



(Atkinson, 2010c)

Railways

Diesel and electric trains

In 1949 New Zealand Railways (NZR) brought its first diesel-mechanical shunting engines into service. As with steam, early machines were British imports. The first mainline diesel-electrics, English Electric DEs, were introduced in 1950, followed by more powerful DFs and DGs.

With the introduction of the US-built General Motors DA class in 1955, diesel traction became a regular feature on the North Island main trunk (NIMT). Described as the 'diesel equivalent of the "Ab" in versatility, the "Da" literally dragged the NZR into the diesel age'.¹ The DA fleet, built in the US, Canada and Australia, eventually numbered 146. The North Island was a diesel domain by the late 1960s, but it wasn't until 1971 (following the arrival of 64 Mitsubishi DJs) that the conversion to diesel on South Island lines was complete.

Next came the powerful General Electric DX, 49 of which were imported between 1972 and 1975. A few years later, 85 DAs were rebuilt as the DC class. In 2008 the DCs and DXs, together with 30 General Motors DFTs, provide the bulk of New Zealand's mainline locomotive power (outside of the electrified NIMT).

Electric trains

New Zealand's first electric railway opened in 1923, but until the 1980s electrification was confined to two South Island tunnels and Wellington's commuter lines. The latter were progressively electrified from 1938, starting with the Johnsonville line. By 1940 the NIMT out of Wellington had been electrified as far north as Paekākāriki. English Electric ED locomotives, most of them built at NZR workshops, and British-built EWs hauled trains over this section until the late 1960s, when diesels took over.

Early electrics

Electric propulsion was seen as ideal for use in tunnels, to avoid the smoke caused by steam locomotives. New Zealand's first electrified railway, opened in 1923, was a 14-kilometre section through the Ōtira tunnel on the Midland line. In 1929 electric locomotives were introduced on the Christchurch–Lyttelton line, which included the Lyttelton tunnel. Both sections subsequently switched to diesel traction – the Lyttelton line in 1970 and Ōtira in 1997.

Commuter trains on the Hutt Valley and Kapiti lines were served by a mixture of electric-hauled trains and English Electric DM multiple units until the early 1980s, when the Hungarian-built Ganz



Electric engine at Wellington station



Changing engines



First electric unit service



Wellington commuters

3rd

Mavag EM units were introduced.

After decades of debate, the central section of the NIMT between Hamilton and Palmerston North was electrified in the 1980s. Unlike the Wellington suburban lines, which use a 1.5 kV DC system, the NIMT uses 25 kV AC. This section is served by 22 EF-class locomotives built by Brush Electrical Machines in Britain.

In 2007 the government announced another major electrification project, with the conversion of the Auckland suburban network (currently served by diesel-hauled trains and diesel multiple units) due to be completed by 2013.

Railcars

Railcars are railway vehicles that carry passengers and have the engine incorporated. New Zealand's first regular railcar services began in 1936, when seven 49-seat Wairarapa-class 'tin hares' began running over the Rimutaka Incline. These were followed by six Hutt-built Standard diesel express railcars, seating 52, and nine British-made 48-seat Vulcans.

The late 1950s saw the arrival of 35 British-built (but Fiat-engined) 88-seat articulated railcars. By the mid-1960s railcars were handling all NZR's long-distance passenger services other than those on the North and South Island main trunk lines. But as passenger traffic fell away later that decade many services closed. When railcars were withdrawn from the Midland line in 1978, the Japanese-built 96-seat Silver Fern twin-sets were the only railcars left in New Zealand. These ran on the North Island main trunk line from 1972 to 1991, and then on Auckland's Rotorua and Bay of Plenty routes until 2001.

Footnotes

1. D. B. Leitch, *Railways of New Zealand*. Auckland: L. Fullerton, 1972, p. 189. Back

Biographies



Garnet Hercules Mackley, 1883–1986

How to cite this page: Neill Atkinson. 'Railways - Diesel and electric trains', Te Ara - the Encyclopedia of New Zealand, updated 26-Nov-10

URL: <http://www.TeAra.govt.nz/en/railways/5>