clay, curtain roof	PR
PS	Two-axle ironstone tippler	PS
PT	Two-axle Palvan	PV
PU	Two-axle van/Palvan	PV
PV	Two-axle Palvan, curtain sides	PV
PX	Two-axle coil/single bolster/tube	PX
TA	Bogie tank, 40-69 tonnes glw	TA
TB	Bogie tank, 70-79 tonnes glw	TB
TC	Bogie tank, 80-89 tonnes glw	TC
TD	Bogie tank, 90-99 tonnes glw	TD
TE	Bogie tank, over 100 tonnes glw	TE
TI	Tank, <i>RIV</i>	TI
TM	Three-axle tank, 25 tonnes glw	TM
TR	Two-axle tank, 20-29 tonnes glw	TR
TS	Two-axle tank, 30-39 tonnes glw	TS
TT	Two-axle tank, 40-49 tonnes glw	TT
TU	Two-axle tank, over 50 tonnes glw	TU

Notes:

- a) In 1998 the PD and PM codes were reallocated to two-axle van, MoD, and two-axle Palvan, MoD, respectively.
b) *RIV* refers to the *Reglamento Internazionale Vagoni* and covers ferry wagons.

Table 2: TOPS brake type codes

(used as a suffix to the two-letter codes listed in Table 1)

A	Air-braked
B	Air-braked with through vacuum pipe
F	Vacuum-braked with Accelerate Freight Inshot (AFI)
G	Vacuum-braked with AFI and through air pipe
H	Dual air and vacuum-braked with vacuum AFI
O	Unfitted (no automatic brake)
P	Unfitted with through vacuum pipe
Q	Unfitted with through air pipe
R	Unfitted with through air and vacuum pipes
V	Vacuum-braked
W	Vacuum-braked with through air pipe
X	Dual air and vacuum-braked



3. BOGIE IRON-ORE AND LIMESTONE HOPPERS

Left: In 1953 John Summers & Sons expanded its premises at Shotton in North Wales into a fully integrated steelworks, and instead of using pig iron from its Shelton Works at Etruria it began receiving imported iron ore from Bidston Dock, Birkenhead. That year Charles Roberts completed a batch of 75 46-ton-capacity bogie hopper wagons, and as output increased an additional 48 were constructed in 1958; initially numbered 60-182, on TOPS they became BSSH 13060-182. All were unfitted, so the block trains, whether loaded or empty, were restricted to 35mph between Bidston and Shotton. Furthermore, the severe gradients on the 12½-mile route from the docks to the steelworks limited loaded trains to 11 PHOs plus a brake van and, following the final steam working in November 1967, the workings were entrusted to pairs of BR Type 2 (Class 24) diesel locomotives from Birkenhead Mollington Street. On the odd occasion a Type 4 would substitute, as on a very wet April Fools' Day in 1979, when a Class 47 was photographed rounding the curve at Bidston West Junction with a short formation loaded with Brazilian ore.



Left: Steel production at Shotton ceased in 1980 and the hoppers were then used to move the remaining stockpile of iron ore to Llanwern Steelworks before 103 were sold to ICI. Most were salvaged for spare parts, in particular their plate-back bogies, which ICI wanted, to replace the diamond-frame bogies fitted to many of its similar limestone hoppers. However, 13 of the Shotton wagons were vacuum-braked and after renumbering as ICIM 19152-64 were allocated to the Roadstone pool working from ICI's Tunstead Quarry, near Peak Forest, to the Quick Mix stone terminals at Dean Lane, Manchester, and the Tilcon terminals at Miles Platting and Stockport. In 1987 ICI ceased quarrying at its Hindlow site, south of Buxton, but retained two kilns producing agricultural and industrial lime. To enable production to continue two trains of limestone a day began running from Tunstead and as the demand for roadstone had declined the former Shotton hoppers were transferred to this movement. ICIM 19162 (formerly BSSH 13065) is seen with a load for Hindlow at Great Rocks in March 1991.

Right: ICI's own fleet of 44-ton-capacity bogie hoppers, built in seven batches by Charles Roberts between 1936 and 1953, carried limestone 365 days a year from Tunstead to Northwich for the soda-ash plants set up by Brunner Mond at Lostock and Winnington. Numbered ICIM 19000-151 on TOPS, they were almost six inches taller than the Shotton hoppers and were vacuum-braked from new, although end ladders were fitted only to those in Roadstone traffic and at one end only. In 1992 all the ICI Mond hoppers were re-prefixed 'BLI' to reflect their new ownership by Buxton Lime Industries. In 1998 they were replaced by air-braked stock, but a number were retained at Northwich for the internal movement of coke and limestone, among them BLI 19106 JGV, still going strong at 50 years old, as seen at Oakleigh Sidings, Northwich, on 12 April 1998.





6. LIME AND DOLIME

Left: Lime is used as a flux in steel making, and in 1972 British Steel leased sixty-nine 46-tonne-glw covered hoppers from BRTE to supply its steelworks in the North East. Initially BRTE 8050-8118 were loaded at Tilcon's Rylstone Quarry, to form a daily block train of 26 PAAs running to either Consett or Lackenby as required, but after the closure of Consett they began working from Hardendale to Lackenby. Built by Standard Wagon at Heywood, the BRTE Covhops carried 33 tonnes of lime, and BRT 8115 was spotted in typically work-stained condition at Hardendale in May 1992.

Below: Hardendale Quarry was also the originating point for lime traffic to Ravenscraig, for which a batch of fifty 37-tonne capacity, 51-tonne-glw Covhops was built at BREL's Ashford Works in 1974. Owned by British Steel Glasgow, BSG 8050-99 were considerably longer than the BRTE wagons, having a 20ft 3in wheelbase compared with 16ft. In place of three hinged roof-hatches they were fitted with a one-piece roof cover which allowed for quicker loading and at the same time reduced the risk of water contamination. When they were ordered it had been planned that these wagons would also supply the Clydebridge steelworks at Rutherglen, but

this was subsequently selected for closure. In 1993 these PAAs, commonly known as the 'White Ladies' after their dusty appearance, replaced the BRTE Covhops in the Lackenby circuit and in 2004 they were purchased by EWS.

BSGL 8199 stands at Hardendale in May 1993 while in the background only two of the four gas-fired kilns appear to be in action. In the 1980s, two trains of butane arrived each week from Stanlow oil refinery to power the kilns but by the date of this visit only outgoing lime and limestone were still on rail.



Right: Until 1983 the steelworks at Scunthorpe had received lime from Steetley Quarry, at Hindlow, but when that flow ceased the fifty 46-tonne-glw Covhops built for the traffic at Heywood in 1970, PR 8000-49, were transferred to other workings. Twenty-five of the PABs were modified with new top hatches and leased by British Aluminium to transport imported alumina from Invergordon, and from 1984 Blyth, to the smelter at Fort William, while of the remainder 15 went to Steetley's Thrislington Quarry at Ferryhill, the rest staying at Hindlow. An early morning visit to Ashbury's finds one of the shunters struggling with the brake lever on PR 8008 during a spot of loose shunting at the West Sidings on 10 July 1985. PR 8008 was one of three empty PABs *en route* to Hindlow to collect another load of glassworks limestone for the P. D. Stirling distribution depot at Mossend.



Left: PR 8008 was subsequently transferred to Thrislington and in May 1991 the author encountered it again awaiting repair outside the Steetley Magnesia Works at Hartlepool Cemetery Point. Here lime and dolime (calcined dolomite, a magnesium-rich form of calcium carbonate), brought by rail from Thrislington, were used in the extraction of magnesium from seawater. The factory had been built in 1937 with governmental assistance as the country prepared for war.

Right: Since the 1950s both minerals had been carried in BR 20-ton Covhops, but in 1981, Steetley was awarded a Section 8 grant to purchase new wagons. Thirty distinctive 51-tonne-glw covered hoppers, fitted with air-operated top covers, were built by Standard Wagon for the dolime traffic and numbered STET 18700-29. These PAAs were also long vehicles at 25ft 7in over headstocks with a 19ft wheelbase and carried 36 tonnes. The large side panels were fitted to facilitate shunting by Hymid Wagon Controllers at Thrislington. The type rarely strayed from the North East as all routine maintenance was handled at Thornaby and this view of STET 18703 was taken at Tees Yard in February 1992, shortly after a visit to the adjacent wagon shop.

