

## 7.9.5 The preliminary design of a replica Immingham class locomotive.

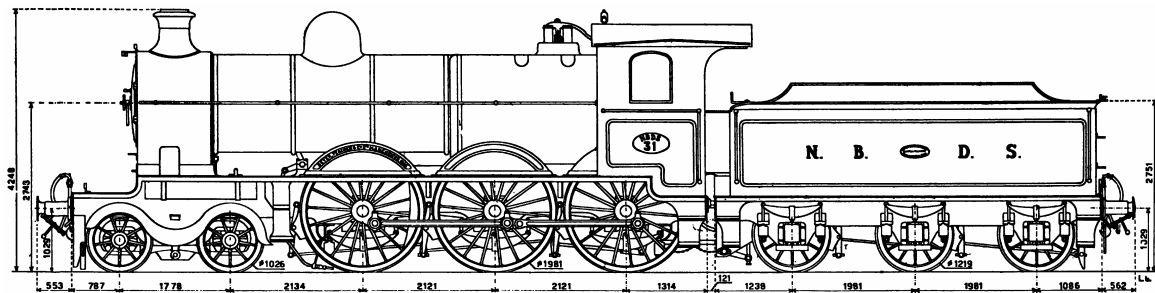


Figure 7.19 NBDS Nos. 30-35, 2 cylinder 4-6-0 steam locomotive<sup>50</sup>

A heritage organisation has the ambition to build a replica Immingham class locomotive. This was a design by Robinson for a 4-6-0 type locomotive with two outside cylinders for the Great Central Railway. The locomotives were built by Beyer-Peacock in 1906 and delivered in two batches with slight differences. An inside-cylindered version was built in 1908 for the Dutch Noord-Brabant Duitse Spoorweg Maatschappij (NBDS)<sup>50</sup> and used on its trains to and from Germany before the First World War.

The main dimensions were:

Heated surface firebox	13.5	m <sup>2</sup>
Heated surface tubes and flues	95	m <sup>2</sup>
Superheater	34	m <sup>2</sup>
Grate area	2.6	m <sup>2</sup>
Boiler pressure	13.4	bar
Cylinders (2) diameter	510	mm
stroke	660	mm
Steam distribution	Walschaerts (NL), Stephenson (UK)	
Wheel diameter	1981	mm
Tender water space	15.9	m <sup>3</sup>
Tender coal	5	t (of 1000 kg)
Locomotive weight incl. supplies	62	t
Tender weight incl. supplies	38	t
Total length	17881	mm
Maximum velocity	100	km/h
Tractive effort	8130	kgf

All engines later received superheaters and had their cylinder diameters increased. The Dutch locomotives were produced with as many weight savings as possible due to the light track of the railway. Over the life of the locomotive this resulted in cracks in the frames, which led to them being taken out of service from 1938 onwards. The British locomotives lasted until 1949 when they were replaced by the new Thompson designed B1 class.

The heritage organisation would like to build a locomotive that corresponds to the original design and looks like it. However, modern times demand a higher velocity of 120 km/h, while the original velocity was 100 km/h with a train of 400 tonnes.