

AA class 4-6-2

10 locomotives. NZR service 1915-1957.



AA
4-6-2

Built by the Baldwin Locomotive Works.

Running numbers 648-657.

Weight 88.5 tons. Length 58' 5". Cylinders 18" x 24". Driving wheels 49". Boiler pressure 170 psi. Tractive effort 21,580 lbs.

Between 1903 and 1913, all new NZR locomotives were built locally. But in 1914, when NZR needed more Pacifics, the country's three main locomotive works were fully engaged – Addington with the X class, Hillside with the Ww, and A & G Price with the Bb.

Additional engines were therefore ordered from the Baldwin Locomotive Works. They were the last American-built steam locomotives delivered to NZR. Using a non-British builder was controversial at the time, but Baldwin's record of prompt delivery outweighed imperial sentiment. The AA class owed little to the NZR-designed A class apart from its wheel arrangement and general dimensions. Construction was completed in under two months from the order being placed – an astonishing performance, which no New Zealand or British manufacturer would have been able to match.

Bar frames prevailed over NZR's contemporary preference for plate frames. Superheaters were fitted from the outset. In the decade following the delivery of its previous Pacifics, the Q class, Baldwin had overcome its lack of enthusiasm for Walschaerts' valve gear, and mastered the type. Water capacity was double that of the A class, and coal capacity twenty-five percent greater.

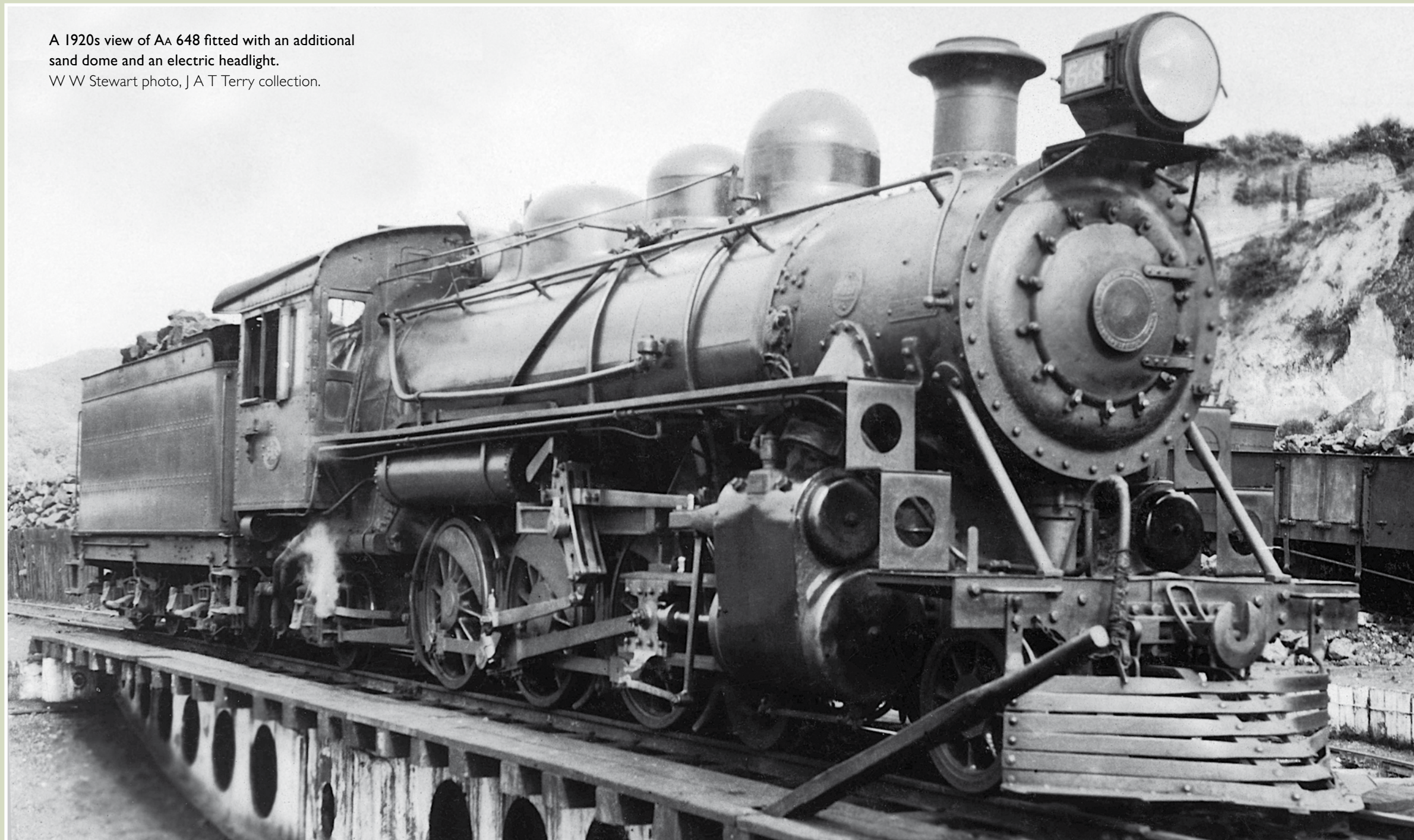
The AA was ordered by NZR's new Chief Mechanical Engineer, H H Jackson. Unlike the A class, it was a simple rather than a compound. Overall the AA was a very competent design. It worked well as delivered, and no early major modifications were required.

In 1919, AA 654 was selected for a trial using pulverised coal. After suitable modifications had been made, it undertook one short return trip between Auckland and Otahuhu, during which it had to make an unplanned stop to raise steam. The trial was abandoned and the modifications reversed.

The AA class had a smaller grate area than its New Zealand-designed equivalents, the A and Ab. This mattered little with good coal, but increasing use of lower-quality Waikato coals at some depots made a larger grate desirable. In the late 1930s, consideration was given to replacing just the fireboxes. But, as the

A 1920s view of AA 648 fitted with an additional sand dome and an electric headlight.

W W Stewart photo, J A T Terry collection.



original boilers were approaching twenty-five years old, NZR decided to fit new Ab-style boilers instead.

Rebuilding started in 1940. The new boilers were outstanding steamers with a higher working pressure, and their installation significantly improved performance. They were longer than the originals, requiring a two-foot addition to the rear of the frame, and a new cab. These changes noticeably altered the look of the class.

Ballast blocks and power reversing gear also proved necessary, the latter being popular with crews. The rebuilding programme was completed in 1942.

The A and AA classes recorded generally similar average mileages and costs. Nevertheless, neither type came close to equalling the performance of the outstanding, never rebuilt, Ab class, which typically averaged around fifty percent more miles per annum, and lower costs.

The AA's worked solely in the North Island. With smaller driving wheels than the A and Ab classes, they tended to be used on more steeply-graded lines in the middle part of the Island, including latterly in the Gisborne and Wanganui areas.

The last AA was withdrawn in 1957. All were scrapped. The New Zealand-designed A and Ab classes went on to outlive the AA's by more than a decade.