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Sanspareil

Sanspareil was designed and built by Timothy Hackworth, then Engine Superintendent of the Stockton and Darlington Railway, In that capacity he would have had as much – and probably far more – experience in the working and maintenance of locomotives as anyone in the country.

His entry was dogged by bad luck. At 4 tons 15.5 cwt over the maximum permissible weight of a four – wheeled engine, which ruled it out of contesting for the prize, though it was allowed to run. Apparently the engine was unsprung, in which the stipulations were further contravened, but there seems to be some uncertainty upon this point. What is certain is that the engine as now preserved is without springs, but the inside length of the cylinder exceeds the stroke by some 10in, which might have been due to providing for the vertical movement of the driving axle on springs, if they were fitted. This excessive cylinder clearance must have resulted in the engine being very wasteful of steam.

Failure to the feed pump resulted in dropping a fusible plug and the coup de grace came as the result of a cylinder cracking. Despite all these misfortunes Sanspareil gave the Rocket a good run and there are those who think that had the weight complied with the conditions and had not misfortune arisen, Sanspareil could have won.

Hackworth had a serious handicap, compared with the Stephensons, in that he lacked the facilities to carry out the manufacture of the engine himself and he had to rely upon outside suppliers for various components, including his boilers and cylinders which gave so much trouble that he was able to get his engine to Rainhill only just in time.

No less than six cylinders were made by Robert Stephenson's firm before two were regarded as acceptable and unfortunately one of these was to fail at Rainhill. This could have been caused by a misplaced core, or bad marking – out: it resulted in the metal between the cylinder wall and the portway having, to quote Thomas F Greener who examined the metal later, "just the thickness of a shilling". Consequently, as soon as the engine began running, the cylinder burst.

The boiler had been supplied by Longrigg's Bedlington Ironworks and was a poor job; the workmanship was so defective that it was necessary to run copper into the joints prior to caulking them. Even though work proceeded day and night, as the engine had to be taken to Liverpool by road there was no time for adequate testing and – to quote John Hackworth, Timothy's eldest son – 'a run of a few miles at midnight on the Aycliffe level was all the trail it got'.

The vertical cylinders, 7in by 18in, drove the 4ft 6 in wheels directly. The boiler, of the return flue type, was 4ft 2 in in diameter and 6ft long. According to Colburn, 'that part of the flue answering to an ordinary firebox was 15.7ft² in extent, which the remaining part of the flue measured 74.5 ft². The grate area was 10ft².

Hackworth does not seem to have appreciated the different conditions applicable to tow the slow speed trains of the S&DR, and those for the high speed needed for the L&MR. Had he done so, he would surely have produced a different engine. For slow-speed work, however, on appreciable inclines, Sanspareil, was a better engine than Rocket.

Use of a return flue meant that firehole, chimney and tender were all at the same end of the engine. The tender is sometimes shown, in early illustrations, at the wrong end. The driver was precariously perched on the ledge at the cylinder end.

Eccentrics for forward and backward gears, which were clutched-in to provide the desired direction of travel, actuated the valves.

Wrought-iron sockets were riveted to the boiler – which served as the frame – and provided bearing for the axles. The wheelbase was very short, being equal to the gauge, a feature contributing yet further to the unsteadiness of an already-unsteady engine. It could be that springs were at one time fitted and later removed; with them excessive pitching of the engine would have been a certainty.

It may be considered unfair that Sanspareil was disqualified on a weight basis, for the loading of each of its axels was less that that of the loading axle of Rocket. That Robert Stephenson regarded Sanspariel as a serious rival at Ravenhill is apparent from his letters.

After the trials, the L&MR Directors bought the engine for £550, the maximum allowable under the eight section of the Stipulations. Later they hired it at £15 a month, to the Bolton and Leigh Railway, who purchased it in 1832 for £110. The L&MR had obtained it, to quote from a Director's letter, 'under the hope that, though manifestly inferior to the Rocket, it might be rendered useful'. It proved of so little value that it was disposed of at a considerable loss. Under the altered conditions in which it worked on the B&LR, it was successful. It continued working, as a locomotive , until 1844, when it went to Coppull Colliery, where it was used to drive a pump, a duty it performed until 1863, when it was sent to South Kensington. The cylinders now on the engine are larger than those originally fitted, and like Rocket, it has been much restored. The tender used at Rainhill was similar to that of Rocket.