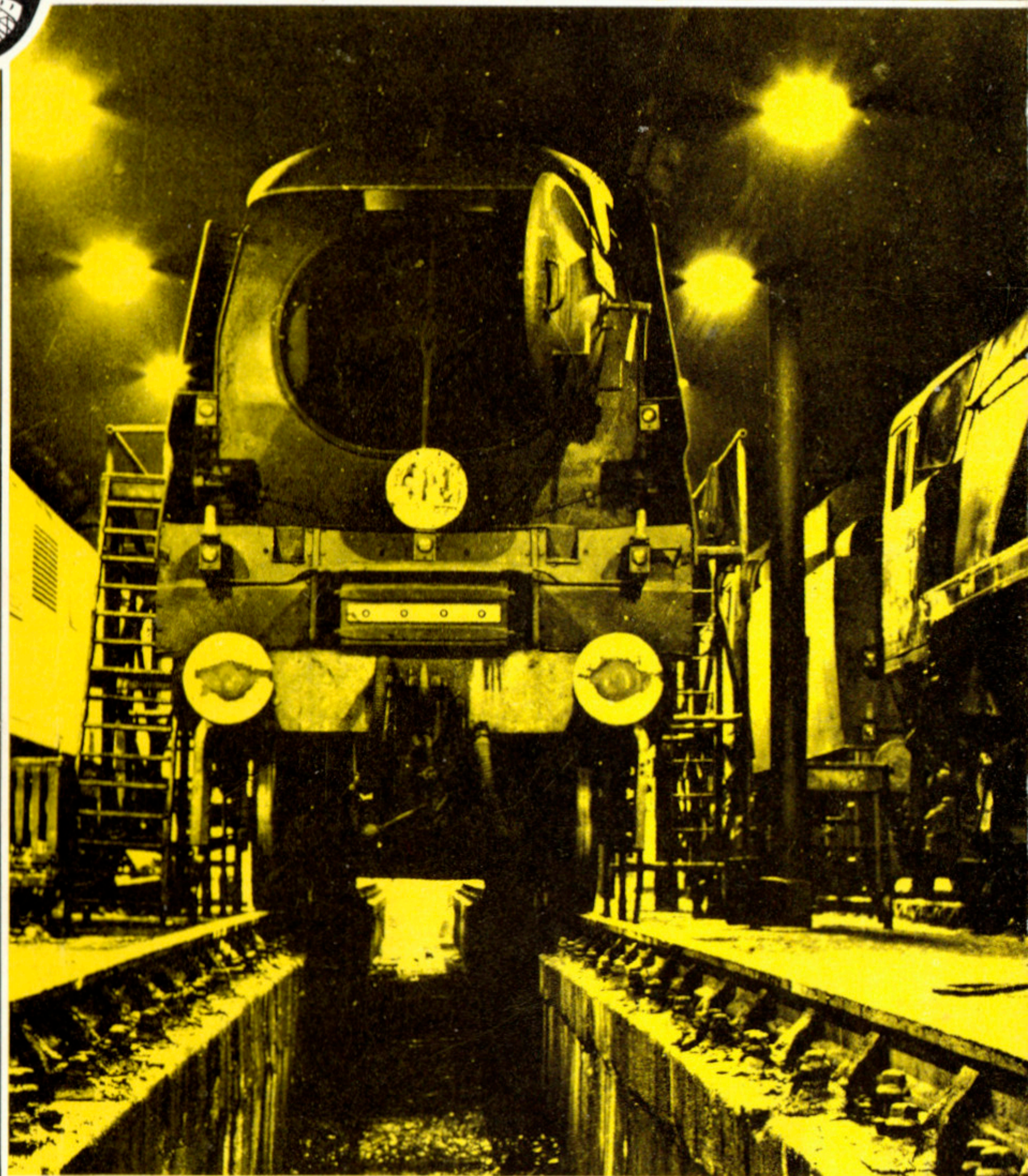




# NOSTALGIA MINIATURES



## STEAM LOCOMOTIVES

A night scene in Salisbury  
Motive Power Depot, just  
prior to the withdrawal of  
steam power.



# Origins of steam

From early times man has sought to develop self-propelled, or mechanically propelled vehicles. The notes of mediaeval inventors tell of their cars driven by wind and hand, followed by brief mentions of the model steam-cars of the Jesuit Father Verbiest in 1668, and of Papin of Cassel in 1698.

The first full-sized vehicle to move itself by steam was made by Nicholas James Cugnot in Paris in 1769. It performed before a group of notables including General Gribeauval (First Inspector-General of Artillery) and orders were given for another machine to be built, to carry cannon. Both machines however were unstable and crude in construction, and therefore unsuitable for practical use. The 1769 engine now reposes in the Conservatoire des Arts et Metiers.

By 1784 James Watt's ingenious foreman, William Murdock, had built a model steam-car of fair size which was running along the roads of Redruth in Cornwall, and in 1786 Watt himself was experimenting with a substantial steam-carriage. A steam coach was designed by William Symington and exhibited at Edinburgh in the same year, and in 1789 Thomas Allen, of London, designed a steam-carriage for passengers and goods.

Richard Trevithick was born at Illogan, in Cornwall, and later resided close by Murdock's house at Redruth. James Watt lived nearby too, and is recorded as saying that Trevithick deserved hanging for inventing the high-pressure steam engine (allegedly because he regarded high-pressure steam as dangerous: but no doubt the fact that his fortunes were tied up in low-pressure patents had some relevance). Trevithick is reported to have fought a duel with Murdock after building, in 1796, a three-wheeled model road engine with a vertical cylinder, not unlike Murdock's.

In 1801 Trevithick, in collaboration with his cousin Andrew Vivian, built a full-sized steam carriage at Camborne, to which place he had moved, and in 1803 a second engine was sent to London and fitted with a barouche-type body by Felton of Leather Lane. This second carriage ran in public for some time at what is now Lord's Cricket Ground and also at Euston Square.

It should be noted that what may be considered as the first successful application of steam to provide power had been developed as early as 1712, when Newcomen designed and operated his stationary beam engine. Subsequently

James Watt, Richard Trevithick and others, built improved stationary engines to provide power for the mines and factories.

In 1804 Trevithick successfully converted one of his stationary engines into the first railway locomotive, to haul wagons between Merthyr Tydfil and Abercynon. In 1808 he constructed 'Catch me who can' which he operated on a circular track in London, hauling wagons in which the public was invited to ride - literally the first passenger steam railway. Unfortunately both locomotives were too heavy for the type of rails then in use.

The first practically successful railway locomotive was J. Blenkinsop's rack locomotive of 1812; it ran on strong cast-iron edge rails and adhesion was secured by the rack. Then, in 1813, came W. Hedley's 'Puffing Billy' - the earliest surviving full-size locomotive in the world - built at Wylam Colliery and used over a five-mile stretch of track between Wylam and the staithes at Lemington-on-Tyne. 'Puffing Billy' can now be seen at the Science Museum, London, which acquired it in 1862 after nearly fifty years' continuous service.

George Stephenson built his first locomotive in 1814 (design unknown) and in 1815 he made the first of his 'Killingworth' engines.

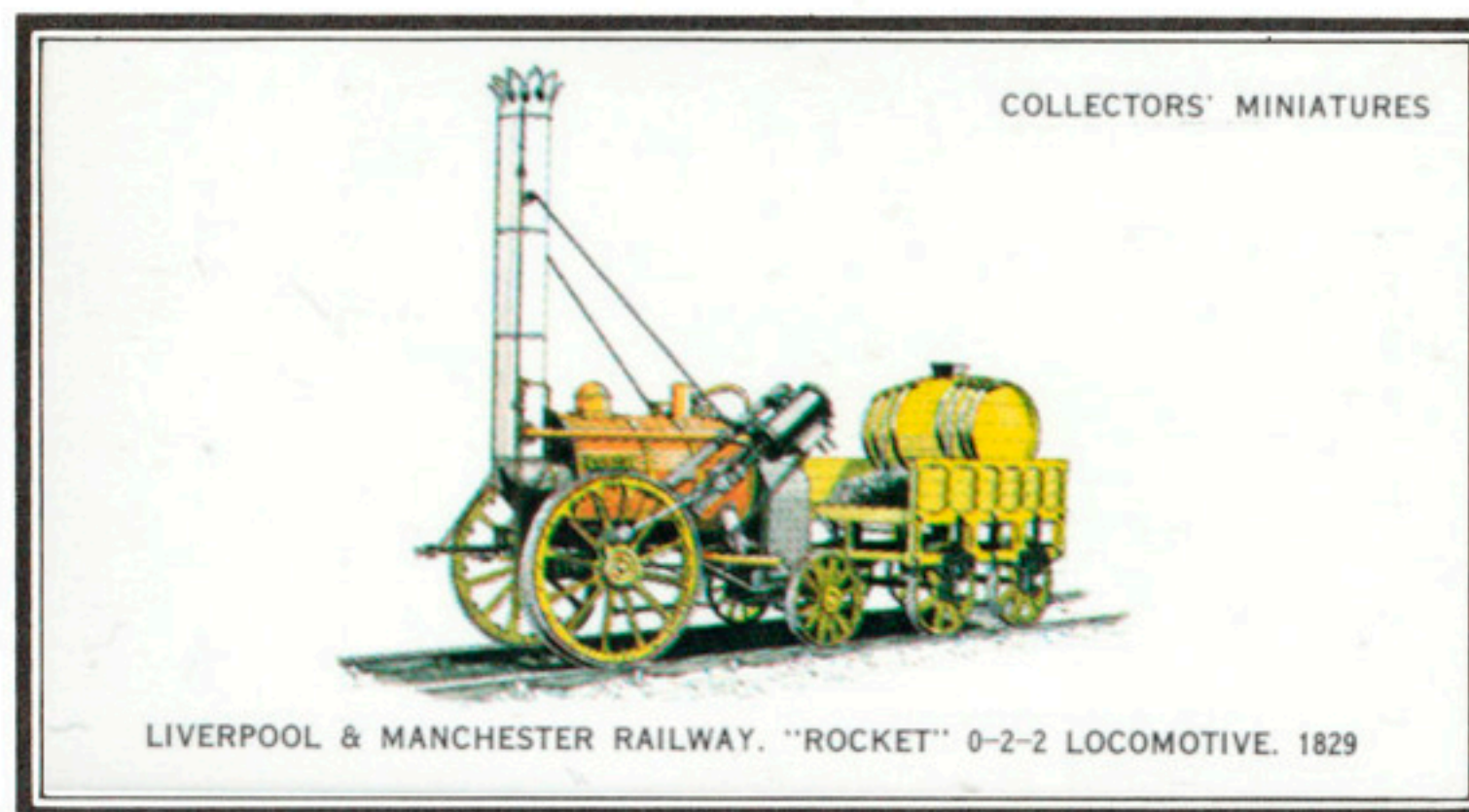
In 1823 the firm of Robert Stephenson and Company was formed mainly for the purpose of building locomotives and Robert Stephenson took over from his father the main responsibility for engine development. Among its earliest products was 'Locomotion', built in 1825 for the Stockton and Darlington Railway - the first locomotive for a public railway, with outside coupling rods. It was at first doubtful however whether steam could compete economically with horse traction on the Darlington Railway, until Timothy Hackworth's powerful six-coupled engine 'Royal George', built in 1827, successfully established the superiority of steam.

The Stephenson locomotive was now being developed rapidly and experimentally, and the success of the 'Rocket' at the Rainhill Trials, held in October 1829, was perhaps the most important single event in railway history.

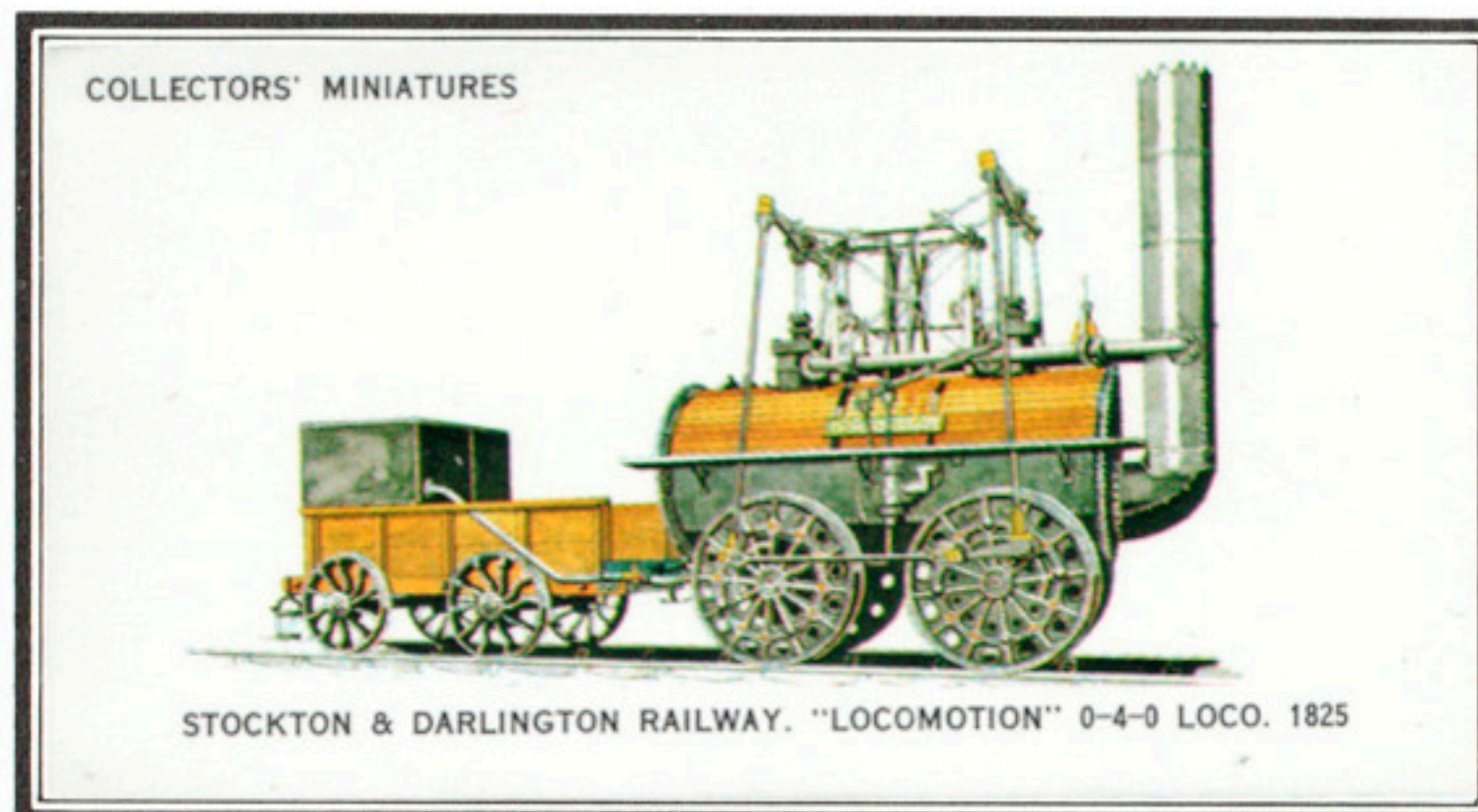
The 'Rocket' and other Stephenson locomotives later hauled passengers and freight on the Liverpool and Manchester Railway, which can be considered to have provided the first really regular passenger service.



Built in 1829 by Robert Stephenson and Company, and winner of the famous Rainhill trials in the same year, the success of this engine is generally considered to have been the most important single event in railway history. The introduction of the multiple firetube boiler, and the increased rate of combustion of the fuel achieved by passing the exhaust steam through a narrowing tube (the blastpipe) to the smokebox, to produce a forced draught through the boiler tubes, assisted in the rapid raising of steam and increased locomotive speeds, at a single stroke, from the pace of a cart horse to more than 30 m.p.h. Weight 4.25 tons.



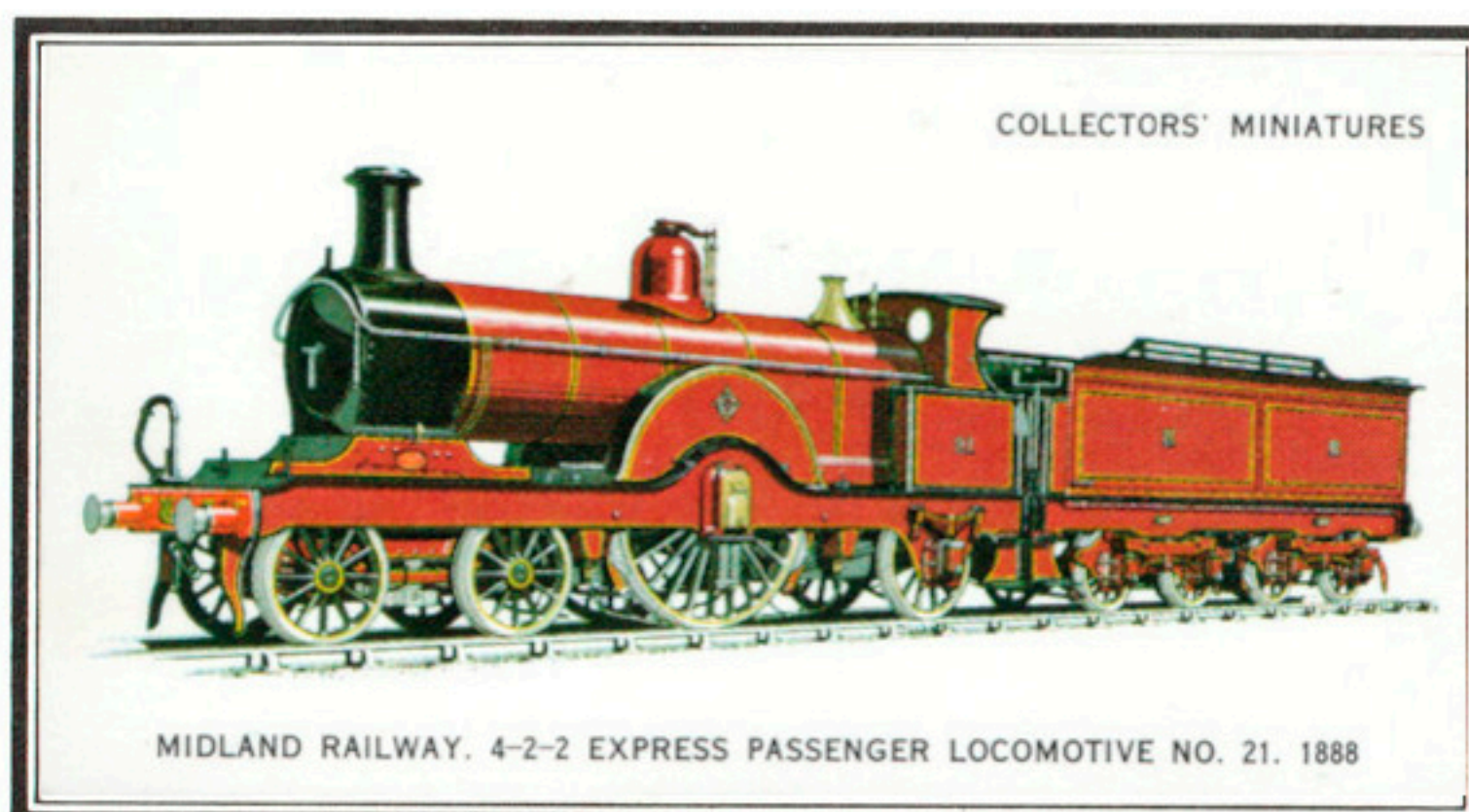
Developed from George Stephenson's locomotives built for work on the Killingworth Colliery lines, this was the first steam engine to be used on a public railway, being in service at the opening of the Stockton and Darlington on the 27th September, 1825. The design is typical of the primitive locomotives which ran on mineral lines before the arrival of the multitubular boiler and other innovations introduced with "Rocket", and a notable feature is the construction of the wheels, consisting of a number of iron castings dowelled together. Weighing 7 tons, with a boiler pressure of 50 lb., the engine is now preserved at Darlington.



Designed by John Ramsbottom, sixty engines of this class were built at Crewe between 1859 and 1865, intended for the Irish Mail traffic between London and Holyhead. They were light and compact (Ramsbottom did not favour large engines) and they were the first locomotives in the world to be fitted with apparatus for picking up water at speed. As a consequence, one of these engines, "Watt" (No. 229), achieved what was then a record non-stop run of 104 miles from Holyhead to Crewe, drawing a special carrying despatches concerning the Trent dispute between Britain and the U.S.A., in 1862.

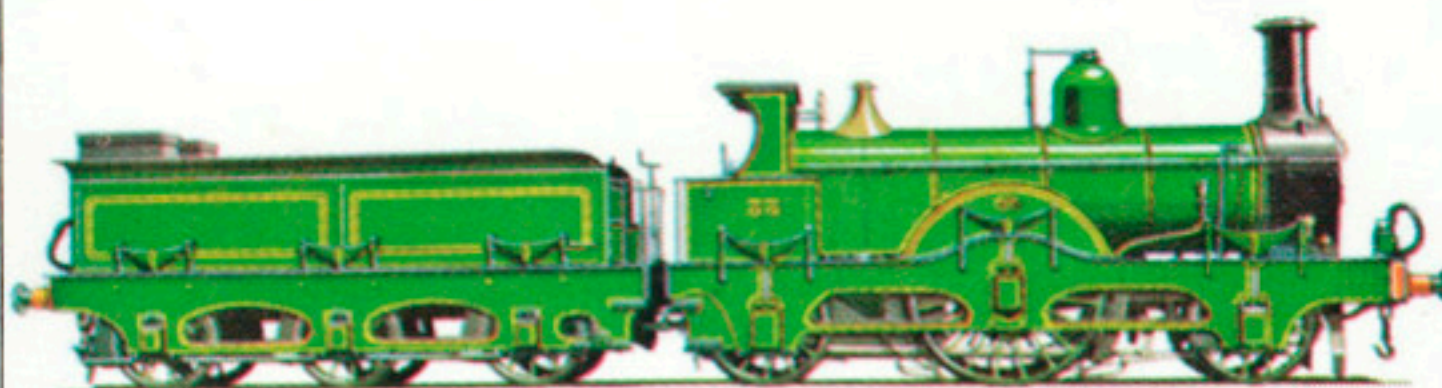


Designed by S. W. Johnson in 1887, these locomotives are remarkable in that they revert to an earlier (by then obsolete) "single wheeler" arrangement. The revival was made possible by the invention of steam sanding gear which, by sanding the rails, allowed the drivers to get a better grip. With a single pair of driving wheels of 7 ft. 9½ in. diameter, the advantages were simplicity of construction and high speed performance. Speeds of up to 90 m.p.h. were recorded by locomotives of this class, of which 95 were built between 1887 and 1900, in five variations each larger than its predecessor. Pressure 180 lb.





COLLECTORS' MINIATURES



MIDLAND RAILWAY, 2-2-2 EXPRESS PASSENGER LOCO. NO. 33. REBUILT 1880

Seventy-four engines of this general design were built to specifications drawn up by Matthew Kirtley. Nos. 130-35 were supplied by Robert Stephenson and Company in 1852; Nos. 120-29 by Sharp, Stewart and Company in 1853, and subsequent batches were built at Derby. No. 33 was built at Derby as No. 141 in 1857. She was rebuilt by S. W. Johnson in 1880 with new, heavy plate frames and renumbered the following year, when she was put to working the Directors' saloon. Weighing 28½ tons, with driving wheels of 6 ft. 8 in. diameter and 16½ in. x 22 in. cylinders, she developed a pressure of 140 lb. per sq. in.

COLLECTORS' MINIATURES



MIDLAND RAILWAY, 4-4-0 COMPOUND EXPRESS LOCO. NO. 1000. REBUILT 1914

Derived from William Smith's patent locomotive of 1898, built for the North Eastern Railway, the Midland compounds were designed by S. W. Johnson in 1902. In all, 240 were built (195 by the L.M.S. after the grouping) of which No. 1000 was the first, entering service as No. 2631 in 1902. Renumbered in 1907, it was rebuilt in 1914 to R. M. Deeley's modified design incorporating a patent regulator which automatically changed over from non-compound starting to full compound as it was advanced. Weight 59½ tons. Driving wheels 7 ft. Cylinders: one HP 19 x 26 in., two 21 x 26 in. Pressure 200 lb.

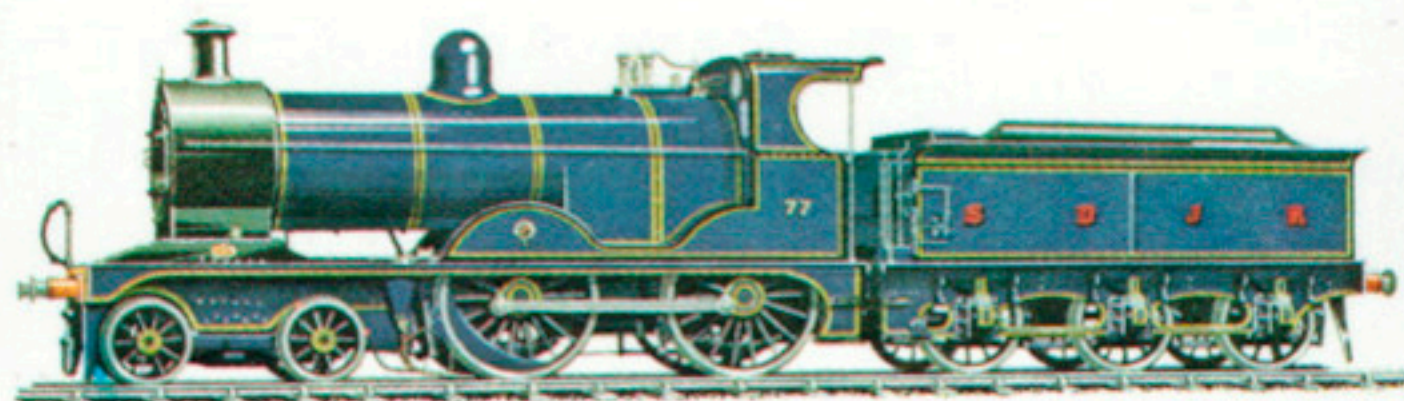
COLLECTORS' MINIATURES



LANCASHIRE & YORKSHIRE RLY. 2-4-2 SIDE TANK ENGINE NO. 1008. 1889

Designed by John Aspinall, this was the first engine to be built at Horwich works and the prototype of its class, of which 330 were built between 1889 and 1911. Frequently used as express engines on main line services, the class was designed to haul heavy passenger loads over the steeply graded L. & Y. branch lines in the Pennines, including a 15 mile stretch on the Salford to Colne branch where the gradient averages 1 in 118. Some of these engines served for more than 60 years. Weight 56 tons. Driving wheels 5 ft. 8 in. Cylinders 17½ in. x 26 in., and 18 in. x 26 in. Pressure 160 lb.

COLLECTORS' MINIATURES



SOMERSET & DORSET JOINT RLY. 4-4-0 EXPRESS LOCO. NO. 77. 1907

Jointly operated by the London and South Western, and by the Midland Railway, the Somerset and Dorset main line ran from Bath to Bournemouth, with some very severe gradients crossing the Mendips. Responsibility for working the line was divided; track maintenance, signalling, station premises, etc., were provided by the L. & S.W.R., while the Midland Railway provided and maintained the locomotives. Standard Midland express engines were modified by providing them with smaller wheels (6 ft. diameter) to cope with the steep inclines, reaching 1 in 50 between Bath and Evercreech Junction. No. 77 was built at Derby in 1907.



Somerset and Dorset engines Nos. 77 and 78 were rebuilt with Belpaire fireboxes in 1921. Both were transferred to L.M.S. stock on the 1st January, 1930, when they were renumbered 320 and 321. Withdrawn from service in 1931, for a time No. 320 continued to run in Somerset and Dorset blue livery but with L.M.S. lettering and numbers. Locomotives of this class weighed 47 tons 8 cwt., with cylinders 18 in. x 26 in. and boiler pressure 175 lb. developing 15,795 lb. tractive effort. They were a later development of S. W. Johnson's 4-4-0 design of 1876, as rebuilt by R. M. Deeley between 1903 and 1910, with larger boilers.



The first fifty engines of this class (Nos. 6100-49) were built in 1927 by the North British Locomotive Company, in Glasgow. Twenty more (Nos. 6150-69) were built at Derby in 1930. In 1933 No. 6152 was sent to the Chicago World's Fair, for which event it exchanged number and name with 6100 "Royal Scot" and received a Stanier-type tender. Afterwards, in the course of an 11,000-mile tour of North America, it crossed the Rocky Mountains unassisted with its train. It returned to Britain with commemorative name-plates and an American-type locomotive bell, as shown here. Weight 84 tons 9 cwt. Driving wheels 6 ft. 9 in.



One of the twenty "Royal Scot" engines built at Derby, shown with original tender. In April 1928 No. 6113 "Cameronian" (one of the Glasgow-built engines) established a world record non-stop run of 401½ miles between Euston and Glasgow. In March 1931, after a disastrous derailment at Leighton Buzzard, thought to have been caused by smoke drifting down the boiler and obscuring the view ahead, deflector plates were fitted to these engines (see "Royal Scot"). The "Scots" were much improved by Sir William Stanier and were renumbered 46100-46170 by British Railways. Cylinders (3) 18 in. x 26 in. Pressure 250 lb.



Introduced by Sir William Stanier in 1934, simultaneously with the celebrated mixed traffic "Black Fives", these 4-6-0 express passenger engines were designed with capacity roughly equal to that of the "Baby Scots" but with taper boilers. As one of the last of the 191 members of the class "Kolhapur" achieved fame in 1967 while working from Leeds over Ais Gill to Carlisle. After withdrawal in 1967 she was purchased by 7029 Clun Castle Ltd. and restored at the Company's Tyseley depot to the condition shown. Weight 134½ tons. Driving wheels 6 ft. 9 in. Cylinders (3) 17 in. x 26 in. Pressure 225 lb.





COLLECTORS' MINIATURES



L.M.S.R. CLASS 7P (CORONATION) NO. 6221 "QUEEN ELIZABETH" BUILT 1937

An improved design commissioned following upon the success of the "Princess" class Pacifics. The first five engines were given fully streamlined casings and a special blue livery for working the new "Coronation Scot" high speed service between London and Glasgow, named for the Coronation of His Majesty King George VI in 1937. In July of that year No. 6220, at trials, attained a record speed of 114 m.p.h., with train. Designed by Sir William Stanier. Weight 105 tons 5 cwt. Cylinders (4) 16½ in. x 28 in. Pressure 250 lb. Tractive effort 40,000 lb. Driving wheels 6 ft. 9 in.

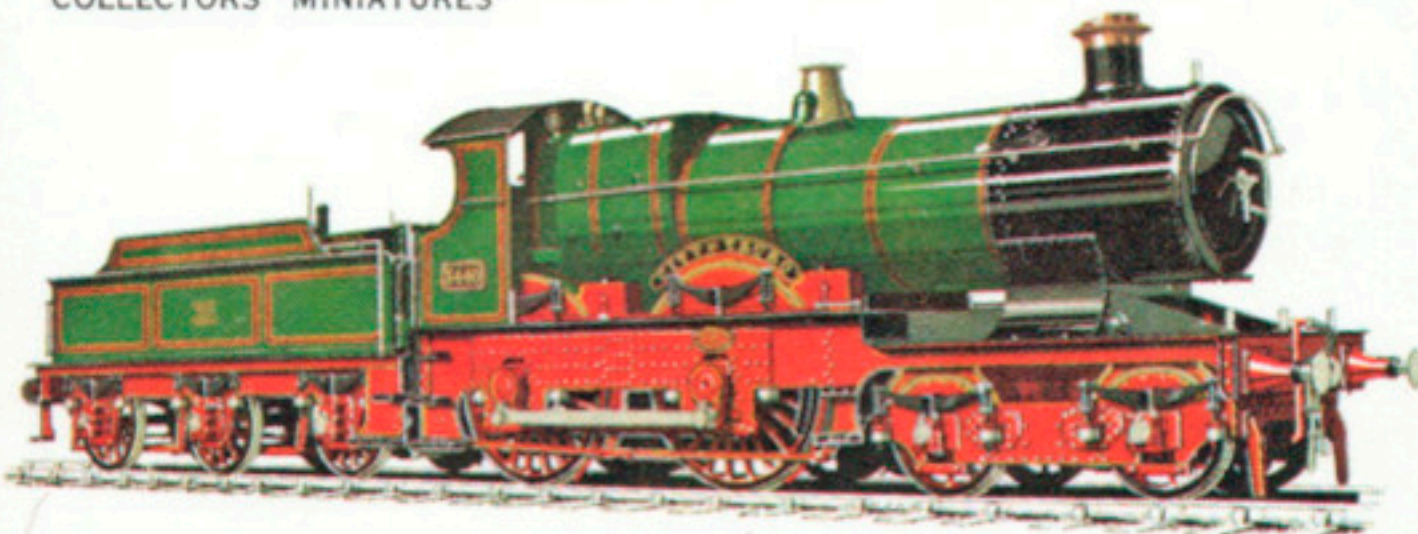
COLLECTORS' MINIATURES



L.M.S.R. CLASS 7P "PACIFIC" NO. 6221 "QUEEN ELIZABETH". MARCH 1941

These engines had larger cylinders, piston valves and heating surface than the "Princess" class from which they were developed. The driving wheel diameter was also increased by 3 inches. In all 38 engines were built, 14 of them without streamlined casings. In 1939 No. 6234, newly fitted with double chimney, handled a train of twenty coaches (610 tons behind the tender) over the 102 miles between Crewe and Carlisle, including the ascents of Shap and Beattock, in 118 minutes. "Queen Elizabeth" was repainted in red and gold livery in March 1941, and in August 1944 she was again repainted in plain black.

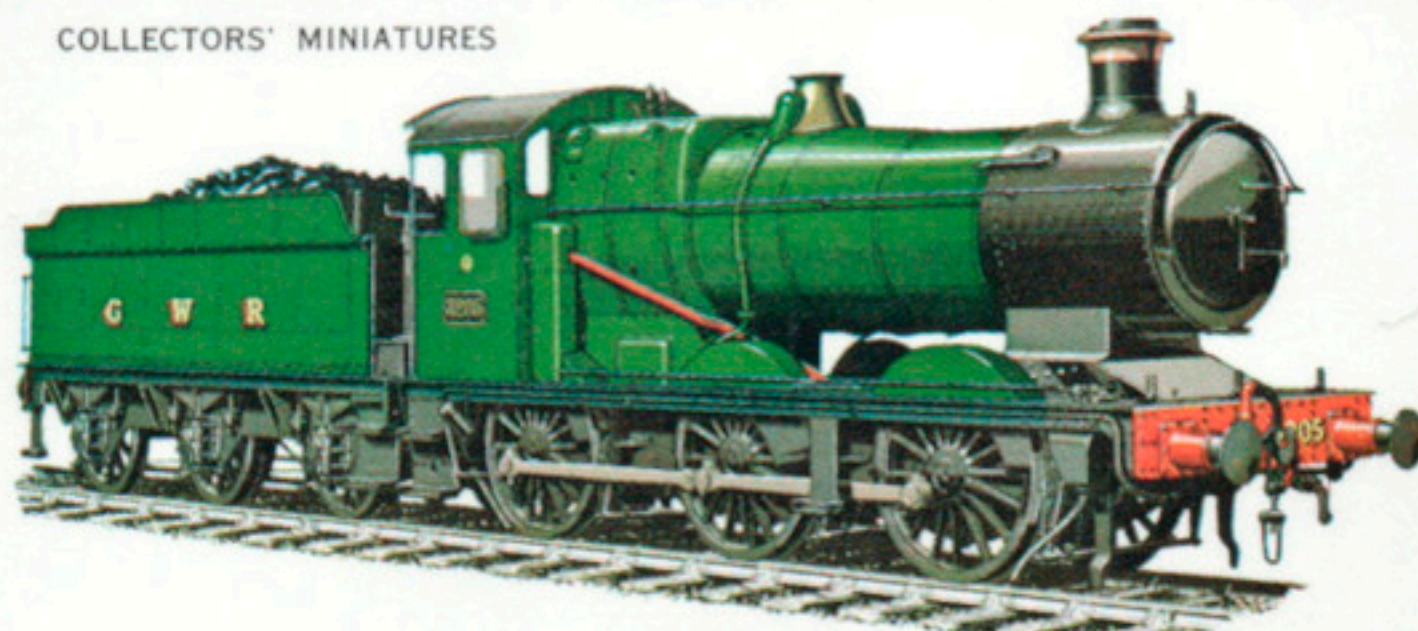
COLLECTORS' MINIATURES



GREAT WESTERN RAILWAY. CITY CLASS NO. 3440 "CITY OF TRURO". 1903

These engines, designed by G. J. Churchward, retained the outside frames associated with Victorian locomotive practice but they incorporated the important advances of the tapered-barrel boiler and the Belpaire firebox. The basic design originated with the "Badminton" class of 1897, followed by the "Atbara" class of 1900, both with parallel boilers. "City of Truro", built in 1903, achieved a speed of 100 m.p.h., hauling an Ocean Mail special, in May 1904. In regular service the class was used to haul the Cornish Riviera Express non-stop between Paddington and Plymouth (246 miles) in 267 minutes.

COLLECTORS' MINIATURES



GREAT WESTERN RAILWAY. "2251" CLASS 0-6-0 MIXED TRAFFIC NO. 3205

The class was introduced in 1930 for medium freight and passenger operation, the wheel arrangement being unusual for the G.W.R. Some of these engines were used by British Railways for passenger duties on the former Somerset & Dorset line between Templecombe and Highbridge. 3205, built at Swindon in 1946, was withdrawn from Templecombe in May 1965 and is now in service on the Severn Valley Railway at Bridgnorth, Shropshire. Weight 42 tons 8 cwt. Driving wheels 5 ft. 2 in. Cylinders (2) 17½ in. x 24 in. Pressure 200 lb. Tractive effort 20,155 lb.



Thirty of these engines were built by C. B. Collett between 1927 and 1930, and for 35 years they worked the heaviest express passenger traffic on the West of England main line between Paddington and Birmingham. "King George V" was the first engine of the new class, having a nominal tractive effort greater than that of any other British 4-6-0 express engine and even exceeding the rated value of the "Pacific" locomotives of the other British systems. She received the double chimney and other modifications shown here, after nationalisation, and is now preserved at Hereford. Weight 89 tons. Pressure 250 lb. Tractive effort 40,300 lb.



Of the 171 engines of this class built between 1923 and 1950, the last batch comprised Nos. 7000-37 (7037, the last of the class, was also the last express engine built at the famous locomotive works, appropriately named "Swindon"). Others of this batch were named "G. J. Churchward" (No. 7017) and "Great Western" (No. 7007). Two years before her withdrawal in 1966 "Clun Castle" worked the high speed special between Exeter and Bristol - more than 40 years after the introduction of this class. After withdrawal she was purchased by 7029 Clun Castle Ltd. and restored at the Company's Tyseley depot to the condition shown here.



Developed by C. B. Collett from Churchward's famous "Star" class, the "Castles" soon established themselves as one of the most famous and successful locomotive designs ever produced. The pioneer engine "Caerphilly Castle" entered service in August 1923 and is now preserved at the Science Museum, London. During the exchange trials of 1924 and 1925 "Pendennis Castle" established new performance records, working over the L.N.E.R. route from Kings Cross to Leeds. After withdrawal in 1964 she was purchased privately. Weight 79 tons 17 cwt. Cylinders (4) 16 in. x 26 in. Pressure 225 lb. Tractive effort 31,625 lb.



As early as 1818 a horse-worked tramway, known as the Welshpool Iron Road, was constructed to draw tramway tubs from the quarry in Brook Street to the Newtown Branch of the Shropshire Union Canal. The line was closed in 1854. In 1899 the Welshpool and Llanfair Railway Company was incorporated and an operating agreement was entered into with the Cambrian Railways Company which undertook to provide, maintain and renew the rolling stock. "The Earl" and "The Countess" (Nos. 1 and 2) were built in 1902, and the 2 ft. 6 in. gauge line was opened in 1903, running from Welshpool station to Llanfair Caereinion (9 miles).







At the grouping, "The Earl" and "The Countess" (Nos. 1 and 2 of the former Welshpool Railway Company) became G.W.R. Nos. 822 and 823. Both were rebuilt at Swindon in 1929 and 1930, with new smokebox and boiler fittings. Regular passenger traffic ceased in 1931 however, although stone continued to be carried by rail, for transhipment to standard gauge wagons at Welshpool, until the closing of the quarries in 1939. In 1956 the line was closed altogether by British Railways (Western Region) but public passenger services were resumed in 1963 by the present Preservation Company. Weight 20 tons. Pressure 150 lb.



Weighing less than 10 tons "Talyllyn" was one of two locomotives ordered from Fletcher, Jennings & Co. of the Lowca Engine Works, Whitehaven, for the opening of the line in 1865. With her sister engine "Dolgoch" she handled all traffic on this 2 ft. 3 in. gauge railway, running the 6½ miles from Towyn Wharf to Abergynolwyn, for 86 years thereafter. The railway was saved from extinction by the formation of the Talyllyn Railway Preservation Society in 1950, since when it has been much improved. "Talyllyn" was rebuilt in 1957/8 by Gibbons Bros. Ltd. at Brierley Hill, Staffs.



Rising to a height of 3,493 ft., with a gauge of 2 ft. 7½ in., this is the only rack railway in Great Britain. The rackrail system used was invented by Dr. Roman S. Abt, whose name it bears, and the locomotives were built by the Swiss Locomotive and Engine Works at Winterthur. The locomotive drive is only to the rack pinion shafts, with cranks driving the extremities of the shafts, and not to the carrying wheels. The engines have inclined boilers and always face up the mountain. "Snowdon" was built in 1896 with two cylinders, 300 x 600 mm, and a working pressure of 200 lb. Weight 17¾ tons.



The Festiniog Railway is one of the oldest railway companies in the world, having been formed by Act of Parliament of 1832 for the carriage of slate from Blaenau Festiniog to Portmadoc Harbour, for shipment aboard coastal vessels. Steam traction was introduced in 1863, and in 1865 the Railway was authorised to carry passengers. Passenger services were discontinued in 1939, with the outbreak of war, and they were not resumed until July 1955 when this engine was restored. Weight (as built) 24 tons. Driving wheels 2 ft. 8 in. Cylinders (4) 9½ in. x 14 in. Pressure 150 lb. Gauge 1 ft. 11½ in.



Three of these unusual engines were built for the Listowel line in 1886, by the Hunslet Engine Company. The Listowel & Ballybunion was the only Lartigue installation ever to employ locomotive traction. The locomotive, weighing 6 tons, was carried on three coupled axles with cylinders placed between the boilers, and the driver and fireman had each a separate firebox. Small transverse wheels located with the two guide rails near the base of the trestles, thus keeping the locomotives and rolling stock in an upright position. The line was dismantled and the engines were broken up in 1924.



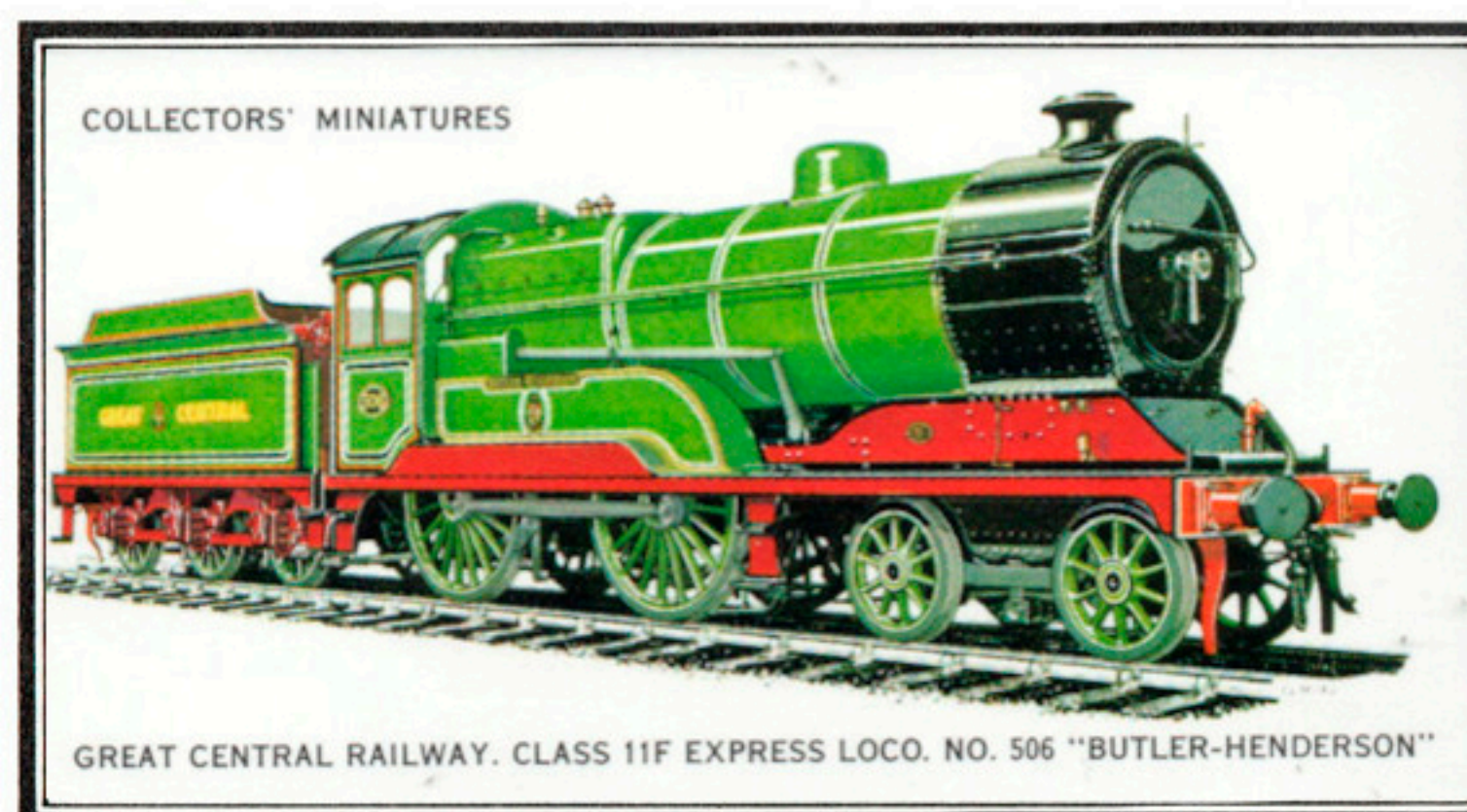
With the exception of No. 15, an 0-6-0T from the former Manx Northern Railway, all engines constructed for use on this 3 ft. gauge line have been of the 2-4-0T type. Nos. 1-13, built between 1873 and 1910, established the standard design and Nos. 1-9 formed the original class. Weighing 18 tons 4 cwt., with 3 ft. 9 in. driving wheels and 2 ft. bogie wheels, "Fenella" develops 4,930 lb. of tractive effort at 120 lb. pressure (cylinders 11 in. x 18 in.). The line closed to all traffic in November 1965 but reopened on the 3rd June, 1967. Subsequently the engines were restored to their original livery of "Island" green.



Designed by Wilson Worsdell, 115 engines of this class were built between 1906 and 1923, becoming Class J27 on the L.N.E.R. With their large 5 ft. 6 in. diameter boilers (unique for an 0-6-0 until 1926) they proved capable of much heavy work throughout the L.N.E.R. system. BR No. 65894 (as L.N.E.R. No. 2392) was the last of this Class to be built and is now preserved by the N.E. Locomotive Preservation Group for work on the North Yorkshire Moors Railway. Weight 47 tons (tender 37 tons). Driving wheels 4 ft. 7 1/4 in. Cylinders (2) 18 1/2 in. x 26 in. Pressure 180 lb. Tractive effort 24,642 lb.



Known as "Improved Directors", eleven of these engines, designed by J. G. Robinson, were built between 1919 and the end of 1922, numbered 501-11. "Butler-Henderson" was the first of them to leave Gorton and is now preserved at Loughborough. They were slightly larger than the original Class 11E engines and they introduced a new type of standard cab with side windows, giving them a notably different appearance from the original "Directors". In their later L.N.E.R. livery, the G.C.R. engines were given the prefix 5000. Weight 61 tons 3 cwt. Cylinders 20 in. x 26 in. Pressure 180 lb. Tractive effort 19,645 lb.





COLLECTORS' MINIATURES



LONDON & NORTH EASTERN RLY. CLASS A1 NO. 4472 "FLYING SCOTSMAN". 1924

In all, 52 engines of this Class were built between 1922 and 1925, the first two of them (Nos. 1470 "Great Northern" and 1471 "Sir Frederick Banbury", soon to be renumbered 4470 and 4471) by the Great Northern Railway. In the 1925 Interchange Trials with the G.W.R., 4474 "Victor Wild" was matched against GWR 4079 "Pendennis Castle": the latter, with a boiler pressure of 225 lb., proving notably more efficient and economical. Shown here is the original "Flying Scotsman" as seen at the British Empire Exhibition at Wembley in 1924. Weight 92 tons 9 cwt. Cylinders (3) 20 in. x 26 in. Pressure 180 lb. Tractive effort 29,835 lb.

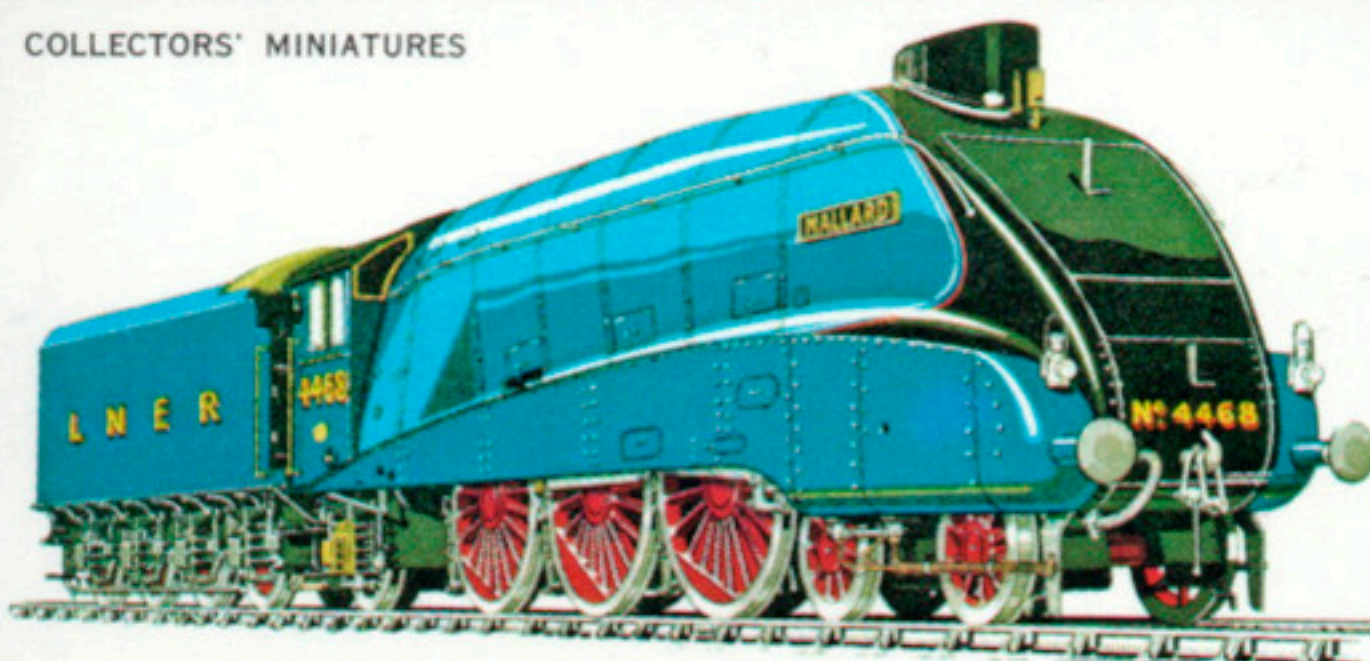
COLLECTORS' MINIATURES



L.N.E.R. CLASS A3 PACIFIC EXPRESS LOCO. "FLYING SCOTSMAN" AS REBUILT

In 1927, as a result of the 1925 Interchange Trials, two A1 Class Pacifics were fitted with new boilers carrying 220 lb. pressure, which became the standard for the re-boiling of existing Pacifics and for new Pacific construction. As rebuilt, these engines were reclassified A3 (BR Class 7P6F). In 1928 a non-stop service – the world's longest – was inaugurated over the whole of the 392.8 mile route from Kings Cross to Edinburgh, when 8-wheel corridor tenders, 25 ft. 10 in. long, were built to provide facilities for changing the engine-crews en route without stopping the train. Weight 96 tons 5 cwt.

COLLECTORS' MINIATURES



L.N.E.R. CLASS A4 PACIFIC EXPRESS LOCO. NO. 4468 "MALLARD". 1937

Designed for higher boiler pressures than the A3 Pacifics, this Class was introduced in 1935 when "Silver Link" left the Doncaster Works (the first four engines were given silver liveries for use with the Silver Jubilee high-speed service). Eventually 35 engines were built. In July 1938 "Mallard" established the world speed record for steam traction with a maximum speed of 126 m.p.h. She is now on Display at the National Railway Museum at York. Weight 103 tons. Cylinders (3) 18½ in. x 26 in. Pressure 250 lb. Tractive effort 35,455 lb. Driving wheels 6 ft. 8 in. (B.R. classification 8P6F).

COLLECTORS' MINIATURES



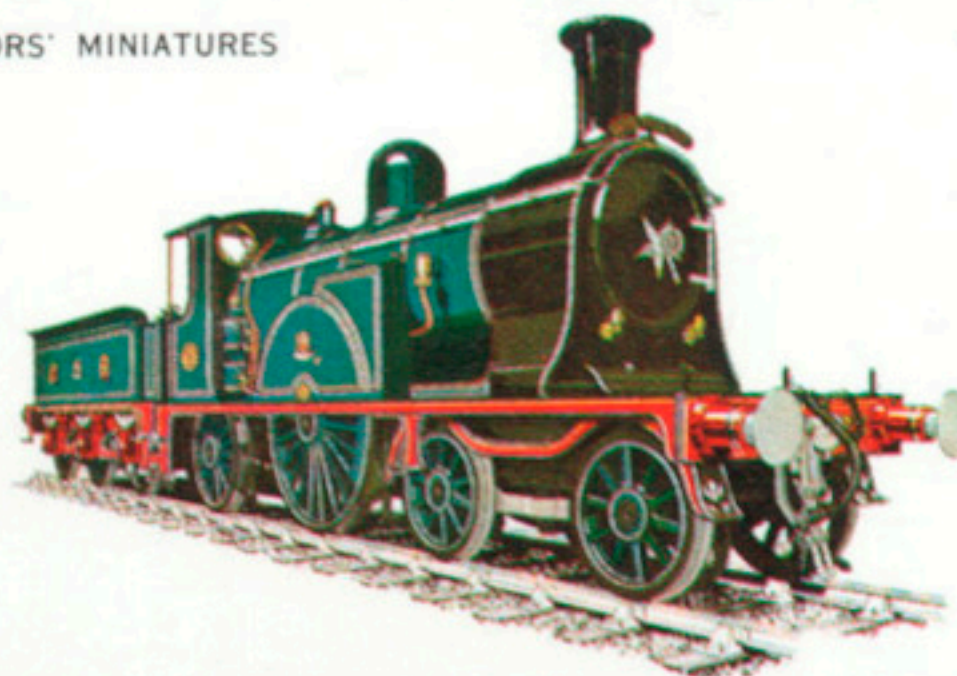
L.N.E.R. CLASS Q6 0-8-0 HEAVY GOODS (MINERAL TRAFFIC) LOCO. NO. 2238

Designed by Sir Vincent Raven for the North Eastern Railway as Class 12, the first of these rugged locomotives entered service in 1913. In all 120 were built by the N.E.R. and ultimately passed into B.R. ownership, bearing the brunt of the heavy mineral traffic for which they were designed: often hauling trains of up to 1,000 tons at 25 m.p.h. No. 2238 (as BR No. 63395) survived until the end of steam and is now preserved by the North Eastern Locomotive Preservation Group. Weight 66 tons (tender 44 tons). Cylinders (2) 20 in. x 26 in. Pressure 180 lb. Tractive effort 28,800 lb. Driving wheels 4 ft. 7½ in.



Constructed by Neilson & Co. in 1886 for the Edinburgh exhibition, but embodying several features characteristic of Dugald Drummond (then locomotive superintendent of the C.R.), No. 123 took part in the 1888 Race to Scotland between the East and West Coast routes, attaining speeds in excess of 70 m.p.h. Renumbered 1123 in 1914, for a number of years it was used only for hauling the Directors' saloon, but in the 1930s (in L.M.S. livery) it again saw passenger service, hauling local trains between Perth and Dundee. Withdrawn in 1935 the engine may now be seen, restored to Caledonian livery, at the Glasgow Museum of Transport.

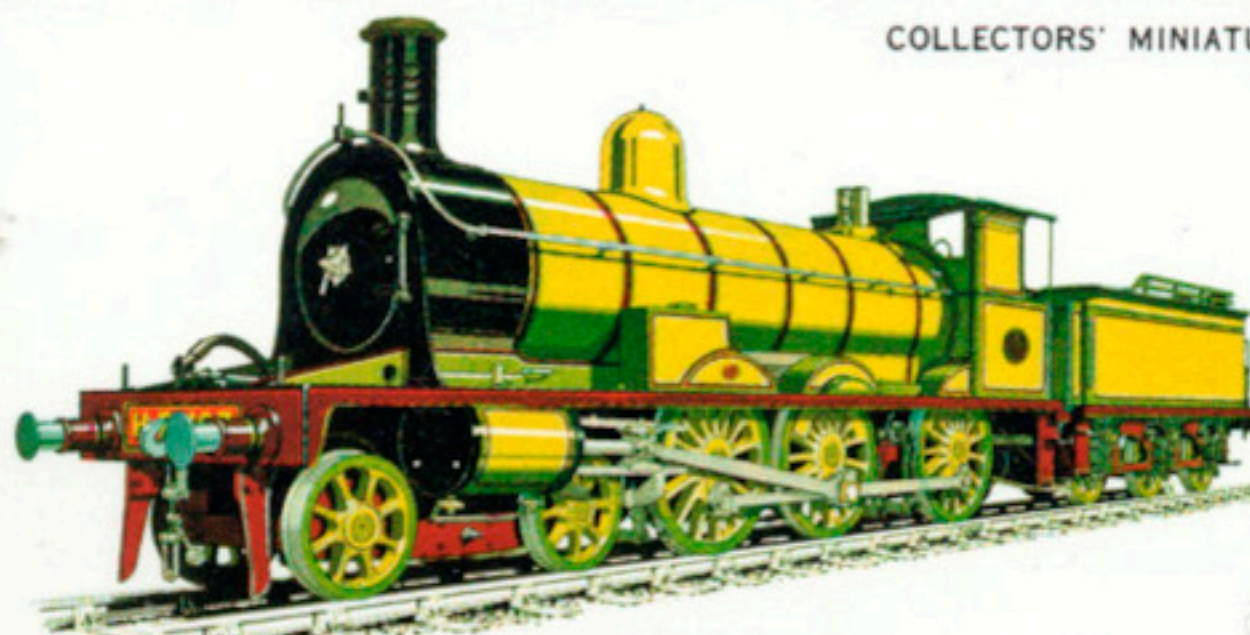
COLLECTORS' MINIATURES



CALEDONIAN RAILWAY. 4-2-2 EXPRESS PASSENGER LOCOMOTIVE NO. 123. 1886

Famous as the first 4-6-0 type to enter service in Britain, 15 of these huge engines were ordered from Sharp Stewart & Co. in 1894, straight off the drawing board. They proved to be splendid engines and, although intended for goods traffic they were commonly used on passenger trains during the tourist season. The centre driving wheels were flangeless and these locomotives remained virtually unaltered until they were taken out of service between 1929 and 1940. Weight 70 tons 13 cwt. Driving wheels 5 ft. 3 in. Cylinders (2) 20 in. x 26 in. Pressure 175 lb. Tractive effort at 85% W.P. 24,556 lb.

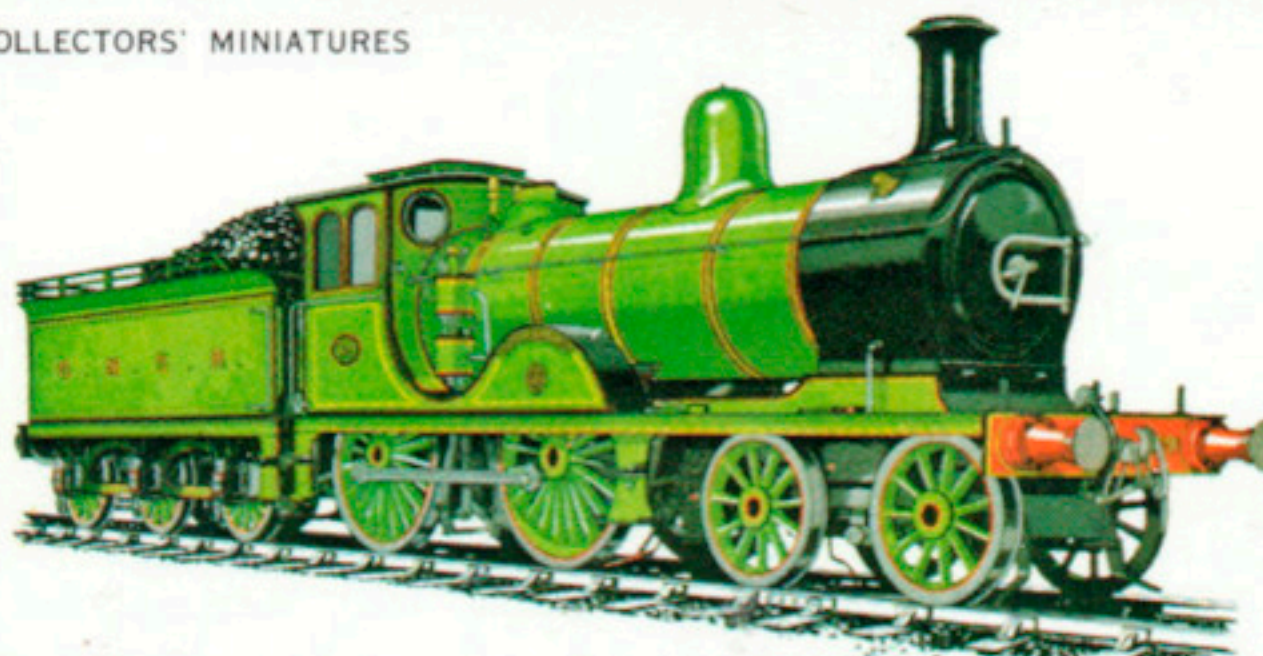
COLLECTORS' MINIATURES



HIGHLAND RAILWAY. 4-6-0 HEAVY GOODS LOCOMOTIVE NO. 103 ("JONES GOODS")

This was a superheated development by Thomas Heywood of an earlier design by William Pickersgill, originally introduced in 1899. Six of the superheated versions were built by North British at their Hydepark Works in Glasgow, in 1920, and two more were built in 1921 at the Company's own works at Inverurie, Aberdeen. In 1958 the last engine to remain in service was restored to G.N.S.R. livery and later placed in the Glasgow Museum of Transport. Weight 86 tons 1 cwt. (full). Driving wheels 6 ft. 1 in. Cylinders (2) 18 in. x 26 in. Pressure 165 lb. Tractive effort 16,184 lb.

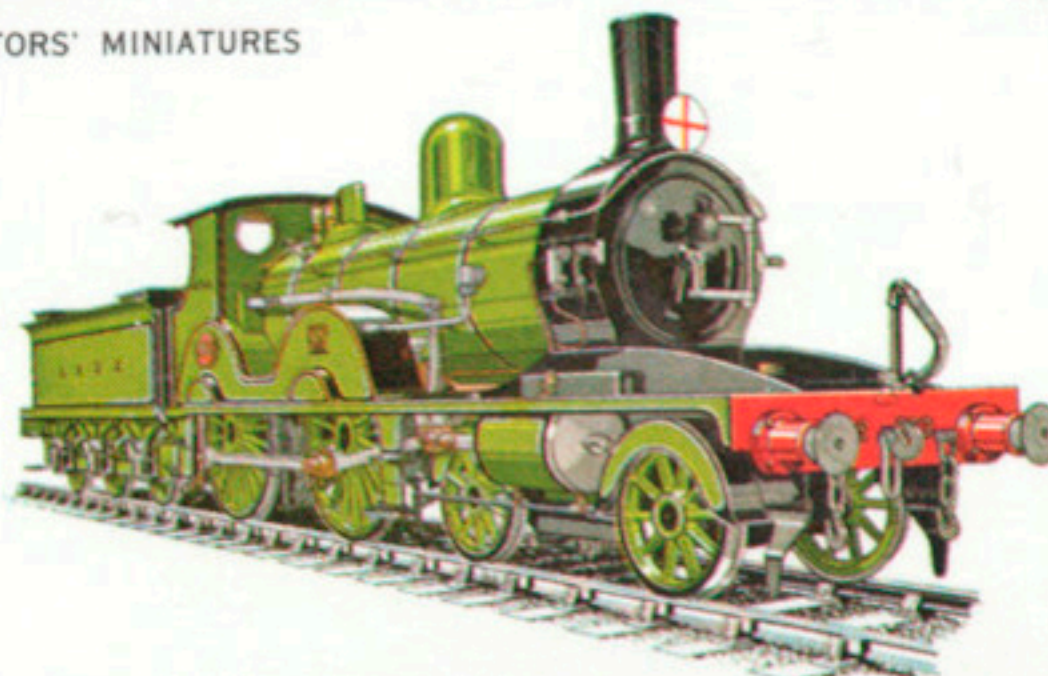
COLLECTORS' MINIATURES



GREAT NORTH OF SCOTLAND RLY. CLASS F 4-4-0 NO. 49 "GORDON HIGHLANDER"

One of four similar classes (T3, T6, X2 and X6) which together comprised William Adams' last group of express locomotives for the L.S.W.R. In all, sixty were built between 1890 and 1896 and at the time of entering service the X2 engines were the most powerful express type in the world. Due to skilful design and fine workmanship they were also amongst the most economical. No. 563 remained in service until 1945 and is now preserved at the National Railway Museum, York. Driving wheels 6 ft. 7 in. Bogie wheels 3 ft. 7 in. Cylinders 19 in. x 26 in. Pressure 175 lb.

COLLECTORS' MINIATURES



LONDON & SOUTH WESTERN RLY. CLASS T3 EXPRESS PASSENGER LOCO. NO. 563



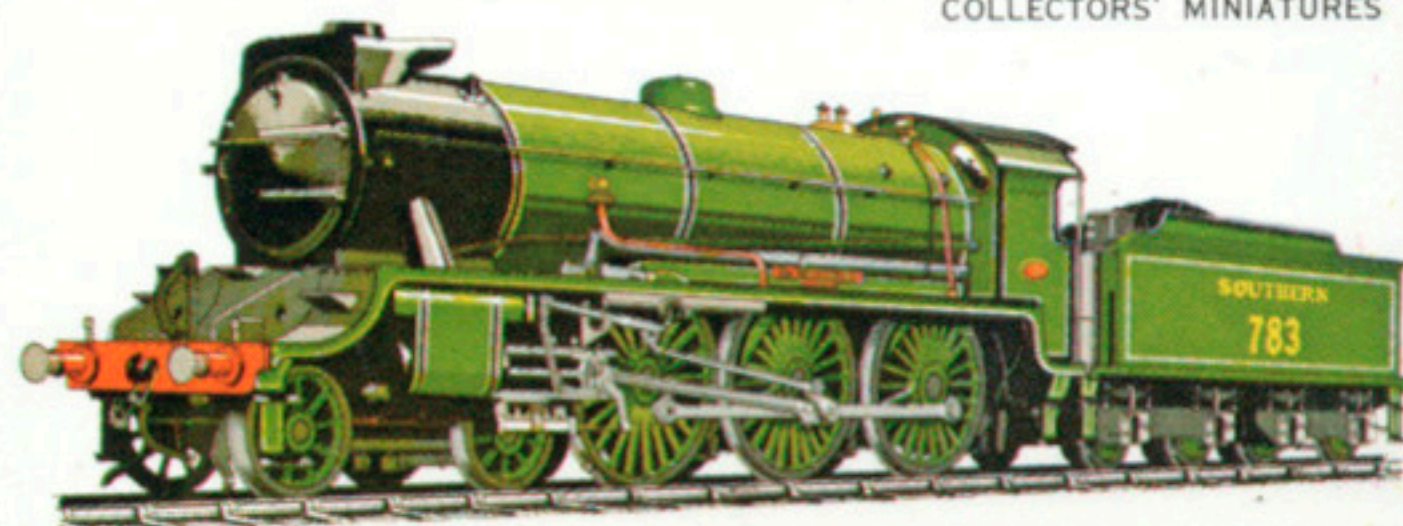
COLLECTORS' MINIATURES



SOUTHERN RAILWAY. "SCHOOLS" CLASS EXPRESS LOCOMOTIVE NO. 928 "STOWE"

Maunsell's last design of express passenger train, these were the most powerful 4-4-0s ever built in this country, despite the fact that they were constructed very economically from existing patterns and tools used for locomotives of the "King Arthur" and "Lord Nelson" classes. Designed for work on the difficult Hastings line of the former S.E. & C.R. the "Schools" later hauled the fast Portsmouth trains and eventually they replaced the "King Arthurs" on the Bournemouth expresses. Weight 67 tons 2 cwt. Driving wheels 6 ft. 7 in. Cylinders (3) 16½ in. × 26 in. Pressure 220 lb. Tractive effort 25,135 lb.

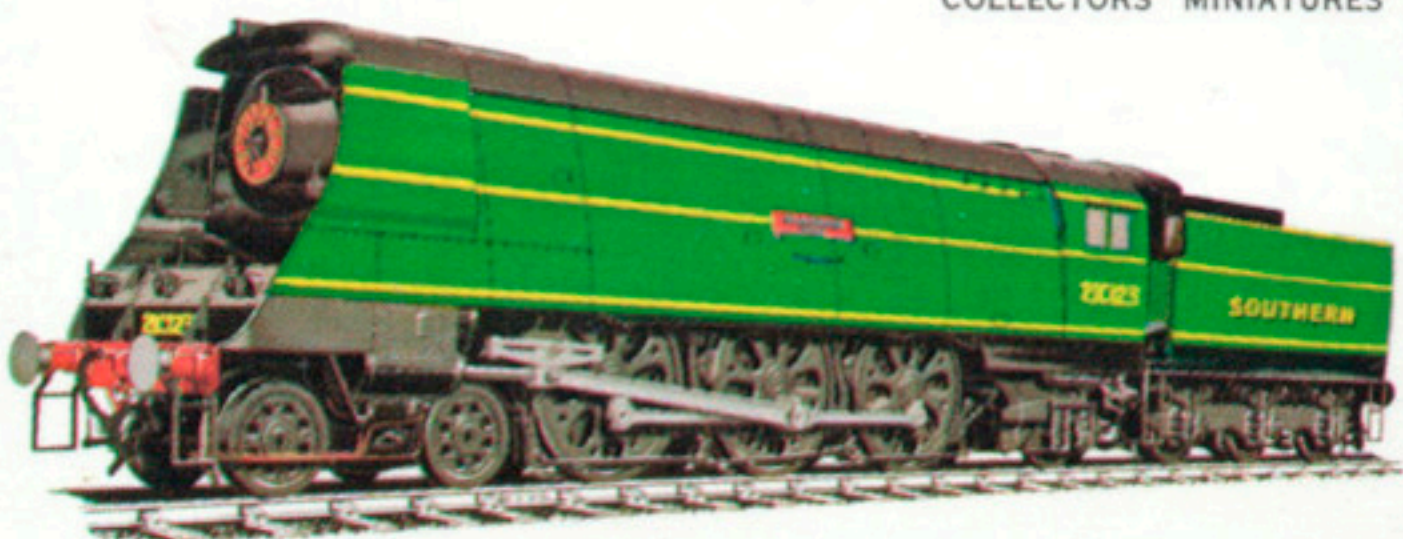
COLLECTORS' MINIATURES



SOUTHERN RAILWAY. "KING ARTHUR" CLASS NO. 783 "SIR GILLEMERE", 1925

The famous "King Arthur" Class owes its origin to the L. & S.W.R. Class N15, designed by Robert Urie in 1918. In 1925 R. E. Maunsell brought out an improved version of this design with higher boiler pressure and long travel valves. In all, 54 engines were built (24 at Eastleigh, 30 at Glasgow) between 1925 and 1927. Withdrawal commenced in 1953 and by 1962 the Class was extinct. No. 783 is shewn as equipped for experimental smoke deflector tests in 1936. In the 1930s engines of this Class hauled the fast boat trains between Victoria and Dover. Weight 138 tons 10 cwt. Pressure 200 lb. Tractive effort 25,300 lb.

COLLECTORS' MINIATURES



SOUTHERN RAILWAY. "WEST COUNTRY" CLASS NO. 21C123 "BLACKMORE VALE"

Mr. Bulleid's "Merchant Navy" Class, from which the "West Country" Class was developed as a light-weight variation, introduced the Pacific wheel arrangement to the lines of the S.R. for the first time. These engines also broke with tradition in their use of patent disc wheels, chain-driven radial valve gear and the adoption of a new numbering system based on Continental practice (2 leading axles, 1 trailing axle and 3 - i.e. "C" - driving axles). 110 were built, from 1945 onwards, "Blackmore Vale" being now preserved by the Bulleid Pacific Preservation Society. Weight 86 tons. Pressure 250 lb. Tractive effort 27,715 lb.

COLLECTORS' MINIATURES



BRITISH RAILWAYS. "BATTLE OF BRITAIN" NO. 34051 "WINSTON CHURCHILL"

Designed by O. V. S. Bulleid, following the success of his larger "Merchant Navy" Class Pacifics, these engines entered service with fully air-smoothed casings from engine to tender, painted in the Southern's pre-war livery of malachite green. Commencing in 1957 a number were rebuilt by British Railways, with conventional Walschaerts valve gear in place of the original specially designed totally enclosed gear. No. 34051 is now part of the National Railway Reserve Collection. Weight 90 tons (originally 86 tons). Driving wheels 6 ft. 2 in. Cylinders (3) 16½ in. × 24 in. Pressure 250 lb.

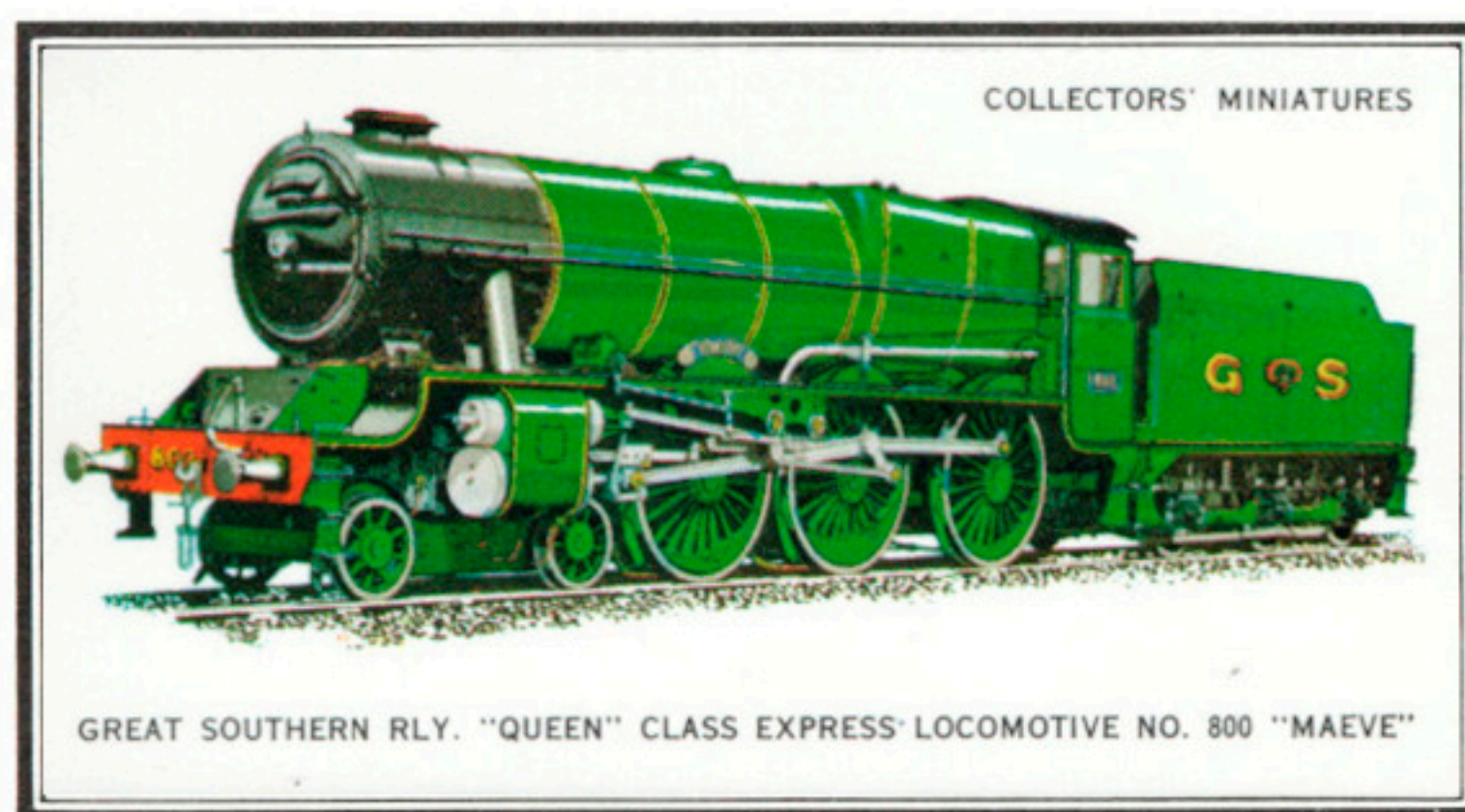


The last of the twelve B.R. standard designs introduced by R. A. Riddles, the "Standard Nines" were intended for heavy mineral freight traffic. 251 were built between 1954 and 1960. All were painted in unlined black except No. 92220, the last new steam locomotive constructed for British Railways, which was given the "Great Western" passenger green livery adopted by B.R. (these engines were occasionally used for fast passenger traffic, one of them having worked the "Flying Scotsman" express at a recorded speed of 90 m.p.h.). Weight (loco.) 86 tons 14 cwt. Pressure 250 lb. Tractive effort 39,667 lb.



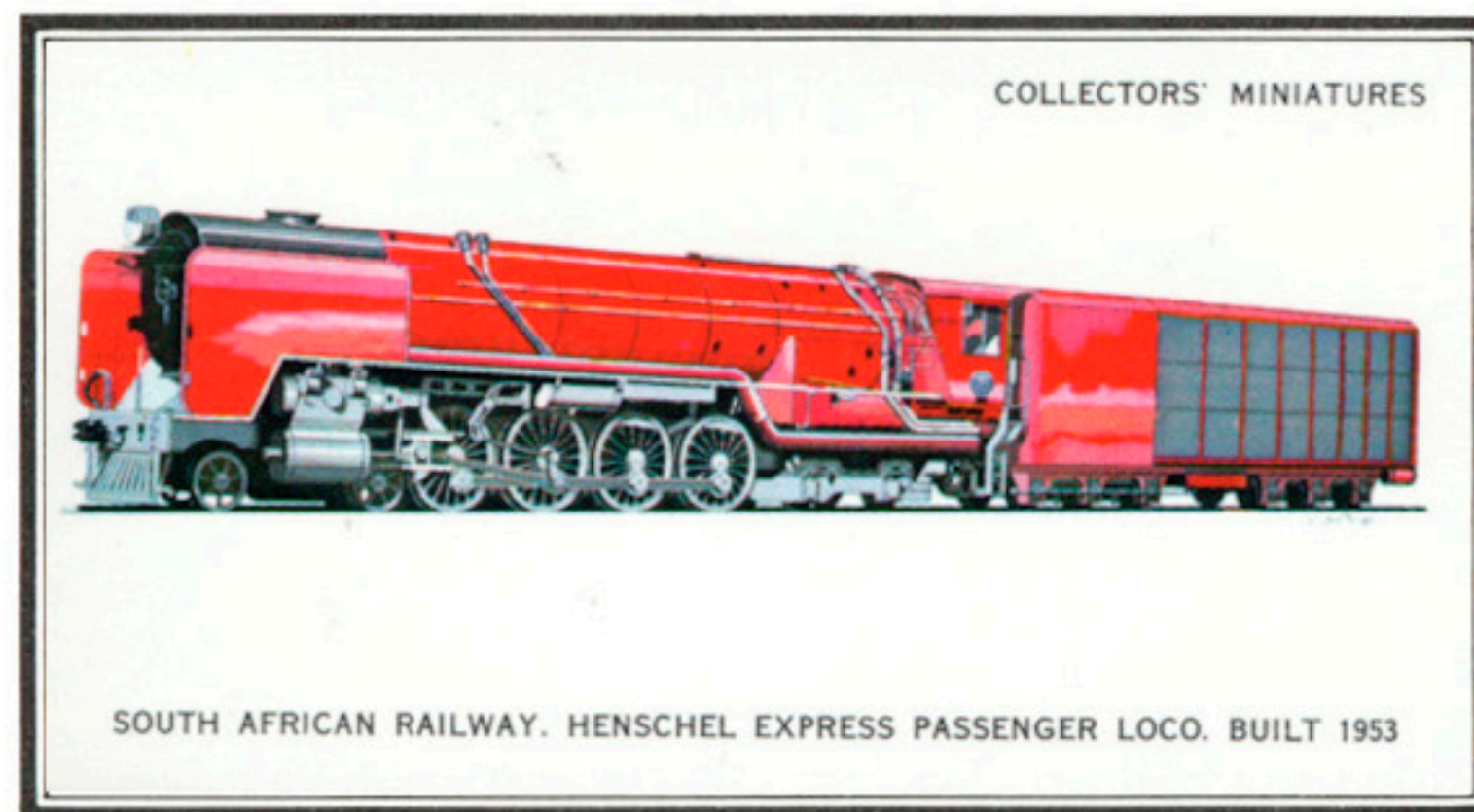
BRITISH RAILWAYS. CLASS 9 HEAVY FREIGHT NO. 92220 "EVENING STAR"

Designed by E. C. Bredin, three engines, named for the Queens of Ireland, were built for working the heavy expresses over the main line between Dublin and Cork. With an overall length of 67 ft. 9 in. and a total heating surface of 2,338 sq. ft. they were the largest and most powerful locomotives in Ireland. They bore a striking resemblance to the rebuilt "Royal Scots" of the L.M.S.R. and they were the last new steam locomotives to be constructed for the Great Southern (later Coras Iompair Eireann). Weight 135 tons (full). Driving wheels 6 ft. 7 in. Cylinders (3) 18½ in. x 28 in. Pressure 225 lb. Tractive effort 33,000 lb.



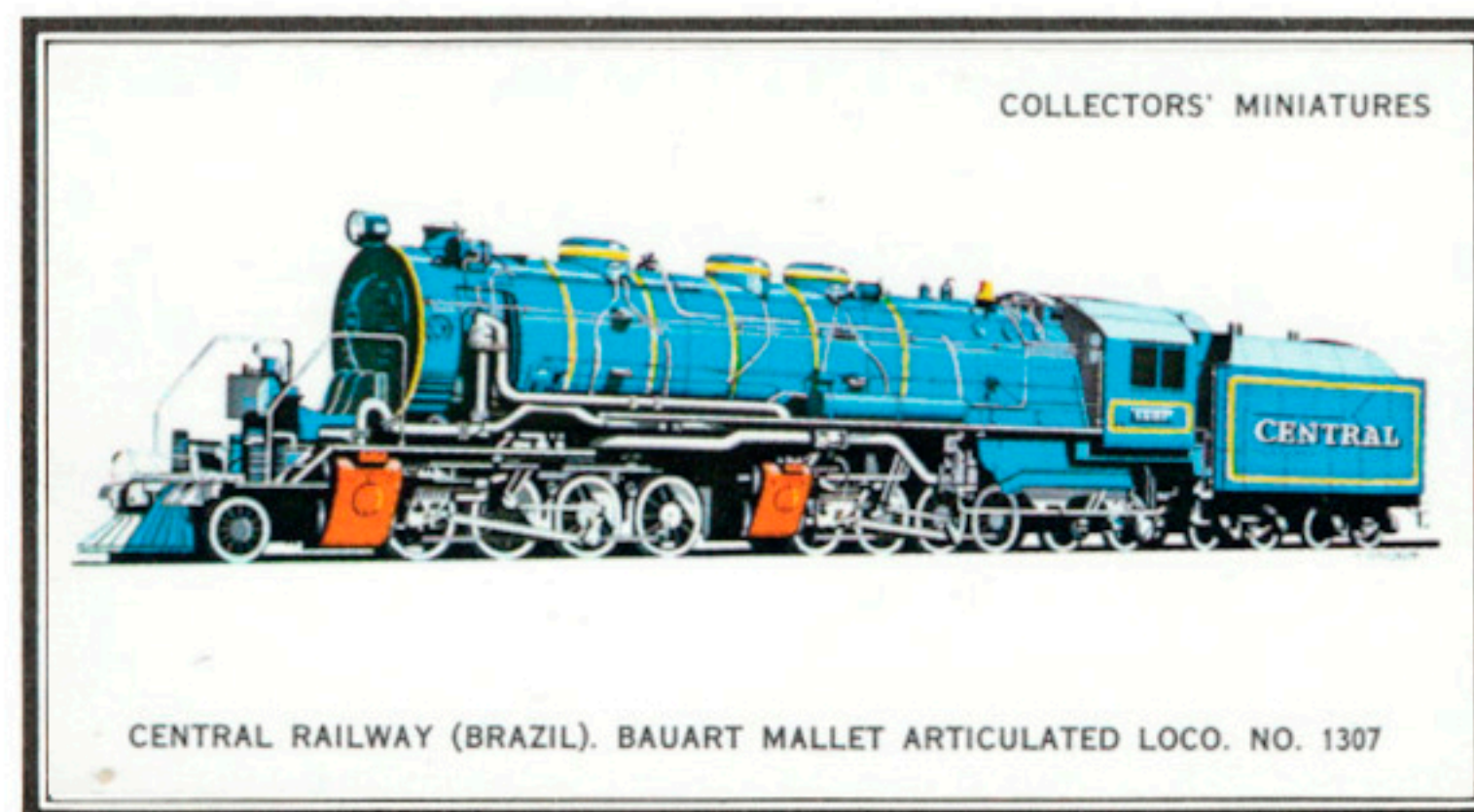
GREAT SOUTHERN RLY. "QUEEN" CLASS EXPRESS LOCOMOTIVE NO. 800 "MAEVIE"

Constructed for service in areas where water is either scarce or else chemically unsuitable for use in steam locomotive boilers, i.e., by reason of impurities which might leave heavy deposits or have a corrosive effect, these engines were specially designed by Henschel to condense their own exhaust steam in a heat-exchanger, the condensate being then fed back to the boiler. The first of them entered service on the 42-inch gauge lines of S.A.R. in 1953 and eventually ninety locomotives were built, all of which are still in service. Weight 123 tons. Horsepower 3,000 (PSi). Maximum speed 60 m.p.h.



SOUTH AFRICAN RAILWAY. HENSCHEL EXPRESS PASSENGER LOCO. BUILT 1953

Built in 1937 for the metre-gauge railways of Central Brazil, this design has proved extremely successful over many years for coping with the difficult conditions encountered there. The many gradients and curves of this mountainous system demand engines with low axle loads, whereas high speeds would be impractical: it was to overcome these problems that this type was developed and built by Rheinstahl Transporttechnik, of Kassel. The first of its class was already in service in 1901, and the example shown represents the most advanced version. Weight 117.5 tons. 1,900 h.p. (PSi). Maximum speed 30 m.p.h.

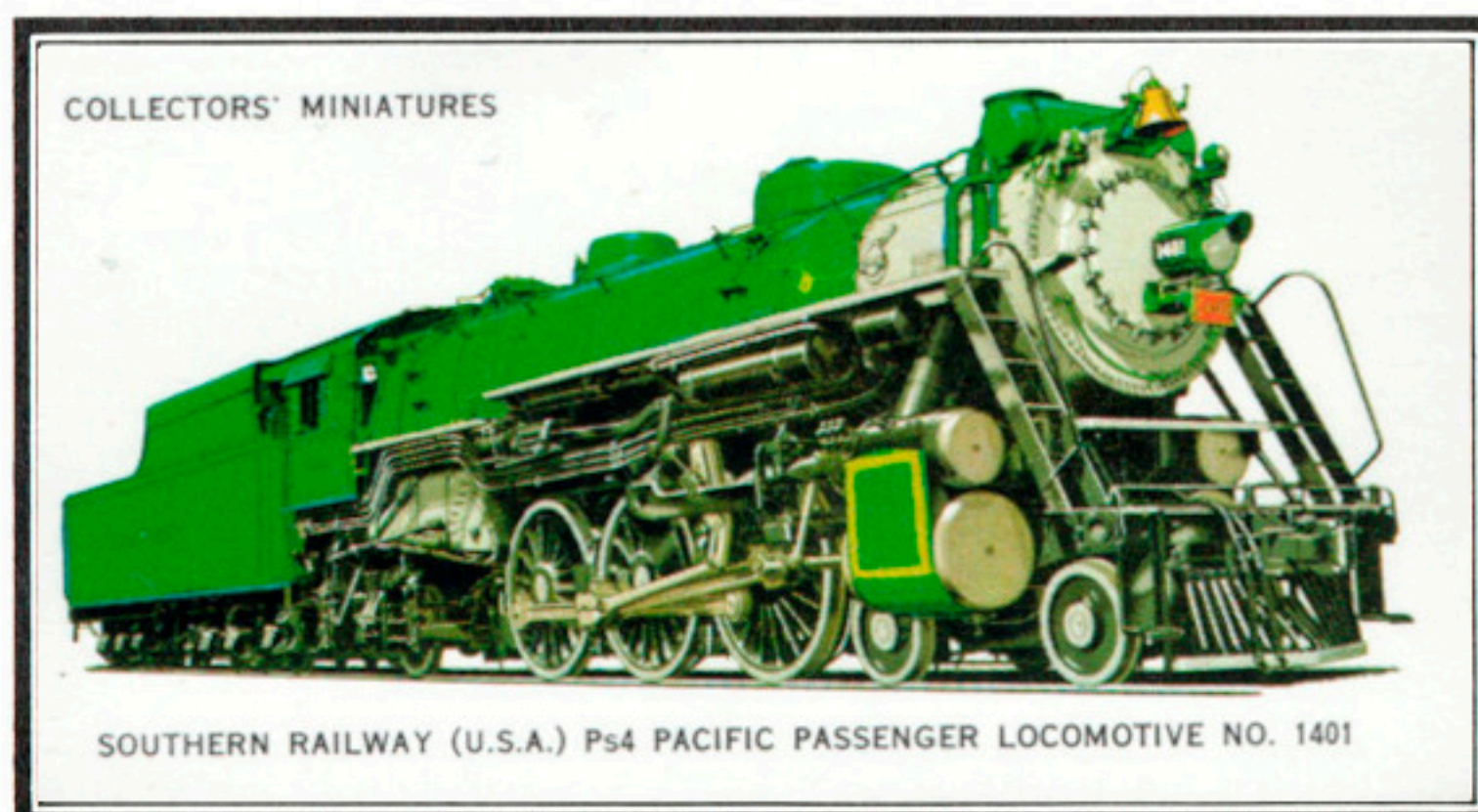


CENTRAL RAILWAY (BRAZIL). BAUART MALLETT ARTICULATED LOCO. NO. 1307





The first steam locomotive in the North West arrived in St. Paul, in 1861, on a Mississippi River steamboat. Although in fact a coalburner, it was designed as a simulated wood-burner, complete with spark arrester and logs. Named for the line's Chief Engineer, Colonel William Crooks, this little engine made its first passenger run to the village of St. Anthony (now Minneapolis) on June 28th, 1862, marking the completion of the first ten miles of railroad in Minnesota. Built by Smith & Jackson, Paterson, New Jersey. Weight (engine and tender) 102,200 lb. Overall length 51 ft. Pressure 110 lb. Tractive power 4,700 lb.



Impressed by the colourful liveries of British engines, Fairfax Harrison, President of the Southern Railway, decided that his system also should have handsomely painted passenger locomotives, by contrast with the plain black generally associated with American practice. Built in 1926 by the American Locomotive Company, No. 1401, first of its Class, was assigned to the Washington-Atlanta section and in April 1945 it was one of ten Ps4s used to haul President Roosevelt's funeral train from Warm Springs, Ga., to Washington. Weight (engine and tender) 561,600 lb. Cylinders 27 in. x 28 in. Pressure 210 lb. Tractive power 45,000 lb.



Originally built as heavy shunting/switching engines, for marshalling yard work on the former Prussian State Railway, this design proved so successful that more than 1,000 locomotives were eventually constructed. They were used for mineral traffic, heavy freight and mixed goods haulage, and even for local branch passenger traffic. As late as 1972 there were still more than 40 engines in service with the Deutsche Bundesbahn. No. 094 564-5 was built in 1914 by F. Schichau GmbH., Elbing, as part of the original batch, and later rebuilt with some modifications. Weight 84.9 tons. Horsepower 1,070 (PSi). Maximum speed 45 m.p.h.



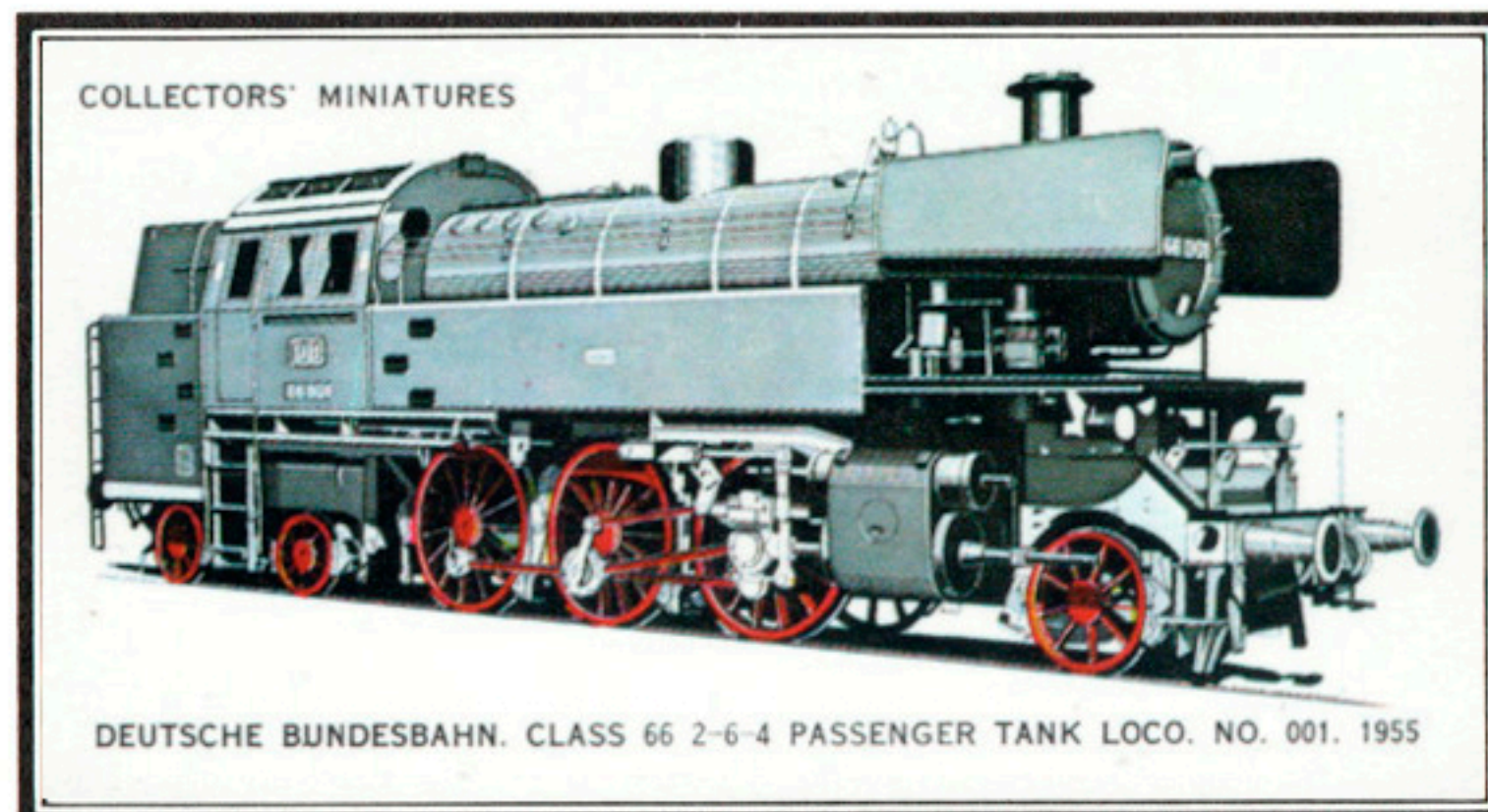
In 1937 the Deutsche Reichsbahn commissioned the building of a new class of locomotives, to be designed primarily for high-speed working. The result was the well-known 05 series of which three examples were built, by Borsig, Berlin, all fitted with apparatus for steamcoal-dust firing. Upon withdrawal in 1960 one of these engines was fully overhauled and presented to the Museum in Nuremberg. Weight 125 tons. Horsepower 1,850 (PSi). Maximum speed 120 m.p.h. (The next following design, Class 06, comprised the most powerful German steam locomotive type, weighing 127 tons and developing 3,020 h.p. PSi).



Experimental design built in 1956 by Fried. Krupp, Essen, incorporating a number of innovative features. Only two examples were built, both of them of 3-cylinder design with drilled cylinder block cast in one piece as an integral part of the completely welded frame; the boiler and firebox were also welded. No. 10001 was built with oil-assisted firing equipment, whereas No. 10002 was fitted for main oil-firing. These were the last new developments introduced in Germany for heavy express steam locomotive service. Weight 119 tons. Horsepower 2,900 (PSi). Driving wheels 2m. Maximum speed 88 m.p.h.



For practical purposes the age of steam railway locomotive traction can be said to have ended in the late 1950s. In Britain, No. 92220 "Evening Star" (see card No. 41), last of her class and the last steam engine to be built for B.R., entered service in 1960, and in other European countries the story was the same. This all-welded passenger tank locomotive, built in 1955 by Rheinstahl AG Transporttechnik (Henschel), represents the final stage of development of the steam locomotive in Germany. Weighing 93.4 tons and developing 1,170 h.p. (PSi), these engines were capable of a maximum speed of 62/63 m.p.h.



The success of the Liverpool and Manchester line destroyed all doubt as to the possibilities of the railway system. Branches were made from the main line to Warrington on the south, and to Bolton on the north. Later, Birmingham was united to Warrington, and consequently with Liverpool and Manchester, by the Grand Junction Railway formed in 1837.

In 1837 also the London and Birmingham Railway was opened, and the Manchester and Birmingham Railway in 1840.

All of these railway companies were amalgamated with the London and North Western Railway upon its formation in 1846, which in turn became part of the London, Midland and Scottish Railway upon the grouping of Britain's railways in 1923.

The period from 1850 until the outbreak of the first World War in 1914 can be said to have been the Golden Age of Steam.

With the outbreak of World War 1 however, in August, 1914, the Government took control of the railways and their ancillary services, creating for this purpose a committee of General Managers known as the Railway Executive Committee.

The demands of war also stripped the railways of rolling stock and materials of all kinds for

use with the armies abroad, and of many of their experienced personnel whose places were taken by willing but inadequately trained staff. By 1918 the problems of supply, repair and reconstruction of Britain's railways had reached such proportions that the Select Committee on Transport, appointed by the House of Commons, advised that the organisation of the railways could not be allowed to return to its pre-war position and that unification was greatly to be desired "whether the ownership be in public or private hands".

The result was the formation, at 1st January, 1923, of the London, Midland and Scottish Railway (L.M.S.R.), the London & North Eastern Railway (L.N.E.R.), and the Southern Railway (S.R.). Alone of the former great companies, the Great Western Railway retained its identity and its essential character.

In September 1939 Great Britain once again declared war upon Germany, and total Government control was once more extended over the entire railway network of the country. This time there was to be no reprieve and in 1948 the four group railways, after precisely twenty five years of existence, were absorbed by British Railways under nationalisation.





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