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The Spectacle

The Rainhill Trials were a remarkable event. Very few people had ever seen a locomotive in action so as far as the public of the time were concerned it would have been like watching what today would be termed science fiction!

The racecourse atmosphere of the Trials was clear with a large crowd, a grandstand erected half way along the south side of the line for the benefit of ladies and a band playing 'pleasing a favourite airs'.

There was the equivalent of a racecard naming the runners and an excitement in the air about the prospect of making – or losing – money.

The Times of 8th October reported: 'Never, perhaps, on any previous occasion, were so many scientific gentlemen and practical engineers collected together at one spot as there were on the rail-road yesterday. The interesting and important nature of the experiments to be tried had drawn them from all parts of the kingdom to be present at this contest of locomotive carriages, as well as to witness the amazing utility of railways in expediting the communication between distant places.'

Spectators lined the 1.5 miles of tracks with 200 L&MR employees struggling to keep them off the course. The two local public houses did a roaring trade, one of them capitalising by naming her venue 'The Rail Road Tavern'.

Due to its sleek appearance and apparently effortless high speed Novelty was the public favourite, followed by Sanspareil and then Rocket.

The Trials began on 6th October and were completed eight days later. The enthusiasm of the onlookers was immense. Speeds of this level had never been seen before and visitors wanted to ride the locomotives – Cyclopede is said to have had some 50 people hanging on the wagons!

It was estimated that between 10,000 and 15,000 people were there to see the first day of the Trials – impressive numbers when you consider their journey there by road in every type of vehicle. Large numbers came from Liverpool, Warrington, St. Helens, Manchester and the surrounding areas. The sheer numbers that visited indicates the tremendous and widespread interest in the event. Press coverage was extensive throughout England as well as into France, Germany and America.

The second day of the Trials suffered from atrocious weather and visitor numbers were significantly down, but by 14th October, the final day of the Trials, spectators were almost as numerous as the first day, as word got about that this was the final test, between Novelty and Rocket.

On the day, Novelty, which had raised steam in only 40 minutes, had proceeded no further than the second leg of its 70-mile journey when a boiler joint blew out,

reportedly due to cement used for repairs having insufficient time to set. The engine was withdrawn.

Perseverance, which followed, was even more unfortunate. With maximum speed reaching no more than six miles per hour, leaving Rocket the winner.

The Rainhill Trials were the first of a large number of locomotive tests which were later to be carried out on tracks, on test plants, or – as in the case of those trials conducted in the day when very sophisticated mobile and stationary testing plant become available – on a test plant followed by a road test.

The findings of many of such trials contributed much to the development of locomotive design. The findings from the Rainhill Trials were basic in nature, but two important answers should be noted. The first was that the steam locomotive had sufficient possibilities to warrant its use on the L&MR, and the second was to point to the direction in which locomotive development lay, i.e. the use of the multi-tubular boiler and direct drive to the wheels.

Later trials were not open to the public in this way and were surrounded with more secrecy, with the findings of many not even being published. As far as Britain was concerned, steam locomotives reached their zenith with Locomotive Exchanges, held in 1948, following the Nationalisation of Railways. These were not only the more extensive trials ever to be conducted in Britain and beyond, but they were certainly the most extensively documented in Britain since the Rainhill Trials.

The nearest overseas equivalent to Rainhill was the Semmering Trials – sometimes referred to as the Austrian Rainhill – which were held 22 years after the L&MR investigations. There, the features sought differed very much from those for which the L&MR Directors were looking. In addition to the provision of tractive effort, essential requirements were the ability to traverse satisfactorily curves of small radii and climb gradients of 1 in 40. As was the case in Rainhill, these trials produced locomotives with new features – among those forthcoming at Semmering was the first use of the 0-8-0-wheel arrangement.

Have you seen? Visit the virtual museum to find out more.