



photo by Jim McDavid

Western Maryland Shay

The Shay geared locomotives were named after the inventor, Ephraim Shay, and were developed in the late 1870's to meet the transport requirements of the ever-growing lumber industry. A more flexible type of engine was needed, one powerful enough to negotiate sharp curves and steep grades in the backwoods lumber sites. In this design, a two or three cylinder vertical steam engine, similar to that used to drive a steam ship is mounted on the side of the boiler, and the connecting rods coupled to a crankshaft are connected to the drive-shafts by universal and slip joints. Small pinions attached to the drive-shafts engage with bevel gears on the truck wheels. In this way all the trucks are powered and more flexibility on sharp curves and rough roadbeds is obtained.

Aster has modeled a 1/32nd scale 1945 Lima-built Western Maryland Shay, the largest three-truck Shay ever manufactured. The Western Maryland used it on a coal mining branch near Chaffee, West Virginia. It was designed for regular operation on a 7% grade with occasional stretches as steep as 10%, and it could haul 156 tons at 10 mph on the

7% grades. Previously preserved at the Baltimore & Ohio Railroad Museum, it is now in service at Cass, Virginia.

Specifications

Weight: 6.4 kg

Dimensions: Length 640 mm x Width 108 mm and Height 148 mm

Wheels: (3 trucks) Diameter 38 mm made of stainless steel

Gear Ratio: 2:1

3 Cylinder Engine:

Vertical 3 cylinder engine (cylinders made of phosphor bronze)

Bore 10 mm x Stroke 12 mm

**2 piston rings made of Rulon around pistons,
miniature ball bearings on crank shaft**

Valve Gear: Stephenson type

Valve Travel 4.6 mm, cut-off 75%

Boiler Type: Center Flue type boiler with 3 fire tubes

Gas (Butane) firing

Capacity: 340 cc of water at 80% full

Fittings: 2 x Safety Valves, Regulator valve, Pressure Gauge, Water gauge, Water check valve, Super Heater

Fuel Tank Capacity: 90 cc of butane gas

Tender Water Tank: Capacity 280 cc of water + available space for R/C equipment

Hand Operation Feed Water Pump installed (Bore 8 mm x stroke 16 mm)

Axle Driven Feed Water Pump: Bore 6 mm x stroke 6 mm mounted on the leading truck wheels axle

Lubricator: Roscoe Displacement

Couplers: Open Jaw Knuckle Coupler

