

The Flanged Wheel

The flanged wheel is closely related to railroading but it was not always that way. In the beginning the flanged wheel was not used. The very first load drawn on rails by a locomotive took place on February 22, 1804 at Penryduren in South Wales. The locomotive (called Trevithicks locomotive) was built in 1803 and had one cylinder 8 inches in diameter with a tremendous stroke of 54 inches.

Richard Trevithick a Cornish engineer (1771-1833) designed and built the tiny 0-4-0 which was the first locomotive to utilize an induced draft to enhance the steaming qualities. The diminutive engine's cylinder was connected by a shaft to a huge flywheel on the right side of the boiler. Another shaft on the left side was crank connected to gearing that meshed with ring gears surrounding the wheel centers.

Trevithick had built the locomotive for the Samuel Homfray Ironworks at Penryduren where flat rimmed carriage wheels were employed to haul the coal and ore. The concept of equipping the wheels with flanges was unheard of, so Richard equipped his tramroad with flanged rails. Perhaps he was covering himself in case of failure of his untested rail road. The carriages could always revert to the dirt road again! In some primitive way could this have been the forerunner of the intermodal concept? Carriages that could be used both on the road and on rails plus a water carrier interchange at Abercynon. History repeats itself!

The first run was from Penryduren to Abercynon, a connecting point on the Glamorganshire Canal and a total run of $9\frac{1}{2}$ miles. The train (1st mixed train no doubt) consisted of one load of bar iron (10 tons) and several carriages with 70 passengers. The entire trip took 4 hours and 5 mins., a far cry from "Mallards" world speed record of 126 M.P.H.

Trevithicks locomotive was derailed after several trials proved it a success. History has failed to record whether or not the flanged rail contributed to the first derailment in history. The worlds first steam locomotive then reverted to stationary service at the ironworks.

By the time "Puffing Billy" came upon the scene in 1813, the flange appeared on the wheel where it rightfully belonged. Long Live the flanged wheel!

Steam forever,

James E. Boynton