



NSWGR AD-60 GARRATT

The history of the Garratt locomotive goes back to 1907 when William Garratt patented his articulated locomotive design. After returning to England from working on railways located in Cuba, Peru and Australia, he devised a scheme for mounting heavy artillery on railway bogies. He discussed his idea with Beyer-Peacock & Company and this subsequently led to the development of the type of locomotive which now bears his name.

The first Garratt, called the K1 Class, was built in 1907 for operation on the 2 foot (600 mm) gauge N.E. Dundas Railway in Tasmania. It was a tiny 0-4-0 + 0-4-0 compound which weighed 33 tons, and one of the two locomotives is currently running on the Welsh Highland Railway in UK. Garratts were destined to expand in gauge, weight and power eventually culminating in a Russian 5 foot (1500 mm) gauge monster built in 1932, and the most powerful, a South African 3 foot 6 inch gauge (1067 mm) GL class 4-8-2 + 2-8-4 which developed 78650 lb tractive effort.

Over the years, more than 2000 Garratts of all types were built. The merit of the Beyer-Garratt design was in their free-steaming capability

which was achieved by optimizing a boiler design which was uncompromised by the need to have driving wheels or trailing trucks beneath the boiler, firebox and ash pan.

The concept of two identical chassis, one positioned forward and one reversed with the boiler assembly slung between them, resulted in excellent riding characteristics and great stability on curves and uneven track. The 'flexible' Beyer-Garratt locomotive rode inside curves, with its boiler within the radius, unlike a conventional locomotive, whose boiler projected outside the curve.

Beyer-Garretts proved to be splendid locomotives and, given the early association with Australia, the standard gauge AD-60 is perhaps the most significant of these locomotives to have operated in the Far East and Australasia. These 4-8-4 + 4-8-4s were built in 1952 and had a tractive effort of 63600 lb. They weighed 262 tons and were thoroughly modern, incorporating the latest state-of-the-art in locomotive design. Aster selected the AD-60 to serve as the Beyer-Garratt prototype to model. The AD-60 Garratts still in existence are:

- No. 6029 at Camberra, Australia Railway Historical Society
- No. 6039 at Dorrigo, Hunter Valley Steam Railway and Society
- No. 6040 at Thirlmere, NSW Rail Transport Museum
- No. 6042 at Forbes, Purchase being negotiated by Hunter Valley Steam Railway and Society .

The AD-60 became known to overseas enthusiasts, especially those in the United States, as the "Big Boys" Down Under!



Specifications

Scale/Gauge: 1/32, Gauge One (45 mm)

Total Weight: 10.83 kg. (23.88 lbs)
(Front Engine 3.04 kg. + Boiler 4.3 kg. + Rear Engine 3.49 kg.)

Dimensions:

Length: O.B 1,044 mm. (41.1 inches)

Width: 98 mm. (3.8 inches)

Height: 136 mm. (5.35 inches)

Wheel Arrangement: 4 - 8 - 4 + 4 - 8 - 4

(all wheels made of stainless steel)

Driving Wheels: Dia. 43 mm Spoke Type, Equalized Spring Action.

Pilot Trucks: Dia. 29 mm Disk Type, Swing Bolster

Trailing Trucks: Dia. 29 mm Disc Type

Engine:

Cylinders: 4 x Cylinders, Bore 12 mm X Stroke 20 mm

Valve Gears: Walschaert's Valve Gear

Steam Port: 1.5 mm, Cut Off 79.3%, Lap 1.25 mm, Travel 5.5 mm.

Boiler Type: Locomotive Type for Either Coal or Alcohol

(10 x Dia. 9 mm Tubes and 1.x Dia 18 mm tube)

Water Capacity: 320 cc at 80 full

Pressure: 4 kg/cm² at Normal Working

Fittings: 3 x Safety Valves, 2 x Super Heater Tubes, Pressure Gauge, Water Gauge, Blow-Down Valve, Throttle Valve, Blower Valve, Whistle and Whistle Valve, 2 x Check Valves

Axle Driven Pumps:

Two are mounted on the Trailing Drivers' Axle on each Front and Rear Engine, 2 x By-Pass Valves

Pump Bore 5 mm x Ram Stroke 6 mm

Lubricators: 2 x Roscoe Displacement Type

Burner: Convertible to either Coal or Alcohol

Fire Bed Area: 43.8 CM²

Fuel: Coal or Alcohol

Tenders:

Water Tanks: Capacity 350 cc (front) + 250 cc (rear)

Hand Operation Water Pump Mounted in the Front Tender

Fuel Tank: Capacity 260 cc of alcohol

Head & Rear Lamps: Battery Operation

Minimum Radius: 2 Meters

