



L.N.E.R. Class A4 Silver Link

The World's Speed Record Champion for Steam Locomotives

Mallard / Sir Nigel Gresley

During the mid-1930's, the London & North Eastern Railway's Chief Mechanical Engineer, Nigel Gresley, reported to his company's directors the need to develop high speed streamlined steam locomotives. Known as the A4 class, four 4-6-2 locomotives were built in 1935. All were painted silver-gray and were given "Silver" names. They were fitted with three cylinders and had a conjugated valve gear by which cross levers from the outside motion drove the inside piston valves.

Wind tunnel testing had been performed on various shapes to identify the configuration that developed minimum drag. It was believed that streamlining would result in a reduction of 100 horse power required for a given speed. With 80 inch diameter drive wheels and a boiler pressure of 250 psi, the A4's were expected to develop very high speeds, and they

did not disappoint their designers. In September of 1935, 'SILVER LINK' covered six miles at the rate of 100 miles per hour and ran the 29.1 miles from Peterborough to Grantham in just 26 minutes.

On July 3, 1938, another A4, 'MALLARD', set a world's speed record of 126 miles per hour (for one second or about 60 yards) and had exceeded 120mph for over three miles and had averaged 120mph for over five miles. The previous record at 124.5mph was held by the Deutsche Reichsbahn 05 class 4-6-4 in 1936. This record stands to this day as the fastest speed ever achieved by steam traction.

By 1939, a total of 36 A4's had been constructed and were in use principally on the east coast routes. The 17th locomotive to be constructed, No. 4498, was named 'Sir Nigel Gresley' in honor of its designer, who had been granted his Knighthood in 1936.



Specifications

Scale/Gauge: 1/32, 45 mm (No. 1) gauge. (Back to back 40 mm)

Dimensions:

Length 691 mm (Engine 433 mm, Tender 127 mm),

Width: 86 mm and Height 127 mm.

Weight: Engine: 3.9 kg. + Tender 1.9 kg.

Wheels:

Driving: Diameter 62 mm, made of stainless steel, coil spring action.

Pilot: Dia. 28 mm, made of stainless steel

Trailing Truck: Dia. 34 mm, made of stainless steel.

Tender: Dia. 39 mm, made of stainless steel

Cylinders:

2 x outside: Bore 12 mm x Stroke 20 mm, Walschaert's valve gear with screw reverser. Valve Travel 6 mm, Lap 1.5 mm. Cut off 75% at full gear.

1 x inside: Bore 12 mm x Stroke 20 mm, Slip Eccentric Drive, Valve Travel 4 mm, Lap 1.5 mm, Cut off 44%.

Boiler:

Type: Fire Tube alcohol boiler (Dia. 55 mm x Length 234 mm)

Water Capacity: 280 ml at 80% full

Pressure: 3.5 to 4 kg/cm

Fittings: 2 x Safety Valves, Regulator Valve, Blower Valve, Check Valve, Pressure Gauge, Water Gauge

Lubricator: Roscoe Displacement Type

Burner: 3 Wick Tube Alcohol Burner

Tender:

Water Tank: Capacity 520 ml of water

Feed Water Pump: Bore 10 mm x Stroke 16 mm

Fuel Tank: Capacity 120 ml of methylated alcohol

Minimum Radius: 2 meter





Artwork courtesy of **Richard Green**, [Locos in Profile](#)