

1 Introduction

1.1 These notes are not, and were not intended to be, a comprehensive history of the Austerity locomotives: its purpose is as a guide to modellers building the Brassmasters' 4mm/ft scale kit. As such it is concerned only with those aspects which affect the construction and use of the model, i.e., variations in external appearance, liveries, names and numbers, and locations and periods of operation.

2 Origins and Early Production

2.1 The origin of the Austerity goes back to 1923 when the Hunslet Engine Company of Leeds introduced a "standard" 0-6-0ST having 3ft 9in driving wheels and 16in x 22in cylinders, examples of which were built into the 1950s. From this design a larger type was developed in 1937: the 48150 class with 4ft 0½in wheels and 18in x 26in cylinders. A further development resulted in the 50550 class of 1941 which introduced the distinctive full-length saddle tank.

The 50550 was designed specifically at the request of Stewarts & Lloyds Minerals Ltd for use between a planned new ironstone quarry at Islip and the company's Corby steel works. However, the project was abandoned and of the eight locomotives built only one became the property of S&L. Three were taken over by the War Department. At that time the Ministry of Supply was looking for a robust heavy shunting locomotive which could be produced quickly and in quantity for war service, for which the LMS "Jinty" was a candidate. However, the MOS accepted Hunslet's proposed design, based on the 50550 but with 4ft 3in wheels and other minor differences.

2.2 The first Austerity was steamed at Hunslet's Leeds works on 1st January 1943 and further examples followed quickly. Such was the demand that other companies built them too - W G Bagnall, Andrew Barclay, Hudswell-Clarke, Robert Stephenson & Hawthorns, and Vulcan Foundry. By the end of 1945 some 370 had been built, all but one for the MOS / War Department, and many were shipped overseas. The end of hostilities found the War Department with surplus locomotives but no work for them, and many were "demobbed".

2.3 Twenty seven were loaned to and later purchased by the Dutch State Railway (Nederlandsche Spoorwegen). Eleven went to the Dutch State Mines (Nederlandsche Staatsmijnen) of which two were returned to the WD. Others were acquired by various light railways, principally in France, and six ventured as far as North Africa to the Chemin De Fer Tunisiens.

2.4 British purchasers were found too, including the Port of London Authority, the Manchester Ship Canal Company, Guest Keen & Baldwins, and United Steel. Seventy five were bought by the LNER as class J94, but the largest contingent went to the newly-formed National Coal Board and they were soon to be found throughout the NCB system. The War Department, later to become the Ministry of Defence, retained some for use at various installations, the best known being the installations at Longmoor in Hampshire and Bicester in Oxfordshire.

3 Post-War Production

3.1 Despite the influx of surplus ex-WD locomotives into industrial use, production of new Austeries continued after 1945, albeit in lesser quantities. The WD/MOD purchased a further 14 in 1953, 15 went to the steel industry, and 77 to the NCB. They were built by Bagnall, Barclay, Hunslet, RSH and the Yorkshire Engine Co. The last Austerity left Hunslet's works in 1964 and, with the exception of recent replicas, was the last new standard gauge steam locomotive built for use in Great Britain.

3.2 During the period 1961-69 Hunslet rebuilt 14 locomotives and gave them new builder's numbers. A fifteenth engine due for rebuilding was scrapped at Hunslet in 1970 after allocation of its new builder's number.

4 Variations and Modifications

4.1 As may be imagined, with 484 members the class was not uniform in appearance and the variations may be grouped into four principal types: (i) 50550, (ii) Austerity as built, (iii) LNER/BR J94 and (iv) post-construction modifications (excluding LNER/BR J94).

4.2 50550

Although the 50550 preceded the Austerity, it is more convenient in the context of considering variations to regard the type as differing from its successor. The principal visual differences are the deep frames at front and rear, dropped centre sections to the buffer beams, sloping bunker back, and square windows in the rear spectacle plate. Other variations are the shape of the chimney, sanding gear operating rods more visible below the running plate, positioning of the rear lamp irons, overhanging cab roof, absence of injectors under the cab, and 12-spoke 4ft 0½ in wheels. These locomotives had coupling rods with adjustable cotters - a feature not normally found on British industrial locomotives.

4.3 Austerity - Variations when built

Early locomotives had single triangular gussets between the frame and the buffer beam at each corner but it was found that arduous shunting tended to bend the buffer beam and later locomotives had twin gussets fitted: this resulting in additional buffer beam rivets. Some locomotives had flush rivets at the top centre of the buffer beam.

Some of the locomotives supplied to the War Department were equipped with train braking equipment.

The eight 1954-built Yorkshire engines had 12-spoke wheels instead of 14-spoke, oval heavy-duty buffers, and no injectors under the cab.

Following the rebuilding of some earlier locomotives (see 4.5 below) the last three new engines were built with the Hunslet gas-producer system fitted. The external evidence of this was the distinctive chimney cowl.

Most locomotives had two sets of footsteps per side - one under the cab entrance and one adjacent to the front sandbox, stayed to the frame. However, some locomotives were fitted with a set of centre steps which were not stayed. In most cases each set had two steps, but some had three, and a few locomotives had various combinations of two and three step arrangements. A further variation was the provision of full safety sides to the steps. In some cases these variations were applied to the locomotives when built and in others they were post-construction modifications.

4.4 LNER/BRJ94

The 75 locomotives purchased by the LNER had two modifications applied quite quickly - fitting of cab doors and standard lamp irons. In 1947 two received enlarged bunkers, which necessitated fitting of narrow cab rear spectacles, together with rear ladders and footsteps below the ladders. Most of the remaining locomotives received these modifications after nationalisation. An additional footstep and a diagonal handrail either side of the tank were fitted to most of the class, although there were variations in the exact length, angle and positioning of the handrail. Posts were added on the left-hand side of the running plate to retain fire-irons. Some were equipped with an additional footstep midway along the running plate. Locomotives allocated to the Cromford & High Peak line were fitted with LNER group standard buffers with oval heads as a precaution against buffer locking on sharp curves. The hopper bunker caused difficulties in hand-coaling at Middleton Top on the Crompton & High Peak, thus the bunker extension was removed but the narrow spectacles were retained.

4.5 Industrial Locomotives

In industrial use some of the Austerities were equipped with all manner of additional features to suit local conditions. Examples are tank side ladders, mechanical lubricators worked off a crankpin, electric headlights, heavy-duty buffers, additional footsteps and/or handrails, extended bunkers, cab weatherboards, raised cab floors, and even aerials for radio communication.

Locomotives working on the NCB's lines of the former Lambton, Joicey & Hetton Collieries in the North East had rounded cabs to cope with the restricted loading gauge.

Several NCB engines were fitted with the Giesl ejector multiple blast pipe and the associated distinctive chimney. This necessitated removal of a section of the tank ahead of the chimney forming a 'keyhole' shaped aperture. In some cases a vertical plate was fitted to the front of the tank and in others the aperture was left open.

The requirements of the Clean Air Act outlawed the emission of black smoke and Hunslet produced a gas producer system designed to eliminate such emissions. It comprised a screw-feed mechanical stoker below the footplate and a different grate, combined with a larger brick arch and a revised blast pipe. During the period 1960-69 Hunslet repurchased, rebuilt and resold fifteen engines of which ten received the stoker equipment, together with a distinctive chimney cowl and a vacuum relief valve in the smokebox door. Exchanges and renewals of smokebox doors resulted in vacuum relief valves appearing on hand-fired locos and stoker-fired locos losing this feature. One of the 50550 type (HE 2414) was rebuilt in 1963 with a stoker, and at the same time received buffer beams and frames of "Austerity" profile.

A further variation concerned sanding: some had steam gear but others relied on gravity. In the rough and tumble of industrial use other items were removed or fell off and not replaced - lamp irons, guard irons, spectacle bars, etc. Some examples were fitted with hooks for a shunting pole, located under the bunker overhang. The NCB Kent Area increased the coal capacity of at least one of its Austerities by extending the bunker rearwards.

Locomotives owned by the Ministry of Defence were subject to numerous modifications including conversion to oil burning, fitting of air brake equipment, and safety footsteps.

Some of the early locomotives which returned to Hunslet for overhaul were fitted with twin buffer beam gussets.

5 Liveries, Names and Numbers

5.1 The original WD livery was khaki with 2in yellow lettering This was applied to HE 2849-93 and HC 1737-41/44-55. The remainder were painted dark green with 6in lettering. Some retained khaki until demobbed and entered LNER stock in this condition. In post war years the MOD used both plain dark green and royal blue. The green is sometimes described as 'Brunswick Green' but in fact more akin to olive drab than the GWR/BR colour. No.171 The Black Knight was black. The attractive royal blue was usually lined in white or red. Additional touches included red coupling rods, white tyre rims and polished fittings. With typical Army "spit-and-polish" an Austerity so bedecked could look extremely smart.

5.2 WD numbers originally ran from 5000 but the series was changed in 1943 to 75000 onward. This continued to 75199, then 71437 to 71536 and finally 75250 to 75331. After the disposal of surplus locomotives in 1947 the remaining 90 were renumbered 100 to 189, being joined by the 1953 additions 190 to 203. By 1968 eleven locomotives were still in MOD ownership, and of these all but two were renumbered again. 190-194 and 198 became 90-94 and 98, while 200-202 became 95-97.196 and 197 were not renumbered.

5.3 Naming of selected MOD locomotives began in 1947. Initially the names were painted on the tanks, but soon rectangular brass plates were fitted midway along the running plate. In some cases these were surmounted by the crest of the Royal Engineers on a backing plate. *Errol Lonsdale* had nameplates on which the brass surround encompassed both name and crest. Locomotives allocated to the RAOC had the corps crest on the cabsides. *Waggoner* had a plate of unique design and after the 1968 renumbering carried additional Army 92 plates on the cabsides. *Black Knight* was painted black and had a black background to the name-plates, whereas other plates had red backgrounds.

5.4 When first delivered to the LNER, some of the J94s were in WD livery and carried shaded LNER numbers and letters. Other than these, the LNER/BR J94 locomotives were always plain black. LNER locomotives generally had plain yellow lettering with numbers on the tank with the company's initials above, but some had the number on the bunker. In the BR period the number was normally placed centrally on the tank with the totem / coat of arms above but one or two had the number on the bunker. A smokebox door number and shed plate was fitted, but most J94s lost their builders plates at an early date. The LNER number series was 8006-80, later BR 68006-80.

5.5 Industrial liveries were diverse, to say the least. In particular the NCB never attempted to introduce a "corporate" livery and individual areas used their own schemes. The North East generally favoured a plain medium blue but there were exceptions - for example Backworth's no.49 in 'LNER' green with black and white lining, and plain black at Lambton/Philadelphia, Kent used a darker blue with white lining, while Yorkshire used dark red or maroon with or without lining. Wales employed a variety of greens. One or two appeared in bizarre combinations: for example, Comrie Colliery's light blue with yellow cab and bunker for their No.19 seemed most inappropriate!

5.6 Industrial names ranged from those which reflected the power of the machine, for example "Warrior" and "Spitfire", through personal names "Robert", "Pamela", etc., to the more mundane "Ore Mining Branch" and "Cadley Hill No.1". Although most names appeared on tankside-mounted plates, some were painted on.

6 Withdrawal and Preservation

6.1 The BR class J94 remained intact until September 1960 and the last was withdrawn in October 1967. The MOD retained several locomotives in working order until the 1970s. During the 1950s and 1960s numerous industrial Austerities fell victim to dieselisation: the influx of surplus ex-BR class 08 and 14 shunters at NCB and British Steel Corporation sites led to mass withdrawals. In addition, the 1960s saw the closure of many industrial rail systems, but a few locomotives survived in regular service into the early eighties.

6.2 As relatively modern machines, the Austerities generally outlived older industrial types and thus survived into the preservation era. Many were retired at a comparatively young age and being robust, powerful, reliable, easy to maintain and simple to drive, they were a favourite choice of preserved railways. Over seventy Austerities are still in existence in Britain, together with three of the eight 50550s. Most are ex NCB or MOD, and post-war engines predominate. Some of the preserved locomotives are no longer in original condition, having been fitted with train brake equipment for working passenger services, and often are painted in the current owners' liveries.

6.3 Although enthusiasts often refer to the type as "J94" this appellation strictly applies only to the ex-BR engines of which just two survive - 68077 and 68078. As previously noted, the BR number series was 68006-68080, but several ex-industrial locomotives have been given non-authentic BR-type numbers.