

Steve Hales of the Barrowmore Model Railway Group explains the background and surprising survival into the 1950s of some unusual steam locomotives.
Prototype photographs courtesy Dan Thompson and Victor Roseman.

CNJ camelbacks

An American peculiarity



Visitors to the Chiltern model railway exhibition at Stevenage on 13th and 14th January 2018 (see *Exhibition Diary* for full details) will come across some strange foreign creatures on the Barrowmore Model Railway Group's American HO layout *Mauch Chunk*, which accurately depicts a real location in Pennsylvania around 1950. Earning their keep well past their 'sell by' date, the distinctive camelbacks of the Central of New Jersey (CNJ) merit a closer look.

The CNJ was a relatively small and always poor railroad running from the coalfields of Pennsylvania down to New York harbour at Hoboken, with other routes running south along the Jersey shore. It carried coal down to the coast and commuters to the ferries across to New York. Lack of money meant the CNJ persevered with obsolete locomotive designs until well into the dieselisation period.

The CNJ finally sent their last steam locomotive to the scrap yard in 1956, which is not unusual in itself, but it was a camelback, No.774. The CNJ was the only railroad to operate camelback locomotives as an important part of their roster right through to the end of steam. It had 131 of them, of seventeen different classes, out of a total of 249 steam locos,

surviving into the 1950s. Twenty five other railroads also ran camelbacks, most of them in the anthracite mining areas of the north-east.

So what were camelbacks and why were they built? Simply put, the distinctive appearance comes from having a cab half way along the boiler instead of at the rear of the boiler. The engineer (driver in British parlance) worked from this cab on the right-hand side of the boiler whilst the fireman toiled alone at the rear, shovelling coal from the tender to the grate. This arrangement arose because the railroads in the Appalachians had plentiful supplies of anthracite coal waste to burn. Anthracite coal is hard to get to light and needs a high temperature, but once alight it burns well. In the 1870s John E.Wootten developed and patented a large, wide firebox to provide a generous surface area for burning anthracite. Burning waste anthracite produced sufficiently substantial savings for the anthracite railroads that they resisted the withdrawal of the camelback design for many years. The Wootten fireboxes were so wide that the engineer could not see past them and hence the cab was positioned forward of the firebox so that the engineer could see where he was going.

Above left
CNJ 4-6-0 class L6 No.757,
a Red Ball brass model.
Photo: Richard Oldfield.

Above
CNJ 4-8-0s Nos.446 and 435
slog through Mauch Chunk
with a heavy coal train on
the Barrowmore MRG layout.
Photo: Steve Hales.



Right
CNJ No.763 4-6-0 class L7s,
built by Baldwin in 1912,
at Communipaw.
Photo from the collection
of D.A.Thompson,
supplied by Victor Roseman.

The importance of camelback locos to the CNJ into the 1950s

camelback	wheels	1919 class	1945	1950	1955
switcher	0-6-0	B2-4	45	38	-
switcher	0-8-0	E1	25	23	-
Consolidation	2-8-0	I4,6	14	8	-
Atlantic	4-4-2	P6	6	1	1
Ten-Wheeler	4-6-0	L3-8	81	61	1
Twelve-Wheeler	4-8-0	K1	24	-	-
		sub-totals	195	131	2

conventional cab	wheels	1919 class	1945	1950	1955
switcher	0-4-0T	A	1		
switcher	0-6-0	B5-7	21	21	8
switcher	0-8-0	E2-4	30	30	4
suburban tank	2-6-2T	J1	9	-	-
Mikado	2-8-2	M1-3	85	45	5
Pacific	4-6-2	G1-4	21	20	6
suburban tank	4-6-4T	H1	6	2	-
		sub-totals	173	118	23

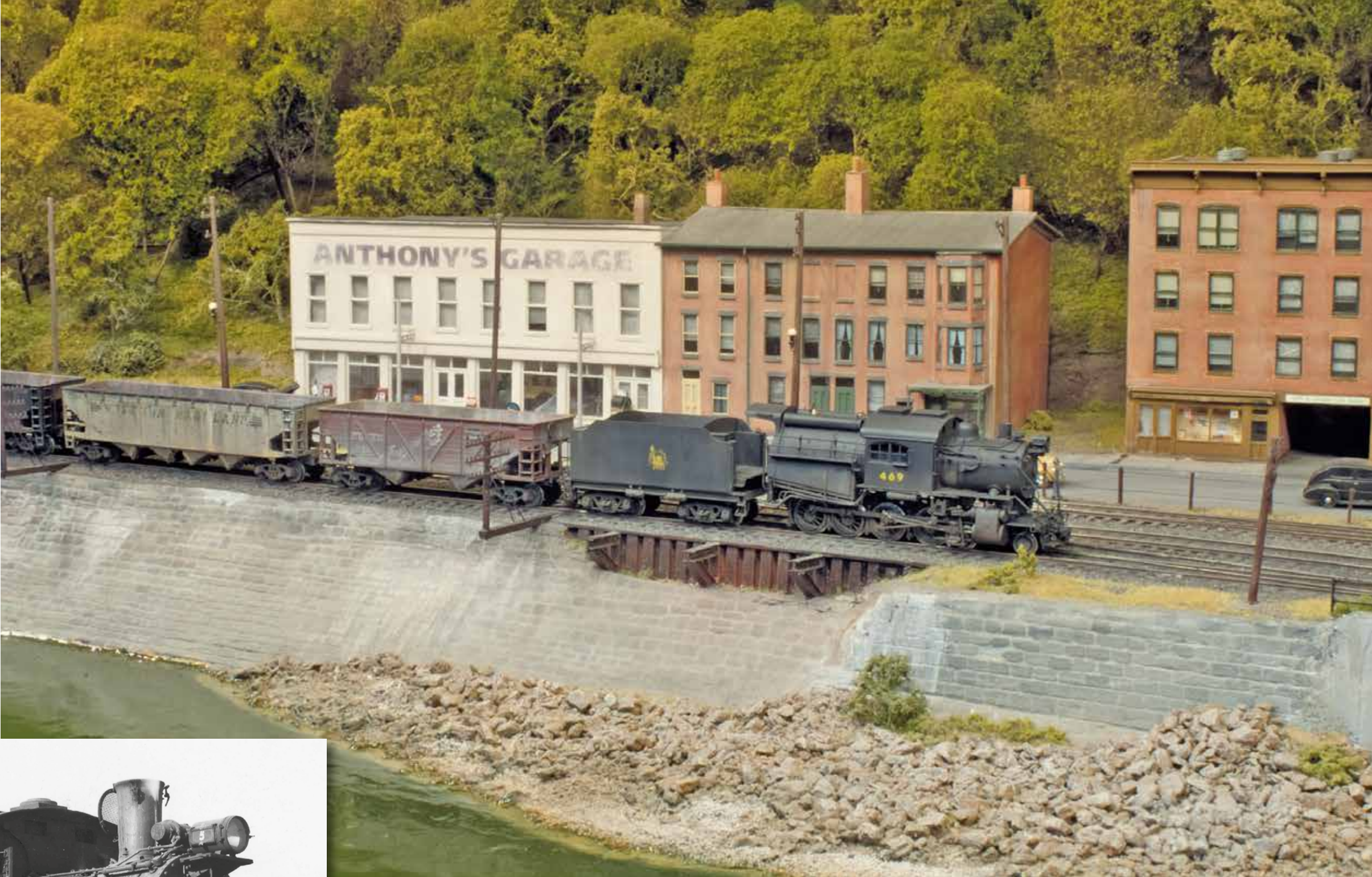
diesels		1945	1950	1955
switchers		31	38	56
freight		-	30	30
road switchers		-	-	48
passenger		-	24	54
	sub-totals	31	92	188

	Totals	399	341	213
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Sources
Locomotives of the Jersey Central 1-999, by Warren B.Crater and Arthur E.Owen, Jr., Railroadians of America, New Jersey, 1957, 1978.
Jersey Central Diesels, by Gerard E.Bernet, Withers Publishing, 1991.

Right
CNJ 4-8-0 No.469 approaching Mauch Chunk on the Barrowmore MRG layout. Photo: editor.

Below
CNJ 0-6-0 class B3 No.5, built by Brooks 1901.
Photo from the collection of D.A.Thompson, supplied by Victor Roseman.



This produced some of the ugliest (or most beautiful, depending on your perspective) locomotives ever built. In 1945 there were still switchers (0-6-0 and 0-8-0), passenger locos (4-6-0 and 4-4-2), and a range of freight machines (4-8-0 and 2-8-0) in widespread use on the CNJ.

We have focused on three classes – each representing one of the main use types: switcher, passenger, and freight – and have chosen ones which survived late and for which brass models are available.

The 0-6-0 B series camelbacks were switchers built by Baldwin Locomotive Works and Brooks Locomotive Works from 1900 onwards and were nicknamed 'bobtails' – later, slightly larger, versions being referred to as 'big bobtails'.

Right
CNJ class B4 'big bobtail' 0-6-0, an Overland brass model.
Photo: Steve Hales.



They worked on light switching duties in the yards around Jersey City and the coalfields as well as in refineries and chemical plants. There were forty-five still in operation in 1945 but they were not normally found in Mauch Chunk.

The 4-6-0 L series passenger camelbacks were the first large, modern ten-wheelers acquired by the CNJ from Baldwin from 1910 onwards. Initially used for fast freights, they became the mainstay of the commuter services into Jersey City and the Hoboken ferry terminal. They had a generator on the tender deck to power the lights in the passenger cars. Films show these locomotives thundering up and down the multi-track main lines in the east of the CNJ system. Eighty-one survived to 1945 but they were only occasional visitors to Mauch Chunk.

The 4-8-0 K series freight camelbacks were built by Brooks from 1899 onwards, initially for heavy main line service. Before the heavy Mikados arrived at the end of the First World War, these were a very common type on the CNJ with over fifty built. They proved unimpressive in service but the CNJ could not afford to scrap them all and by 1945 there were still twenty-four left. They were affectionately known as ‘chunkers’ – not for their chunky appearance but because they were so often seen around the coalfields near Mauch Chunk.

There were many safety concerns with camelbacks and the railroad unions campaigned against them: the fireman had to balance on a moving platform, out in the elements, while stoking the fire. The engineer in the small cab on the side of the boiler was roasted on his left side and frequently frozen on his right; the position was directly above the whirling



side rod and should one break he had no way of escape. Construction of new camelbacks was banned in 1918 by the Interstate Commerce Commission, but they allowed exceptions until finally, in 1927, all new construction was forbidden. This did not stop railroads keeping existing camelback locomotives in operation, however, and the CNJ carried on for nearly thirty more years.

Above
CNJ 4-8-0 class K1a No.435, a PSC brass model.
Photo: Steve Hales.

Below
CNJ 4-8-0 No.430 in the yard at Mauch Chunk on the Barrowmore MRG layout.
Photo: editor.

Below
CNJ 4-8-0 class K1 No.472, built by Brooks 1901.
Photo from the collection of D.A.Thompson, supplied by Victor Roseman.



Providing prototypical rolling stock for the *Mauch Chunk* layout, set in 1945-55, has proved something of a challenge. For a start, not all of the CNJ camelback classes are available in any form, and those that have been produced are only available as brass models. (The few plastic camelbacks in CNJ livery are not based on genuine CNJ prototypes). It is also rare for any CNJ stock to find its way to the UK, although some diesels occasionally do.

Despite this, over a fifteen year period eight CNJ camelbacks and one Reading Railroad camelback (the Reading owned the CNJ from 1902 onwards) have been acquired – one as a gift from a fellow US modeller. Five of our models are K-series freight camelbacks of the 4-8-0 ‘chunker’ variety – two from PSC (Precision Scale Co. Ltd) and three from Red Ball. Two L-series passenger camelbacks are 4-6-0s from Red Ball, and most recently acquired is a B-series ‘big bobtail’ from OMI (Overland Models Inc.) – still to be painted.

Further information

Further details of the *Mauch Chunk* layout can be found online at – www.homauchchunk.co.uk

Further reading
Central Railroad of New Jersey Steam Locomotive Planbook, Postwar Power (c.1945-1954), second edition, Victor Roseman, 2015.
The Central Railroad Company of New Jersey Steam Motive Power 1935-1956, Robert F.Fischer, 2004.
The Hard Coal Carriers: Volume 2: Camelback Twilight, Gerard E.Bernet, Railroad Ave. Enterprises, 1995.
See also – www.homauchchunk.co.uk/cnj_books.htm

Mauch Chunk is due to be at the Chiltern show on Saturday 13th and Sunday 14th January at the Stevenage Arts and Leisure Centre, Lytton Way, Stevenage, SG1 1LZ.
www.cmra.org.uk