

Tire choices in Roman chariot racing

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Formal chariot racing was a sophisticated and popular sport for over 1800 years, from Etruria in the 6th c. B.C. down to the fall of Constantinople, and the races held in a large number of circuses and hippodromes imply that huge numbers of racing chariots were made over the course of those centuries. It may therefore be thought surprising that no racing machine has been found, but the dearth of such hardware is plausible given the perishable wood and leather components of the lightweight vehicles and the desirability of recycling the metal parts. In this situation a particular artifact must be accorded special significance. It is a hand-sized bronze model of a Roman racing *biga*, known as the Tiber model because found in the river. Dated to the 1st-2nd c. A.D., it is now on display in the British Museum (GR 1894.10-30.1, Bronze 2694). With this model as our guide, all the major dimensions of Roman racing chariots have been reasonably well determined; further, several technical aspects (some obvious, others quite subtle) of actual racing chariots can be established from it.¹ Among the subtle details of the model, one feature is especially intriguing in view of the remarkably realistic work of its maker, who was clearly knowledgeable in matters large and small of vehicular racing. As first mentioned to me by J. Swaddling of the British Museum during our latest study of the model (November 2014), an unusual tire configuration is apparently represented on this all-bronze model: the right wheel has a slightly raised rim, as if to indicate a thin iron tire, but the left wheel lacks this feature (fig. 1). This asymmetrical arrangement is not only curious, it also implies extra work and expense. What, then, could be the reason for it?

One possibility for having apparently only one tire on the Tiber model — which was probably a toy for a rich individual; the emperor Nero, an avid racer, was said to play with toy chariots² — is that two different castings were used in the toy's production, and either one could have been used in the assembly, in random selection from a box.³ However, two



Fig. 1a. Bronze model of a Roman racing chariot in the British Museum (author; copyright Trustees of the British Museum).



Fig. 1b. Right wheel of the model in fig. 1a, evidently representing a thin iron tire (author; copyright Trustees of the British Museum).

1 B. I. Sandor, "The genesis and performance characteristics of Roman chariots," *JRA* 25 (2012) 475-85.
2 Suet., *Nero* 22.1.
3 Robert Hurford, pers. comm. (August 2015); see his www.chariotmaker.com