

The 'Nominal' Diameters of Wheels

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It was the practice of the LNWR Locomotive Department to describe engine wheels by their 'nominal' diameter, a term which has puzzled many enthusiasts including me. Why an engine that had 6ft 9in driving wheels should be referred to as a '6ft 6in Jumbo' seems a mystery to which only Crewe could know the answer. The explanation that '6ft 6in' was the 'nominal' diameter seemed to be no explanation at all but merely an additional mystery.

The question as to what is meant by 'nominal diameter' was raised recently in the e-mail group and Peter Davis provided an excellent explanation. By chance, while going through some papers recently, I came across a list of 'Standard Tyres', which perhaps helps to make the term clearer. Where I obtained this list I cannot now remember, but it is a photocopy and may have come from the library of the NRM, York. Certainly, the original derives from C.Williams as the note 'Rec'd 8/1/31' written in the top right-hand corner is in his handwriting.

It is clear from the list that the 'nominal' diameter of a wheel, while it had some relation to the actual diameter of the wheel and the tyre fitted to it, was its diameter in name only ('nominal' in the 'Concise Oxford Dictionary' meaning 'existing in name only, not real or actual'). So the 'nominal diameter' was the dimension used to refer to a particular wheel, though the wheel itself did not have that actual dimension.

If this still seems puzzling, perhaps the examples in the list may make it clear why the use of a 'nominal' diameter was thought desirable. A wheel with a 'nominal' diameter of 6ft 6in was actually 6ft 3in before the tyre was added. The tyre was rolled to an outside diameter of 6ft 9 $\frac{1}{4}$ in and the $\frac{1}{4}$ in was turned off, making the final diameter 6ft 9in. After being on the road, however, the tyre would wear down and would be scrapped when its diameter was (?). So the diameter of 6ft 9in was only correct when the wheel was new and to call it a 6ft 9in wheel throughout its subsequent life was inaccurate and incorrect. In practice, the 'nominal' diameter was a sort of working mean between the actual diameter when new and the actual diameter when the tyre was scrapped. Presumably, in Crewe Works, both in the drawing office and the shops, especially in the shop making wheels, any reference to a '6ft 6in' brought to mind both the appropriate wheel and its tyre, with all the associated dimensions. At the same time, in any calculations of tractive effort or whatever, the nominal dimension as a practical mean was preferable.

