

THE TRIUMPH OF AN A4 PACIFIC

Recordings made on 23 May 1959 on board a special train organised by the Stephenson Locomotive Society in celebration of its Jubilee

The train of 295 tons gross was hauled by class 'A4' Pacific No. 60007 *Sir Nigel Gresley*, driven by Driver Bill Hoole, himself a member of the Stephenson Locomotive Society.

On the return journey from Doncaster to Kings Cross No. 60007 attained a maximum speed of 112 miles an hour.

In order to preserve the authenticity of this record none of the recordings made during the journey have been edited in any way.

Note: a railway train makes a great deal of noise, especially when travelling at high speeds. It is necessary to play this record at a high volume level in order to create the correct impression.

A descriptive article on this journey, written by Cecil J. Allen, M.Inst.T., A.I.Loco.E., was published by Ian Allan Limited in July 1959. Mr Allen is well known as the leading authority on locomotive performance and it would be an impertinence to try to improve on his article. We gratefully acknowledge the permission given by Ian Allan Limited, the Editor of *Modern Railways*, and Mr Cecil J. Allen to quote from the article and data originally published in *Trains Illustrated*, now published under the title of *Modern Railways*.

Cecil J. Allen writes in his introduction:

"May 23rd 1959 was a day of thrills that many experienced recorders of locomotive performance are unlikely to forget for a long time to come ... our sensations were those of perfectly smooth travel at the highest speeds, coupled with the most scrupulously careful observance of all speed restrictions ...

"No. 60007 *Sir Nigel Gresley*, like No. 60014 *Silver Link*, has always been an outstanding performer among the 'A4' Pacifics, and care had been taken to put the engine in first-class order for the occasion. Moreover there had been assigned to the duty the driver above all others who might be expected to make the utmost of the opportunity – Bill Hoole of Kings Cross shed, one of the British footplatemen whose name will go down into history for his exploits with steam power ... Fireman Hancox, his mate on May 23rd, though as yet of limited experience in high-speed running, also did finely and, even though some falls in the working pressure were inevitable when the maximum of effort was being made, at no point did the performance give any indication of shortness of steam."

After listening to the complete recording of the journey, shortly before his retirement, Bill Hoole wrote:

"When I heard these recordings I was able to enjoy our journey again and it brought back many memories of other journeys on the line from Kings Cross.

"I was fortunate to be the driver of the first advertised special train in Britain to do over 100 mph and this performance was a great credit to the back-room boys, the maintenance staff who turned out *Sir Nigel* in such wonderful condition.

"Driving steam locomotives has been my life and the job has always had a thrill for me, especially express work, from getting the 'right away', giving a warning whistle, opening the steam regulator

valve and feeling the locomotive respond. Always alert for possible wheel slip, to be avoided at all costs.

“The build-up of power makes the first exhaust beats heavy, then the chimney noise eases. On the footplate the metallic ring from the rods and the rail joint taps as speed builds up blend with the sounds of coal being trimmed to size or shovelled into the firebox and the water feeds being manipulated to maintain a safe level in the boiler without decreasing the high pressure needed for high-speed work.

“All this develops into a wonderful symphony of music to my ears, which are so tuned to Gresley engines and ‘A4s’ in particular. This adds to the pleasure of achievement from good team work of Fireman and Driver.

“Great satisfaction is derived from making up time lost from some unseemly delay, regaining minutes by using the power available from careful handling of the reversing lever and steam regulator. This often meant long stretches with speeds of 70, 80, 90 or more, with heavy trains behind, giving a feeling of zest and power, the reward that only high speed with safety can give.”

SIDE ONE

Leaving Kings Cross; at speed through Hitchin; passing Peterborough, over Stoke Summit; arriving at Doncaster.

Band One

Sir Nigel Gresley, immaculately shining, stands at the head of the train in Kings Cross Station. The station announcer is heard in the background, carriage doors are finally closed. Bill Hoole gets the ‘right away’ and raises echoes from the roof with two warning whistles. The train moves almost imperceptibly out of the station and towards the tunnel.

The sharp blast of the exhaust is loudly heard as *Sir Nigel* tackles the climb out of Gas Works Tunnel and on through Copenhagen Tunnel towards Finsbury Park, at which point this section of the record ends.

Cecil J. Allen wrote:

“Starting without a trace of a slip, *Sir Nigel* accelerated to 31 mph up the initial 1 in 105–110 to Holloway, on 45 per cent cut-off and with regulator full open; continuing on 40 per cent, we were through Finsbury Park in 5 min. 31 sec., at 53½ mph, and a little over a mile later, now at 20 per cent cut-off, had crossed the mile-a-minute line, to pass Wood Green at 64. From here the engine had to be eased to conform to the speed limit.”

Band Two

Approaching Hitchin and tearing through the station with the warning whistles all but drowned in the shattering clatter as the train passes over points and crossings at 90 miles an hour. A sharp burst of exhaust from No. 60007 brings the speed up above the hundred on the 1 in 200 falling gradient through Three Counties Station.

“Not until after we had taken water at Langley did Hoole give 60007 his head. At milepost 30 we were doing 85 mph and successive miles from there were covered at average speeds of 86.6, 90.4, 91.9, 95.7, 98.4, 97.8 and 96.9 mph, with a certain maximum of 100 and probably 101 mph at about milepost 35½. The seven miles between posts 30 and 37 were covered at an average of 94.1 mph; cut-off here was 15 per cent, and the regulator partly open.” (C.J. Allen)

Band Three

Approaching Peterborough speed is reduced to comply with the permanent restriction through the station.

Slowly crossing the Nene Bridge *Sir Nigel*, contrasting the dash through Hitchin, crawls through Peterborough Station at 18 mph, then accelerates gently, soon slowing again, with steam blowing off, for a further speed restriction made necessary by track work at Werrington Junction.

Band Four

Sir Nigel roars through Corby Glen Station to attack the last three miles of 1 in 178 rising gradient on the climb to Stoke. The sound of the engine's exhaust is flung back from cutting walls. A group of boys at the lineside cheer the passing train so loudly that their voices are briefly heard above the crescendo of sound as the train flashes under a bridge.

At Stoke Summit *Sir Nigel* is eased before hurtling into Stoke Tunnel. After rattling past High Dyke Sidings, now on a 1 in 200 falling gradient, brakes are applied for a 60 mph speed restriction at Great Ponton, just ahead.

"On this part of the climb cut-off was being advanced gradually to 36 per cent, which gave an increase over the 1½ miles of level track through Corby Glen station to 83½ mph. On the final 3 miles at 1 in 178 speed had fallen to 80½ mph when the final cut-off advance to 40 per cent was made, which actually produced an acceleration up the grade to the 82 mph at which the summit was cleared!" (C.J. Allen)

Band Five

Having taken the Lincoln route from Grantham *Sir Nigel* now approaches Doncaster, clattering over the points and crossings on the outskirts. The cheering crowds at the lineside are greeted with whistles and the train is brought gently to a stop in Doncaster Station, at the end of the outward journey.

SIDE TWO

Leaving Doncaster; through Retford and on over the summit to Markham; from Great Ponton and on over Stoke Summit to Essendine; arriving at Kings Cross

Band One

At Doncaster, ready to start on the return journey.

Bill Hoole acknowledges the 'right away' and the train moves gently out of the station, cheered on by excited crowds on the platform and at the lineside.

Driver Hoole soon opens the regulator to begin some spectacular acceleration on a falling gradient of 1 in 264 followed by level track.

"We were greatly indebted to one of the railway staff on our train who made a belated appearance, for as a result we started 2 min. late, giving Driver Hoole what always appeals to him – some time to make up! The start was almost electric in its vigour; 4 miles out of Doncaster we were doing 70 mph, and then went up the 1 in 198 to Pipers Wood at a minimum of 68." (C.J. Allen)

Band Two

Just after passing Ranskill *Sir Nigel* whistles twice while racing towards Retford. The brakes are soon applied to slow the train for the permanent speed restriction ahead. After whistling through Retford Station and clattering over the GC line crossing *Sir Nigel* meets a fellow 'A4' flashing past, whistling a brief greeting, at the head of a down express. As the train runs on a section of welded track the engine's exhaust grows stronger on the 1½ miles of 1 in 178 rising gradient. A continuing climb at 1 in 200 leads to the summit and the short Askham Tunnel, approximately ½ mile beyond which is the milepost 133¾ referred to in the log.

"After a permanent way check to 40 mph just beyond Bawtry, Hoole treated us to one of the tremendous accelerations that characterised several sections of the run; in this case 6 miles of level brought us up from 40 to 80½ mph before the easing to 65 over Retford Crossing. From here there was a recovery to 70½ mph up the 1 in 178 to Gamston and further to 72½ up the 1 in 200 to Markham Summit." (C.J. Allen)

Band Three

Passing Great Ponton, after climbing for three miles at 1 in 200, *Sir Nigel* tears past High Dyke, dives through Stoke Tunnel, whistles a brief greeting to the signal box at Stoke Summit and, on a gradient of 1 in 178, begins the run down Stoke Bank.

Acceleration is rapid and Corby Glen is passed in a flash. The exhaust beat becomes almost continuous, as do the rail-joint beats which, at times, are almost drowned by the roar of the engine, the whole reaching a crescendo in cuttings and through Little Bytham Station.

Sir Nigel gives a long whistle, the permitted maximum speed has been reached and the rhythm of the rail-joints now takes over from the sounds of the engine as the train races on past Essendine Station.

"Even after 5 miles up at 1 in 200, our speed was still 75 mph as we breasted Stoke Summit, another record so far as I am concerned and a higher minimum than any on the previous occasions on which record speeds have been attained down Stoke Bank. Such was the grand start for the highlight of the day.

"Excitement in the train was now intense. For a long way down the bank from Stoke I was taking consecutive quarter-miles with a split-second watch, but picking up the posts against a brilliant westering sun – it was a perfect day – at intervals gradually diminishing to the merest fraction of 8 seconds apiece, and getting all the figures noted, eventually became an impossible task. So I resorted to a watch recording to tenths of a second, and to taking quarters from the rail-joints, to be certain of catching the maximum speed. This was reached in the neighbourhood of Little Bytham, where *Sir Nigel* at length got my reading down to 8.1 seconds for a quarter – 111 mph. But the average speed of 110.8 mph from Little Bytham to Essendine, begun at 109 and ended at 104 mph, pretty clearly indicates a top speed of 112 mph. From Corby to Little Bytham the average works out at 103.2 mph and from Essendine to Tallington at 100.6 mph.

"We were still very gradually accelerating up to the point where 111 mph was recorded and I am inclined to think that a slightly higher maximum might have been reached down the 1 in 264 beyond Essendine, had not the cut-off now been brought back from the 30 per cent used at this point. As the boiler pressure was now down to 200lb, I should put the extreme limit at 115 mph, I do not think that in any event we could have touched 120, let alone *Mallard's* 126 of July 3, 1938, which incidentally was with a train of 240 as compared with our 295 tons. The 113 mph of *Silver Fox* on August 27, 1936 was also with 270 tons gross, 25 tons less than the weight of our train, but the punishment of *Silver Fox* in making this speed had serious results due to overheating of the middle big-end. On May 23 Driver Hoole was taking no such risks and his handling of *Sir Nigel Gresley* was such that no heating trouble was experienced, notwithstanding the tremendous effort that his

engine was putting out at many different points. Moreover 110 mph was the maximum speed that had been authorised by the Chief Civil Engineer.” (C.J. Allen)

Band Four

“The racing was now at an end. A placid finish brought us into Kings Cross just over 4 min. early, in an overall time of 137 min. 42 sec. for the 156.0 miles from Doncaster. The three permanent way checks had cost rather less than 7 min.; I should put the net time at about 131 min., 13 min. less than schedule, representing a net start to stop average of 71.4 mph ...

“To sum up, what were the records achieved on this most memorable day? First in merit I think the speed of 82 mph – *attained* and not even a minimum – up the 1 in 178 to Stoke Summit with a 295-ton train. It is true, of course, that the *Deltic* diesel has whirled 360 tons over the same summit at 86½ mph, but that takes us into another realm of motive power, and, moreover, required no strenuous firing efforts such as were put out on the footplate of *Sir Nigel Gresley* in achieving this speed. In the ultra-high-speed realm *Sir Nigel Gresley* is the first British locomotive of any description to achieve three separate maxima of 100 mph in the course of one single day’s round trip – 100, 101 and 112 mph. As already mentioned, the time of 7 min. 4 sec. from Corby to Tallington was a record, and with little doubt the 6 min. 45 sec. for the 10.6 miles from St Neots to Biggleswade was another. A rough calculation shows that at least 25 miles of the circuit were run at an average speed of 100 mph, and more than 55 miles at an average of 90.

“If this was Driver Hoole’s ‘swan song’ in express passenger service, he can be assured that it is one of the runs destined to become historic; and we all salute him, and Fireman Hancox equally for a superb achievement ...

“And how can one conclude without a salute to the honoured memory of that great locomotive designer whose name our engine so proudly and appropriately carried? ...

“Notwithstanding the criticism that had been levelled so often at the Gresley derived motion, the fact remains that to date four of his Pacifics have covered over 2,000,000 miles apiece and one is approaching the 2,500,000-mile mark.” (C.J. Allen)