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VOLUME II THE SOUTHERN RAILWAY 1923-1947. The First Decade

Chapter 14, Ten years locomotive design, first two years performance

The Southern Railway officially came into being on January 1st 1923, “an amalgamation and absorption of Companies“, seven more companies were acquired up to the end of 1926. The first Board meeting of the new Company took place on the 4th January. The new Board [as per arrangements in the Amalgamated scheme] had twenty-one directors: eight elected by the L&SW, five by the LB&SC, five by the South Eastern and three by the LC&D. Three joint General Managers were appointed at this meeting, subsequently Sir William Forbes retired on the 30th June and Sir Percy Tempest at the end of the year. Thus by the 1st January 1924 Sir Herbert Walker became sole General Manager, he was a railway manager through and through. Further chief officers were appointed on June 7th 1923, including R.E.L.Maunsell as Chief Mechanical Engineer, E.C.Cox as Chief Operating Superintendent and Herbert Jones as Electrical Engineer although as already noted A.C.Rowarth was subsequently given the key New Works Electrification role in 1925.

In practice, the Southern Railway evolved rapidly, not just in terms of Board and Management structures, but as a coherent strategic unit. It is generally considered it suffered less from internecine strife than the other Railways north of the Thames, although staff loyalty to pre grouping Companies endured for many years, if not generations. It has also been suggested that it benefited by having a General Manager, who lacked some of the Political and City connections of his equivalents in the other three Companies, he was merely an excellent railway company manager. The Southern regarded by many as the minnow of the “big four“, in practice became the most, some would say only, profitable and viable Company.

No completely new LB&SC designed locomotives were constructed after the formation of the Southern, the ten B4X Class 4-4-0's, built at Brighton Works between April 1923 and January 1924, were nominally rebuilds of B4's. At Eastleigh 18 locomotives were built to Urie's designs in 1923, 24 and 25 [15 H15 and three N15 Class 4-6-0's]. The takeover by the Maunsell regime was rapid, the prime need was a large reliable passenger locomotive. The Urie N15's fulfilled much of the requirement, although in operation they failed to “punch their weight“, partly through steaming difficulties. The solidity, straightforward design and ease of maintenance were real positives. As an earnest of their reliability, the example of the similar H15 Class 4-6-0's during the First War is often cited, they ran 150,000 to 200,000 miles before a General Overhaul. Maunsell instigated various tests on Urie N15 No.742, then partly as a result of these tests and partly as a result of his own experiences on the SE&C he evolved the King Arthur Class 4-6-0 design.

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Southern Maunsell 2-6-0's and 4-6-0's

The King Arthur Class 4-6-0 had 6 feet 7 inches diameter driving wheels and two outside cylinders, [20½ inches diameter by 28 inches stroke]. The boiler had a working pressure of 200 pounds per square inch and a total heating area of 2,215 square feet, [1,716 square feet in the boiler tubes, 162 square feet in the firebox and 337 square feet in the superheater]. The firegrate area was 30 square feet and the locomotive weighed 81 tons, [the earlier locomotives were one ton lighter] the tender another 57½ tons. The major differences from the Urie design were: an increase in boiler pressure - a concomitant reduction in cylinder diameter - a Maunsell superheater affording ten percent greater area - cylinders aligned with outside steam pipes - piston valves with increased travel - redesigned steam ports and smoke-box arrangements similar to those embodied in the N Class 2-6-0's. In many ways the King Arthur Class design was an amalgam of Urie's commitment to Mechanical strength and Maunsell's [with borrowings from Churchward via Holcroft] front-end design knowledge. Twenty King Arthur's were built at Eastleigh, the first 18 entered service in 1925 and 26, the last two in January 1927. Thirty more, from the North British Locomotive Company, all entered service during 1925. The existing Urie designed N15's, destined to be known as the "Urie Arthur's", received many of the design improvements consistent with avoiding excessive expenditure in carrying out the work.

Simultaneously, with the conception of the King Arthur's the Southern was afforded the opportunity to purchase fifty sets of parts for N Class 2-6-0's, built at Woolwich Arsenal after the end of the War. These locomotives, after assembly at Eastleigh, with boilers built by the North British Locomotive Company entered service in 1924 and 1925. Twenty 2-6-4 Tank's were built in 1925 and 1926, similar to the N's, with the major exceptions, the coupled wheels were 6 feet diameter and the superheater area was increased from 203 to 285 square feet, this was effected by extending the elements to virtually the full length of the flue. The 2-6-4 Tank's, very similar to the SE&C No.790, were built at Brighton and by the Armstrong Whitworth Company. The increase in superheater size resulted in a total heating area in excess of 1,800 feet, a feature ultimately incorporated in all the Maunsell 2-6-0's.

Four 2-6-0's placed in service in 1924 were part of a post War order placed on Ashford Works by the SE&C and consisted of three N Class and No.822 which had three cylinders. Walschaerts valve gear was employed on the two outside cylinders and the Holcroft conjugated system on the inside cylinder. The N1 Class, as the three cylinder 2-6-0 was designated, had cylinders 16 inches diameter by 28 inches stroke, weighed 63 tons, boiler and firegrate dimensions were the same as for the N Class. It has been suggested that the various Maunsell 2-6-0's would have benefited with a larger boiler, the one actually used supposedly limited in size by the geometry conditional on fitting side water tanks of adequate capacity on the 2-6-4 Tank's. The eminently successful Great Western Railway Class 43xx 2-6-0's however had a total evaporative area some nine percent less, [three percent less when fitted with a Swindon No.4 standard] and a total cylinder volume approximately one and a half percent greater.

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Southern Maunsell Class L1 4-4-0

The 43xx Class fire grate area was also less, justified because the GWR invariably used coal of a higher calorific value than the Southern. There is an argument that says that cylinders on a steam locomotive are never too large for the boiler, the boiler merely limits the rate at which a cylinder can take steam, i.e. the speed at which the locomotive travels and the percentage cut off selected at that speed. The problem arose because this fact was not conveyed to footplate crews, also why have cylinders, which for most purposes were unnecessarily large? Sometimes cylinder size was set by a standardisation policy, e.g. the 43xx had the same cylinders as the Saint Class 4-6-0's but allayed to a boiler some 25 percent smaller. The boiler, not surprisingly was the limiting feature with respect to maximum power. This was not uncommon, although often not ascribable to a standardisation policy e.g. the Hughes Class 4-6-0's on the Lancashire and Yorkshire Railway. Only Messrs Ivatt and Bulleid, amongst British Twentieth Century designers incorporated significantly smaller cylinders with relation to the boiler total heating area apparently without jeopardising the continuous power output of the locomotive, [Great Northern Railway Ivatt Atlantic's and Southern Railway Bulleid Pacific's]. Towards the end of 1925, a three-cylinder version of the K Class 2-6-4 Tank emerged from Ashford Works, effectively an N1 Class 2-6-0 with 6 feet diameter coupled wheels.

There was in 1925 an urgent requirement for more power for the Folkestone expresses. The L Class 4-4-0's used for some years and exclusively since the introduction of the 80 minutes non stop schedules from Charing Cross in 1922 barely managed 250 tons, 300 tons was too much. The L1 Class 4-4-0's embodied much of the Maunsell design team philosophy applied to the original Wainwright/Surtees L Class, although there was limited time to refine thoughts and incorporate any changes. Boiler pressure was increased to 180 pounds per square inch, heating area in the firebox and the boiler tubes maintained the same with superheater area reduced from 319 to 235 square feet.

It is revealing to compare superheater surface area as a fraction of the total boiler heating area for Maunsell designs; D1/E1 Class 0.164 - Moguls [and Tank derivatives] as originally built 0.117, as altered first on the K Class 0.157 - King Arthur Class 0.152 - L Class 0.179 - L1 Class 0.143. The L1 cylinders were smaller, 19½ inches diameter by 26 inches stroke and the steam lap increased to one and three sixteenths of an inch, the maximum that could be accommodated without a cylinder redesign. Holcroft observed that when Surtees designed the L Class he proposed a one and one sixteenth inch steam lap but Maunsell, based on previous experience at Inchichore reduced this to seven eighths, he [Holcroft] considered this was probably a mistake. The N Class smoke-box arrangements were incorporated complete with chimney. The North British Locomotive Company built fifteen L1's in 1926.

Maunsell and his team commenced the design of a four-cylinder 4-6-0 in 1925, primarily to provide a more powerful locomotive for the Dover and Folkestone Boat train service.

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Southern Maunsell U and U1 Class 2-6-0's

The first Lord Nelson 4-6-0, completed at Eastleigh Works in August 1926, had 6 feet 7 inches coupled wheels and four cylinders, [16½ inches diameter by 26 inches stroke]. The boiler had a working pressure of 220 pounds per square inch with a total heating area of 2,365 square feet, [1,795 square feet in the boiler tubes, 194 square feet in the firegrate and 376 square feet in the superheater]. The firegrate area was 33 square feet, the locomotive weighed 83½ tons, the tender another 57 tons.

The Southern had, by the end of 1926 added to its passenger locomotive twenty K Class 2-6-4 Tank's, one K1 Class 2-6-4 Tank, 52 King Arthur Class 4-6-0's, 15 L1 Class 4-4-0's, one Lord Nelson Class 4-6-0, 53 more mixed traffic N Class 2-6-0's and the solitary N1 Class 2-6-0. During the following six years to the end of 1932 another 70 main line passenger locomotives entered service including 15 more Lord Nelson's in 1928 and 1929.

A decision was made in 1927, after some vacillation to build 20 more K Class 2-6-4 Tank's. However following the derailment at Sevenoaks in August of that year, the order was amended and they appeared as 2-6-0 tender locomotives with 6 feet diameter coupled wheels.

The U Class were essentially N Class 2-6-0's with larger diameter driving wheels. The only significant difference was the positioning of the rear set of driving wheels, six inches forward in the chassis, which it has been suggested made them steadier at high speeds. [The profile of the firebox floor was flatter than on the N, because of the larger diameter coupled wheels, it has been postulated this made them more difficult to fire. i.e. the U rode better, but the N accelerated better and was more reliable on the road, perhaps!] In practice, taking into account the coupled wheel diameter difference the N's were driven at faster piston speeds, probably a greater cause of oscillation. It is more likely that the increased overhang led to slightly less noise and vibration in the cab [the vibration would be at a lower frequency] which is not itself an indication of how well the locomotive as an entity is "riding at speed". The difference in coupled wheel spacing appears more likely to have come about because both the U and U1 designs originated as 2-6-4 Tank's, in which the rear set of driving wheels were brought forward to give better space for the rear bogie. [Ref.1] Thirty U Class 2-6-0's were built from 1928 to mid 1931 in addition to the 20 K Class converted to 2-6-0's, the work involved in building the new locomotives and converting the Tank's was shared between Ashford and Brighton works.

The three cylinder 2-6-4 Tank No.890 was converted to a tender locomotive at Ashford in 1928. It had been involved in two derailments on the Otford-Maidstone-Ashford route, the second only four days before the Sevenoaks incident. It became the prototype of the U1 Class, 20 new locomotives were built in 1931 similar to A890, except that they had Walschaerts valve gear on all three cylinders, Number 890 was converted to this arrangement during a General Overhaul at Ashford in 1932. The U1 Class 2-6-0's weighed approximately three tons more than the two cylinder U Class 2-6-0's.

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Southern Maunsell Schools Class 4-4-0

Fifteen S15 Class Mixed Traffic 4-6-0's, built at Eastleigh in 1927 and 1928, included modifications similar to those developed for the original Urie design of N15 Class 4-6-0's previously incorporated in the King Arthur's. The Maunsell S15's had 5 feet 7 inches diameter driving wheels and two outside cylinders, [20½ inches diameter by 28 inches stroke]. The boiler had a working pressure of 200 pounds per square inch and a total heating area of 2,215 square feet, [1,716 square feet in the boiler tubes, 162 square feet in the firebox and 337 square feet in the superheater]. The locomotive weighed 81 tons, the tender another 56 tons. The firegrate area was 28 square feet, slightly less than on the King Arthur's because of the thicker foundation ring.

The final new design before the end of 1932 was the Schools Class 4-4-0. Much has been written about its origin: inter alia, it was designed for the Hastings line - it was in answer to a request for a locomotive to haul 400 tons trains at average speeds of 55 miles per hour - it was a three quarters Lord Nelson - it was cheaper than the proposed ten further Lord Nelson's and therefore made possible further capital expenditure on electrification projects. What transpired was a 4-4-0 with 6 feet 7 inches diameter coupled wheels and three cylinders, [16½ inches diameter by 26 inches stroke]. The boiler, designed in the Eastleigh drawing office, overturned Clayton's decision for a scaled down Lord Nelson design and used a modified Maunsell S15. The boiler working pressure was 220 pounds per square inch and the total heating area 2,049 square feet, [1,604 square feet in the boiler tubes, 162 square feet in the firegrate and 283 square feet in the superheater]. The locomotive weighed 67 tons, the tender another 42 tons. The School Class, with tender effectively weighed the equivalent of one coach less than a King Arthur Class 4-6-0, [i.e. a Schools when developing the same horse power as a King Arthur could haul an eleven coach train at the same speed as a King Arthur with ten]. [Ref.2] The Schools design was without any doubt the outstanding locomotive produced by the Maunsell team, ten were built in 1930 and five more rolled out from the works by the end of 1932.

Locomotives built in the first decade of the Southern Railway's existence included:- 73 Express passenger 4-6-0's, [three Urie Class N15, 54 Maunsell Class N15 and 16 Lord Nelson] - 30 express passenger 4-4-0's, [15 L1 Class and 15 Schools Class] - 19 Mixed Traffic 4-6-0's, [four Urie H15 Class and 15 Maunsell S15 Class] - 136 mixed traffic 2-6-0's [59 N Class, 50 U Class, including 20 converted from K Class 2-6-4 Tank's, 21 U1 Class with one converted from a 2-6-4 Tank and six N1 Class]. The 2-6-0's use varied considerably, the U1's invariably appeared initially on fast passenger services whereas the N1's featured on freight duties. The S15 Class 4-6-0's handled passenger trains at weekends, particularly in the high summer period.

A continuous programme of improvements and updates was carried out on the existing locomotive fleet in parallel with new locomotive construction. One of the more significant was the fitting of superheaters to the T9 Class 4-4-0's. Urie had implemented a programme in 1922, but between October 1924 and July 1929 all 66 were rebuilt with the Maunsell type.

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Southern Railway [Central Section] Timetable alterations

T9 Class 4-4-0's fitted with the Urie design received the Maunsell variety at their next General Overhaul. The Maunsell superheater had an area of 213 square feet, which combined with the 921 square feet in the tubes and 142 square feet in the firebox gave a total heating surface of 1,276 square feet.

Nine Eastern Section D Class 4-4-0's were rebuilt to D1's in 1926 and 1927.

Although timetables changed following the establishment of a unitary Railway in South East England, the use of one Companies locomotive on another Companies route inevitably took longer, not least because of different loading gauges. The years 1924 and 1925 represented an extension of post War pre grouping locomotive performance and practice.

The Central Section of the Southern Railway, [The former LB&SC] 1923 and 1924

The Brighton timetable was remodelled in 1924; in 1923 there were four Down and three Up 60 minutes trains between London and Brighton, in 1924 there were nine Down and six Up with an additional one on Saturdays. There were significant improvements to the Eastborne and Worthing service; several trains served both resorts by splitting before Keymer Junction, usually at Haywards Heath. There were ten daily trains in 1923 from London to Eastborne within one and three quarters of an hour, a year later 21, in 1923 four trains completed the journey in 90 minutes, the following year eight. Lewes also benefited, 22 daily trains from London in 1923, four of these in 70 minutes or less, the following year nine, although the fastest time remained at 61 minutes. Worthing had nine Down trains in 1923, 14 the next year. Improvements in frequency, journey times were similar, in 1923 one train in 76 minutes and four others from 85 to 89 minutes, in 1924 the best service was two minutes slower, the next three 86, 86 and 87 minutes.

There were similar improvements in the Up direction: six to ten per day through trains from Worthing to London. Eastborne had 14 daily trains to London within one and three quarters of an hour in 1924 compared with eight the previous year. There were 21 departures from Lewes compared with 16 in 1923 which overall were quicker, in 1923 only one to London in less than 70 minutes [67 minutes], a year later five [62, 67, 68, 68 and 69 minutes].

The timetable, into force on July 14th 1924 also incorporated significant changes in the Portsmouth service. Effectively all fast trains to Portsmouth ran from Waterloo via Guildford. The trains on the former LB&SC. route via Horsham became semi-fast, although some of the intermediate timings were quick. Bognor and Littlehampton had more through trains from London than previously, nine and seven compared with five and two in 1923, overall timings were similar: Bognor, 104 to 120 minutes, Littlehampton 100 to 113, previous best 102 minutes.

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Southern [Central Section] to Brighton, Portsmouth and Eastborne in 1923

In 1923 [Ref.1] before the concentration of the Portsmouth service on the former L&SW. route a B2X Class 4-4-0 with 225 tons on the 11.35 ex Victoria reached Fratton seven and a half minutes late against the 110 minutes non stop schedule from Victoria. It passed Clapham Junction in 6 minutes 5 seconds, Sutton in 22 minutes 10 seconds and Dorking, 80 seconds behind schedule, in 37 minutes 20 seconds. Speeds were 23 miles per hour minimum before Sutton, 61 before Dorking, 45 through the station, 30 minimum at Holmwood and 64 before Horsham, the slack there taken at 40 and subsequently 54 at Itchingfield Junction, 43 minimum afterwards and 64 maximum at Pulborough. There were delays after Barnham Junction due to heavy track occupation due extra trains for the Goodwood Races. Passing times from Victoria were 55 minutes 3 seconds to Horsham, 76 minutes 40 seconds to Arundel, 84 minutes exactly to Barnham Junction, 93 minutes to Chichester and 109¾ minutes to Havant, the actual time to the Fratton stop was 117 minutes 35 seconds, about 110 minutes Net. This was a good performance by a B2X Class 4-4-0, but if there was a serious intent to maintain the 110 minutes schedule then a more powerful locomotive was needed.

The 17.05 ex London Bridge was accelerated in 1923 to give an 85 minutes overall timing to Eastborne including a non stop schedule to Lewes of 61 minutes. L Class 4-6-4 Tank No.330 with 320 tons was through New Cross in 5 minutes at 56 miles per hour and with a minimum of 36 at Forest Hill, East Croydon in 14 minutes 55 seconds. The minimum at Quarry 41 miles per hour was followed by 69 at Earlswood and 77 at Horley, where the East Grinstead portion was slipped, reducing the load to 220 tons. Three Bridges was passed in 35 minutes 20 seconds, there was a slight check for signals before Balcombe tunnel, a recovery to 71 miles per hour before the slack to 20 at Keymer Junction, 64 maximum before Lewes and after another check, an arrival 20 seconds early, 58 minutes Net. The recorder of this run returned on the 18.40 to London, schedule from Lewes to East Croydon the next stop 51 minutes. An I3 Class 4-4-2 Tank, with a light train of 145 tons was stopped by signals for ten seconds before Keymer Junction, then on the Main Brighton Line it ran from Keymer Junction to Quarry in 25 minutes 5 seconds. Fifty one miles per hour was maintained on the 1/264 to Balcombe tunnel, the maximum at Horley was 67, the minimum at Quarry 50 and the time to East Croydon 49 minutes 55 seconds, 47 minutes Net.

Two records on the 60 minutes non stop schedule from Victoria to Brighton provide a contrast in driving styles. C.J.Allen timed 4-6-4 Tank, No.328 with 380 tons on the 11.00 ex Victoria. Clapham Junction was passed in six and a half minutes before a long PWR slack led to the train taking 18 minutes 40 seconds to East Croydon. Speeds after East Croydon were 50 miles per hour attained on the 1/254, a falling away from this to 45 at Quarry, 67 at Horley, 44 minimum at Balcombe, 66 at Keymer Junction and a minimum of 51 at Clayton. The time from Earlswood to Preston Park was 28¾ minutes and overall to Brighton 64 minutes 10 seconds, 60 minutes Net, a far from enterprising performance.

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Southern [Central Section] Stroudley Tank's in 1923

Some of the initial lost time could have been recovered with faster running on the downhill sections. A correspondent timed the 15.10 ex Victoria, hauled by B4X Class 4-4-0 No.55 with 300 tons when after Clapham Junction was passed in 5 minutes 35 seconds and East Croydon in 15 minutes exactly speeds were significantly higher. Forty-three miles per hour at Quarry, 80 at Horley, 53 at Balcombe tunnel and 75 at Haywards Heath before signals at Keymer Junction interrupted this lively progress. Passing times from Victoria were; Earlswood 28 minutes 5 seconds, Balcombe Tunnel North 39 minutes 10 seconds and Haywards Heath 43¾ minutes, Brighton was eventually reached 20 seconds within schedule, probably 56 minutes Net.

C.J.Allen returned on the 12.20 ex Brighton, a 350 tons train, hauled by another 4-6-4 Tank, No.327. The initial gradient to Clayton tunnel was climbed at 48 miles per hour; the maximum afterwards at Keymer Junction was 71 and the minimum at Balcombe 55. After this the maximum at Horley was only 68 miles per hour but the time of 32 minutes 20 seconds to Earlswood was within schedule and Victoria was reached in 59 minutes 25 seconds, Allen reckoned the Net time 58 minutes. These two journeys with Baltic Tank's confirm they could time 350-400 tons trains on the 60 minutes schedule, without exceeding 70 miles per hour.

The B4X Class 4-4-0's always had a reputation for sluggish downhill running, although the trip behind No.55 hardly supports the theory. They also were purportedly poor timekeepers, but in 1924 they worked the 17.05 London Bridge to Eastborne, which after the accelerations of 1923 had been initially rostered for a Baltic Tank and reportedly maintained the 61 minutes schedule to Lewes comfortably.

Whilst the most modern LB&SC locomotives were competently handling the 60 minutes schedules to Brighton the Stroudley D1 Class 0-4-2 Tank's continued to perform, relative to their size, impressive feats of haulage. J.N.Maskelyne noted No.248 with 180 tons pass Forest Hill at 32 miles per hour after a signal-check at New Cross, the maximum afterwards was 53 and the stop at Norwood Junction was made in 14¼ minutes from London Bridge. To attain 32 miles per hour on the 1/100 required an EDHP of 475-525. Maskelyne said "he was astonished by this performance", although he insisted it was only a little better than the average for a D1. On another occasion No.684, a regular performer between Tunbridge Wells and London in 1923, with the 08.58 to London Bridge, a train of moderate weight, probably 100-120 tons was stopped by signals outside East Croydon in 26 minutes from Three Bridges. Schedule over the 19.0 miles non stop was 26 minutes. Maskelyne, also timed Stroudley "Terrier" 0-6-0 Tank's at speeds of around 55 miles per hour when working the Tunbridge Wells to Oxted auto trains, on one occasion as high as 62½ when descending the 1/200 gradient North of Hilders Lane tunnel. The D1 Class 0-4-2 Tank's on occasions, hauled heavy trains i.e. the 08.11 Cheam to London Bridge, allowed 20 minutes for the non stop run from West Croydon to London Bridge and regularly made up to ten bogie coaches.

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Southern [Central Section] performance on the Brighton line 1924

The D3 Class 0-4-4 Tank's handled some fairly lengthy services, eg the 18.40 Cannon Street to Tonbridge. Apparently the South Eastern footplate crews were not appreciative of the ex LB&SC locomotive, considering them to be far inferior to their own H Class Tank's, a not invented here scenario no doubt. On their home territory the D3's were employed from London Bridge to Tunbridge Wells with seven bogies, eg. on the 20.00 and occasionally they replaced Gladstone Class 0-4-2's on the 19.20 London Bridge to Hastings.

Locomotive working across the three Sections [equivalent to the three former Companies] and allocation of locomotives from one pre grouping Company to the motive power depot of another began in 1924. Another innovation was through working of Great Western Railway locomotives between Birmingham, departure 10.10, and Redhill. GWR City Class 4-4-0's Nos. 4107 and 4139 were noted on this duty, they ran to Purley depot for servicing and turning.

C.J.Allen [Ref.4] considered his experiences on the Brighton Line disappointing. Baltic Tank No.330 suffered a partial failure at Three Bridges, leading to a stop of ten minutes and ultimately, after losing its path, arrived at Brighton 32½ minutes late, the load was the standard off peak, seven Pullman Cars, 250 tons Gross. On another occasion H2 Class 4-4-2 No.425, with 260 tons, reached Brighton in 65¾ minutes. Six and a half minutes had been lost by signal checks and a PWR slack at Keymer Junction. Speeds were 71 miles per hour at Horley, 49 at Balcombe tunnel and 76 at Haywards Heath. An H1 Class 4-4-2 No. 40 with 250 tons in the Up direction ran to Victoria in 10 seconds over the level hour. The time to East Croydon was 44 minutes 25 seconds. Speeds before were, 50 miles per hour at Clayton tunnel, 74 at Keymer Junction, 53 at Balcombe, 74 at Horley and 46 at Quarry.

The 14.23 Worthing to Victoria had B4 Class 4-4-0 No.44 with 185 tons, Allen described this locomotive as "not superheated but fitted with a Weir heater". In practice No.44, at this time, carried a boiler incorporating Robinson superheater, Weir feed pump, 20 inches diameter cylinders and eight inches piston valves. This boiler was fitted to No.44 in 1921 and transferred to I3 Class 4-4-2 Tank No.81 in 1926. The total heating area was 1,500 square feet, [1,126 square feet in the tubes, 120 square feet in the firebox and 235 square feet in the superheater]. Number 44, with 185 tons, ran from Hove to the next stop at Haywards Heath in 18¼ minutes with 49 miles per hour reached on the rising grade to Clayton and a maximum of 69 at Keymer Junction, schedule to Haywards Heath was 21 minutes. Horley was passed in 17 minutes 20 seconds from the restart before the train was routed via Redhill and finally arrived Victoria 15 minutes late.

The 15.10 Victoria to Eastborne schedule to its first stop at Haywards Heath was a smart 46 minutes. An I3 Class 4-4-2 Tank No.90 with 355 tons, not surprisingly with such a load, made a slow start to East Croydon, 18½ minutes but the running afterwards was good. On the 1/264 before Coulsdon it accelerated from 43 to 45 miles per hour, [EDHP 700-750], then fell away to 37 at Quarry [the cylinders had probably beaten the boiler].

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Southern [Central Section] 08.48 ex Brighton, 17.00 ex London Bridge

After Earlswood I3 No.90 reached 68 miles per hour at Horley, fell to 50 at Balcombe tunnel [an excellent minimum] and finally attained 68 again. The actual time from Victoria to Haywards Heath, where the load was reduced to 220 tons, was 50 minutes 20 seconds. The succeeding stages to Lewes and Eastborne were run in 17½ and 22 minutes, 20 minutes Net, maxima on each stage were 66 and 68 miles per hour.

A B4 Class 4-4-0 No.63 with 220 tons from Eastborne, lost five minutes on the initial booking to Lewes through signal checks. It passed Keymer Junction in 14 minutes 25 seconds from the restart, reached 55 miles per hour at Haywards Heath after the slack and fell away to 50 at Balcombe. The maximum at Horley was 74 miles per hour, with a minimum of 45 it passed Quarry in 39 minutes 40 seconds, reached 65 at Coulsdon before signal checks commenced and continued all the way to Victoria.

During the summer of 1924 the 08.48 Brighton to Victoria and the return working, the 17.00 from London Bridge were frequently hauled by one of the J Class 4-6-2's, Nos.325 and 326. [These trains had been hauled since 1920 by Tank engines rather than Atlantic's]. A.J.L.Winchester who was undergoing his apprenticeship at Brighton in 1924, recounted his footplate experiences on these trains [Ref.5]. He noted these two locomotives were easy to fire and could keep the initial 13 minutes booking from Brighton to Keymer Junction. Winchester thought No.326 was the slightly better of the two, particularly in starting. R.A.H.Weight, in support of this view quoted a journey on which No.326 delayed by signals took 25 minutes 34 seconds to pass Quarry and then with 74 miles per hour at Horley, 53 at Balcombe Tunnel North and 75 at Keymer Junction reached Brighton in 59½ minutes. Weight assessed the Net time as 56½ minutes, the Earlswood to Preston Park stage was run in 26¾ minutes. In comparison H1 Class 4-4-2 Atlantic No.41 with a lighter train, 325 tons passed Quarry in 23¼ minutes after 54 miles per hour at New Cross, a minimum of 40 at Forest Hill, 56 at Norwood Junction and between 46 and 41 from East Croydon to Quarry. Subsequent maxima were 69 miles per hour at both Horley and Keymer Junction after which Brighton was reached in 58¾ minutes. Number 326, with a 60 minutes non stop service from Victoria had a clear road as far as Preston Park where it was checked by signals, actual time was 59½ minutes, Net time four minutes less.

A B4X Class 4-4-0 No.56 was diagrammed in February 1924 to work the 12.20 Brighton to Victoria and the 15.40 return so H.Holcroft could appraise them. [Ref.6] With 294 tons Tare, Earlswood was passed in 33½ minutes, [W.T.T. 32½ minutes] Quarry in 42¼ minutes and after signal checks Victoria was reached two minutes late. The locomotive was driven on full Regulator from Preston Park to Quarry, cut off was 40 percent to Hassocks, 35 to Balcombe and 30 to Quarry, Holcroft estimated coal consumption at 48 lbs. per mile. In the Down direction, with 250 tons, seven Pullman Cars, after initial signal checks the Earlswood to Preston Park stretch was run in 25¼ minutes. Controls set at half-open Regulator and 30 percent cut off, 58¾ minutes, 56¾ minutes Net. Holcroft considered the B4X made heavy going of it.

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Southern [Central Section] Locomotive Tests between Brighton and Ashford

E.M.S.Wood [Ref7] was working at Brighton Works when the last ten B4X's were being constructed. He noted on Friday nights that the 17.45 Up Brighton Belle with seven coaches and a B4X, typically No.55, only kept time if the locomotive was driven hard and that speed never exceeded 72 miles per hour. It is usually considered the major limitation in the B4X design was the retention of eight inch piston valves, apparently occasioned by material shortages in 1922 and 1923. Certainly the B4X did not achieve an improvement over the B4's comparable to that of the D1 and E1 rebuilds over the D and E Classes on the SE & C.

It became obvious to Cox and the Maunsell design team during 1924 that the provision of new large locomotives would inevitably lead to a surplus of medium powered passenger locomotives. One of the routes rapidly developed, across previous separate Railway boundaries, was that from Brighton to Ashford. The W.T.T. for September 1925 included six through trains from Brighton to Ashford and one from Brighton to Dover. Various locomotives were tested on this route in April and May 1924, [the normal day to day motive power was Gladstone Class 0-4-2's allocated to Brighton, B2X Class 4-4-0's from St. Leonards Marina and F1 Class 4-4-0's from Ashford]. The locomotives employed on the Tests were superheated T9 Class 4-4-0 No.E314, Stirling F1 Class 4-4-0 No.A204, B2X Class 4-4-0's Nos.206 and 208, both of which had top feed supply to the boiler and Gladstone Class 0-4-2 No.172. Each locomotive was manned by a crew who usually worked on that particular type of locomotive to obviate the not invented here effect. Trains for the Tests were specially made up, two former SE&C "birdcage sets" plus a bogie van, probably 190-200 tons Gross. There was no time booked against the T9 during a weeks operation, the F1 was debited with seven minutes, the two B2X's 21 and 27 minutes and the Gladstone 13 minutes. Coal consumption was 27lbs per mile for the T9, 31lbs for the F1, 42 and 40lbs for the two B2X's and 38 lbs. for the Gladstone.

Although no details of the Test running appear to have survived, some records made some years later by A.M.Fisher when schedules and formations were similar indicate the work involved. The 09.10 Brighton to Margate, twice hauled by B4 Class 4-4-0 No.B46, at that time regarded as the best member of the Class, with 124 and 203 tons Tare, ran from Lewes to Polegate, 11.6 miles, in 14 minutes 45 seconds and 15 minutes 5 seconds, schedule 16 minutes. As an earnest of the generosity of the schedules on the route a C2X Class 0-6-0 kept time on every stage from Brighton to Rye. The 09.10 schedules were, 15 minutes from London Road Brighton to Lewes, 16 minutes on to Polegate, 16 minutes to Bexhill Central and 19 minutes Hastings to Rye. A Gladstone Class 0-4-2 kept schedule from London Road to Lewes after a signal check before Falmer and continued to Polegate in 19 minutes 10 seconds with a PWR slack at Glynde. Fisher stated that the Stirling F1 Class 4-4-0's ran smartly on the level sections, once from Polegate to Lewes in 15¾ minutes, schedule 16 or 17 minutes. The F1's however usually required 12 minutes westbound to pass Falmer from the Lewes start suggesting they probably failed to reach 20 miles per hour on the 1/88.

Date: July 7th 2002

Southern [Eastern Section] Tests with E Class 4-4-0 No.504

These 1924 Tests confirmed the T9 Class's excellent reputation, they had power to spare on this route, and the good showing of the F1 was apparently a surprise as was the poor performance of the B2X Class. The B2X as a result of these tests, were withdrawn from service by the end of the decade, the Gladstone's were already being withdrawn from service.

The Eastern Section of the Southern Railway,
[formerly the SE&C] 1923 and 1924.

The main passenger locomotive development on the SE&C after the end of the War was the introduction of the rebuilt Wainwright D1 and E1 Class 4-4-0's on the Kent Coast and Boat Train services. Holcroft continued tests on these locomotives after the formation of the Southern Railway. E1 Class 4-4-0 No.506 was considered by the running department to be a rogue and at their request he undertook extensive footplate observations during the period March to August 1923. On the 17th May No.506 had 286 tons Tare on the 14.40 Boat train ex Victoria. It passed Maidstone station at 19 miles per hour and accelerated to 32 over the next mile mainly at 1/100 but with short level sections, this was achieved with the regulator half-open and the cut off at 35 percent. Speed fell to 23 miles per hour on the 1/80 with the cut off shortened to 26 percent, and then following a further reduction to 23 percent at Bearstead, it reached 41 to 42 on the varying grades to Hollingborne with a final minimum of 27 on the 1/100 to Lenham. The average gradient from Maidstone to Lenham, based on official LC&D diagrams is approximately 1/141, average speed was 34 miles per hour, the locomotive under these comparatively easy working conditions developed an EDHP of 700-750. Holcroft's enthusiasm for this performance by No.506 is understandable. [Ref.8]

Holcroft made 46 journeys on the footplate of No.506 including some on the through train from Dover to the Great Western Railway. This roster involved the northbound non stop stage from Ashford, departure 10.34 to Redhill, returning with the 14.43 Redhill to Dover and back to Ashford with the 17.05. The train in June loaded relatively lightly, less than 235 tons, but in July with the summer formation reached 280-290 tons. On the 9th July, with 287 tons Tare, Holcroft regarded the run as moderate with the return over the 46.1 miles from Redhill to Ashford taking 50¼ minutes, including a signal check at Tonbridge. On the tenth the run to Redhill was again moderate, ascribed to dusty coal but after some good quality hard Brinkind was taken on, the return was good. On the 12th the locomotive was driven easily as far as Tonbridge, small valve and 20 percent cut off, then after the station the regulator was opened fully and the cut off lengthened to 23 percent, later reduced to 20 percent. Speed was maintained at 55 to 56 miles per hour on the rise to Godstone, average gradient 1/330, an EDHP of 780-830, Number 506 ran from Tonbridge pass to Redhill stop in 26 minutes. In the reverse direction the Redhill to Ashford stage occupied 53½ minutes including a signal check before Tonbridge.

Date: July 7th 2002

Southern [Eastern Section] Boat Train performance

Holcroft tabled records of 16 Down Boat Trains in the 1923 and 1924 period, three via Maidstone, the rest via Tonbridge. The best performance was probably with No. 506 on August 10th 1923 when with 289 tons Tare it ran to Dover in 99 minutes exactly. The average from Paddock Wood to Headcorn was 66 miles per hour with half-open regulator and 26 percent cut off. Holcroft calculated the coal consumption at 37 lbs. per mile. The other 12 runs via Tonbridge took from 99¼ to 104¾ minutes. Overall times varied more in the Up direction due to frequent out of course delays occasioned by erratic departures dependent on the arrival of the incoming boat.

The 16.30 Boat train ex Charing Cross before the War had a 90 minutes non stop schedule to Dover, the equivalent in 1924 the 16.00 ex Victoria, limited to 175 tons, was allowed 95 minutes. A run with E1 Class 4-4-0 No.163 and 195 tons suggested that with a clear road this was not difficult [Ref.9]. It passed Herne Hill in 6 minutes 25 seconds, fell to 31 miles per hour at Sydenham Hill after which there was a PWR slack before Beckenham, signal checks before Bickley and a slack to 15 miles per hour at Knockholt. The time to Tonbridge was 47¾ minutes, 74 miles per hour was attained at both Paddock Wood and Staplehurst before a slowing to 30 for signal check at Pluckley. There was a further signal check before Ashford, an acceleration to 62 miles per hour on the rising gradients to Smeeth, 66 reached on the short level stretch afterwards, Westenhanger passed at 64, Shorncliffe at 71 and with 68 before Dover was reached one minute late. The Net time, [there were four signal checks and a PWR slack] was probably 86 to 87 minutes, the EDHP 700-750 from Ashford to Westenhanger.

The 98 minutes schedule of some Boat Trains to Folkestone was liberal. E1 Class 4-4-0 No.160 with 245 tons, delayed initially by signals culminating in a stop for 15 seconds, passed Knockholt in 33 minutes 40 seconds. There were two PWR slacks after this despite which Folkestone was reached in 95¾ minutes with maxima of 70 miles per hour before Tonbridge and 67 at Paddock Wood. [Ref.10]

Another E1 Class 4-4-0 No.160, with 315 tons ran Dover Victoria in 108 minutes 10 seconds, a loss of three minutes. It was nearly two minutes late at Knockholt, 80 minutes 20 seconds from Dover after which there were two PWR slacks before Victoria. The maximum between Ashford and Tonbridge was 69 miles per hour and the minimum before Sevenoaks tunnel 30.

The introduction of 80 minutes schedules between Charing Cross and Folkestone in both directions in 1922 plus the subsequent increasing loads placed these trains at the forefront of Southern motive power requirements in 1923. The 13.00, 16.05 and 19.00 ex Charing Cross ran to the 80 minutes schedule, the 17.00 ex Cannon Street to 85 minutes including a three minutes stop at Ashford. The L Class 4-4-0's could be used unlike on the Boat Trains from Victoria. Number 775 with 340 tons, on the 13.00 passed New Cross in 9 minutes 20 seconds at 53 miles per hour. The time from there to Knockholt was 17¾ minutes after a minimum of 31 miles per hour at Elmstead.

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Southern [Eastern Section, L Class 4-4-0's on the Folkestone Express's

Speed rose to 38 miles per hour at Orpington and fell to 34 at Knockholt. [The 4-4-0 developed an EDHP of 850-900 between New Cross and Knockholt.] It reached 77 miles per hour at Hildenborough, passed Tonbridge slightly over two minutes late and lost almost another minute to Ashford, 68 minutes 5 seconds from Charing Cross. Speeds between Tonbridge and Ashford were 65 miles per hour at Paddock Wood, falling to 59, rising to 66 and finally falling to 54 at Chart, through the station 62, 49 at Westenhanger and 68 before the Folkestone stop effected three minutes late in 83 minutes exactly. The portion slipped at Ashford reduced the load to 255 tons. It must be emphasised that with twice the permitted load the L Class 4-4-0 maintained the 16.00 Victoria to Dover Boat train schedule between Knockholt and Ashford. The performance was very similar to the best performance observed by Holcroft on a Boat Train with a 20 tons lighter train by E1 Class 4-4-0 No.497. The E1 had a slight advantage between Tonbridge and Ashford; the popular view would credit the E1 as a better locomotive on the fast stretch, the L better uphill. It seems likely that the D1 and E1 rebuilds sounded better and rode at speed better but in practice there was little in it. The L as already noted, reportedly were designed by Surtees with the steam lap set at one and one sixteenth inches, but Maunsell reduced it to seven eighths of an inch after consulting his former Chief Draughtsman E.E.Joynt at Inchihore. The steam lap was eventually increased but there is some doubt as to when.

L Class 4-4-0 No.761 with 275 tons on the 11.00 from Folkestone attained 46 miles per hour on the initial rise to Westenhanger. It was 90 seconds late at Ashford, 17 minutes 35 seconds and at Tonbridge 150 seconds down, 43 minutes 39 seconds, after 68 miles per hour at Ashford and Paddock Wood. It passed the station at 30 miles per hour, reached 44 on the initial easy stretch, fell to 30 at Sevenoaks tunnel and rose again to 60 at Dunton Green, as a result of this work Knockholt was passed four minutes late, 62 minutes 55 seconds from Folkestone. The maximum before New Cross was 76 miles per hour and the arrival at Charing Cross two minutes late, an L could do better than this. Number 775 with 285 tons passed Ashford one minute late but then with speeds between 66 and 74 miles per hour, Paddock Wood in 35 minutes 40 seconds at 70, schedule 36 minutes and Tonbridge in 41¼ minutes. The time to Knockholt passed at 42 miles per hour was 59 minutes 55 seconds after a minimum at Sevenoaks tunnel of 34, the arrival at Charing Cross was five minutes late due to signal checks, without the checks one minute early.

L Class 4-4-0 No.777 struggled with the 17.10 from Folkestone with 340 tons. It passed Ashford in 18 minutes 25 seconds, Tonbridge in 45 minutes 55 seconds with 44 miles per hour at Westenhanger and a maximum of 65 before Tonbridge. Tonbridge to Knockholt took 21 minutes 50 seconds with minima of 27 miles per hour before Sevenoaks tunnel and 36 at Knockholt. The time to New Cross was 79 minutes 25 seconds and with a clear road, to Charing Cross 87½ minutes, actually it arrived 11 minutes late. The maximum at Hither Green was 70 miles per hour. The 80 minutes Folkestone Expresses were allowed 52 minutes from Sandling Junction to Knockholt, the Boat Trains 57½ minutes, No.777 took 59 minutes.

Date: July 7th 2002

Southern [Eastern Section] D1 and E1 Class 4-4-0's to Margate

The Kent Coast Express schedules, particularly the Victoria to Margate non stop's, were for many years only adhered to with D and E Class 4-4-0's, if the trains were light and there were no out of course delays. By 1923 the D1 Class 4-4-0's were at work and the schedules had been eased, although weights had increased to 300 tons Gross.

C.J.Allen made a return trip to Margate in 1923. D1 Class 4-4-0 No.502, with 285 tons on the 15.15 ex Victoria, schedule 92 minutes non stop to Margate, lost half a minute, 88 minutes Net. There was a PWR slack initially, Herne Hill was passed in eight and a quarter minutes and at Swanley the train was 40 seconds ahead of schedule, 26 minutes 20 seconds from Victoria. The maximum at Farningham Road was 74 miles per hour and including another PWR slack it was still ten seconds ahead at Sole Street, 36 minutes 50 seconds. There was a stop for 25 seconds at Rochester Bridge and from the restart to Margate took 47 minutes 10 seconds. Speeds were 74 miles per hour at Sittingborne, 30 through Faversham, 62 before Herne Bay and 72 before Margate. The following year No.502 with 320 tons started more slowly, 22 miles per hour at Sydenham Hill and 55 before Bromley compared with 61. The maximum at Farningham Road was again 74 miles per hour and Sole Street was passed almost a minute late, 38 minutes 50 seconds, [schedule between Victoria and Sole Street had been eased by one minute since the previous year]. There was a signal check before Rochester Bridge and with 68 miles per hour at Sittingborne and 60 before Herne Bay the train was on time at Herne Bay, 81¼ minutes, before a signal check resulted in a Margate arrival one and a quarter minutes, 94¼ minutes actual, 92 minutes Net. The D1's could time 300 tons trains as a normal event, C.J.Allen never announced his presence to the footplate crew and his visits to Southern Railway lines were rare so recognition was unlikely.

The 17.20 from Margate was not renowned for punctual running Number 545 in 1923, with 265 tons failed at Newington, 39 minutes 50 seconds from Margate and was replaced by a C Class 0-6-0 No.581, which greatly to Allen's surprise ran to Victoria in 65 minutes 10 seconds, schedule 65 minutes. It attained 25 miles per hour on the 1/100 to Sole Street, 64 maximum at Farningham Road and the only out of course delay was a PWR slack between Herne Hill and Victoria. [Holcroft recounted a similar event in 1925 when a C replaced a King Arthur Class 4-6-0 on an Up Boat Train at Tonbridge]. The Wainwright C Class 0-6-0's were ubiquitous on the SE&C, 109 were built from 1900 to 1908. Boiler working pressure was 160 pounds per square inch and the total heating area 1,200 square feet, [1,089 square feet in the tubes and 111 square feet in the firebox]. The firegrate area was 17 square feet, the locomotives weighed 44 tons, the tender another 38 tons. Number 581 probably developed an EDHP of 575-625 up to Sole Street, a good performance from such a small dimensioned locomotive. Many British locomotive engineers designed good 0-6-0's, Wainwright was one of them.

A D1 Class 4-4-0 No.492 in 1924, with 245 tons, ran poorly on the 17.20 from Margate, it lost 11 minutes on the 95 minutes non stop schedule.

Date: July 7th 2002

Southern [Eastern Section] L Class 4-4-0's on the Hastings Branch

The L Class 4-4-0's in 1923 and 1924 continued, as they had since the beginning of the War to haul the major trains on the Hastings branch. The 17.04 ex Cannon Street was scheduled to the first stop at Tunbridge Wells in 51 minutes and in another 34 minutes to the next at West St. Leonards. Number 780 with 300 tons, lost two minutes to Tunbridge Wells, in mitigation it was badly checked by signals and comfortably maintained the schedule to West St. Leonards.

L Class 4-4-0 No. 768 with 235 tons on the 15.40 ex Charing Cross, non stop schedule to Crowhurst 80 minutes, ran the distance in 77 minutes 50 seconds, 74 minutes Net. The New Cross to Knockholt stretch took 16 minutes with minima of 39 and 43 miles per hour at Elmstead and Knockholt. The uphill Tonbridge to Tunbridge Wells stretch took 7 minutes 50 seconds with 34½ miles per hour attained. Downhill maxima were 64 miles per hour at Dunton Green, 70 at Hildenborough and 64 on the Hastings Branch. Despite the loss of three minutes through signal checks before New Cross, the train was two and three quarters minutes ahead of schedule at Battle, 73¼ minutes from Charing Cross. There was a signal check before the Crowhurst stop.

In the Up direction on the 17.24 from Crowhurst, an L Class 4-4-0 No.764 with 310 tons kept the initial 33 minutes schedule to Tunbridge Wells with 40 seconds to spare. The time to Etchingam was 14 minutes 35 seconds, the maximum before the station 64 miles per hour, through the station 60, to Wadhurst 26 minutes 5 seconds, with a minimum of 34. On another occasion, No.772 with a lighter train, 190 tons, on the 19.26 from Crowhurst, attained 71 miles per hour between Robertsbridge and Etchingam and fell away to 32 at Wadhurst. It reached Tunbridge Wells comfortably within schedule, 31¼ minutes actual.

L Class 4-4-4 No.764 passed Tonbridge in 8 minutes 25 seconds from the Tunbridge Wells restart and completed the climb to Knockholt in another 20 minutes 20 seconds with minima of 30 miles per hour at Sevenoaks tunnel and 41 at Knockholt and a maximum in between of 61 at Dunton Green. There was a PWR slack and a stop for signals after Knockholt resulting in a half-minute late arrival at Charing Cross, 49 minutes 25 seconds from Tunbridge Wells; the Net time was 46 minutes. Number 790, with the lighter train and a very generous 51 minutes schedule to the London Bridge stop kept time exactly including a minute delay due to signals.

Main line passenger locomotives were frequently utilised on short London local Suburban trains during the day. One such was the 13.24 [in the W.T.T] Orpington to Charing Cross, which stopped at Bickley, Bromley South, Shortlands and Beckenham Junction. It left Beckenham at 13.43 and ran non stop via New Beckenham, arriving at 14.02. Locomotives observed on this duty included J Class 0-6-4 Tanks, the 2-6-4 Tank No.A790, L Class 4-4-0's and N Class 2-6-0's. A regular traveller on the train commented that the stopping stages at the beginning of the journey were invariably smartly performed!

Date: July 7th 2002

Southern [Western Section] New Portsmouth Timetable

Although the first two years of the Southern Railway witnessed little motive power sharing across the three sections, rationalisation for special events was rapidly implemented. Indeed by 1924, the Timetable and advertising for the Derby Day race meeting recognised that all three routes were now owned by one Railway. The aspiring punter had the choice of 54 Down special trains via the former SE&C Tattenham Corner branch, 42 via the former LB&SC branch to Epsom Downs and 18 via the former L&SW route to Epsom.

The Western Section of the Southern Railway [ex L&SW] 1923 and 1924

The major timetable change, on the Western Section in the first two years involved the Portsmouth service in July 1924. From that date the London and Portsmouth traffic was concentrated on the former L&SW route via Guildford, as has already been noted in the context of changes to the Central Section timetable. The new timetable included 98 minutes non stop trains from Waterloo to Portsmouth at 11.50, 13.50 and 15.50 [to the Harbour station in one and three quarter hours]. There were hourly departures from Waterloo at 50 minutes past the hour commencing 09.50 up to 18.50, except 14.50, plus additional trains at 08.20 and 21.50. Up, departure from Portsmouth Harbour station was at 55 minutes past the hour, with the 09.55, 11.55 and 13.55 booked non stop from the Town station to Waterloo in 98 minutes. On Summer Saturdays a 30 minutes interval service operated, 20 and 50 minutes past the hour from Waterloo. Many of the additional trains ran via Epsom and the former LB&SC Mid-Sussex route through Horsham and Chichester.

Fratton Motive Power depot provided the locomotives for the 11.50 and 13.50 Down non stop's and the corresponding Up 09.55 and 13.55. In total the depot had five daily return workings to London, one locomotive making two return trips, usually S11 Class 4-4-0's. The S11 were rebuilt with boilers with superheaters in 1920, 21 and 22. In this form they had two inside cylinders [19 inches diameter by 26 inches stroke] and 6 feet 1 inches diameter coupled wheels. The boiler working pressure was 175 pounds per square inch and the total heating area 1,349 square feet, [993 square feet in the tubes, 161 square feet in the firegrate and 195 square feet in the superheater]. The locomotive weighed 54 tons, the tender another 45 tons. The rebuilt S11's were transferred to Fratton specifically for use on the London trains and appear to have performed well for the few years they were used. [Ref.11] Number 396 was observed hauling the 18.50 ex Waterloo to Havant the first stop in 87 minutes, schedule 89 minutes with 260 tons. On the Saturday 11.20 ex Waterloo via Epsom and Chichester the same locomotive was noted passing Havant in 91 minutes, the best time noted by the Mid Sussex route, this train was scheduled to reach Portsmouth Town at 13.12. The Saturday service stretched locomotive resources such that Adams 4-4-0's appeared on some Waterloo to Portsmouth non stops.

Date: July 7th 2002

Southern [Western Section] Performance to Portsmouth

C.J.Allen made a return trip to Portsmouth shortly after the initiation of the new service. [Ref.12] He commented on the poor performance of a superheated T9 Class 4-4-0 No.283 with 250. This can partly be explained by the fact that at the time the locomotive concerned still carried a saturated steam boiler. The train, delayed at the start by signals, passed Clapham Junction in 10 minutes 5 seconds, the 20.5 miles to Woking occupied another 25 minutes and Guildford in 43 minutes. Speed rose to 47 miles per hour at Godalming, fell to 21 on the first stretch of 1/80, reached 55 on the subsequent mile sharply downhill and finally fell to 13 on the second stretch of 1/80. Haslemere was passed in 67 minutes and the next 23.4 miles to Havant run in 25 minutes 35 seconds, maximum downhill 74 miles per hour at Liss. The train was delayed by a signal check at Havant and further before Portsmouth Town station, actual time was 104¼ minutes, 100 minutes Net. Undoubtedly a superheated T9 could have kept time.

The Up train was ten minutes late leaving the Harbour station as a result of a late running Isle of Wight ferry. S11 Class 4-4-0 No.396 with 170 tons recovered seven and three quarter minutes by running from the Town station to Waterloo in 90¼ minutes. Speed reached 54 miles per hour before Havant, the minimum at Buriton was 26 and maximum at Petersfield 70, passed in 26¾ minutes. The minimum before Haslemere was 33 miles per hour, 67 was touched before Godalming, 60 afterwards and Guildford passed at 20 in 55 minutes 10 seconds, schedule 60 minutes, the junction slack at Woking was negotiated at 40, the maximum before Surbiton was 68.and Clapham Junction was passed in 83 minutes 35 seconds.

The Waterloo to Bournemouth and Weymouth service remained unchanged, although frequency, particularly during Holiday weekends, increased as did the weight of the trains. Five runs published in 1924 [Ref.13] furnish a reasonable view of locomotive requirements in the Down direction.

An L12 Class 4-4-0 No.419 was delayed twice by signals and for a PWR slack before Woking with the result that it required 34 minutes 55 seconds to pass the station with 300 tons. Speed increased from 46 to 49 miles per hour on the gradient to MP31 [650-700EDHP], 64 was attained before Basingstoke, the minimum at Litchfield 50 and the maximum on the subsequent descent after Winchester 79. The Southampton arrival was 70 seconds early, 90 minutes 50 seconds, the 55.8 miles from Woking to Southampton stop were run in 55¼ minutes, with an unchecked start the time could have been 84 minutes.

A superheated T9 Class 4-4-0 No.300 with 385 tons passed Clapham Junction in 7 minutes 22 seconds, Surbiton in 16 minutes 51 seconds at 57 miles per hour and Woking in 30 minutes 11 seconds, over a minute late. The minimum at MP31 was 47 miles per hour, the maximum before Basingstoke, passed in 56 minutes 2 seconds, 60. The average EDHP from Woking to Basingstoke was 725-775. The minimum at Litchfield was 42 miles per hour and subsequent maximum 69.

Date: July 7th 2002

Southern [Western Section] Performance to Bournemouth

Northam Junction was passed, one minute early, in 87 minutes 22 seconds before a signal stop led to an arrival three minutes late at Southampton, with a clear road 91 minutes, schedule 92 minutes. Waterloo to Basingstoke in 56 minutes with 400 tons is a measure of the capacity of the superheated T9's. A D 15 Class 4-4-0 and an N15 Class 4-6-0 in tandem played with a 400 tons train. Speed reached 64 miles per hour after Surbiton before checks for signals before Woking, at MP31 it was 47, 66 before Basingstoke and the minimum before Litchfield was 45. The maximum was 75 miles per hour at Winchester, the stop at Southampton six minutes early, 86 minutes 4 seconds actual and 84¾ minutes Net.

Two runs behind D15 Class 4-4-0's with 400 and 420 tons provided very different performances. Number 472 was two and a half minutes late at Woking, three and three quarter minutes down at Basingstoke and after a minimum of 41 miles per hour at Litchfield and a maximum of 68, four minutes late at Eastleigh. There was a slight signal check and Southampton reached in 94 minutes 31 seconds, 93¾ minutes Net, one could assume this was a locomotive overloaded. Number 471 was so badly delayed in the early stages that 23¼ minutes elapsed before Surbiton was passed. It then reached 59 miles per hour at Weybridge, passed Woking eight and one quarter minutes late, 37 minutes 12 seconds, fell to 45 at MP31 and attained 59 before Basingstoke, where it was seven and a half minutes late, 63 minutes 33 seconds. The minimum before Litchfield was 40 miles per hour and with 70 on the descent Eastleigh was passed six and three quarters minutes late, 89 minutes 43 seconds. There was a stop for signals after this with the result that the final arrival at Southampton was 14½ minutes late, the Net time however was 91 minutes. Number 472 ran from Woking to Eastleigh in 55½ minutes with 400 tons whereas No.471 with 420 tons was three minutes quicker, schedule 54 minutes. The T9 with 385 tons took 52½ minutes and was 29 seconds quicker from Woking to Basingstoke. The performance of D15 Class 4-4-0 No. 470 with 440 tons on an Up train was published in 1925 but as noted previously O.S.Nock placed this run in the pre grouping period.

A new locomotive appeared on the Basingstoke to Eastleigh section in 1923, a Great Western Railway French built 4-4-2 compound frequently worked the 11.00 from Oxford, scheduled in summer non stop from there to Winchester in a very leisurely 90 minutes. The return was on the 15.36 from Eastleigh. The winter timetable of 1923 included a stop at Basingstoke where locomotives were changed.

The fastest start to stop runs on the three Sections of the Southern Railway in 1924, were: Redhill to Ashford on the Eastern - 46.6 miles in 50 minutes, Horsham to Arundel on the Central - 21.0 miles in 24 minutes and Dorchester to Wareham on the Western -15.0 miles in 16 minutes. Averages were 55.8, 51.5 and 56.2 miles per hour respectively.

Date: July 7th 2002

Chapter 15: The Southern Railway, 1925-1932.

The Southern Railway in terms of passenger locomotive usage effectively became a single entity in 1925. Although Tests of various intermediate locomotives were carried out in April 1924, 1925 saw the regular use of a particular Class of locomotive throughout the network. Timetables also reflected the existence of a single Railway. However certain pre-grouping loyalties to specific locomotives on designated routes were still influencing allocations forty years later.

It began reorganising many of its stations; at Leatherhead for instance work began to concentrate all trains at the ex LB&SC station in readiness for the forthcoming electric service from Waterloo; on a grander scale, after 25 years of SE&C inactivity, a start was made on a new station at Ramsgate. This plus a new section of railway allowed the abandonment of the lines to Ramsgate Harbour and from Ramsgate Town to Margate Sands.

An early locomotive reallocation was that of L12 Class 4-4-0 No.E421 to Brighton. It ran for a week between Brighton and Portsmouth before being employed on the "Sunny South Express", in each direction between Brighton and Kensington. Before transfer to Brighton it was allocated to Eastleigh on a duty: 06.55 to Southampton - 07.20 Boat train to London - 11.30 Waterloo to Bournemouth - 17.05 return to Waterloo - 22.00 Down Mails to Southampton Terminus - "light engine" back to Eastleigh, a daily mileage of 386. Later in 1925, T9 Class 4-4-0 No.E314 worked on the Eastern Section, either the 09.50 Charing Cross to Dover via Maidstone or on the Ashford to Brighton through service. T9's Nos.E304 and E310 also appeared on the Eastern Section. There were other inter-Section workings, for example an ex LB&SC E4 Class 0-6-2 Tank took a Morning Tonbridge-Oxted-London train and returned on the former South Eastern route via Redhill. Stirling F1 Class 4-4-0's of the former South Eastern Railway worked over the former LB&SC route from Tunbridge Wells to London. One train might, on successive days feature locomotives from different pre grouping Companies. The 09.00 London Bridge Low Level to Deal regularly appeared with one of the following, T9 Class 4-4-0 No.E314, L12 Class 4-4-0 No.E437 and D Class 4-4-0 No.A734.

However the event that heralded the new order, more than anything else, was the introduction of the first King Arthur Class 4-6-0 in February 1925. On July 13th one commenced working the Dover and Folkestone Boat trains and eventually they ran to the same schedules as the D1 and E1 Classes with 425 tons rather than 300 tons. There were 30 at work by the end of 1925 on the Western and Eastern Sections.

C.J.Allen published at the end of 1925 three examples from correspondents of three different Classes on the Southampton service. King Arthur Class 4-6-0 No.773 with 345 tons ran to Southampton in 89 minutes 28 seconds from Waterloo. The maximum before Woking was 66 miles per hour, the station passed in 28 minutes 56 seconds as per schedule. There was a PWR slack near Farnborough after which speed rose to 66 miles per hour after Hook.

Date: July 7th 2002

Southern to Southampton in 1925

At Basingstoke the train was on time, 55 minutes 20 seconds. The time to Winchester, passed at 80 miles per hour, was 73 minutes 42 seconds. There was another PWR slack at MP72, the Net time to Southampton was 84 minutes; the 4-6-0 was toying with this load on the 92 minutes schedule.

By way of comparison an Urie H15 Class 4-6-0 No.524 built in 1924 [the only change from the original design being the adoption of a Maunsell type superheater], with 300 tons barely maintained time. Woking was passed in 29 minutes 27 seconds, Basingstoke in 55 minutes 12 seconds, Eastleigh in 83 minutes 57 seconds, one minute late, and Southampton reached in 92 minutes 20 seconds. The H15's never appeared suitable for express duties, despite the six feet diameter coupled wheels, indeed when, at Holcroft's behest one was tried on an Eastern Section Boat Train the results were very poor. He thought the 6 feet diameter coupled-wheels would be an asset on the stiff gradients but much time was lost. He noted the performance was well below that of a King Arthur and on the Down run, with 301 tons Tare an E1 could have timed the train with lower Regulator and cut off settings employed.

It was inevitable that when a new larger locomotive was introduced, however well it performed in its first outings it would be upstaged by an older and smaller one. The third instance of recent performance quoted by Allen was with T9 Class 4-4-0 No.338, equipped with superheater on a 380 tons train driven by Shering of Eastleigh. [Whether it had an Eastleigh type superheater or the Maunsell version at the time of the run is not known]. Clapham Junction was passed in 7 minutes 10 seconds from the Waterloo start and Woking in 29 minutes 28 seconds after a maximum of 60 miles per hour. The minimum at MP31 was 48 miles per hour, the maximum before Basingstoke, passed exactly to time in 55 minutes 4 seconds, was 59 and after Winchester 70, before a PWR slack at Shawford. The stop at Southampton was made in 90 minutes 23 seconds, 89½ minutes Net. The time from Woking to Basingstoke was a quarter of a minute quicker than that of No.E300, a year previous, an average EDHP of 750-800, the load was slightly less, [a ten miles per hour wind at 45 degrees to the train or the absence of i.e. from the south westerly direction would have made the difference]. It confirmed however that the previous example when a superheated T9 worked a heavy train to time without high speeds past Winchester was not an isolated event.

In the Up direction King Arthur Class 4-6-0's Nos.774 and 777 had 350 and 440 tons trains. With the lighter one No.774 attained 45 miles per hour at Winchester, fell to 43 at Litchfield, was one and three quarters minutes late at Basingstoke due to the earlier PWR slack at Allbrook. Subsequent speeds were 72 miles per hour, 66 minimum at MP31, 80 maximum at Woking, the average from Basingstoke to Surbiton was 72, the time 29 minutes 40 seconds and the final time to Waterloo 90¾ minutes. Number 777 fell to 37 miles per hour at Litchfield, passed Basingstoke in 46 minutes 52 seconds and ran the 35.8 miles to Surbiton in 29 minutes 53 seconds. There were then delays due to signals before Waterloo which was reached two and one quarter minutes late, 94 minutes 20 seconds, 91½ minutes Net.

Date: July 7th 2002

Southern Western Section performance in 1925

Experiences with other locomotive types in the Up direction produced no performance equal to that of T9 Class 4-4-0 No.E338. H15 Class 4-6-0 No.521, with a light train, 185 tons, experienced a signal check to 20 miles per hour before Winchester, after which it attained 51 at the top of the long gradient to Litchfield. It passed Basingstoke in 43 minutes 2 seconds and Surbiton in 75 minutes 29 seconds and reached Waterloo one minute late after a signal check, 88 minutes Net. D15 Class 4-4-0 No.469 attained 52 miles per hour at Eastleigh, fell to 46 at Litchfield, was one minute early at Basingstoke, 41 minutes 4 seconds from Southampton, which was passed at 69 miles per hour. With easy running afterwards the time to Surbiton was 75 minutes 25 seconds and with signal checks onwards to Waterloo, reached one and a half minutes late, 91¼ minutes Net. The EDHP's at Litchfield were; 565-615 by the H15, 675-725 by the D15 and 750-800 by both King Arthur's. C.J.Allen considered that No.777 performed poorly, in practice both King Arthur's were apparently worked identically, assuming similar boiler conditions, which with the heavier train was insufficient for timekeeping.

Delays were always likely between Clapham Junction and Waterloo. F.J.Lane [Ref.14] was a regular passenger on the 08.48 from Winchester which was allowed 78 minutes non stop to Waterloo at this time. The train was regularly hauled by a D15 Class 4-4-0, No.E463 or E465 and most days it covered long stretches between Basingstoke and Clapham Junction at average speeds of 65 miles per hour with maxima of about 75. It was invariably early at Vauxhall, and after out of course checks, late at Waterloo.

The King Arthur Class 4-6-0's seldom appeared on the Portsmouth Direct, most trains were entrusted to either 4-4-0's or T14 Class 4-6-0's. However the introduction of the King Arthur's to Southampton and Bournemouth released D15 Class 4-4-0's to Fratton depot where they replaced the S11's on the fast Waterloo to Portsmouth trains. The T14's were still used at times and the S15 Class 4-6-0's and Maunsell 2-6-0's regularly at summer weekends. Locomotive performance between Waterloo and Portsmouth appears to have improved considerably after the introduction of the new timetable, particularly against the 98 minutes non stop schedules. A superheated T9 4-4-0 No.E338, with a very heavy train for this route, 11 bogie coaches, probably 320 tons Gross, reached Portsmouth Town in 104 minutes on the 13.50 ex Waterloo despite a two minutes stop at Liphook for signals. In the Up direction T14 Class 4-6-0 No.446, with seven coaches completed the journey in 92 minutes.

Holcroft's first footplate observations of the King Arthur Class 4-6-0's were between Waterloo and Salisbury but in December 1925 and January 1926 he made six return trips between Victoria and Dover some on No.764, reported "steaming badly". The train was the 10.45 Boat ex Victoria, allowed 98 minutes non stop to Dover with up to 425 tons Tare. [The E1 Class 4-4-0's were allowed 100 minutes with 300 tons maximum]. The best Net time was on the 12th January when Holcroft rode on No. 769, the overall time was 103 minutes with signal checks at Orpington and Folkestone Junction plus PWR slacks at Dunton Green and Hildenborough.

Date: July 7th 2002

Southern K Class 2-6-4 Tank to Brighton 1925

Ten new K Class 2-6-4 Tank's were supplied to the Central section in 1925 and Holcroft observed No.A792 on non stop 60 minutes Expresses between Victoria and Brighton. A comparison was made with a Billinton 4-6-4 Tank, No.B331 on the "Southern Belle" which with the winter formation usually loaded to 240 tons. Holcroft made six journeys Down, three with No.A792 and two with No.B331 on 240 tons trains, the other with B331 and 223 tons. All were completed within 60 minutes, the quickest by A792 on the 14th when Earlswood was passed in 27½ minutes from Victoria, the 27.8 miles from there to Preston Park run in 25¾ minutes and Brighton reached in 56¾ minutes. The other two runs with No.A792 finished in 59¾ & 59½ minutes, all with the same Driver. The running with the Baltic tank was very consistent, 29¼ minutes to Earlswood and Brighton reached in 60, 59¼ & 58¾ minutes.

All six Up journeys were hampered by PWR slacks and signal checks. The Baltic passed Earlswood each day in 32 minutes with Tare loads of 187, 202 & 201 tons. The 2-6-4 Tank took 30½, 34½ after a signal check and 31¾ minutes with Tare weights of 217, 215 & 214 tons. Number B331 reached Victoria seven minutes, five and a half minutes and a quarter minute late. The 2-6-4, checked less, took 61, 64½ & 60¼ minutes. The K was adjudged to have consumed less coal, c. three percent and the Baltic rode better at speed. [Ref.15] Maunsell's intention to use Tank engines and specifically with the 2-6-4 configuration, on many of the Southern's Express trains, with 300 tons loads based on these Tests, appeared eminently sensible.

Before the end of 1925, the King Arthur 4-6-0' were accepted by crews and performing well on both the Western and Eastern Sections, the Superheated T9 Class 4-4-0's, were proving better value than one imagines anybody could have envisaged and the Suburban electrification programme was proceeding apace.

The electrification freed up some steam locomotives for other duties. The H Class 0-4-4 Tank's, previously used in the London Suburbs were re-employed on Country services, some of which involved comparatively long journeys e.g. Margate to Ashford, Eastborne or Brighton to Tonbridge, Maidstone to Redhill etc. The H Class, although not as powerful as the M7 Class 0-4-4 Tanks were reliable and economical machines. The King Arthur's regularly hauled the heavier Continental Boat trains on the Eastern Section until further Lord Nelson Class 4-6-0's became available. Eleven journeys in 1926 & 1927 indicate that with 450 tons Gross the King Arthur's could run from Victoria to Dover in 98 minutes but there was little to spare. Knockholt would typically be passed in 33 minutes from the Victoria start, which entailed a minimum of about 26 miles per hour at Sydenham Hill and 30 to 35 at Knockholt. Holcroft timed three runs when Dover was reached in 98¾, 98¼ and 98½ minutes with PWR slacks in force at Polhill and before Tonbridge. In practice these slacks only delayed the trains by one minute or so. The quickest actual recorded time the author has found was with the 16.00 ex Victoria and a comparatively light train of 300 tons when Dover was reached in 94 minutes including one signal check and one PWR slack.

Date: July 7th 2002

Southern Eastern Section Boat Train performance

The Up Boat Trains as noted previously were more likely to experience out of course delays, on nine occasions the overall times varied from 102 to 120 minutes. Unfortunately there are no details available of the run in 102 minutes. A time of 105¾ minutes was achieved with a PWR slack at Paddock Wood. The best time with a full load from Tonbridge to Knockholt was 21¼ minutes, the Tonbridge to Sevenoaks stretch took 14¼ minutes, an EDHP of 1,000 to 1,100. Similarly leaving Victoria 27 miles per hour on the 1/101 at Sydenham Hill required an EDHP of 1,050 to 1,150. The locomotives were driven on full Regulator and 35 percent cut off to achieve such figures.

C.J.Allen in 1927 travelled on the footplate [Ref.16] of L1 Class 4-4-0 No.755 on the 16.15 ex Dover Marine with 285 tons routed via Maidstone. Despite signal checks both sides of Sandling Junction, it passed Ashford in 30 minutes 40 seconds and averaged 38.7 miles per hour over the 10.1 miles of rising grades from there to Lenham, achieved with half-open Regulator and 35 percent cut off, an average EDHP of 575-625. The average from Maidstone up to Barming was 30.3 miles per hour, with the cut off increased to 45 percent at first and then reduced back to 35 percent, an EDHP of 650-700. This affords an interesting comparison with the three Cylinder K1 Class 2-6-4 Tank and 210 tons on the 12.56 from Dover. With the controls set at full Regulator and 27 percent cut off and boiler pressure at 180 pounds per square inch, the average was 34.6 miles per hour, an EDHP of circa. 450.

The advent of the Lord Nelson Class 4-6-0's provided the running department with a locomotive that was capable of hauling 450 ton Boat trains to schedule comfortably, Holcroft travelled on the footplate of No.850 three times in 1926. On the first occasion with 450 tons the time to Dover was 106¼ minutes with three PWR slacks. He attributed the lost time to the locomotive being driven too easily as a result of driver unfamiliarity. Holcroft believed he [the driver] had not driven No.850 with such a heavy train before. The next time, eleven days later, Dover was reached in 97¼ minutes including a stop lasting two and a quarter minutes at Orpington and a PWR slack before Westenhanger, the Net time was 93 minutes Net, perhaps even 92. The locomotive was driven with a half-open Regulator, the cut off set at 30 percent up to Sydenham Hill, 27 percent up to Bickley and Knockholt and 25 percent to Ashford. On the third the 95 minutes schedule of the 16.00 ex Victoria with the normal 338 tons train was exceeded by three and a quarter minutes. Five minutes was lost by an emergency one-minute stop at Pluckley plus additional PWR slacks at Penge, Hildenborough and Westenhanger, c.90 minutes Net. The locomotive was driven with the Regulator half-open and the cut off varied between 20 and 27 percent.

C.J.Allen observed Lord Nelson 4-6-0 No.850 with 460 tons from the footplate in 1927 on the 10.45 ex Victoria. It gained one minute and a quarter to Sevenoaks, the minimum at Sydenham Hill was 31½ miles per hour and at both Bickley and Knockholt 37, with cut off advanced to 30 percent and the Regulator two fifths open. The hardest work was done on the straight from Tonbridge to Ashford with the Regulator half open and cut off at 30 percent.

Date: July 7th 2002

Southern Eastern Section Lord Nelson performance

Number 850 attained 70 miles per hour maximum and reached Dover in 98 minutes 10 seconds, 94 minutes Net. There were PWR slacks before Tonbridge and at Westenhanger, the driver Stuckey, the same as on Holcroft's second run with Lord Nelson. The 11.00 ex Victoria, on May 16th 1927, loaded to 15 bogie coaches, an additional portion was added for the use of the King of Egypt. Lord Nelson hauled the 475 tons to Dover in 98 minutes, the preceding 10.45 was taken by a pair of T9 Class 4-4-0's.

The performance of the Lord Nelson 4-6-0's was at times very variable. In 1928 No.E850 was noted losing five minutes on schedule with the 10.45 ex Victoria with 460 tons. In 1931 No.E858 with 445 tons passed Sydenham Hill in 13½ minutes and was delayed by signals with the result it required 35 minutes 10 seconds to pass Orpington and 49¾ minutes to Tonbridge. The average from Tonbridge to Ashford was only 55 miles per hour and 23 minutes 10 seconds was taken from the latter station to Dover Marine, a minute was lost by a signal check before Dover, c.98 minutes Net. Number E852, with 425 tons, experienced a severe PWR slack, between Pluckley and Ashford and ran from Ashford to Dover Marine in 21 minutes 57 seconds, the arrival was 47 seconds late, 95 minutes Net. Number E857 on a Folkestone Boat train, with 430 tons, after a series of delays passed Tonbridge in 54½ minutes, ran the 40.5 miles from there to Folkestone Junction in 40 minutes 38 seconds and reached the exchange siding at Folkestone Junction in 97 minutes 35 seconds.

Number E850 on two occasions in 1926 with 440 tons ran from Dover to Victoria in 112 and 114½ minutes on the 15.38, schedule 113 minutes and on both runs was driven easily, sufficient to maintain time. The Up Boat train ex Folkestone, 13.40, usually loaded lightly, 340-350 tons and was hauled from the Harbour station to the Junction sidings, by three Kirtley 0-6-0 Tank's, one at the front as train engine and two at the back as bankers. It usually ascended the 1/30 gradient at 6-8 miles per hour. In 1928 an L1 Class 4-4-0 with 350 tons kept time from the Junction sidings to Victoria including a diversion over the Catford loop line. There were occasions when special Boat Trains were run, often consisting of only a few coaches. On one such occasion in 1928, HRH the Prince of Wales arrived at Folkestone Harbour at 08.41 and seven minutes later was on a train for Victoria, Gross weight 120 tons. L1 Class 4-4-0 No.A754 ran from the Junction to Victoria in 85 minutes including checks to 15 miles per hour at Ashford, Tonbridge and Knockholt, it passed Bickley Junction, 59.4 miles, in 63¼ minutes.

The Lord Nelson Class 4-6-0's received much criticism for their erratic and sometimes poor performances. Various theories have been advanced as to why they apparently performed so badly, many of them conflicting and almost certainly irrelevant. Driver Stuckey's two journeys witnessed by C.J.Allen and H.Holcroft demonstrate that No.E850 could time 450 tons on a Boat train without being driven harder than half-open regulator and 30 percent cut off and exceeding 70 miles per hour. A King Arthur, to achieve a similar uphill performance had to be driven on Full Regulator and 35 percent cut off.

Date: July 7th 2002

Southern Central Section, Newhaven Boat Train

It would appear that in the late 20's and early 30's footplate crews became accustomed to working the Lord Nelsons gently. Later in the 30's design modifications adopted with the intention of sharpening the exhaust achieved the same effect as might have been achieved by driving them harder. Train lengths were limited by short platforms, average speeds comparatively low due to the presence of frequent restrictions and tight timetable paths particularly in the Suburbs threaded through a plethora of stopping and semi-fast trains. Many footplate crews confronted with regular speed checks, both permanent and out of course, particularly in the Up direction, plus an incentive to save fuel, would settle for driving a Lord Nelson on three eighths open Regulator and one and a quarter notches between Dover and Tonbridge. They would be almost keeping time, there were bound to be some out of course delays later, a lost time ticket would be difficult to enforce.

A B4X Class 4-4-0, Nos.B67 and B73 on alternate days hauled the Newhaven Boat Train ex Victoria in 1926 and 1927. Other locomotives featured at times, particularly on relief trains; there is even a record of a Stroudley Gladstone 0-4-2, No.B612, on the 10.00 ex Victoria. A new set of coaches entered service on June 6th 1927 which as they included two Pullman Cars in the formation was too heavy for a B4X which were replaced by H1 Class 4-4-2's Nos.B38 and B40. Train departure times were: Newhaven Harbour at 04.45 and 17.10 and Victoria at 10.00 and 20.20. Schedules were generous: 10.00, Down allowed 18 minutes from Victoria to the first stop at East Croydon, 50 minutes from there to the next at Lewes, overall time Victoria to Newhaven 87 minutes with six minutes spent at the two stations - 20.20, allowed an extra minute to East Croydon, one minute less from Lewes to Newhaven Harbour, five minutes at the two stops and an overall time of 85 minutes – Up, overall times were 83 minutes with three minutes at the stations and 93 minutes with six minutes. At times extra coaches were added to the formation, in 1929 H1 Class 4-4-2 No.B41 with 500 tons kept the 87 minutes Victoria to Newhaven schedule including the stop at East Croydon.

The Charing Cross to Folkestone non stop 80 minutes schedules when introduced in 1922, as noted previously were a challenge, the L Class 4-4-0's only maintained schedule with 250 tons if there were no out of course delays. The L1 Class 4-4-0 was designed with the intention of running 300 tons trains to these schedules. Holcroft rode on the footplate of an L Class 4-4-0, No.A775 when it was fitted with an N Class type smoke-box. The 17.10 from Folkestone weighed 230 tons and passed Tonbridge in 43¼ minutes after a PWR slack at Paddock Wood. The locomotive was driven with the Regulator half open to Ashford and five eighths open on to Tonbridge and the cut off set at 35 percent, maximum speed was 70 miles per hour. The 13 miles from Tonbridge to Knockholt were run in 19 minutes, an average EDHP of 500-550 and Charing Cross was ultimately reached ten minutes late after persistent checks for signals. A better example of L capabilities at this time was a run behind No.A779 with 300 tons, [Ref.17] when Ashford was passed in 17¼ minutes, the maximum at Headcorn was 70 miles per hour and the time to Tonbridge was 42 minutes 35 seconds.

Date: July 7th 2002

Southern [Eastern Section] performance to Folkestone 1926-32

The uphill stage to Knockholt took 19 minutes 8 seconds, an average EDHP of 630-680, New Cross was passed in 73 minutes 19 seconds before signals checked further progress. The actual arrival at Charing Cross was six and three quarters minutes late, the Net time was 82 minutes Net, the L lost two minutes on the fast stretch East of Tonbridge. C.J.Allen [Ref.7] travelled on the 17.10 from Folkestone, on a Folkestone Race day, when L Class 4-4-0 No.A775 had a 340 tons train. Speed was 41 miles per hour at Sandling; it took 19¼ minutes to pass Ashford at 69 with the next 21.3 miles to Paddock Wood run in 20¼ minutes. Tonbridge was passed slowly under adverse signals in 45 minutes 25 seconds before the train was delayed all the way to London by preceding Race traffic.

The L12 Class 4-4-0's introduced on the Folkestone Expresses as an interim panacea, apparently found favour with footplate crews and ran faster between Folkestone and Tonbridge than the L's. However it was not until the advent of the L1's that punctual arrivals became a reality.

The principal trains to Folkestone in February 1930 via Tonbridge were: 09.15 ex Charing Cross, which stopped at Tonbridge and Ashford, the three intermediate stages scheduled in 45, 32 and 18 minutes - 13.15 allowed 66 minutes to Ashford the first stop - 16.15 and 19.15 non stop to Folkestone in 80 minutes - 17.00 and 18.12 ex Cannon Street, the first non stop to Ashford in 65 minutes, the second, with stops at Sevenoaks, Tonbridge and Ashford reached Folkestone at 19.50.

Various records from 1928 to 1932 furnish a view of day to day performance. An L1 Class 4-4-0, No.A757 on the 13.15, with 320 tons, delayed initially by signals, covered the uphill stage from New Cross to Knockholt in 17 minutes 20 seconds, an average EDHP of 775-825. Actual speeds were 50 miles per hour at New Cross, 35 minimum at Elmstead, 47 at Orpington, 39 at Knockholt, 67 at Dunton Green, 54 at Sevenoaks and 77 before the Tonbridge slack. The Tonbridge to Ashford time was 29 minutes exactly with a maximum of 66 miles per hour at Paddock Wood and the Ashford arrival 3 minutes 20 seconds late, 67 minutes Net. The restart from Ashford was excellent, Westenhanger passed at 53 miles per hour and with a maximum of 67 afterwards the stop at Folkestone made in 17 minutes 55 seconds. The L1 developed an EDHP of 830-880 on the rising grades to Westenhanger, the only poor running was on the fast stretch from Tonbridge to Ashford, the very section where the L1's were expected to run more freely than the L's.

A year later L1 Class 4-4-0 No.A756 with 280 tons on the same service ran to the Ashford stop in 68 minutes 20 seconds and on to Folkestone in another 18 minutes 35 seconds including a PWR slack at Westenhanger. The Tonbridge to Ashford time was 27½ minutes, the New Cross to Knockholt 16 minutes 20 seconds with minima at Elmstead and Knockholt of 36 and 40 miles per hour, average 740-790EDHP.

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Southern [Eastern Section] performance to Folkestone 1926-32

An L1 Class 4-4-0 No.757 during 1930 on the 17.00 ex Cannon Street with 305 tons reached Ashford in 65¼ minutes, this included a PWR slack at Elmstead, probably only a slight loss of time and another at Tonbridge which cost one and a half minutes. The New Cross to Knockholt time was 16 minutes 39 seconds and from Tonbridge to the stop 26 minutes 50 seconds with a maximum of 72 miles per hour. Holcroft stated that the L1 Class 4-4-0's had no difficulty in running 300 tons trains to time on the fast Folkestone services. It is difficult to reconcile this statement with the evidence of locomotives barely maintaining schedules whilst developing an EDHP of about 800. It should be noted that including the tender the L1's hauled trains up to six times their own weight at average speeds in excess of 50 miles per hour over a fairly difficult route.

The 18.00 ex Charing Cross, regularly entrusted to the three-cylinder 2-6-4 tank No.A890 until the Sevenoaks derailment, was scheduled in 30½ minutes from London Bridge to the first stop at Sevenoaks, ten minutes to Tonbridge the next stop and 33 minutes to Ashford. Holcroft rode on the footplate twice on this train, Tare weights were 287 and 285 tons and respective times for the three stages 31¼, 31½ [29 Net], ten and a quarter, ten and a quarter, 33¾ and 29 minutes respectively. On the second run there was difficulty in maintaining boiler pressure on the uphill section from London Bridge to Knockholt, it fell to 150 pounds per square inch with the Regulator full open and the cut off around 25 percent. The New Cross to Knockholt stage was run in 16½ minutes despite these difficulties, an average EDHP of 650-700. Full Regulator working at 150 pounds per square inch boiler pressure probably represented a steam chest pressure of 135-140 pounds per square inch, equivalent to half-open Regulator working at full boiler pressure.

The Saturday 11.30 ex Charing Cross was allowed 86 minutes to the Folkestone stop. L1 Class 4-4-0 No.758 with 310 tons, following delays in the early stages, passed New Cross one and a half minutes late and ran from there to Folkestone in 71 minutes 50 seconds, sufficient to achieve an arrival two and a half minutes early.

The introduction of the new three cylinder Schools Class 4-4-0's to the Folkestone service in 1930 provided a welcome measure of additional power. Number 902 on the 17.00 ex Cannon Street, with the normal load, 305 tons, climbed from New Cross to Knockholt in 15 minutes 53 seconds with a minimum of 37 miles per hour at Elmstead, an average EDHP of 850-900. The time to Tonbridge was 37 minutes 20 seconds, before a severe PWR slack between Paddock Wood and Ashford resulted in a 2 minutes 55 seconds loss on schedule, 63 minutes Net. On another day No.902 with the same train was checked for signals three times before Tonbridge, 39 minutes 53 seconds and then with 73 miles per hour attained twice came to a stop at Ashford 31 seconds within schedule, 61 minutes Net.

The 16.15 in 1931 with Schools Class 4-4-0 No.901 and 270 tons, after initial signal checks, passed New Cross in 11 minutes 16 seconds.

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Southern [Eastern Section] performance to Folkestone 1930-32

New Cross to Knockholt took 16 minutes 32 seconds. At Tonbridge it was one and three quarters minutes late, 39 minutes 47 seconds from Charing Cross. Speeds afterwards were, 69 miles per hour at Paddock Wood and Ashford with a PWR slack in between, 57 minimum at Westenhanger and a final flourish to 71 before Folkestone. The stop was made in 80 minutes 3 seconds from Charing Cross, 75 to 76 minutes Net. Number 902 on the same train with an unchecked run other than a PWR slack before Tonbridge reached Folkestone in 78 minutes 50 seconds. Intermediate passing times were; Tonbridge 39 minutes exactly, Ashford 63 minutes 55 seconds, New Cross to Knockholt took 15¾ minutes.

The 19.15 ex Charing Cross, with Schools Class No.902 plus the usual 305 tons was delayed one evening twice, by PWR slacks, before Orpington and Tonbridge. Despite a maximum at Hildenborough of 81 miles per hour it was four and a quarter minutes adrift at Tonbridge, 42 minutes 10 seconds, it then ran from there to Folkestone 39¾ minutes. Speed varied between 68 and 59 miles per hour from Tonbridge to Ashford, the station passed at 68, the minimum at Westenhanger was 58 followed by 69 maximum before the stop. The actual overall time was 81 minutes 55 seconds, 78½ minutes Net.

The advent of the Schools Class 4-4-0's improved the chances of an on time arrival at Ashford significantly by the 13.15 ex Charing Cross. Number 900 with 325 tons ran to the stop in exactly 65 minutes. Tonbridge was passed in 38 minutes 20 seconds, including a PWR slack before New Cross, from there to Knockholt took 15 minutes 35 seconds, an average EDHP of at least 900-950. The maximum before slowing for the Tonbridge slack was 76 miles per hour and afterwards 67. Number 900, with one coach less, 290 tons Gross ran New Cross to Knockholt in 15 minutes 28 seconds, maximum at Orpington was 50 miles per hour and minimum at Knockholt 41. There were PWR slacks before New Cross and Hildenborough despite which the time to Tonbridge was only 37½ minutes although a third PWR slack proved too much, Ashford was reached in 68 minutes 24 seconds, 63 minutes Net. Two minutes of the lost time was recovered by smart station work at Ashford, following which the next stage to Folkestone was run in 16 minutes 22 seconds. Speeds were 55 miles per hour at Westenhanger and 76 at Sandling Junction passed in 11 minutes 58 seconds.

The older locomotives, those of 19th century vintage, when required still performed competently. In September 1930, Rebuilt Stirling B1 Class 4-4-0 No.A455, [built 1898, rebuilt 1911] had 245 tons on a National Excursion, booked non stop to Ashford via Swanley Junction and Eynsford, an increase of 3.7 miles compared with the direct route, the various slacks at Junctions probably cost an extra nine minutes. There were signal checks at Hither Green and Swanley Junction, a PWR slack at Eynsford; consequently it required 60 minutes 50 seconds to pass Tonbridge before the 26.6 miles from there to Ashford were run in 28¾ minutes. The average speed from Paddock Wood to Pluckley exceeded 60 miles per hour. [Ref.18]

Date: July 7th 2002

Southern [Eastern Section] from Folkestone with L1 Class 4-4-0's

The best Up services from Folkestone in February 1930 were: 06.54 from the Central station, stops at Shorncliffe, Sandling Junction, Ashford, Tonbridge, Sevenoaks and London Bridge, Cannon Street reached at 08.40 - 08.10 stop at Sandling, non stop from there to London Bridge in 77 minutes with a Cannon Street arrival at 09.40 - 09.00 to Charing Cross, allowed 90 minutes including stops at London Bridge and Waterloo - 11.10 and 17.00 both non stop to Charing Cross in 80 minutes.

C.J.Allen's first experience with an L1 Class 4-4-0 on an Up train produced a performance close to the maximum possible. Sandling was passed in seven and three quarter minutes at 48 miles per hour and Westenhanger at 53 with 340 tons. The time to Ashford was 16 minutes 20 seconds and to Tonbridge 39 minutes 40 seconds, 80 seconds inside schedule, with speed held between 68 and 76 miles per hour to Paddock Wood. Driver Harris provided Allen with his first ever run inside the 41 minutes schedule. The Tonbridge to Knockholt section took 18¾ minutes, there was a PWR slack to 20 miles per hour before New Cross, a slight signal check afterwards and the stop at Charing Cross made in 79 minutes 10 seconds, 77¾ minutes Net. Number 758 developed an EDHP of 800-850 at Sandling Junction, an average of 725-775 between Tonbridge and Knockholt and before entering Sevenoaks tunnel probably 825-875, the second stage of the climb was taken more easily, speed fell from 61 miles per hour at Dunton Green to 42 at Knockholt. A later experience on the same train with No.A758 in 1928 was not as good, Ashford passed in 17 minutes 50 seconds at 71 miles per hour, Tonbridge in 42 minutes 25 seconds and Knockholt in 61 minutes 35 seconds. An unchecked run ended with a two minutes late arrival, 81 minutes 55 seconds overall.

Details of five journeys behind L1 Class 4-4-0's in 1930 provide a reasonable picture of their performance on the 80 minutes non stop schedule. The locomotives concerned were Nos.A753, A783, A755, A784 and A756, the respective Gross train weights 275, 305, 305, 320 and 325 tons. The overall [Net] times were:- 80 minutes 7 seconds [77¼ minutes] - 80 minutes [78¼ minutes] - 83½ minutes [79¼ minutes] - 79 minutes 55 seconds - 86 minutes [81½ minutes]. The initial times to Ashford were similar; 17 minutes 38 seconds, 17 minutes 20 seconds, 17 minutes 10 seconds, 18 minutes and 17¼ minutes. There was a greater variation over the continuation to Tonbridge; 23 minutes 1 second, 22 minutes 35 seconds, 23 minutes 5 seconds, 24 minutes and 25 minutes 5 seconds, the average speeds in the range 70.6 to 63.6 miles per hour. The maximum on the fast stretch, 75 miles per hour was reached twice i.e. on runs one and two, the third was slightly less, 74. Number A756 appears to have struggled, although this may well be a case of a driver who preferred not to run quickly, a natural and frequent occurrence amongst footplate crews over the years. The times from Tonbridge to Knockholt were 19 minutes 9 seconds including a PWR Slack after Tonbridge, 19 minutes 20 seconds, 19 minutes 25 seconds, 18 minutes 55 seconds and 19 minutes 35 seconds. Number A784 developed an average EDHP of 660-710 over this section.

Date: July 7th 2002

Southern [Eastern Section] performance from Folkestone 1930-32

An interesting comparison is afforded by a run with a D1 Class 4-4-0 No.727 with 305 tons. Ashford passed in 17 minutes 35 seconds at 70 miles per hour, Tonbridge in 40 minutes 42 seconds after a maximum of 73 before, the climb up to Knockholt took 18 minutes 37 seconds with 34 entering Sevenoaks tunnel and 51 at Knockholt. The D1 developed an average EDHP of 650-700 on this stage, another confirmation of the excellent results obtained by rebuilding the Wainwright 4-4-0's. The D1 touched 72 miles per hour before New Cross and finally reached Charing Cross in 79 minutes 13 seconds. Maxima by Nos.A753, A783 and A755 before New Cross were 74, 73 and 67 miles per hour.

Although sufficient Schools Class 4-4-0's were available for the 80 minutes Folkestone to Charing Cross expresses from 1930 onwards, L1 Class 4-4-0's continued to appear regularly. Two journeys, behind Nos.1757 and 1755 respectively [renumbered by the addition of 1,000] with 310 and 350 tons are interesting. Number 1757 attained 45 miles per hour at Sandling, passed Ashford in 17 minutes 5 seconds, the maximum before Tonbridge was 73 and the time on to Knockholt 18 minutes 39 seconds. Knockholt was passed in 59 minutes 34 seconds after which a PWR slack and two checks for signals resulted in an arrival 6 minutes 24 seconds late, 79½ minutes Net. Number 1755 attained 48 miles per hour at Sandling, passed Ashford in 16 minutes 35 seconds at 77, ran the 21.3 miles from there to Paddock Wood in only 17 minutes 50 seconds, an average speed of 71.3, with a maximum of 78. It then took 5 minutes 55 seconds to run from Paddock Wood to Tonbridge, perhaps signals were sighted at danger, a minute lost. The Tonbridge to Knockholt time was 18¼ minutes with a minimum of 51 miles per hour at Knockholt, the maximum before New Cross was 72 and the final arrival 40 seconds early. The average EDHP from Tonbridge to Knockholt was 750-800, Knockholt was passed in 58¾ minutes and it could have been 57¾ minutes. This, the epitome of Southern Railway inside cylinder 4-4-0 locomotive performance confirms how good the Maunsell 4-4-0's were and how close Wainwright and Surtees were to success in 1914. Although logically a locomotive is as good as its last General Overhaul, L1 No.755 seems to have always been particularly good.

The Schools Class 4-4-0's in the Up direction, as in the Down, had a reasonable reserve of power on the non stop 80 minutes schedule. The earliest record the author has found is of No.902, with 305 tons. [Ref.20] Ashford passed in 16¼ minutes, Tonbridge in 39¾ minutes and Tonbridge to Knockholt run in 16 minutes 35 seconds, an average EDHP of 780-830. Signals then interfered and Charing Cross was reached in 83 minutes, 76 minutes Net. C.J.Allen when he published this account enthused about the work performed by the three cylinder 4-4-0 between Tonbridge and Knockholt, in practice it represented an increase in power compared with L1 Class 4-4-0 No.1755 of less than five percent. Subsequent experiences suggest the Schools were not driven as hard as the L1's. Later in the same year No.901, with 315 tons was slower to Tonbridge 40 minutes 35 seconds, after passing Ashford in 16 minutes 55 seconds.

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Southern [Eastern Section] School's performance from Folkestone 1930-32

The time up to Knockholt was 18 minutes 35 seconds, where the train was on time before a signal check led to a one and three quarters minutes late arrival at Charing Cross, 78 minutes Net. Number 900 with 330 tons passed Ashford in 16 minutes 25 seconds at 76 miles per hour, then averaged 77 from there to Paddock Wood with a maximum of 81, Tonbridge was passed in 38 minutes 20 seconds, following this splendid start there were delays all the way to London. The running from Ashford to Paddock Wood required a power output at least ten percent greater than the best L1 effort.

Eight runs behind Schools Class locomotives published in 1932, on the Folkestone to London non stop service, suggest drivers had become so used to running faster east of Tonbridge they often passed there early, permitting easier running on the uphill stretch to Knockholt. The quickest time to Tonbridge was by No.900 with 310 tons, Sandling passed at 48 miles per hour, Ashford in 16 minutes 35 seconds, Tonbridge in 38 minutes 25 seconds, the average from Ashford to Paddock Wood was 76½ and the maximum 80. With 360 tons No.902 was through Ashford in 16 minutes 58 seconds at 78 miles per hour, Tonbridge in 39 minutes 43 seconds and Knockholt in 58 minutes 27 seconds. The best times from Tonbridge to Knockholt were 18 minutes by No.906 with 275 tons and 16 minutes 50 seconds by No.905 with 305 tons on an occasion when the train had been delayed by a PWR slack before Paddock Wood, the time to Tonbridge 43½ minutes. Number 905 with 405 tons passed Ashford in 18 minutes 59 seconds and Tonbridge in 44 minutes 10 seconds after a PWR slack at Headcorn to 30 miles per hour. It reached 72 miles per hour at Paddock Wood, Tonbridge to Knockholt took 21 minutes 55 seconds and Charing Cross was reached seven and a half minutes late, about 85 minutes Net. The overall actual and [Net] times from Folkestone to Charing Cross were:

No.906 - 275 tons	78½ minutes.	[76½ minutes Net]
No.902 - 305 tons	81 minutes 40 seconds	[78 minutes Net]
No.905 - 305 tons	83 minutes 20 seconds	[76 minutes Net]
No.901 - 305 tons	81 minutes 24 seconds	[79 minutes Net]
No.900 - 310 tons	80 minutes 50 seconds	[77 minutes Net]
No.903 - 355 tons	82¾ minutes	[78½ minutes Net]
No.902 - 360 tons	80¼ minutes	[78½ minutes Net]
No.905 - 405 tons	87 minutes 20 seconds	[85 minutes Net]

The run by No.905 with 405 tons was poor. A better effort with 410 tons recorded at this time between Tonbridge and Cannon Street occurred on the 08.10 ex Hastings. Tonbridge was passed in 8 minutes 38 seconds from a start at Tunbridge Wells Central after a PWR slack, Sevenoaks in 20 minutes 14 seconds and Knockholt in 26 minutes 57 seconds. There was a bad signal check after Knockholt, New Cross was passed in 38 minutes and Cannon Street reached in 46¼ minutes, schedule 46 minutes, 44 minutes Net. Number 905 developed an EDHP of 900-950 between Tonbridge and Knockholt, an increase in power of almost twenty percent over the best L1 Class performances.

Date: July 7th 2002

Southern [Eastern Section] Improvements on the Hastings Branch

There were major improvements on the Eastern Section in the decade from 1923 to 1932, in addition to the provision of more powerful locomotives. New additions in 1929 were corridor stock on the 16.15 and 17.00 from London, inauguration of the "Golden Arrow" Pullman service on 15th May between Victoria and Dover and three new train sets on the Hastings route, built to the appropriate restricted loading gauge. Work commenced on a new station at Hastings in 1929, cost £202,000, which was officially opened on July 6th 1931. The Schools Class designed to comply with the Hastings branch loading gauge, were not permitted to work over the route officially until July 6th 1931, following the completion of various civil works improvements. L Class 4-4-0's had a near monopoly of the Hastings service until the advent of the Schools. In 1926 however two E1 Class 4-4-0's [displaced from Boat train duties by King Arthur Class 4-6-0's] were transferred to Hastings and from 1931 T9 Class 4-4-0's became regular visitors to Hastings on Sundays. The L's handled the Hastings trains well, they were particularly good on the uphill sections, it was as already noted on the high speed sections of line such as between Folkestone and Tonbridge that they were suspect.

The 15.20 ex Charing Cross and the 17.04 ex Cannon Street for many years ran non stop to Crowhurst. L Class 4-4-0 No.763 [Ref.21] with 270 tons, following signal checks after London Bridge passed New Cross in 9 minutes 50 seconds from Charing Cross and Knockholt, one and a half minutes late, in 27 minutes 35 seconds at 35 miles per hour. It reached 68 miles per hour at Dunton Green, fell to 54 at Sevenoaks and touched 72 before the Tonbridge slack, passed 25 seconds late, 40 minutes 55 seconds. The difficult stretch up to Tunbridge Wells took 8 minutes 40 seconds with a minimum of 31 miles per hour, subsequent speeds were 40 on the short downhill stretch after Strawberry Hill tunnel, a minimum of 36 at Frant, 74 maximum on the long descent to Robertsbridge and 61 at Battle. Robertsbridge was passed two and a half minutes early, 65 minutes 35 seconds and the stop at Crowhurst effected four and a half minutes early, in 75½ minutes.

An L Class 4-4-0 No.765 in the Up direction with 240 tons ran from Crowhurst to the next stop at Tunbridge Wells Central in 31 minutes 5 seconds, schedule 32 minutes. From the restart it passed Tonbridge in nine and a quarter minutes after a PWR slack, the uphill stage to Knockholt, passed on time took 18¾ minutes before signal checks caused an arrival one and a half minutes late at London Bridge, 46 minutes Net, schedule 48 minutes.

The new Hastings station was officially opened on July 6th 1931 and the 10.25 ex Charing Cross that day, specially hauled by Schools Class 4-4-0 No.E904, consisted of the normal 320 tons formation plus two additional Pullman Cars for visiting dignitaries, a total Gross weight of 390 tons. There were out of course delays early on after which five of the lost ten minutes were recovered. The introduction of the Schools Class 4-4-0's, as with the Folkestone service, brought a new level of power to the Hastings route. The performance of No.905, with 410 tons in the Up direction on the 08.10 Hastings to London between Tunbridge Wells and London has already been noted.

Date: July 7th 2002

Southern [Eastern Section] the Kent Coast Services 1926-27

The Kent Coast services to Margate and Ramsgate continued until 1932 to be hauled, due to weight restrictions, by inside cylinder 4-4-0's. The only novelty was the introduction of the superheated T9 Class 4-4-0's, transferred from the Western section, from 1925 onwards. The Southern Railway adopted a more pragmatic view of the timetable than the SE&C, it eased the schedules slightly, presumably in the belief that passengers preferred to arrive on time rather than being entranced with the excitement of very occasionally reaching Margate in exactly one and a half hours.

In September 1927 for instance, the non stop trains to Margate, the 15.15 ex Victoria and the 17.08 ex Cannon Street were allowed 97 and 92 minutes respectively. The 18.08 ex Cannon Street reached Margate in 102 minutes including stops at Whitstable and Herne Bay. In the Up direction the 07.43 and 07.51 from Margate ran to London Bridge non stop in 97 minutes and including a stop at Herne Bay in 102 minutes. The 10.32 from Margate, 10.05 ex Ramsgate, ran non stop to Victoria in 98 minutes, the 17.30 was allowed an additional two minutes. In February 1929 the timings in the Down direction were the same, except the former 17.08 ex Cannon Street left two minutes earlier and was allowed an extra minute to Margate. In the Up direction from Margate: 07.43, non stop to Cannon Street in 100 minutes - 07.51 to London Bridge with the stop at Herne Bay in 101 minutes - 08.47 to Victoria with a stop at Herne Bay in 105 minutes - 10.25 in the same time with a stop at Westgate - 17.30 non stop in 100 minutes.

One of the early major works, other than electrification projects, undertaken by the Southern Railway was the rationalisation of lines and services in the Margate and Ramsgate area. On July 19th 1926 the new Ramsgate connecting lines opened including new stations at Ramsgate and Dumpton. Simultaneously the former LC&D. station at Ramsgate Harbour and the SE stations at Ramsgate Town and Margate Sands closed. In 1929 the rationalisation of the formerly archaic arrangements at Minster Junction was completed with the opening of the triangular arrangement.

Typical locomotive performance on the new pragmatic schedules can be illustrated by a run with D1 Class 4-4-0 No.A249 with 305 tons in 1926. The 15.15 ex Victoria initially delayed by signal checks between Herne Hill and Sydenham Hill passed Bickley Junction over a minute behind schedule, 27 minutes 10 seconds. At Rochester Bridge it was on time, 49 minutes 55 seconds, after a maximum at Farningham Road of 71 miles per hour, a minimum at Sole Street of 44 and a maximum before braking for the Rochester Bridge curve of 66. The time to Sittingborne was 65 minutes, exactly to schedule, the speed 66 miles per hour further increased to 69, and to Faversham passed slowly for the turnouts at the end of the station, 72 minutes 25 seconds, schedule 73 minutes. The final stage to Margate required 24¼ minutes producing an actual arrival 20 seconds early, 96 minutes 40 seconds, probably 95 minutes Net.

Date: July 7th 2002

Southern [Eastern Section] performance to Margate, 1929-31

An example of T9 Class 4-4-0 performance on the Sunday 10.10 ex Victoria, No.E312 with Maunsell superheater and 245 tons passed Sydenham Hill in 11 minutes 35 seconds, a good start. There was a PWR slack to 30 miles per hour before Bickley, another after Swanley, the maximum at Farningham Road only 57, the minimum at Sole Street 39 and the maximum after 67. The time to Chatham was 49 minutes 20 seconds and with 66 miles per hour at Sittingborne and 63 before Herne Bay the stop at Westgate was made in 93 minutes 34 seconds, about 90 minutes Net, schedule 94 minutes.

The former LC&D M3 Class 4-4-0's were withdrawn from service in the period 1925-8, their duties then taken over by rebuilt Stirling 4-4-0's, F1's allocated to Gillingham motive power depot and B1's to Faversham. They were employed on excursion trains in addition to local services; the only dual brake fitted member of the class, No.A440, often hauled the New Cross Gate to Margate excursion via the former South Eastern route through Redhill and Ashford.

S.A.W.Harvey timed E1 Class 4-4-0 No.A507 in July 1930 [Ref.22] on the Sunday Pullman, 10.10 ex Victoria with 310 tons. It passed Swanley in 29 minutes, after a slight signal check between Herne Hill and Sydenham Hill, was further checked at Fawkham before it ran the 25.2 miles from Sole Street to Faversham in slightly under 29 minutes, including the slow passage through the Medway Towns. The 20.4 miles from Faversham to Westgate took 20 minutes 5 seconds, the Margate arrival was delayed by signals, Mr Harvey reckoned the Net time as 88 minutes, schedule 97 minutes; he noted this excellent performance before he recorded actual speeds.

C.J.Allen published six Down and four Up runs in 1931 [Ref.23]. Four of the Down runs featured D1 Class 4-4-0's with the standard 285 tons load on the non stop 97 minutes schedule from Victoria to Margate. The locomotives concerned were Nos.A505, A736, A509 and A502, the actual [Net] times were: 103 minutes 20 seconds, [94 minutes] - 102 minutes 40 seconds, [94 minutes] - 94 minutes 25 seconds, [89¾ minutes] - 100 minutes 5 seconds [98 minutes]. Three of them timed by a correspondent, a regular traveller on the line, No.A502 by C.J.Allen himself, presumably the runs behind Nos.A505, A736 and A509 represent better efforts. Number A509 passed Bickley Junction in 23 minutes, there was a PWR slack afterwards, ran Swanley to Sole Street in the quick time of 10 minutes and was one and a half minutes early at Chatham, 50½ minutes from Victoria. There was another PWR slack before Faversham, 71 minutes 40 seconds, the time from there to Westgate 20¾ minutes, this by far the best run. Number A736 ran Faversham to Westgate in 20 minutes 50 seconds, with speeds of 64 miles per hour before Herne Bay and 70 afterwards. On C.J.Allen's run, the time over this stretch was 21½ minutes and the speeds 64 and 67 miles per hour. This run kept reasonably close time to the W.T.T schedule throughout: 50 seconds lost on the initial nine minutes to Herne Hill - Bickley passed 40 seconds late in 26 minutes 40 seconds at 30 miles per hour - Swanley one minute late after a maximum of 59 at St. Mary Cray - one minute down at Chatham after a minimum of 37 at Sole Street.

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Southern [Eastern Section] performance from Margate 1929-31

A PWR slack then made it nearly four minutes late at Sittingborne, 68 minutes 55 seconds, reduced to three and a quarter minutes at Herne Bay, 88 minutes 10 seconds, and two minutes at Margate, 100 minutes 5 seconds. The non stop 97 minutes schedule represented a reasonable challenge for a 52 tons locomotive.

A T9 Class 4-4-0 No.E300 with Maunsell superheater and 315 tons passed Sydenham Hill in 11¼ minutes. [Ten seconds better than No.A509] At Swanley it was exactly on schedule, 32 minutes, despite a signal check and a PWR slack before. With a time of ten and a half minutes from Swanley to Sole Street it was 85 seconds to the good at Chatham, 51 minutes 25 seconds. There was a PWR slack at Sittingborne, Faversham passed one and three quarters minutes down, 74 minutes 50 seconds, the stretch to Westgate run in 21 minutes 10 seconds and the final arrival at Margate 80 seconds late, 92 minutes Net. The 21.00 ex Victoria allowed 74 minutes to Faversham, had D1 Class 4-4-0 No.A736, one of those rebuilt in 1927, with 285 tons. The D1 passed Swanley in 30 minutes 7 seconds at 50 miles per hour, then after a maximum of 72 at Farningham Road, Sole Street in 40 minutes 50 seconds at 43, Chatham in 50 minutes 55 seconds and finally reached Faversham in 74 minutes 25 seconds.

A T9 Class 4-4-0 No.E313 with Maunsell type superheater had 250 tons on the 17.30 Up from Margate. Despite PWR slacks after Herne Bay, at Gillingham and Swanley, plus a signal check after Beckenham Junction it still almost reached Victoria to time, 100 minutes 20 seconds, schedule 100 minutes. Passing times were: Faversham 26¾ minutes, Chatham 46½ minutes, the average from Rochester Junction to Sole Street was 35.5 miles per hour, the Chatham to Swanley time 23 minutes 20 seconds. A D1 Class 4-4-0 No.A735 with a heavier train of 310 tons on the same service passed Faversham in 25 minutes 35 seconds after 64 miles per hour before Herne Bay, followed by a minimum of 44, 66 before Whitstable and 64 afterwards. Signals stopped the train before Chatham, it passed through the station in 50 minutes 50 seconds, without the check the time could have been 46 minutes. Rochester Junction to Sole Street took 12 minutes 40 seconds; speeds on the four miles at 1/100 were 27, 33, 28 and 30½ miles per hour, an EDHP of 825-875. The T9 took 11 minutes, which suggests a speed of 34 miles per hour from Cuxton Road to Sole Street, an EDHP of 800-850. Number A735 cleared Sole Street in 65½ minutes, two and a half minutes late and Farningham Road in 72 minutes 25 seconds. There were stops at Swanley and Bromley South before a diversion via the Catford Loop line and a final arrival 18 minutes late.

A D1 Class 4-4-0 No.A246 on the 10.32 from Westgate with 280 tons lost one and a half minutes on the 98 minutes non stop schedule to Victoria. There were PWR slacks at Sittingborne and Swanley, passing times were Faversham 24¾ minutes, Sittingborne 33 minutes 5 seconds and Swanley 68¾ minutes, Rochester Bridge to Sole Street took 12¾ minutes, the Net time was 94 minutes.

Date: July 7th 2002

Southern [Eastern Section] Upgrading the former LC&D Main Line

The 07.49 from Margate stopped at Herne Bay, Whitstable and London Bridge, a D1 Class 4-4-0 No.A505 with 310 tons ran the three stages in 16 minutes 20 seconds, 7 minutes 10 seconds and 79 minutes 55 seconds, 76 minutes Net; schedules were 16, seven and 78 minutes. From the Whitstable start it passed Chatham in exactly 30 minutes, Sole Street in 46 minutes 20 seconds and with a minimum of 25 miles per hour followed by a maximum of 69, Swanley in 56 minutes 50 seconds before signal checks intervened.

During the first decade of the Southern Railway work continued on the upgrading of the former LC&D main line, by 1931 there was only one bridge, near Birchington that required work to permit the employment of larger locomotives. The D1 Class 4-4-0's, shortly to be replaced on the major Kent Coast trains, had coped well for over a decade on this difficult route. The first new motive power to appear at Ramsgate were some L1 Class 4-4-0's from Dover following the introduction of Schools Class 4-4-0's on the Folkestone service. One of the workings that Ramsgate utilised the L1's on was the through train from Margate to the Great Western Railway and Bournemouth, the locomotive worked "light engine" from Ramsgate to Margate, hauled the 08.25 to Redhill via Dover returning to Ramsgate on the 14.33 from Redhill. It completed its day by taking the 18.00 from Ramsgate to Faversham, the 19.35 from there to Dover and "light engine" Dover to Ramsgate, a daily mileage of about 270 miles. Subsequently there were ten L1 Class 4-4-0's at work on the Chatham route. The final upgrading of the Kent Coast line, completed in 1932, permitted King Arthur and Lord Nelson Class 4-6-0's and Schools Class 4-4-0's between Victoria, Margate and Ramsgate.

The London to Brighton service in September 1927 included 60 minutes non stop trains ex Victoria at 11.05, 15.05, 17.35 and 18.35, ex London Bridge at 17.00. By February 1928 there were additional services ex Victoria at 17.35 and 20.35. There were trains which made their first stop at Haywards Heath in 1927 at 11.15, 14.15, 15.35, 18.40, 20.35, 21.05 and 24.05 ex Victoria plus a portion slipped from the 17.05 ex London Bridge. Schedules varied from 47 to 52 minutes [equivalent to 60 to 65 minutes non stop to Brighton]. In 1930 the 14.15 ex Victoria had been deleted from the timetable but there was an additional Business service, the 17.50 ex London Bridge, 48 minutes to the stop at Haywards Heath. Three Eastborne trains made their first stop from London at Lewes, the 15.15 and 17.20 ex Victoria in 65 and 66 minutes, the 17.05 ex London Bridge in 61 minutes.

The fastest Eastern and Central section trains both began their sprints at Redhill: the 08.27, 07.20 ex London Bridge to Sandwich with a through coach to Folkestone was allowed 22 minutes to Tonbridge, an average speed of 54.2 miles per hour - the 10.46, 10.05 ex Victoria, schedule to the next stop at Haywards Heath was 19 minutes, an average of 53.7 miles per hour.

The Up service from Brighton, Haywards Heath and Lewes to London was similar in frequency and speeds to the Down one.

Date: July 7th 2002

Southern [Central Section] the Evening Business rush 1929

The Service intensity on the Brighton line in pre-electrification days can be illustrated by considering fast and semi fast trains from London Bridge that passed Forest Hill on a summer weekday in 1929 between 16.00 and 20.00. [Ref.24] Typical schedule to pass Forest Hill was nine minutes.

The 16.00 ex London Bridge, to Brighton in 69 minutes with a stop at Redhill, normally nine bogie coaches including a 3rd Class Pullman Car was an H1 Class 4-4-2 duty, either No.B38 or B40. For some years previously with a B4X Class 4-4-0 it was a notorious late runner, an Atlantic was rostered after the introduction of the King Arthur Class 4-6-0's on the Victoria route.

The 16.05 ex London Bridge, also a heavy train, to Eastborne in 112 minutes with four stops, 97 minutes running time. The formation included a 1st Class Pullman Tea Car and regular motive power was a U Class 2-6-0, No.A791, A792 or A627.

The 16.09 ex London Bridge ran to Brighton via Oxted and East Grinstead, and stopped at every station from Upper Warlingham to Brighton, reached at 19.01. Invariably, the locomotive was a B2X or a B4 Class 4-4-0, on the Saturday equivalent, the 16.15 ex London Bridge a Gladstone 0-4-2 often appeared, No.B172 on the 24th August 1929. [The B2X's although nearing the end of their working life still had Main Line diagrams, the 12.14 London Bridge to Eastborne and Hastings was one, a train of two halves. The schedule as far as Haywards Heath was 79 minutes for the 37.7 miles with stops at East Croydon, Purley, Redhill and all stations to Haywards Heath. From Haywards Heath the 28.8 miles to Eastborne were allowed 48 minutes with stops at Lewes and Polegate, 44 minutes running time.]

The 16.20 London Bridge to Tunbridge Wells West, reached at 17.52, served every station after East Croydon and consisted of six coaches. [On Saturdays, it was a Reading and Tonbridge train.] Motive Power was normally one of, B1 Class 4-4-0 No.A443, F1 Class 4-4-0 No.A331 and not infrequently unrebuilt B Class 4-4-0, No.A34 or A458.

The 16.40 London Bridge to Uckfield, arrival 18.13, consisted of five ex LB&SC Balloon coaches and ran semi-fast to Eridge with stops at Sanderstead, Upper Warlingham, Oxted and Edenbridge. The usual locomotive was a D3 Class 0-4-4 Tank, either No.B375 or B384.

The 16.44 from London Bridge, the 16.40 ex Cannon Street [shortly afterwards it changed and commenced its journey at London Bridge] ran fast to Coulsdon South, the first stop, then all stations to Sindlesham and terminated Reading at 19.14. [Three years previous the arrival had been eight minutes earlier with the Merstham and Wanborough stops omitted] A portion was detached at Redhill for Tonbridge. The train usually had a U Class 2-6-0 from Cannon Street to Reading. [In 1925 this train was booked non stop from London Bridge to Redhill in 31 minutes and departed London Bridge four minutes earlier and arrived Reading 19.02]

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Southern [Central Section] the Evening Business Rush 1929

The 16.50 ran non stop from London Bridge to Horsham via Three Bridges in 55 minutes and terminated Portsmouth Harbour at 19.19 after seven further stops. The train included through coaches to Bognor [George the Fifth's supposedly favourite watering place] arrival 18.39. On July 10th 1929 B4 Class 4-4-0 No.B53 hauled the train and on September 25th B2X Class 4-4-0 No.B315. This was a difficult assignment for a B4 and an impossible one for a B2X. The regular locomotives were B4X Class 4-4-0's No.B71 or B72 later replaced by L12 Class 4-4-0's.

The 17.00, the "City Limited", non stop to Brighton in 60 minutes, weighed 385 tons Tare entrusted to an L Class 4-6-4 Tank.

The 17.05 London Bridge to Eastborne slipped a portion at Horley for East Grinstead, made its first stop at Lewes in 61 minutes and reached Eastborne in 85 minutes. An Eastborne based U Class 2-6-0 usually hauled the train, No.A798 on September 25th

The 17.08 included a 1st Class Pullman Car in its make up, as did the 17.05 and ran to its first stop at Preston Park in 61 minutes. A portion slipped at Haywards Heath followed the main train as an all stations service to Brighton. The main train ran to Hove and Worthing and terminated at Angmering at 18.41. A 4-6-4 Tank hauled this train on September 25th.

The next departure from London Bridge the 17.11, on September 25th also a 4-6-4 Tank, stopped at East Croydon, Purley, Redhill and stations to Three Bridges, Haywards Heath and Brighton, reached at 19.45, 14 minutes later than the portion slipped from the 17.08. The two trains together provided a service to every station from Redhill to Brighton except Balcombe. [Although a 4-6-4 Tank hauled the 17.00, 17.05 and 17.08 on September 25th, an Atlantic, H1 or H2 Class 4-4-2, often headed at least one of them.]

The 17.20 London Bridge to Tunbridge Wells stopped at all stations from East Croydon, except for Selsdon Road and the Halts. On the 25th September it consisted of six bogies hauled by B4 Class 4-4-0 No.B57.

The next two trains served the Redhill and Reading lines. The 17.20 ex Cannon Street, non stop London Bridge to Redhill in a generous 34 minutes, stopped at Reigate and Dorking before terminating Gomshall at 18.23. Motive power usually an L12 Class 4-4-0, No.E421 on the 25th of September.

The 17.29 ex London Bridge, made its first stop at Coulsdon South, then all stations except Earley, reached Reading at 20.15. The locomotive was invariably also an L12 Class 4-4-0, No.E425 on the 25th September.

The 17.40 ex London Bridge ran to East Grinstead in 68 minutes with stops at East Croydon, Sanderstead, Upper Warlingham and all stations afterwards. On the 25th September motive power was a J Class 0-6-4 Tank, on the 20th August an I1X Class 4-4-2 Tank, No.B599. [Ref.25]

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Southern [Central Section] the Evening Business Rush 1929

Number 599 was rebuilt as an I1X at the end of 1928. The I1 Class 4-4-2 Tank's as originally built in 1907 had limited power and in 1925 were considered for withdrawal. Brighton Works however suggested they could be rebuilt utilising the spare saturated steam boilers released following the rebuilding of the B4 Class 4-4-0's to B4X and the few saturated I3 Class 4-4-2 tanks to the superheated form. In their rebuilt guise the I1X 4-4-2 Tank's retained their 5 feet 6 inches diameter coupled wheels and inside cylinders [17½ inches diameter by 26 inches stroke]. The boiler had a total heating area of 1,626 square feet [1506 square feet in the tubes and 120 square feet in the firebox]. The firegrate area was 24 square feet. In this form they weighed 72 tons, carried 1,800 gallons of water and two and three quarters tons of coal. Some new boilers were built as spares.

The 17.50 ex London Bridge ran to Bognor via Hove, first stop Haywards Heath in 48 minutes, Bognor reached at 19.54. This was a heavy train as far as Haywards Heath, where an Eastborne portion was detached, 11 corridor coaches plus one van. The train was usually entrusted to an H2 Class Atlantic, J.D.Truss observed one passing Honor Oak Park at a good speed with this train.

The 18.00 London Bridge to Brighton made its first stop Horley, where it connected with a motor train to Horsham, the next at Burgess Hill and reached Brighton at 19.13. Some of the coaches then formed the 19.25 Brighton to Portsmouth. It was reasonably heavy, nine bogies usually hauled by a B4 or B4X Class 4-4-0 [B4 No.B68 on the 20th August and B4X No.B60 on September 25th]

The 18.08 London Bridge to Reading, first stop Coulsdon South then all stations to Reading included a portion for Tonbridge, detached at Redhill, normally loaded to 250 tons. Usual locomotive was a J Class 0-6-4 Tank, No.A598 on the 20th August, which reportedly climbed Forest Hill Bank well. One would envisage that with the small firegrate the J's required careful handling out to Coulsdon, a classic case of firing "little and often" no doubt.

The 18.22 London Bridge to Gomshall, allowed 45 minutes to Redhill with stops at East Croydon, Purley, Coulsdon South and Merstham [the 16.20 with the same stops took two minutes less] was a heavy train, typically nine coaches and usually was headed by an L12 Class 4-4-0, No.E425 on the 20th of August. The rear portion, detached at Redhill formed an all stations service to Eastborne.

The 18.30 London Bridge to Forest Row, with stops at East Croydon, Selsdon and all stations after usually had a D Class 4-4-0, No.A744 on 20th August.

The 18.40 ex Cannon Street stopped at London Bridge, East Croydon, Purley and all stations to Tonbridge hauled by an H Class 0-4-4 Tank. The main portion of the train continued from Redhill to Reading behind a Stirling 4-4-0, the other to Tonbridge behind the H.

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Southern [Central Section] the Evening Business Rush, 1929

The 19.00 London Bridge to Eastborne due 21.12 after 12 intermediate stops, normal motive power was a U Class 2-6-0.

The 19.20 ran to the same schedule as far as Redhill as the 19.00 [18 minutes to the first stop at East Croydon and 19 minutes to the next at Redhill] but in contrast to a recently built 2-6-0 had Gladstone Class 0-4-2 No.B193. It stopped all stations Redhill to Haywards Heath and then ran fast to Brighton. The coaching stock continued to Portsmouth as the 21.15 from Brighton.

The 19.33 from London Bridge, 19.30 ex Cannon Street stopped East Croydon, Purley and all stations to Dorking, scheduled for an F1 Class 4-4-0, A740 on 20th August.

The F1 Class 4-4-0's played a major part in the Redhill to Reading passenger service. In 1926 the Reading based ones commenced working Reading to Waterloo trains. An S11 Class 4-4-0 that year handled a Reading to Charing Cross roster, a larger turntable installed at Reading in 1927 permitted all designs of former L&SW 4-4-0's to work to Reading. The Reading based F1's then shared the Waterloo service with Nos.E137, E150, E349, E388 and E394. When the River Class 2-6-4 Tank's were withdrawn from service, the Birkenhead to Dover through train was initially entrusted to E Class 4-4-0's Nos.A157 and A166, soon replaced by the more suitable L12 Class 4-4-0's Nos.E422, E425 and E430, reputedly the first regular use of this Class on the Redhill Reading Line. Subsequently the L12's were employed on many of the London Business trains, the F1's continued on many of the locals. The use of the various 4-4-0 Classes at Reading continued to change over the years, during 1929 the Waterloo to Reading service was almost entirely handled by Drummond 4-4-0's, a few years later the Stirling 4-4-0's prevailed.

The 19.40 ex London Bridge stopped at all stations after East Croydon to East Grinstead where it waited ten minutes and then proceeded as the 21.05 to Brighton via Horsted Keynes and Haywards Heath from where it ran fast to Preston Park with a Brighton arrival at 22.15. A U Class 2-6-0 hauled this train, No.A796 on the 20th August.

The London Bridge trains during this four hours period complemented similar ones from Victoria. There were trains from Victoria to Bognor and Portsmouth at 16.30, 17.00, 18.20 and 19.20 plus the 17.47, which ran to Horsham via Three Bridges and Crawley. There were non stop services from Victoria to Brighton at 16.35, 17.35, 18.05 and 18.35, the 16.05 was a stopping train to Three Bridges, Brighton with four stops. The 17.20 ran to Lewes and Eastborne, the 17.40 to West Worthing, the 18.40 had portions for Eastborne and Littlehampton and the 19.05 to Brighton with four stops.

The Oxted lines were served by semi-fast's from Victoria at 16.50 to Brighton via Eridge, 18.10 to Uckfield and Heathfield [divided at Eridge] after a portion had been detached previously at East Croydon which ran all stations to Tunbridge Wells West and the 19.55 to Uckfield.

Date: July 7th 2002

Southern [Central Section] performance to Brighton in 1926

The 17.08 and 18.50 ex Victoria were stopping services to East Grinstead, the 18.50 continued to Tunbridge Wells from East Grinstead. All of these trains, except the four to Bognor and Portsmouth via Sutton, shared the same tracks as those from London Bridge between Windmill Bridge Junction and South Croydon. Twenty-six from London Bridge, 16 from Victoria, 42 steam hauled trains plus the electrified service to Caterham, Tattenham Corner and Coulsdon North in a four hours period.

Recordings of locomotive performance on the Central Section in the period 1926 to 1932 are naturally concentrated on the 60 minutes non stop trains to and from Brighton and effectively split into two clear phases i.e. before and after the introduction of the King Arthur Class 4-6-0's. The batch of King Arthur's built at Eastleigh [Nos.E793-E806 inclusive] between March 1926 and January 1927 were all allocated to the Central Section.

Normal loads on Brighton expresses in 1926 were 350 tons or less, although this represented a significant increase over those of six years previous. [Ref.27]. The Atlantics handled these loads well. H1 Class 4-4-2 No.41 with 300 tons, delayed by a PWR slack and signals in the early stages, passed East Croydon in 16 minutes 25 seconds and reached Brighton in 59 minutes 10 seconds. The 27.7 miles from Earlswood to Preston Park were run in 26¼ minutes, 57½ minutes Net. H2 Class 4-4-2's Nos. 424, 425 and 421 with 320, 340 and 340 tons respectively passed East Croydon in 15¾ minutes, 15 minutes 10 seconds and 15¾ minutes after a signal check. Number 424 suffered another signal check at Keymer Junction and reached Brighton in 61 minutes 24 seconds, 59 minutes Net. Number 425 reached Brighton 50 seconds within schedule, the minimum at Quarry was 47 miles per hour, the time to Earlswood 28 minutes 4 seconds, after which with 71 maximum at Horley, 58 at the entrance to Balcombe Tunnel and 72 at Haywards Heath it passed there in 43 minutes 55 seconds. The locomotive was then eased such that it fell to 45 miles per hour at Clayton. Number 421 arrived seven minutes late after being checked by signals at East Croydon, before Haywards Heath and between Preston Park and Brighton, 59 minutes Net.

The 18.35 ex Victoria regularly entrusted to a 4-6-4 Tank, on two occasions with No.B330 with 340 and 350 tons arrived at Brighton two and a quarter and one and three quarters minutes late, 59 and 59¾ minutes Net. On the first occasion Quarry Box was passed in 25 minutes 55 seconds, [55 seconds longer than H2 Atlantics Nos.424 and 425] and Haywards Heath in 44 minutes 44 seconds following which there were delays for signals. On the second, after an initial PWR slack, the Earlswood to Preston Park stretch was run in 27 minutes 40 seconds.

An H2 Class No.424, in the Up direction with 300 tons reached 47 miles per hour at Clayton, 75 at Keymer Junction, fell to 53 at Balcombe Tunnel and reached 70 at Horley before it was eased. Earlswood and East Croydon were passed on time in 32 minutes 24 seconds and 45 minutes 10 seconds before signal checks led to a three and a quarter minutes late arrival at Victoria.

Date: July 7th 2002

Southern [Central Section] performance to Brighton in 1927

H1 Class 4-4-2 No.39 with 350 tons attained the same speed at Clayton and with a maximum of 72 miles per hour at Keymer Junction was 20 seconds behind at Haywards Heath, 16 minutes 25 seconds. There was a signal check at Three Bridges followed by 67 miles per hour at Horley, 47 minimum at Quarry and 70 at Purley. East Croydon was passed in 45 $\frac{3}{4}$ minutes before various delays resulted in a seven minutes ten seconds late arrival at Victoria. Lord Monkswell [Ref.28] timed an unchecked journey behind a Baltic Tank with 290 tons on the 13.20 ex Brighton. [It would have been regarded as a heavy train before the War] The fall in speed between Keymer Junction and Balcombe Tunnel was only 10 miles per hour [70 to 60] and the maximum at Horley 76. MP17 [33.8 miles from Brighton] was passed in 35 minutes 20 seconds. C.J.Allen timed a very similar performance, albeit with a lighter train, 240 tons when Earlswood was passed in 29 minutes 50 seconds. Speeds were 75 miles per hour at Keymer Junction, 58 at Balcombe Tunnel and 77 at Horley. East Croydon was passed in 41 $\frac{3}{4}$ minutes and after easing, Victoria reached in 58 minutes 25 seconds.

The introduction of the King Arthur Class 4-6-0 locomotives heralded another significant improvement in performance levels. Five journeys in the Down direction tabulated in the summer of 1927 showed the King Arthur's could, if driven appropriately, handle trains in excess of 400 tons. [Ref.29] Three of the journeys involved No.E804 with 355, 360 and 420 tons. Times to East Croydon were 15 minutes 50 seconds, 16 minutes 35 seconds and after a PWR slack 17 minutes 10 seconds. There was a signal check on the first run after East Croydon, Quarry Box was passed in exactly 27 minutes, on the other two the times were 26 minutes and 27 minutes 55 seconds with speed falling with the 420 tons load to 40 miles per hour. Times to Earlswood were 30 minutes, 28 minutes 57 seconds and 30 $\frac{3}{4}$ minutes and over the fast stretch to Preston Park 27 minutes 35 seconds, 27 minutes 48 seconds and 29 minutes. Number 804 with 420 tons reached 75 miles per hour at Horley, fell to 45 at Balcombe Tunnel and reached 71 at Keymer Junction. The Actual and [Net] times were: 60 minutes 27 seconds, [59 $\frac{1}{2}$ minutes] - 60 minutes 15 seconds, [59 $\frac{1}{2}$ minutes] - 64 minutes 15 seconds, [61 minutes].

King Arthur Class 4-6-0 No.E806 with 385 tons was driven with a better level of performance in mind, East Croydon passed in 15 minutes 50 seconds and Earlswood in 29 $\frac{1}{2}$ minutes. Speed then reached 77 miles per hour at Horley, was still 61 at the entrance to Balcombe Tunnel and rose to 79 at Haywards Heath before signals spoilt the fun after Hassocks. The Earlswood to Preston Park stretch was run in 26 $\frac{3}{4}$ minutes, without the check it would have been 25 $\frac{3}{4}$ or 25 $\frac{1}{2}$ minutes, the actual average from Earlswood to Hassocks was 68 miles per hour. Number No.E793 with 420 tons, on an unchecked trip, ran to Brighton in 59 $\frac{1}{4}$ minutes. The start to Quarry with the heaviest train of the five was the quickest, the Box passed in 26 minutes, from East Croydon 10 minutes 25 seconds compared with 9 minutes 35 seconds with No.E804 and 360 tons. The respective average EDHPs were 820-870 for E804 and 850-900 for E793. Following this good start No.E793 averaged 60 miles per hour from Earlswood to Preston Park.

Date: July 7th 2002

Southern [Central Section] performance from Brighton in 1927

Four journeys from Brighton featured four different King Arthur Class 4-6-0's. Number.E800 with 355 tons arrived at Victoria 15 seconds late. It passed Keymer Junction 99 seconds adrift [schedule 13 minutes], Earlswood 55 seconds behind [32½ minutes] and East Croydon 30 seconds down [45 minutes]. Number.E802's performance with 360 tons was better, speeds were 47 miles per hour on the initial 1/264 to Clayton, 70 at Keymer Junction where the train was exactly to time, 58 minimum at Balcombe, 77 the maximum at Horley and 56 the minimum at Quarry. The time to East Croydon was 42 minutes 29 seconds and to the Victoria stop 57 minutes 50 seconds. Number E802 developed an EDHP of 1,050-1,100 between Haywards Heath and Balcombe and again between Earlswood & Quarry Tunnel. Numbers E794 and E797 with 405 and 415 tons barely kept schedule. Keymer Junction was passed in 14 minutes 28 seconds and 13 minutes 35 seconds. Number E797 attained 42 miles per hour at Clayton, 69 at Keymer Junction, fell to 43 at Balcombe and touched 73 at Horley. On both occasions Earlswood was passed in 32 minutes 50 seconds. Number E797 then fell to 34 miles per hour at Quarry, it required 47 minutes 50 seconds to pass East Croydon and Victoria was reached three minutes five seconds late, 61 minutes Net. Number E794 experienced a PWR slack before Croydon and ultimately arrived at Victoria 55 seconds late, 59¾ minutes Net.

The King Arthur's handled the majority of the Victoria to Brighton and return expresses. The Business trains to and from London Bridge, owing to difficulties in handling the King Arthur's at that station, were entrusted to ex LB&SC locomotives, Atlantics and Baltic Tanks with occasional assistance from B4X Class 4-4-0's. The heaviest train between London and Brighton usually ran on a Sunday i.e. the "Southern Belle" which could load to 11 Pullman cars plus one van, 420 tons Tare/ 450 tons Gross.

A King Arthur Class 4-6-0, No.E798 in 1928 with 360 tons on the 18.35 ex Victoria, initially checked badly by signals, required 18 minutes 55 seconds to pass East Croydon. Speed then fell to 38 miles per hour at Quarry and the Earlswood to Preston Park stretch took 27 minutes 25 seconds. The time to Preston Park was 60 minutes, after another signal check the Brighton arrival four minutes 25 seconds late. Maxima were 71 miles per hour at Horley and 70 past Keymer Junction, the minima 55 at both Balcombe Tunnel and Clayton. The Net time 59½ minutes, the driver drove to the schedule and made no attempt to regain any of the time lost early on

In the Up direction No.E793 with 375 tons attained 50 miles per hour at Clayton and passed Keymer Junction a quarter of a minute ahead of schedule at 66. [Gains in time, however small on the initial 13 minutes booking to Keymer were rare]. After this good start matters were taken easily, 49 miles per hour minimum at Balcombe and 70 at Horley, Earlswood passed comfortably to schedule, 32 minutes 5 seconds. The minimum at Quarry was 48 miles per hour and with a Maximum of 66 at Purley and a signal check, East Croydon was passed in 44 minutes 50 seconds. There were further signal checks either side of Clapham Junction.

Date: July 7th 2002

Southern [Central Section] Atlantic performance

Victoria was reached half a minute late, 58 minutes Net. This time achieved with speed only exceeding 70 miles per hour once briefly, the maximum power output was probably on the initial ascent from the Brighton start. [Not necessarily the best way to manage the fire]

The Atlantics on occasions worked the "Belle". Two journeys, published in 1929 [Ref.30] featured; an Atlantic on the Down train and a King Arthur on the Up. H2 Class 4-4-2 No.425 had a substantial load [nine Pullman Cars plus two Brakes], 425 tons Gross. It slipped initially on the climb from Victoria to Grosvenor Bridge and took 6 minutes 39 seconds to pass Clapham Junction, at East Croydon the train was nearly two minutes behind schedule, 16 minutes 56 seconds. The average from East Croydon to Quarry was 48.2 miles per hour, actual quoted speeds were 48 at Purley and Coulsdon and 46 at the entrance to Quarry Tunnel, an EDHP of 950-1,050 for ten minutes. The time to Earlswood was 30 minutes 18 seconds [schedule 29 minutes] and on to Preston Park another 27 minutes 35 seconds with maxima of 72 miles per hour at Horley and 66 at Keymer and minima of 50 at both Balcombe and Clayton. Brighton was ultimately reached three quarters of a minute late. It is unlikely that before the advent of the King Arthur's, a footplate crew would have considered it possible to work such a train to Brighton in 60 minutes, or very close to it, let alone with an ex LB&SC locomotive.

In the Up direction King Arthur No.E803, with the same train lost one minute on the initial allowance to Keymer Junction passed at 72 miles per hour after 42 at Clayton. Subsequent speeds were, 54 miles per hour minimum at Balcombe, 70 the maximum at Horley and 47 minimum at Quarry, the train was on time at East Croydon, 44 minutes 50 seconds. Signal checks either side of Clapham Junction resulted in a final arrival 80 seconds late, 59 minutes Net, the locomotive probably developed an EDHP of 1,125-1,175 up to Balcombe Tunnel and nearly as much up to the Quarry summit. The Victoria to Brighton trains had a short run but the locomotives worked during the hour.

A Southern Railway engineering trainee outlined in 1929 his footplate experiences between Brighton and London [Ref.31]. An H1 Atlantic No.B38 [fitted with a superheated boiler in 1925] had 390 tons on the 12.05 ex Brighton. Keymer Junction was passed in 13½ minutes, Earlswood in 33½ minutes and Victoria reached exactly to time. To achieve this barely timekeeping performance required the cut off set at 40 percent for virtually the whole journey with the Regulator three-fifths open uphill and half open on the favourable stretches.

The H1 Class Atlantics when carrying a superheated boiler had a total heating area of 2,283 square feet [1,810 square feet in the tubes, 136 square feet in the firebox and 337 square feet in the superheater]. Number B38 worked back to Brighton on the 15.05 "Belle" with 360 tons and reached Brighton on time including a PWR slack to 30 miles per hour at Streatham.

Date: July 7th 2002

Southern [Central Section] Maximum Atlantic output

H1 Class 4-4-2 No.B40 [fitted with a superheated boiler at the end of 1927] with a light train on the 12.05 ex Brighton, 270 tons, was a quarter of a minute ahead of schedule at Keymer Junction and maintained this position as far as Clapham Junction. A signal check then caused a one and a half-minute late arrival at Victoria. Returning on the 15.05 ex Victoria there were bad delays at Balham Junction, the train was four minutes down at Earlswood. Three minutes were recovered on the fast stretch to Preston Park, which would have entailed an average of 67 miles per hour. The young engineer quoted actual speeds of 72 miles per hour at Horley, 60 at Balcombe Tunnel and 70 at Keymer Junction.

His best run on the 08.45 to London Bridge was with H1 Class No.B40 and a 390 tons train. Keymer Junction was passed three quarters of a minute late after slipping in Clayton Tunnel, subsequent times were; Haywards Heath 16½ minutes, Three Bridges 24½ minutes and Earlswood 31¾ minutes. The locomotive was eased after Three Bridges but the time of eight minutes with such a load from Haywards Heath was excellent. This would have required a minimum of 56 to 58 miles per hour at Balcombe Tunnel. The time to Coulsdon was 40½ minutes following which signal checks caused an arrival one and three quarters of a minute late at London Bridge, probably no more than 57 minutes Net. If the Haywards Heath to Three Bridges stage really was run in eight minutes this would have required an EDHP of 1,100-1,200, before Balcombe Tunnel. Since the locomotive was driven with the Regulator wide open and 60 percent cut off to Keymer and 50 percent on to Three Bridges we have a record of an Atlantic "given the lot". Great credit to Mr. Ivatt, it was hardly surprising the locomotive slipped in Clayton Tunnel.

The student engineer also reported that H2 Class 4-4-2 No.425 had worked the "Belle" to time with 11 Pullmans [423 tons Tare/ 450 tons Gross], of which there is a record and H1 Class 4-4-2 No.41 had run the Newhaven Boat train to schedule with 500 tons. The Boat train schedule was easier than the 60 minutes London to Brighton timing, 86 minutes to Newhaven including a four minutes stop at East Croydon. The time from Coulsdon North to Keymer Junction was 30 minutes compared with 28 minutes on the Brighton 60 minutes trains. The Boat train had to start from the Croydon stop and slow for the junction turnout at Keymer. There was spare time in the schedule from Keymer to the Newhaven stop, so it is probable that timing the Boat with 500 tons was equivalent to timing the "Belle" with "eleven on". The Atlantics experienced difficulties with these heavy trains on the initial gradient from Victoria up to Grosvenor Bridge, presumably the 500 tons train was afforded rear end banking out of the Terminus. Certainly the Atlantics worked harder under Southern Railway ownership than they had under the LB&SC. The most economical Atlantic at Brighton was No.B425 with a coal consumption of 40 pounds per mile, the best King Arthur figure achieved with No.E803, 38 pounds per mile.

Mr. Maunsell instructed some locomotive depots to keep detailed accounts of expenses incurred in running certain Tank locomotives.

Date: July 7th 2002

Southern [Central Section] "The City Limited"

Amongst the various 0-4-4 Tank's coal consumption ranged from 36.3 pounds per mile for the former SE&C R1 Class to 40.4 for the former L&SW M7 Class. The Adams O2, the SE&C H Class and LB&SC D3 Classes ranged between these figures. A repair cost index was also derived, the R1's had a figure of 94, the M7's 120, values for the H, O2 and D3's were 96, 108 and 119. The worst locomotives on both accounts were the J Class 0-6-4 Tank's with coal consumption of 42.6 pounds per mile and a repair index of 137. The Marsh designed express passenger 4-4-2 Tank's showed up well, the Superheated 13 Class had coal consumptions of only 34.2 pounds per mile and a repair index of 113, the rebuilt saturated steam 11X were heavier on coal, 41.5 pounds per mile but lighter on maintenance, 99. The E4 and E5 Class 0-6-2's ["Radials"] had coal figures of 38.9 and 40.1 pounds per mile and repair indices of 115 and 118. One wonders what Mr. Maunsell and his team thought about these figures, other than presumably disappointment at the poor showing of the M7 Class 0-4-4 Tank's. They certainly recognised that "pounds of coal per ton mile hauled" was a useful indicator of locomotive effectiveness and one difficult to measure.

The 17.00 ex London Bridge, "The City Limited" [13.00 on Saturdays] ran to Brighton non stop in 60 minutes, regular motive power was an L Class 4-6-4 Tank, the normal load 385 tons Tare. The start from London Bridge to East Croydon was one to two minutes easier than that from Victoria. Three runs on this train, behind No.B327, B329 and B333 suggest the "Baltic's" kept time, but not apparently with much to spare. Overall and [Net] times from London Bridge to Brighton were: 64 minutes 50 seconds [60½ minutes] - 60 minutes 10 seconds [58½ minutes] - 61 minutes 17 seconds [60 minutes]. Minima at Forest Hill and Quarry were 33, 31 and 32 miles per hour and 39, 41 and 41. The maxima at Horley were 71, 70 and 72 miles per hour and the minima entering Balcombe Tunnel 48, 50 and 51. Two journeys hauled by Atlantics Nos. B39 and B40 make an interesting comparison. Number B39 completed the journey in 60 minutes 7 seconds with speeds similar to those of the Baltics. Number B40, presumably driven with the same enthusiasm exhibited on the 08.45 Up passed East Croydon in 15 minutes after a minimum of 40 miles per hour at Forest Hill and despite a signal check at Purley only fell to 48 at Quarry. The time to Earlswood was 29 minutes 2 seconds; the stretch to Preston Park took 26 minutes 18 seconds with 72 miles per hour at Horley and 71 at Keymer Junction. The minima at Balcombe and Clayton were 56 miles per hour, Preston Park was passed in 55 minutes 20 seconds and the stop at Brighton effected in 58 minutes 36 seconds, 56½ minutes Net.

C.J.Allen published in 1931 12 Down journeys between Victoria and Brighton hauled by King Arthur Class 4-6-0's [Ref.32], train weights varied from 275 to 455 tons. The quickest actual time was by No.E802 with 325 tons, 57 minutes 55 seconds, the quickest Net time by No.E798 with a light 275 tons train 54½ minutes. Five journeys were completed within the hour, four between 60 and 61 minutes and the remaining three arrived 2 minutes 20 seconds, 3 minutes 25 seconds and 4 minutes 20 seconds late, all Net times were less than 60 minutes.

Date: July 7th 2002

Southern [Central Section] King Arthur performance 1928-31

The best time and performance as far as Earlswood was by No.E805 with 440 tons. It passed Clapham Junction in 5 minutes 24 seconds, attained 53 miles per hour at Streatham Common and fell to 48 at Quarry. The 8.3 miles from East Croydon to Quarry Box took 9 minutes 59 seconds, an average EDHP of 1,100-1,200 and the Earlswood to Preston Park stage 28 minutes exactly. It reached Brighton in 59 minutes 14 seconds after a slight signal check, 58½ minutes Net. Number E796 with 455 tons was delayed by signal checks and a PWR slack to such an extent that it was nearly six minutes late passing Earlswood, 34 minutes 55 seconds. The 27.7 miles to Preston Park were then run in 26 minutes 20 seconds, unfortunately no speeds were recorded, and the final arrival was 4 minutes 20 seconds late. The fastest time between Earlswood and Preston Park was 25¼ minutes by No.E802 with 360 tons when the maxima were 74 and 76 miles per hour at Horley and Keymer Junction and the minima 57 and 54 at Balcombe and Clayton, the maximum before slowing for Preston Park was 61.

Eight Up journeys were tabulated [Ref.33] with trains weighing from 350 to 410 tons. The best actual time was by No.E805 with 360 tons, 58 minutes 35 seconds and the best Net time, 56½ minutes by No.E806 with 405 tons. Five reached Victoria within the hour, one in less than 61 minutes, one in less than 62 minutes and one in 62 minutes 40 seconds. Number E806 with 405 tons started slowly, Keymer Junction passed in 14 minutes 50 seconds at 72 miles per hour, fell to 54 at Balcombe Tunnel and was through Three Bridges in 25 minutes 55 seconds. Subsequent speeds were 78 miles per hour at Horley, 54 at Quarry and 67 at Purley. The Three Bridges to East Croydon stretch was run in 17 minutes exactly, an average of 67 miles per hour. East Croydon was passed in 42 minutes 55 seconds and Victoria reached exactly 17 minutes later after a severe PWR slack, 56½ minutes Net.

Times from Brighton to passing Earlswood were remarkably consistent, on the four occasions the train was unchecked, 32 minutes 5 seconds, 31 minutes 31 seconds, 32 minutes 10 seconds and 32 minutes 40 seconds with 360, 375, 405 and 410 tons respectively. The best start from Brighton was by No.E850 with 375 tons, 46 miles per hour attained at Clayton, Keymer Junction passed in 13 minutes 14 seconds at 72, 56 minimum at Balcombe Tunnel and a time to Three Bridges of 24 minutes 6 seconds.

P.E.Holder, a regular traveller on the Brighton line believed the 4-6-4 Tank's started better than the King Arthur's. He quoted a journey behind Baltic No.B331 with 430 tons in support of this view, MP46 passed in 8 minutes 10 seconds at 46 miles per hour [six seconds faster than his best King Arthur and with a train heavier by 55 tons] and Keymer Junction in 13 minutes 8 seconds at 69. The minimum at Balcombe with this big train was 50 miles per hour and without exceeding 65 at Horley the time to Earlswood, 32½ minutes as per schedule. The minimum afterwards at Quarry was 48 miles per hour following which a severe PWR slack resulted in the train passing East Croydon two minutes late, 46 minutes 55 seconds and arriving at Victoria 2 minutes 40 seconds down, 58-59 minutes Net.

Date: July 7th 2002

Southern [Central Section] U Class 2-6-0's to Brighton

The new U Class 2-6-0's allocated to the Central Section at times worked the weekday "Brighton Belle" [seven Pullman Cars, Gross weight 260 tons] [Ref.32]. Holcroft made a return trip with No.A631 on the 27th of April 1931. The 15.05 passed East Croydon in 15 minutes 5 seconds, it then experienced signal checks, was through Earlswood in 28 minutes 25 seconds and ran on to Preston Park in 28 minutes 20 seconds including a PWR slack entering Balcombe Tunnel. Brighton was reached five seconds within the hour. The locomotive was driven with cut off set at 35 percent and the Regulator opened between three sixteenths and three eighths. In the Up direction it lost one and a half minutes to Earlswood, boiler pressure fell to 170 pounds per square inch at Balcombe Tunnel. It was driven with a half-open Regulator and the cut off set at 35 percent. Despite a signal check to 20 miles per hour at Quarry and a PWR slack at East Croydon the final arrival at Victoria was made in 61 minutes 50 seconds, c. 60 minutes Net.

A U Class 2-6-0 could do better than this, No.1632 with 340 tons [Ref.33] passed MP46 in 8 minutes 36 seconds from Brighton at 45 miles per hour and Keymer Junction in 13³/₄ minutes at 68. The minimum at Balcombe Tunnel was 48 miles per hour after which a PWR slack made the train late at Three Bridges, 27 minutes 10 seconds. Earlswood was passed in 34³/₄ minutes, after this the minimum at Quarry was 45 miles per hour, the maximum at Purley 69 and the time to East Croydon 47 minutes. Victoria was reached two minutes late, 61 minutes 58 seconds, 58¹/₂ minutes Net. The locomotive developed an EDHP of 750-800 on the uphill stretches.

S.A.W.Harvey [Ref.34], who was to become a close observer of locomotive performance in Kent, Surrey and Sussex for some years until his early death, made two return trips to Brighton in 1931. The Saturday 12.35 ex Victoria was allowed a generous 63 minutes to Brighton non stop and on two occasions King Arthur Class 4-6-0's Nos.E803 and E794 with 350 and 325 tons completed the journey in 63 minutes 10 seconds. On the first, after signal checks at Purley, maxima were 75 miles per hour at Horley and 72 at Keymer Junction. On the second East Croydon, presumably because of checks, was passed at only 32 miles per hour, the subsequent minimum at Quarry was a good 49 increased to 72 before Earlswood where this vigorous progress was arrested by signals, the 63 minutes schedule did not require such enthusiasm.

A King Arthur Class 4-6-0, No.E767, with 400 tons on the Up "Belle" reached Victoria in exactly 60 minutes with 75 miles per hour attained at Keymer Junction and including a PWR slack after Earlswood.

The 19.25 ex Brighton schedule allowed 78 minutes to Victoria including stops at Haywards Heath, East Croydon and Clapham Junction. King Arthur Class 4-6-0 No.E805, with 380 tons attained 72 miles per hour at Keymer Junction but still stopped at Hayward Heath 40 seconds late on the 17 minutes schedule. This loss was recovered by gaining exactly one minute on the 37 minutes schedule from there to East Croydon, including a signal check at Coulsdon North.

Date: July 7th 2002

Southern [Central Section] Business trains from Horsham 1931-32

F.S.Bond another frequent observer of Central Section locomotive performance for many years recorded three of the morning Business trains from Horsham to London in 1931/32. The 08.25 stopped at Faygate, Crawley, Three Bridges, Horley, Earlswood, Redhill and East Croydon and terminated at London Bridge at 09.39. The 09.01 [08.08 ex Bognor] stopped at Horley and reached London Bridge at 09.58. The 09.37 after stops at Faygate, Crawley, Three Bridges and East Croydon reached London Bridge at 10.48.

The 08.25 was a heavy train, ten coaches plus two or three vans usually hauled by an I3 Class 4-4-2 Tank or a B4X Class 4-4-0, either of which apparently had to be worked hard to maintain schedule. Mr. Bond however noted an occasion when an E5X Class 0-6-2 Tank, with a Gross load of 330 tons lost only one minute on the overall 35 minutes schedule from Three Bridges to East Croydon. The E5X Class was an E5 with a boiler from the C3 Class 0-6-0. They had a firegrate area of 18¾ square feet, boiler working pressure of 170 pounds per square inch and total heating surface of 1,300 square feet, [1,195 square feet in the tubes and 165 square feet in the firebox]. They were considered less stable at speed than the E5's but the larger boiler albeit with the same size firegrate would have helped in hauling a heavy train, although it is unlikely that Marsh envisaged 330 tons. The 09.01 loaded to only seven bogies and usually had an H2 Class 4-4-2, sometimes an L Class 4-6-4 Tank.

Bond rode on the 09.37, a light train, 16 times between Three Bridges and East Croydon, usual motive power was an E5 Class 0-6-2 Tank, the schedule for the 19.0 miles was 26 minutes. The best overall time noted was 22 minutes 10 seconds by No.2585 with 110 tons. Earlswood, 7.7 miles, passed in 9 minutes 20 seconds, Quarry Summit in 14 minutes 35 seconds at a minimum of 49 miles per hour and Purley, 16.0 miles in 18½ minutes. Number No.585, with 90 tons, reached 60 miles per hour at Horley and passed Quarry in 14 minutes 20 seconds at 45. It was then eased and passed Purley in 18 minutes 55 seconds before signals checked progress. On a third run No.2585 attained 62 miles per hour at Horley and passed Quarry in 14 minutes exactly at 46 before delays occurred. Number.2592 with 90 tons, on three occasions passed Quarry summit in 14 minutes 30 seconds, 14 minutes 7 seconds and 13 minutes 43 seconds [with 64 miles per hour at Horley and 47 at the summit]. The real fire-eater was No.B399, the first E5 to be built, with 100 tons it reached 65 miles per hour at Horley, passed Quarry Box in 11 minutes 55 seconds at 56, the summit in 13 minutes 25 seconds at 53 and Coulsdon North, 14.5 miles, in 15 minutes 55 seconds before signals intervened. This was the last Thursday before the introduction of electric services to Three Bridges on July 3rd 1931, a definite attempt by the crew to "try a little harder".

Mr.Bond timed I3 Class 4-4-2 Tank's with 150 tons twice, they passed Quarry Box in 13 minutes 40 seconds and 13 minutes 45 seconds from Three Bridges. The 13's, despite their large diameter coupled wheels could make very smart short start to stop runs, No. 2084 for instance ran the 3.55 miles up at 1/254 from Horley to Three Bridges in 5 minutes 8 seconds.

Date: July 7th 2002

Southern [Central Section] Schools to Eastborne 1930

The K Class 2-6-0's, nominally mixed traffic locomotives, usually worked freight duties. On October 28th 1931 No.2340 hauled 280 tons on one of two Excursions [the second weighed 336 tons] from stations on the Mid-Sussex line to Bourneville, as far as Kensington Olympia, where a LMS locomotive took over. It ran from Three Bridges to East Croydon, the next stop in 27 minutes 10 seconds. In the reverse direction, the time was 24½ minutes, the maximum at Horley 70 miles per hour. Another good performance over the same stage involved Gladstone 0-4-2 No.B172. A failed U Class 2-6-0, No.A798 was replaced at Lewes by an I2 Class 4-4-2 Tank which took the, 299 tons Tare, probably 330 tons Gross train as far as Three Bridges where the Gladstone replaced it and ran to the next stop at East Croydon in 29 minutes. The 10.20 ex Eastborne schedule from Haywards Heath to East Croydon the next stop was 38 minutes, equivalent to 26 from Three Bridges.

Although observations of steam locomotive performance on the main Brighton line in 1931 and 1932 naturally centred on the King Arthur's, Atlantics and Baltic Tanks, the smaller locomotives hauled some relatively heavy semi-fast trains. B4X Class 4-4-0 No.56 with 300 tons [Ref.36] on the 12.05 ex Victoria ran from East Croydon to Brighton in 52 minutes 15 seconds, schedule 53 minutes. It passed: Quarry Box in 14 minutes 5 seconds at 48 miles per hour, Earlswood in 17 minutes 35 seconds, the maximum at Horley was 64 miles per hour, Three Bridges in 26 minutes 5 seconds, there was a PWR slack at Balcombe Tunnel, Haywards Heath in 36¾ minutes, Keymer Junction in 40 minutes 10 seconds and Preston Park in 50 minutes 25 seconds. The Saturday 13.48 ex London Bridge was allowed 53 minutes from East Croydon to the next stop at Lewes. An I3 Class 4-4-2 Tank No.B87 with 250 tons passed Earlswood in 17 minutes 30 seconds, Haywards Heath in 36 minutes 35 seconds, Keymer Junction in 40 minutes 5 seconds and stopped at Lewes in 52 minutes 5 seconds. The continuation to Eastborne took 22 minutes 40 seconds with Polegate passed in 16 minutes 10 seconds.

School Class 4-4-0's Nos.E904, E907 and E908 were introduced to the Eastborne service in 1930, particularly the 16.05 and 17.05 ex London Bridge. The 16.05 schedule allowed 102 minutes overall to Eastborne [including stops at East Croydon, Haywards Heath, Lewes and Polegate], the running time was 96 minutes. The 17.05 [normally six corridor coaches plus one Pullman and four non-corridor coaches slipped at Horley for East Grinstead and Forest Row] ran to Lewes, the first stop in 61 minutes, comparable to 60 minutes to Brighton. Footplate Crews in practice seldom drove the Eastborne trains with the same urgency as the Brighton ones as far as Keymer Junction and afterwards there were severe slacks at Lewes and Polegate. The Schools when at Eastborne seldom, if ever reached the levels they subsequently attained on the Eastern and Western Sections.

Indicator tests carried out with Schools Class 4-4-0 No.E909 between London Bridge and Eastborne in the spring of 1931 highlight the ease with which the School's maintained schedule. The heaviest working on the indicator card was full Regulator and 31 percent cut-off at 31 miles per hour.

Date: July 7th 2002

Southern [Central Section] Last Steam Brighton Expresses 1932

The maximum Indicated Horse-Power [IHP] out of 14 cards was 1,175, [School's were predicted to have a peak IHP of 1,300 with full Regulator and 25 percent cut-off]. After electrification of the Brighton and Hove service at the end of 1932 the Eastborne trains were part of an even more intensive service between Keymer Junction and London which led to regular niggling out of course delays. The School's undoubtedly performed adequately on the Eastborne diagrams but they were never able to shine as elsewhere.

The end of steam haulage on the London Brighton trains, an event of major significance, heralded inter alia, the start of the rise of the electric express train on the Southern Railway and the obvious parallel demise of steam haulage. On December 31st ex LB&SC L Class 4-5-4 Tank No.2333 was rostered for the 12.05 ex Brighton and the 15.05 ex Victoria. Driver Hall with 310 tons set out to show those attending the rites what a Baltic could do with a medium sized train. He passed Clapham Junction in 5 minutes 35 seconds and East Croydon in 14 minutes 41 seconds after 58 miles per hour at Streatham Common. East Croydon to Quarry took 9 minutes 16 seconds with 55 miles per hour reached on the 1/254 and a minimum of 50 at Quarry, the maximum at Horley was 77, Balcombe tunnel was entered at 60 following which, not surprisingly, adverse signals were encountered. The times to Three Bridges and MP 31^{3/4}, were 33^{3/4} minutes and 35 minutes 43 seconds respectively, Brighton was ultimately reached in 58 minutes 41 seconds. With speeds in the upper seventies at Keymer Junction and 60 minimum at Clayton the journey could have been completed in 54 minutes, the EDHP when 55 miles per hour was attained after East Croydon was c.1,000.

The last stream hauled "City Limited", 17.00 ex London Bridge on December 30th was a competent performance. With the usual 385 tons Tare formation, OL Class 4-6-4 Tank No.B332 made a slow start, Forest Hill in 9 minutes 40 seconds and East Croydon 16 minutes 10 seconds. The time from there to Quarry box was 10 minutes 15 seconds, Earlswood passed in 29^{1/4} minutes, the average EDHP from East Croydon to Quarry Box was 875-925. The Earlswood to Preston Park section took 25 minutes 25 seconds, probably involving speeds in the upper seventies at Horley and Keymer Junction and minima in the upper fifties at Balcombe and Clayton. With a quicker start from London Bridge, which in practice would probably have led to a signal check, Brighton could have been reached in 56-57 minutes, the actual time 57 minutes 48 seconds. LB&SC steam was in good shape at the end of 1932.

C.J.Allen published two articles in the Railway Magazine, effectively a resume of steam locomotive performance between London and Brighton from 1898 to 1932. Although these articles are well known and many of the logs have been reproduced in subsequent books and articles it is apposite to select performances above the norm for particular Classes of locomotive. In the Down direction B4X Class 4-4-0 No.67 with 280 tons on the 17.00 ex London Bridge, probably in 1923 or 1924 passed Quarry Box in 24 minutes 22 seconds. The East Croydon to Quarry took 9 minutes 50 seconds, an average EDHP of 750-800.

Date: July 7th 2002

Southern [Central Section] East and West of Brighton

There was a signal stop after this and from the restart the B4X ran the Earlswood to Preston Park section in 24 minutes 31 seconds with a maximum of 79 miles per hour at Keymer Junction and a minimum of 64 at Clayton, Net time from London Bridge to Brighton was 54¼ minutes.

C.J.Allen furnished details of 19 Up journeys, two of which passed Earlswood inside half an hour. H2 Class 4-4-2 No.422 with 365 tons in LB&SC days took 29 minutes 22 seconds, including a very rapid start, MP46 passed in 6 minutes 55 seconds at 55 miles per hour. King Arthur Class 4-6-0 No.E768, an ex Boat Train link locomotives, with 310 tons took 29 minutes 40 seconds. It passed MP46 in eight and a half minutes and at Keymer Junction was 59 seconds behind the Atlantic. Subsequent speeds were 76 miles per hour at Keymer, 56 at Balcombe [and after Earlswood], 79 at Horley, 51 at Quarry and 68 at Purley. There were signal checks after Purley all the way to Victoria, reached in 58 minutes 13 seconds, 52½ minutes Net.

L Class 4-6-4 Tank, No.B330 and 325 with 53 miles per hour at MP46 and 72 afterwards was 17 seconds quicker to Keymer Junction, 12 minutes 18 seconds. Following a PWR slack at Haywards Heath It attained 55 miles per hour at Balcombe and with maxima of 75 at Horley and 72 at Purley, reached Victoria in 56 minutes 55 seconds, 53½ minutes Net. The Baltic developed at least 950-1,000 EDHP before Balcombe. The fast start adds fuel to P.G.Holder's assertion that the Baltic's started better than the King Arthur Class 4-6-0's although the 4-6-0's had the edge, particularly at high speeds.

A feature of Southern Railway timetables in the first ten years of its existence was the increase in medium and long distance services to the east and west of Brighton. The service to Ashford has already been mentioned and by February 1930 was well established, there were semi-fasts from Brighton at: 07.15 to Ashford in 130 minutes with 12 intermediate stops - 09.10 in 118 minutes with nine stops - 09.55 in 133 minutes with 15 stops - 12.50 [12.26 ex Shoreham] 124 minutes with nine stops - 16.05 [14.25 ex Portsmouth], 130 minutes with 11 stops - 18.45 [17.05 from Portsmouth, ex Cardiff] 130 minutes with seven stops. The last train ran into Eastborne station and out, the others directly from Polegate to Bexhill. The 09.10 continued from Ashford to Ramsgate and Margate reaching the latter station at 12.23. The fastest service along the South Coast was the Sunday 17.52 from Portsmouth, which reached Brighton at 19.05 and departed ten minutes later, with five further stops it ran to Ashford in 118 minutes, 172 minutes running time for the 104½ miles from Portsmouth to Ashford with ten stops en route.

There were semi-fasts to Portsmouth from Brighton at; 07.50 to Cardiff, 70 minutes with four stops - 09.38 to Bournemouth [08.40 ex Eastborne], stops at Hove, Worthing and Chichester, to St Denys the next stop via Fareham in 50 minutes, Southampton reached at 11.20, Bournemouth at 12.18 - 10.25 to Portsmouth Town in 97 minutes with nine stops - 11.00 to Plymouth and Cardiff, to Portsmouth in 79 minutes with five stops - 17.10 to Portsmouth Harbour which ran to the Town station in 92 minutes with eight stops.

Date: July 7th 2002

Southern [Central Section] Brighton to Chatham, 1927

The "Sunny South Express" [it ran on Mondays only at this time of the year] left Hastings at 11.00, Eastborne at 11.45 and arrived Brighton at 12.27. Brighton departure was at 12.35, 50 minutes to East Croydon the next stop, then Kensington and via the LMS to Manchester. The east to west and the west to east service from Brighton was mirrored by similar trains in the opposite direction, the southbound "Sunny South Express" ran on Saturdays.

A new service initiated in 1927 ran between Brighton and Chatham. In the northbound direction trains left Brighton at 09.16 and 16.20. These stopped at London Road, Lewes, Tunbridge Wells West in 38 minutes from Lewes and with further stops at the Central station and High Brooms reached Tonbridge at 10.34 and 17.40. They reversed at Tonbridge, ran non stop to Maidstone, continued to Strood where they reversed again and ran to Gillingham [on Saturday they terminated at Chatham]. The Chatham arrival times were 10.34 and 17.40. The actual running times were 126 minutes for this very cross-country service. The route followed the "crow" in principle, albeit with regular kinks in the line. The southbound trains left Chatham at 08.48 and 16.09 with the same stops as the northbound service, except the 08.50 omitted High Brooms; running times were 130 and 126 minutes. Although the average speed was only 30 miles per hour the Southern Railway Public Timetables for July 10th 1927 accorded the service page three billing with the heading, [page one was devoted to advertising week-end tickets, page two to Paris overnight via Southampton-Havre] "Through express service between Chatham, Maidstone & Tonbridge and Tunbridge Wells, Lewes & Brighton".

The departing "Express's" from Brighton, other than to London, were hauled by a variety of motive power. In 1926 as has already noted, the Ashford trains were handled primarily by Brighton Gladstone 0-4-2's and B2 and B2X Class 4-4-0's from St. Leonards Marine depot and rebuilt Stirling 4-4-0's [Classes B1 and F1] from Ashford. E1 Class 4-4-0's Nos. 179 and 506 were allocated to Hastings in 1926 and reportedly worked between Brighton and Ashford. West of Brighton apart from the LB&SC types ex L&SW locomotives based at Fratton appeared. An L12 Class 4-4-0 [No.E422] regularly hauled the Brighton to Cardiff train whilst the other was sometimes entrusted to K Class 2-6-4 tank No.A800.

The service east of Brighton in 1928 usually involved Gladstone Class 0-4-2's or Stirling F1 and B1 Class 4-4-0's. The Stirling's had replaced the Billington designed 4-4-0's at St Leonards by then. There were letters in the Railway press at the time questioning the replacement of the Brighton built locomotives by smaller older ones. Things are not always what they seem. The summer "Sunny South Express" loading became too much for a Gladstone between Brighton and Eastborne, piloting up to Falmer summit with a Radial [0-6-2] Tank had become the norm. To avoid this they were replaced by B4 Class 4-4-0's which also proved inadequate, and finally one off a K Class 2-6-0, a J Class 4-6-2 Tank or a Baltic Tank [B326 and B323 were regulars] was used, with occasionally a U Class 2-6-0 or even exceptionally a C2X Class 0-6-0. This appears to have led to better timekeeping.

Date: July 7th 2002

Southern [Central Section] Last Gladstone duties

The summer "Sunny South Express" regularly loaded to 11 or 12 coaches on a weekday, on Saturday there was a separate Birmingham train, both trains consisting of eight or nine coaches, which eased the motive power requirements.

A Gladstone Class 0-4-2 regularly hauled the 09.16 Brighton to Chatham in 1928 as far as Tonbridge. It then worked the 11.34 Tonbridge to Hastings and 14.25 Hastings to Brighton, the latter allowed 62 minutes over the 29¾ miles from Hastings to Brighton with stops at Pevensey, Polegate, Lewes and London Road.

West of Brighton, the Bournemouth service, which previously had been worked by a Brighton based locomotive was now part of a Fratton diagram including crew, a regular performer was T9 Class 4-4-0 E704. The diagram involved the 06.35 Portsmouth Harbour to Brighton - 09.40 Brighton to Bournemouth - 13.40 Bournemouth West to Brighton - 18.25 Brighton to Portsmouth Harbour, a daily mileage of 279 miles plus light engine movements to and from depots.

A Gladstone Class 0-4-2 No.B172 was reported on a Brighton to Bournemouth train in 1929 consisting of ten coaches plus a Pullman Car, definitely a challenging assignment. By 1930 the 0-4-2 and 0-4-4 Tanks on local trains around Brighton had mainly been replaced by the 4-4-2 Tanks but a Gladstone was still rostered to work both the 09.10 Brighton to Margate as far as Ashford and the 09.55 to Ashford. The Billinton designed 4-4-0's [Nos.B201-13 and B314-25] were never seen east of Brighton in 1929 whereas in the previous year they were still working to Eastborne. The "Sunny South Express" was at this time often hauled from Brighton to Willesden by J Class 4-6-2 Tank No.B325. The infiltration of Stirling rebuilt 4-4-0's onto the Central Section now included F1 Class 4-4-0's on the 07.55 Oare to Lewes and the 08.25 Hastings to Brighton.

The "Sunny South Express", by far the heaviest train between Eastborne and Hastings, was often hauled by an I2 Class 4-4-2 tank [a memory of when Nos. 14 and 19 in LB&SC days hauled the train over the more difficult stretch to Brighton]. Conversely the Redhill to Brighton stage of the Birkenhead to Brighton and Hastings service was rostered for a F1 Class 4-4-0. [No.A35 was a regular]. Former SE&C 4-4-0's appeared on some of the semi-fast trains on the Brighton Main line, F1 Class 4-4-0's were noted on Victoria to Brighton trains as early as 1928. [Nos.A74 and A240]

The last time Gladstone Class 0-4-2 No.B194 headed the 09.10 Brighton to Ashford was on July 22nd 1931. The regular working of this locomotive for some time had been: 09.10 Brighton to Ashford - 13.20 Ashford to Brighton - 17.58 Brighton to Tunbridge Wells - 21.34 Tunbridge Wells West to Brighton. After working this roster No.B194 was withdrawn from service and subsequently scrapped at Brighton, the working was then taken over by sister engine No.B197.

Date: July 7th 2002

Southern [Central Section] Bognor's increasing importance

Trains west of Brighton sported a varied motive power at this time. The 07.50 regularly featured an I3 Class 4-4-2 Tank or a T9 Class 4-4-0. A.M.Fisher remembered that an I3 would appear for a few weeks followed by a T9 for a similar length of time [presumably between boiler washouts]. The 11.00 was usually entrusted to a L12 Class 4-4-0 [Nos.E417 or E425] but occasionally produced a Gladstone Class 0-4-2. The 15.55 was a B4X Class 4-4-0 duty. In the eastbound direction the 13.45 from Portsmouth was a Gladstone turn replaced in the early thirties by an I1X Class 4-4-2 Tank, Fisher observed that the I1X's ran well with this light train.

The concentration of London to Portsmouth traffic on the Guildford route commencing with the summer timetables for 1924 led to a reduction in service frequency on the Mid Sussex route, although Bognor became an increasingly important destination. The principal trains from London Bridge in September 1925 were the 13.50 and 16.50, allowed 105 and 111 minutes overall to Bognor, they reached Portsmouth Town at 16.39 and 19.19. The 15.20 and 16.20 ex Victoria included through carriages for Bognor, 117 and 120 minutes overall. Schedules for these two trains included 24 minutes for the 20.6 miles from Horsham to the next stop at Arundel, [an average 51.5 miles per hour] with Hardham Junction, 13.1 miles, passed in 15 minutes from the Horsham start. The 18.20 ex Victoria via Three Bridges and Crawley, with stops at Horsham, Arundel and Ford Junction reached Bognor in 100 minutes.

Two years later there was a 08.50 ex London Bridge via Three Bridges which included through carriages to Bognor in 125 minutes, the main train ran to Portsmouth Town reached at 11.23. The 11.30 ex Victoria ran weekdays and Saturday to Chichester, arrival 13.33 and Bognor at the same time.

The best trains to Bognor in February 1930 were: 10.10 ex London Bridge, 131 minutes overall [it included an unusual stop at West Croydon] – 13.40 ex London Bridge, 130 minutes – 15.20 ex Victoria via Sutton, 122 minutes – 16.20 ex Victoria via Sutton, 124 minutes - 16.50 ex London Bridge, 109 minutes - 17.50 ex London Bridge via Preston Park and Worthing, 124 minutes - 18.20 ex Victoria via Three Bridges, 102 minutes.

Mid Sussex trains in 1927 were usually hauled by locomotives from Fratton depot [B2X Class 4-4-0's and I3 Class 4-4-2 Tank's] and Bognor depot [B4 and B4X Class 4-4-0's including Nos.B55, B72 and B73]. Regular performers until 1929 were Gladstone Class 0-4-2's, afterwards rarely. Locomotives displaced from the Brighton Main Line by King Arthur Class 4-6-0's appeared including H2 Class 4-4-2's on the 15.20 and 18.20 ex Victoria. From 1929 onwards L12 Class 4-4-0's took the two afternoon trains ex London Bridge. The B2X Class 4-4-0's were withdrawn from service in the early thirties, but LB&SC locomotives [B4X Class 4-4-0's and I3 Class 4-4-2 Tank's] remained a feature of Mid Sussex line operations until electrification.

A Saturday service at 14.55 ex Victoria introduced in 1931 via Three Bridges gave a 98 minutes time to Bognor, at that time the fastest ever.

Date: July 7th 2002

Southern [Western Section] improved Portsmouth Timetable

Many services on the Mid Sussex line were maintained by auto trains, some of which amassed a considerable daily mileage. In 1932 a D Class Stroudley 0-4-2 Tank based at Bognor shed had a daily roster which included: Bognor-Barnham Junction-Portsmouth Harbour, Portsmouth Harbour-Chichester, Chichester-Dorking North via Midhurst, Dorking North-Horsham, Horsham-Three-Bridges and return twice, Horsham-Bognor, Bognor-Barnham Junction and return, one and a half hours carriage shunting and Bognor to Barnham Junction return, c.190 miles.

Whilst the Brighton electrification in 1932 was undoubtedly the highlight of the year and perhaps even of the Southern's first decade another significant event was the end of a long established practice, the use of slip carriages. The last Central section slips included: four coaches from the 17.05 London Bridge to Eastborne at Horley, which continued to Forest Row serving all stations on the Three Bridges to East Grinstead branch and a portion from the 17.08 London Bridge to Angmering, slipped at Haywards Heath which worked forward as a stopping service to Brighton. The last train to carry a slip portion was the 17.20 Victoria to Eastborne on Saturday April 30th 1932, the actual slip occurred at Three Bridges.

There was little change in the Western section timetable, outside of the peak summer service during the first decade of the Southern Railway. The Portsmouth service, as has been noted, was improved in the summer of 1924. In October 1923 there were trains to Portsmouth from Waterloo at; 05.50, 06.50, 09.50, 10.50, 12.50, 13.50, 16.50, 17.50, 18.50 and 21.50, five of these ran via the New Guildford line. The best, in terms of overall speed were the 09.50, 12.50 and 15.50, all of which ran via the New Guildford line and with stops at Guildford and Fratton reached Portsmouth Town in 118 minutes. The 18.50 with an additional stop at Haslemere was allowed an extra four minutes overall, the 17.50 which stopped additionally at Woking and Havant was only allowed 121 minutes. The 16.50 ran non stop to Guildford, then Haslemere and all stations after with a Portsmouth Town arrival at 19.11.

The 11.50, 13.50 and 15.50 ex Waterloo in September 1927 ran non stop to Portsmouth Town in 98 minutes. The 09.50, with stops at Guildford and Fratton required 11 minutes more and the 16.50, with stops at Guildford, Godalming, Haslemere and Petersfield 17 minutes more. A portion detached from this train at Guildford followed as an all stations service to Portsmouth. The 17.52 with the same stops as in 1923 reached the Town station in 123 minutes from Waterloo. The 18.50, fast to Havant and with a further stop at Fratton reached the Town in one hour and three-quarters. The February 1930 timetable showed only slight changes, the 15.50 made an additional stop at Fratton. The 18.50 and 19.00 provided between them a comprehensive coverage of Portsmouth Direct line stations, the 18.50 served Havant and Fratton, the 19.00 Woking, Guildford, Godalming, Haslemere and stations to Portsmouth, a portion detached at Guildford ran all stations to Haslemere. The Up service from Portsmouth in both years not surprisingly resembled that in the Down direction.

Date: July 7th 2002

Southern [Western Section] Timetable improvements to Alton

Alton had a good service in October 1923; the best trains were the 09.20, 13.10, 15.15, 16.00, 17.10 and 18.34 ex Waterloo, all of which made their first stop at Woking. The 18.34 stopped at Aldershot after Woking and then at all stations to Alton, the others stopped everywhere after Woking. Overall times from Waterloo to Alton varied from 83 [18.34] to 95 minutes. The 15.15 continued from Alton to Fareham and Gosport, the others ran to Southampton via Eastleigh except the 18.34, which terminated at Eastleigh.

The 09.10 ex Waterloo in September 1927 reached Alton in 82 minutes after stops at Woking, Aldershot and all stations and continued to Fareham and Gosport, reached in two hours and three-quarters hours. There was a connecting train at Alton, which ran to Brockenhurst. The 14.00 and 16.20 ran fast to Woking, then stopped all stations and reached Alton in 92 and 86 minutes respectively, both continued on to Southampton Terminus. The 16.20 included a portion for Gosport detached at Alton, which completed its journey in two hours and three-quarters. The 18.38 ran to Alton in 86 minutes omitting the Brookwood stop and continued to Eastleigh. The best trains from Alton to Waterloo were the 10.40 [09.23 ex Gosport] to Waterloo in 81 minutes with stops at Farnham, Aldershot and Brookwood and the 09.06 [07.44 ex Eastleigh] which stopped at Bentley, omitted Brookwood and was two minutes slower.

The best trains from Waterloo to Alton in 1930 were: 09.00, 87 minutes overall - 14.00, 90 minutes - 15.10, 90 minutes - 16.15, 92 minutes - 17.10, 90 minutes - 18.38, 86 minutes. All made their first stop at Woking and with the exception of the 18.38, [it omitted Brookwood] stopped at all stations afterwards. The 09.00 ran through to Bournemouth via Eastleigh completing the overall journey in a pedestrian four hours and a half. The 16.15 and 18.38 provided the best service to Gosport, a few minutes under three hours, [the writing was already on the wall for the Meon Valley line]. The fastest trains from Alton to Waterloo were the 09.04 [06.57 ex Southampton Terminus] 79 minutes, non stop from Aldershot to Waterloo in 49 minutes and the 11.05 [09.10 ex Romsey], which was ten minutes slower and ran from Brookwood to Waterloo in 42 minutes.

Locomotives from the top Links regularly hauled Waterloo to Southampton Terminus trains via Alton. Loads west and south of Alton were light, reflecting the heavy gradients between Alton and Winchester and passenger loadings between Alton and Fareham. On June 15th 1925 for instance on the 15.42 ex Southampton Terminus an L12 Class 4-4-0 had 130 tons to Alton and 234 tons afterwards. This train stopped at all stations as far as Woking and then ran from there non stop to Waterloo in 33 minutes.

Two years later on the Aldershot to Waterloo non stop service [the train originated from Eastleigh] an M7 Class 0-4-4 Tank No.24 had ten bogies from Alton, probably 240-250 tons. From the Aldershot start it reached 45 miles per hour at Ash Vale and passed Brookwood, 7.1 miles in 10 minutes 42 seconds before slowing as it passed from Local to Through Line.

Date: July 7th 2002

Southern [Western Section] Bournemouth Timetable to 1930

The time to Woking, passed at 55 miles per hour was 15 minutes 42 seconds, to Raynes Park 33 minutes 28 seconds and Vauxhall 46 minutes exactly, the average over the 15.7 miles from Woking to Raynes Park was 53 miles per hour. The Drummond 0-4-4 Tank's probably ran longer non stop distances at this time than their designer ever envisaged. Many of them conversely had been modified for auto train working and moved away from the Suburbs, many more were converted later.

There was little change to the Waterloo to Southampton and Bournemouth Timetable during the first six years of the Southern Railway. From 1923 to 1930 the 08.30, 09.30 and 11.30 ex Waterloo, with six, eight to ten stops and six intermediate stops respectively arrived at Bournemouth around 11.20, 12.35 and 14.20. The 12.30, 14.30, 16.30 and 18.30 in 1927 effectively still ran to the schedules established by the L&SW after the War i.e. 92 minutes to the stop at Southampton and two hours and a quarter overall to Bournemouth.

By 1930 the 12.30 and 14.30 had been accelerated by five minutes to Bournemouth and the 16.30, "The Bournemouth Limited", ran non stop in two hours exactly. It was followed by the 16.45, which with stops at Southampton and Brockenhurst reached Bournemouth at 19.04. A portion detached at Brockenhurst served all stations between there and Bournemouth. During the summer period the "Bournemouth Limited" left Waterloo at 10.30 and returned from Bournemouth at 17.15 in addition to the 16.30 which returned from Bournemouth at 08.40 the following morning.

The other afternoon trains from Waterloo were: 13.30, in October 1927 it reached Bournemouth Central at 16.19, in October 1930 four minutes earlier - 14.30 ran on Mondays and Fridays only in both 1927 and 1930 - 17.30 in 1927 allowed 106 minutes to Southampton, including stops at Basingstoke and Winchester, ran non stop from there to Bournemouth Central, arrival 19.57. A rear portion detached at Southampton served principal stations to Bournemouth, by 1930 it ceased to divide at Southampton and with nine stops between there and Bournemouth arrived at the Central station some 33 minutes later.

The 18.30 ex Waterloo, accelerated by four minutes by 1930, reached Bournemouth at 20.41 after the one stop at Southampton. The 19.30 by contrast made 17 stops between Basingstoke and Bournemouth where in 1930 it arrived at 22.55, two minutes earlier than in 1927. The Up service from Bournemouth to Waterloo was similar.

The best overall time between Bournemouth and Weymouth was 62 minutes by the 08.30 ex Waterloo, with stops at Poole, Wareham and Dorchester South. In the Up direction the quickest time was 56 minutes, effected by the 07.32 ex Weymouth with stops at Dorchester South and Poole. After a 12 minutes stop at Bournemouth, whilst the Bournemouth West portion plus the new locomotive was attached, it ran to Waterloo non stop in two hours. The overall time from Weymouth to Waterloo was 3 hours 8 minutes.

Date: July 7th 2002

Southern [Western Section] King Arthur Class 4-6-0's to Bournemouth

The King Arthur Class 4-6-0's were quickly integrated into the London to Bournemouth service and from November 1926 were permitted to work west of Dorchester to Weymouth. Trains were often heavy, in excess of 450 tons. A typical "timekeeping" run on the 92 minutes non stop schedule from Southampton to Waterloo involved a loss of three to five minutes against the 32 minutes pass to pass time in the W.T.T. from Eastleigh to Basingstoke. Typical times were 36½ minutes with 430 tons, 36¾ minutes with 415 tons, 35¾ minutes with 430 tons and 36 minutes with 455 tons. The lost time was then recovered over the favourable grades on to London; typically the 23.4 miles from Basingstoke to Woking would occupy 22 to 23 minutes.

Six journeys Down between October 1925 and November 1928 featured loads between 365 and 390 tons. On three occasions when the train was unchecked on the Woking to Basingstoke stretch times varied from 25 minutes 5 seconds to 25 minutes 33 seconds. The overall 92 minutes schedule to the Southampton stop was observed twice, the best time 90 minutes 55 seconds, on the other four runs the arrivals were three and three quarters, four, five and five and a quarter minutes late. The 38 minutes schedule for the continuation to Bournemouth was improved on three times [by three, two and a quarter and one and a half minutes], the other three trains lost time due to out of course delays. It appears Drivers drove the King Arthur's to achieve 4-4-0 performance.

Most observant people who travelled on the Bournemouth service between 1925 and 1929 noted an overall lethargy, but the footplate crews usually maintained schedule even with heavy trains. It should be remembered that a superheated T9 Class 4-4-0, in favourable conditions could maintain these schedules with trains approaching 400 tons in weight. A good King Arthur performance involved a time of 25 minutes from Eastleigh to Litchfield with 450 tons, which required an EDHP of 800-850 over the 18 miles.

R.A.H.Weight writing, some years later [Ref.38] recalled a journey on a relief when a superheated T9 Class 4-4-0, albeit with only 230 tons passed Litchfield at 50 miles per hour and Basingstoke slightly early. From there to Woking took 20¾ minutes, with 72 miles per hour maximum, 89 minutes Net to Waterloo, quicker than anything else he had timed at the time.

The accelerations of 1929 naturally increased demands on the locomotives although initially with restricted loads. The official opening of the Municipal pavilion by HM Duke of York provided a foretaste of the new schedules with special trains run with the Duke as a passenger. King Arthur Class 4-6-0 No.E773 with 285 tons passed Woking in 28¼ minutes, Basingstoke in 51 minutes 55 seconds, Southampton in 85 minutes 35 seconds and reached Bournemouth, one and a half minutes early, 118 minutes 25 seconds. The Up train, 355 tons, reached Waterloo 40 seconds late after two PWR slacks. Southampton was passed in 33 minutes, the Eastleigh to Basingstoke stretch took 30 minutes 40 seconds including a PWR slack and Basingstoke to Woking 20¾ minutes.

Date: July 7th 2002

Southern [Western Section] Acceleration to Bournemouth

The trial trip of the "Bournemouth Limited" on July 8th 1929, 14.30 ex Waterloo with Lord Nelson Class 4-6-0, "Lord Hawke", No.E860, and 13 coaches reached Bournemouth in 118¾ minutes. Maximum speed was 85 miles per hour between Hinton Admiral and Christchurch, the crew by then presumably celebrating that they had had sufficient water supplies. [Ref.39]

After the "Bournemouth Limited" inaugural run a King Arthur Class 4-6-0 No.E774 with 370 tons in the Up direction kept time exactly including a signal check to 30 miles per hour before Worting Junction. Southampton was passed one and a half minutes late, 36 minutes 5 seconds mainly due to a poor performance on the uphill section from Christchurch to New Milton, speed fell to 38 miles per hour. Subsequent speeds were 45, 50 and 48 miles per hour at Eastleigh, Winchester and Litchfield passed in 65 minutes 50 seconds from Bournemouth. Following the signal check it passed Basingstoke nearly four minutes late and ran the 23.4 miles to Woking in 20¼ minutes with a maximum of 77 miles per hour, a minimum of 70 at MP31. The 11.1 miles to Hampton Court Junction took eight and three quarters minutes with a maximum of 80 miles per hour, where the train was still 85 seconds behind schedule, [schedule 103½ minutes]. With a clear road to the Terminus the stop at Waterloo was made in exactly 120 minutes, the EDHP at Winchester was 925-975.

Two runs on the accelerated 12.30 ex Waterloo, 89 minutes to Southampton, indicate the performance required to maintain schedule and what could be achieved if required. King Arthur Class 4-6-0 No.E788, with 375 tons, passed Clapham Junction in 7 minutes 25 seconds and Woking half a minute ahead of the 29 minutes schedule after attaining 65 miles per hour at Byfleet. The minimum at MP31 was 49 miles per hour. Basingstoke was passed ten seconds early in 53 minutes 50 seconds after a maximum of 61, the minimum at Wootton was 45 and maximum at Winchester, passed in 73 minutes 20 seconds, 75. Southampton was reached one minute and a quarter late after signal checks, 87 minutes Net. Number E792, with 370 tons passed Clapham Junction in seven and a quarter minutes and after a PWR slack, Woking in 31 minutes 5 seconds. The average from there to Basingstoke was 63 miles per hour, passed in 53½ minutes following which with normal running Southampton was reached in 87 minutes 50 seconds, 84½ minutes Net. Number E788 restarting from Southampton passed Totton in 6 minutes 25 seconds and Brockenhurst in 18 minutes 10 seconds at 65 miles per hour. The time to Christchurch after a maximum of 72 miles per hour before the curve, was 29 minutes 25 seconds and to Pokesdown 31 minutes 40 seconds before signals delayed the eventual arrival at Bournemouth, 34 minutes Net.

The Crusaders Union, [C.J.Allen had connections with them] in 1930 ran two special trains to Southampton Docks with Lord Nelson 4-6-0's Nos.E860 and E862. [Ref.40]. Number E860 with 13 coaches, 455 tons Gross, passed Clapham Junction in seven and a half minutes from Waterloo, Woking in 29 minutes and Basingstoke in 53 minutes 5 seconds. Speeds were 64 miles per hour before Woking, 52 at MP31 and 64 before Basingstoke.

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Southern [Western Section] Performance to Bournemouth 1929-32

The minimum at Wootton was 49 miles per hour and the maximum at Winchester 74, passed in 72 minutes. A PWR slack and signal check then resulted in a loss of 85 seconds against the 90 minutes schedule to the Dock gates, Allen computed the Net time as 86 minutes. The Driver, Gray, on the return journey passed Winchester in 18¾ minutes from the start at 50 miles per hour and sustained 49 on the 1/264 gradient afterwards, an EDHP of 1100-1200. There was a signal check before Basingstoke, following which, with a maximum of 75 miles per hour before Woking, Surbiton was passed in 76½ minutes and Waterloo reached, after a signal check, in 93 minutes, 88 minutes Net from the Dock gates.

The "Bournemouth Belle", introduced as an all-Pullman train in 1931 made its inaugural journey on Sunday July 5th. It left Waterloo at 10.30 and returned from Bournemouth at 17.10, a portion on weekdays ran to and from Weymouth, a service that only lasted a year. The Tare weight leaving Waterloo was 384 tons, the schedule to the first stop at Southampton 89 minutes, one minute less in the opposite direction. The Summer train service for that year included seven Saturday non stop trains between Waterloo and Bournemouth.[three Down, four Up] The Saturday 14.40 ex Waterloo ran non stop to Southampton in 88 minutes, the fastest schedule ever at that time.

The accelerations of 1929 and the general improvement in the service naturally led to a higher level of locomotive performance. C.J.Allen [Ref.41] published a series of runs to and from Bournemouth. Three Down journeys on the "Bournemouth Limited", with normal trains i.e. 335, 345 and 350 tons, hauled by King Arthur Class 4-6-0's Nos.E452, E776 and E783 gave actual overall [Net] times from Waterloo to Bournemouth of 116¾ minutes [115½], 119 minutes 47 seconds [117¾] and 118 minutes 5 seconds [117½].

The run with No.E452 showed what could be achieved with a King Arthur when driven vigorously from the Waterloo start, Clapham Junction passed in six and three quarter minutes and Woking in 26 minutes with 70 miles per hour attained at Byfleet. The minimum at MP31 was 60 miles per hour and with a maximum of 69 after, Basingstoke was passed three minutes early, in 50 minutes 5 seconds, the time to MP 31, 32 minutes 32 seconds suggests there was a check, probably for signals, between Fleet and Basingstoke. The time to Winchester was 69 minutes 50 seconds and despite a PWR. slack the train was 2 minutes 20 seconds ahead of schedule past Southampton, schedule 86 minutes. Number E776 took 62 seconds more to Woking, speeds were 65 miles per hour at Esher and Byfleet and 53 minimum at MP 31. It was two and a quarter minutes behind at Basingstoke but still 40 seconds ahead of the W.T.T. Subsequent speeds were 69 miles per hour at Winchester and 70 before Christchurch, there was a PWR slack before Eastleigh.

Number E783 ran closely to schedule. There was an initial check before Clapham Junction following which the train was ten seconds late at Woking, 15 seconds late at Basingstoke, five seconds early at Eastleigh and 35 seconds early at Southampton.

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Southern [Western Section] performance to Bournemouth 1929-32

This required 59 miles per hour before Woking, 50 at MP31, 64 maximum before Basingstoke, 48 at Wootton and 71 at Winchester. The two hours schedule with 350 tons was not an arduous duty for a King Arthur Class 4-6-0 and water supply was not a concern, particularly with the large tenders.

The Christmas Eve "Bournemouth Limited", in 1930 with extra coaches added, weighed 460 tons. King Arthur Class 4-6-0 No.E789 passed Clapham Junction in seven and three quarters minutes, reached 65 miles per hour twice before Woking, fell to 53 at MP31 and with 67 afterwards passed Basingstoke 35 seconds ahead of schedule, 52 minutes 25 seconds. The work after Basingstoke was not so good, a minimum of 39 miles per hour at Wootton but with 77 past Winchester it was still half a minute ahead at Eastleigh, 78 minutes exactly from Waterloo. There were bad signal checks before Southampton, passed through four and a half minutes late, 90 minutes 40 seconds. Forty seconds was recovered on to Bournemouth with 64 miles per hour maximum before Brockenhurst, a minimum of 49 at Lymington Junction and a final maximum of 69 before Christchurch. The Net time from Waterloo to Bournemouth was 119 minutes.

Two journeys on the 14.30 ex Waterloo exhibited different ways achieving a punctual arrival at Southampton. King Arthur Class 4-6-0 No.E785, with 405 tons took 86 minutes 5 seconds. It reached 61 miles per hour before Woking, fell to 53 at MP31 and with a maximum of 64 afterwards passed Basingstoke in 53 minutes 29 seconds. The minimum at Wootton was 47 miles per hour and the maximum between Winchester and Eastleigh 77. Number E779 ran slowly to Basingstoke, 30 minutes 35 seconds to Woking and 57 minutes 5 seconds to Basingstoke. The 31.3 miles to Southampton were then run in 31³/₄ minutes with 81 miles per hour average between Winchester and Eastleigh producing a ten seconds early arrival at Southampton.

Four runs with King Arthur Class 4-6-0's Nos.E789, E778, E775 and E773 with 345, 375, 375 and 395 tons gave actual and [Net] times from Bournemouth to Waterloo of: 120 minutes, [118¹/₂ minutes] - 120³/₄ minutes, [120¹/₄ minutes] - 121 minutes 18 seconds, [116 minutes] - 123 minutes 32 seconds, [120 minutes]. Times to Southampton were: 36 minutes 40 seconds including a PWR slack, 35 minutes 5 seconds, 32 minutes 3 seconds and 34 minutes 36 seconds, schedule 34 minutes. The run with No.E775 was the best, it reached 64 miles per hour before Christchurch, slowed to 45 for the curve, accelerated to 53 before Hinton Admiral, fell to 45 minimum at New Milton, reached 60 at Brockenhurst and 69 before Totton. There was a signal check to 15 miles per hour after Southampton before 42 at Eastleigh, 48 at Winchester, 50 at Litchfield and a reduction to 30 before Basingstoke for signals, the stretch on to Surbiton was run in 31 minutes 19 seconds with a maximum of 75. There was a third signal check after this. On the three other runs speeds after Eastleigh were 47, 47 and 45 miles per hour and times from Basingstoke to Surbiton 31 minutes 29 seconds, 29 minutes 25 seconds and 30¹/₂ minutes. Number E778 averaged 74 miles per hour, actual speeds were 75 at Farnborough, 71 at MP31 and 81 maximum after Woking.

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Southern [Western Section] through workings to Oxford

These four runs afford an impression of locomotives driven easily uphill and allowed to attain fairly high speeds on the favourable stretch, in practice fast downhill running was not common. The Stephenson Locomotive Society held a competition in its Journal in the early thirties for the best-written article. One of the published articles in 1932 [Ref.42] was from a Member who had travelled "many thousands of miles" between Southampton and Waterloo. He had never during his travels experienced a locomotive failure, quite recorded a speed of 80 miles per hour or more or noted a time of half an hour or less between Basingstoke and Surbiton. He had however timed an even time run from Basingstoke to Waterloo, 47¾ minutes for the 47.8 miles with a very cautious final approach to the Terminus.

The service intensity from Waterloo on some Summer Saturdays by 1932 reached saturation point. In that year between July 23rd and September 10th there were 12 Main Line Express departures from 10.30 to 11.30, four to Bournemouth, two to Portsmouth, one to Weymouth via Wimborne and five to the West of England.

Holiday excursion traffic was also heavy and had since the early years of the Century invariably been scheduled at good average speeds, as has been noted previously with reference to the long non stop runs to Wareham before the War. In April 1932 S.A.W.Harvey travelled from Winchester to Surbiton behind King Arthur No.774 with 420 tons in 62 minutes including a PWR slack at Esher, speed reached 78 miles per hour twice on the London side of Basingstoke and the minimum at MP31 was 64.

The King Arthur Class 4-6-0's immediately following their allocation to Bournemouth appeared on the through workings to Oxford, they shared the rosters with L12 and D15 Class 4-4-0's. New corridor trains were introduced on the Bournemouth to Birkenhead and Bournemouth to Newcastle services on July 5th 1929. The Birkenhead train consisted of ten coaches [seven coaches including a Restaurant car to Birkenhead and a three coach set to Manchester], the Newcastle had eight. The Bournemouth to Oxford working always seemed a long distance although in practice it was a few miles shorter than the journey to Waterloo.

This was not the case with the through working from Bournemouth to Wolverhampton, although the return journey was not accomplished within a day. The northbound working was on a Friday, 09.30 ex Bournemouth, arrival Wolverhampton at 15.45. The return southbound on Saturday was with a relief to the Birkenhead to Bournemouth. The Southern Railway locomotive usually employed on this roster in 1928 was superheated T9 Class 4-4-0 No.E288, the Great Western Railway on the balancing working used a City Class 4-4-0. The City worked the Friday 14.30 from Wolverhampton to Bournemouth and a relief to the Bournemouth to Birkenhead on the Saturday. The Sheffield to Bournemouth service, which worked south on a Friday and returned north on the Saturday was normally hauled by a Great Western locomotive, either a 42xx Class 4-4-0 or a 43xx Class 2-6-0.

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Southern [Western Section] the Portsmouth Direct route

Great Western locomotives worked some Reading to Southampton trains throughout including the 17.00 from Reading, which stopped at all intermediate stations and completed the journey in a not very impressive 109 minutes. In 1932 this train was observed hauled by a Great Western Star Class 4-6-0, No.4002. [Ref.43] GWR locomotives regularly worked over the Basingstoke to Eastleigh section and continued on to Portsmouth and Southampton in addition to the regular rosters to Bournemouth and from Salisbury to Portsmouth. A correspondent in 1926, noted that during the summer, on any Saturday afternoon one could observe six trains of GWR stock travelling south or north at Cosham, not all hauled by GWR locomotives but it indicates the level of through workings between the Southern and GWR.

The London to Portsmouth route always the Cinderella of the L&SW initially retained this status under the Southern. As already noted the introduction of the King Arthur's on the Bournemouth service freed up the D15 Class 4-4-0's, although many trains continued with L12 Class 4-4-0's and T14 Class 4-6-0's. Holcroft [Ref.44] made two journeys on the 09.50 ex Waterloo in June 1926, at this time it stopped at Petersfield in addition to Guildford and Fratton. The locomotive involved was L12 class 4-4-0 No.E415, undergoing oil-firing trials. On the first occasion with 290 tons it reached Guildford, in 38¾ minutes with Woking passed in 29¾ minutes. On the second with 284 tons difficulties were experienced in maintaining boiler pressure as far as Woking, Guildford was reached two and three-quarters minutes late against the 39 minutes schedule. Holcroft attributed this to inadequate preparation of the locomotive. The Guildford Petersfield stage was run in 39¾ minutes on both days with the initial uphill section to Haslemere taking 25½ and 24¾ minutes. The final stage to Fratton occupied 27¼ and 25¾ minutes, the gain on schedule on the second run occurring on the favourable gradients after Rowlands Castle, presumably in an attempt to recover time lost earlier on the journey.

Although initially the Southern Railway regularly routed relief Portsmouth expresses via Epsom and the Mid Sussex line, within a few years the Eastleigh route became the preferred alternative. In 1928 for instance the Saturday 11.45 relief to the 11.50 ex Waterloo and its return working ran non stop to and from Portsmouth Town via Basingstoke and Eastleigh. There was also a relief to the 12.50 at 12.46 which returned from Portsmouth at 15.38 via Eastleigh.

Four U1 Class 2-6-0's were allocated to Fratton depot in 1931 and were well regarded. They reportedly maintained the 98 minutes non stop Waterloo to Portsmouth schedule with 350 ton trains.

The following year the Crusaders Union organised an excursion to Portsmouth, similar in concept to that to Southampton Docks, three trains ran, the 11.35 ex Waterloo non stop via Eastleigh. A Lord Nelson Class 4-6-0 with a light train, 300 tons, including a PWR slack at Esher passed Eastleigh in 82 minutes 35 seconds. It was then delayed badly on the line through Fareham to Portsmouth. The return train ran via Guildford and Effingham Junction.

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Southern Alternative routes

The Lord Nelson 4-6-0's regularly visited Portsmouth at this time, somewhat surprisingly often on the 16.50 ex Waterloo, a working they shared with H15 Class 4-6-0's, King Arthur Class 4-6-0's and U Class 2-6-0's. The running as far as Guildford was regularly observed by Frank Box. [Ref.45]. Whilst the 16.50 was often entrusted to a Lord Nelson, the 17.52 regularly featured a T9 Class 4-4-0, frequently No.709.

The Southern Railway increasingly catered for excursion and peak traffic requirements. There were extra scheduled summer Saturday trains from Waterloo in 1927 i.e.: 09.05 principal stations to Poole - 10.10 Southampton, Wareham, Dorchester and Weymouth. This train ran non stop from Southampton to Wareham via Ringwood in 67 minutes and reached Weymouth in 3 hours 21 minutes from Waterloo - 10.30 Southampton and Bournemouth only [also ran on Mondays and Fridays] - 11.08 Southampton, Pokesdown, Boscombe and Bournemouth, - 12.05 Southampton, Brockenhurst, Wareham via Ringwood, Dorchester and Weymouth with through coaches for both Lymington and Swanage, included a Restaurant car detached at Brockenhurst which returned to London on the 15.30 from Brockenhurst [14.00 ex Weymouth via Ringwood] [Intriguingly the Southern Railway timetable of July 10th 1927 included the statement that the Restaurant Car on the 12.05 would be attached at Brockenhurst] - 12.40 Southampton and stations to Brockenhurst - 13.12 Southampton, Pokesdown, Boscombe and Bournemouth - 14.12 Southampton and Bournemouth - 14.30 Southampton, Bournemouth and principal stations to Weymouth, [to Bournemouth on Mondays and Fridays]. All of these were scheduled to the first stop at Southampton in 92-95 minutes, additionally many of the all year round trains ran in duplicate or triplicate, sometimes even quintuplicate.

The Southern was fortunate. At very busy times it could use alternative routes, the Ringwood line, "Castleman's Corkscrew" instead of the Sway Bournemouth route and Basingstoke, Eastleigh, Fareham instead of the Portsmouth Direct as already noted were used by scheduled services.

The Central and Eastern Sections however regularly ran excursions over the Woodside to Selsdon line closed to passenger services in 1917, which enabled through trains from Lewisham to Brighton, these normally travelled South via Oxted and Haywards Heath but regularly returned via Lewes, Sheffield Park and Oxted. The Woodside to Selsdon line also provided access to and from the Mid Kent line and thereby offered an alternative route from Tonbridge to Cannon Street or Charing Cross, without recourse to the Main London to Brighton line. As an indication of the level of traffic that at times used this route on August Bank Holiday 1928 there were trains from Hastings at 16.45, 18.45, 18.55, 19.15 and 19.36 which ran to London via Tonbridge, Edenbridge, Crowhurst South Junction, Oxted, Selsdon Road and Ladywell and terminated at Cannon Street or Charing Cross. These particular trains passed Selsdon Road at 18.26, 20.23, 20.30, 20.57 and 21.17. Locomotives involved D Class 4-4-0's Nos.A75, A7267 and A728, B1 Class 4-4-0 No.A455 and L Class 4-4-0 No.A770.

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Southern Horse Race Meetings

A Wainwright C Class 0-6-0 No.A690 hauled a Brighton excursion on September 15th 1927. The mid-week excursion's from Lewisham to the Kent Coast, Hastings and Brighton in 1927 picked up passengers from the normally closed stations on the Woodside route.

Although the Southern served several Racecourses, the Derby Meeting at Epsom generated the greatest traffic. The L&SW, SE&C and LB&SC prior to the grouping all competed for the traffic, to Epsom Town, Tattenham Corner and Epsom Downs respectively. The Southern increasingly concentrated the service on Tattenham Corner. It employed a variety of motive power; some large locomotives were required for the steeply graded route. The six Pullman coach special from the City in 1926 was entrusted to the three-cylinder 2-6-4 tank No.A890. The next year the following locomotives appeared on specials to Tattenham Corner:- B1 Class 4-4-0's Nos.A446, A455 and A459 - E Class 4-4-0 No.A516 - E1 Class 4-4-0's Nos.A497 and A506 - L and L1 Class 4-4-0's Nos.A759, A760, A773, A778, A779, A785 and A787 - J Class 0-6-4's Tank's Nos.A597 and A614 - K Class 2-6-4 Tank's Nos.A796, A799, A800, A802, A803 and A806 - three-cylinder No.A790 - several 0-6-0's, 0-4-4 Tank's and the Pullman special had N Class 2-6-0 No.A812.

During 1926 Goodwood week motive power was Gladstone Class 0-4-2's with B4X Class 4-4-0 No.B67 on the Pullman special from Victoria.

The Easter Monday meeting at Kempton Park always attracted vast crowds and until 1934 most specials were steam hauled. M7 Class 0-4-4 Tank's, including the only superheated one performed much of the work, supported by T1 Class 0-4-4 Tank's, Jubilee Class 0-4-2's and K10 and L11 Class 4-4-0's. During the Races batches of locomotives were turned on the Fulwell-Strawberry Hill-Shecklegate triangle.

[The Southern Railway kept coach sets specifically for these events and Association-Football matches]

A different type of event, the Aldershot Military Tattoo attracted large crowds. Late night trains ran on the Reading Redhill route in 1927 and a few years later there were six through trains from the LMS and one from the LNER, the Southern Railway provided motive power to Aldershot from and to Kensington Addison Road. The LNER train ran to Fleet station.

The Royal Trains were undoubtedly the special "Specials". The route they ran over from Waterloo to Portsmouth was changed after the grouping, they followed the original LB&SC one as far as Leatherhead but then proceeded via Effingham Junction, Guildford and Fratton. The schedule allowed for the South Jetty to be reached in two hours from Victoria. The locomotives on two occasions in 1925 when the Prince of Wales travelled, were, Down E1 Class 4-4-0 No.A160 and L12 Class 4-4-0 No.E429 and Up E1 Class No.A165 and T9 Class 4-4-0 No.E729. The first trip occasioned by the King's visit to the Mediterranean, the second by a visit to Cowes.

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Southern Specials

The longest regular non stop runs on the Southern were those between Waterloo and Bournemouth, 107.8 miles, but some specials, particular when loads were light and water could be conserved, ran over longer distances. The various Commonwealth leaders, when on October 30th 1926 they inspected the Atlantic Fleet were provided with a train non stop from Waterloo to Dorchester, 135.7 miles, headed by King Arthur Class 4-6-0 No.E775. The 4-6-0 was replaced by a 4-4-0 for the short run from Dorchester to Weymouth. Two years later when HM The King inspected a Tank display at Lulworth a special ran to Wool, the motive power on this occasion T9 Class 4-4-0 No.E302. On October 30th of the same year Lord Nelson Class 4-6-0 No.E850, with a Royal Special consisting of five Pullman coaches, ran non stop to Weymouth Junction, a distance of at least 142 miles, in 179 minutes.

Royal Specials frequently ran between London and Dover, for both UK Royals and visiting foreign dignitaries. The King of Egypt for instance was accorded a special train hauled by L1 Class 4-4-0 No.A759 on his arrival. On departure, as noted previously, when the timing was not dependent on the vagaries of an incoming vessel, extra coaches were added to the mid Morning Boat Train.

Special trains were at times provided for dignitaries other than Royalty and Heads of State. The Papal Legate in June 1932 had a special from Folkestone to Holyhead, the train made up of LMS coaches and taken by L Class 4-4-0 No.A777, from Folkestone Junction to Kensington Addison Road, in 115 minutes. The enthronement of the Archbishop of Canterbury in 1929 required two extra trains of vestibule stock hauled by E1 Class 4-4-0 No.A511 and L1 Class 4-4-0 No.A758 respectively. Additionally the London to Gillingham service was extended to Canterbury that day.

Football specials featured less on the Southern than on the other three Railways; there were few professional teams although at times local sides competed with the great. When Brighton for instance, played Newcastle six specials left Brighton on the Friday Evening at 22.50, 23.00, 23.08, 23.25 and 23.43 returning from Newcastle through the Saturday night. The locomotive variety on such trains could be considerable; one returning train was hauled by a LNER D49 Class 4-4-0 No.256 from Newcastle to Banbury, a GWR Castle Class 4-6-0 from there to Kensington Addison Road and finally a U Class 2-6-0 No.A797 to Brighton. The Arsenal vs. Portsmouth Cup-tie of 1932 involved six special trains, which left the Capital between 10.00 and 11.40.

There was a continuing increase in special's [Excursions] to the "Seaside", a plethora in fact, many running mid-week. The coastal resorts were also invariably the destination for special excursions from the other three Railways. There were far less specials emanating from the South East, those that did served a variety of events, one such was Bourneville. The performance of a K Class 2-6-0 No.B2340, on one of these has been noted already. Special trains to view the Dock facilities at Southampton and/or specific Ocean Liners were another source of revenue.

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Southern Railway Company Performance 1923-32

When a special train was advertised for the visit of the Steam Ship "Berengaria", the demand for tickets was such that six trains ran rather than the one advertised. Such trains usually ran to reasonably fast schedules, in 1927 for example on one such occasion there were three trains from Waterloo between 10.00 and 11.00, the second departing at 10.47. This, consisting of vestibule stock and King Arthur Class 4-6-0 No.E451 completed the Down journey in 114 minutes and the Up in 105 minutes.

Eastleigh Locomotive Works, in 1930 became a tourist attraction, a special with Lord Nelson Class 4-6-0 No.E865, left Waterloo at 11.20 and returned from Eastleigh at 16.50.

Although the Southern suffered less from the recession than the other three Railway Companies, it was not immune to its effects despite the population drift to the South East. The 09.00 service from Victoria to Folkestone for Boulogne and the 10.00 to Dover for Paris via Calais were suspended in the 1932 Winter Timetable.

During the first decade of the Southern's existence traffic receipts were: 23.27 million pounds in 1923 - 23.74 million in 1925 - 21.94 million in 1926, the drop was due to the industrial turmoil - 23.33 million in 1927 - by 1930 they had declined to 22.10 million with the nadir reached in 1932, 19.45 million. [They then increased to 19.62 million in 1933 and 20.13 in 1934]. The Net receipts fell from 4.55 million pounds in 1923 to 3.66 million in 1932 with a peak profitability of 4.82 million in 1929. [The figures for 1933 and 1934 were 4.03 and 4.30 million pounds] The major success of the first decade was the reduction in total expenditure from 19.20 million pounds in 1927 to 16.01 million in 1932. [The figures for 1933 and 1934, by which time the increased costs associated with increased turnover began to take effect, were 15.82 and 16.07 million] Employee numbers in March 1923 were 70,479 which grew to 73,005 in 1928 and fell to 68,119 in 1932 and further to 62,807 in 1934.

The number of steam locomotives accounted for in 1923 was 2,256, in 1932 1,999 with a further reduction of 80 over the next two years. The corresponding steam mileage was 57.5 million in 1923 and 52.96 million in 1932. [This fell to 51.52 million in 1933 but then rose to 52.78 million in 1934] The electric motor vehicle mileage climbed from 5.11 million in 1923 to 21.32 million in 1932 and mainly as a result of the Brighton electrification scheme by another 4.33 million in 1933.

Despite adverse macroeconomic pressures the Southern Railway at the end of its first decade had electrified most of its Suburban Network, improved its carriage stock, [Steam stock had been reduced from 6,959 vehicles to 5,072.] by the replacement of virtually all the old six wheeled and four wheeled stock and much of the early bogie stock. Track improvements had been considerable, [from mid 1932 all Classes of locomotives were permitted to operate over the former LC&D Main lines] and whilst concentrating on electrification it had made major improvements to its steam locomotive fleet.

Southern Railway Company Dividends 1923-32

Dividends on the preferred stock were maintained at five percent until 1930, then reduced to four percent in 1931 and one percent in 1932 [they were increased back to three percent the following year and to four percent the next] Dividends on the deferred stock fell from 3½ percent to 1¼ percent in 1930 and after that no dividends were paid on this stock. [The deferred ordinary, ordinary "A" and "B" stocks were amalgamated in 1926 under the provisions of the Southern Railway Act of that year] Overall, judged against the performance of the other three Main Railway Companies the Southern Railway had survived well, but the halcyon pre Great War days of the Railway Companies were long past.

Chapters 14 & 15 REFERENCES AND NOTES

- Ref. 1 The U & U1 Classes had wheel centres set at 8 feet 10 inches from the centre of the leading axle [bogie] to the centre of the coupled wheels, 7 feet 3 inches from the centre of the first driving wheel to the second and 7 feet 9 inches between the second and the third. The N & N1 Classes had 8 feet 3 inches between the second and third driving wheels.
- Ref. 2 In practice the rolling resistance of a locomotive and tender was not the same per ton weight as for a carriage but the point is relevant.
- Ref. 3 Railway Magazine [RM] Vol. LIII
- Ref. 4 [RM] Vol. LV
- Ref. 5 Journal of the Stephenson Locomotive Society [SLS] Vol. XVI
- Ref. 6 Locomotive Adventure Vol. II [HH] p.158 Ian Allan 1965
- Ref. 7 [SLS] Vol. XL
- Ref. 8 [HH] fig.18 p.88 Description p.113
- Ref. 9 [RM] Vol. XL
- Ref.10 [RM] Vol. LIII p.390
- Ref.11 [RM] Vol. LV. p.483-4 L.C.Paxton
- Ref.12 [RM] Vol. LV
- Ref.13 [RM] Vol. LIV One record by C.J.Allen, four by Correspondents
- Ref.14 Railway World Vol. 21 p.160 [RW] F.J.Lane
- Ref.15 [HH] p.67-70 Some of the timings show minor discrepancies between passing times and summary times.
- Ref.16 [RM] Vol. LXI
- Ref.17 [RM] Vol. LVIII
- Ref.18 [RW] Vol. 26 p,122-3 Norman Harvey quoting S.A.W.Harvey
- Ref.19 [RM] Vol. LX p 95-7
- Ref.20 [RM] Vol. LXVIII p. 280
- Ref.21 [RM] Vol. LXVII p. 377-8
- Ref.22 [RM] Vol. XL p. 316-7
- Ref.23 [RM] Vol. LXVIII p.106-9

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- Ref.24 This is based on an article by J.D.Truss in the Railway Observer [Journal of the Railway Correspondence and Travel Society] Vol. XII [RO] with additional material added .
- Ref.25 J.D.Truss considered the use of an 0-6-4 Tank unusual. D.L.Bradley in his book on SE&C. locomotives stated that for most of 1929 one was employed on the 17.20 to East Grinstead. [Did he mean the 17.20, a Tunbridge Wells train or the 17.40]
- Ref.26 [RO] Vol. I
- Ref.27 [RM] Vol. LVIII p. 462-5
- Ref.28 "The Railways of Britain" Lord Monkswell. Benn 1926
- Ref.29 [RM] Vol. LXI p. 215-7
- Ref.30 [RM] Vol. LXIV C.J.Allen quoting two correspondents
- Ref.31 "Maunsel locomotives" O.S.Nock E.Everard 1951 Two journeys recorded by Nock himself are included in the analysis
- Ref.32 [HH] p. 76.
- Ref.33 [RM] Vol. LXXIII. p. 97-106
- Ref.34 [SLS] Vol. XXXIX N Harvey quoting S,A,W,Harvey
- Ref.35 [RM] Vol. LXXI p. 312
- Ref.36 [RO] Vol. 6 p 115-6
- Ref.37 [RW] Vol. 21 p. 160
- Ref.38 [SLS] Vol. XIV p. 17
- Ref.39 [RM] Vol. LXV p. 272-5
- Ref.40 The author remembers as a young member of the Crusaders Union attending a large gathering in London at which the organist was C.J.Allen
- Ref.41 [RM] Vol. LXIX p. 255-9
- Ref.42 [SLS] Vol. VIII
- Ref.43 [RO] Vol. 9
- Ref.44 [HH] p..187-190
- Ref.45 "The Lord Nelson's" D.W.Winkworth. Allen and Unwin. 1985

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Chapter 16: THE SOUTHERN RAILWAY 1933-39.

From Recession to War

The inauguration of a complete Timetable of electric trains to Brighton and West Worthing from the beginning of 1933 naturally led to a major reduction in Central Section steam locomotive rosters. The 60 minutes non stop schedule from London to Brighton had been the benchmark for locomotive performance on the section for many years. Indeed increasing train weights, at times to 450 tons, represented a power requirement close to the maximum achievable by a King Arthur Class 4-6-0 for consistent punctuality. The best Eastborne schedules had always been easier than the Brighton ones. The 17.06 ex London Bridge was the most demanding, 61 minutes to the first stop. The schedule to pass Coulsdon North from the start was 21 minutes, the same as for the 17.35 Victoria to Brighton when steam hauled, despite the fact that the start from Victoria to East Croydon was at least, on a like for like basis, one minute more difficult. The 17.06 schedule allowed 26 minutes from Coulsdon to Haywards Heath the 17.35 one minute less.

The Brighton electrification led to some locomotive withdrawals and the transfer of many more to other duties, particularly on the Eastern Section. The released King Arthur Class 4-6-0's ultimately found their way to the Eastern Section, mainly on the Kent Coast trains, although some initially operated from Eastborne depot. The Eastborne expresses in 1933 were hauled by a variety of locomotives i.e. King Arthur Class 4-6-0's, H2 Class 4-4-2's, L Class 4-6-4 Tank's, J1 and J2 Class 4-6-2 Tank's, T9 Class 4-4-0's on the "Eastborne Sunday Pullman" and Schools Class 4-4-0's.

The final demise of the Gladstone Class 0-4-2's occurred in 1933, the last revenue earning employment was with the 13.25 Ashford to Brighton on August 18th of that year. The veteran, No.2172 had found regular employment in its last years of service with some reasonably important trains, on December 3rd 1932 for instance it hauled the 19.00 Brighton to Portsmouth and returned with the 21.45 from Portsmouth, 190 tons Gross to Portsmouth, six Great Western Railway corridor coaches coming back. A few months later it was observed on the 16.50 Victoria to Brighton via Uckfield. It often took the 13.51 from Eastborne to Haywards Heath which continued as the 15.32 to London Bridge via Horsted Keynes and Oxted. It returned to Eastborne on the 19.05 ex London Bridge. This duty some two years later was often performed by a Baltic Tank. The last B2X Class 4-4-0, No.206, allocated to Fratton depot was withdrawn from Service in the spring of 1933.

The Eastborne and Hastings service was electrified from July 7th 1935, during the previous seven months or so, Battersea and Bricklayers Arms depots handled many of the Eastborne trains. The Eastborne allocation of express locomotives at this time was seven U1 Class 2-6-0's, two 4-6-2 and four 4-6-4 Tank's plus two B4 Class 4-4-0's.

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Southern [Central Section] to Eastborne 1932-35

The H2 Class 4-4-2's were allocated to Bognor [four off] and New Cross [two off], the H1's to New Cross [three off] and Newhaven [two off].

Locomotive duties at times appeared unequal. On the Saturday before Easter 1935 for instance between 10.35 and 11.35 two scheduled Eastborne trains left behind U1 Class 2-6-0's Nos.1905 and 1906 [11 corridor coaches plus two Pullman Cars on the 11.10] and a Plunpton Race meeting special had No.1892 [ten bogies plus two six wheeled brakes], whereas a King Arthur Class 4-6-0 on the 11.45 Race special had two ordinary and four Pullmans.

An interesting regular performer on the Eastborne trains at this time was L Class 4-4-0 No.1777. This had been fitted with a Maunsell type superheater in 1931, 19½ inches diameter cylinders and a boiler with a working pressure of 180 pounds per square inch boiler in the autumn of 1934. The ability of the L1 Class 4-4-0 to run heavy trains at high speeds on the Tonbridge to Folkestone section of the South Eastern Main line led to the L Class modifications. They were equipped with Maunsell type superheaters from 1925 to 1938, the boiler working pressure increased to 180 pounds per square inch between 1927 and 1944 and 19½ inches diameter cylinders fitted between 1922 and 1941. The modifications were carried out as with the changes to the I1 Class 4-4-2 Tank's when convenient i.e. when new or replacement boilers were required or at General overhauls.

Locomotive performance on the Eastborne trains in the period after electrification of the Brighton service and before the final implementation of electrification to Eastborne seems to have been variable and seldom if ever exciting. The Schools Class 4-4-0's, whilst they achieved performances on the Eastern and Western sections that elicited gasps of astonishment from onlookers, seldom if ever rose to such dizzy heights between London and Eastborne. The frequency of out of course speed restrictions, the many permanent speed restrictions plus a footplate culture that regarded the Eastborne service as one on which locomotives were driven easily, mitigated against sparkling performances.

D.W.Winkworth [Ref.1] published details of six journeys hauled by Schools Class 4-4-0's in the period 1933-35, timed by H.T.Clements, one on the weekday 21.10 ex Victoria and two on the Sunday 20.40, with loads of 235, 290 and 370 tons. Number 913, with 370 tons attained 40 miles per hour on the 1/264 at Purley from the East Croydon start before a signal stop. It then ran Earlswood to Haywards Heath stop in 16¾ minutes with 71 miles per hour maximum at Horley, 47 minimum at Balcombe tunnel and a final 67 at Copyhold Junction. Numbers 910 and 902 on the 12.20 ex Eastborne, with 285 and 335 tons passed Three Bridges from a start at Haywards Heath in 11 minutes 50 seconds and 12 minutes exactly with 47 and 48 miles per hour on the 1/264 before Balcombe Tunnel. Number 902 developed an EDHP of 775-825, the maximum power output other than transitory on any of the six runs. Only one of the six journeys ran to schedule although on all occasions the Net times were less.

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Southern [Central Section] Electrification to Eastborne

The U1 Class 2-6-0's increasingly used on the Eastborne trains towards the end of steam operation by all accounts performed poorly. Norman Harvey travelled between East Croydon and Eastborne in 1935, Down some ten minutes was lost by the locomotive and in the Up direction with the same 350 tons train seven minutes were dropped on the generous 54 minutes Lewes to East Croydon schedule. [Harvey attributed four minutes of the lost time to the locomotive despite his invariable generosity in assessing performance]

The high spot in performance on the Eastborne trains, bearing in mind the size of locomotive was the Sunday Pullman with its schedule of 80 minutes in both directions between Victoria and Eastborne. In summer the load was eight Pullman Cars, c.320-330 tons Gross and the motive power from 1933 until the demise of steam a T9 Class 4-4-0. The T9's apparently maintained time with the heaviest trains, they had the advantage on a Sunday of less traffic in the Suburban area and therefore fewer signal checks but it was another example of the abilities of the superheated T9's.

The best consistent locomotive performance on the Eastborne line probably occurred between Lewes and Eastborne. Some schedules on this stretch, taking into account train weights were tight, the 17.06, with an overall schedule of 82 minutes from London Bridge to Eastborne was allowed 20 minutes, the 08.05 and 09.30 from Eastborne one minute more. Other trains ran between Polegate and Lewes in 17 minutes except for the 14.25 from Lewes allowed one minute less.

A.M.Fisher timed an H2 Class 4-4-2 from Polegate with 366 tons Tare on the 10.25 ex Eastborne when Lewes was reached in 16¼ minutes, Berwick, 4.2 miles was passed in 7 minutes 35 seconds. The initial start from Polegate consists of half a mile at 1/330 and seven eighths of a mile at 1/188 up followed by a similar distance at comparable grades downhill and five eighths of a mile up at 1/100.

The electrification of the Eastborne and Hastings service reduced steam locomotive rosters on the Central Section further. However until the electrification of the Mid Sussex routes in 1938 and indeed for many years after that, steam hauled passenger trains continued on both the Eastborne and the Brighton via Keymer Junction routes. The number of steam hauled passenger trains increased enormously at Holiday times adding considerably to the operating challenges. An indication of maximum steam activity in the period between the electrification of the Eastborne and the Mid Sussex routes is afforded by reference to departures from Victoria commencing 11.08 and finishing 12.03 on the August Bank Holiday weekend Saturday in 1936.

The 11.08 to Eastborne via Oxted and Eridge ran semi-fast to Eridge then stopped at all the stations on the Heathfield line with Eastborne reached at 13.35, it included a portion for Uckfield, arrival 12.46. The train on this particular Saturday consisted of seven coaches, two three coach sets plus one hauled by an F1 Class 4-4-0 No.1149.

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Southern [Central Section] Steam from Victoria, 1936

There were three departures in a seven minute period: 11.18 to Bognor [relief to the 11.20] B4 Class 4-4-0 No.2047 with eight coaches - 11.20 to Littlehampton, I3 Class 4-4-2 Tank No.2090 with nine coaches plus one Pullman - 11.25 to Bognor, T9 Class 4-4-0 No.704 with seven coaches plus one Pullman. The 11.42 to Portsmouth left behind T9 No.336 with the same formation as the 11.25.

[The normal Saturday service consisted of the 11.20, which with stops at Sutton, Dorking North, Horsham and Arundel, reached Barnham Junction at 13.09 and then stopped at all stations to Portsmouth Town, arrival 14.04. The Bognor portion, detached at Barnham reached George the Fifth's purported favourite resort at 13.23. Passengers for Littlehampton had to change at Arundel.]

The 12.03 to Brighton via Oxted, East Grinstead and Sheffield Park, served every station between East Croydon and Lewes. It consisted of two coaches plus a three coach set with B4 Class 4-4-0 No.2046.

All six trains were entrusted to pre-grouping locomotives, the I3 would have required a vigorous driving to maintain schedule with 330 tons.

East Croydon was the location to observe Central Section steam hauled passenger trains from London [with the exception of those routed via the Mid Sussex route through Sutton and Dorking. The activity from around 17.00 to 20.30 on Maundy Thursday [April 2nd 1938] gives a view of how much this could be.

The 16.57 from East Croydon [16.40 ex London Bridge] ran semi fast to Uckfield, arrival 19.16, on this day hauled by I3 Class 4-4-2 No.2086.

The 16.50 ex London Bridge passed through, first stop Horsham in 53 minutes, next stop Barnham Junction at 18.23. [The main train continued to Portsmouth Town, arrival 19.12, the Bognor portion reached there at 18.36.] It consisted of six coaches plus one Pullman with L12 Class 4-4-0 No.429.

The 17.10 from East Croydon, [16.50 ex Victoria] stopped every station from Sanderstead to Lewes via Oxted and Uckfield and finally reached Brighton at 19.16. Motive power I3 Class 4-4-2 tank No.2086.

The 17.09 ex London Bridge ran non stop to Horley in 33½ minutes. [This service prior to electrification was provided by a portion slipped from the 17.05 to Eastborne]. The 17.09 continued to Forest Row, reached at 18.17. On April 4th it had E Class 4-4-0 No.1514 with seven corridor coaches, usual motive power was an E1 Class 4-4-0.

The 17.28 from East Croydon, [17.09 ex Victoria] stopped all stations to East Grinstead except Selsdon, consisted of seven non corridor coaches with I3 Class 4-4-2 Tank No.2080.

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Southern [Central Section] Maundy Thursday 1938

The 17.38 from East Croydon, [17.20 ex London Bridge] ran to Tunbridge Wells West stopping at all stations except Selsdon, motive power an E Class 4-4-0. This was part of Bricklayers Arms Duty No.90, normally from March 1937 an L Class 4-4-0, [In 1935, an I1X Class 4-4-2, a D3X or H Class 0-4-4 Tank] if no L available a D1, E1 or L1 Class 4-4-0 appeared. The use of an E suggested the usual L was used on a heavy Eastern Section duty.

The 17.57 from East Croydon, [17.40 ex London Bridge] to East Grinstead, all stations from Sanderstead also appeared with an E Class 4-4-0 with seven non corridor coaches, usual motive power a B4X Class 4-4-0.

The 17.25 London Bridge to Reading, first stop Coulsdon South in 22½ minutes, was the last survivor of the former SE&C service from London to the Redhill to Reading line. With the commencement of the electric service to Redhill and Reigate all other through trains, apart from the Saturday mid-day, were discontinued, a change of trains at Redhill became necessary. U Class 2-6-0 No.1638 on Maundy Thursday had seven non-corridor coaches.

The 18.08 from East Croydon, [17.50 ex Victoria] stopped at all stations from Sanderstead to Lewes via East Grinstead and Sheffield Park, terminated Brighton at 20.16 and usually had an I1X Class 4-4-2 Tank. Before February 1937, this and the 17.09 to Forest Row were I3 Class 4-4-2 Tank duties. From this date with the imposition of more onerous axle load limits the I3's were forbidden to run over the Three Bridges to Ashurst Junction, Horsted Keynes to Culver Junction and Polegate to Redmill Junction routes. This decision caused the motive power authorities some difficulties.

The 18.28 from East Croydon, [18.10 ex Victoria] ran semi fast to Uckfield where it arrived at 19.37 and included through coaches for Eastborne via Heathfield detached at Eridge. Motive power as usual was an I3 Class 4-4-2 Tank. A portion detached at East Croydon left at 18.31 all stations to Tunbridge Wells West with a D3X Class 0-4-4 Tank.

The 18.15 ex Victoria, first stop Horsham in 51 minutes, with further stops at Arundel and Barnham Junction reached Bognor at 19.54. Usual motive power an H2 Class 4-4-2, on this day an L12 Class 4-4-0 with nine coaches. The H2 hauled the 18.23 relief made up of ten coaches plus one Pullman Car.

The 18.47 from East Croydon, [18.30 ex London Bridge] served all stations to Forest Row, arrival 19.53, except South Croydon and had an I1 X Class 4-4-2 Tank No.2006.

The 19.10 from East Croydon, [18.48 ex Victoria] stopped at all stations to East Grinstead had I1X No.2604.

The 19.25 East Croydon to Tunbridge Wells West via Edenbridge, this the return working of the 18.12 Auto train from East Grinstead to East Croydon.

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Southern [Central Section] Maundy Thursday 1938

The 20.00, [19.42 ex London Bridge] stopped all stations to Haywards Heath via East Grinstead with E5 Class 0-6-2 Tank No.2593.

The 20.21, [20.02 ex Victoria] semi fast to Eridge, stops at Oxted and Edenbridge; front portion continued all stations to Brighton, rear to Eastborne via Heathfield. The three coach set plus five ex LB&SC balloon coaches was a tough assignment for I1X Class 4-4-2 Tank No.2001 as far as Eridge.

The 20.23, [20.04 ex London Bridge] to Tunbridge Wells was another I1X duty, but with only four non-corridor and one corridor coaches.

The 20.20 Victoria to Newhaven Boat train consisting of 11 coaches plus Pullman Car had F1 Class 4-4-0 No.1013 and L1 Class 4-4-0 No.1778. It was preceded by five relief trains, motive power for these was: B4X Class 4-4-0 No.2056, H2 Class 4-4-2 No.2422, H1 Class 4-4-2 No.2040, Schools Class 4-4-0 No.933 and King Arthur Class 4-6-0 No.793.

[There were Newhaven Boat Trains ex Victoria on Maundy Thursday 1939 at 20.00, 20.20, 20.25 and 20.30 and Agents trains [Thomas Cook etc.] from Cannon Street at 19.03, 19.25, 19.45 and 20.17. Agent's trains ran from Cannon Street from 1936 onwards if there was insufficient capacity at Victoria].

In the Up direction on Maundy Thursday 1938 the 17.01 arrival at East Croydon, the 15.35 ex Haywards Heath to London Bridge via East Grinstead was hauled by an I3 Class 4-4-2 Tank, No.2079.

The Up Newhaven Boat train, due Victoria at 18.05, passed through behind H2 Class 4-4-2 No.2421 with B1 Class 4-4-0 No.1013 as pilot.

The 18.28 arrival, 14.42 Margate to London Bridge via Dover, Tonbridge and Redhill to London Bridge consisted of three bogie coaches plus two vans hauled by E Class 4-4-0 No.1273.

The 19.58 arrival at East Croydon, the 17.18 Brighton to Victoria via Sheffield Park and East Grinstead stopped at all stations as far as East Croydon and was hauled by B1 Class 4-4-0 No.1101.

R.A.H.Weight in 1939 "gladdened the hearts of Southern Railway steam enthusiasts" after the outbreak of War with a note in the Journal of the Stephenson Locomotive Society concerning his observations on an August Saturday at Three Bridges shortly before the outbreak of War. [Ref.2]. During a six hours period, commencing at 13.15, 22 steam hauled Expresses passed including nine Newhaven Boat Trains, one Up empty stock working, six "Sunny South Express's", three period return excursions to the LMS and four to the Great Western. Six trains were double headed, for some years the Atlantics, H1 and H2 Class 4-4-2's had been limited to 410 tons Tare on the Newhaven Boat trains.

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Southern [Central Section] Performance with the Bognor trains

Locomotives observed were : four H1 Class 4-4-2's, three H2 Class 4-4-2's, six B4X , six D, two B1 [both as pilots], one L12, one T9 Class 4-4-0, one I3 Class 4-4-2 tank, one U1 Class 2-6-0 and one N1 Class 2-6-0. Number 1879 was borrowed by Eastborne depot from Tonbridge for the weekend. Of the 26 locomotives listed by Weight, only two were built after 1923, [he presumably observed two locomotives twice i.e. working in each direction].

The Bognor and Portsmouth basic service in the period immediately before electrification in July 1938 consisted of ten Down trains and 13 Up. The two best Down were the 16.50 ex London Bridge and the 18.15 [previously the 18.20] ex Victoria, both ran non stop to Horsham via Three Bridges. The 18.15 was a heavy train like the 15.20 which ran via Sutton and Dorking, usually hauled by an H2 Class 4-4-2 based at Bognor depot.

Locomotive performance on the Bognor trains at times was good. An H2 Class 4-4-2 No.2426 on the 18.20 ex Victoria in 1934 with 375 tons passed Clapham Junction in 5 minutes 51 seconds and East Croydon after signal checks, one and a quarter minutes late, in 16 minutes 10 seconds. Speed rose from 31 miles per hour at East Croydon to 46 at Purley, fell to 44 at Quarry, touched 67 maximum at Horley and after reducing to 25 for the junction at Three Bridges Horsham was reached 17 seconds late, schedule 50 minutes. The Atlantic performed up to the level required by the former Victoria to Brighton 60 minutes schedule. The 18.20 was allowed 29 minutes to pass Earlswood as per the 60 minutes schedule and then two minutes more to Three Bridges reflecting the need to slow for the junction. Number 2426 developed an EDHP of 825-875 between East Croydon and Quarry. The restart from Horsham was brisk, Pulborough, 12.3 miles passed in 14 minutes 34 seconds, with a maximum of 67 miles per hour and Arundel the next stop reached three quarters of a minute inside the 26 minutes schedule despite two PWR slacks. Speed seldom exceeded 70 miles per hour between Horsham and Arundel although Norman Harvey once timed B4X Class 4-4-0 No.2056 at 72 miles per hour with a Norwood Junction to Bognor excursion on Good Friday 1937, his highest recorded speed on the Mid Sussex line.

The 16.50 ex London Bridge and the 13.50 ex Victoria were regularly hauled by an L12 Class 4-4-0. The 16.50 in the last year of its operation was noted with; seven individual L12's, eight T9 Class 4-4-0's and one B4X Class 4-4-0, No.2045. Number 2045 was fitted with a D15 Class type chimney and other modifications at Eastleigh in an attempt to improve its performance. Locomotives on the last three days the 16.50 ran were B4X No.2056 and L12 Nos.419 and 424. Number 424 earlier with the standard train formation, two Southern three coach sets plus one Pullman Car was one and a half minutes late at Forest Hill, two minutes late at Coulsdon North, maintained to Horsham reached exactly two minutes late, 55 minutes from London Bridge.

There was a regular diagram for a Stewarts Lane L Class 4-4-0 in 1938, duty No.503: 09.05 Victoria to Portsmouth Town, arrival 11.36 via Three Bridges with eight stops, 14.55 Portsmouth Town to Victoria 17.33 via Dorking.

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Southern [Central Section] performance over the Mid Sussex 1937-38

L Class 4-4-0 No.1764 with six coaches was recorded travelling from East Croydon to Horsham in a Net running time of 42½ minutes, just inside schedule, with stops at Redhill and Three Bridges, the maximum before the Horsham stop was 65 miles per hour. [Ref.3] On Saturdays in June a Newhaven based Atlantic worked the 09.05, part of a duty which included the 04.42 Newhaven to Victoria, then to Portsmouth return and the 20.20 Victoria to Newhaven, a daily mileage in excess of 300.

The 15.20 as previously noted loaded heavily train, particularly regarding the steep gradients between Streatham Junction and Horsham. An H1 Class 4-4-2 in 1937 with 334 tons Tare and H2 No.2426 with 320 tons in 1938 kept time from Dorking to the next stop at Horsham [schedule 20 minutes]. Bognor depot borrowed an H1 from Brighton if its H2's were out of service.

The Arundel to Horsham section, in the Up direction, overall was against the locomotive. An H1 Class 4-4-2 No.2041 with 275 tons on the 18.21 from Arundel to Victoria, after an initial PWR slack to 25 miles per hour, reached 62 on the level at Pulborough, fell to 43 on the 1/100 and reached 65 on the favourable stretch to Billingshurst. It then fell to 47 miles per hour on the three miles to Itchingfield Junction [including two miles at 1/100] and reached 60 before Horsham, 25 minutes 33 seconds, schedule 26 minutes. The time from Amberley passed at 48 miles per hour to Horsham, 16.8 miles was 19 minutes 5 seconds and from Pulborough to Horsham 14 minutes 6 seconds. [Ref.4]. An I3 Class 4-4-2 Tank with 250 tons on the 14.55 ex Portsmouth was 12 seconds slower between Pulborough and Horsham.

The 13½ miles between Horsham and Dorking after a favourable start, 1.1 miles downhill at 1/100 and 1/160 included four adverse miles, two and a quarter miles of which were at 1/90 and 1/100 to Holmwood before the steep descent to Dorking including two miles at 1/100 and briefly 1/80.

H1 Class 4-4-2 No.2041 with 275 tons reached a maximum of 55 miles per hour at Warnham after starting from Horsham, fell to a minimum of 40 at Ockley and reached 51 on the easier grades to Holmwood. It passed Dorking one minute early at 47 miles per hour after a maximum of 69, schedule 19 minutes before signal checks resulted in a time to the Sutton stop of 37 minutes 32 seconds. A T9 Class 4-4-0 No.729 with 340 tons reached 48 miles per hour, fell to a minimum of 25, passed Ockley in 11 minutes 57 seconds, Holmwood in 14 minutes 40 seconds and reached Dorking in 20 minutes 37 seconds after 67 maximum. The continuation to Sutton, the next stop took 17 minutes 54 seconds. A B4X Class 4-4-0 No.2052, with 275 tons on Good Friday 1938 passed Holmwood in 14 minutes 30 seconds and then averaged exactly 60 miles per hour to the Dorking stop, made in 19½ minutes. No speeds were quoted for the downhill stretch, which was probably just as well, the train had left Horsham eight minutes late due to delays through signals earlier.[Ref.5] An H2 Class 4-4-2 with 340 tons passed Dorking in 20 minutes and with an unchecked run reached Sutton in 35 minutes 20 seconds, schedule 37 minutes.

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Southern [Central Section] the Morning Up Bognor

Many excursion trains to the South Coast resorts continued to be steam hauled for some years post electrification. Shortly after electrification a B4 Class 4-4-0 No.2051 replaced a failed I3 Class 4-4-2 Tank on the 18.50 Brighton to Tooting with 280 tons and maintained schedule to Horsham over the Steyning line. After the Horsham start there was a PWR slack at Warnham to 15 miles per hour, a minimum of 14 at Ockley and with only 58 maximum before, Dorking was passed 11 minutes late. .

The morning train, 07.48 ex Bognor, usually 250 tons, ran via Three Bridges and was allowed 24 minutes from the there to the next stop at East Croydon. F.S. Bond travelled regularly by this train and particularly interested himself in performance to Quarry summit. H2 Class 4-4-2 No.2425 passed Horley in 4 minutes 55 seconds at 64 miles per hour, Earlswood in 8 minutes 55 seconds at 60, Quarry Box in 12 minutes 10 seconds and the summit in 13 minutes 40 seconds. Another H2 No.2426 made an identical time to Earlswood despite experiencing a slight signal check at Horley. An L12 Class 4-4-0 No.430 passed Horley in 4 minutes 50 seconds at 65 miles per hour, Earlswood in 8 minutes 40 seconds at 62, Quarry Box in 11 minutes 50 seconds and Quarry summit in 13 minutes 50 seconds. The two shortest times noted by Bond between the Box and the Summit were 90 seconds by Nos.2425 and 430.

Mr. Bond observed runs almost as quick behind B4 Class 4-4-0's and I3 Class 4-4-2 Tank's over the same section, albeit with lighter trains, c.150 tons. B4 No.2046 passed Horley in four and three quarter minutes at 64 miles per hour, Earlswood in 8 minutes 40 seconds, Quarry Box in 12 minutes 12 seconds and Quarry summit in 13³/₄ minutes. Comparative times and speeds for I3 No.2076 were, 4 minutes 40 seconds at 65 miles per hour, eight and three quarter minutes at 64, 12 minutes 12 seconds and 13 minutes 43 seconds. Certainly these drivers were not holding up the electric trains.

The Mid Sussex line naturally attracted considerable attention, it was not only the last LB&SC Main line operated entirely by steam but the motive power was usually of pre grouping design and the trains were attractive, almost every one included a Pullman Car in its formation.

K.J.Leeming, at Christ's Hospital school from 1927-1934, recounted his alternative studies many years later. [Ref.6] He noted the gradual introduction of Maunsell coaching stock, such that by 1934 all main line trains were composed of it. In terms of locomotive performance he was of the opinion that when the two 4-6-2 Tank's were tried on the route in the summer of 1933 they were not a success and that the I3 Class 4-4-2 Tank's performed as well as the H2 Class 4-4-2's or B4X Class 4-4-0's. The extra Holiday traffic, he estimated one in four trains ran to or from Guildford and that many of these after reversal ran to or from Brighton via Steyning, brought a variety of locomotives to the line. [His estimate of Guildford line traffic is high but it indicates how many excursions used this single line route]. He noted the following 4-4-0 Classes on excursions and relief's; B1, F1, D, E, L, L11, S11, K10, C8, T9 and L12.

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Southern [Central Section] Electrification to Bognor

He also noted C and O1 0-6-0's and occasionally Maunsell 2-6-0's. The ex LB&SC K Class 2-6-0's often used on through excursions to and from the LMS and the LNER did not appear on Southern Railway excursions, whereas the T9 Class 4-4-0's regularly worked excursions from Western Section stations to Brighton via Epsom, Christs Hospital and the Steyning line.

The Horsham to Guildford line normal scheduled passenger workings were hauled by D1 Class 0-4-2 Tank's with two coach push and pull sets in the twenties, in the thirties D3 Class 0-4-4 Tank's appeared and shortly before the War M7 Class 0-4-4 Tank's. The Saturday and Sunday excursions to the Sussex Coast, sometimes there were as many as six a day, usually consisted of nine ex L&SW coaches. Locomotives used to or from Christs Hospital were M7 Class 0-4-4 Tank's, K10 Class 4-4-0's and occasionally C8 and T9 Class 4-4-0's. In the Southbound direction locomotives were detached at Christ's Hospital and taken to Horsham Depot for servicing, a Horsham locomotive attached at the opposite end of the train took the train on via the Steyning line for Brighton or via Amberley for Bognor or Littlehampton. Locomotives employed on these duties were I1X Class 4-4-2 Tank's, E4, E5 and E5X Class 0-6-2 Tank's and occasionally C3 or C2X Class 0-6-0's.

Increasingly towards the end of steam operation L&SW 4-4-0's featured. K.Nichols [Ref.7] observed during the Easter Holiday of 1938 trains from London to the Coast and on the Coast line hauled by seven different T9 Class 4-4-0's and five L12 Class 4-4-0's, four B4X Class 4-4-0's with the I3 4-4-2 Tank's primarily used on stopping trains. The H2 Class 4-4-2's were reserved for the important weekday services and seldom appeared at weekends.

The last Down scheduled steam hauled passenger train on July 2nd 1938 the 19.20 Victoria to Portsmouth Harbour had T9 Class 4-4-0 No.115, the last Up, the 19.00 ex Portsmouth I3 Class 4-4-2 Tank No.2029 with 150 tons. The driver was a Pulborough man who had first been a fireman on the route 25 years previous, the sense of occasion however was somewhat spoilt by a 15 minutes late arrival at Victoria.

Following the electrification of the Mid Sussex routes, Central Section steam duties were mainly concentrated on the Oxted and Redhill to Reading routes.

Two exceptions were the 17.08 and 17.25 ex London Bridge, the 17.08, as noted previously was first stop Horley in 33½ minutes, [the ex steam hauled 60 minutes non stop Brighton 17.00 was allowed 34 minutes to pass the station]. An I3 Class 4-4-2 Tank hauled the 17.08 until the Class was banned from the Three Bridges to Ashurst Junction section. Norman Harvey [Ref.8] travelled on the train in 1939 with E1 Class 4-4-0 No.1511 and the normal 225 tons load. It passed Forest Hill in 8 minutes 35 seconds at a minimum of 32 miles per hour and Norwood Junction in 12¼ minutes at 60. There was a PWR slack to 25 miles per hour at Sturt Lane and a maximum of 74 before Earlswood. Horley was reached exactly to schedule. There was no equivalent Up service, the stock returned to London from East Grinstead via Oxted.

Date: July 7th 2002

Southern [Central Section] Brighton Main Line Steam 1939

The 17.25 [Saturday equivalent service left at 12.40] made its first stop at Coulsdon South in 22 minutes, the former steam hauled 17.00 was allowed 21 minutes to pass Coulsdon North. The 17.25 which stopped at all stations afterwards with the Reading arrival at 19.57 included a portion for Tonbridge detached at Redhill. The corresponding Up train left Reading at 07.24.

Norman Harvey sampled the 17.25 in 1939, U Class 2-6-0 No.1802 with eight coaches, approximately 250 tons. It passed Forest Hill in 10 minutes, was a few seconds ahead at Windmill Bridge Junction, schedule 15 minutes and lost a minute to Coulsdon. After the Brighton electrification in 1933 other Reading trains started or terminated at Redhill. The Evening Business traffic was catered for by four shuttles between Redhill and Gomshall, one of these on the return journey ran non stop from Gomshall to Reigate, 10.8 miles, schedule 16 minutes. An E4 Class 0-6-2 Tank made a brave attempt, with 100 tons, eight minutes to Dorking and 17 minutes to the stop at Reigate.

The Stirling 4-4-0's for many years were the mainstay of the Redhill to Reading service, in 1935 the rebuilt B1's and F1's were still ubiquitous in much of Southern England. J.D.Truss, over a twelve months period, noted them at work on: Waterloo to Reading - Reading to Redhill - London to Tonbridge - Hastings line stoppers - Gillingham, Sheerness, Maidstone and Ashford - London to Brighton via East Grinstead and via Uckfield - to Tunbridge Wells West - the cross country routes from Gillingham to Brighton and Ashford to Hastings and Brighton.

Although various "foreign" locomotives were introduced on the Redhill to Reading line after the grouping in 1923 including L12 Class 4-4-0's as well as the "friendly" J Class 0-6-4 Tank's, the Stirling monopoly was not really challenged until the advent of the K Class 2-6-4 Tank's. When the K's were withdrawn from service, following the Sevenoaks accident, the Stirling's returned, with L12 Class 4-4-0's on the through trains to and from the Great Western Railway. However following the return of K's as U Class 2-6-0's and further new builds in the early thirties the use of the small 4-4-0's again declined and by the mid thirties although they were still in evidence the N and U Class 2-6-0's were dominant.

The heaviest train, regularly run over the Redhill to Reading route was the Birkenhead to Dover, photographs by M.W.Early show it hauled In April 1925 by F1 Class 4-4-0 No.A9, in September 1926 by K Class 2-6-4 Tank No.A801 and in February 1932 by U Class 2-6-0 No.1638. The bulk of the Redhill to Reading trains in March 1939 were hauled by U Class 2-6-0's, the usual load was light, typically a former SE&C three coach birdcage set plus boxes, milk tanks etc. F1 Class 4-4-0's Nos.1043, 1078, 1079 and 1185 still appeared regularly. The through GWR/SR service usually consisted of nine corridor coaches with a U Class 2-6-0. The Evening Redhill to Gomshall shuttles were in the hands of D3 or M7 Class 0-4-4's or the E4 0-6-2 Tank's. A 2-6-0 on the Redhill to Reading section could spend ten months without hauling 200 tons and then with the through train made up to 11 coaches, take on 400 tons.

Date: July 7th 2002

Southern [Central section] SR locomotives to Oxford, GWR to Redhill

Southern locomotives on occasions worked through to Oxford from Redhill. A Guildford based U Class 2-6-0 in 1935 took the 11.40 from Redhill, [09.23 ex Deal and 09.25 ex Hastings]. [A portion, usually three coaches, for Bournemouth detached at Guildford ran forward to Bournemouth via Petersfield and Fareham. After the Portsmouth electrification this train ran via Alton and Winchester.] The U then worked Oxford to Reading on a GWR stopping train, made a return trip to Didcot and then returned to the Southern.

A Great Western Railway 43xx 2-6-0 in summer 1937 worked 08.17 Reading to Redhill [all stations] and returned on the 09.05 ex Hastings which ran non stop from North Camp to Oxford, reached at 13.25. Commencing with the winter Timetable a Southern 2-6-0 [N or U] took the 08.51 Redhill to Didcot and returned from Oxford on the 12.25, Redhill arrival 14.33. There was a balancing GWR working from Reading.

Most GWR workings between Reading and Redhill were handled by 43xx Class 2-6-0's although there were reports in 1936 of 4-6-0's; both the two cylinder Saint Class and the four cylinder Star Class. They were noted on the 08.15 from Reading returning with the 11.28 Eastborne to Birkenhead. With the exception of the Gomshall shuttles Tank engines were seldom used between Redhill and Reading, a novelty in 1938 was an R1 Class 0-4-4 Tank on the Sunday Redhill to Aldershot train.

The Birkenhead through service, other than at summer peak times when separate trains were run, split, or in the northbound direction joined, at Redhill. Southbound the front portion proceeded to Ashford and the Kent Coast resorts, the rear four coaches to Hastings via Brighton and Eastborne with reversals at both stations. The Brighton to Redhill sector and the return working were part of a Tonbridge depot roster, the normal locomotive was a D Class 4-4-0, with an occasional B1, T9 and in 1937 and 1938 L1 Class 4-4-0. The southbound train allowed 42 minutes over the 29.9 miles from Redhill to Brighton hardly constituted an arduous booking with ten coaches let alone four. On two occasions in 1937, D Class 4-4-0's Nos.1586 and 1733 maintained schedule comfortably, No.1733 recorded a Net time of 39 minutes with maxima in the lower sixties. On Summer Saturdays when loads could be heavy, the 13.38, 14.23 and 14.53 departures from Redhill ran to Brighton on schedules of 37, 45 and 40 minutes respectively.

The "Sunny South Express" in 1938 ran from Manchester and Liverpool to Hastings with through coaches from Sheffield and Birmingham and return. There was an additional service from Birmingham to Brighton and Eastborne on Saturday and others at peak times, for instance on July 30th the Public timetable had five trains from the West Midlands. During winter and off peak periods the "Sunny South" loaded to only four coaches between Willesden and Brighton whereas in the Summer 11 or 12 was the norm. H1 and H2 Class 4-4-2's were regular motive power, delays by signal checks particularly on the intensively used double track section south of Balcombe tunnel were common, locomotive performance predictably was far from scintillating.

Date: July 7th 2002

Southern [Central Section] performance on the Through trains

Norman Harvey timed H1 Class 4-4-2 No.2040 with ten coaches when it reached 70 miles per hour at Horley, the average from Earlswood to Three Bridges was 60, the result a stop before Balcombe tunnel to let another train proceed. On another occasion an S11 Class 4-4-0 No.399 hauled the train, the usual New Cross Gate H1 had on this day worked to Bournemouth from Brighton, the S11, which had worked to Brighton from Portsmouth handled the Brighton to Willesden return sector of the New Cross Gate Duty. The S11 starting from East Croydon with ten coaches took nine minutes to Purley, then ran well to Three Bridges, 25 minutes and after a signal check reached Brighton in 56¼ minutes, 54¼ minutes Net, schedule was a generous 61 minutes. The I3 Class 4-4-2 Tank's often ran between Brighton and Willesden during the summer, on one August Saturday in 1937 the three northbound trains were taken by Nos.2078, 2081 and 2084, immediately before the War the four coach off peak regularly had a U1 Class 2-6-0 or L12 Class 4-4-0.

The Brighton and Eastborne section with some difficult gradients, particularly westbound from Lewes presented a more difficult locomotive task. The J1 and J2 Class 4-6-2 Tank's frequently used handled 11 and 12 coach trains, 400 tons comfortably including on the 1/88 from Lewes up to Falmer following the severe slack through the station. The variety of locomotives employed in addition to the two Pacific Tank's was considerable, on August 26th 1938 for example, the through trains to the GWR and LMS had; one off E1, D and L Class 4-4-0's, three N Class 2-6-0's and one I1X Class 4-4-2 Tank.

An L Class 4-4-0 No.1771, with 290 tons on the "Sunny South" ran from Brighton to Eastborne in 36 minutes 25 seconds, a four and a half minutes gain on schedule. There was a signal check before Falmer costing one minute, the maximum at Glynde was 70 miles per hour. A B4 Class 4-4-0 with six coaches on the Sunday 17.33 from Brighton, [ex Wolverhampton] lost two and a half minutes on the 42 minutes schedule to Eastborne which included the Polegate stop. It was four minutes late past Southerham Junction as a result of signal checks, maxima were 60 miles per hour before Lewes and past Glynde. An L12 Class 4-4-0 with 290 tons passed Polegate in 14¾ minutes from the Lewes start before signals spoilt the run. Smaller locomotives appeared on the four coach train; in September 1937 for instance D3 Class 0-4-4 Tank No.2391 did the honours.

On the more difficult westbound journey an L Class 4-4-0 No.1768 with 260 tons on the 11.30 from Eastborne in 1939 lost almost five minutes to Brighton, actual time 42 minutes 50 seconds. There was a signal check before Polegate and a stop before Lewes, between checks speeds were 50 miles per hour at Berwick, 66 at Glynde and 20 minimum on the 1/88 to Falmer. In the same year an I1X Class 4-4-2 Tank regularly hauled the weekdays 10.05 Hastings to Birkenhead from Eastborne. Number 2595 with a light train, 130 tons, ran to Brighton in 35½ minutes including a signal check before Lewes, a gain on schedule of one and a half minutes, passing times were Polegate, 6 minutes 55 seconds [schedule 7 minutes] and Lewes 21¾ minutes. Speed reached 24 miles per hour on the 1/88 and 65 before Kemp Town Junction.

Date: July 7th 2002

Southern [Central Section] Eastborne to Brighton

Number 2596, with only 100 tons, reached 60 miles per hour at Glynde, fell to 28 on the 1/88 and touched 62 before Kemp Town Junction. A more interesting challenge for an I1X occurred in 1938 with a 270 tons train. Number 2596 passed Polegate in 8 minutes 12 seconds from Eastborne at 35 miles per hour, attained 66 at Glynde, passed Southerham Junction in 21 minutes 37 seconds and Lewes in 22 minutes 40 seconds. The minimum on the 1/88 was 18 miles per hour and the maximum afterwards 60 at Kemp Town Junction, the Brighton arrival was 25 seconds behind schedule.

A B4 Class 4-4-0 No.2068 with 300 tons passed Polegate in 8 minutes exactly from the Eastborne start and Southerham Junction in 21 minutes 50 seconds after a maximum of 64 miles per hour. It fell to 18 miles per hour on the 1/88 before recovering to 21 and passed Falmer in 34 minutes, one and a half minutes slower than No.2596 with 270 tons, the maximum after was only 52. Number 2068 developed an EDHP of 625-675 before Falmer. [No.2068 was a hybrid as following a General overhaul at Eastleigh in October 1935 it incorporated the frames of No.2059. In May 1936 it hauled a three coach racecourse special from Brighton to Paulsgrove Halt and was described as appearing immaculate].

The Brighton Main Line was traversed by, in addition to the scheduled services from the GWR via Reading and Redhill and the LMS via Willesden, regular day and half-day excursions from North London and further afield. Typical examples of such trains,: 1934, from Leicester, ten vestibule coaches plus a kitchen car, taken from Kensington Addison Road to Brighton by N Class 2-6-0 No.1410 - 1936, ten coaches from Hemel Hempstead hauled from Willesden to Brighton by an L12 Class 4-4-0 - 1939 Leighton Buzzard to Hastings, ten coaches 330 tons, U1 Class 2-6-0 No.1903. Number 1903 ran via the Main Brighton line to Keymer Junction, then Polegate and the direct route to Hastings. It returned via Ashford, Maidstone, Swanley and Herne Hill thus travelling in the same direction and avoiding the Tonbridge to Hastings route for which the stock was out of gauge, total mileage by this circuitous route, 158 miles.

The heaviest steam hauled trains on the Central section were those run in connection with the Newhaven Dieppe Boats. In 1928 and 1929 regularly 450 tons hauled by an H1 Class 4-4-2, however in the thirties, in the interests of punctuality they were limited to 410 tons Tare. An H1 in the summer of 1938 hauled 425 tons to schedule Down, the schedule in this direction was reckoned the tougher locomotive proposition. As a result of the 410 tons limit, many Boat trains were double headed, the pilot locomotive, often an ex SE&C 4-4-0. Indeed such was the variety and number of locomotives employed that H.Gamble wrote an article entitled the "South Eastern invasion of Lewes". [Ref.9]. Typical loadings on Up Boat trains can be illustrated by reference to September 10th 1938; first train 12 coaches with a B4X Class 4-4-0 piloted by an H1 Class 4-4-2 - second, 11 coaches plus one van with H2 Class 4-4-2 No.2424 - third, 12 coaches plus one van with B4X Class 4-4-0 No.2050 piloted by another B4X No.2045.

Date: July 7th 2002

Southern [Central Section] Newhaven Boat Trains 1937-39

Practically every type of ex SE&C 4-4-0, as well as all the former LB&SC types appeared on the Boat trains. Some examples indicate the variety:- 17/8/1937 EI Class 4-4-0 No.1497 with H2 Class 4-4-2 No.2422 as pilot - 30/7/1939 H2 No.2424 with F1 Class 4-4-0 No.1205 as pilot - 4/8/1939 L Class 4-4-0 No.1778 with E Class 4-4-0 No.1547 as pilot and H2 No.2424 with B1 Class 4-4-0 No.1449 as pilot - 8/8/39 B4X Class 4-4-0 No.2060 with F1 No.1108 as pilot - 12/8/39 E No.1547 with F1 No.1105 as pilot. The main train was invariably hauled by a 4-4-2, with or without a pilot but in one week in November 1937 instead of the then normal H2 No.2421, on two days a Schools Class 4-4-0 appeared and on another a King Arthur Class 4-6-0.

The locomotive demands on the Central Section were not continuous high speed running but intermittent, sometimes requiring short high power bursts, particularly to enable steam hauled trains to intermingle with an intensive electric service. The available motive power it appears seldom passed muster, four coupled designs with large diameter driving wheels hardly met the criteria. Comparatively small locomotives at times had to haul relatively heavy trains up stiff gradients as from Lewes and on many sections of the Oxted lines, although here there were less or no electric trains to delay.

The 14.50 London Bridge to Oxted usually consisted of eight bogie coaches and apparently normally about the same number of passengers; overall schedule including seven stops from Norwood Junction to Oxted was 38 minutes. All the station starts except Norwood Junction were uphill and the I1X Class 4-4-2 Tank's usually kept time, just. The I1X's had the same boiler as the B4 Class 4-4-0's, as originally built the I1 Class was far less powerful, [Some would say quite inadequate] as rebuilt they certainly performed well in the nineteen thirties. In view of the duties rostered to them, particularly after the I3's were prohibited from certain routes, this was just as well.

B4 lass 4-4-0 performance varied. Number 2054 with 180 tons on the 16.20 London Bridge to Brighton via East Grinstead improved on the initial 18 minutes schedule to East Croydon by 50 seconds, with 220 tons on the 17.40 London Bridge to East Grinstead it lost four minutes on the 27 minutes schedule form East Croydon to Oxted including stops at Sanderstead, Riddlesdown, Upper Warlingham and Woldingham. Six feet 9 inches diameter four coupled wheels were not ideal for stopping trains on adverse gradients.

The older rebuilt Stirling 4-4-0's were still required in the late thirties, to haul loads not dissimilar from those they handled in their prime, but not on expresses. F1 Class 4-4-0 No.1013 with a train of six bogies plus one van took 28 minutes 16 seconds from East Croydon to Oxted with five intermediate stops, schedule 24 minutes. A more suitable train for one of these locomotives, an F1 in this case, was the Sunday 11.38 from Tonbridge, [10.15 ex Gillingham] to Brighton, booked non stop from Tunbridge Wells to Lewes in 36 minutes. Lewes was reached one minute inside schedule with 185 tons, there was a PWR slack before Groombridge, the 3.5 miles from Eridge to Crowborough, much of it at 1/88 took 5 minutes 10 seconds.

Date: July 7th 2002

Southern [Central Section] Rebuilt Stirling's on the Oxted lines

The F1 reached 60 miles per hour on the downhill stretch to Buxted. A B1 No.1459, with a light load of three bogies ran from Tunbridge Wells West to Lewes in 39 minutes 34 seconds running time with stops at Crowborough, Uckfield, Isfield and Barcombe Mills, a three and a half minutes gain on schedule. This was the 16.37 Maidstone West to Brighton, the through Medway Towns to Brighton service, truncated to run only as far as Maidstone after electrification between Maidstone and London.

Despite the apparent availability of larger locomotives the rebuilt Stirling's appeared on Oxted line workings up to the outbreak of War. In March 1939 B1 Class 4-4-0 No.1459 hauled the 18.48 Brighton - East Grinstead - Victoria on successive Sundays.

The longest daily diagram for a rebuilt Stirling, an Eastborne based F1 or B1, involved: 06.56 Newhaven Harbour to Victoria [a van train, with one passenger coach in the formation, non stop Lewes to Victoria in 75 minutes] - 11.08 Victoria to Eastborne via Eridge and Heathfield - 15.39 Eastborne to Charing Cross as far as Tonbridge - 17.55 Tunbridge Wells to Eastborne.

The 11.08 ex Victoria ran semi fast to Eridge where the train split. The initial run to East Croydon, the first stop was allowed 17 minutes. Norman Harvey sampled this three times: F1 Class 4-4-0 No.1249 with 185 tons lost half a minute to Balham, schedule 9½ minutes and reached East Croydon one minute in arrears - F1 No.1028 with the same load lost two minutes to East Croydon, not exceeding 44 miles per hour - B1 No.1449 showed what a Stirling could do with a willing crew and maintained schedule just! Clapham Junction passed at 36 miles per hour, Balham Junction in 9½ minutes, the maximum at Streatham Junction was 52 miles per hour and East Croydon was reached with six seconds to spare. The steam hauled Brighton 60 minutes expresses were booked to pass Windmill Bridge Junction in 15 minutes, the B1 took 35 seconds more.

Other records behind rebuilt Stirling's show variable performance. B1 No.1440 with three coaches on the 13.36 London Bridge to Tunbridge Wells ran from East Croydon to Oxted, with five intermediate stops, in 27 minutes 5 seconds running time, schedule 26 minutes. Number 1013, rebuilt as late as 1926, with 200 tons on the Sunday 08.36 lost four and a quarter minutes over the same stretch. Number 1013 often hauled the 15.35 Haywards Heath to London Bridge via East Grinstead usually made up of seven bogie coaches, a challenge on the 1/75 from Horsted Keynes to West Hoathly. The Oxted to East Croydon stage on one occasion took 25 minutes 10 seconds running time, schedule 23 minutes. One minute was allowed at each station stop, the train was on time at East Croydon as a result of smart station working.

The SE&C D and E Class 4-4-0's regularly worked on the Oxted lines. E No.1514, with 270 tons on an excursion via the Oxted and Mid Kent route maintained the 31 minutes all stations allowance from Oxted to Elmers End.

Date: July 7th 2002

Southern [Central Section] Larger locomotives on the Oxted Lines

The only adverse station start in this direction is at Oxted. In the opposite more difficult direction D No.1730 with seven coaches kept the overall 32 minutes schedule from East Croydon to Oxted including time spent at the five intermediate stops, these locomotives were far from ideal on all station services.

D Class 4-4-0 No.1488 was twice noted in 1939 with the 11.18 Brighton to Tunbridge Wells train, eight stops en route, schedule 79 minutes overall. On one day it lost three minutes against schedule, on the other it ran to time. These trains were more suited to locomotives with smaller diameter driving wheels, a Stroudley D Class 0-4-2 Tank kept time with the 13.48 ex Brighton one day in 1938, same schedule to Tunbridge Wells and an additional stop.

Large locomotives became available for other duties following Central Section Main line electrification. The L Class 4-6-4 Tank's however for which there were no appropriate Central Section duties, were rebuilt with tenders, the N15X Class and transferred to the Western Section whilst the Eastborne electrification works were completed.

The Atlantics, B4X Class 4-4-0's and I3 Class 4-4-2 Tank's transferred to Stewarts Lane after the Mid Sussex electrification, found some employment on the Eastern Section. Such transfers were never ideal, footplate crews on one Section seldom welcomed locomotives from another, the superheated T9 Class 4-4-0's excepted, "not invented here" was alive and well.

Despite this transfer of many Central Section locomotives some larger locomotives appeared on the Oxted services where the Civil Engineer permitted. The 10.18 Brighton to Victoria which ran via Uckfield with eight stops was allowed two hours and a quarter and was usually hauled by a B4X Class 4-4-0 in 1938. It became a regular H1 or H2 Class 4-4-2 working in 1939 which returned with the 15.55 ex Victoria [first stop Oxted, then Eridge where a coach for Eastborne was detached], to Brighton in one minute under two hours. Loading varied from five coaches, an easy assignment, to eight coaches, more of a challenge considering the gradients. Another change at this time was the gradual replacement of the B4 Class by E Class 4-4-0's.

The H1 and H2 Atlantic's were seldom extended on Oxted line workings and were also far from ideal on stopping trains. The 15.55 ex Victoria allowed 21 minutes over the 15.4 miles from Oxted to the next stop at Eridge suited them better. An H2, No.2424 with 240 tons passed Edenbridge in 6 minutes 52 seconds from Oxted after a maximum of 68 miles per hour at Monks Lane, fell to 52 on the rising grades to Cowden, rose to 66 at Ashurst and reached Eridge in 18½ minutes. This was recorded by R.A.H.Weight, who observed that of several comparable runs with B4X Class 4-4-0's, the best by No.2067 gave an overall time only seven seconds longer, although the average speed over the adverse grades from Edenbridge to Cowden was six miles per hour less. The smaller locomotive gained time on the Atlantic by a faster finish from Ashurst Junction to the Eridge stop.

Date: July 7th 2002

Southern [Central Section] South of Tunbridge Wells West

An E Class 4-4-0 on the 15.55 with four coaches, after the removal of the through Eastborne coach at Eridge, left Crowborough 30 seconds late. It attained 65 miles per hour on the downhill stretches, ran rapidly after the stops and was two and a half minutes ahead of schedule past Culver Junction before a signal check, although the arrival at Lewes was still on time.

A second working for an Atlantic introduced in 1939 included the 07.00 Brighton to London Bridge, [the locomotive worked to Brighton on the 03.25 Newspaper train ex London Bridge], which normally loaded to eight or nine coaches and stopped at all stations from Brighton to Sanderstead except Falmer. H2 Class 4-4-2 No.2425 with 260 tons between Buxted and Crowborough reached 40 miles per hour on the initial easier grades and fell to 30 on the final 1/75 and 1/80.

The section of the Oxted lines between Crowhurst South Junction and Selsdon regularly constituted part of an alternative route from Tonbridge to London. This was an Eastern Section working and reflected the former joint ownership of the route by the SE&C and LB&SC.

Locomotive variety on the Oxted lines was at times bewildering and reflected an increasing trend on the Southern Railway whereby locomotives of varying power worked the same train at different times. It led inevitably to "lowest common denominator" scheduling and perhaps partly explains the lack of improvement in speed of many trains from the twenties to the end of steam haulage.

Details of some Stewarts Lane locomotive rosters illustrate the point: Duty No. 501 - H Class 0-4-4 Tank, 06.30 Victoria to Tunbridge Wells via East Grinstead, 09.26 Tunbridge Wells West to Victoria via Edenbridge [this was a semi-fast service], 21.10 Victoria to East Grinstead and the 22.46 return - Duty No.502, I3 Class 4-4-2 Tank, 05.20 Victoria to Tunbridge Wells West, light engine to Uckfield, 08.18 Uckfield to Victoria [semi-fast, three stops, Uckfield to Victoria in 63 minutes], 18.10 Victoria to Uckfield [semi-fast to Eridge with three stops in 63 minutes], 19.50 Uckfield to Tunbridge Wells West, 21.00 Tunbridge Wells West to Victoria - Duty No.503, B1 or E1 Class 4-4-0, 12.03 Victoria to Brighton via East Grinstead and Sheffield Park, return by the same route at 17.18.[usually three coaches only].

Seven Tunbridge Wells West rosters mainly involved I1X Class 4-4-2 Tank's with an occasional I3 Class 4-4-2, although up to 1935 a D3X Class 0-4-4 Tank worked the Down 17.50 which loaded to seven coaches.

Many of the rosters involving work on the Oxted lines, whilst requiring the locomotive to be in steam for long periods resulted in comparatively small daily mileages. A roster for a B4 Class 4-4-0, early morning slow [very!] to Brighton from London Bridge via Horsham and the Steyning route, return to London via the Oxted route followed by another return trip to Brighton probably represented the largest daily mileage worked, c.250 miles.

Date: July 7th 2002

Southern [Central Section] Locomotive variety on the Oxted Lines

As an earnest of the locomotive variety on the Oxted lines the following further illustrate the point:- 09.05 Victoria to Tunbridge Wells, D Class 4-4-0 - 14.30 Victoria to Tunbridge Wells, E5 Class 0-6-2 Tank based at Norwood Junction - 16.20 London Bridge to Brighton via East Grinstead [fast to Oxted with a Tunbridge Wells portion detached at East Croydon], B4X Class 4-4-0 - 16.50 Victoria to Brighton via Uckfield [portion for Tunbridge Wells detached at Ashurst], B4X - 17.09 Victoria to East Grinstead [load eight coaches] I3 Class 4-4-2 Tank - 17.40 London Bridge to Lewes [three non corridor coaches and a four coach set as far as East Grinstead], Brighton based B4. [During the winter of 1938/9 this was an E Class 4-4-0 duty]. As already noted the 11.08 featured a rebuilt Stirling and to complete the variety the 06.37 Eastborne to Redhill via Heathfield and Tunbridge Wells and the 12.06 return was the preserve of D3X Class 0-4-4 Tank No.2397.

The inauguration of electric trains to Bognor coincided with the initiation of the electric service between Brighton and Portsmouth, the through trains from Brighton to Bournemouth, Cardiff and the West of England remained steam hauled. Locomotive performance between Brighton and Portsmouth was invariably dreary, whether this was the result of the proliferation of junctions, the number of speed checks, the debilitating effect of a rather featureless landscape or just a footplate malaise is difficult to fathom. Speed seldom exceeded 60 miles per hour despite the usually light trains. There were heavier trains at times, in 1937 for instance on one occasion the Cardiff to Brighton, taken from Salisbury to Portsmouth by a T9 Class 4-4-0 with eight coaches had the through coaches from Plymouth including a refreshment car added at Portsmouth. The reorganised train of 11 coaches was taken on from Portsmouth to Brighton by B4X Class 4-4-0 No.2073.

The indefatigable Norman Harvey sampled locomotive performance west of Brighton in 1939 and although he managed to enthuse about his experiences, in truth they were not very good. The 19.58 ex Brighton, in July 1938 ran to Bournemouth, reaching there at 23.12. On three occasions, U Class 2-6-0 No.1629 once and S11 Class 4-4-0 No.395 twice ran ahead of schedule with light trains but the schedule demanded little. In the eastbound direction an L12 Class 4-4-0 No.417 with eight coaches on the 14.20 ex Cardiff gained four and a half minutes on the 23 minutes schedule from Worthing to Brighton without any undue effort.

The L12 Class 4-4-0's were frequent performers on the Brighton to Salisbury route, the 11.00 Brighton to Cardiff and the 12.00 to Plymouth were lightly loaded trains to and from Fareham, after the addition of the portion from Portsmouth they presented a considerable haulage proposition. Harvey recorded runs behind L12's Nos. 417, 421 and 425 with trains of five to eight coaches as far as Fareham. The locomotive diagrams in 1939 sent a Brighton locomotive through to Salisbury on the 11.00 returning on the 14.55 from Salisbury [ex Plymouth and the West of England]. Another Brighton locomotive hauled the 12.00 to Fareham, where it was replaced by a U Class 2-6-0 and returned to Brighton on the Cardiff service, 16.33 from Fareham.

Date: July 7th 2002

Southern [Central Section] Q Class 0-6-0's

Eastleigh built twenty Q Class 0-6-0's in 1938/9, under the Bulleid regime but to a design prepared by the former Maunsell team, Bulleid himself was scathing about them. They had 5 feet 1 inches diameter coupled wheels and two inside cylinders [19 inches diameter by 26 inches stroke]. The boiler had a working pressure of 200 pounds per square inch and a total heating area of 1,432 square feet [1,125 square feet in the boiler tubes, 122 square feet in the firebox and 185 square feet in the superheater]. The firegrate area was 22 square feet and the locomotive weighed 49½ tons, the tender an additional 40½ tons. The Q's, whilst essentially designed for freight use were well suited to excursion trains over difficult routes with low axle load limits.

A Q Class 0-6-0 No.543 hauled an excursion to Bognor, on Easter Monday 1939, via the Guildford to Christ's Hospital line. They were destined to become regular visitors to this route with heavy trains. However on the Whit Monday of that year, four of the five Reading to Bognor excursions featured 700 Class 0-6-0's to Christ's Hospital, the fifth had F1 Class 4-4-0 No.1183. Motive power after Christ's Hospital onwards to Bognor was more varied; C2X Class 0-6-0, H2 Class 4-4-2, I1X Class 4-4-2 Tank, I2 Class 4-4-2 Tank and K Class 2-6-0. The Reading to Brighton through train was taken to Christ's Hospital by a 700 and on to Brighton by an I1X.

The Q Class 0-6-0's Nos. 540-4 allocated to Guildford in 1939 regularly worked passenger trains to Reading, particularly Guildford duties Nos.210 and 225 previously for U Class 2-6-0's. They were considered useful locomotives although there were difficulties in maintaining boiler pressure. Whilst the Q's could be regarded as Maunsell's last passenger design the Schools Class 4-4-0's were a more fitting finale to a very competent regime.

Horse Race Meetings represented a major motive power requirement and presumably a significant source of revenue for the Southern Railway. Although electrification gradually reached the Courses closer to London, steam hauled trains were still needed particularly for First Class passenger stock. The reversibility and high passenger capacity of the electric stock made it ideal for Third class Race traffic. First Class Pullman specials ran to Epsom Downs on all four days of the 1937 Derby meeting, on three of the days double headed by a pair of I3 Class 4-4-2 Tank's. There were two Pullman specials on June 2nd, Derby Day, both double headed by tank locomotives; one had an I3 and an H Class 0-4-4 the other an E5 Class 0-6-2 plus another H. [At the April 1936 meeting the six coach Pullman specials were hauled on the three days by a single I3.] Steam trains to Tattenham Corner involved three L1 Class 4-4-0's, three N Class 2-6-0's and one N1 Class 2-6-0. Excursions from Stourbridge, Cardiff and Alton were hauled over Southern rails by U Class 2-6-0's.

Fourteen years after the formation of the Southern Railway, with the exception of the H Class, ex LB&SC locomotives still operated on the Epsom Downs route and ex SE&C, or Maunsell designs, ran to Tattenham Corner. On Derby Day 1939 three Pullman trains ran to Tattenham Corner with N Class 2-6-0's.

Date: July 7th 2002

Southern [Central Section] Lingfield Races 1938

The Lingfield Race meetings, far smaller affairs, usually involved four or five special trains from London and one from Brighton. At the 1938 March Meeting there were five trains, hauled by one E1 Class 4-4-0, two I3 Class 4-4-2 Tanks' and two U1 Class 2-6-0's. One of the U1's ran from Victoria to Lingfield and continued after the Meeting to Brighton, the other worked up from Brighton in the morning and continued to London in the evening, three locomotives turned on the East Grinstead triangle during the day. The May Meeting in the same year had five Special's from London which departed Lingfield in the evening at six minute intervals from 16.55 to 17.19. They consisted of: eight ex LB&SC balloon-coaches with I3 Class 4-4-2 No.2079 - nine Pullman's with U1 Class 2-6-0 No.1904 - five balloon's plus one L&SW and four SE&C non corridor's with an I3 - six SE&C non corridor's with an I3 - six balloon's plus one non corridor with another I3 The first three, Gross weights 280, 360 and 330 tons required good performances on the initial nine miles uphill to Woldingham. The following year I3's hauled four of the five trains from London, U1 No.1904 the other made up of nine Pullman coaches.

There were frequent one off events which required special trains, "The Times" newspaper in 1939 for instance organised a visit to Hever Castle for its readers. Six specials ran to Hever, motive power was three N Class 2-6-0's, two H1 Class 4-4-2's and one I3 Class 4-4-2 Tank. Probably as a result of this the 15.55 ex Victoria and the 16.50 ex London Bridge were hauled by a B4 Class 4-4-0 No.2054 and B4X Class 4-4-0 No.2045 complete with its modified blast pipe. Many excursions ran from and to the Central Section, some involving the locomotives in, by Southern standards, a long journey. There was in 1937 a regular 08.27 New Cross Gate to Portsmouth and Bournemouth via Horsham, after Chichester, the front portion proceeded to Portsmouth, the rear to Bournemouth. On Easter Monday 1937 L Class 4-4-0 No.1765 worked from New Cross to Bournemouth, almost 130 miles.

Other special excursions, through reversals, involved several locomotives within a short distance. The Tunbridge Wells Advertiser newspaper on May 15th 1938 organised an excursion to visit the Ocean Liner Dock at Southampton. The train, made up of six corridor coaches, one Pullman Car and a centre corridor coach started from Crowborough at 09.16 and ran via Eridge, Groombridge, both Tunbridge Wells' stations and Tonbridge to Redhill behind B1 Class 4-4-0 No.1457 and E Class 4-4-0 No.1515. The train after reversal at Redhill carried on to Guildford behind U Class 2-6-0 No.1630. Here after another reversal it left behind another U No.1622 and reached the Docks at 13.06. The return train, departure 19.10, had the same locomotives except for U No.1639 between Guildford and Redhill.

Visits to factories were a popular Thirties' diversion, the Cadbury's factories at Bourneville and Fry's at Somerdale were two such crowd pleasers. On April 8th and 21st 1933, 11 coach trains, ten coaches plus one Pullman Car on the first occasion and eight coaches plus three Pullman Cars on the second ran from Brighton to Bristol. The motive power on each occasion was a pair of T9 Class 4-4-0's, Nos.303 and 313 and 303 and 302.

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Southern [Eastern Section] Improvements 1932

Whilst the number of Central Section steam hauled trains reduced dramatically in the thirties, locomotive variety did not, undoubtedly great fun for the railway enthusiast but hardly economic. The key Southern Railway strategy was to maximise, "the Capital spend" on electrification. It was neither the first nor certainly the last well managed business to convince itself that high operating costs mattered little if you were investing in new technology to ultimately replace the source of the inefficiencies. Thirty years later they were almost proved correct!

Whilst inauguration of the full electric Service between London and Brighton was the Major event of 1932/3 two other significant developments impacted on Eastern Section services. One, the completion of the Kent Coast line upgrade permitted the use of heavier locomotives, the other the availability of King Arthur Class 4-6-0's [new builds and those from the Central Section]

Details of a performance on the 17.10 from Folkestone indicated future possibilities. Waterloo was reached in 73 minutes, passing times: Ashford 15 minutes 12 seconds, Tonbridge 38¼ minutes, from there to Knockholt 16 minutes 24 seconds. The average from Smeeth to Paddock Wood was 74 miles per hour, [25.4 miles in 20¾ minutes], the load was comparatively light, 270 tons Gross and the locomotive King Arthur Class 4-6-0 No.803. [Ref.10]

The 80 minutes Charing Cross to Folkestone and return schedule including the stop at Waterloo Junction attracted most attention up to the outbreak of the Second World War, although other schedules, with allowance for additional stops were almost as demanding. Schools Class 4-4-0 No.910 in 1934, with 10 coaches including a Pullman Car, plus one luggage van reached London Bridge four and a half minutes within the 78 minutes schedule. It passed Ashford in 17 minutes 12 seconds, Tonbridge in 39¼ minutes and Knockholt in 57½ minutes.

C.J.Allen in spring 1934 published details received from various correspondents of their experiences between Folkestone and Charing Cross/Waterloo with loads between 265 and 370 tons. [Ref.11] A King Arthur Class 4-6-0 No.798, with 265 tons, passed Ashford in 15 minutes 48 seconds at 71 miles per hour and after a maximum of 73, Tonbridge in 38 minutes 43 seconds with a reduction to 34. It reached 43 miles per hour after the station, fell to 38 at Sevenoaks tunnel, rose to 62 at Dunton Green, fell to a minimum at Knockholt of 43, passed in 55 minutes 57 seconds and with 72 at Hither Green Waterloo reached in 74 minutes 18 seconds.

Two runs behind L1 Class 4-4-0's confirmed they could keep time with 300 tons. Number 1757 with 305 tons passed Ashford in 17 minutes 35 seconds, Tonbridge in 40¾ minutes, the maximum before was 74 miles per hour; the uphill stage to Knockholt took 19 minutes 25 seconds and Charing Cross was reached non stop in five seconds over 80 minutes. Number 1758 with an extra coach, 340 tons Gross made a slower start to Ashford, 18 minutes 57 seconds and after 78 miles per hour maximum passed Paddock Wood at 75.

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Southern [Eastern Section] London to Folkestone performance

At Paddock Wood, passed in 35 minutes 48 seconds, it was only eight seconds down. Then with a signal check and further ones later it reached Waterloo eight and a half minutes late, probably 77 minutes Net. The L1's had little leeway for any out of course delays when hauling such loads.

Four experiences with Schools Class 4-4-0's gave overall times of: 76½ minutes [76 Net] to Waterloo with 305 tons, No.901 - 78 minutes 50 seconds to Charing Cross with 310 tons, Waterloo passed in 76 minutes 25 seconds, No.900 - 81 minutes 20 seconds [78½ Net] with 315 tons, No.905 - 79 minutes 59 seconds with 370 tons, No.910 including one signal check. The fastest time to Tonbridge, was 39 minutes 10 seconds by No.900, after passing Ashford in 16 minutes 10 seconds at 77 miles per hour. The best time from Tonbridge to Knockholt was 18¼ minutes by No.910 [the heaviest train]. It passed Tonbridge at 31 miles per hour, entered Sevenoaks tunnel at 36, touched 61 touched Dunton Green and fell to 43 at Knockholt. Assuming the 36 miles per hour entering Sevenoaks tunnel was maintained an EDHP of 1,000-1,100, the average from Tonbridge to Knockholt was 775-825.

In the opposite direction Schools Class 4-4-0 No.901, with 270 tons, after initial delays for signals, passed New Cross in 10¼ minutes from Charing Cross and ran the uphill stretch to Knockholt in 15 minutes. It reached 78 miles per hour at Hildenborough, observed the Tonbridge slack very carefully to 20 and passed through in five seconds under 38 minutes. Ashford was passed after restrained running in 62 minutes 55 seconds and with even more restraint due to fog, Folkestone reached in 78 minutes 10 seconds.

An L1 Class 4-4-0 No.1758, with 405 tons from Charing Cross, passed New Cross in 10 minutes 10 seconds after signal checks, took 19 minutes 5 seconds more on to Knockholt, with 28 miles per hour at Elmstead, passed Tonbridge in 42 minutes 5 seconds after 75 before and Ashford 28½ minutes later. Speeds from Tonbridge were 61 miles per hour after Paddock Wood, 50 at Chart, 61 at Ashford, 51 at Sandling and 65 before Folkestone, reached in 85½ minutes from Charing Cross, 84 minutes Net, schedule 85 minutes. The L1 developed an EDHP of 825-875 between New Cross and Knockholt.

Allen later published three more experiences between Charing Cross and Folkestone with Schools Class 4-4-0's, [Ref.12] two recorded by O.S.Nock from the footplate. Number 916 with 300 tons, on the Saturday 12.55 ex Charing Cross ran to Folkestone in five seconds over 80 minutes. New Cross to Knockholt took 15 minutes 39 seconds, with full Regulator all the way; the cut off 18 percent at New Cross was increased to 29 percent at Elmstead and again at Knockholt. This particular driver drove on full regulator except downhill from Sevenoaks to Tonbridge and from Sandling Junction to Folkestone where the first port and three fifths open Regulator was employed. Speeds were 72 miles per hour at Dunton Green, 78 at Hildenborough and 71 twice between Tonbridge and Ashford with the cut off between 18 and 22 percent. The Net time was 75 minutes, the average EDHP between New Cross and Knockholt 850-900.

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Southern [Eastern Section] London to Folkestone performance

In the Up direction No.921 with 300 tons on the 17.10 from Folkestone, reached Waterloo in 76 minutes 20 seconds including one PWR slack. This driver set the Regulator at three fifths open from the start to Westenhanger with cut off advanced from 28 to 31 percent, after Westenhanger the Regulator was reduced to the first port with cut off varied from 25 to 31 percent. Speeds were a minimum of 38 miles per hour at Sevenoaks tunnel after 46 at Tonbridge, 61 maximum at Dunton Green and 46 minimum at Knockholt, the time from Tonbridge to Knockholt 16 minutes 53 seconds, the locomotive developed an EDHP of 740-790 under these easy working conditions. .

O.S.Nock timed another run as a passenger, Schools No.917 with 390 tons stopped at Waterloo in 74 minutes 49 seconds from Folkestone. Sandling was passed in 8 minutes 23 seconds at 47 miles per hour, [No.921 was 22 seconds quicker with 50, 917 developed 850-900 EDHP compared with 740-790]. Number 917 attained 79 miles per hour between Ashford and Tonbridge [921, 77]; at Tonbridge there was only two seconds difference in the passing times. It then ran the Tonbridge to Knockholt stage in 17 minutes 43 seconds, an average EDHP of 875-925. This performance has generated considerable enthusiasm but in Nock's own book on the Maunsell locomotives he included a record of No.912, also with 390 tons when the Tonbridge to Knockholt time was 17 minutes 7 seconds, an average EDHP of 900-950. The best Down performances quoted by Nock [Ref.13] [Ref.14] were with Schools No.919 with 305 tons, New Cross to Knockholt in 14 minutes 47 seconds and with No.912 with 410 tons, an excellent 15 minutes 20 seconds, an average EDHP of 940-990 and 1125-1225.

The Schools Class 4-4-0's could comfortably maintain the 80 minutes Folkestone schedule with 300 to 350 tons without the need for any high speeds. Driver Ely for instance with No.919 ran to Folkestone in 77 minutes including a signal check before Hither Green, he averaged 47 miles per hour from Hither Green to Knockholt, passed Tonbridge in 38½ minutes, 37 minutes Net, reached 72 maximum afterwards and fell to 58 minimum at Westenhanger. The average from Paddock Wood to Shorncliffe was 65.3 miles per hour. [Ref.15] In the Up direction R.A.H.Weight timed No.922 with 310 tons to Waterloo in 76 minutes 40 seconds including a signal check at Marden, which cost two and three quarters minutes. The maximum speeds were 74 miles per hour before Tonbridge and 73 at Hither Green, the minima 36 at the entrance to Sevenoaks tunnel and 55 at Knockholt. This was the 17.10, which reached 53 miles per hour at Westenhanger, the top of the rising grades from the Folkestone start. When trains reached 400 tons vigorous driving was required to keep time with a Schools Class 4-4-0, the locomotives were then hauling, including the tender six to seven times their own weight at average speeds of over 55 miles per hour.

The heaviest loads between Chislehurst and Folkestone were the Day Boat trains from Victoria to Dover or Folkestone and return regularly hauled by Lord Nelson Class 4-6-0's. "The Night Ferry" sometimes had a Lord Nelson.

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Southern [Eastern Section] Boat Trains

The inaugural Up "Night Ferry" service on October 12th 1935 was double-headed by Schools Class 4-4-0 No.939 and L1 Class 4-4-0 No.1750. The train weighed 440 tons and was taken up to Sevenoaks at a minimum of 43 miles per hour and to Knockholt at 49. Orpington was passed in 69 minutes and Victoria reached in 97 minutes. The EDHP between Tonbridge and Sevenoaks was 1,700-1,800 suggesting both locomotives were worked fairly hard. [Double heading often entailed easy working]. A pair of 4-4-0's was a frequent event, Company policy sought to avoid double heading involving either a King Arthur or Lord Nelson Class 4-6-0. The incoming boat, invariably docked late during the initial weeks.

The Down "Night Ferry" on October 14th [six Wagons Lits sleeping cars, four ordinary coaches and five vans, c.550-560 tons Gross] had L1 Class 4-4-0 No.1758 and D1 Class 4-4-0 No.1470, the next three days, Lord Nelson Class 4-6-0 No.858, L1 No.1758 with D1 No.1470 and L No.1764 with 1470. There were two Up trains on October 14th, Lord Nelson No.855 took five sleeping cars plus two vans, c.330 tons Gross and Schools No.939 with L1 No.1756 six sleeping cars, three corridor coaches and two vans, c.480 tons Gross. On October 16, 17 and 18th L1 No.1758 partnered by D1 No.1470 on the first two days and L Class 4-4-0 No.1764 on the third day had the duty.

Stewarts Lane Depot provided motive power for the majority of the scheduled day Boat trains, Dover had the Up 14.45 and many of the special trains, including those for members of the British Royal Family and visiting foreign dignitaries, inside cylinder locomotives were used for these duties.

Lord Nelson Class 4-6-0's Nos.863 and 852 timed in 1933 with 465 and 470 tons ran from Dover Marine to Victoria in 94 minutes 7 seconds and 96 minutes 23 seconds. Number 863, unchecked, ran close to schedule, i.e. Ashford 22 seconds late, schedule 27 minutes, after 52 miles per hour at Sandling Junction, Tonbridge in 51 minutes 25 seconds, schedule 51 minutes, with 74 maximum before, Sevenoaks tunnel was entered at 36 and the minimum at Knockholt was 38. Tonbridge to Knockholt in 18 minutes 43 seconds represented an average EDHP of 1,150-1,250, a slightly higher figure was developed earlier at Westenhanger. Number 852 reached 49 miles per hour at Sandling, took 20 minutes 22 seconds from Tonbridge to Knockholt, consequently it was two minutes late passing Bickley Junction, 77 minutes 28 seconds actual, whereas No.863 was only 20 seconds adrift.

A Lord Nelson link was established at Stewarts Lane in November 1935, of the ten locomotives allocated to the depot, seven were placed in the link, which naturally involved seven duties i.e. a) 11.00 Down Boat train - b) 08.50 to Ramsgate - c) shed day - d) 09.00 Down Boat train - e) 16.30 Down Boat train - f) on shed, or any odd item. In practice it was often employed on either the 15.00 Down Boat train or the 15.20 to Ramsgate. Return journeys were made with the 17.48 ex Ramsgate and providing the incoming boats arrived on time, the 15.21, 17.20, 18.55, 21.40 and 23.00 Up Boat Trains [23.00 was the return working of the Down 15.00].

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Southern [Eastern Section] Lord Nelson Class 4-6-0 performance

This in many ways admirable, although somewhat wasteful method of working was abandoned almost two years later, locomotives of all classes being used as appropriate, particularly on Boat Trains. One advantage of a free for all system was it permitted the use of a Lord Nelson on four Boat Train workings per day, in 1938 for instance: No.851 hauled a morning Folkestone Boat train, returned to Victoria on the 12.42, headed an "Agents" Boat train from Cannon Street at 16.22 and back on a similar Up working later in the evening. During peak periods at the end of the thirties locomotive demands were such that duties were assigned at very short notice. This led to few timetable improvements in terms of speed and with the light duties often allocated to the Lord Nelson's reports of slovenly running, commented on by many observers.

Holcroft made a return trip to Folkestone in 1936 on Lord Nelson Class 4-6-0 No.853 reported "steaming badly". With the 09.00 ex Victoria and 407 tons Tare the harbour siding at Folkestone was reached in 101 minutes, including two signal checks and a PWR slack before Tonbridge passed in 53 minutes. The locomotive was driven with Regulator half to three quarters open and cut off varied from 20 to 27 percent. Tonbridge to Folkestone Junction, reached seven and a half minutes late, took 46½ minutes, with Regulator three-quarters open and cut off between 20-30 percent, boiler pressure 200 pounds per square inch. In the Up direction Tonbridge was passed in 48 minutes and Knockholt in 69 minutes, including a PWR slack at Hildenborough. Boiler pressure was 215 pounds per square inch at Sandling Junction and 205 at Paddock Wood. Victoria was reached in 103 minutes after a two minutes early start from Dover. Holcroft stated the problem was inadequate Superheat, presumably due to either soot accumulation on the outside of the tube bundle or internal scale leading to priming rather than inhibition of hot gas flows.

A 1937 record with Lord Nelson Class 4-6-0 No.854 was better [Ref.16]. The "Night Ferry", 440 tons, was checked by signals initially, fell to 27 miles per hour on the 1/101 at Sydenham Hill and took 49½ minutes to pass Tonbridge. It continued to Folkestone in 41½ minutes including a PWR slack to 15 miles per hour after Paddock Wood, with 69 at Headcorn, 66 at Chart, 75 at Ashford, 61 minimum at Westenhanger and 77 maximum before Folkestone, Victoria to Dover 89½ minutes Net. The 24.2 miles from Headcorn to Sandling Junction were run in 17¾ minutes; this involved an EDHP of about 1275-1375.

The problems with the Lord Nelson Class 4-6-0's have been written about regularly and repetitively without drawing entirely satisfactory conclusions. Holcroft travelled on No.862 in August 1937 after a Kylchap blast pipe assembly had been installed. [Maunsell tried a Kylchap design whereas Bulleid preferred the Lemaitre assembly] Number 862 with the 15.00 ex Victoria and 376 tons Tare passed Knockholt in 31¼ minutes including signal checks at Herne Hill and after another signal check Tonbridge one minute late in 47½ minutes. It ran from there to Folkestone Junction, 41.4 miles in 39 minutes, this achieved with the small-valve of the Regulator and 20 percent cut off and reached Dover one and a half minutes early, schedule 95 minutes, 88 minutes Net.

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Southern [Eastern Section] Lord Nelson Class 4-6-0 performance

The Lord Nelson Class 4-6-0's could handle heavy trains, No.853 hauled the Night Ferry with a 524 tons Tare load, probably 545 tons Gross, [three days later a pair of 4-4-0's took 605/630 tons].

Victoria to Dover and return Boat Train schedules in the summer of 1937 were set at 95-96 minutes with one of the Friday evening Cannon Street departures allowed 94 minutes and the Thursday mail train 92 minutes.

The Lord Nelson Class 4-6-0's, fitted with Lemaitre exhaust systems produced some excellent performances. How much was attributable to the changed exhaust systems, rather than a more competitive footplate regime and better coal is debatable. Two logs published early 1939 suggest what was possible. [Ref.7]. Number 857, with 435 tons passed Sydenham Hill in 11 minutes 54 seconds from Victoria at 29 miles per hour and Knockholt in 29 minutes 57 seconds. Despite a PWR slack it was a quarter of a minute early at Sevenoaks [schedule 37½ minutes] and with a maximum of 78 miles per hour at Hildenborough, one and a half minutes ahead at Tonbridge [schedule 45½ minutes]. The stretch to Folkestone Junction took 37 minutes 5 seconds with a maximum of 75 miles per hour, it was almost six minutes ahead at the Junction station, 81 minutes 8 seconds and reached Dover Marine in 89½ minutes, 88¾ minutes Net; this was on the 11.00 allowed 95 minutes.

Number 855 with five tons more was four seconds ahead at Sydenham Hill, passed at 29 miles per hour, [The difference between being seated at the front of the train and the rear would be at least 15 seconds at this low speed] slower to Knockholt, 31 minutes 35 seconds at 35 miles per hour and on time at Sevenoaks, 37 minutes 28 seconds. The maximum before was 70 miles per hour at Dunton Green and afterwards 83 at Hildenborough. Paddock Wood was passed one minute early, 50½ minutes, before a PWR slack, and Ashford in 71½ minutes, schedule 72 minutes. Speeds were 70 miles per hour at Ashford, 62 maintained up the gradient to Westenhanger and 78 before Folkestone Junction, passed in 83 minutes 48 seconds. With an easy finish, Dover Marine was reached in 93 minutes 50 seconds. Numbers 857 and No.855 passed Ashford at 70 miles per hour, No.857 then ran the 13.8 miles to Folkestone Central in 12 minutes 42 seconds, No.855 in 24 seconds less. Number 855 developed 1,285-1,385 EDHP before Westenhanger, a power output well within Lord Nelson capability, in practice seldom required.

Lord Nelson and King Arthur Class 4-6-0's were permitted to work via the Maidstone route from July 1937, the Up "Golden Arrow" from Dover ran that way on September 10th of that year loaded to 465 tons and headed by Lord Nelson Class 4-6-0 No.865. A King Arthur Class was noted hauling an equally heavy train on the same day via Tonbridge. [Ref.18]

The "Railway Gazette" during this period reported that No.863, with 450 tons, had run the "Golden Arrow" to time on a 90 minutes special schedule. R.A.H.Weight timed No.859 with 490 tons when Dover was reached in 95½ minutes, 95 minutes Net.

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Southern [Eastern Section] Stirling 4-4-0 performance 1932-39

Whilst Schools Class 4-4-0's virtually monopolised the Folkestone expresses and the Lord Nelson's the Boat trains with the exception of the "Night Ferry" and peak Summer extras, the older smaller locomotives continued to perform sterling work elsewhere. The rebuilt Stirling 4-4-0's, despite their somewhat anachronistic appearance, emphasised by those with outside framed tenders continued to handle some reasonably fast trains until the outbreak of War.

S.A.W.Harvey, a great enthusiast for the inside cylinder 4-4-0 Classes, recorded their performance on the former South Eastern Main Line. Typical F1 Class 4-4-0 duties were the stopping trains from Ramsgate to Ashford via Canterbury West. F1 No.1151 in July 1933 with 150 tons was two minutes early at Sturry and then dropped a few seconds on the five minutes schedule to Canterbury. Trains at times ran over this section somewhat faster, L Class 4-4-0 No.1774 with only four coaches on the 07.55 from Margate ran the 11.45 miles from Minster to Canterbury the next stop in 12 minutes 34 seconds with a maximum of 76 miles per hour at Sturry. Wye, 9.95 miles from the Canterbury restart was passed in 11 minutes 48 seconds at 74 miles per hour and Ashford reached in 17 minutes 55 seconds after a signal check, 17 minutes Net. Schedules for the two stages were 15 and 20 minutes, running on the morning train to Hastings that day were definitely lively.

An F1 Class 4-4-0, No.1002 with 240 tons on a Dover to Ashford working ran the Folkestone Central to Ashford stage in 19 minutes including a bad signal check before Ashford, 18½ minutes Net. The average speed from Sandling Junction to Westenhangar was 39 miles per hour and to Smeeth 58, the elderly 4-4-0 probably attained 37 on the 1/280 before Sandling and touched 65 past Smeeth.

The Stirling 4-4-0's often ran as pilots, on August 19th 1939 for instance F1 No.1156 with E Class 4-4-0 No.1166 on the Saturday 12.00 Charing Cross to Deal and back on the 16.10 ex Deal with L1 Class 4-4-0 No.1785. The load was ten coaches plus one Pullman Car, schedule 100 minutes to Shorncliffe with stops at Tonbridge and Ashford and on the return 127 minutes from Deal to Charing Cross with stops at Dover Priory, Folkestone Central and Waterloo [the last stage in 82 minutes]. The following Saturday No.1156 was pilot to L1 No.1784 on the same train although with two coaches less.

Earlier in the same year, on Maundy Thursday, F1 Class 4-4-0 No.1084 hauled the through service ex Birkenhead GWR from Redhill to Ashford. The train made up of five GWR coaches plus a restaurant car arrived at Ashford two minutes late. Assuming a punctual departure from Redhill the 4-4-0 ran the 46.6 miles in 65 minutes including time spent at the Tonbridge stop. The second train from the GWR that day, included the three through coaches from Bournemouth attached at Guildford, and consisted of eight coaches plus a restaurant car in total, was hauled by a D1 Class 4-4-0 No.1246. The 15.00 ex Charing Cross [ten coaches, one Pullman car and two vans] had another D1 No.1487 with a Stirling B1 Class 4-4-0 No.1445 as pilot to Ashford, where the four coaches for Margate via Canterbury were detached.

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Southern [Eastern Section] the inside cylinder 4-4-0's

S.A.W. Harvey later in the year timed D1 Class 4-4-0 No.1246 with 360 tons from London Bridge to Ashford. The minimum at Knockholt was 35 miles per hour, the maxima at Dunton Green and Hildenborough 75 and 78 respectively. The restart from Tonbridge was slow, eight and a half minutes to Paddock Wood but then No.1246 reached 72 miles per hour and fell only to 60 at Chart, the reward for this fine performance, a stop for signals lasting three and a half minutes outside Ashford station.

Tonbridge depot had six D Class 4-4-0's. Many of their duties were on the Central section but at times they appeared on the South Eastern Main line. Number 1737 in 1935 with 220 tons on the 20.33 Ashford to London Bridge [schedule 71 minutes non stop] passed Tonbridge in 29¼ minutes and Orpington in 50¾ minutes before signal checks. The maximum between Ashford and Tonbridge was 68 miles per hour, the minimum entering Sevenoaks tunnel 38. The E Class 4-4-0's also handled some summer weekend expresses, including the Saturday 14.31 Ramsgate to New Cross Gate [through coaches from Margate] booked non stop from Canterbury West to Redhill in 78 minutes. Usually it consisted of six non corridor coaches. The corresponding Down service left New Cross Gate at 09.51 and reached Ramsgate at 12.23, the schedule between Redhill and Ramsgate the same as the Up working but including a stop at Ashford, i.e. 106 minutes.

The H Class 0-4-4 Tank's handled some semi-fast's in the Ashford area. The 15.18 from Dover Marine [14.05 ex Margate] to Victoria via Maidstone was an H duty as far as Ashford [non stop Shorncliffe to Ashford] although the load was light, usually only four coaches. At times the H's handled considerably heavier trains, for instance in 1937 No.1158 took the 13.15 ex Charing Cross forward from Ashford to Dover with nine coaches, probably 300 tons Gross.

The L and L1 Class 4-4-0's replaced on the Folkestone expresses by the Schools Class 4-4-0's continued to perform well when required although increasingly employed on light stopping trains.

Two runs over the short stage from Ashford to Folkestone confirm the quality of work obtainable from the L Class 4-4-0's fitted with 19½ inches cylinders, a Maunsell superheater and a boiler rated at 180 pounds per square inch. Number 1769 with 340 tons Tare, probably 360-370 Gross, on the Saturday 12.00 ex Charing Cross attained 53 miles per hour on the initial adverse grades to Smeeth and passed Westenhanger at 55. The time to Sandling Junction was 12 minutes 44 seconds [schedule 12 minutes] and after a maximum of 68 miles per hour, to the stop at Folkestone Central 17 minutes 44 seconds [schedule 18 minutes]. Two years later Number 1777 on the 16.38 ex Cannon Street, [according to the W.T.T. limited to seven bogie coaches] with 200 tons reached 58 miles per hour at Smeeth, 64 at Westenhanger and 74 at Sandling Junction, the time to Folkestone Central was 16 minutes, schedule 17 minutes. Number 1769 developed an EDHP of 780-830 at Smeeth and No.1771 at least 700, as it was still accelerating the figure was probably higher.

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Southern [Eastern Section] L and L1 Class 4-4-0's performance

Two further runs, with a Superheated E Class 4-4-0 and a J Class 0-6-4 Tank afford interesting comparisons. The E, No.1275 with 275 tons on a National Sunday League excursion, starting from Ashford, accelerated to 56 miles per hour at Smeeth and reached Folkestone Central in 17 minutes 15 seconds after a maximum of 70. The J, No.1595 with 190 tons passed Smeeth in 6 minutes 35 seconds, Westenhanger in 10 minutes 48 seconds at 56 miles per hour and reached Folkestone in 16 minutes 45 seconds after a maximum of 64. This run timed by J.N.Faulkner has been published many times. [Ref.19]. The E developed 725-775EDHP after Smeeth, the J 480-530.

L1 Class 4-4-0's still hauled some 80 minutes Folkestone expresses, both relief and as replacements for Schools Class 4-4-0's. S.A.W.Harvey recorded three with the 77 minutes schedule from Waterloo to Folkestone. Numbers 1786 and 1758 with light trains, 250 and 255 tons, passed New Cross in 6 minutes 57 seconds and 6 minutes 44 seconds. Number 1786 then ran the adverse stretch to Knockholt in 14 minutes 58 seconds; No.1758 with a PWR slack was 53 seconds slower but both passed Tonbridge early, 35 minutes 5 seconds and 34 minutes 55 seconds [schedule 36½ minutes]. The first passed Ashford one minute early after a PWR slack [schedule 62 minutes] and stopped at Folkestone in 75 minutes 38 seconds, 74 minutes Net. Number 1758 after three checks [two signal and one PWR] between Tonbridge and Ashford ran from there to Folkestone Central in 14 minutes 7 seconds, Waterloo to Folkestone actual was 82 minutes 52 seconds, Harvey considered the various checks had cost ten minutes.

The original Wainwright/Surtees 4-4-0's maintained the 80 minutes non stop Charing Cross to Folkestone Central schedule with 250 tons and vigorous driving, the L1 Class 4-4-0's had five to six minutes in hand. On the third occasion L1 No.1788 with 350 tons passed New Cross in 7 minutes 23 seconds and ran the 11.7 miles to Knockholt in 17 minutes 47 seconds. The two minutes lost to Sevenoaks, 30 minutes 57 seconds were gradually regained, 83 seconds late at Tonbridge, 55 seconds at Ashford and finally 28 seconds to the Folkestone stop. Numbers 1786 and 1788 developed 750-800 and 810-860 average EDHP respectively between New Cross and Knockholt.

An interesting example of L Class 4-4-0 performance was observed in the Up direction on another National Sunday League excursion, from Ramsgate to Bromley South via Canterbury West and Ashford. Number 1764, with a full set of Maunsell modifications and 280 tons passed Minster Junction in 6 minutes 5 seconds, attained 70 miles per hour before and following a PWR slack and reached Canterbury West exactly to schedule in 22 minutes. Ashford was passed in 19 minutes from the Canterbury restart after a maximum of 60 miles per hour at Chilham and a signal check. The 42.3 miles from Ashford to Orpington took 49 minutes 8 seconds with maxima of 77 miles per hour between Ashford and Tonbridge, 65 at Dunton Green and 75 at Orpington, the minimum at Knockholt was 50. Bromley South was finally reached in 79 minutes 19 seconds from Canterbury, schedule 78 minutes, checks after Orpington cost at least ten minutes.

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Southern [Eastern Section] 4-4-0 performance Ashford to Tonbridge 1928-38

The scheduled excursions provided the inside cylinder 4-4-0's with regular employment, often as has been noted involving by Southern standards relatively lengthy journeys. On the 20th August for instance the 18.20 Margate to Norwood Junction via Ashford and Redhill had an E Class 4-4-0 No.1547 and the 19.40 to Forest Hill by the same route an L Class 4-4-0 No.1766.

Mr Harvey prepared an analysis of his experiences between Ashford and Tonbridge over the decade 1928-38 [92 times on trains passing both stations].

L1 Class 4-4-0's featured 32 times: average train weight was 320 tons and the average speed 65.4 miles per hour. He considered the best run was with 340 tons when the 26.6 miles were covered in 22 minutes 56 seconds with a maximum of 76 miles per hour.

There were 24 records with Schools Class 4-4-0's, average weight 345 tons, average speed 66.3 miles per hour, the best performance: with 380 tons, 22 minutes 9 seconds, maximum 85 miles per hour.

The ex L&SW inside cylinder 4-4-0's appeared 27 times, 19 of them were with L12 Class 4-4-0's, average weight 305 tons, average speed 65.2 miles per hour, best performance: with 280 tons 22 minutes 31 seconds, maximum 80 miles per hour. The smaller T9 Class featured on eight occasions, 275 tons average, best performance: with 190 tons, 22 minutes 27 seconds, maximum 80 miles per hour.

The D1 Class 4-4-0's, on nine occasions, average weight 290 tons, average speed 63.8 miles per hour, best performance: with 225 tons, 23 minutes 27 seconds, maximum 79 miles per hour.

These results indicate a very high level of performance, particularly as many of his journeys were made either on summer Saturdays or with excursion's, although it should be emphasised that Mr Harvey encouraged the footplate crews to perform well. They provide a picture of the capabilities of locomotives in average condition but not necessarily of their day to day performance.

The rebuilt Stirling 4-4-0's regularly hauled passenger trains up to the summer of 1939 over the Swanley to Ashford route. The trains were usually light, fortunately considering the gradients particularly on either side of Maidstone, which enabled the elderly locomotives to maintain schedules.

The Sunday 08.25 Victoria to Ashford in 1934 with F1 Class 4-4-0 No.A149 and 95 tons was on time at Bromley and ran from there to Ashford in a total running time of 76 minutes 40 seconds, [schedule 75 minutes with stops at St. Mary Cray, Swanley, Wrotham, Maidstone, Bearstead and Lenham]. No.A149 was on time at Lenham and then lost 95 seconds on the downhill stretch to Ashford. The two difficult sections from Maidstone to Bearstead and from there to Lenham were run in 6 minutes 8 seconds and 10 minutes 25 seconds [schedules six and 11 minutes].

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Southern [Eastern Section] the Maidstone route

An F1 Class 4-4-0 No.1078 ran from Maidstone to Malling in 9 minutes 47 seconds, to the next stop at Wrotham in 9 minutes 50 seconds [schedules nine and ten minutes]. The train was running minutes early after a punctual start from Wrotham before signal checks led to an arrival at Bromley South a minute late. Some ten months earlier, July 1933, F1 Class No.1140 with 250 tons took 18¼ minutes to pass Wrotham, [10.35 miles and 230 feet higher], from the Maidstone start, schedule 16 minutes. It reached 60 miles per hour at Kemsing, reduced the lateness to 20 seconds at Swanley, was on time at Bromley South after a stop at St. Mary Cray and ran from there non stop to Victoria via the Catford Loop line in 23¼ minutes, 21¼ minutes Net,

High speeds occurred on the sharp favourable gradients of the Maidstone route. Superheated E Class 4-4-0 No.1275 on a 275 tons National Sunday League excursion, booked non stop from London Bridge to Ashford via Swanley took 23½ minutes over the initial 9.4 miles to Chislehurst due to signal checks. The next 42.5 miles to a signal check before Ashford were run in 56 minutes 20 seconds pass to stop, the 22.4 miles from Swanley to Maidstone occupied 25½ minutes with 78 miles per hour maximum between Wrotham and Malling. The minimum on the 1/60 after Maidstone was 28 miles per hour and the average from Maidstone to the summit at Lenham 40.7. The train stopped outside Ashford station in 79 minutes 50 seconds, final time to the station was 83½ minutes, 71 to 72 minutes Net. The average EDHP from Maidstone to Lenham was 725-775, the same figure, as already noted, subsequently developed before Westenhangar.

L Class 4-4-0 No.1778, with a light train, 145 tons on the 09.10 Victoria to Dover in 1938 ran Swanley Junction to the next stop at Maidstone in 26 minutes 40 seconds, two and a quarter minutes inside schedule. It then climbed the 1/60 to Bearstead at a steady 30 miles per hour, an EDHP of 850-900, this probably required full Regulator working with an advanced cut off.

Norman Harvey recorded performance shortly before the inauguration of electric workings to Maidstone in 1939. H Class 0-4-4 Tank No.1266, with 125 tons on the 18.15 ex Victoria stopped at Bromley South, Otford and all stations to Maidstone, the time from Bromley South to Otford was 23 minutes. Speeds were 21 miles per hour at Bickley, 50 before Swanley and 48 at Eynsford. On the Saturday 19.55 Victoria to Ashford an E Class 4-4-0 No.1273, also with 125 tons kept the ten minutes schedule from passing Swanley to the Otford stop. An F1 Class 4-4-0, often No.1215 regularly hauled the 19.05 Ashford to Victoria in 1938, the usual load four corridor coaches but on the 27th December it was seven, challenging for a 60 years old design. [Number 1215 was built in 1891 and rebuilt 15 years later]. The train stopped at all stations, which would have helped on the climbs.

Following the Maidstone electrification in July 1939 the H Class 0-4-4 Tank's retained some semi-fast duties east of Maidstone. The 13.56 Ramsgate to Maidstone stopped only at Lenham between Ashford and Maidstone, schedule to Lenham was 16½ minutes with a further 14 minutes to Maidstone.

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Southern [Eastern Section] Summer Peak at Ashford 1936-39

H Class 0-4-4 Tank No.1307 with 185 tons stopped at Lenham in 15 minutes 43 seconds after passing Hothfield and Charing in 6 minutes 25 seconds and 9 minutes 50 seconds. Another time it took a minute longer to Hothfield and two minutes more to the Lenham stop. Number 1523 with 230 tons passed Hothfield in 7 minutes 58 seconds, Charing in 12 minutes 28 seconds and reached Lenham in 18¾ minutes. The average from Hothfield to Charing was 51 miles per hour by No.1307 and 35.5 No.1523. This represented 600-650 and 450-500 EDDHP, No.1307's performance must have been close to if not at the absolute maximum. On restarting from Lenham the three respective trains ran to Maidstone in 12 minutes 43 seconds, 11 minutes 5 seconds and 11 minutes 44 seconds, maxima on the latter two runs 68 miles per hour [Ref.20] maintained between Hollingborne and Bearstead.

Peak summer traffic on the South Eastern Main line was always heavy and Ashford, a major junction always particularly busy. R.A.H.Weight regularly reported happenings. He noted 15 Up and Down Boat trains in a three hours period on August 1st 1936, the following Saturday 19 in three and a half hours. The heaviest Boat train, 13 coaches, was hauled by Lord Nelson 4-6-0 No.855. The L and L1 Class 4-4-0's were usually limited to nine coaches on Boat Train duties despite regularly hauling 11 coaches on other expresses. During the two periods of observation he noted: eight Lord Nelson and three King Arthur Class 4-6-0's - 13 L1 and nine L Class 4-4-0's - 13 D and eight E Class 4-4-0's [Weight considered the 4-4-0's were running particularly well] - Ten D1 and three E1 Class 4-4-0's - four B1 and six F1 Class 4-4-0's [he noted several nine to eleven coach trains hauled by a pair of rebuilt Stirling's] - six C Class 0-6-0's - eight H Class 0-4-4 Tank's - four J Class 0-6-4 Tank's - one O1 Class 0-6-0 - ten N Class 2-6-0's - one R1 Class 0-4-4 Tank [No. 2380 from Lydd to Ashford with the through coaches to London].

Between 14.50 and 19.35 on the 31st July 1937 Weight observed 55 expresses including 29 Boat trains. Locomotives involved were: nine Lord Nelson's and six King Arthur Class 4-6-0's - nine Schools Class 4-4-0's - seven Maunsell 2-6-0's - 28 inside cylinder 4-4-0's [Classes L, L1, D1 and E1] - one T9 Class 4-4-0 - three J Class 0-6-4 Tank's [including No.1597 working Ramsgate to Victoria via Ashford and Maidstone]. Eighty-three trains were seen on the 30th July 1938, during a six and a half hours period. Motive power this time was - one Lord Nelson - eleven King Arthur's - twelve Schools - 29 inside cylinder 4-4-0's - one T9 - 30 Maunsell 2-6-0's.

The Ashford to Hastings route although not one associated with fast trains occasionally witnessed quick running. A D Class 4-4-0 No.1750 in 1938 with only 95 tons ran the 8.5 miles from Ashford to Appledore in 10 minutes 7 seconds start to stop with a maximum of 73 miles per hour. In the eastbound direction B1 Class 4-4-0 No.1446 with 130 tons ran the 15.3 miles from Rye to Ashford in 20 minutes. It attained 60 miles per hour on the level start from Rye and fell to 43 at the top of the 1/100 Ham Street bank. The fastest schedule between Rye and Ashford was 22 minutes and in the reverse direction 11 minutes between Ashford and Appledore.

Date: July 7th 2002

Southern [Eastern Section] Hastings Branch 1937-38

The Tonbridge to Hastings passenger service was monopolised by four coupled locomotives, the only exceptions were one passenger working for an N1 Class three cylinder 2-6-0 in 1938/9, 14.58 ex Hastings which called at all stations and the occasional appearance of a C Class 0-6-0.

The introduction of the Schools Class 4-4-0's, after the infrastructure improvements in July 1931, provided a welcome increase in power, they had a fair reserve with the permitted 340 tons on the schedules then in force. The Schools Class from then on hauled most of the more important trains, although the L and L1 Class 4-4-0's still appeared on the route regularly. A variety of motive power appeared at peak periods, for instance there were 23 departures towards Tonbridge from Hastings on August Bank Holiday 1938 between 19.00 and 23.00. Locomotives were: 12 Schools Class 4-4-0's - 11 inside cylinder 4-4-0's [from the following Classes; three L, two L1, three D, one E1 and two T9]. Two excursions from the Eastborne direction travelling through to Ashford were hauled by a B4X Class 4-4-0 and an N Class 2-6-0, in the opposite direction a C Class 0-6-0 and a D Class 4-4-0 were used.

Norman Harvey, as a young enthusiast, spent a week on the Tunbridge Wells Central to Hastings section and noted on seven consecutive journeys, six of them hauled by locomotives from St. Leonard's depot, considerable gains on schedule. The heaviest train was the Saturday 15.25 ex Charing Cross, 390 tons Gross with which Schools Class 4-4-0 No.906 passed Wadhurst in nine and three quarters minutes from Tunbridge Wells and ran to the stop at Crowhurst in 30 minutes [schedule 33 minutes].

On an August Saturday, later in the same year, 1937, the 18.40 Hastings to Charing Cross booked non stop from St. Leonards to Tunbridge Wells Central, 27.3 miles, in 44 minutes had L1 Class 4-4-0 No.1786 with nine coaches. The actual time was 42 minutes 21 seconds; the 10.3 uphill miles from Robertsbridge to Wadhurst took 15 minutes 21 seconds.

The C Class 0-6-0's hauled the occasional passenger train between Tonbridge and Hastings. The 09.12 Tonbridge to Hastings, which ran in the peak summer months, booked over the 23.3 miles from Tunbridge Wells to Crowhurst in 31 minutes start to stop, was a regular C duty in 1938, the load usually six non-corridor coaches.

The extra Down trains on Maundy Thursday evening that year were hauled by Classes E, L and L1 4-4-0's. The Easter Monday 11.28 Tonbridge to Hastings, made up of nine coaches, undoubtedly challenged F1 Class 4-4-0 No.1249, although it had a C Class 0-6-0 as pilot as far as Wadhurst.

On the first Saturday of the summer service that year the 08.25 Charing Cross to Hastings and the return working from Hastings, the 12.55 were hauled by E Class 4-4-0 No.1516 with a B1 Class 4-4-0 No.1101 as pilot. The 12.55, after the addition of the Bexhill portion at Crowhurst, loaded to ten coaches plus a Pullman car.

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Southern [Eastern Section] Alternative routes

Many summer Saturday and Bank Holiday extras to Hastings ran from London to Tonbridge via Edenbridge, Oxted and Crowhurst South Junction, some ran via New Cross Gate, East and South Croydon and others via the Mid Kent and Elmers End. The alternative routes available to the Southern in Kent, Surrey and Sussex, useful in emergencies also enabled relief trains to depart ahead of the scheduled service without delaying it. The 15.15 relief to the 15.25 Charing Cross to Hastings ran via Oxted which enabled the 15.25, non stop to Crowborough to pass Tonbridge ahead of it, "the first shall be last". The 18.59 relief to the 19.10 ex Hastings travelled via Otford and Swanley after Sevenoaks enabling the 19.10 to reach London ahead of it.

Special trains regularly used alternative routes; passengers often subjected to a gentle stroll through the Garden of England. Hop-pickers' trains, for both the pickers and their friends visiting at weekends, for instance frequently ran via the Crowhurst South Junction spur and Oxted. The number of Hop-pickers' trains could be considerable; on September 8th 1935 there were 21 evening arrivals at London Bridge. A year later, Sunday 15th September, 23 specials arrived at London Bridge from 19.35 to 23.04. Three years later most special trains over the weekends September 3-4 and 10-11 used the Oxted route between London and Tonbridge. Locomotives used on Hop pickers' specials in 1935 were: B1, F1 and D Class 4-4-0's and O and O1 Class 0-6-0's, three years later E and superheated E Class 4-4-0's also.

Locomotive performance when scheduled services were diverted to alternative routes was at times good. S.A.W.Harvey travelled on the 15.25 ex Charing Cross on February 27th 1938 via East Croydon and the Oxted line. An L Class 4-4-0 No.1777 with 270 tons starting from New Cross Gate attained 32 miles per hour on the 1/100 to Forest Hill and 54 at Norwood Junction. After checks for signals at Windmill Bridge Junction the L ran well on the adverse gradients to MP17¼. Speeds were 50 miles per hour on the easier stretch after Upper Warlingham, 46 at MP17¾ summit, 60 at Oxted and 64 past Lyghe Halt after the slack for the Crowhurst spur. Tonbridge was reached one minute early in 49 minutes 7 seconds, 47¾ minutes Net. Number 1777 developed at least 800-850 EDHP whilst climbing the 1/100 to Forest Hill.

C.J.Allen in 1941 published some pre-war experiences on the Hastings service from correspondents. [Ref.21] The 08.48 ex Hastings, 09.03 from Crowhurst was allowed 33 minutes to pass Tunbridge Wells and 78 minutes to Cannon Street. It was usually a light train and twice Schools Class 4-4-0's Nos.934 and 903 with 240 tons reached Cannon Street in 78 minutes 39 seconds and 77 minutes 30 seconds, 71 and 75 minutes Net. Schools No.908, with 380 tons ran from Crowhurst to Tunbridge Wells Central in 31 minutes 21 seconds. It passed Battle, 2.05 miles in 5 minutes 42 seconds with 67 miles per hour reached after the station and fell to 45 at Mountfield. Speed rose to 67 miles per hour at Robertsbridge, 8.05 miles, passed in 11 minutes 57 seconds. Etchingam, 10.2 miles, was passed in 13 minutes 51 seconds at 61 miles per hour and the minimum at Wadhurst, 18.4 miles, passed in 24 minutes 25 seconds was 36.

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Southern [Eastern Section] Hastings Line performance

An L Class 4-4-0 No.1779 with 345 tons made a faster start from Crowhurst than Schools Class 4-4-0 No.908, at Battle it was 37 seconds ahead. With 65 miles per hour afterwards, 55 minimum at Mountfield it was 38 seconds ahead at Robertsbridge passed at 71 and past Etchingam in 13 minutes 9 seconds. The long climb to Wadhurst then emphasised the greater power of the Schools', No. 1779 passed Wadhurst in 25 minutes 38 seconds at 29 miles per hour and reached Tunbridge Wells in 32 minutes 40 seconds. Etchingam to Wadhurst took 10 minutes 34 seconds behind No.908 with 380 tons compared with 12 minutes 21 seconds by No.1779. The Sunday 20.10 ex Hastings [schedule Crowhurst to Wadhurst 27 minutes non stop] with L1 Class 4-4-0 No.1782 and 335 tons passed Battle in 6 minutes 12 seconds, Etchingam in 13 minutes 35 seconds and reached Wadhurst in 26 minutes 17 seconds. Times for L1 No.1789 with one more coach 385 tons were: Battle, 5 minutes 30 seconds - Etchingam 13 minutes 28 seconds - Wadhurst 26½ minutes. The 4.9 miles from Wadhurst to Tunbridge Wells took 8 minutes 10 seconds and 8 minutes 4 seconds [schedule eight minutes].

L1 Class 4-4-0 No.1782 continuing from Tunbridge Wells ran to London Bridge the next stop in 43 minutes 39 seconds, schedule 44½ minutes. Number 1789 ran to a Hither Green stop in 37 minutes 17 seconds and from the restart reached London Bridge in another 8 minutes 15 seconds. The two locomotives ran the Tonbridge to Knockholt stretch in 20 minutes 5 seconds and 18 minutes 47 seconds, 625-675 and 750-800 average EDHP. The best Schools Class performances over this section were by No.934 with 345 tons, 18 minutes 5 seconds, 750-800 EDHP and 19 minutes 6 seconds and 18 minutes 55 seconds by Nos.922 and 923, with 380 tons, 770-820 DHP.

Allen tabulated details of three journeys on the 15.25 ex Charing Cross, [schedule 79 minutes to the first stop at Crowhurst]. Schools Class 4-4-0's Nos. 906 and 903 with 275 and 295 tons reached Crowborough in 78 minutes 13 seconds and 79 minutes 42 seconds, 77 and 78 minutes Net. Number 906 ran the New Cross to Knockholt stretch in 15 minutes 43 seconds, an average EDHP of 690-740. Number 903 reached 54 miles per hour at Orpington, fell to 46 at Knockholt, reached a maximum of 70 before Tonbridge passed 50 seconds late in 39 minutes 50 seconds and with minimum and maximum of 24 and 36 was 30 seconds late at Tunbridge Wells, 49 minutes. There was a PWR slack before Wadhurst. Number 906 ran from Tunbridge Wells to the Crowhurst stop in 29 minutes 22 seconds, a gain on schedule of one minute.

An L1 Class 4-4-0 No.1785 with 345 tons checked initially by signals, passed New Cross in 10 minutes 24 seconds and Knockholt in 27 minutes 54 seconds, an average EDHP of 800-850. There was a PWR slack before Tonbridge, then a struggle between Tonbridge and Tunbridge Wells, 14 minutes 14 seconds, passed six minutes late. It then ran to the Crowhurst stop in 28 minutes 26 seconds, 79 minutes Net overall. [This Net time assumes much of the lost time between Tonbridge and Tunbridge Wells resulted from the PWR slack and loss of impetus for the steep gradient on the Hastings branch at Tonbridge].

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Southern [Eastern Section] Hastings Line performance

The 15.25 with L Class 4-4-0 No.1767 on three days in 1939, the 2nd, 3rd and 4th August, was observed passing Tunbridge Wells Central two and a half to three minutes late each day.

Allen gave details of one heavy Down train. Schools Class 4-4-0 No.902 with 380 tons ran from London Bridge to the next stop at Sevenoaks in 28 minutes 21 seconds with minima of 34 and 42 miles per hour at Elmstead and Knockholt and a maximum of 66 at Dunton Green. Sevenoaks to Tonbridge, the next stop took 11 minutes 34 seconds with 75 miles per hour maximum, the continuation to Tunbridge Wells, 11 minutes 42 seconds with a maximum of 31 and from there to Battle 28¾ minutes. Wadhurst was passed in nine and a half minutes, maximum after a PWR slack was 69 miles per hour. The total running time from London Bridge to Battle was 80 minutes 21 seconds, 79½ minutes Net [schedule 81 minutes].

R.A.H.Weight recounted in 1941 how shortly before the outbreak of war he travelled from Tunbridge Wells to Crowhurst behind E Class 4-4-0 No.1176, built in 1907 with a 265 tons train. Wadhurst was passed in nine and three quarter minutes from the start, the 18.3 miles from there to the Crowhurst stop took 20 minutes 55 seconds, Battle was passed in 27 minutes and the arrival was 80 seconds early. Maxima were 65 miles per hour at Etchingham and 62 at Battle, minimum at Mountfield 38. Although the Hastings line trains attracted much attention, the amount of adverse gradients in such a short distance and the reduced loading gauge appealed, in practice locomotive performance was not up to the high standard of the Folkestone route. The schedules, to be fair to the footplate crews did not require it and it could be argued that a PWR slack or other out of course check on an adverse gradient between Tonbridge and Hastings had a disproportionate effect on overall punctuality. The Hastings line trains were however scheduled at slower speeds over the common route between Tonbridge and London Bridge.

S.A.W.Harvey compiled a set of comparative locomotive records over the 4.9 miles between Tonbridge and Tunbridge Wells Central. Horsepower calculation over a short start to stop section is difficult and Harvey only observed speeds on some of his runs, nevertheless the figures are of interest. He recorded 90 runs involving seven different Classes of locomotive.

L1 Class 4-4-0's featured on 14 occasions, average load 304 tons, average time 12 minutes 38 seconds, the best performance as judged by Mr. Harvey: No.1788, 9 minutes 55 seconds with 245 tons.

Thirteen L Class 4-4-0's, average load 287 tons, average time 12 minutes 18 seconds, best performance: No.1770, 10 minutes 54 seconds with 340 tons.

Ten I3 Class 4-4-2 Tanks's [presumably on Tonbridge to Brighton trains] average load 186 tons, average time 11 minutes 47 seconds, best performance: No.2081, 10 minutes 20 seconds with 208 tons.

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Southern [Eastern Section] Tonbridge to Tunbridge Wells

Seven D1/E1 Class 4-4-0's, average load 198 tons, average time 12 minutes 14 seconds, best performance: No.1504, 11 minutes 38 seconds with 253 tons.

Four T9 Class 4-4-0's, average load 218 tons, average time 11 minutes 51 seconds, best performance: No.301, 10 minutes 29 seconds with 234 tons.

Three N1 Class 2-6-0's, average load 318 tons, average time 11 minutes 46 seconds, best performance: No.1878, 11 minutes 6 seconds with 318 tons.

The Schools Class 4-4-0's not surprisingly featured far more frequently than any other, 39 times, average 344 tons, average time 11 minutes 6 seconds, best performance:, No.901 10 minutes 8 seconds with 360 tons.

The figures are particularly interesting for the L, L1 and Schools Class 4-4-0's. The T9 Class 4-4-0's, N1 Class 2-6-0's and the D1 and E1 Class 4-4-0's were hauling excursions and the I3 Class 4-4-2 Tank's, Tonbridge to Brighton trains. The overall schedules and often the loads were less demanding in the case of the excursions, the Brighton trains started from "cold" at Tonbridge. Start to stop schedules from Tonbridge to Tunbridge Wells varied. The W.T.T. for June 1937, indicated 11 minutes for the London to Hastings trains, with two allowed an extra minute, ten or 11 minutes for the Brighton trains. The Schools' maintained schedule overall, the others did not; this was undoubtedly an awkward stretch of railway.

The introduction in 1932-3 of the King Arthur Class 4-6-0's and the Schools Class 4-4-0's to the Kent Coast led to an improvement in the Victoria to Margate non stop service in 1933. In practice schedules were restored to the former SE&C ones of some twenty years previous, however the trains were heavier but there was a chance that now the schedules could be kept. One observer by 1933 had noted four Schools', six Lord Nelson Class 4-6-0's and seven King Arthur's at work on the Kent Coast trains.

C.J.Allen had one of his days out South of the Thames to sample the revised schedules. A King Arthur Class 4-6-0 No.797, with 385 tons was two minutes late at Swanley, 28 minutes 55 seconds from Victoria, after minima of 26 and 34 miles per hour at Sydenham Hill and Bickley. There was a PWR slack before Rochester; No.797 was still two minutes adrift at Sittingborne, 61 minutes 7 seconds and the 31 minutes schedule from there to the Margate stop was kept exactly. This required 68 miles per hour before Sittingborne, 72 before the Faversham slack, 25 for the Junction, and 64, 46, 61, 48 and 71 from there to Westgate passed at 64. The final two minutes late arrival at Margate had a familiar ring to it, the locomotives were larger, the weight of the train had grown, the overall effect was the same, plus ca change.

In the Up direction King Arthur No.768, with 300 tons lost 46 seconds on the 92 minutes non stop schedule from Margate to Victoria, three to four minutes attributable to a PWR slack at Teynham and signal checks before Chatham.

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Southern [Eastern Section] King Arthur Class 4-6-0's to the Kent Coast

The start was slow, Faversham passed in 26¼ minutes [schedule 25 minutes] without exceeding 64 miles per hour, at Chatham the train was four minutes late, 47 minutes 54 seconds. Three minutes were regained between there and London, the best parts of the performance, 40 miles per hour maintained on the 1/100 to Sole Street, 1,175-1,275 EDHP and 76 miles per hour maximum afterwards. [Ref.22]

The SE&C had built up a reasonable Season ticket clientele between London and the Kent Coast resorts: punctual running of the Business trains was a priority. The 07.25 ex Ramsgate, 07.40 from Margate, stopped at Herne Bay and Whitstable with 74 minutes allowed from there to Cannon Street. King Arthur Class 4-6-0 No.798, with the normal weekday load of 310 tons passed Faversham in 9 minutes 47 seconds from Whitstable, slowed to 30 miles per hour for the slack, reached 71 before Sittingborne and passed Chatham in 28 minutes 25 seconds. The Sole Street time was 41 minutes 2 seconds after a fall from 38 to 28 miles per hour on the 1/100 and New Cross 67 minutes 19 seconds after a PWR slack at Swanley. After signal checks either side of London Bridge it reached Cannon Street one and a half minutes late.

King Arthur Class 4-6-0 No.772, on the Monday train, with an additional coach, 345 tons Gross, was six seconds quicker to Chatham with speeds of 70 miles per hour before Sittingborne, 50 minimum at Teynham and 62 at Newington. It fell to 27 miles per hour at Sole Street, passed in 42 minutes 9 seconds, reached 77 at Farningham Road and fell to 53 at Swanley. St. Mary Cray was passed in 54 minutes 24 seconds at 67 miles per hour, almost two and a half minutes ahead of No.798 before a signal stop and check resulted in an arrival at Cannon Street 3 minutes 17 seconds late. [Ref.23] [Schedules to Sole Street and Swanley were 42 and 52 minutes].

The 17.33 from Margate [17.15 ex Ramsgate] was allowed 92 minutes non stop to Victoria. Schools Class 4-4-0 No.901 in 1935, with 315 tons passed Faversham in 25½ minutes [schedule 25 minutes] after 62 miles per hour before Whitstable and 66 afterwards. Number 901 was one minute early at Chatham, 42 minutes 5 seconds, the minimum at Sole Street was 30, the maximum at Farningham Road 78, it passed St Mary Cray in 68½ minutes at 66 after a minimum of 53 at Swanley and Bickley two minutes early, 71 minutes. It was then badly checked to Victoria, reached seven and a half minutes late, without the checks 88 or 89 minutes. Punctuality, even with light trains was questionable, in April 1939 for instance Schools Class No.916 with only 220 tons on the 17.15 ex Ramsgate passed Bickley Junction in 72 minutes 50 seconds, then checked by signals and diverted via the Catford loop, it reached Victoria seven minutes late.

C.J.Allen in 1940 published a series of journeys on the Up non stop from Margate, mainly timed by A.J.Baker, including the 1935 run behind Schools Class No.921. [Ref.24] The other eight with Schools Class 4-4-0's scaled 245 to 380 tons Gross. On three occasions the actual time from Margate was within the 92 minutes schedule.

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Southern [Eastern Section] Margate to Victoria nonstop 1935-39

Schools Class 4-4-0 No.922 achieved the fastest actual time to Victoria, 89 minutes 57 seconds, with 245 tons including PWR slacks before Herne Bay and at West Dulwich. It passed Bickley Junction in 71 minutes 11 seconds. Speeds were 64 miles per hour before Faversham, 69 maximum at Sittingborne, 30 minimum at Sole Street and 80 maximum at Farningham Road. The quickest Net time 83¾ minutes, actual 93 minutes 41 seconds was achieved by No.921, also with 245 tons, Ovenden was regarded as one of the more enterprising Ramsgate drivers. There were PWR slacks before Herne Bay and at Swanley, speeds were 67 miles per hour before Herne Bay, 71 before Faversham, 74 before Sittingborne and 71 at Newington, the minimum at Sole Street was 35 the maximum at Farningham Road 84.

Schools Class 4-4-0 No.920 with 295 tons reached Victoria in 93 minutes 36 seconds, 86¾ minutes Net. The start was rapid, Faversham in 24 minutes 59 seconds with 70 miles per hour attained twice. Sittingborne was passed in 32 minutes 41 seconds [schedule 32½ minutes] followed by a stop for signals. The 33.0 miles from passing Rochester Bridge to Victoria were run in 41 minutes 33 seconds, with a minimum at Sole Street of 33 miles per hour and a maximum at Farningham Road of 81, a gain of five minutes over this stretch. Number 912, with 315 tons, kept time with 36 seconds to spare after passing Swanley on time, 67 minutes 11 seconds. There were slight signal checks at St. Mary Cray and before Herne Hill, Net time 90¾ minutes Speeds were 68 miles per hour maximum before Faversham and before Sittingborne, 24 minimum on Sole Street and 83 maximum at Farningham Road.

Driver Ovenden with Schools Class 4-4-0's Nos.917 and 916 with 320 and 315 tons started quickly to Faversham, 24 minutes 11 seconds and 24 minutes 12 seconds. Speeds were 73 and 74 miles per hour before Herne Bay and 65 before Faversham. Number 917 had three signal checks, the last after Rochester Bridge following which it passed Sole Street at 26 miles per hour, Farningham Road at 84 and with 62 minimum afterwards, Bickley Junction despite all the delays in 77 minutes 49 seconds. It was then diverted via the Catford Loop and reached Victoria in 100 minutes 44 seconds, 87½ minutes Net. With No.916 he had an almost clear road, one signal check for signals before Bickley and reached Victoria in 90 minutes 11 seconds with 26 miles per hour at Sole Street and 81 at Farningham Road, 89 minutes Net.

Schools Class 4-4-0 No.914 with Lemaitre exhaust ran to Victoria in 92 minutes 48 seconds with 350 tons, including signal checks before Chatham and a PWR slack before Swanley. It passed Faversham in 24 minutes 43 seconds, with 68 miles per hour the maximum before and Rochester Bridge after the checks in 49½ minutes, subsequently the minimum at Sole Street was 31 and the maximum at Farningham Road 83, Net time 86 minutes. This run was probably the best in the series. [Whilst the fitting of Lemaitre exhausts to the Schools by Mr. Bulleid did not increase their potential power, records invariably show the Lemaitre fitted locomotives performed better. Perhaps drivers worked them harder: particularly uphill the sound of the exhaust may have belied the extent.

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Southern [Eastern Section] Punctuality on the Kent Coast

[When Number 914, the first Schools Class 4-4-0 fitted with a Lemaitre exhaust hauled the 18.03 Cannon Street to Hastings during the week preceding Easter 1939, a regular passenger on the 17.56 electric from Cannon Street noted that the 18.03 passed the electric earlier in his journey than ever before. [Ref.25] Similarly earlier in March when No.914 worked the 06.58 Hastings to Cannon Street and the 10.25 ex Charing Cross it was noted passing Dunton Green at 70 miles per hour and Hildenborough at 80, speeds previously unheard of on the 10.25].

The heaviest train from Margate, 380 tons with Schools Class 4-4-0 No.919, reached Victoria in 94 minutes 53 seconds. It was checked by signals initially and was over two minutes late at Faversham, 27 minutes 22 seconds. Following this, with 66 miles per hour at Sittingborne, 62 at Newington, 26 minimum at Sole Street and 81 at Farningham Road it passed Bickley Junction in 75 minutes 4 seconds, still two minutes down, before further signal checks, Net time was 91¾ minutes.

The introduction of the King Arthur and Lord Nelson Class 4-6-0's and the Schools Class 4-4-0's improved punctuality, or reduced lateness, depending on ones view on the Kent Coast. W Hopkins Brown in 1935 [Ref.26] noted "since the Kent Coast line has been available to the Lord Nelson, King Arthur's and Schools Class locomotives very good timekeeping has been observed". King Arthur's hauled many of the Ramsgate trains. The 18.15 ex Cannon Street, first stop Whitstable in 70 minutes and the 19.15 ex Victoria, first stop Faversham in 68 minutes were Schools' duties; the 15.20 ex Victoria often had a Lord Nelson. Observations in 1936 [Ref.27] of the 18.15 ex Cannon Street, with a School's indicated arrivals a few minutes early at Whitstable. The 17.47 ex Cannon Street in 1937 made its first stop at Faversham, schedule 63½ minutes and with a King Arthur Class 4-6-0 was reported a good timekeeper. Hopkins Brown stated that speeds in excess of 75 miles per hour were rare; he once noted 80 with a Schools at Sittingborne.

The Lord Nelson Class 4-6-0's after the establishment of the Stewarts Lane link regularly worked the 08.50 ex Victoria, the absurdities caused by inflexible rotas are epitomised by details of Lord Nelson No.858 on this train. [Ref.28] The train, four corridor coaches plus a Pullman car, only 175 tons Gross, passed Bromley in 19½ minutes after a PWR slack on the Catford Loop, [schedule 20 minutes to Shortlands Junction] and despite prolonged brake applications on the descent from Sole Street, Chatham in 47 minutes [schedule 51½ minutes]. With further gentle running it passed Faversham in 69 minutes, two and a half minutes early and finally stopped at Whitstable one and a half minutes early, 78½ minutes from Victoria.

By way of a contrast on the 21st September 1936 the 10.35 ex Victoria had ten coaches plus a Pullman Car 390 tons Gross with which a King Arthur Class 4-6-0 also kept time comfortably. It passed Gillingham in 32 minutes from the start at Bromley South and reached Faversham the next stop in 50½ minutes, schedule 52 minutes.

Date: July 7th 2002

Southern [Eastern Section] King Arthur Class 4-6-0 performance to Margate

A 1937 record indicates the speeds necessary to maintain the 90 minutes non stop schedule to Margate. King Arthur Class No.804 with 310 tons on the 15.15 ex Victoria reached Margate in 90 minutes 8 seconds. It fell to 26 miles per hour at Sydenham Hill and 39 at Bickley, passed Swanley in 28 minutes 48 seconds [schedule 27 minutes] the minimum at Sole Street was 43 and after a PWR slack on the subsequent descent Chatham in 49³/₄ minutes [schedule 47¹/₂ minutes]. The lost time due to the gentle start and aggravated by the PWR slack was recovered by running from Chatham to Margate in 40 minutes 23 seconds. Speeds were 70 miles per hour after Gillingham, falling to 60, 76 after Sittingborne, the Faversham slack taken at 35, 67 before Herne Bay and 76 after.

Brief details, assuming they are correct, of the Saturday 12.45 ex Cannon Street allowed 46 minutes to the first stop at Chatham with King Arthur Class 4-6-0 No.803 and a 12 coaches train, probably 400 tons indicate what could be achieved if the occasion demanded. There were delays in the London area and Chatham was reached one and a half minutes late. The King Arthur then gained three minutes on the 30 minutes schedule to the next stop at Whitstable with a maximum of 88 miles per hour at Sittingborne [Ref. 29]

Visitors to the Kent Coast seaside resorts, as with most in the 1930's, justified a greatly increased summer service, particularly on Saturdays in July and August. There were 15 principal weekday trains from London to the Kent Coast in July/August 1937. One, the 15.15 ex Victoria ran to Margate non stop in 90 minutes, there was an additional non stop service on Fridays in 104 minutes. Two made their first stop at Whitstable, 80 and 89 minutes, with a further two on Fridays, 80 and 82 minutes. The 19.15 ex Victoria ran non stop to Faversham in 68 minutes and the 21.15 to Chatham in 49 minutes. There were four trains that served principal stations, with an additional one on Monday plus two semi-fasts. Two of the four Business services from Cannon Street ran to Whitstable, the first stop in 70 and 73¹/₂ minutes, the other two made their first stop at Faversham in 62¹/₂ and 63¹/₂ minutes. There were scheduled mid-week excursions from Blackheath and New Cross in addition to the Restalls excursions from Victoria on Wednesday and Thursday. The 11.15 ran non stop to Whitstable in 83 minutes, the 11.30 stopped at principal stations.

There were two non stop trains from Victoria to Margate on Saturdays in 98 and 96 minutes and one from Bromley South in 83 minutes. Five ran non stop to Herne Bay in 91 to 97 minutes and 12 made their first stop at Whitstable in 78 to 93 minutes. [78 minutes on the 00.10 on Sunday, the next fastest took 83 minutes]. There was a train from Beckenham Junction, non stop to Sittingborne in 67 minutes. Two ran via Lewisham, the allowance from there to the next stop at Whitstable was 73 and 75 minutes. There was a non stop booking from Bromley South to Whitstable in 64 minutes. There was one non stop train to Sittingborne, 70 minutes and another from Catford in 63¹/₂ minutes. Faversham had three non stop's from Victoria, booked in 68 to 80 minutes and one from Bromley South in 61 minutes.

Date: July 7th 2002

Southern [Eastern Section] D and E Class 4-4-0's

The two Saturday mid-day Business trains, ex Cannon Street at 12.45 and 13.15, ran to the first stop at Chatham in 46 minutes. There were four other trains, booked non stop from Victoria to the Medway Towns in 52 to 55 minutes and seven that stopped at principal stations, a total of 42 scheduled departures from London to the Kent Coast on a Saturday. Many, except for the two Business services and the Evening trains, although scheduled at slower overall speeds than the weekday trains represented a major operating challenge. Maunsell 2-6-0's and inside cylinder 4-4-0's hauled many of them.

The rebuilt Stirling 4-4-0's, as already noted still appeared in the 30's on stopping trains. F1 Class 4-4-0 No.1195 in 1934 with 190 tons kept the overall schedule from Faversham to Ramsgate. The elderly 4-4-0 lost one minute on the ten minutes schedule to the first stop at Whitstable. A year previously B1 Class 4-4-0 No.1452 on a Faversham to Dover working improved on the 18 minutes schedule from Canterbury West to Kearsney, 13.3 miles, by 35 seconds. The average over the two miles from Snowdon to Shepherdswhill was 50 miles per hour, three quarters of this is uphill at 1/180 the remainder falling at 1/132. It is reasonable to assume that 47-48 miles per hour was attained on the ten miles uphill stage from Canterbury, however with only 75 tons.

The Wainwright/Surtees D and E Class 4-4-0's with some B1's were the mainstay of the Gillingham service prior to electrification. On June 28th 1939, immediately before inauguration of electric services D No.1247 took the 07.20 Victoria to Faversham with seven coaches and B1 Class 4-4-0 No.1449 the 18.45 Victoria to Gillingham. A D No.1733, in 1935 with 290 tons on the 16.05 ex Victoria ran from Bromley South to the next stop at Rochester in 30¼ minutes, schedule 32 minutes. This entailed 30 miles per hour on the initial 1/95 and 1/100 up to Bickley Junction, a maximum of 75 at Farningham Road and a time to Sole Street of 22 minutes 20 seconds [schedule 22 minutes].

The D Class 4-4-0's handled many of the semi-fast's, No.1731 in 1938 was observed on the Saturday 13.35 Victoria to Sheerness with six corridor and three non corridor coaches and two days after Christmas with nine coaches plus a Pullman car on the 08.45 Victoria to Dover. The D and E's frequently hauled the scheduled mid-week excursions. The Wednesday 09.55, for instance from St. Mary Cray to Brighton, arrival 12.09 via Otford, Tonbridge and Uckfield had E No.1315 on August 2nd and 9th.

The L Class 4-4-0's regularly hauled fast trains on the Chatham section. Although No.1769 allocated to Dover depot in March 1939, was employed mainly on the former South Eastern Main line on a duty encompassing either the 08.40 Margate to Redhill or the 08.57 Dover Marine to Charing Cross returning on the 15.00 Down. If they could be entrusted with such duties requiring continuous high speeds on easy grades [they had always performed well on the hills] it is hardly surprising they found favour on the former LC&D routes. Mr. S.A.W.Harvey was very fond of the L's; his records behind these locomotives justify his enthusiasm.

Date: July 7th 2002

Southern [Eastern Section] L Class 4-4-0 performance on the Kent Coast

L Class 4-4-0 No.1757 on the Saturday 16.55 ex Ramsgate [schedule 85 minutes non stop Broadstairs to Bromley South] had 315 tons. It reached 72 miles per hour at Herne Bay and despite a signal check at Whitstable, passed Chatham in 47 minutes 52 seconds; the 34.8 miles from Birchington to Gillingham took 36 minutes 7 seconds. It was stopped for signals at Cuxton Road signal box on the 1/100 and then reached 74 miles per hour at both Fawkham and Farningham Road before a final flourish to 68 at St Mary Cray after a signal check at Swanley. It finally reached Bromley South on time. Harvey reckoned 77 minutes Net. This effort, recorded in 1935, represented a performance level better than that required on 92 minutes non stop Margate to Victoria schedules. Number 1767 had 19½ inches cylinders, a 180 pounds per square inch boiler and original Wainwright superheater.

Thirteen months later Driver Moor of Ramsgate depot ran from Faversham to the next stop at Bromley South in 62 minutes 2 seconds with 300 tons and L Class 4-4-0 No.1769, 60 minutes Net. He reached 77 miles per hour before Sittingborne, sustained 33 up to Sole Street, reached 75 at Farningham Road, fell to a minimum of 55 at Swanley and finally touched 74 at St. Mary Cray. Assuming 33 miles per hour was sustained on the 1/100 to Sole Street the L developed an EDHP of 920-970. Number 1769 had previously maintained schedule on the all stations phase between Margate and Faversham. It, at this time had 19½ inches diameter cylinders, the 180 pounds per square inch boiler and a Maunsell superheater.

Another L Class 4-4-0 No.1762, with all three modifications, in 1939 and a 230 tons load ran from Whitstable to Bromley South in 64 minutes 56 seconds. There were delays initially for signals. Faversham was passed two and a half minutes late but by Swanley it was ahead of schedule, 52 minutes 2 seconds, 47 minutes Net. Number 1773 with 20½ inches cylinders, Maunsell superheater and 160 pounds per square inch boiler had the 10.30 relief to the 10.35 ex Victoria. It ran the Bromley South to Faversham stage in 50¾ minutes start to stop, Bickley was passed in four and a half minutes and Gillingham in 33¾ minutes. The 10.35 with a King Arthur Class 4-6-0, was allowed 51 minutes from Bromley to Faversham. .

There were, as noted previously, two Saturday trains that ran via Lewisham and Hither Green. An L Class 4-4-0 No.1771 in August 1935, with smaller cylinders, higher boiler working pressure and Wainwright superheater had 345 tons on the 10.10 Victoria to Ramsgate. Chislehurst was passed in 11 minutes at 42 miles per hour from the Lewisham start, the average from Hither Green Junction to Chislehurst was 32.9, and Swanley in 16¾ minutes after 65 at St. Mary Cray. Speed then rose to 76 miles per hour at Farningham Road, fell to 54 at Sole Street and with a restrained 62 afterwards the train was three minutes early past Chatham. The maximum at Sittingborne was 78 miles per hour, the average over the 9.0 miles from Rainham to Teynham 62 and after the Faversham slowing, passed five and a half minutes early, Whitstable was reached in 63 minutes 46 seconds [schedule 69 minutes].

Date: July 7th 2002

Southern [Eastern Section] Central Section locomotives

The L Class 4-4-0's performed excellent work throughout the thirties and the rebuilt Wainwright D1 and E1 Class 4-4-0's after proving their worth for a decade on the Kent Coast, despite their replacement on these trains by larger locomotives still performed well when the opportunity arose. S.A.W.Harvey [Ref.30] noted D1 No.1494 on the 16.05 ex Victoria pass Sole Street in 19 minutes 50 seconds from the Bromley South start, two and a half minutes quicker than the previously quoted run by D No.1733 with 290 tons on the same train. The D1 stopped at Rochester in 28 minutes 2 seconds. An E1 No.1160, with a lighter train, 255 tons, on the 08.45 ex Victoria was one minute quicker to Sole Street than No.1494, the advantage gained at the start, Swanley in 10 minutes 15 seconds compared with 11 minutes 35 seconds.

Many Saturday extra trains were entrusted to Maunsell Moguls, particularly the U1 Class three cylinder 2-6-0's. Mr Harvey's copious notes of their performances have been dealt with elsewhere [Ref.31]. A writer in the Stephenson Locomotive Society Journal in 1936 observed that the U1's climbed the banks better than the 4-4-0's and were an ideal type for weekend semi-fast trains. In May of that year No.1906 with 270 tons was timed at an average of 38 miles per hour from Cuxton Road to Sole Street.

O.S.Nock in his book on Maunsell's locomotives postulated based on one specific run that the U1 Class 2-6-0's exhibited the normal characteristics of locomotives with Walschaerts valve gear, i.e. moderate uphill work and very fast running on favourable stretches. On the same page he detailed three logs from S.A.W.Harvey, including one where U1 No.1907 with 360 tons ran from Swanley to Sole Street in 8 minutes 43 seconds. The maximum at Farningham Road was 76 miles per hour, the minimum at Sole Street 56, as a comparison a D1 Class 4-4-0 with 315 tons took 8 minutes 23 seconds.

Other locomotives appeared on the Kent Coast, particularly after the Central Section electrification in 1938. The 09.05 Victoria to Ramsgate, frequently hauled by an H2 Class 4-4-2 attracted Norman Harvey's attention. He timed No.2423, with the usual eight coaches twice in the summer of 1938. On the first Bickley was passed in 4 minutes from Bromley, Swanley one minute late in 13 minutes, there was a PWR slack at Farningham Road, Sole Street two minutes late [schedule 22 minutes] and the Chatham stop made in 33½ minutes, schedule 33 minutes, 32 minutes Net. The start on the second occasion was better, Swanley on time before two PWR slacks led to a late arrival at Chatham. An L12 Class 4-4-0, on the 09.05 checked by signals at St. Mary Cray ran well to pass Sole Street in 21½ minutes. A T9 Class 4-4-0, with a Restalls excursion, eight coaches, was checked badly and took 35 minutes 10 seconds from Bromley to Rochester. Locomotive performance on the Chatham section was a curate's egg.

Other ex LB&SC locomotives were tried on the Eastern Section. The B4X Class 4-4-0's were apparently not liked by footplate crews, a view shared with Central section crews and the H1 Class 4-4-2's were regarded in no better light, a view not shared on the Central Section.

Date: July 7th 2002

Southern [Eastern Section] Up performance on Sole Street Bank

An H1 Class 4-4-2 hauled the 12.35 Victoria to Ramsgate and the 20.13 return on the 20th and 21st of February 1938, the first appearance of an Atlantic on the Eastern Section. The arrival at Victoria was to time on both days, the train was light c.210 tons. The I3 Class 4-4-2 Tank's employed on some Chatham trains and Dover semi-fasts' were liked by the crews, they elicited the same response as when two members of the Class were relocated to Salisbury depot on the Western Section. An I3 regularly worked the 09.10 Victoria to Dover in the summer of 1938 returning on the 16.56 via Maidstone East. During that summer seven L12's, four H2's, two B4X's and seven I3's were noted at work on the Eastern Section, none remained on the Eastern Section post September 26th.

S.A.W.Harvey compiled a table of performances climbing to Sole Street from Rochester Bridge. He used the average speed over the 4.2 miles from Cuxton Road signal box to Sole Street station as a comparator.

The former L&SW 4-4-0 Classes featured on 29 occasions.

The T9 Class on 24 runs, average load 234 tons, average speed 34.2 miles per hour, best performance as assessed by Mr Harvey: with 287 tons, average speed 34.2 miles per hour.

The L12 Class on five runs, average 293 tons, 34.8 miles per hour, best performance: with 314 tons at 34.8 miles per hour.

The D1 and E1 Classes of 4-4-0 noted on 21 and 17 occasions.

The D1's, average 225 tons, 31.4 miles per hour, best performance: with 280 tons at 33.6 miles per hour.

The E1's, average 230 tons, 32.0 miles per hour, best performance: with 260 tons at 37.2 miles per hour.

The L and L1 Classes 4-4-0 were noted on 17 and 11 occasions.

The L's, average 250 tons, 31.2 miles per hour, best performance: with 285 tons at 33.3 miles per hour.

The L1's average 320 tons, 28.9 miles per hour, best performance: with 350 tons at 33.6 miles per hour.

Whilst the length of the climb from Rochester Bridge to Sole Street suggests an actual speed at Sole Street probably represented a maintained speed, the average speed from Cuxton Road to Sole did not. There was a half-mile stretch at an average of 1/132 after Cuxton Road and a short level stretch, c.100 metres after the signal box plus a very short stretch by the box. Trains were also usually still losing speed past the box from the initial impetus of a higher speed after the Rochester curves. Examination of many climbs on this section indicates that 90 percent of the average speed from Cuxton Road to Sole Street approximates to an equivalent sustained speed on the 1/100.

The average EDHP for the various Classes on the 95 runs collected by Mr. Harvey, based on the above assumption, are in ascending order: D1, 600-650 - E1, 625-675 - T9, 650-700 - L, 660-710 - L1, 740-790 - L12, 770-820.

Date: July 7th 2002

Southern [Eastern Section] Locomotive variety on the Kent Coast

The maximum figures were; D1, 750-800 - L, 775-825 - E1, 790-840 - T9, 800-850 - L12, 875-925 and L1, 950-1,000. It should be noted that L No.1769 when it sustained 33 miles per hour on the 1/100 with 300 tons and a U1 Class 2-6-0 38 miles per hour with 270 tons developed EDHPs of 900-950. The differences in ascending order of power outputs between the average and the best performance reflects the respective locomotive duties. The L1 and L12's invariably worked comparatively heavy trains whereas the D1 and E1's often hauled lighter ones on the Gillingham or Sheerness services.

Simple criteria for assessing locomotive performance usually concentrate on the ability to boil water, the total boiler heating area or the size of the fire grate [the "Tuplin standard"]. In terms of EDHP per square foot of firegrate area the maximum figures were; E1 - 34.0, T9 - 34.4, U1 - 37.0, L12 - 37.5, L - 41.1 and L1 - 43.3. EDHP per square foot of boiler heating area gives the following comparative figures, the calculations assume all locomotives fitted with Maunsell type superheaters: D1- 0.51 EDHP per square foot of boiler heating area, E1 - 0.53, U1 - 0.53, L - 0.56, L1 - 0.59, T9 - 0.64 and L12 - 0.65. The U1 Class 2-6-0, although built for passenger use was essentially a mixed traffic design, an N Class with three cylinders and six feet diameter coupled wheels, comes out well in these comparisons. The other results emphasise the efficacy of the classic inside cylinder design of 4-4-0, particularly when superheated whether from the Drummond or Maunsell design teams.

The variety of motive power on the Kent Coast services and the associated route to Dover via Faversham proved of great interest to Railway enthusiasts. How efficient it all was is open to question? Some indication of the complexities can be illustrated by observations made in 1936. There were 26 main line departures from Victoria Eastern side in the two and a half hour period from 10.10 to 12.42 on the Saturday preceding the August Bank Holiday Monday, August the 1st. Motive power was: two Lord Nelson and four King Arthur Class 4-6-0's - four L and four L1, one off T9, D, D1, E1 and B1 Class 4-4-0's - six U1 and one N Class 2-6-0's - two C Class 0-6-0's. The coaching stock for these 26 trains was 227 coaches, 99 of these had corridors plus 13 Pullman coaches and ten vans.

The 10.10 to Ramsgate, eight coaches plus one Pullman, c.330 tons Gross, non stop from Lewisham to Whitstable was hauled by C Class 0-6-0 No.1579. The 11.06 and 11.26 to Ramsgate, by contrast, made up of one bogie set were taken by Lord Nelson 4-6-0 Class No.859 and King Arthur Class 4-6-0 No.806 respectively. The 12.10 and 12.20 Continental Boat Trains for Folkestone, schedule 108 minutes to the Junction ran via Maidstone East hauled by B1 Class 4-4-0 No.1451 as pilot to D Class 4-4-0 No.1726, 11 corridor coaches and L1 Class 4-4-0 No.1753, eight former L&SW coaches plus two vans. The 12.35 to Margate consisted of nine former Midland Railway Clerestory coaches; this stock had arrived at Victoria 26 minutes late behind a King Arthur and left Victoria only 14 minutes later. The average departure was four and a half minutes late; including the electric suburban services 13 to 14 trains per hour passed over the single Down line to Brixton.

Date: July 7th 2002

Southern [Eastern Section] Allhallows as a resort

There were numbered headboards for 201 Down and 129 Up Main Line trains between 05.00 and 22.20 on the Eastern Section. The starting points for the 201 down trains were Victoria 82, Charing Cross 68, Cannon Street 21, and Holborn Viaduct 7 with the remaining 23 commencing their journey at stations in the Suburbs. There were also 50 Continental departures between 05.30 and 20.50, 36 from Victoria, 14 from Cannon Street, 26 of these from Victoria and 11 from Cannon Street to Dover Marine, the rest to Folkestone. Away from London this plethora of trains plus through services from other Railways resulted, for instance, in 50 Down trains arriving at Margate between 10.00 and 17.00 and during the same period 49 trains arriving at or passing through Folkestone. [Ref.32]

There was also an intensive Sunday train service on the Kent Coast lines. On an early July Sunday in 1936, 15 Down trains passed through Herne Bay in the one and three quarter hour period, 11.30 to 13.15. Motive power was: four U1 Class 2-6-0's - one Lord Nelson Class 4-6-0 [On a Victoria to Margate non stop, presumably the 09.47 running late] - four King Arthur Class 4-6-0's - two Schools Class 4-4-0's - two L Class 4-4-0's and two E1 Class 4-4-0's. In the Up direction there were 19 trains between 17.42 and 21.23, including one to Bricklayers Arms and one to Cannon Street. The locomotives employed essentially those used in the morning. Lord Nelson No.863 passed at 18.54 with a train of nine coaches plus one Pullman car. [Ref.33]

Allhallows was the new Southern Railway resort, the W.T.T. in 1937 provided for seven excursions between July 4th and September 26th. Two started from Blackheath, two from Woolwich Arsenal, two from Cannon Street and one from New Cross. Schedule for the 14.8 miles from Gravesend to Allhallows was 29 to 33 minutes, two stopped at Sharnall Street for passing purposes on the single track route. The 10.35 and 11.30 ex Cannon Street made their way gently to the resort in 82 and 90 minutes. There were return trains from Allhallows at times between 17.54 and 20.06, four destined for Cannon Street, two to New Cross, one to Deptford and one to Bricklayers Arms. The schedule to pass Gravesend varied from 28 to 33 minutes, depending if the train made a stop at Sharnall Street or not. On the August Bank Holiday 1939 there were 19 trains from the London termini or the Suburbs to Allhallows all rostered to be hauled by C Class 0-6-0's, such were the complexities of handling seaside traffic in the thirties. Allhallows served by trains since 1932 died as a resort with the outbreak of the Second World War.

Schedules on the Western Section of the Southern Railway improved the most in terms of speed in the period 1933-39. The reduction in time, to key destinations from London, from summer 1914 to summer 1938 was 8.4 percent on the Western Section, compared with 2.1 percent on the Eastern Section and 6.3 percent on the Central Section.

The Waterloo to Portsmouth service was for many years the poor relation, the 98 minutes schedule between London and Portsmouth & Southsea introduced after the formation of the Southern Railway represented significant progress.

Date: July 7th 2002

Southern [Western Section] timetable improvements to Portsmouth

The available motive-power, particularly the smaller T9 Class 4-4-0's, rather than the D15 Class 4-4-0's, had difficulty maintaining schedule with the heavier trains. The introduction of the U1 Class 2-6-0's helped, but with continually increasing loads punctuality at times was indifferent. In mitigation it should be emphasised that at times the locomotives and by definition their footplate crews, performed well with heavy trains. T9 Class No.287 was observed in October 1932 on the Up 07.55 Saturday from Portsmouth Harbour passing Wimbledon five to six minutes late at 60 miles per hour, with a train of 11 corridor and five non corridor coaches, c.450 tons. On Saturday the 07.55 stopped at Woking, where four non-corridor coaches ex Salisbury, 07.10, were attached, on this day the T9 had hauled 340-350 tons from Portsmouth to Woking. The T9's could time trains up to 300 tons over the Portsmouth Road, Nos. 337 and 338 were considered excellent locomotives.

The smaller Drummond locomotives performed well in emergencies, in 1934 when a U1 Class 2-6-0 failed at Petersfield, an M7 Class 0-4-4 Tank took the 11 coaches train c.350 tons on to London. The M7 passed Surbiton in 25½ minutes from the Guildford start before signal checks after Vauxhall delayed the train further. There were times when speeds on the Portsmouth line gradients were very low, even with the larger locomotives, a King Arthur Class 4-6-0 No.775 for example, with 11 coaches fell to a minimum of 14½ miles per hour at Buriton siding in the Up direction. By comparison a T14 Class 4-6-0 No.E460, with ten coaches was sprightly, running the last quarter of a mile to the summit at 22½ miles per hour. The U1 Class 2-6-0's by common consent handled the 350 tons trains competently, seldom exceeding 70 miles per hour downhill, a similar reputation to that gained on the Central and Eastern Sections. [They were in theory limited to 70 miles per hour] The U1 was a competent rather than inspired design, perhaps exactly what a mixed traffic locomotive should be.

The introduction of the Schools Class 4-4-0's to Fratton depot predicated significant improvements in the timetable for July 1935, including a 90 minutes non stop schedule between Waterloo and Portsmouth & Southsea. The 11.50 ex Waterloo ran to the 90 minutes schedule, the 15.50 to the first stop at Fratton in 88 minutes and the 18.50 to Havant in 82 minutes. The 09.54 and 12.00 from Portsmouth and Southsea ran non stop to Waterloo in 90 minutes. Holcroft made a footplate trip to Portsmouth after the introduction of the Schools Class 4-4-0's but before the introduction of the improved schedules. Number 930 with 300 tons ran to the first stop at Surbiton in 18½ minutes and from there to Portsmouth and Southsea, the next stop in 83½ minutes. The time over the adverse section from Guildford to Haslemere was 19½ minutes with the cut off lengthened to 33 percent on the 1/80. He returned on the 15.45 with Schools No.929 and nine coaches.

C.J.Allen published a series of Down runs in February 1936, hauled by Schools Class 4-4-0's and timed by various correspondents, [Ref.34] four of them with the 11.50 ex Waterloo. Schools No.927, with 345 tons reached Portsmouth in 93 minutes 57 seconds with one out of course check.

Date: July 7th 2002

Southern [Western Section] Schools Class 4-4-0's to Portsmouth

Following the PWR slack before Surbiton, Hamton Court Junction was passed two and a half minutes late by Schools Class 4-4-0 No.927, 20 minutes 9 seconds, and after a minimum of 22 miles per hour Haslemere four and a half minutes late, 58 minutes 58 seconds, the maximum after was 72 at Liss. On another occasion, the same locomotive with the same load completed the journey in 51 seconds less, 88 minutes Net, there was a signal stop between Woking and Guildford and a check before Fratton. The Guildford to Haslemere time was 17 minutes 57 seconds, compared with 19 minutes 46 seconds on the previous run although the final minimum was 21 miles per hour. The Guildford slack was observed correctly, 30 miles per hour, speed rose to 58 on the easier grades before Godalming, fell to 42 on the first stretch of 1/80, rose to 56 on the subsequent downhill and finally fell to 21 on the second stretch of 1/80.

Schools Class 4-4-0 No.933, with 385 tons reached Portsmouth in 90 minutes 33 seconds; it passed Hampton Court Junction 98 seconds late at 67 miles per hour after a PWR. slack, the maximum at Byfleet was 68 and the Guildford to Haslemere stage took 19 minutes 27 seconds, with a minimum of 22. The maximum at Liss was 71 miles per hour and the minimum at Buriton 37. Number 927 with 380 tons passed Hampton Court Junction 2 minutes 10 seconds late following a PWR slack, was two minutes late at Guildford and ran from there to Haslemere in 18 minutes 40 seconds. Speeds after Guildford were 56, 40 and 56 miles per hour before a final minimum of 21. It was 2 minutes 11 seconds late at Haslemere but with a maximum of 82 miles per hour before Liss and a minimum of 42 at Buriton two minutes early at Havant, passed in 79 minutes exactly, before signals stopped it at Fratton, in 88 minutes 52 seconds. This, the best locomotive performance of the four on the non stop 90 minutes schedule, was not the best result for the passengers.

Schools Class 4-4-0 No.924, with 340 tons on the 15.50 ex Waterloo reached Fratton three quarters of a minute inside schedule, 87 minutes 12 seconds. It was two minutes late at Hampton Court Junction, 19 minutes 38 seconds, due to the Wimbledon PWR slack. Subsequent speeds were 69 miles per hour at Byfleet, 27 minimum at Haslemere, 79 before Buriton and an excellent minimum of 56 at Buriton. Havant was passed in 79 minutes 9 seconds, the time from Guildford to Haslemere 18 minutes 33 seconds.

Two runs on the 18.50 ex Waterloo featured Schools Class 4-4-0's Nos.931 and 928 with 310 and 345 tons. Number 931 arrived at Havant one and three quarters minutes late, schedule 82 minutes, there was a signal check before Clapham Junction and a PWR slack between Guildford and Godalming. The Guildford to Haslemere time was 19 minutes 2 seconds. Number 928 reached Havant two minutes early on an unchecked run, it was 55 seconds early at both Hampton Court and Woking, one minute late at Guildford, schedule 36 minutes, the time up to Haslemere passed ten seconds late, was 18 minutes 40 seconds. The two minutes gained from Haslemere to the Havant stop required speeds of 74 miles per hour at Liss, a minimum of 51 at Buriton and a final maximum of 70 before the Havant stop.

Date: July 7th 2002

Southern [Western Section] Maximum School's performance to Portsmouth

Steam locomotive performance continually fascinates, there is always the possibility a footplate crew will produce something special. This probably requires a combination of circumstances, a locomotive in top condition, best quality coal, favourable weather, an incentive and a driver "up for it" plus a fireman able to manage the steam supply. In such circumstances occasionally a performance materialises right at the limit. The 18.50 ex Waterloo on a Sunday, allowed 89 minutes to Fratton had Schools Class 4-4-0 No.931 with 345 tons. It was badly delayed initially and passed Hampton Court Junction eight minutes late, increased to eight and a half minutes at Woking after a maximum of 69 miles per hour before at Byfleet. Woking was passed at 38 miles per hour, speed rose to 63 before the slowing for Guildford station, taken generously, probably at 40. The stage to Haslemere was run in the surprising time of 14 minutes 1 second, achieved by accelerating to 65 miles per hour before Godalming, falling to 56 on the first uphill stage, reaching 62 in the subsequent dip and finally falling to 38 at Haslemere. Subsequent speeds were 79 miles per hour at Liss, 54 minimum at Buriton and 74 before slowing for Havant. There was a PWR slack after Havant followed by acceleration to 66 miles per hour, the stop at Fratton was made in 86 minutes 43 seconds. The 36.3 miles from Guildford to Havant were run in 35½ minutes, schedule 45 minutes. Eulogies have been written over this performance, it was undoubtedly remarkable.

The vertical rise from Guildford to Haslemere is c.345 feet, speeds at Guildford and Haslemere were usually similar, the average EDHP can be calculated with reasonable accuracy. Number 928 with 345 tons developed an average EDHP of 700-750, No.927 with 345 tons 750-800, No.928 with 345 tons 790-840, No.927 with 345 tons and No.933 with 385 tons 825-875, No.927 with 380 tons 860-910, No.924 with 340 tons 880-930 and No.931 with 345 tons 1,150-1,200.

O.S.Nock [Ref.35] rode on the footplate of Schools Class 4-4-0 No.916 with 350 tons, when Havant was passed in 81 minutes 11 seconds after two PWR slacks and one signal check. Further signal checks resulted in a late arrival at Portsmouth, 114 minutes from Waterloo. The time from Guildford to Haslemere was 16 minutes 3 seconds with 59 miles per hour at Godalming, 43 at Witley, 58 in the dip and a final minimum of 26 at Haslemere. The average EDHP was 975-1,025, the locomotive driven with the main valve of the Regulator half open and the cut off set at 26% as far as Godalming, from where the regulator was opened further to three fifths and the cut off lengthened to 30%. The boiler pressure was maintained at 210-220 pounds per square inch. The train the 11.50 ex Waterloo was allowed 105 minutes to Portsmouth & Southsea so it was hardly surprising it was delayed at Havant! In the Up direction Nock timed No.925, with 395 tons when Waterloo was reached in 93 minutes 58 seconds despite three PWR slacks and a stop, the train was the Sunday 10.16 scheduled in 90 minutes non stop. The driver set the cut off at 29 percent for the whole journey, with the first port of the Regulator full open 45 miles per hour was attained on the rise to Rowlands Castle, which fell away to 25 on the 1/80 to Buriton, an EDHP of 900-950.

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Southern [Western Section] High speeds on the Portsmouth Direct 1936-37

The Reverend R.S.Haines held a season ticket between Petersfield and Portsmouth from April 1936 until electrification on July 4th 1937. In this short period the young enthusiast travelled over 25,000 miles on the 18.7 miles stretch. Haines's normal evening train, the 17.40 ex Portsmouth Harbour ran to Waterloo in 110 minutes, schedule Fratton to Petersfield, 17.3 miles, 29 minutes. Until September 1936 motive power was a Fratton based Schools Class 4-4-0 with Portsmouth No.1 link crew. The best time from Fratton to Petersfield was 26 minutes 11 seconds, achieved twice with ten coaches and Nos.930 & 933. From September 15th 1936 it became a Guildford roster with a D15 Class 4-4-0. On June 3rd 1937, a friendly driver with No.463, nine coaches and Haines on the footplate, made a special effort. He passed Havant in 8 minutes 55 seconds, ran through the junction "at a greater speed than usual", covered the 6.0 miles from Rowlands Castle to Buriton in 8 minutes 56 seconds and stopped at Petersfield in 24 minutes 55 seconds.

Number 463's effort can be compared with a run, not timed by R.S.Haines, on the 12.00 to Waterloo with a Schools Class 4-4-0 and 315 tons. Number 917 passed Havant in 9 minutes 46 seconds from Portsmouth and Southsea, [0.8 miles further] at 34 miles per hour. It ran the 6.0 miles in 8 minutes 8 seconds with 45 miles per hour at Rowlands Castle, 51 at Idmiston, 38 at the top of the 1/80 and passed Petersfield in 25 minutes 19 seconds. Number No.925 with 395 tons took 9 minutes 40 seconds. The average EDHP between Rowlands Castle and Buriton Box was 870-920 by No.925, 890-940 by No.927 and 775-825 by the D15, figures were probably higher over the 5.0 miles from Rowlands Castle to the summit. The D15's for some years hauled the 98 minutes non stop Portsmouth expresses, No.463's effort and another by No.465 with 310 tons produced running above this standard. Number 465 ran from Guildford to Waterloo in 40¾ minutes, 36½ minutes Net, it passed Hampton Court Junction, 17.0 miles, in 20 minutes 55 seconds at 66 miles per hour. As an indication of possible Schools Class 4-4-0 performance, in the last months of steam No.927 on the 12.00 from Portsmouth passed Haslemere three minutes early, 37 minutes 52 seconds at 38 miles per hour after a maximum of 72 at Liss. It reached Waterloo in 91 minutes 38 seconds, 85 minutes Net after signal checks before Woking and Clapham Junction.

The 21.33 from Portsmouth was one of those trains which combined a gentle schedule, three hours to Waterloo, light load, two coaches and two vans, and a top link crew and locomotive. King Arthur Class 4-6-0 No.776, with renowned Nine Elms top link driver H.Payne ran from Rowlands Castle to the next stop at Petersfield in 10 minutes 48 seconds, a gain on schedule of four and a quarter minutes. Buriton Box, 6.0 miles from Rowlands Castle was passed in 8 minutes 6 seconds with 74 miles per hour before the Petersfield stop. On another Evening the 21.33 with Schools Class 4-4-0 No.927 passed Bedhampton, 5.6 miles, in 6 minutes 43 seconds from the Fratton start and was three seconds faster from the Fratton restart to Buriton than Driver Payne's effort. Such events have little to do with locomotive performance but gladden the hearts of many a railway enthusiast and bring a smile to many a footplate man, the less said about wasted coal and water the better.

Date: July 7th 2002

Southern [Western Section] A final fling on the Portsmouth Direct 1937

The approaching end of steam often encouraged from crews “an end of term” effort; one such was by Driver May on 29th June 1937. Fortunately Frank E.Box was a passenger from Guildford plus the future to be Reverend, R.S.Haines from Haslemere. The 17.50 ex Waterloo left Guildford behind Schools Class 4-4-0 No.927 with 262 tons and kept the 20 minutes schedule to the next stop at Haslemere with 20 seconds to spare, the 6.7 miles from Milford pass to Haslemere stop took 10 minutes 57 seconds. From the restart it passed Liss, 8.6 miles, in 8 minutes 40 seconds and attained 90 miles per hour at the bottom of the 1/80. [Haines reckoned 87] The minimum at Buriton was 56 miles per hour followed by 76 maximum before the slack for Rowlands Castle. The final time to Havant was 23 minutes 28 seconds for the 23.4 miles from Haslemere [schedule 28 minutes].

Performance over the Portsmouth Direct line for many years was variable, but over the last two to three with the large 4-4-0's, Schools on the major trains and D15's on the secondary, the steam locomotive bowed out on a high note.

Passenger traffic at Holiday times and for certain special events could be heavy. The Naval Review at Spithead on July 16th 1935, involved 102 special trains, for 30,000 passengers, 51 from London on July 16th, 46 made up of corridor or Pullman stock, [six regular London to Portsmouth services and 23 others were cancelled]. Forty-one departed Waterloo between 07.55 and 13.45 destined for either Portsmouth or Southampton. The Southern Railway publicity machine claimed that 40 arrived early or on time, five were one to three minutes late and one from Weymouth was six minutes late, there were five towns other than London. [The publicity machine, apparently in conflict with its previous release, also stated that the London trains averaged half a minute late.] The return specials left, mainly in the early hours of the morning with an average lateness of one minute. On the 1936 Bank Holiday, the last that steam reigned on the London to Portsmouth line, there were 124 arrivals at Portsmouth and Southsea, 114 of them between 09.00 and 24.00 and 124 departures, 106 of these between 09.00 and 24.00.

Larger locomotives appeared, after civil engineering improvements on the Southampton to Portsmouth via Netley route during 1933-6. In 1936 H15 Class 4-6-0's were authorised and Nos.476 and 521 were observed on Cardiff to Brighton trains. A correspondent to the RCTS noted six stages of locomotive evolution over the three years, i.e. Adams', L11, L12 and D15 Class 4-4-0's, Maunsell 2-6-0's and I3 Class 4-4-2 Tank's [transferred from the Central Section to Salisbury]. Motive power over the short but difficult Fareham to Southampton stretch was often perplexing. On July 23rd 1938, for instance a K10 Class 4-4-0 No.344 had 11 coaches on a Bournemouth and Plymouth to Brighton service, despite a ten coach limit for all locomotives and was followed by a ten coach Cardiff to Brighton train with L11 Class 4-4-0 No.159 and T9 Class 4-4-0 No.715. Two I3 Class 4-4-2 Tank's, Nos.2087/8, on the 2nd August hauled 11 coaches on a Cardiff to Portsmouth train. Motive power decisions made at Salisbury probably did not take into account the cumulative effect if a portion from Bournemouth was added at Southampton.

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Southern [Western Section] "Bournemouth Limited" 1932-39

Some of the trains running over the Netley line made, by Southern standards, long non stop runs, the longest probably was in 1932, shown in the timetable as Salisbury to Worthing, in practice there was a stop at Fareham to take water. Relatively long non stop runs remained in force throughout the thirties but average speeds remained low.

The Southampton and Bournemouth schedules improved slightly in the period and considering increased train weights, particularly at peak times, presented a significant challenge to the various Maunsell designed locomotives, especially in 1938 and 1939. The schedule of the premier train, the "Bournemouth Limited", introduced in 1929 as a two hours non stop service in both directions between Waterloo and Bournemouth, was in July 1935 reduced to 118 minutes and twelve months later to 116 minutes Down. The "Bournemouth Belle", inaugurated as a Pullman train in 1931, ran on certain days, increasingly more so until January 1st 1936 and then became an all the year round service. From July 1936 timings were 87 minutes to Southampton and after a two minutes stop, 37 minutes on to Bournemouth. In the Up direction it had a two hours schedule from Bournemouth, 33 minutes to the stop at Southampton and 85 minutes to Waterloo. Although these two attracted most attention, others, particularly the 18.30 Waterloo, at times in excess of 500 tons with an 88 minutes booking to Southampton had merit.

The "Bournemouth Limited" was a King Arthur Class 4-6-0 duty until the introduction of Schools Class 4-4-0's transferred from Fratton depot to Bournemouth after inauguration of electric services to Portsmouth in July 1937. The King Arthur's were transferred from Bournemouth to Exmouth Junction at the same time, apart from two kept primarily for the through workings to Oxford. The Great Western Railway authorities objected to the use of the Schools between Didcot and Oxford due to high axle loadings. Eight Down journeys over the period 1933-39 afford a reasonable view of locomotive work on the "Limited". The load initially was pegged at 330 tons but was increased to 365 tons in 1935 with an additional coach added on Fridays, and over the years extra coaches added more frequently.

King Arthur Class 4-6-0's Nos.787 and 784, with 345 and 415 tons ran to Bournemouth in 117 minutes and 116 minutes 32 seconds, 115½ and 113¼ minutes Net. Number 787 after an initial PWR slack, passed Woking in 28 minutes 21 seconds, fell to 53 miles per hour at MP 31 and attained 66 before Basingstoke passed in 51 minutes 48 seconds from Waterloo. The minimum at Litchfield was 45 miles per hour, the maximum at Winchester, passed in 70 minutes 22 seconds, 82 and despite signal checks before Eastleigh it was two and three quarters minutes early at Southampton, 83 minutes 14 seconds. Speeds after Southampton were 64 miles per hour before Brockenhurst, 48 minimum at Sway and 64 maximum at Christchurch, sufficient to achieve a three minutes early arrival on the two hours schedule. Number 784 had two additional coaches plus two signal checks and a PWR slack and took 19¾ minutes to pass Surbiton. It then attained 70 miles per hour at Byfleet and was two minutes late at Woking.

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Southern [Western Section] King Arthur's on the "Bournemouth Limited"

The MP31 minimum was 58 miles per hour and with 73 maximum afterwards the lateness was reduced to three-quarters of a minute at Basingstoke, 52 minutes 15 seconds. After 77 miles per hour maximum at Winchester, Driver E.Baker of Bournemouth with No.784 passed Southampton three minutes early, 82 minutes 58 seconds, and with 75 before the Christchurch slack reached Bournemouth three and a half minutes within schedule [Ref.36].

King Arthur Class 4-6-0 No.787 ran Woking to Basingstoke in 23 minutes 27 seconds, No.784, making up lost time took only 21 minutes 15 seconds, average EDHP of 840-890 and 1,200-1,250. It has been claimed the King Arthur's had difficulty in maintaining the "Bournemouth Limited" schedule, even when restricted to ten coaches which was observed whenever possible. The sedate way the King Arthur's were invariably driven on the Southampton and Bournemouth route in the twenties encouraged a devalued view of their capabilities, Driver Baker's performance shows what could be achieved. The adverse 44.3 miles from Surbiton to Litchfield were run in 42 minutes 10 seconds, an average of 63 miles per hour with 415 tons. Driver Kelly with a King Arthur and 340 tons in 1935, schedule 118 minutes, passed Worting Junction in 53½ minutes, Shawford, 69.7 miles, in 71 minutes 20 seconds with a maximum of 76 miles per hour and after delays for signals, Southampton in 82 minutes 28 seconds. Bournemouth was reached two and a half minutes early, 115 minutes 34 seconds. [Ref.37] A year later, when the schedule had been reduced again, [116 minutes] No.792 with the standard 340 tons, reached Bournemouth with nine seconds to spare. The start was good, Hampton Court Junction, 16 minutes 52 seconds at 69 miles per hour, Woking, 26 minutes 55 seconds at 63, MP31 at 56 and Worting Junction, 52 minutes 27 seconds. [Average EDHP Woking Basingstoke 900-950] It then fell to 45 miles per hour after Worting Junction but after 80 maximum passed Southampton in exactly 80 minutes, three minutes early and ran gently on to Bournemouth.

Schools Class 4-4-0's were tested on the "Bournemouth Limited" at the end of 1936, No.936 on at least two occasions, a Bournemouth driver purportedly said they looked forward to their arrival. Ten were allocated to Bournemouth, crews rapidly adjusted to them, in particular mastering starting a heavy train with a four-coupled locomotive with a very high adhesion factor. [The experience wherever the Class was used except the Down platform at London Bridge and its notorious bend]. The greater challenge on the "Bournemouth Limited" was 107.8 miles non stop with a tender water capacity of only 4,000 gallons and coal consumption no greater than 40-50 lbs/hour.

Two experiences in 1937 illustrate how well the challenge was met. Schools Class 4-4-0's No's.929 and 930 with 340 and 410 tons reached Bournemouth in 116 minutes 12 seconds, 112 minutes Net, and 115 minutes 19 seconds. Number 929, reached 71 miles per hour at Hampton Court Junction and again at Byfleet, the minimum at MP31 was 58, the maximum before Basingstoke 68. This excellent running produced times of 26 minutes 36 seconds to Woking and 48 minutes 48 seconds to Basingstoke.

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Southern [Western Section] Schools on the "Bournemouth Limited"

Subsequent speeds were 50 miles per hour at Litchfield and 82 at Winchester with Southampton passed in 79 minutes 48 seconds including a slight delay for a PWR slack in the tunnel before. There were signal checks on the continuation to Brockenhurst, passed in 99 minutes 59 seconds and then with a minimum of 51 miles per hour at Sway and 75 before Christchurch Bournemouth was reached on time. Number 930 passed Woking in 29 minutes 18 seconds, Basingstoke in 52 minutes 12 seconds and at Northam Junction was five minutes behind No.929. However with a clear road through Southampton, it passed Brockenhurst in 98 minutes 10 seconds and reached Bournemouth three quarters of a minute early. Number 929 developed an average EDHP of 880-930 and No.930, 990-1,040 between Woking and Basingstoke. Comparisons of the power outputs of King Arthur Class 4-6-0's and Schools Class 4-4-0's should take into account that a King Arthur plus tender weighed 29 tons more than a Schools plus tender, equivalent to almost an additional coach.

High speeds were recorded on occasions behind Schools Class 4-4-0's on the long favourable stretch between Micheldever and Eastleigh. Number 925, with 340 tons reached Bournemouth two and a quarter minutes early. Initial speeds were 68 miles per hour at Hampton Court Junction, 53 minimum at MP31 and 49 at Wootton, passing times were Woking in 27 minutes 35 and Basingstoke in 50 minutes 25 seconds. Speed then rose to 84 miles per hour at Winchester, 86 before Eastleigh and Southampton was passed in exactly 80 minutes. The running was more restrained afterwards, 65 miles per hour before Brockenhurst, 49 minimum before Sway and 72 maximum before Christchurch. Worting Junction was passed one minute inside schedule and Southampton and two and three quarter minutes early. [Ref.38]

Schools Class 4-4-0 No.931 with 415 tons, shortly before the outbreak of war passed Hinton Admiral, 101 miles from Waterloo in 106 minutes 24 seconds. It passed Woking in 29 minutes 40 seconds and Basingstoke in 53 minutes 6 seconds. Speed fell to 51 miles per hour at MP31, reached 66 at Fleet, the minimum after Basingstoke was 52 and the maximum before Eastleigh 86; [one minute 40 seconds late at Worting Junction and 26 seconds early at Southampton]. The maximum before Brockenhurst was 69 miles per hour, the minimum at Sway 55 and the maximum before Christchurch 76. There was a signal check to 44 miles per hour at Christchurch, following which Bournemouth was reached on time, 114 minutes Net. Average EDHP Woking to Basingstoke was 975-1,025, the recorder of this run ascribed the slow start to poor coal, perhaps it indicated poor preparation of the locomotive, whatever by Woking the crisis, if there ever was one, was past.

These Schools Class 4-4-0' performances were surpassed by two, published by D.W.Winkworth in his book on the Schools Class. Number.928 in 1938 with 345 tons and No.930 at an unspecified date with 410 tons completed their journeys in 117 minutes, 109 minutes Net, and 112 minutes 56 seconds, 110½ minutes Net. Woking to Basingstoke took 20 minutes 9 seconds and 22 minutes 44 seconds, an EDHP of 1,090-1,140 and 1,025-1,075.

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Southern [Western Section] King Arthur performance to Southampton

Frank E.Box timed Schools Class 4-4-0 No.928, driven by Driver Oliver with the standard "Bournemouth Limited" load, when it passed Winchester in 67¼ minutes at 80 miles per hour, Eastleigh in 73 minutes and Southampton in 81 minutes. The final time to Bournemouth was 118 minutes 23 seconds but Box attributed over five minutes lost to out of course delays.

Records of King Arthur Class 4-6-0's on trains stopping at Southampton generally suggest poor performance. Number 780 in 1933 with winter "Bournemouth Belle", six Pullman cars, c. 250 tons Gross dawdled out to Worting Junction in 57 minutes 5 seconds and then sped down to Southampton, 81½ miles per hour average from Micheldever to MP75. They usually started well, often the one time drivers handled them urgently.

On the Crusaders Union visit to Southampton in 1937 King Arthur Class 4-6-0 No.776 with 515 tons kept schedule including suburban stops at Clapham Junction, Wimbledon and Surbiton. King Arthur performance at times was slovenly, No.786 with 370 tons in 1937 took 60 minutes 53 seconds to pass Basingstoke, there were two PWR slacks but the maximum was only 65 miles per hour. It continued to Southampton in 32 minutes 57 seconds, [schedule Basingstoke 54 minutes and Southampton 87½ minutes]. Speeds after Basingstoke were 49 miles per hour minimum at Wootton and 72 maximum at Winchester. The continuation to Bournemouth took, 35 minutes 44 seconds [schedule 36 minutes] with 66 miles per hour before Brockenhurst, 47 before Sway and 72 maximum Christchurch. In May of the same year No.788, with 380 tons on the 18.30 ex Waterloo ran to Southampton in 87 minutes 3 seconds, [Woking 28 minutes 59 seconds, Basingstoke 53 minutes 52 seconds] and continued to Bournemouth in 37 minutes 5 seconds.

A King Arthur Class 4-6-0 No.773 in 1938 with 395 tons passed Clapham Junction in 7 minutes 54 seconds, reached 68 miles per hour at Hampton Court Junction, 70 at Byfleet, fell to 55 at MP31 and again 70 maximum before Basingstoke. Woking to Basingstoke took 22 minutes 24 seconds, average EDHP 1,040-1,090, the latter station passed in 50 minutes 27 seconds from Waterloo, Southampton was reached in 86 minutes 2 seconds and the continuation to Bournemouth was run four seconds inside the 36 minutes schedule. A year later No.785 with 415 tons maintained the 87 minutes schedule to Southampton comfortably, Woking 29 minutes 22 seconds, Basingstoke 53 minutes 35 seconds and Southampton 84 minutes 36 seconds. The minimum after Basingstoke was 49 miles per hour, the maximum before Eastleigh 84. The general improvement in performance on the Bournemouth route in the late thirties had even infiltrated King Arthur crews. In fairness King Arthur' performance had always been good on the semi-fast trains, often with trains of 14 coaches.

A small coterie, between three and six, of Lord Nelson Class 4-6-0's allocated to Nine Elms depot in the thirties regularly hauled the "Bournemouth Belle". C.J.Allen published during the period some journeys with this train. In 1936 No.860 with 495 tons ran to Southampton in 89¾ minutes, 85½ minutes Net.

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Southern [Western Section] Lord Nelson's on the "Bournemouth Belle"

Number.861 with 515 tons on a Crusader's Union special passed through the Dock Gates in 89¼ minutes, 85½ minutes Net. Two years later No.865, with 460 tons unchecked reached Southampton in 84 minutes 12 seconds. Three journeys in 1938/9, No.865 with 415 tons, 860 with 495 and 864 with 500 took, 82 minutes 9 seconds, 79 minutes Net, 85 minutes 7 seconds and 82 minutes 42 seconds. The drivers were Payne twice with No.865 and Delve with No.860. On another occasion in 1939 No.865 with 505 tons reached Southampton in 83 minutes 47 seconds, 80 minutes Net.

Much has been written about the various modifications made to the Lord Nelson Class 4-6-0's, particularly to the exhaust systems. Some of the claims appear rather extravagant, including the concept that the fitting of a Lemaitre exhaust system transformed the "Nelsons" from rather indifferent locomotives to a position as the best 4-6-0 within the U.K, as ever the truth is less spectacular and more complex, the fact Nine Elms used the Lord Nelson's on heavy trains if possible helped with their reputation. Numbers.860 and 861 in the above examples ran Woking Basingstoke in 23 minutes 57 seconds and 24 minutes 19 seconds, EDHP 1,150-1,200 and 1,170-1,220 respectively.

Lord Nelson Class 4-6-0 No.865 modified to a 90 degree crank setting in 1933 was fitted in 1938 with a Kylchap blast pipe arrangement, the second of a pair of blast pipes purchased under Maunsell's aegis in 1934. In this guise the locomotive on test burnt nine percent more coal per train mile than an unmodified locomotive, perhaps because it was driven harder? There appears to have been no attempt to measure coal burnt per horsepower developed. Numbers 864 and 860 were fitted with Lemaitre exhaust systems in January and December 1939. Number.865 in 1938, when running to Southampton in 84¼ minutes with 460 tons ran Woking to Basingstoke in 23 minutes 42 seconds, an average EDHP of 1,080-1,130. It reached a maximum of 83 miles per hour before Eastleigh and ran from Southampton to the next stop at Bournemouth in 36 minutes 20 seconds. Number 860 with 495 tons ran Woking to Basingstoke in 24 minutes 21 seconds, an average EDHP of 1,120 -1,170. Number 865, fitted with the Kylchap arrangement and with a lighter train took 21 minutes 52 seconds, an EDHP of 1,150-1,200. Number 864 fitted with the Lemaitre arrangement required 22 minutes 55 seconds, an EDHP of 1,275-1,325.

Lord Nelson Class 4-6-0 No. 864 passed Woking, with half-open Regulator and 18 percent cut off, with a slight increase, seven-eighths Regulator and 20 percent, the minimum at MP31 was 51 miles per hour. At Basingstoke the Regulator was opened fully, the cut off lengthened to 22 percent, the minimum at Wootton was 55 miles per hour, if maintained on the 1/249, an EDHP of 1,475-1,525. The average from Basingstoke to Wootton was 54.5 miles per hour, from Basingstoke to Worting Junction 56.4 and from Worting to Wootton 52.8. This would imply that if the speed was 55 miles per hour at Wootton the train was checked at Worting, either for signals or an exaggerated slack for the turnout. Whatever actually occurred, the locomotive produced a high power output.

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Southern [Western Section] Schools performance to Southampton

Lord Nelson Class 4-6-0 No.865, with the Kylchap exhaust hauled 505 tons from Woking to Basingstoke in 22 minutes 54 seconds, average EDHP 1,290-1,340. Allowing for duration and doubt whether No.864 maintained 55 miles per hour on the 1/249, this suggests a comparable performance. The performance at Wootton was exceptional, speeds on other runs were; 49 miles per hour by No.860 with 495 tons, 48 by 865 with 415 and 51 by 860 with 495. Number 865 with 505 tons passed Hampton Court Junction in 17 minutes 10 seconds at 68 miles per hour, attained 73 at Byfleet, passed Basingstoke three and a half minutes early, the minimum afterwards was 52½, the time to Winchester passed at 80, 67 minutes, almost sixty miles per hour average from Waterloo with 500 tons. After a signal check to 20 miles per hour at Eastleigh it reached Southampton in 83 minutes 47 seconds, unchecked Eastleigh 72½ minutes and Southampton 80 minutes.

The introduction of the Schools Class 4-4-0's encouraged the view that the King Arthur Class 4-6-0's had been replaced by smaller locomotives which reflected badly on them. The first part of the argument was partially valid, the second part not at all. The King Arthur's were considered more suitable for the West of England route to Exeter. In practice the School's, boiler total heating area of 2,049 square feet, firegrate 28.3 square feet were some six to eight percent smaller than the King Arthur, [2,215 and 30.0]. As already noted with a 450 tons load, the total weight, i.e. locomotive plus tender plus train was reduced by c. five percent with a Schools' compared with a King Arthur.

The Schools Class 4-4-0's successfully handled the, at times very heavy principal trains, stopping at Southampton, particularly the 18.30 ex Waterloo. C.J.Allen published ten logs at various times from correspondents, although presumably best performances, they support the view that a high level of punctuality was achieved on the Bournemouth route in the thirties. [Ref.39]

The ten in ascending weight order were:-

With 405/410 tons;

No.930, reached Southampton in 87 minutes 36 seconds, continued to Bournemouth. 38 minutes 6 seconds, 36½ minutes Net.

No.927, 91 minutes 9 seconds, [87½ minutes Net], 36 minutes 40 seconds

No.924, 86 minutes 15 seconds, 36 minutes 59 seconds

When loads were at this level timekeeping appeared relatively easy, these three runs were made shortly after the introduction of the Schools' to the Bournemouth route. Times to Basingstoke were; 55½ minutes, [one and a half minutes late] - 56 minutes 10 seconds, after a two minutes delay before Clapham Junction - 54 minutes 35 seconds. The average EDHP between Woking and Basingstoke was 850-900, 860-910 and 960-1,010. The minima after Worting Junction were 43, 44 and 47 miles per hour and the maxima before Eastleigh 78, 80 and 83. The Southampton to Bournemouth schedule was 36 minutes. Numbers 930 and 934 started slowly, Brockenhurst passed in 20 minutes 29 seconds and 20 minutes 14 seconds. Number 924 was better, Brockenhurst in 18 minutes 23 seconds, it then fell to 43 miles per hour before Sway and as with the two others only reached 65 before Christchurch.

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Southern [Western Section] Schools performance to Southampton

With 445 tons;

No.925, reached Southampton in 88 minutes 12 seconds, including a signal check to 50 miles per hour at Winchester. It passed Basingstoke one minute late, 55 minutes 6 seconds, the average EDHP from Woking to Basingstoke was 960-1,010, minimum after Woking Junction 46 miles per hour, maximum after the signal check 77 at Eastleigh.

With 480-490 tons:

No.925 reached Southampton in 87 minutes 20 seconds and continued to Bournemouth in 38 minutes 6 seconds, 36 minutes Net.

No.931, 87 minutes 24 seconds, 36 minutes 56 seconds, 35¼ minutes Net.

No.928, 91 minutes 12 seconds, [87 minutes Net], 35 minutes 44 seconds.

Number 925 passed Woking in 30 minutes 12 seconds, the minimum at MP31 was 52 miles per hour, the maximum before Basingstoke 65, average Woking to Basingstoke 59.5, EDHP of 1,160-1,210. Basingstoke was passed in 53 minutes 48 seconds; there was a signal check after Micheldever and 82 miles per hour the maximum afterwards. Brockenhurst was passed in 18 minutes 10 seconds, after 65 miles per hour maximum, 52 minimum before Sway, 72 before a PWR slack to 20 before Christchurch.

Number 931 made a better start, Hampton Court Junction, half a minute early, 17 minutes 33 seconds, Woking one minute early, 28 minutes 26 seconds with 65 miles per hour at both Esher and Byfleet. The time to Basingstoke was 53¼ minutes, three quarters of a minute early, average EDHP from Woking 1,040-1,090, the minimum at Wootton 48 miles per hour, followed by a PWR slack and a maximum of 75 on the descent to Southampton. Brockenhurst was passed in 18 minutes 39 seconds and with the same awkward PWR slack before Christchurch Driver Billett was only one minute late into Bournemouth.

Number 928 did not exceed 61 miles per hour to Woking, passed in 31 minutes 16 seconds and was over three minutes late at Basingstoke, average EDHP from Woking 975-1,025, reduced to one and a half minutes at Eastleigh, 81 minutes 2 seconds, maximum before 89 miles per hour. Brockenhurst was passed in 18 minutes 31 seconds with 64 miles per hour before, maximum before Christchurch 79. .

With 510 tons:

Number 932 passed Surbiton in 18 minutes 40 seconds. Speeds after this were, 65 miles per hour at Esher, 67 at Byfleet, 65 at Fleet and an intervening minimum of 48 at MP31. Basingstoke passed in 54 minutes 20 seconds, average from Woking 58.8, EDHP 1,175-1,225, minimum at Wootton 47 miles per hour the maximum at Winchester 82, passed in 72 minutes 34 seconds and Southampton reached in 86 minutes 32 seconds. Christchurch passed in 30 minutes 6 seconds from restart before bad checks.

With 525 tons;

No.926, 87 minutes 21 seconds, 37 minutes 31 seconds

No.927, 87½ minutes, 36¾ minutes

No.927, 88 minutes [timed to Southampton only]

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Southern [Western Section] Schools with 525 tons to Southampton

Number 926 passed Woking in 29 minutes 54 seconds, Basingstoke in 55 minutes 32 seconds, 62 miles per hour at Esher and Byfleet, 61 at Fleet, 47 minimum at MP31. Average EDHP Woking to Basingstoke 1,075-1,125. The minimum and maximum after Worting Junction were 46 and 78 miles per hour. With the load reduced to 455 tons at Southampton, Brockenhurst was passed in 18 minutes 39 seconds; there was a PWR slack before Christchurch.

Number 927, driven by Kerry, passed Surbiton in 17 minutes 53 seconds and Woking in 30 minutes 16 seconds. The minimum at MP31 was 46 miles per hour, the maximum before Basingstoke 63, time to Basingstoke 55 minutes 34 seconds, average EDHP from Woking, 1,090-1,140. Southampton was reached half a minute late due to a slight signal check at Winchester after 46 miles per hour minimum at Wootton and 76 either side of Winchester. On another occasion with identical load No.927 kept time to Southampton and lost three quarters of a minute to Bournemouth, no other details are available.

D.W.Winkworth, in his book on the Maunsell Schools, quotes an additional run timed in 1938 when No.932 with 410 tons ran to Southampton in 92¼ minutes, assessed as 81¼ minutes Net. It was badly delayed initially, culminating in a signal stop at Surbiton and was ten minutes late at Woking, and the average from there to Basingstoke was 61.7 miles per hour, an EDHP of 1,050-1,100.

The performances of Nos.925 and 932, between Woking and Basingstoke were excellent. The existence of two independent records eliminates, or at least minimises, thoughts that the train weight was overestimated, there was a strong following wind [more likely in the opposite direction] or an error in the timing, a hand held stopwatch is hardly sophisticated. The EDHP per square foot of firegrate area on the two runs was 41.9 and 42.4 i.e. 42 and the EDHP per square foot of boiler heating surface was 0.58 and 0.587 i.e. 0.58. King Arthur Class 4-6-0 No.784 with 415 tons on the "Bournemouth Limited" produced figures of 40.8 EDHP per square foot of firegrate area and 0.55 EDHP per square foot of boiler heating area. Assuming the data accurate, they indicate a slight advantage to the Schools Class, even allowing for errors, plus or minus three percent. The King Arthur EDHP was approximately two percent higher, statistically probably insignificant, the Schools won conclusively if EDHP per ton of locomotive is considered i.e. 17.9 versus 15.1. In practice the King Arthur Class 4-6-0's and the Schools Class 4-4-0's were both thoroughly capable locomotives.

There were slight timetable differences in the Up direction compared with the Down during the period 1933-39, e.g. the best time for the "Limited" to Waterloo from Bournemouth was 118 minutes vs. 116 minutes whereas the Up "Bournemouth Belle", including the stop at Southampton was allowed 120 vs. 126 minutes. Five journeys with King Arthur Class 4-6-0's on the Up "Bournemouth Limited", indicate how locomotive performance improved over the years, perhaps it reflected increasing Driver enthusiasms. [Ref.40]

Date: July 7th 2002

Southern [Western Section] King Arthur's, Bournemouth to London

Three journeys in 1933/4 when the Bournemouth to Waterloo schedule was two hours resulted in; King Arthur Class 4-6-0 No.792 arrived at Waterloo, with two seconds to spare - No.785 with the normal 340 tons, lost one minute 41 seconds, 118 minutes Net - No.791, with two extra coaches, 405 tons Gross, arrived four and a quarter minutes late, 120 minutes Net. Number 792 passed Southampton in 33 minutes 47 seconds and Basingstoke in 73 minutes 4 seconds, schedule 33½ and 72 minutes. Speeds were 42 miles per hour minimum at New Milton, 68 maximum before Totton, the average from Winchester to Litchfield 47, an average EDHP of 750-800. The maximum on the London side of Basingstoke was 76 miles per hour and Surbiton was passed on time, 104 minutes 38 seconds. Number 785 was five seconds slower to Brockenhurst, 19 minutes 40 seconds and 33 seconds to Southampton after reaching 74 miles per hour before Totton. It averaged 52 miles per hour between Winchester and Litchfield, 970-1,020 EDHP, passed Basingstoke in 72 minutes 8 seconds, was two minutes ahead of schedule at Woking but then experienced signal checks and a signal stop before Vauxhall. Number 791 with 405 tons passed Southampton in the same time as No.785, its time over the adverse section from Christchurch to Sway; 10 minutes 15 seconds, was the quickest, an average EDHP of 890-940. The average from Winchester to Litchfield was 46.4 miles per hour, 950-1,000 EDHP; it passed Basingstoke over two minutes late and with 73 maximum reduced this to 42 seconds at Surbiton before signals caused delays.

Two runs, made shortly before the Schools assumed the "Bournemouth Limited" duty, suggested a more vigorous approach to driving, even allowing that the schedule by this time had been reduced by two minutes. King Arthur Class 4-6-0 Nos.778 with Driver Selby and 787 both had the standard 340-345 tons load. They passed Sway in 15 minutes 24 seconds and 15 minutes 20 seconds, averages from Christchurch to Sway were 55.8 and 60.8 miles per hour, 825-875 and 950-1,000 EDHP. Number 787 was checked by signals at Lymington Junction, No.778, with a clear road and 75 miles per hour maximum passed Southampton in 31 minutes 44 seconds, No.787, following the check, was almost two minutes slower. Both were checked for a PWR slack between Eastleigh and Winchester, No.778 accelerated from 46 miles per hour at Winchester to 49 at Litchfield, No.787 from 44 to 58, 890-940 and 1,130-1,180 EDHP at least [No.787 was still accelerating when it passed Litchfield]. They passed Basingstoke in 72 minutes 4 seconds and 71 minutes 34 seconds [schedule 71½ minutes], No.787 was delayed by a signal check before Worting Junction. Number 778 reached 74 miles per hour before Woking, after a PWR slack passed Clapham Junction one minute late, 112 minutes 6 seconds and with slow running, perhaps under signals at caution, reached Waterloo two minutes late, five seconds over two hours, the Net time was 114½ minutes. Number 787 after the check at Worting reached 80 miles per hour at Hook, fell to 74 at MP31, reached 76 at Brookwood and passed Hampton Court Junction early, 100 minutes 53 seconds. A long PWR slack before Clapham Junction resulted in Waterloo being reached 2 minutes 41 seconds late, the Net time only 111½ minutes, an average start to stop speed of 58 miles per hour.

Date: July 7th 2002

Southern [Western Section] Performance Up from Bournemouth 1933-39

Two experiences with King Arthur Class 4-6-0's between Southampton and Waterloo exhibited different driving styles, although out of course delays led to similar overall journey times. In 1933 No.777 with 450 tons averaged 41.2 miles per hour between Winchester and Litchfield, 800-850 EDHP, passed Basingstoke in 44 minutes 5 seconds and then reached 75 miles per hour at Winchfield and at Byfleet. It passed Surbiton in 76 minutes 4 seconds and reached Waterloo in 97 minutes 22 seconds after signal checks, 92-93 minutes Net. A few years later Driver Delve with No.776 and 380 tons passed Eastleigh in 9 minutes 21 seconds, slowed to 20 miles per hour for a PWR slack at Shawford and accelerated to 53 at Lichfield on full Regulator and 25 percent cut off, 1,075-1,125 EDHP. Basingstoke was passed in 43 minutes 55 seconds, 80 miles per hour reached afterwards before another PWR slack, Surbiton in 79 minutes 17 seconds and with signal checks Waterloo was reached in 98 minutes 56 seconds, 84 minutes Net.

The Schools Class 4-4-0's produced good performances in this direction. O.S.Nock [Ref.41] noted No.930 with 375 tons on the 08.40 ex Bournemouth in 1937. It passed Sway in 16 minutes 31 seconds; the average from Christchurch to Sway was 52.9 miles per hour, 820-870 EDHP, and Southampton in 34¼ minutes. There was a signal stop for three-quarters of a minute at St. Denys, the Winchester to Litchfield average was 48.6 miles per hour, 920-970 EDHP. Basingstoke was passed four minutes late, with a PWR slack at Winchfield and despite 76 miles per hour achieved either side of the slack, Woking five minutes late, 97 minutes 5 seconds. The Driver recovered three and a half minutes of this lost time before Waterloo, the average from Woking to Surbiton was 80 miles per hour, maximum 82, 113 minutes Net.

Three runs on the "Bournemouth Limited" published in 1939 [Ref.42] featured Schools Class 4-4-0's Nos.930, 931 and 929, with 345 tons on the first two and 415 tons on the third. They passed Brockenhurst, [all three experienced a PWR slack] in 19 minutes 17 seconds, 20 minutes 40 seconds and 21 minutes 41 seconds, Nos.931 and 929 were checked further, times to Southampton were 32 minutes 33 seconds, 39 minutes 21 seconds and 38 minutes 28 seconds. They were half a minute early, six and a half and six and three quarter minutes late at Northam Junction, at Basingstoke three minutes early, three and six minutes late. Averages from Winchester to Litchfield were 56.3, 54.3 and 44.7 miles per hour, 1,050-1,100, 1,000-1,050 and 890-940 EDHP. Basingstoke to Surbiton, 35.8 miles took: 31 minutes 52 seconds with 75 miles per hour maximum - 32½ minutes, a PWR slack to 20 before Woking, 80 and 78 maxima before and after - 28 minutes 38 seconds with 81 maximum at Woking. Times to Surbiton were 99 minutes 61 seconds, 106 minutes 5 seconds and 106 minutes 10 seconds. Number 930 with Driver Osborne, despite a PWR slack and a signal check to 10 miles per hour arrived on time, 118 minutes 5 seconds from Bournemouth, 113½ minutes Net. Number 931, with a clear road was only 80 seconds late, despite the out of course checks, 108 minutes Net, 80 minutes from Southampton pass to Waterloo, 77 minutes Net. Number 929 delayed by signals arrived almost four and a half minutes late at Waterloo, 114-115 minutes Net with 415 tons.

Date: July 7th 2002

Southern [Western Section] Schools performance from Bournemouth

D.W.Winkworth gave details of a run with No.929 and 375 tons when Waterloo was reached four seconds inside schedule, 110½ minutes Net. The average speed from Christchurch to Sway was 57.9 miles per hour, 925-975 EDHP and from Winchester to Litchfield 50.7, 960-1,010 EDHP. The train was badly checked between Litchfield and Worting after which the Basingstoke to Surbiton stretch was run 28½ minutes. The Schools Class 4-4-0's had a considerable margin of power in reserve [if not water] with the usual 340 tons formation and 118 minutes non stop schedule.

Schools Class 4-4-0's at times hauled heavier trains which stopped at Southampton, although not as heavy as in the Down direction. Yes, the author recognises this implies stock was worked Down to Bournemouth never to return! One surmises that the coach distribution across the various Up trains was more even and if not there were empty stock workings. D.W.Winkworth gave details of three runs between Bournemouth and Southampton timed by Dr. Fluker and H.T.Clements. Number 930 with 410 tons ran the 28.8 miles in 34 minutes 10 seconds, No.929 with 470 tons in 35¼ minutes, [34½ minutes Net] and No.930 with 480 tons in 34 minutes 40 seconds, schedule 37 minutes. Average speeds from Christchurch to Sway were 58.7, 55.0 and 51.9 miles per hour, 1,020-1,070, 1,060-1,110 and 960-1,010 EDHP respectively. He also quoted two runs timed by Mr. Clements between Southampton and Waterloo. Number 930 with 415 tons ran to Waterloo in 94 minutes 25 seconds, 85½ minutes Net and No.933 with 485 tons in 86 minutes 50 seconds, 86¼ minutes Net. The times to Micheldever were 28 minutes 35 seconds and 30 minutes 50 seconds, average from Winchester 51.4 and 45.0 miles per hour, 1,060-1,110 and 1,020-1,070 EDHP.

The Lord Nelson Class 4-6-0's [in 1933 were seldom rostered to trains that extended them, whereas in 1939 on occasions they realised their full potential. C.J.Allen published details in 1934 of three journeys. [Ref.43] Number 865 with a light train, 330 tons, ran from Southampton to Waterloo in 88¼ minutes without exceeding 74 miles per hour, it passed Basingstoke in 39 minutes 40 seconds and Woking in 60½ minutes. Driver Payne, with the same load, eight Pullman cars and No.852 passed Woking in 62 minutes 11 seconds after a bad PWR slack at Shawford, he ran Basingstoke to Woking in 18 minutes with 83 and 82 miles per hour at Hook and Woking, signals then spoil the fun. Number 853 with driver Delve and 470 tons [not the "Belle"] was 2 minutes 35 seconds behind Payne at Eastleigh, 11 minutes 25 seconds, passed Winchester in 20 minutes 5 seconds, was checked for a PWR slack and reached 41 miles per hour at Litchfield, 920-970 EDHP. Basingstoke was passed in 46 minutes 5 seconds and the continuation to Surbiton run in two seconds under 28 minutes. Maxima were 79 miles per hour at Hook and 83 at Woking. The winter "Bournemouth Belle" at times only six Pullman cars, was an easy task for a Lord Nelson'. Number 856 passed Basingstoke in 37 minutes 1 second from Southampton, Woking in 57 minutes 40 seconds and after a PWR slack reached Waterloo in 87 minutes 22 seconds, it could have reached Waterloo in 81 to 82 minutes without the slacks. It did not exceed 75 miles per hour.

Date: July 7th 2002

Southern [Western Section] Lord Nelson performance in 1939

Three examples published in 1939 exhibited a higher level of Lord Nelson Class 4-6-0 performance. [Ref.44] Number 864, starting from Bournemouth, with 370 tons, delayed by a PWR slack before Sway, passed Brockenhurst in 20 minutes 26 seconds and reached Southampton in 35½ minutes. From the restart it passed Litchfield in 29 minutes 9 seconds, an average of 52.1 miles per hour from Winchester, 1,030-1,080EDHP, Basingstoke in 39 minutes 10 seconds after a PWR slack and following another PWR slack Woking in 62 minutes 51 seconds. It reached 80 miles per hour after Woking, passed Surbiton in 72 minutes 40 seconds and after signal checks reached Waterloo in 88 minutes 42 seconds, 81-82 minutes Net. Number 862, fitted with the Kylchap blast pipe arrangement and double chimney, ran from Bournemouth to Southampton in 33 minutes 20 seconds with 500 tons on the "Bournemouth Belle". The average from Christchurch to Sway was 54.7 miles per hour, 1,200-1,250 EDHP. From Southampton it passed Worting Junction in 34 minutes 44 seconds, schedule 37 minutes. The average from Winchester to Litchfield was 54.5 miles per hour, 1,440-1,490EDHP. The times to Basingstoke and Surbiton, with a signal check before Woking were 37 minutes 4 seconds and 69 minutes 12 seconds, the final time to Waterloo 87 minutes 40 seconds after another signal check, 82 minutes Net.

Driver Payne, shortly before his retirement, drove Lord Nelson Class 4-6-0 No.865 with 495 tons from Bournemouth, with the one stop at Southampton, to Waterloo in an actual running time of 114 minutes 40 seconds. [Number 865 left Eastleigh works in June 1939 with a Lemaitre type exhaust.] He passed Brockenhurst in 18 minutes 56 seconds after an average from Christchurch to Sway of 53.7 miles per hour, 1,150-1,200 EDHP. The time to Worting Junction from Southampton was 35 minutes 36 seconds, the average from Winchester to Litchfield 54.0 miles per hour, 1,410-1,460 EDHP. He passed Basingstoke in 37 minutes 49 seconds, took 28 minutes 53 seconds on to Surbiton and reached Waterloo in 81 minutes 10 seconds. Without the Southampton stop, providing water supplies permitted, Bournemouth to Waterloo in 112 minutes, 57¾ miles per hour with 500 tons, the original performance specification for the Lord Nelson Class 4-6-0 met with something to spare. H.T.Clements recorded a similar performance to those of Nos.862 and 865 from Bournemouth to Southampton with No.863, with a Lemaitre exhaust, on August 6th 1939, two days later the "Bournemouth Belle", with the same load, 12 Pullman cars, had a Schools Class 4-4-0 Up and Down.

Lord Nelson Class 4-6-0's Nos.862 and 865 between Winchester and Litchfield achieved 44.4 and 43.5 EDHP per square foot of firegrate area and 0.62 and 0.61 EDHP per square foot of boiler heating area. These are some five percent higher than the maximum achieved by Schools Class 4-4-0's on Bournemouth services and some ten percent above those of King Arthur Class 4-6-0's, albeit not at the same locations. Such differences could be explained by different wind speeds but they do question the frequently stated belief that the Lord Nelson was the poor Maunsell design. They also show up well in terms of EDHP per ton of locomotive i.e. 17.3 and 17.2 compared with 17.9 and 15.1 for the others.

Date: July 7th 2002

Southern [Western Section] Maunsell's locomotives assessed

There is little doubt that Maunsell's locomotives performed well on the Western Section in the period 1933-39, particularly in the two years prior to the onset of War. Schedules had improved, loads increased, Nine Elms and Bournemouth Enginemen responded to the challenge. Mileage between General Repairs during the thirties for the three Classes was similar i.e. Schools Class 4-4-0 - 90,000, Lord Nelson Class 4-6-0 - 89,000 and King Arthur Class 4-6-0 - 86,500. Although too much credibility cannot be given to such figures, it is surprising to see lower mileages for the two cylinder locomotives than for the three and four cylinder ones. Punctuality on the Southern in the late thirties was good and the locomotives were capable of continuing until the advent of electrification, unfortunately War intervened.

Successful locomotive operation can be measured in terms of daily revenue mileage. Western Section rosters increasingly involved a return trip to Weymouth from London. In 1934 for instance the locomotive working the 08.30 Waterloo to Bournemouth continued to Weymouth on the 13.00 from Bournemouth and returned to London from Weymouth with the 17.35. The locomotives of the 12.30 ex Waterloo and the 07.40 ex Weymouth worked through between London and Weymouth. The Schools Class 4-4-0's undertook certain Bournemouth depot duties in the late thirties, e.g. No.381, 07.25 Bournemouth to Waterloo, 12.30 Waterloo to Weymouth and 18.30 Weymouth to Bournemouth - No.388 - 12.01 Bournemouth to Weymouth, 17.37 Weymouth to Waterloo and 08.30 Waterloo to Bournemouth - another involved a freight working, the 02.26 Bournemouth to Weymouth, then 07.45 Weymouth to Waterloo and 16.30 Waterloo to Bournemouth.. The daily mileage was less than 300 although there were duties that involved higher figures, No. 280 - [379 or 379A in Winter] for an Eastleigh based locomotive, light engine to Southampton Terminus, 07.08 Docks to Waterloo, 11.30 Waterloo to Bournemouth West, 17.05 return,[15.05 in Winter] 22.30 Waterloo to Southampton, light engine to Eastleigh, c 400 miles. This roster was regularly taken by Lord Nelson Class 4-6-0 No.857 after fitting with a boiler incorporating a round top firebox, in 1939 a King Arthur Class 4-6-0 obliged.

The Western Section ran many extra trains during the summer, particularly on Saturdays with a variety of motive power and with some locomotives called on to relive the glories of their youth. There were 67 steam hauled Main Line departures from Waterloo on Saturday July 29th 1938 in addition to 45 Portsmouth Electric's. The specials for organised campers left before 08.00, the two that ran via Southampton were hauled by T9 Class 4-4-0 No.119 to Lymington and H15 Class 4-6-0 No.483 to Swanage. The service, connecting with the Boat to St Malo ran in two parts, with T14 Class 4-6-0 No.460 and S15 Class 4-6-0 No.521. The 08.27 to Bournemouth, 08.30 to Weymouth and 08.54 to Swanage left behind T14 No.447, Lord Nelson Class 4-6-0 No.858 and an N15X Class 4-6-0 respectively. U Class 2-6-0's or L12 Class 4-4-0's usually hauled the Lymington Pier trains. [On one August Saturday an L11 Class 4-4-0 had ten coaches in each direction.] The 10.30 "Bournemouth Belle", 12 Pullmans had Lord Nelson No.864, the 10.38 to Bournemouth a King Arthur Class 4-6-0 and the 10.47 a T14.

Date: July 7th 2002

Southern [Western Section] Saturday July 29th 1938

The 11.30 to Bournemouth ran in four parts. On July 29th there were only three Down Ocean Liner Expresses, but four Up Channel Islands Boat trains were all hauled by 4-6-0's, one H15, No.522, one T14, No.460 and two N15X's, Nos.2327 and 2328.

The N15X Class 4-6-0's, the former LB&SC Railway 4-6-4 Tank's were rebuilt between December 1934 and April 1936. Following the commencement of electric services, first to Brighton and then to Eastborne and Hastings, there were no suitable duties remaining on the Central Section. Number 2329 was noted on a return duty to Bournemouth on December 19th and 20th 1934, Mr.C.W.Steward, who travelled to Brockenhurst and back observed "the locomotive started badly", it suffered from three dead centres on the Down run and two more on the Up. The driver stated the locomotive was "a bad coal eater", not invented here perhaps. Numbers Nos.2332 [once] and 2328 [twice] worked the winter "Bournemouth Belle", apparently to time in 1936 and No.2333 performed the honours on 18th November 1937. Number 2328 on the 21.00 ex Waterloo was noted despite checks at Vauxhall and Wimbledon arriving at Eastleigh to time.

The 11.20 from Southampton, with N15X Class 4-6-0 No.2328 and 370 tons in 1938 maintained the 90 minutes non stop schedule to Waterloo and the intermediate passing times closely. [Ref.45] Eastleigh 10 minutes 25 seconds, Litchfield 32 minutes 40 seconds, an average of 46.7 miles per hour from Eastleigh, and 40 minutes 3 seconds to Worting Junction, schedule 39½ minutes. Hampton Court Junction was passed in 73 minutes 6 seconds, schedule 73 minutes, maximum 73 miles per hour reached at Basingstoke and Woking, Waterloo was reached 40 seconds late. The average from Winchester to Litchfield was 47.8 miles per hour, 980-1,030 EDHP.

The T14 Class 4-6-0's, as noted already, regularly appeared on Bournemouth trains at Peak periods, particularly summer Saturdays. Number 443, with 315 tons on the 11.22 ex Waterloo reached Southampton in an actual time of 92¾ minutes, 88¾ minutes Net. [Ref.46] Following a laboured start, it passed Surbiton in 18 minutes 57 seconds and Woking in 32 minutes 16 seconds at 57 miles per hour. Speed onwards to MP31 ranged between 51 and 53 miles per hour and reached 63 at Farnborough, before severe signal checks at Basingstoke. There was a recovery to 46 miles per hour at Wootton and 82 was attained on the descent to Eastleigh, the four-cylinder 4-6-0's were always noted for riding well at high speeds. Number 443 developed an EDHP of 790-840 between Woking and MP31 and at least 740-790 before Wootton.

The T14 Class 4-6-0's at this time carried a boiler with Maunsell superheater, the total heating area was 1,733 square feet [1,280 square feet in the boiler tubes, 155 square feet in the firebox and 295 square feet in the superheater.

The T14 Class 4-6-0's often ran quickly downhill, visitors to the footplate expressed surprise they were travelling so fast. D.S.M. Barrie was a passenger on December 24th 1938 on a relief to the 18.30 ex Waterloo

Date: July 7th 2002

Southern [Western Section] Incidents and diversions

The locomotive was a T14 No.446 with 288 tons Tare. [Ref.47]. The train stopped at Woking because of difficulties and an M7 Class 0-4-4 Tank No.672 was attached as pilot. This took four minutes before the double-headed train continued to a stop at Basingstoke in 30¾ minutes. The M7 was replaced there by U Class 2-6-0 No.1805 which driven with some vigour passed Shawford, 21.9 miles from Basingstoke, in 21 minutes 53 seconds at 83 miles per hour. No doubt the T14 rode well at this speed, one imagines that the crew on the 2-6-0 were hanging on. There was a special stop at Eastleigh, DSMB assumed for crew changing purposes on the 2-6-0, which continued as pilot to Bournemouth.

Secondary passenger locomotives handled much of the excursion traffic. Thomas Cook for example organised an excursion for the Leicestershire Branch of the NFU to Southampton on Whitsun Tuesday 1937. The train made up of 11 LMS Railway coaches including a Kitchen car left Brent Junction eight minutes late at 13.07 behind an S11 Class 4-4-0 No.401, travelled via Acton, Isleworth, Staines and Virginia Water and reached Southampton 20 minutes late at 15.28. [Seven minutes was spent at Basingstoke to enable the 13.30 ex Waterloo to pass] The return journey commenced at Southampton at 20.00 and including a four minutes stop at Basingstoke was to schedule at Acton Wells before the locomotive stalled on the 1/49 up to Brent Junction No. 2 Box. The Box was ultimately reached at 23.23, 55 minutes late. This was typical of the pitfalls when comparatively small locomotives hauled 400 ton trains.

There were occasions, as with all Railways, when trains were diverted at short notice. The 16.58 Up Channel Islands Boat train on August 18th 1935 "caught fire" at Micheldever. The Up "Bournemouth Belle", 12 Pullman cars, 500 tons Gross with Lord Nelson Class 4-6-0 No.861 was stopped at Winchester where the Lord Nelson ran round the train and hauled it back tender first to Eastleigh. It ran round again and then ran the 23.3 miles from Eastleigh to Salisbury in 36 minutes. At Salisbury a King Arthur Class 4-6-0 No.456, attached to the rear of the train, took it to Waterloo in the reasonable time, bearing in mind the weight, of 93 minutes. The Waterloo arrival at 22.58 was over two hours and a half late. The train was considered too heavy for diversion over the 1/60 gradients of the Alton line.

The older locomotives, not immune as already noted to problems when pressed into Main line service, could on occasions reward the observer with some interesting moments. Mr. Barrie noted on August 7th 1937 the 13.30 Waterloo to Bournemouth, 15 coaches, 442 tons Tare/475 tons Gross was hauled by an L12 Class 4-4-0 No.432 in the hands of much respected Driver Payne. The lengthy stop at Basingstoke was made 14 minutes late, schedule 57 minutes. Another lengthy "breather" was taken at Winchester the next stop. At Southampton an M7 Class 0-4-4 Tank was added as pilot, bunker first, the pair of locomotives ultimately limped into Bournemouth West at 17.35, 70 minutes late. Some of the lost time was attributed to the brakes leaking on!

Date: July 7th 2002

Southern [Western Section] Effects of electrification in 1937

The number of daily rosters for secondary locomotives naturally reduced with the onset of further electrification. The through trains from Waterloo to Southampton via Alton ceased with introduction of electric services to the latter town, Auto sets hauled by an M7 Class 0-4-4 Tank ran between Alton and Southampton. Locomotive variety on the through workings to Southampton had been considerable, 06.55 Waterloo to Southampton for example was usually an H15 Class or T14 Class 4-6-0 allocated to Nine Elms depot, on 24th November 1937 an Urie N15 Class 4-6-0 No.751 appeared, on 8th December No.754. During the week December 15th to 19th motive power was U1 Class 2-6-0 No.1900 on Wednesday, N15X Class 4-6-0 No.2332 on Thursday and H15 Nos.489 or 491 on the other days.

The Reading electrification, concurrent with the Alton one, replaced many steam diagrams. For some years M7 Class 0-4-4 Tank's allocated to Nine Elms depot hauled many of the Waterloo to Reading trains but during the last eighteen months of steam they were almost entirely replaced by tender locomotives. One correspondent during the early months of 1937, noted one F1 Class 4-4-0, three different U1 Class 2-6-0's, three U Class 2-6-0's, one L12 Class 4-4-0, one T9 Class 4-4-0, two K10 Class 4-4-0's and five L11 Class 4-4-0's. Reading depot, for many years used K10's on the London trains but from 1933 replaced them mainly with the F1's

December 31st 1938 was the last day of steam operation between Waterloo and Reading. The 13.16 ex Waterloo that day consisted of seven former L&SW coaches hauled by U Class 2-6-0 No.1805. The 28 minutes schedule to the first stop at Staines, via Barnes Bridge, 20½ miles was kept including a signal check between Ashford and Staines; Reading was reached on time at 14.44. The 15.00 Up, entrusted to T9 Class 4-4-0 No.119 the Southern Railway Royal engine, stopped at Wokingham and all stations from there to Staines and finally reached Waterloo at 16.19. The last Up train with a Reading based locomotive, the 19.00, which made the same stops as the 15.00, reached Waterloo one minute early at 20.18 including signal checks at Putney and Vauxhall. The locomotive was F1 Class 4-4-0 No.1079 with a three coaches former SE&C set, a complete SE&C train in fact. The last train from Reading, the 22.25 had L11 Class 4-4-0 No.435. Actual locomotives used on the last day, [with duty numbers were]; L11's Nos. 154, 155, 409 and 435, [Nos. 69, 57, 70 and 66], U No.1805, [No.86], T9 No.119, [No.90] and F1's Nos.1079, 1140 and 1231, [Nos. 183,4 and 5].

Schedules between Bournemouth and Weymouth were improved concomitant with the introduction of the 116 minutes non stop timing to Bournemouth. The "Bournemouth Limited" reached Weymouth in six minutes under three hours, the Bournemouth to Weymouth section run in 55 minutes including stops at Poole, Wareham and Dorchester South. The 07.45 ex Weymouth, with stops at Dorchester South and Poole was allowed 50 minutes to Bournemouth Central, it left three minutes earlier from July 1938 and made an additional stop at Wareham. Trains west of Bournemouth typically consisted of six coaches as far as Wareham and four coaches from there to Weymouth.

Date: July 7th 2002

Southern [Western Section] Performance West of Bournemouth

The "Bournemouth Limited" ran to Waterloo from Weymouth in 173 minutes. The improved schedules on the Weymouth section provided further encouragement to fast running west of Bournemouth, a tradition dating back to the end of the 19th Century, albeit with light trains. The 13.35 ex Weymouth was allowed 11½ minutes from Dorchester South to the stop at Wool, 10.0 miles, seven minutes to Wareham, 5.0 miles, and ten minutes over the 7.1 miles from there to Poole. D.S.M.Barrie timed an Urie N15 Class 4-6-0 with 100 tons over the three stages in 11 minutes 8 seconds, 6 minutes 56 seconds and 10 minutes 11 seconds with maxima of 78, 65 and 63 miles per hour.

The highest speeds between Bournemouth and Weymouth occurred between Dorchester South and Wareham in the Up direction, the crews sometimes encouraged by railway enthusiasts. Three journeys timed by Dr. Fluker were published in 1939 [Ref.48]. Schools Class 4-4-0's Nos.923, 927 and 928, with 135 tons ran the 15.0 miles from Dorchester to the next stop at Wareham in 15 minutes 3 seconds, 14 minutes 44 seconds and 13 minutes 45 seconds. Average speeds over the 4.4 miles from Moreton to Wool were 78.7, 77.6 and 87.3 miles per hour; maxima were 84, 88 and 95. D.W.Winkworth [Ref.49] published details of a run behind No.924, with nine coaches, 310 tons Gross, when Wareham was reached in 14 minutes 38 seconds, average from Moreton to Wool 80 miles per hour. These were definitely exciting runs, although they have little to do with evaluating locomotive performance. The 07.42 ex Weymouth, in 1939 was allowed 16 minutes from Dorchester South to Wareham, the 09.25 and 17.37 an additional minute.

The Swanage through trains, as opposed to through carriages, on summer Saturdays loaded to seven or eight corridor coaches. The normal branch service in 1936 was handled by six M7 Class 0-4-4 Tanks' fitted for auto train operation with the through trains from and to London invariably taken from Bournemouth to Swanage by K10, L11, T9 or S11 Class 4-4-0's. In 1937, a 700 Class 0-6-0 took one train to Bournemouth and the following year newly built Q Class 0-6-0 No.530 hauled the 09.20 and 13.55 ex Swanage as far as Bournemouth. There were trains from Waterloo to Swanage on summer Saturdays in 1939 at 08.54, 11.22, 12.22, 13.22 and 14.24, the 12.22 and 14.24 booked non stop from Waterloo to Bournemouth in 128 and 124 minutes respectively, the 11.22 and 13.22 were first stop Southampton in 92 and 94 minutes. There were trains from Swanage to Waterloo at 09.20, 11.20, 13.55, 16.00 and 18.00.

Whereas the motive power for the Swanage trains between Waterloo and Bournemouth was usually a 4-6-0, [U Class 2-6-0 No.1798 worked the 13.22 Down on 8th July 1939] the Lymington Pier trains, 09.40 and 11.38 Down and the 11.12, 13.32 and 15.47 Up involved smaller locomotives. The turntable at Brockenhurst, where locomotives were turned was of limited size. Locomotives noted on the 13.32, which ran non stop from Southampton to Waterloo, schedule 90 minutes, in 1939 were T9 Class 4-4-0's twice, an L12 Class 4-4-0 once and U Class 2-6-0's three times.

Date: July 7th 2002

Southern [Western Section] Adams Class 4-4-0's still at work

Despite the introduction of new motive power and increasing electrification the Adams Class 4-4-0's surprisingly survived into the 1930's and more surprisingly at times appeared on fast, albeit light trains. On August 15th 1933, T3 Class 4-4-0 No.563, built in 1893 headed an Ocean Liner Express made up to five coaches from Southampton to Waterloo. Numbers 563 and 571 were especially prepared in 1938 for working the Imperial Airways Specials associated with the Flying Boats. The trains usually consisted of a few corridor coaches including one luggage vehicle. The Down train, 20.05 ex Victoria, ran to Southampton in 103 minutes, the Up train, 13.23 ex Southampton Docks were allowed 97 minutes. There were five Adams 4-4-0's allocated to Basingstoke depot in 1939 and on at least three occasions that year they worked the through coaches from Glasgow onwards from Basingstoke to Southampton Docks. On July 30th T6 Class 4-4-0 No.681, built 1895 had four coaches, on the 18th August T3 No.572 built 1893 had six and on the following day X6 No.657 built 1895 also had six, No.657 was overhauled at Eastleigh works in 1939. The normal motive power for the through Glasgow service was a U Class 2-6-0 if a separate train ran or alternatively the through coaches were attached to the 21.00 Waterloo to Southampton Docks Boat train.

The Basingstoke to Bournemouth and Portsmouth routes used by through trains from or to the Great Western Railway, witnessed a variety of GWR locomotives, conversely Southern locomotives worked through to Oxford and occasionally beyond. The Bournemouth to Birkenhead service in 1935 was often hauled by a D15 Class 4-4-0, Nos.467-9, between Oxford and Bournemouth, more often by an N15 King Arthur Class 4-6-0. A two cylinder U Class 2-6-0, one of three recently transferred to Bournemouth depot was an occasional visitor to Oxford. During the Easter period of that year a special working was implemented with an Urie King Arthur No.736 through to Wolverhampton. Number 736 had eight coaches from Bournemouth to Eastleigh, where seven more were added, five from Portsmouth hauled by U1 Class 2-6-0 No.1894. Number 736, with 15 coaches was 15 minutes late at Reading, 45 minutes at Birmingham and 60 late at Wolverhampton. On the return journey, with the same load Reading was passed 10 minutes late, the Portsmouth portion reached there four minutes late. An even larger train ran on 17th August, 17 coaches on the southbound Birkenhead and Birmingham to Bournemouth, a mix of GWR, Southern and LMS stock hauled to Eastleigh by a GWR Hall Class 4-6-0 No.5921 and an inside cylinder GWR 4-4-0 No.3258. Three coaches were detached at Eastleigh for Portsmouth.

The Saturdays only, Bournemouth to Wolverhampton in 1935 often involved a U Class 2-6-0 working right through. The Friday 17.04 Bournemouth arrival, 12.20 ex Birmingham Restaurant Car Express, hauled by a Southern locomotive was shown in the Public Timetable non stop Oxford to Eastleigh in 121 minutes, an average of 35 miles per hour! The following 17.20 arrival, the southbound Birkenhead service, diagrammed for a GWR 4-6-0, usually a Hall Class 4-6-0, which worked north on the Saturday 09.40 to Birkenhead.

Date: July 7th 2002

Southern [Western Section] GWR locomotive workings

The Saturday relief Birkenhead service was worked to Bournemouth by a GWR Hall Class 4-6-0, which returned on the Sunday 16.46 Bournemouth West to Wolverhampton. The 16.46 included a restaurant car in its formation with a Portsmouth portion added at Eastleigh. Locomotives noted on this duty included three different four cylinder GWR Star Class 4-6-0's and nine Hall's. The August Sheffield to Bournemouth observed on three occasions, had a Hall twice and a GWR 43xx Class 2-6-0 once, this was a Banbury depot duty.

The 43xx Class 2-6-0's usually handled the scheduled Reading to Southampton trains except on Saturdays when a Hall Class 4-6-0 did the honours, unusually on the 13th November a GWR Bulldog Class 4-4-0 No.3404 appeared. The Didcot to Southampton trains were regularly hauled by GWR Duke Class 4-4-0's whilst the through workings from Cheltenham to Southampton via the former Midland and South Western Railway route had 43xx Class 2-6-0's in the summer and Dukes or former M&SWJt. 4-4-0's in the winter. The through Portsmouth to Cardiff working was a Southern duty from Monday to Wednesday and a GWR one from Thursday to Saturday, normally a 43xx. The Portsmouth to Oxford working was another 43xx roster. The strengthening of the bridge at Bursledown completed in April 1936 allowed the use of 4-6-0's over the Netley line, a Hall Class 4-6-0 No. 4928 was seen on the 4th and 6th April with the Cardiff to Portsmouth.

In 1936 the Friday and Saturday Birkenhead to Bournemouth services were hauled by GWR locomotives, Star Class 4-6-0's Nos.4018 and 4031 at times. The 17.00 Reading to Southampton train, a Hall duty, occasionally produced a Saint Class 4-6-0, one of which was also noted on the Netley line. The first GWR Grange Class 4-6-0 seen at Eastleigh was with the Oxford to Portsmouth working on 26th September 1936, in October, a Bulldog 4-4-0 appeared.

A considerable number of GWR locomotives worked over Southern Railway routes at Bank Holiday periods. On July 31st 1937 21 specials passed through Eastleigh; four from Leicester to Portsmouth hauled by a Saint Class 4-6-0 and three 43xx Class 2-6-0's, thirteen from Wolverhampton to Portsmouth produced seven 43xx, four Hall Class 4-6-0's, one Saint and one inside cylinder 4-4-0 No.3411. [No.3411 had 14 coaches] Three from Wolverhampton to Bournemouth had Hall's and one from Leicester to Bournemouth a Grange Class 4-6-0. The two Birkenhead to Bournemouth trains were shared, a Schools Class 4-4-0 on one and a Hall on the other, the Birmingham Moor Street to Bournemouth one had a 43xx. A Great Western Railway enthusiast on holiday in South Hampshire would have felt at home.

The regular workings of GWR locomotives to South Hampshire continued throughout the thirties. In a twelve hour period commencing 06.00 on the 30th July 1938 the following passed through Eastleigh:- seven 43xx Class 2-6-0's - seven Halls Class 4-6-0's - two Grange Class 4-6-0's - one Star Class 4-6-0, one of the Halls was pilot to a Southern locomotive. The 1939 workings followed the pattern established over the previous five years.

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Southern [Western Section] GWR and Southern to Ascot 1938-39

The GWR supplied stock and locomotives for specials to Ascot Races from the west, the Southern Railway service to Ascot from Waterloo for the June Meeting in 1939 was mainly electric multiple unit stock. Twenty-one GWR trains, hauled by GWR 43xx Class 2-6-0's ran over the Reading to Ascot section, a gauge test with a Grange Class 4-6-0 had been unsuccessful. Each of the trains was taken back to Reading whilst the Race Meeting was in progress and returned to Ascot in the evening, 84 stock movements over the Southern Reading to Ascot section during the day,

The Southern Railway service to Ascot the previous year, 1938 was steam hauled and a youthful Ian Allan noted T9, D15 and S11 Class 4-4-0's and Maunsell 2-6-0's. The ordinary trains deposited their passengers at Ascot station, the First Class specials theirs at West Ascot. Stabling of trains was a problem, running roads were used and as a consequence single line operation was in force from Knowle signal box to Ascot and from Ascot to West Ascot. The Western Section at times pre War was very busy.

The Southern in 1939 was a well run Railway, arguably the best in the UK. It had developed a coherent strategic plan formulated around a continuing electrification programme.

The published financial and operating results for British Railways in 1938, in terms of locomotive usage and costs reflect well on the Southern, particularly when set against a business framework that discouraged capital expenditure on steam motive power, specifically construction of new locomotives. Additionally, with the exception of the West of England service run lengths were short; Weymouth the furthest destination from London was the same distance from the Capital or less than Taunton, Cardiff, Shrewsbury, Crewe, Chesterfield, Staveley Town and Doncaster.

The cost of coal per train mile was 8.78 pence [old] per mile, [£678 per locomotive]. This compared with 7.70, 7.64 and 6.65 pence for the LMS, LNER and GWR Companies. The Southern, despite the Kent coal-fields paid more for much of its coal, which was delivered from other parts of the UK. Working expenses per train mile in 1938 were 21.82 pence; comparable figures for the other three were 20.76, 21.23 and 19.89. The costs per locomotive were £1,677 per annum compared with £1,724, £1,614 and £1,517. Maintenance costs, including partial renewals, were 3.95 pence per mile, for the others 3.72, 4.61 and 3.74. The average annual mileage per locomotive was 25,714 for the Southern compared with 28,879, 25,740 and 26,852 for the LMS, LNER and GWR. These figures shed no light on costs per horsepower and are devalued as comparisons through the higher percentage of freight train miles run by the other three Companies.

Locomotive expenses on the Southern represented 25.9 percent of total traffic expenses, 25.3, 24.9 and 24.7 percent for the other three. The GWR is shown in an excellent light by these figures, although it is not clear, how or even if, depreciation costs were addressed.

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Southern Railway Company profitable in 1938

There was a reduction of circa 20 percent in the number of steam locomotives on the Southern from 1923 to 1938, Electric Motor Vehicles in the same period increased by some 500 percent. The number of locomotive hauled carriages almost halved, virtually matched by the increase in electric passenger coach stock. Overall there was an increase in passenger stock of c. five percent; electromotive power units also carried passengers.

The key issue, Company profitability in 1938, indicated how well the Southern had weathered the Depression. Railway receipts in 1938 were £22.0 million; previously in 1932 they fell to £19.9 million, then rose to £20.4 million in 1934 and continued to grow afterwards. Working expenditure fell to a minimum of £15.8 million in 1933 and rose to £17.7 million in 1938, resulting in a surplus of £4.3 million, compared with £3.7 million in 1932 and £4.5 million in 1923. Dividends payable on Ordinary stock had been restored to five percent; they had previously been reduced to one percent at the height of the Depression. The 36 million of deferred stock received no payment. The Government take-over of the Railways in 1939 assessed the Southern Railway Net revenue, including ships, hotels and other activities, at £6.6 million this was based on the years 1935, 36 and 37.

It was easy in 1938 to believe that Schools Class 4-4-0 No.939 was the last Southern Railway Express steam passenger locomotive. The War, the presence of O.V.S.Bulleid and his relationship with Sir Eustace Missenden was to prove otherwise.

Chapter 16: REFERENCES AND NOTES.

- Ref. 1 D.W.Winkworth, "The Schools Class", George Allen and Unwin 1982 [B]
- Ref. 2 Journal of the Stephenson Locomotive Society [SLS] Vol.15 p.273
- Ref. 3 SLS Vol. XL.
- Ref. 4 O.S.Nock in the Railway Magazine [RM] Vol. 107.
- Ref. 5 N.Harvey. SLS Vol. XL
- Ref. 6 Railway World [RW] Vol. 37
- Ref. 7 SLS Vol. XIV
- Ref. 8 Norman Harvey spent much time observing Central Section steam locomotive performance from 1935-39. His experiences were published mainly in the SLS Journal and Railway World
- Ref. 9 Trains Illustrated Vol. VI p.14-5
- Ref. 10 RM Vol. LXXII p.308
- Ref. 11 RM Vol. LXXIV p.325-30

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- Ref. 12 RM Vol. LXXIX p.325 & 375
Ref. 13 O.S.Nock, "Locomotives of R.E.L.Maunsell". E.Everard
1951 [A]
Ref. 14 The run with No.912 was also quoted by O.S.Nock in RM Vol.
107 p.265
Ref. 15 SLS Vol. VII p.64
Ref. 16 SLS Vol. XIII p. 119
Ref. 17 RM Vol. LXXXIV p. 172-8
Ref. 18 SLS Vol. XIV p. 309
Ref. 19 SLS Vol. XV & RW Vol. 20
Ref. 20 RM Vol. LXXXVII p. 56-60
Ref. 21 RM Vol. LXXXVII p.156
Ref. 22 RM Vol. LXXII p. 411-2
Ref. 23 Both these logs were published in RM Vol. LXXVI p.273-4
O.S.Nock tabulated the second in his book on Maunsell's
locomotives
Ref. 24 RM Vol. LXXXVI p.487-9.
Ref. 25 Railway Observer [RO] Journal of the Railway
Correspondence and Travel Society Vol. XI p.163
Ref. 26 SLS Vol. XI
Ref. 27 SLS Vol. XII p. 220
Ref. 28 RO Vol. VIII. P. 142
Ref. 29 SLS Vol. XII p. 218-9, The figures given state that the train
arrived 1½ minutes late at Chatham and departed at 13.40
and arrived Whitstable one minute early. This is impossible
i.e. 22 minutes start to stop. The departure time should have
been presumably, 13.35, schedule 13.33. R.A.H.W eight
one assumes was quoting somebody else.
Ref. 30 Details used by O.S.Nock in his book on Maunsell locomotives
Ref. 31 [A]
Ref. 32 RO Vol. VIII p.225-7
Ref. 33 SLS Vol. XII p. 219-21
Ref. 34 RM Vol. LXXVII p. 102-5
Ref. 35 RM Vol. LXXIX p. 323-332
Ref. 36 RM Vol. LXXV p. 248-54
Ref. 37 SLS Vol. XI p. 259
Ref. 38 RM Vol. LXXXI p. 252
Ref. 39 RM Vol. LXXXII p.91-4, Vol. LXXXIII & Vol. LXXXV
p. 168-77 & 245-50
Ref. 40 RM Vol. LXXV p. 249-54 & Vol. LXXX p. 404-14
Ref. 41 [A]
Ref. 42 RM Vol. LXXXV p. 168-77
Ref. 43 RM Vol. LXXV
Ref. 44 RM Vol. LXXXV p. 168-77 & 245-50
Ref. 45 SLS Vol. XIV p.18
Ref. 46 Railways Vol. II p. 230-8
Ref. 47 RO Vol. XI & SLS Vol. XV p. 57
Ref. 48 RM Vol. LXXXV p.168-70
Ref. 50 [B]

Chapter 17: SCHEDULED SERVICES AUGUST 1939.

August 1939 witnessed the ultimate flowering of the Southern Railway's express train timetables. [There were probably more passengers the previous summer, certainly more trains connecting with cross Channel shipping services]. Increased electrification had effectively improved the quality of available steam motive power]. The summer Timetable of 1939, into force on June 2nd, represented the culmination of 16 years of progress, particularly with respect to electrification. A review of schedules on the major steam operated routes [in the Down direction or when through to other Railways Companies, from the Southern] is apposite.

The London, Ashford, Hythe, Folkestone, Dover, Deal and Margate tables encompassed the former South Eastern Main Line to Dover. There were scheduled fast trains on weekdays to Folkestone at 16.15 and 19.15 ex Charing Cross, non stop from Waterloo to Folkestone Central reached at 17.35 and 20.35. The 16.15 included through coaches for Ramsgate [arrival 18.37] via Deal and Dover. The 19.15 continued to Margate [arrival 21.56] The 13.15 ex Charing Cross, non stop from Waterloo to Ashford in 65 minutes, after four minutes at Ashford and a further stop at Shorncliffe reached Folkestone Central at 14.48 and Margate at 16.07. The 09.15, the first Down fast from Charing Cross, with stops at Waterloo, Sevenoaks, Tonbridge, Ashford and Shorncliffe took 104 minutes to Folkestone and another 90 minutes to Margate. The 11.15, with additional stops at Headcorn and Sandling was five minutes slower to Folkestone but three minutes quicker to Margate, 14.26. The 15.15 with the same stops as the 09.15 plus Westenhanger and Sandling Junction reached Folkestone in 109 minutes and Margate 91 minutes later. The last "quarter past the hour" departure, the 21.15 stopped also at Paddock Wood, was subject to request stops between Ashford and Folkestone Central, reached in 109 minutes, terminated at Ramsgate at nine minutes after midnight.

The 22.35 with stops at Waterloo, London Bridge, Sevenoaks, Tonbridge, Ashford and Shorncliffe plus request stops at Paddock Wood and Sandling was allowed 109 minutes to Folkestone and terminated at Dover Priory at 00.32. The Wednesday night 00.05 ran to Maidstone East in 55 minutes and to Ashford in 29 minutes more [arrival 01.30], Folkestone Central 01.50 and terminated at Deal at 02.34. [Theatre-goers were catered for with a 1st and 3rd Class Pullman Car]. The 10.52 ex Charing Cross ran via Maidstone, stops at Waterloo, London Bridge and Hither Green, 44 minutes to Maidstone, 11.59 and to the next stop at Folkestone Central, 12.44 and Ramsgate at 13.52.

Business trains left Cannon Street at 17.00 non stop to Ashford in 64 minutes, with further stops at Sandling and Shorncliffe it reached Folkestone Central in 89 minutes and terminated at Ramsgate at 19.31 and 18.18 with additional stops at Sevenoaks and Tonbridge but omitting Sandling was seven minutes slower to Folkestone and reached Ramsgate at 21.47.

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Southern [Eastern Section] summer timetable 1939

There were 14 trains from Ashford to Margate via Canterbury West, some ex Maidstone East where they connected with the electric service from London. The majority stopped at most stations. The portion ex the Birkenhead stopped at Canterbury, Minster Junction and reached Margate in 69 minutes. at 16.55. The 18.12, with a stop at Canterbury and a request at Chartham was allowed 65 minutes. The 19.34 ex Charing Cross, seven stops before Ashford, 21.17 with the same stops as the "Birkenhead" except Margate East reached Margate at 22.25 and Ramsgate in 156 minutes from Charing Cross.

Compared with the 12 on weekday, [one extra on Wednesdays] there were 25 trains ex Charing Cross to Folkestone and beyond on Saturdays plus the 13.00 to Canterbury. Eight ran non stop from Charing Cross or Waterloo to Folkestone Central, the 12.55 in 80 minutes from Charing Cross and the 16.15 and 19.15 to the weekdays 80 minutes schedule including the stop at Waterloo. The others were slower, reflecting increased traffic, some heavier loads and the need to utilise less powerful locomotives. There was one train first stop Shorncliffe, one to Sandling and two more to Ashford.

Hastings had 13 trains from Ashford, New Romney five and Rye one that terminated there on weekdays. The best four to Hastings were the 09.10 and 20.59, which stopped only at Rye, allowed 39 and 37 minutes for the 26¼ miles and the 09.55 and 11.55, with an additional stop, 41 minutes.

There were 12 principal weekday London to Hastings via Tunbridge Wells trains. Eight left Charing Cross at 25 minutes past the hour - 08.25, stops at Waterloo, London Bridge, Sevenoaks, Tonbridge, Tunbridge Wells Central, Crowhurst, West St. Leonards and St. Leonards reached Hastings at 10.23 - 09.25, additional stops at Wadhurst and Robertsbridge in exactly two hours - 10.25, same stops as far as Tunbridge Wells, then Battle and all stations to Hastings, 12.20 - 12.25, after Tunbridge Wells, Wadhurst, Etchingham and all stations to Hastings, 14.37 - 14.25, request stop at Etchingham, Battle and subsequent stations, Hastings 16.19 - 15.25 first stop Crowhurst in 81 minutes, the two St. Leonards stations, Hastings in 95 minutes from Charing Cross - 16.20 ex Charing Cross stopped at Waterloo, London Bridge, Tunbridge Wells, Battle and stations to Hastings, 18.09.

The two Business trains left Cannon Street at 17.06 and 18.03; ran non stop to Tunbridge Wells in 47 and 48 minutes respectively. The first with stops at Crowhurst and two further reached Hastings in 92 minutes; the second with an additional stop at Wadhurst was nine minutes slower overall.

The 19.25 ex Charing Cross with stops at Waterloo, London Bridge, Tonbridge, Tunbridge Wells, Crowhurst and West St Leonards reached Hastings at 21.12 – the 22.25 stopped also at Wadhurst, then three conditionals to Crowhurst and all after, Hastings 00.17 - 23.55, Wednesday only beyond Tunbridge Wells, [terminated there at 00.59 other days], Hastings in 2 hours 5 minutes, 12 minutes less on the forth and where applicable fifth Wednesday of the month.

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Southern [Easter Section] summer timetable 1939

The 23.55 made additional stops between Tunbridge Wells and West St. Leonards on the first three Wednesdays of the month - Wadhurst, Robertsbridge and Battle on the first and third - Etchingham and Crowhurst on the second - on others it ran non stop Tunbridge Wells to West St. Leonards. One wonders how many potential passengers planning an evening in London for the Theatre took one look at the timetable and abandoned the enterprise.

The Saturday service on the Hastings branch consisted of 14 express trains, ex Charing Cross plus the 12.18 and 13.02 Business services ex Cannon Street. The 12.18 made its first stop Tunbridge Wells in 47 minutes, then Crowhurst and the two St. Leonards stations completed the journey in 94 minutes, the 13.02, with a Tonbridge stop was ten minutes slower. Of the others, the 15.25 ran non stop from Charing Cross to Tunbridge Wells, the 13.30 and 14.45 non stop from Waterloo to Tunbridge Wells and the 10.25 and 11.25 non stop London Bridge to Tunbridge Wells.

The London, Sheerness on Sea, Margate, Ramsgate, Dover, Deal and Sandwich timetable equated to the former LC&D Main Lines. There were 19 principal weekday trains between Victoria and Ramsgate. Additionally the 14.10 ex Victoria ran to Dover Priory reached in 2 hours 22 minutes with seven intermediate stops. Eight of the Kent Coast trains left Victoria at 35 minutes past the hour. The best times to Ramsgate, [Margate reached in 20 minutes less], were by the first and last of the day i.e. the 08.35 and 21.35 in 2 hours 22 minutes and 2 hours 20 minutes. The 08.35 stopped at Bromley South, Chatham, Whitstable, Herne Bay and all stations to Ramsgate. The 21.35 ran to Chatham in 49 minutes, then Faversham and all stations afterwards. The best train of the day, 15.20 ex Victoria, ran to Westgate, the first stop, in 88 minutes and reached Ramsgate at 17.13.

The first train the 05.15 ex Victoria [on Saturdays included a Pullman car in its formation] and reached Ramsgate at 08.40 after 18 stops. [On Mondays the 06.10, also with Pullman facilities, with 13 stops reached Ramsgate seven minutes after the 05.15]. There were trains at 35 minutes past the hour from 08.35 to 12.35. The 10.10 and 12.30 ran via Lewisham and from there to the next stop at Whitstable in 73 minutes, reached Ramsgate at 12.33 and 15.48. On Fridays until August 18th there was a relief to the 15.20, at 15.05, non stop to Margate in 100 minutes. The 15.35 reached Ramsgate in 2 hours 33 minutes serving the principal stations en route.

The principal Business trains left Cannon Street at 16.45, 17.15, 17.46, 18.15 and 18.23. The 16.45 and 17.46 stopped at Faversham in 63 and 64 minutes and all stations to Ramsgate [arrivals 18.54 and 19.56]. The 17.15 and 18.15, first stop at Whitstable in 69 and 72 minutes terminated at Ramsgate at 19.07 and 20.07. [17.15 reached Margate in 93 minutes after a stop at Herne Bay, 18.15 stopped Herne Bay and all stations after]. The 18.23 stopped at all three Medway towns, then Sittingborne, Faversham plus three more and two conditional ones, arrived Dover Priory at 20.29. There was a connection at Faversham for all stations to Ramsgate reached at 20.54.

Date: July 7th 2002

Southern [Eastern Section] summer timetable 1939

The 19.15 ex Victoria, first stop Faversham in 68 minutes, reached Ramsgate at 21.28. There was a relief on Fridays at 19.00, which with stops at Whitstable, Herne Bay and Westgate [three less than the 19.15] was into Margate 13 minutes earlier and reached Ramsgate at 21.15. The 20.35 and 21.35 ex Victoria were followed by the 00.05 on Thursday nights, to Ramsgate in 2 hours 21 minutes including the traditional revellers Pullman.

There were 41 trains from Victoria on an August Saturday to Margate and Ramsgate plus three to Dover. The 15.20 ran non stop to Margate in 99 minutes, the 14.54 first stop Birchington and the 17.00 non stop Bromley South to Margate. Five trains made their first stop at Herne Bay, 11 the first at Whitstable and four at Faversham. Two trains after stops at Catford, Lewisham ran non stop to Whitstable. The timetable was at its most intensive between 10.0 and 12.00. There were six departures in the half-hour period from 11.25 to 11.55:

11.25 - First stop Herne Bay 12.56, terminate Ramsgate 13.37.

11.30 - First stop Herne Bay 13.04, terminate Margate 13.21.

11.35 - First stop Whitstable 13.05, terminate Ramsgate 13.54.

11.40 - First stop Bromley South, terminate Ramsgate 14.06.

11.50 - First stop Swanley, terminate Dover Priory 14.26.

11.55 - First stop Herne Bay 13.30, terminate Ramsgate 14.13.

The 11.40 and 11.55 made their second stops at Faversham and Chatham; the 11.50 ran via the Catford loop enabling the 11.55 to proceed ahead of it on the Main Line.

There were trains to Ramsgate from Blackheath and Gravesend at 08.58 and 11.00 respectively. The 07.42 ex Charing Cross ran via the North Kent line. The Business service, 13.15 ex Cannon Street, ran to its first stop at Chatham in 46 minutes and terminated Ramsgate at 15.23.

Electrification reduced steam passenger working essentially to two major routes on the Central Section, the Oxted lines and the Tonbridge, Redhill and Reading section. There were 27 weekday trains from either London Bridge or Victoria to or beyond Oxted. Four ran to Brighton via East Grinstead and Sheffield Park, the 08.03 and 16.20 ex London Bridge and the 12.03 and 17.50 ex Victoria. These stopped at all stations from Sanderstead onwards except the 16.20 which ran non stop from East Croydon to Oxted. Five ran semi fast to Eridge, 11.08, 15.55, 18.10 and 20.02 ex Victoria and the 16.40 ex London Bridge. The 15.55 with the one stop at Oxted reached Eridge in 54 minutes and continued to Brighton, arrival 17.55, via Uckfield, a coach detached at Eridge worked to Eastborne via Heathfield. The 11.08, 18.10 and 20.02 with stops at East Croydon, Oxted and Edenbridge reached Eridge in 68, 62 and 61 minutes, the 11.08, was subject to a conditional stop at Hever. They terminated at Eastborne at 13.35, with a portion for Lewes detached at Eridge, Uckfield at 19.36, with a portion for Eastborne detached at Eridge and Uckfield at 21.27. The 16.40 with additional stops at Sanderstead, Upper Warlingham and Hurst Green reached Eridge in 70 minutes and terminated Uckfield at 18.14.

Date: July 7th 2002

Southern [Central Section] summer timetable 1939

The Oxted line service included eight trains to Tunbridge Wells West from London; five ran via the direct route through Edenbridge and three via East Grinstead.

There was one train from London which terminated at Forest Row, one at East Grinstead and three at Oxted. Trains with multiple destinations, whilst not as common as before still existed, the 18.10 ex Victoria included a Tunbridge Wells West portion, detached at East Croydon in addition to sections for Uckfield and Eastborne split at Eridge.

There was a reduced service over the Oxted lines on Saturdays, no doubt to the relief of some locomotive depot foremen, desperately attempting to meet summer Saturday requirements on Eastern Section routes.

Tunbridge Wells to Brighton trains stopped at most intermediate stations with the exception of those ex Maidstone West, the rump post electrification of the through service from Brighton to the Medway Towns. The 10.13 from Tunbridge Wells, 09.15 ex Maidstone West, reached Brighton at 11.12 after stops at Crowborough, Uckfield and Lewes. The afternoon train took 66 minutes with additional stops at Isfield, Barcombe Mills and London Road. The quickest train over the route, the Sunday 12.02 from Tunbridge Wells West, ran to Brighton in 55 minutes with one stop at Lewes.

There were 20 weekday trains from Redhill towards Reading including the four evening shuttles to Gomshall. The 10.17 the only one that had any pretence to be other than an all stations service, omitted five stops and completed the 46¼ miles to Reading in 95 minutes, the 18.02 was the only through service from London, 17.25 ex London Bridge.

The through service from the Southern Railway to Birkenhead GWR combined at Redhill, one portion from Ashford [formed there from a train from Deal via Dover and another from Margate via Canterbury West], the other from Hastings and Brighton. The combined train left Redhill at 11.40, stopped at Guildford, where three through coaches for Bournemouth via Alton were detached and North Camp before reaching Reading General at 12.55. On Saturdays in addition to the 11.40 there were trains from Redhill at: 11.28 [ex Margate and Eastborne] to Wolverhampton - 14.18 [ex Hastings and Brighton] to Birmingham. The 11.28 stopped at Guildford, North Camp and then ran non stop to Oxford, arrival 13.25, the 14.18 reached Reading at 15.38 after the same two stops.

There were 23 weekday departures trains from Redhill in the Tonbridge direction. The first the 05.44 [04.50 ex London Bridge] continued to Margate via Ashford and Canterbury West. Four ran only as far as Godstone, two were non stop to Tonbridge, the 08.17 to Ramsgate via Dover and the southbound Birkenhead, schedules 26 and 31 minutes respectively, the two additional Saturday trains from the Midlands were allowed 29 and 26 minutes.

Date: July 7th 2002

Southern [Central Section] summer timetable 1939

There were few scheduled steam hauled weekday passenger trains on the main London to Brighton line: the Newhaven Boat trains - two evening residential's, London Bridge, to Reading and Forest Row - the "Sunny South Express" - the southbound Birkenhead.

The "Sunny South Express", allowed a gentle 61 minutes from East Croydon to the next stop at Brighton and after reversal another 41 minutes to Eastborne ran from Willesden to Hastings in one minute over three hours. There was a Saturday 11.30 Birmingham to Eastborne and Hastings, with similar timings between Willesden and Hastings and a train from Leicester, which ran 10 to 20 minutes behind the "Sunny South". On certain Saturdays these trains ran in duplicate, triplicate or more. The weekdays Birkenhead, allowed 42 minutes from Redhill to the next stop at Brighton and 40 minutes on to Eastborne, ran from Redhill to Hastings in 2 hours 10 minutes, four minutes less on Saturdays when schedules over the two stages were 41 minutes. The 09.45 Saturday Wolverhampton to Hastings, Redhill departure 13.38, [schedule 37 minutes over the two stages] ran to Hastings in 2 hours 2 minutes. The 10.20 Wolverhampton to Eastborne was allowed 45 and 43 minutes, overall 98 minutes from Redhill to Eastborne.

The Saturday "Sunny South Express" also served the Kent Coast resorts. Northbound the 10.50 ex Ramsgate ran to Manchester and Liverpool, the preceding 10.20 to Birmingham.

Following the inauguration of electric services to Portsmouth, Alton and Reading, steam express's from Waterloo were essentially confined to the West of England and Southampton, Bournemouth and Weymouth routes. Bournemouth trains left Waterloo at 30 minutes past the hour from 08.30 to 19.30 [the Mail to Dorchester at 22.30]. The first train, the 05.40, with ten intermediate stops, reached Bournemouth at 08.51 and Weymouth at 10.05 after six further stops. The quickest service to Weymouth was the 16.30, the "Bournemouth Limited", 2 hours 54 minutes, first stop Bournemouth in 116 minutes and further stops at Poole, Wareham and Dorchester South. The 12.30, 14.30 and 18.30 ran to Bournemouth in 129, 128 and 129 minutes respectively including the one stop at Southampton. Continuing to Weymouth with three, three and four more stops they completed their journeys in 3 hours 8 minutes, 3 hours 17 minutes and 3 hours 11 minutes. The 08.30 and 09.30 also continued to Weymouth, with 11 and 12 intermediate stops they completed the course in 3 hours 51 minutes and 3 hours 50 minutes.

The 10.30, the "Bournemouth Belle", ran to Bournemouth only, 126 minutes to Central including the Southampton stop. The 11.30 with ten stops was 42 minutes slower. The 13.30 and 15.30, the latter connected with the through service from Newcastle to Bournemouth at Basingstoke, reached Central in 2 hours 43 minutes and 2 hours 42 minutes with eight and five stops. There was a semi fast fifteen minutes after the "Bournemouth Limited", 2 hours 37 minutes to Bournemouth with nine stops, the 17.30 and 19.30, with 12 and seven stops took 2 hours 51 minutes and 2 hours 45 minutes.

Date: July 7th 2002

Southern [Western Section] summer timetable 1939

On Saturday, commencing with the 05.40, there were 27 departures from Waterloo to destinations between Southampton Terminus and Weymouth; eight to Weymouth, five to Swanage, 12 to Bournemouth, two to Lymington and one to Southampton Terminus. Six were booked non stop from Waterloo to Bournemouth, the 10.38, 11.17, 12.22, 14.34, 14.30 and 16.30, in 126, 126, 124, 127 and 116 minutes respectively. Ten, the 09.17, 09.22, 10.30, 10.47, 11.22, 12.30, 12.35, 13.22, 14.35 and 18.30 made their first stop at Southampton, in 87 minutes by the "Bournemouth Belle", 88 minutes twice, 90 minutes once, 92 minutes three times and 94-5 minutes by the three remaining. Two, the 08.27 and 16.45, made their first stop at Winchester in 76 and 72 minutes and four at Basingstoke in 56-57 minutes.

Despite the initiation of the Mid Sussex electrification which included the completion of the Brighton to Portsmouth route there were four weekday steam hauled trains from Brighton: the 09.42 and 19.58 to Bournemouth and the 11.00 and 12.00 to Cardiff and Plymouth. The 11.00 combined at Fareham with the 12.10 ex Portsmouth, the 12.00 with the 12.55.

There were trains from Portsmouth to Cardiff at 09.37 and 17.35 and to Bristol at 07.29 and 14.33. These semi fasts plus the 10.33 [semi fast to Salisbury only] all ran via Southampton and Salisbury. The 10.04 ex Portsmouth Harbour ran to Eastleigh and ultimately Manchester, the 14.38 to Wolverhampton. On Saturdays the 10.04 ran to Sheffield, the 09.58 to Manchester. The 11.00 ex Brighton ran separately to Cardiff, with a train from Portsmouth at 12.33. The 12.00 ex Brighton similarly ran to Plymouth as well as the 12.40 ex Portsmouth. There were trains from Portsmouth to Cardiff at 12.33 and 16.45, to Wolverhampton via Eastleigh at 13.39, 14.38 and 19.05 and from Portsmouth Harbour to Birmingham at 14.05 and 15.33. On two Saturdays in July and on the 2nd September there was a 20.35 to Swindon via Southampton, Romsey, Andover Junction and the former Midland & South Western Junction route.

Electrification reduced some cross-country services, the Chatham to Brighton service as noted previously was truncated; similarly the Margate-Ashford-Brighton was shortened to Hastings. Through trains between Waterloo and Southampton via Alton ceased to run but there remained many steam hauled trains over electrified routes apart from those from or to the London Termini.

Bournemouth was served by through trains from the GWR via Basingstoke in addition to from the LMS via the Somerset and Dorset route. There were also two Saturday trains to Cardiff via Wimborne and Salisbury with limited stops, southbound non stop from Salisbury to Poole and from Salisbury to Wimborne, average speeds over the single tracked sections were 30 miles per hour. The weekdays Bournemouth West to Birkenhead and Manchester and to Newcastle left at 09.30 and 11.02. On Saturdays there were departures at; 09.15, 09.23, 09.40, 10.00, 11.12 and 13.05 to Birmingham, Manchester, Birkenhead, Sheffield, Sheffield and Wolverhampton, with an additional train on two August Saturdays to Birmingham Moor Street.

Date: July 7th 2002

Southern Summer Timetable 1939

The Southern Railway timetables of 1939 did not show an overall improvement in terms of speed over the previous 25 years for steam hauled trains comparable with that of the other three British Railways. The Southern however successfully handled a prodigious Summer Holiday traffic and threaded its express passenger trains efficiently through the World's largest Suburban electrified network.

Date: July 7th 2002

Chapter 18: THE SOUTHERN RAILWAY 1939-47 From the outbreak of War to Nationalisation.

The immediate reaction of the British Railway's to the outbreak of the Second World War was an emergency timetable including draconian cuts in Service and speed. This emergency timetable, in force for a week was replaced by a modified normal summer timetable which was then replaced by a new Wartime timetable. Unlike 1914-1918, when certain fast trains remained in the Timetable for two years or so, there was an overall deceleration and introduction of a maximum speed limit in addition to service cuts.

The Wartime timetable included eight principal trains from Waterloo for Southampton and Bournemouth. The 05.40 continued to Weymouth, with 22 intermediate stops, reached at 10.23. The 08.30, with 18 stops reached Weymouth at 12.26 [Bournemouth at 11.19]. The 11.30 and 15.30 with 11 and 9 stops respectively reached Bournemouth at 14.36 and 18.36. The 16.30, 17.30 and 19.30 with nine, 16 and 16 stops respectively reached Bournemouth at 19.22, 20.46 and 22.56. Typical times between stops were; Waterloo to Basingstoke 62 minutes, [15.30, 17.30 and 19.30] and to Winchester 86 minutes, [16.30]. The Saturday 12.30 made its first stop at Southampton in 104 minutes and the next at Bournemouth 40 minutes later.

On the Central Section Oxted lines, the remaining semi-fasts retained schedules similar to those pre War, indeed the 15.55 ex Victoria, with additional stops became a more tightly timed train. The only other Down semi-fasts' were the 16.20 London Bridge to Brighton via East Grinstead, non stop to Oxted from East Croydon and the 16.40 London Bridge to Brighton via Eridge. The service between Reading, Redhill and Tonbridge was similarly reduced with the remaining semi fast's maintaining pre war schedules.

There were trains ex Charing Cross over the ex South Eastern Main line: at: 09.15, Folkestone reached at 11.06 after five stops - 11.15, Folkestone 13.06, seven stops - 15.15 Folkestone 17.12, seven stops. The 17.00 and 18.18 Business trains ex Cannon Street reached Folkestone at 18.37 and 20.01 after four stops, the late train from Charing Cross, 21.15 reached Folkestone at 23.05, after five stops plus one conditional. The 19.34 ex Charing Cross ran to Margate, reached at 21.17 via Ashford and Canterbury West. Typical timings between stops were; Waterloo to Sevenoaks 31 minutes, Waterloo to Tonbridge 43 minutes, Cannon Street to Tonbridge 33 minutes and Tonbridge to Ashford 34 minutes, [31 minutes by the 13.15]. There were departures for Hastings from Charing Cross at 08.25, 12.25, 16.20, 17.31, 18.22 and 19.34, the quickest the 16.20 and 17.31 took 114 minutes with ten and eight stops. Best start to stop times were: London Bridge to Sevenoaks 29 minutes - Tunbridge Wells to Crowhurst 34 minutes. The 17.06 ex Cannon Street, first stop Tunbridge Wells in 47 minutes, after further stops at Etchingham, Crowhurst and the two St. Leonards stations reached Hastings at 18.44.

Date: July 7th 2002

Southern Wartime timetables

There were trains from Victoria to Margate and Ramsgate via ex LC&D Main line at 08.35, 10.35, 12.35, 15.35, 19.15 and 20.25 which arrived at Margate at 10.40, 12.44, 15.01, 17.48, 21.09 and 22.51. The 08.35 ran from Bromley South to Chatham in 34 minutes and after a portion for Faversham was detached in another 34 minutes to Whitstable. The 15.35 ran Bromley South to Chatham in 33 minutes and the 19.15 to its first stop at Faversham in 68 minutes. The 16.45 and 17.46 Business services from Cannon Street ran non stop to Faversham in 65 and 66 minutes and reached Margate at 18.39 and 19.37; the 17.15 made its first stop at Whitstable in 75 minutes and reached Margate at 18.53. The 14.10 ex Victoria and the 17.22 and 18.23 ex Cannon Street all made their first stop at Rochester and continued to Dover.

Some previously cancelled trains were reinstated from January 1st 1940 and some schedules improved. Normal weekday arrivals, steam and electric between 07.00 and 14.00 at the respective London Termini were: Waterloo 140 - Victoria 66 - London Bridge 114 - Charing Cross, Cannon Street and Holborn Viaduct 167. The total at the London Termini, 548 was 88 percent of the pre war number. The summer extra Service in 1940 was a shadow of that run before the War, the following August Bank Holiday, 1941, most trains ran in duplicate, in the thirties there were more scheduled trains and these often ran in quadruplicate or quintuplet.

The Service generally improved as the War continued, from December 1941, for instance the 15.25 relief to the 15.30 ex Waterloo was incorporated in the published timetable with an overall time to Bournemouth Central of 2 hours 25 minutes with stops at Winchester and Southampton. In the Up direction the Bournemouth West portion of the 13.35 ex Weymouth ran as a separate train, it left Bournemouth Central at 14.32, stopped at Southampton and Woking and reached Waterloo at 16.55. The 16.35 ex Waterloo omitted the stops between Sway and Boscombe and reached Bournemouth at 19.02.

The effect of easier schedules, more out of course delays due to increased freight and passenger trains for the Military plus at times a total suspension of the service inevitably led to a falling off in the commitment to punctuality developed during the thirties. Some interruptions to scheduled services were severe. The evacuation of the British Expeditionary force at the end of May and the beginning of June 1940 caused major delays with the Redhill to Reading section closed to all public services. [There were 565 special trains from Dover, Folkestone, Ramsgate, Margate and Sheerness during the emergency.]. Later in the War, as an example of a long-term interruption, the viaduct on the Brighton to Falmer section was closed due to bomb damage on May 24th 1943. This, in addition to halting the service over that section caused a major disruption to locomotive duties on the Oxted Lines through the effective loss of servicing facilities at Brighton. Charing Cross station was closed to traffic from June to October 1943 following a visitation by a flying bomb. These, only two of the more graphic examples of continuous bomb damage were not the only exceptional happenings, the War years also had more than their fair share of bad weather,

Date: July 7th 2002

Southern Wartime locomotive transfers

In January 1940 a major freeze up resulted in many of the Brighton section electric sets being piloted by a steam locomotive. On 8th February the 09.43 Brighton to London Bridge, schedule 62 minutes including a stop at Haywards Heath was formed of eight coaches hauled by L Class 4-4-0 No.1763. Despite these unremitting hindrances, plus poor maintenance, locomotive performance, when conditions allowed, remained surprisingly good.

The initial reduction in the passenger train service, particularly when there were few troop movements, resulted in low utilisation of some express passenger locomotives, thus early in the War five King Arthur Class 4-6-0's, were transferred from Stewarts Lane to Hither Green depot for freight workings. The cessation of all Boat Train traffic led to the concentration of all the Lord Nelson Class 4-6-0's on the Western Section, in practice, with only 16 locomotives in the Class, this operationally made sense even if done for the wrong reasons. The trains on the Waterloo Southampton and Bournemouth route increased in weight and stopped more often, resulting in the replacement of the Schools Class 4-4-0's by King Arthur and Lord Nelson's. A powerful 4-4-0 with low adhesion factor was not a particularly desirable Wartime machine. The 08.30 and 09.30 semi-fasts from Waterloo regularly 16 or 17 coaches in 1940 were frequently hauled by a Lord Nelson, the Schools' took the lighter trains, normally 14 coaches. The T14 and N15X Class 4-6-0's handled many of the specials to Southampton Docks.

The Schools Class 4-4-0's, underemployed at Bournemouth depot in late 1939, found extensive work in the two weeks Christmas period. The Southern Railway at times had spare locomotives and also some in the wrong areas for Wartime requirements. U1 Class 2-6-0's at Exmouth Junction were transferred to Guildford and the two I3 Class 4-4-2 Tank's placed in store at Salisbury at the outbreak of War returned to service.

Another requirement in 1940, the evacuation of school children, required 32 special trains on the 2nd June, in total 70. The event that really stretched resources was the Dunkirk evacuation, as an indication of how much, two 12 coach trains, made up of LNER stock, were observed leaving Woking in the Basingstoke direction hauled by Adams Class 4-4-0's. The military requirements fortunately eased after the end of the Dunkirk emergency, they could hardly have been met, even if the situation had demanded. The Dunkirk evacuation involved 186 train sets, 55 Southern, 47 LNER, 44 GWR and 44 LMS which made 620 trips during the emergency, the peaks were the last day of May and the first day of June when 107 and 110 trains ran.

There had, as already outlined, been considerable redirection of locomotive resources on the Southern, a number of former LB&SC locomotives made redundant through electrification in the thirties were modified to suit the less generous Western and Eastern Section loading gauges. The transfer of the U1 Class 2-6-0's to the Central Section for use on freight trains and when required heavy passenger duties freed up even more former LB&SC locomotives.

Date: July 7th 2002

Southern lends locomotives to other British Railways

The two J Class 4-6-2 Tank's at work on the Western Section from October 1940 regularly hauled the 09.54 Waterloo to Basingstoke. H2 Class 4-4-2's, transferred to Basingstoke depot had three rosters that involved a round trip to London. B4X Class 4-4-0's were also used from the end of 1940. Nine Elms depot employed former SE&C D1 Class 4-4-0's and in September 1941 a D Class No.1731 hauled the 17.09 Waterloo Basingstoke residential.

The uncertainty of military requirements and the continuing emergencies led to diverse locomotive use, the Central Section 10.18 Brighton to Victoria via Eridge, usually three or four coaches to Eridge and semi-fast from there to Victoria after addition of the Eastborne coaches was definitely the best train of the day. On five successive days motive power was an I3 Class 4-4-2 Tank, a B4X Class 4-4-0, an E Class 4-4-0, a U1 Class 2-6-0 and a B1 Class 4-4-0, one suspects, even with a clear road, the B1 lost time.

The Eastern Section increasingly used the L and L1 Class 4-4-0's on previous Schools Class 4-4-0 duties. On the Western Section the Urie designed King Arthur Class 4-6-0's, particularly Nos.736-9 fitted with the large diameter chimney and multiple jet blast pipe, were more evident. Number 755, with the modified cylinders as well as blast arrangements was considered to be the equal of a Lord Nelson Class 4-6-0. Whilst it was not equal in power to a Lord Nelson, maintenance of two cylinder locomotives was easier and the different exhaust sound undoubtedly earned it plaudits from footplate crews.

The changing military requirements led to greater motive power demands on the other three British Railways. Some N15X Class 4-6-0's and I3 Class 4-4-2 Tank's were loaned to the Great Western Railway. I3 No.2091, whilst allocated to Worcester depot was observed hauling six coach trains up Hatton Bank competently. Southern locomotives found their way throughout the Kingdom, D1 Class 0-4-2 Tank's and F1 Class 4-4-0's were allocated to such diverse locations as Wick, Stranrear and Peterborough. Allocations to other Railways in 1941 included: six T1 Class 0-4-4 Tank's - five K10 - three T9, ten S11, ten F1, two B1 and two Class B4 4-4-0's. The two B4's went to the LNER; the K10, T9 and S11's to the Somerset and Dorset Joint. [Although the S&DJt. was jointly owned by the Southern, since 1930 motive power was the responsibility of the LMS, the Southern allocation enabled the LMS to use its own locomotives elsewhere.] Two D1 and five D1M 0-4-2 Tank's, four S15 and seven N15X Class 4-6-0's and two I3 Class 4-4-2 tanks also found their way to the GWR and the LNER. Three diesel shunters were sent and three other locomotives lent to the Kent and East Sussex Railway.

Later in the year Urie King Arthur Class 4-6-0's Nos.736-55 were destined for the LNER but the Southern appears to have indulged in some "cherry picking" and kept Nos. 736-8, 741, 43, 45, 46, 752, 53 and 55. Three H Class 0-4-4 Tank's went to Scotland also later in the year and the LMS had as many as ten F1's in addition to the B1's. The S11 Class 4-4-0's were also noted in use beyond the limits of the S&DJt, one between Leicester and Derby, another gaining time between Bristol and Gloucester.

Date: July 7th 2002

Southern, a return to pre-Grouping locomotive allocations

All of the larger locomotives on loan returned to the Southern in 1943.

The Southern often supplied motive power well beyond its own boundaries, U1 Class 2-6-0's regularly worked to Banbury on the Ashford to Newcastle service. When it was first reintroduced in September 1944 from Southampton to Newcastle, Southern locomotives worked to Woodford Halse, usually a King Arthur Class 4-6-0 or U Class 2-6-0. On the first journey South U Class 2-6-0 No.1624 replaced LNER V2 Class 2-6-2 No.4846 at Woodford Halse.

The other Wartime tendency was for all locomotives to be regarded as mixed traffic, thus in 1942 a nominally freight Q1 Class 0-6-0 often hauled 10-13 coaches on passenger trains and King Arthur Class 4-6-0's Nos.793-806 freight trains. These 4-6-0's previously displaced from Central Section passenger workings by electrification in 1932, returned as freight engines.

The Reading F1 Class 4-4-0's, on loan to the LMS were replaced by D Class 4-4-0's and in 1943 the H2 Class 4-4-2's transferred to Ashford were replaced at Basingstoke by the now unwanted Bournemouth Schools Class 4-4-0's. The J Class 4-6-2 Tank's returned to the Central Section. The increased use of the Lord Nelson Class 4-6-0's according to reports improved Western Section timekeeping. Many Southern locomotives, by the end of 1943 had returned to their pre War depots. D.S.M.Barrie spent three days, December 17-19, travelling west of Bournemouth and noted only one locomotive not of L&SW lineage, a Q Class 0-6-0 on an eight coach Weymouth to Bournemouth train. I3 Class 4-4-2 Tank's increasingly handled heavy London to Tunbridge Wells West trains, up to nine coaches over a severely graded route, which had become too much for the I1X Class 4-4-2 Tanks'. The easing of I3 route restrictions was definitely fortuitous. The two I3's, previously on loan to the GWR returned to New Cross Depot and the H2 Class 4-4-2's at Ashford to the Central Section in 1944.

The smaller locomotives still on loan to other Railways; the T1 Class 0-4-4 Tank's, the K10, T9, S11, F1 and B1 Class 4-4-0's and the H Class 0-4-4 Tank's all returned to the Southern in 1944.

Some Wartime locomotive performances were of a high level. E.W.Maybank, a frequent traveller between London and Tonbridge often used the 13.15 ex Charing Cross. Details of some of his experiences were published in 1943 and 1944 [Ref.1] Eight journeys in 1942 and early 1943 involved three Classes of locomotive; L Class 4-4-0's twice, H2 Class 4-4-2's and Schools Class 4-4-0's three times each. The two L's Nos.1771 and 1769, with 325 tons ran from London Bridge to the next stop at Tonbridge, 27.7 miles in 38 minutes 29 seconds and 42 minutes 7 seconds respectively. On the first, New Cross to Knockholt took 16 minutes 6 seconds, the maximum before Tonbridge was 71 miles per hour, a PWR slack before the station caused the half a minute loss on schedule, 35½ minutes Net. Number 1769 checked by signals to 10 miles per hour at Orpington and with further signal checks as well as a PWR before Tonbridge, achieved a similar Net time.

Date: July 7th 2002

Southern [Eastern Section] War time performance to Tonbridge

The H2 Class 4-4-2 No.2422 had 325 tons, Nos.2422 and 2426 340 tons. They reached Tonbridge in 37¾ minutes, 40 minutes 57 seconds and 38 minutes 4 seconds. New Cross to Knockholt times were, 15 minutes 42 seconds, 16 minutes 29 seconds and 17 minutes 47 seconds, maxima on the first two before Tonbridge were 68 and 69 miles per hour, there was a PWR slack before Tonbridge on each occasion, 35¼ and 36½ minutes Net. Number 2426 lost time uphill to Knockholt, reached 64 miles per hour at Dunton Green, fell to 55 at Sevenoaks and with 75 before the Tonbridge stop just scraped in on time. The Schools Class 4-4-0's Nos.931, 917 and 918 with 315, 320 and 320 tons reached Tonbridge in 39 minutes 41 seconds, 37 minutes 18 seconds and 35 minutes 23 seconds. Times over the 11.8 miles uphill were 15 minutes 47 seconds, 15 minutes 5 seconds and 15 minutes 2 seconds. There was a check on the first two before Tonbridge, before Sevenoaks on the third and before New Cross on the first and third. Net times were 35½, 34 and 34 minutes. Maxima before Tonbridge were 72, 71 and 70 miles per hour. Number 917 passed Sevenoaks in 26 minutes 3 seconds from London Bridge [schedule 29 minutes]. Number 918 passed Knockholt at 46 miles per hour after 55 at Orpington. The best average EDHP for each Class between New Cross and Knockholt were 870-920 by L No.1771, 920-970 by H2 No.2422 and 960-1,010 by Schools Nos.917 and 918.

A year later L1 Class 4-4-0 No.1783 with 350 tons, Schools Class 4-4-0 Nos.921, 923 and 938 with 360, 380 and 390 tons and No.915 with 390 tons featured. L1 No.1783 ran from London Bridge to Tonbridge in 34 minutes 39 seconds including a signal check to 39 miles per hour before Orpington, a delay of 30 seconds. The start was the quickest of any, New Cross, 5 minutes 14 seconds at 54 miles per hour and Hither Green in 7 minutes 54 seconds at 50. Speeds after were at Orpington was 44 miles per hour at Orpington, 38 minimum at Knockholt, 69 maximum at Dunton Green, 59 at Sevenoaks 59, passed in 26 minutes 50 seconds and 76 before Tonbridge. The New Cross to Knockholt time including the signal check was 15 minutes 51 seconds.

Schools Class 4-4-0's Nos.921, 923 and 938 reached Tonbridge in 36 minutes 31 seconds, 35 minutes 58 seconds and 36 minutes 46 seconds. Numbers 921 and 938 were delayed by signals entering Tonbridge station, half a minute and two minutes and a half respectively, No.923 by a PWR slack before New Cross. The uphill times were 14 minutes 58 seconds, 16 minutes 43 seconds and 16 minutes 51 seconds. Number 923, after passing Knockholt in 22 minutes 46 seconds reached 70 miles per hour at Dunton Green, fell to 60 at Sevenoaks and attained 83 before the Tonbridge stop, Knockholt to Tonbridge, 13.0 miles in 13 minutes 12 seconds, the Wartime speed limit somewhat neglected on this occasion. Number 921 was over two minutes quicker to Knockholt, 20 minutes 38 seconds but after that was limited to 65 miles per hour. Number 938 attained 71 miles per hour at Dunton Green before easing. Number 915, after initial delays, ran from London Bridge to Sevenoaks in 30 minutes 58 seconds. Speeds were 36 miles per hour at New Cross, 41 at Hither Green, 34 at Elmstead Woods, 49 at Orpington, 41 at Knockholt and 71 at Dunton Green, the Net time 28-29 minutes.

Date: July 7th 2002

Southern [Easter Section] Wartime performance from Sevenoaks

It is difficult to assess the EDHP for the L1 between New Cross and Knockholt with the signal check, if ignored the average EDHP was 950-1000 and if as Mr Maybank suggested the check cost 30 seconds, the figure rises to an even more impressive 990-1040. The Schools Nos.923, 938 and 921 developed an average EDHP of 960-1010, 950-1000 and 1075-1125. Whilst the Schools Class may not have found favour on the Western Section during the War years, on the Eastern Section they remained very much the ace performers.

War time locomotive performance on the former South Eastern Main line wasn't always like this. Norman Harvey travelled on the 13.15 ex Charing Cross twice in 1943, on the first H2 Class 4-4-2 No.2422 with 375 tons fell to 29 miles per hour at Elmstead Woods, and with a maximum of only 64 at Hildenborough was four and a half minutes late at Tonbridge. On the second No.2423 with 360 tons in August ran a little better, 50 miles per hour at Orpington, after which speed fell away badly to 33 at Knockholt, the maximum before Tonbridge, reached 30 seconds late, was 70. The continuation to Ashford, delayed by freight trains took twice the schedule, 64 minutes for 26.6 miles. Mr Harvey usually announced his presence on the train to the footplate crew and encouraged them in their endeavours.

Four journeys timed by Mr Maybank between Sevenoaks and London Bridge involved for Wartime some fast running. Schools Class 4-4-0's Nos.909 and 938 with, 230 and 240 tons, reached 50 miles per hour on the downhill stretch to Dunton Green, passed Knockholt, in 7 minutes 58 seconds and 8 minutes 6 seconds at minima of 44 and 42 and touched 76 and 77 on the long downhill stretch to London. New Cross, 17.3 miles from Sevenoaks, was passed in 18 minutes 52 seconds and 19 minutes 3 seconds, the stops at London Bridge effected in four and six seconds over 23 minutes, the quickest schedule from Sevenoaks to London Bridge was 26 minutes.

Schools Class 4-4-0 No.906, twice with 350 tons passed Knockholt in 8 minutes 42 seconds and 8 minutes 56 seconds, [maxima and minima were 48 and 37 and 47 and 36 miles per hour respectively], Hither Green, 14.9 miles in 16 minutes 54 seconds and 17 minutes 12 seconds [the average from Chelsfield to Hither Green 72½ miles per hour]. Number 906 reached London Bridge in 25 minutes 50 seconds, after signal checks and in 24 minutes 5 seconds after a slight signal check at Hither Green, it passed New Cross in 19 minutes 56 seconds.

The L and L1 Class 4-4-0's regularly deputised for the Schools Class 4-4-0's, particularly on the Tunbridge Wells/Hastings route. An interesting comparison is afforded by two journeys on the Sunday 16.50 ex Hastings, starting at 17.06 from Crowhurst with further stops at Robertsbridge, Tonbridge Wells Central and Tonbridge and due Waterloo at 18.37. The load in each case was eight coaches c.290-300 tons Gross, the locomotives were L Class 4-4-0 No.1760 and Schools Class 4-4-0 No.908. Number 1760 left Hastings one minute late, reached 32 miles per hour on the climb to Crowhurst and departed there two minutes late.

Date: July 7th 2002

Southern [Eastern Section] Wartime performance on the Hastings branch

Number 908 left Hastings on time, attained 35 miles per hour before Crowhurst, and left there punctually. Number 1760 passed Battle in 5 minutes 18 seconds and with 66, 58 and 68 miles per hour before Robertsbridge left there 70 seconds late, the scheduled time was 17.19, No 908 attained 70 before Robertsbridge. Number 1760 reached a maximum of 52 miles per hour after Robertsbridge, fell to a minimum of 34, passed Wadhurst at 36 and stopped at Tunbridge Wells one minute late. Number 908, left Robertsbridge on time kept the 23 minutes schedule to Tunbridge Wells with a maximum of 56 miles per hour, a minimum of 29 and 37 at Wadhurst. Number 1760 touched 58 miles per hour on the steep descent to Tonbridge, left there one minute late, attained 33 at Sevenoaks tunnel, was checked for a P.W.R slack at Orpington and with a maximum of 72 at Hither Green reached Waterloo on time, pedantically ten seconds late. Number 908 left Tonbridge on time, fell to 33 miles per hour at Sevenoaks tunnel and without exceeding 65 would have reached Waterloo on time but for a signal check resulting in a one minute late arrival. The L's could maintain Hastings line schedules with 300 tons, but the L reportedly was "worked hard", the Schools "easily". [Ref.2]

Norman Harvey travelled on the 16.50 ex Hastings some four years later towards the end of the War, when it was often double headed. Schools Class 4-4-0 No.936 and F1 Class 4-4-0 No.1021 with 380 tons gained over three minutes between Robertsbridge and Tunbridge Wells West. They averaged 48 miles per hour over the adverse four and a half miles, passed Wadhurst in 13 minutes 18 seconds and stopped in 19 minutes 35 seconds. Schools No.907 on the Sunday 09.25 ex Charing Cross, starting from Tunbridge Wells six minutes late, with 255 tons ran Crowhurst in 29 minutes 5 seconds with 68 miles per hour maximum at Robertsbridge and 60 minimum on the rise to Battle, 26½ minutes Net. .

An L1 Class 4-4-0 No.1785 in July 1945, with 320 tons on the 14.10 ex Hastings [the rostered Schools Class 4-4-0 reported stopped for a boiler washout] left Crowhurst three minutes late and gained two minutes on the 11 minutes schedule to Robertsbridge, with 70 miles per hour at Mountfield. The stretch from there to Tunbridge Wells was difficult; on this occasion speed rose to 44 miles per hour at Etchingham, fell to a minimum of 24 and was only 32 at Wadhurst and despite 54, after Tunbridge Wells was reached four minutes late, three minutes lost from Robertsbridge. Speed reached 60 miles per hour on the descent to Tonbridge, fell to 26 at Sevenoaks tunnel, reached 54 at Dunton Green, fell to 46 at Knockholt and finally touched 70 at Hither Green. A PWR slack and signal checks resulted in a final arrival 16 minutes late, the locomotive lost eight minutes between Hastings and London Bridge.

L1 Class 4-4-0 No.1782 with 310 tons at about the same time on the 09.15 Charing Cross to Ramsgate via Tonbridge kept time easily. A minute was gained from Waterloo to Sevenoaks, 31½ minutes, despite only 25 miles per hour at Elmstead Woods, half a minute was lost on the 11 minutes schedule to the next stop at Tonbridge and two and a half minutes gained against the 33 minutes allowance to Ashford. The maxima were 66 and 62 miles per hour.

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Southern [Central Section] Wartime performance on the Oxted lines

Oxted line train loads increased during the Wartime period and with a variety of motive power, the route attracted observers, particularly to the older locomotives.

The quickest Down train was the 15.55 ex Victoria. In October 1939, with the normal five coaches, H1 Class 4-4-2 No.2041 passed South Croydon in 18 minutes 35 seconds and stopped at Oxted as per schedule in exactly 32 minutes. Following the introduction of the East Croydon stop No.2041 ran the 9.9 miles from there to Oxted in 14 minutes 27 seconds [the adversely graded 5.9 miles from South Croydon to Woldingham took eight minutes with 60 miles per hour attained at Upper Warlingham]. H2 Class 4-4-2 No.2424 with 240 tons kept the 17 minutes schedule from East Croydon to Oxted [South Croydon to Woldingham in 9 minutes 52 seconds]. In October 1942 H1 No.2041 with 235 tons lost a minute to East Croydon and another to Oxted. Speeds were 46 miles per hour at Upper Warlingham, 32 minimum at Woldingham and 62 maximum before Oxted. It lost half a minute on the next stages to Edenbridge and Eridge with maxima of 62 and 64 miles per hour.

In 1943 H1 Class 4-4-2 No.2039 arrived at Eridge one minute early with the 15.55, it had gained three to four minutes between Victoria and Eridge. This was considered a rare event, even if locomotive performance was sufficient to maintain schedule, time was invariably lost at station stops. U1 Class 2-6-0 No.1900 with 255 tons in March 1945, apparently in a deplorable condition deputising for a stopped 4-4-2 was driven vigorously by Driver Thomson of Brighton depot. East Croydon to Oxted completed in 15 minutes 27 seconds, South Croydon to Woldingham in 8 minutes 40 seconds, maximum before Oxted 65 miles per hour. The 5.3 and 10.1 miles to Edenbridge and Eridge were run in 7 minutes 12 seconds with 70 miles per hour before Edenbridge and 14 minutes 11 seconds, schedule eight and 15 minutes. The 16.20 ex London Bridge, after detaching a portion at East Croydon which followed all stations, continued non stop to Oxted. B4 4-4-0 No.2063 with 120 tons took 16½ minutes [8 minutes 40 seconds South Croydon to Woldingham]. [Ref.3]

The EDHP developed by the various locomotives between South Croydon and Oxted gives a measure of performance requirements on the route: B4 No.2063, 480-530 - H1 No.2041, 730-780 - H2 No.2424 760-810 - U1 No.1900, 930-980. Number 1900 was timed at 38 miles per hour on the 1/100 at Sanderstead, probably an attained speed, EDHP of 970-1,020.

In the Up direction Norman Harvey timed I1X Class 4-4-2 Tank No.2005 with 285 tons on the Sunday 19.42 ex Tunbridge Wells. It passed Woldingham in 8 minutes 14 seconds from the Oxted start and reached East Croydon in 17 minutes 51 seconds, schedule 19 minutes. The Oxted start involves three fifths of a mile at 1/100 and two miles at 1/132 through the tunnel to MP17¾.

The heaviest gradients in the South East, with the exception of the Folkestone Harbour branch were on the Eridge to Polegate line, "The Cuckoo Line", 1/50 with curvature; not surprisingly punctuality at times left much to be desired.

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Southern [Central Section] Wartime performance on the "Cuckoo Line"

On Sunday April 18th 1943 an I1X Class 4-4-2 Tank hauled the 20.27 Tunbridge Wells West to Eastborne, three bogie coaches plus a van. It stopped at High Brooms Halt after Tunbridge Wells where no one alighted or joined the train, perhaps because the timetable stipulated it did not stop there. At the next station Groombridge, it overstayed its scheduled stop and left with an average of 16 persons per compartment. Later there was a long wait at Heathfield followed by another at the next station, Horam where the locomotive left the train to collect four milk wagons. This resulted in a stop of 30 minutes, a passenger after Hellingly observed that "some special effort was needed to make up time". The crew must have heard this rejoinder as some remarkable bursts of speed were noted either side of Hailsham, as high as 35 miles per hour was claimed. At Polegate the locomotive left the train again, this time to transfer the four milk wagons to the 21.40 Eastborne to London Bridge van train which, had been held at Polegate for 50 minutes. The 20.27 reached Eastborne at 22.45, the schedule a far from demanding 21.59.

The stretch from Rotherfield to Heathfield in the Down direction was particularly difficult for footplate crews, from the station the line climbed at 1/56 for 0.4 of a mile and after a short level stretch at 1/50 for 0.8 of a mile. It then fell at 1/52 and 1/50, with a level stretch through Mayfield station, for 2.6 miles. At the bottom there were two 22 chain diameter curves, necessitating a speed restriction, following which it ascended for two miles at 1/50 to Heathfield, including a 24 chains curve in the middle of the gradient. The I3 Class 4-4-2 Tank's were forbidden to work over the Eridge to Polegate section from 1937 to 1943, the I1X Class 4-4-2 Tank's used had difficulties with more than four coaches. The 15.55 ex Victoria included through coaches for Eastborne, detached at Eridge and attached to the 16.34 Tunbridge Wells West to Eastborne, usually a three coaches set. The I1X's could not in the Winter of 1943 maintain the 20 minutes schedule from Rotherfield to Heathfield, including the stop at Mayfield, an average speed of 19 miles per hour. To ease the problem the 16.34 was reduced to a two coach push and pull set and an I3 was diagrammed to work the train.

The 15.55 ex Victoria at Bank Holiday periods ran to Brighton only with an additional train at 16.02 to Eastborne via Heathfield. On Maundy Thursday and Easter Saturday, 1943, I3 Class 4-4-2's Nos.2079 and 2087 hauled five coaches on the 16.02. On summer evenings in 1945 there was a 21.50 Victoria to Heathfield which ran semi-fast to Eridge. On the 22nd April formed of eight coaches it was hauled by Q Class 0-6-0 No.541. Later in the year, 18th July, Q No.544 worked a train of nine coaches to Heathfield. On the 3rd and 4th August of the same year the 16.02, a seven coach ex SE&C set, was hauled by an I3 No.2027 and E Class 4-4-0 No.1515. A pilot locomotive was attached at Eridge, on the 3rd, I1X Class 4-4-2 No.2004 and on the 4th B1 Class 4-4-0 No.1450.

The I1x Class 4-4-2 Tank's continued to work over the Eridge Polegate section even after the Tunbridge Wells West based ones were replaced by I3 Class 4-4-2 Tank's and transferred to Redhill and New Cross Gate.

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Southern [Central Section] Wartime locomotive variety on the Oxted lines

An Eastborne based I1X No.2596 worked the 07.52 ex Eastborne, including through coaches to London which were attached at Eridge to the 08.32 ex Lewes, on June 2nd 1945. On this particular day due to the failure of the 4-4-2 on the Lewes train, the I1X worked through to London and continued on the Atlantic roster i.e. the 12.03 Victoria to Brighton via East Grinstead and Sheffield Park and the 17.18 return.

Locomotive shortages and failures were common and often resulted in the overloading of smaller locomotives. On the 6th May 1944 for instance D3X Class 0-4-4 Tank No.2397 hauled the 13.08 Tunbridge Wells West to London Bridge via East Grinstead, six crowded corridor coaches. It lost ten minutes as far as South Croydon, mainly on the long uphill stretch from Lingfield to Woldingham. In the opposite direction on Saturday 31st March 1945, the 13.25 Victoria to Tunbridge Wells via East Grinstead made up of six ex. L&SW coaches and a Southern coach had a B1 Class 4-4-0, a challenge, particularly the start up the 1/70 from Lingfield at 1/70.

Older smaller locomotives were regularly pressed into service, rosters at times were bewildering. The 16.42 East Croydon to Tonbridge [rear portion of the 16.20 ex London Bridge] was observed late 1943 with locomotives from Tunbridge Wells, Brighton, New Cross Gate, Norwood, Horsham and Redhill depots. Specifically: three E4 and two E5 Class 0-6-2 Tank's - one C2X and one C3 Class 0-6-0 - one I1X and eight I3 Class 4-4-2 Tank's - two Q Class 0-6-0's - one D Class 0-4-4 Tank - one K Class 2-6-0. More powerful motive power became the norm as the War progressed, H2 Class 4-4-2's and J Class 4-6-2 Tank's returned from other Southern Sections and from 1942 onwards Maunsell 2-6-0's increasingly appeared.

A J Class 4-6-2 Tank, Nos.2325 or 2326 from March 1943 hauled: 05.20 Victoria to Tunbridge Wells - 09.28 semi-fast to Victoria via Edenbridge - 18.10 Victoria to Uckfield, eight corridor coaches - light engine to Tunbridge Wells - 21.00 to Victoria via Edenbridge. The 18.10 reverted to its pre war schedule from the start of 1945 i.e. semi-fast to Eridge, a slow portion detached at East Croydon.

The H1 and H2 Class 4-4-2's from 1942 worked to Brighton via Sheffield Park as well as via Uckfield. The H2's reallocated from Ashford to Brighton were often observed on the route. Saturday May 6th, No.2426 had eight coaches on the 15.55 Victoria to Brighton and Eastborne via Uckfield, No.2422 a three coaches set on the 16.18 London Bridge to Brighton via East Grinstead and Sheffield Park and No.2425 the 17.18 Brighton to Victoria via East Grinstead. May 18th No.2423 had the 10.50 Brighton to Victoria via East Grinstead and 15.55 return via Uckfield and No.2421 the 08.32 Lewes to Victoria via Uckfield, eight coaches and 12.03 via East Grinstead. [There were nine I3 Class 4-4-2 Tank's, at work on the Oxted lines that day.].

There were two Brighton duties for H2 Class 4-4-2's at the end of 1944. One involved the: 10.50 Brighton to Victoria via East Grinstead -

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Southern [Central Section] Wartime H1 & H2 Class 4-4-2 duties

15.55 Victoria Brighton via Uckfield - 20.35 Haywards Heath London Bridge via East Grinstead - 03.25 London Bridge Brighton via Redhill. The other Atlantic roster involved: 08.00 Brighton [formerly 08.32 ex Lewes] Victoria via Uckfield - 12.03 Victoria Brighton via East Grinstead - 17.18 return - 22.00 Victoria Brighton vans via Main line. The restoration of the Newhaven Boat trains, normally ten corridors plus three vans provided the Atlantics with a bigger challenge; on the 22nd April an L Class 4-4-0 No.1762 headed the Down train

Before the Atlantics were permitted to work via East Grinstead and Sheffield Park B4 or B4X Class 4-4-0's regularly hauled the London to Brighton trains, the former SE&C inside cylinder 4-4-0's occasionally. On the 7th August D1 No.1246, with seven non corridor coaches plus two vans drew attention to itself when it stalled on the 1/94 by Wandsworth Common. The Atlantic's, although undoubtedly greatly appreciated by the footplate crews, also had their difficulties. On September 29th 1944 H1 Class 4-4-2 No.2038 with the 10.50 to Victoria was replaced, due to a hot box, by L Class 4-4-0 No.1762, which with 230 tons, lost four minutes between East Croydon and Oxted on the 15.55 ex Victoria. The following day H2 No.2426 ex works overhaul, but without running in, had difficulties with an Up 245 tons train and on the 15.55 boiler pressure fell to 100 pounds per square inch at Woldingham and did not reach 200 pounds per square inch until Eridge. Four and a half minutes of the lost time was then recovered to Lewes.

The Atlantics occasionally hauled the 19.42 London Bridge Haywards Heath via East Grinstead, which with three coaches hardly required such power. H2 Class 4-4-2 No.2426 was noted running to the first stop at East Croydon in 15½ minutes including signal checks. Speeds were 50 miles per hour at New Cross Gate, 38 minimum at Forest Hill and 52 maximum at Norwood Junction.

The availability of the Atlantics reduced the use of N and U1 Class 2-6-0's, particularly on the 08.32 ex Lewes and the 16.50 Victoria to Brighton via Uckfield on which they had been regular performers since 1942. The 2-6-0's also appeared less on the 17.20 London Bridge to Tunbridge Wells, alternatives were available, notably E Class 4-4-0's from Redhill depot.

Whilst overall the War years witnessed a reduction in scheduled passenger services, some new trains were introduced, primarily for military requirements. Some represented a considerable challenge for motive power; one such was the Ashford to Newcastle. Northbound the train left Ashford at 08.45 for Redhill behind a King Arthur Class 4-6-0 [which returned with the southbound service]. A U1 Class 2-6-0 then took over from Redhill to Banbury; with the at times heavy formations, a tough proposition for these comparatively modestly dimensioned locomotives over the heavy gradients of the Redhill to Reading route. U1 Class 2-6-0 No.1899 had an F1 Class 4-4-0 No.1240 as pilot with 16 coaches on the 11th July 1943 from Redhill [The U1's regularly had an F1 as pilot with loads of this magnitude] but on the 30th, No.1895 was noted leaving Reading for Redhill with 17 coaches and no pilot.

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Southern [Central Section] Wartime performance Redhill to Reading

The train, discontinued for a time, was reinstated in 1944 as a Southampton to Newcastle service. Motive power between Woodford Halse, [rather than Banbury] and Southampton varied, a U Class 2-6-0 on the first day, later D15 and Schools Class 4-4-0's and King Arthur Class 4-6-0's regularly. This also was a heavy train, on July 28th and August 3rd and 4th made up of 17, 16 and 17 coaches plus a van. Motive power on the three days Schools No.931 and D15 No.471, the heaviest noted behind a D15 was 18 coaches. However the hardest locomotive requirements were undoubtedly when the U1's worked the service from Ashford over the Redhill to Reading section.

Early in 1941, U1 Class 2-6-0 No.1890, with 12 LNER coaches plus an eight wheeled van, probably 425 tons Gross ran from Guildford to the next stop at Deepdene in 24½ minutes, schedule 29 minutes. The minimum on the 1/96 between Chilworth and Gomshall was 20 miles per hour and following a recovery on the favourable grades past Gomshall 26 at MP33¾, the maximum before the Deepdene stop 60. From the restart it attained 30 miles on the 1/125, passed Reigate in 11 minutes and reached Redhill after a signal check in 15 minutes as per schedule. [Ref.4] Later in the year U1 Nos.1895 and 1890 with 390 and 435 tons ran from Guildford to Deepdene in 24 minutes 22 seconds and 23 minutes 37 seconds. They passed Shalford Junction at 35 and 40 miles per hour, fell to 28 and 29 on the 1/100 past Chilworth and further to minima of 21 and 21½ at the top of the first stretch of 1/96. Shalford to Gomshall took 11 minutes 45 seconds and 11 minutes 40 seconds, the minimum at MP33¾, the summit of the 1/96 was 31 miles per hour after 45 in the dip past Gomshall, maxima before the Deepdene stop were 58 and 62. They reached 25 miles per hour on the rising grades after the restart, passed Reigate in 12 minutes 3 seconds and 12 minutes 31 seconds after a signal check and reached Redhill in 18 minutes 11 seconds and 17 minutes 7 seconds after further delays, 15¾ minutes Net in each case.

Northbound U1 Class 2-6-0's Nos.1895 and 1890 twice, had 380, 410 and 415 tons. From the Redhill start speed reached 24, 25 and 25 miles per hour falling to 21, 20 & 22 on the 1/100; Reigate was passed in 6 minutes 13 seconds, 5 minutes 34 seconds and 5 minutes 51 seconds, there was a PWR slack before Deepdene and the stop at the station was effected in 13 minutes 32 seconds, 13 minutes 8 seconds and 14 minutes 24 seconds. The Net times were 13¼ and 12¾ minutes twice. Starting from Deepdene speed reached 28, 24½ and 28 miles per hour on the 1/100 and fell away to 24, 20½ and 22½ on the 1/96 to MP 33¾. Gomshall, 5.4 miles, was passed in 12 minutes 58 seconds, 14 minutes 20 seconds and 13 minutes 8 seconds and Shalford Junction in 22 minutes 13 seconds after a signal check, 22 minutes 33 seconds and 21 minutes 25 seconds. Guildford was reached in 25 minutes 28 seconds, 26 minutes 20 seconds and 23 minutes 46 seconds, 23¼, 25½ and 23¼ minutes Net respectively, the schedule was 41 minutes from Redhill to Guildford including the stop at Deepdene.

The U1 Class 2-6-0's were worked hard on these trains to keep time as the horsepower figures indicate.

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Southern [Western Section]] Wartime performance

Numbers 1895 and 1890 with 380 and 415 tons developed 950-1,000 and 1,020-1,070EDHP when reaching 28 miles per hour on the 1/100 from the Deepdene start, which fell to 840-890 at the top of the climb. On the other run with No.1890 the comparative figures were 860-910 and 740-790. When they reached 28 miles per hour on the 1/100 this probably required full Regulator and virtually maximum cut off, it is unlikely the boiler could have continued providing steam to the cylinders for long at this level of working. On the southbound journeys No.1890 developed 825-875EDHP with 435 tons, the other two less c.730-780EDHP between Shalford and MP33¾.

Western Section locomotive performance was arguably less interesting during Wartime than on other Sections. Despite heavier loads the overall speed limit reduced significantly power requirements on the fast easily graded London to Southampton route. [The best performances on the Western Section were with the West of England trains, particularly between Salisbury and Exeter.

Three runs timed by J.G.Webber on the 14.40 from Bournemouth as far as Southampton were competent performances.[Ref.5] N15X Class 4-6-0 No.2329, with 11 coaches ran to Southampton in 38 minutes 40 seconds. There was a PWR slack at Christchurch, a signal check at New Milton, following which it ran the 13.0 miles from Sway to Totton at an average of 65 miles per hour. School's Class 4-4-0 No.931 with 450 tons passed Brockenhurst in 19 minutes and took 33 minutes 50 seconds with 72 miles per hour before Brockenhurst and 66 afterwards. Lord Nelson Class 4-6-0 No.861 with 450 tons ran the course in 37 minutes including a signal check at Hinton Admiral, 34 minutes Net.

A Schools Class 4-4-0 No.930 in 1942 with 14 coaches on the 13.30 ex Waterloo reached Bournemouth ten minutes due to out of course delays, it continued to Weymouth with seven coaches. Returning on the 13.35, the correspondent noted Lord Nelson Class 4-6-0 No.859 with a comparatively light train of nine coaches reach Waterloo on time at 16.58.[Ref.6]

When the Lord Nelson Class 4-6-0's replaced the Schools Class 4-4-0's on the principal Bournemouth trains as already noted, punctuality reportedly improved. H.Gelder travelled behind Lord Nelson No.852 with 490 tons in September 1943 on the 15.30 ex Waterloo. It passed Surbiton in 17 minutes 14 seconds, attained 60 miles per hour at Hampton Court Junction and 66 at Byfleet and reached Woking one and three quarters minutes early, 29 minutes 15 seconds. It passed MP31 at 46 miles per hour from the restart and with 61 maximum afterwards reached Basingstoke two minutes inside the 30 minutes schedule. [Ref.7] Six days before Christmas Lord Nelson No.861 with 14 coaches on the 14.20 ex Bournemouth West ran from the Central station to Southampton in 36 minutes. Mr Gelder in 1943 travelled on the 15.25 ex Waterloo when Lord Nelson Class 4-6-0 No. 855 with a substantial train of 570 tons passed Hampton Court Junction at 65 miles per hour. It attained 65 miles per hour again at Byfleet, fell to 45 minimum at MP31, the Woking to Basingstoke time, passed in 54½ minutes was 25 minutes 20 seconds.

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Southern [Western Section] Wartime performance

The average EDHP between Woking and Basingstoke was 1,175-1,225, the minimum after Basingstoke was 44 miles per hour and with 71 before Winchester Junction, the stop at Winchester was effected six minutes and a half inside the 82 minutes schedule. [Ref.8] Another Lord Nelson No. 851, in February 1943, on the Saturday 12.25 ex Waterloo gained two minutes to the first stop at Woking with 440 tons, schedule 31 minutes. Worting Junction, 25.9 miles from Woking, was passed six minutes early in 28 minutes 5 seconds after a maximum of 73 miles per hour at Hook [average Hook to Basingstoke 71½ miles per hour]. Matters were then taken easily after this sparkling start and Southampton was reached five minutes and a half early.

King Arthur Class 4-6-0's, replaced between Salisbury and Exeter by the new Merchant Navy Class 4-6-2's became available on the Bournemouth route in 1943. Number 767 regained 13 minutes of a late start from Waterloo by Southampton on the 08.30. Number 772 with 506 tons Tare, probably 540-550 tons Gross on the 16.35 ex Waterloo ran the 42.2 miles from Woking to the next stop at Winchester in 49 minutes 20 seconds, schedule 52 minutes. The minimum after Basingstoke was 48 miles per hour and the maximum before Winchester 75. Two days before the end of the year an Urie King Arthur No.737 starting from Winchester with 11 coaches on a relief passed Hampton Court Junction, 53.3 miles, in 57 minutes 20 seconds, speeds were 70 miles per hour at Hook and 55 minimum at MP31. It reached Waterloo in 79 minutes after signal checks, 75 minutes Net.

The Lord Nelson Class 4-6-0's were usually rostered to the 08.30, 09.30 11.30 and 17.30 ex Waterloo. They handled the 11.30, regularly 14 coaches, easily: if a Schools Class 4-4-0 was used timekeeping was indifferent, indeed if there were any "light engines" in London these were employed as pilots. On 11th December 1943 Schools No.924, piloted Lord Nelson No.860 and not surprisingly time was kept easily. From March 1945 the N15X Class 4-6-0's Nos.2329 and 2333, recently returned from the GWR often hauled the 11.30. The Schools Class 4-4-0's despite their poor reputation, on occasions performed well. In 1943, one with 405 tons recovered two and a half minutes of a late start between Winchester and Basingstoke and continued from there to the next stop Waterloo in 53½ minutes. It passed Clapham Junction in 46 minutes with a maximum of 67 miles per hour. In the opposite direction Schools No.926 with 530 tons ran from Woking to Basingstoke in 29½ minutes, with a maximum of 65 miles per hour at Hook and to the next stop at Winchester in 24 minutes 5 seconds with a maximum of 75.

There were times when drivers neglected to observe the Wartime speed restrictions. H.Gelder noted Lord Nelson 4-6-0 No.861 with ten coaches and one luggage van pass Fleet, 11.3 miles, in 11 minutes 5 seconds from a start at Basingstoke at 75 miles per hour, Farnborough at 82, MP31 at 69 and Brookwood at 75. Woking was reached in 22½ minutes. From the restart it passed Clapham Junction in 20 minutes 50 seconds after 83 miles per hour maximum.

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Southern [Western Section]] Wartime performance on Semifast's

Number 861 left Winchester 26 minutes late and was only four late at Waterloo. Other runs recorded at the same time included Lord Nelson No.851 with 490 tons, Winchester to Waterloo in 85½ minutes actual, 78½ minutes Net and No.853 with 420 tons, Bournemouth to Southampton in 33¼ minutes. It passed Sway in 15 minutes 55 seconds and after 67 miles per hour maximum, Totton, 25.5 miles, in 28 minutes.

Locomotive performance on the semi-fast and stopping trains varied, at times leisurely, at others lively. The 15.54 ex Waterloo after a wait at Basingstoke left there at 17.40 as a stopping train to Southampton Terminus. The schedule from Basingstoke to Winchester was 26 minutes including the stop at Micheldever; usual motive power was an Urie King Arthur Class 4-6-0. Number 752 with 340 tons reached 61 miles per hour at Litchfield before Micheldever and ran the 7.5 miles on to Winchester in nine and a half minutes with 67 miles per hour maximum, the Net running time Basingstoke to Winchester was 24½ minutes. Number 741 with 390 tons lost one minute, a D15 Class 4-4-0 with 395 tons three and a half without exceeding 60 miles per hour.

The Sunday 19.34 from Basingstoke, 18.30 ex Waterloo was allowed 26 minutes to Winchester non stop. King Arthur Class 4-6-0 No.766 with 480 tons took 24 minutes 40 seconds with a maximum of 69 miles per hour. A Schools Class 4-4-0 with 490 tons needed 20 seconds more and a higher maximum, 75 miles per hour. On June 25th Lord Nelson Class 4-6-0 No.855 also with 490 tons, passed Micheldever in 15 minutes at 64 miles per hour and after a maximum of 76 stopped at Winchester in 22¾ minutes. Lord Nelson No.853, in the same month with 490 tons passed Surbiton in 16 minutes 25 seconds from the Waterloo start before delays for a long PWR slack. It then ran from Woking to the next stop at Basingstoke in 29½ minutes.

The Up semi-fast's could be equally interesting. A T9 Class 4-4-0 in 1943 replaced a 4-6-0 at Basingstoke and with 355 tons ran to Woking in 28½ minutes [schedule 27 minutes] and to the next stop at Surbiton in 16 minutes Net. A Lord Nelson Class 4-6-0 with nine coaches ran from Woking to Surbiton in 14¾ minutes and an Urie King Arthur Class 4-6-0, with multiple jet exhaust and 430 tons took 15¼ minutes with 70 miles per hour maximum.

The 10.32 from Winchester, [08.35 ex Bournemouth West] was a persistent late runner. King Arthur Class 4-6-0 No.768 with 520 tons ran to Basingstoke in 33½ minutes and to the next stop at Woking in 26 minutes 20 seconds, schedule 32 and 28 minutes, No.775 with 510 tons took 38 minutes and 26 minutes 10 seconds. An Urie King Arthur with a more reasonable 390 tons passed Farnborough in 15 minutes 49 seconds from Basingstoke and without the following checks could have reached Woking in 25 minutes. A Schools Class 4-4-0 No.924 with 440 tons kept time on the 14.30 ex Bournemouth in February 1944, mainly through fast running on the favourably sections. It took 35¾ minutes to Southampton, including a PWR check at Sway and kept the 66 minutes schedule from there to Woking with a quarter of a minute to spare.

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Southern [Western Section] Wartime Cross Country Trains

The average from Basingstoke to Farnborough was 73.5 miles per hour, with 76 at Hook and 70 at Fleet.

A B4 x Class 4-4-0 No.2070 on 17th January 1945 with a Basingstoke to Waterloo train ran from Woking to Surbiton the next stop in 15 minutes 20 seconds and from there to Waterloo in exactly 17 minutes. Wartime locomotive performance was a curate's egg, the best such as a Lord Nelson passing Basingstoke in 54½ minutes with 570 tons well up to pre-war standards, the worst scarcely equal to the end of the 19th Century.

The through Brighton and Portsmouth to Salisbury service and beyond in the latter War years usually had a D15 Class 4-4-0. Number 464 with 280 tons on the 09.00 Portsmouth to Cardiff gained three minutes from Southampton to Romsey, schedule 15 minutes, including a PWR slack at Nursling. It then, with 56 miles per hour at Dean and 59 before Alderbury Junction improved on the 24 minutes schedule to Salisbury by three and a half minutes. Number 463 with 410 tons and T9 Class 4-4-0 No.287 as pilot ran from Southampton to Salisbury, the next stop in 35¾ minutes, 34¼ minutes Net. Southbound D15 No.464 with T9 Class 4-4-0 No.115 and 450 tons ran from Salisbury to Southampton, with 64 miles per hour at Kimbridge in 36 minutes. Another D15 with 310 tons reached 70 miles per hour at Kimbridge.

Plymouth to Brighton trains loaded heavily, on December 19th 1943 for instance 14 coaches from Salisbury with D15 Class 4-4-0 No.470 and T9 Class 4-4-0 No.727. The Cardiff to Portsmouth that day had ten coaches with D15 No.471. The Brighton to Plymouth on three consecutive Saturdays had T9 No.310 to Fareham, where the Portsmouth portion was detached with D15 No.468 or 471 as pilot.

Not all trains were heavy, the Sunday 17.05 Portsmouth to Bournemouth usually consisted of only four or five coaches. L12 Class 4-4-0 No.417 with four coaches ran to schedule to Southampton from Fareham start with 62 miles per hour reached at Bursledon and a signal check at St. Denys. Number 425, with five coaches, 160 tons, passed Bitterne, 12.0 miles from Fareham in 15 minutes 48 seconds, c. two minutes inside schedule. The 12.55 ex Portsmouth in 1945 ran non stop from Fareham to Romsey, usually with a K10 or L11 Class 4-4-0, Nos.384 and 141, on the 5th January an M7 Class 0-4-4 Tank, on the 31st B4X Class 4-4-0 No.2056 and on the 2nd March Adams Jubilee Class 0-4-2's Nos.599 and 630.

Although performance at the end of the War varied the locomotive fleet was with hindsight, in surprisingly good condition. O.S.Nock in his book "British Locomotives at Work" detailed two footplate trips, one on a King Arthur Class 4-6-0 No.772 with 420 tons and the other with an Urie King Arthur No.747 with 495 tons. Number 747, with full Regulator and 35 percent cut off accelerated from 34 miles per hour at Worting Junction to 38 at Wootton, at least 875-925EDHP. Number 772 accelerated its train from 40 miles per hour before Basingstoke to 46 at Wootton, an average of 950-1,000EDHP.

Date: July 7th 2002

Southern Wartime introduction of the Merchant Navy's

The locomotive earlier developed 870-920 when passing MP31 at 48 miles per hour, with the Regulator full open at both locations, cut off 35 percent at MP31 and 38 percent at Worting Junction.

Observers of Wartime locomotive performance must have always anticipated the worst and been delighted if something better ensued. On the 18th August 1942 D.S.M.Barrie on the 14.26 Alton to Southampton Terminus noted an M7 Class 0-4-4 Tank with the normal two coach auto set attain 63 miles per hour between Medstead and Ropley and then 60 before the next station, Alresford. The driver was obviously intent on driving up to the Wartime speed limit wherever possible.

Special services, other than for Military purposes were scarce during the War, hop-pickers specials were an exception, in 1944 no less than five B1, four D, one D1, six E, four E1, one F1, one L and one L1 Class 4-4-0's were employed. The elderly Stirling 4-4-0's at times with relatively heavy trains, on the 2nd September, F1 No.1110 had eight coaches from London Bridge to Pluckley, three days previous B1 No.1443 six corridor-coaches plus three vans on the 09.33 London Bridge to Hawkhurst, with No.1459 tender first as pilot from Tonbridge. On 1st September No.1459 took the same train with an additional van to Tonbridge with No.1445 as pilot from there. There were no 0-6-0's used on the Hop-pickers trains in 1944, presumably they were all required on freight services.

It appears with hindsight, surprising that the direction of Post War steam locomotive operation in the South East was established by developments during the War years. The first Merchant Navy Pacific [4-6-2] worked a special train from Eastleigh to Alresford on the day it was formally named and on March 24th 1941, No.21C1 took ten empty coaches from Eastleigh to Bournemouth and returned with 20. Following this, the locomotive and the nine others built at the time spent most of the wartime period working on the West of England route. The Merchant Navy Class 4-6-2's had 6 feet 2 inches diameter coupled wheels and three cylinders [18 inches diameter by 24 inches stroke]. The boiler working pressure was 280 pounds per square inch and the total heating area 3,116 square feet [2,176 square feet in the boiler tubes, 275 square feet in the firebox plus thermic syphons and 665 square feet in the superheater.] The fire grate area was 48½ square feet, the locomotive weighed 96 to 97 tons, the tender another 48 tons.

Merchant Navy Class 4-6-2 No.21C7 on October 11th 1944 hauled the 08.35 Victoria to Ramsgate, eight coaches plus two vans and returned on the 13.35, ten coaches, as a precursor to a special test run to Dover on the 13th. The test schedule was kept easily with the 70 miles per hour speed limit observed. By the beginning of 1945 recently built Nos.21C11 and 21C12 were working from Nine Elms depot, No 21C11 was observed on the 06.00 Southampton to Waterloo on the 19th January, its first visit to London, and it then worked the 09.30 Down. Number 21C12 hauled the 09.54 Waterloo to Basingstoke on the 22nd of the same month.

Date: July 7th 2002

Southern [Central Section] running in the Bulleid Light Pacific's

The first light Pacific's, West Country Class 4-6-2's, built at Brighton were run in on the 08.00 Brighton to Victoria via Uckfield returning on the 12.03 Victoria to Brighton via East Grinstead. The West Country Class 4-6-2's had 6 feet 2 inches diameter coupled wheels and three cylinders [16 3/8 inches diameter by 24 inches stroke]. The boiler working pressure was 280 pounds per square inch, the total heating area 2,667 square feet [1,869 square feet in the boiler tubes, 253 square feet in the firebox plus thermic syphons, 545 square feet in the superheater]. The fire grate area was 38¼ square feet, the locomotive weighed 86 tons, the tender another 43 tons.

West Country Class 4-6-2 No.21C101 on the 21st June, with eight coaches on the 08.00 ex Brighton ran the 10.1 miles from Eridge to Edenbridge in 12 minutes 15 seconds and the 5.3 miles to the next stop at Oxted in 8 minutes 25 seconds, schedule 15 and 9 minutes. The following trains that morning, the 09.28 Tunbridge Wells West to Victoria and the 08.20 Lewes to Victoria were hauled by a D1 Class 4-4-0 No.1743 and B4 Class 4-4-0 No.2062. The following day No.21C103 worked to London on the 08.00, developed a hot box and was replaced on the 12.03 by Stirling 4-4-0 B1 No.1450. Later in the year, at the end of October, No.21C110 spent three weeks working from Redhill depot. A typical day involved; 07.45 and 17.36 ex Redhill, 12.17 and 21.34 ex Reading. It was observed running with three coach trains, prophetic of things to come and perhaps indicative of peace-time conditions.

The Newhaven Boat trains, as noted already, commenced operation early in 1945, despite the difficulties at Dieppe harbour; the first Boat train between Victoria and Dover Marine ran on 23rd October 1945. The inaugural one, six coaches, three Pullman cars and two four wheeled vans hauled by Merchant Navy Class 4-6-2 No.21C17; a second, seven coaches, one Pullman car and one van by a King Arthur Class 4-6-0. Tests previously undertaken between Victoria and Dover with Merchant Navy's appear to have produced a best performance with No.21C2 and 460 tons, Dover in 84 minutes 55 seconds. The initial start from Victoria involved 40 miles per hour at Sydenham Hill, 65 before Bromley and a minimum of 48 at Knockholt, passed in less than 24½ minutes. There was a signal check to 20 miles per hour before Sevenoaks, 78 before the Tonbridge slowing, an average of 81 after a PWR slack before Paddock Wood over the 21.3 miles to Ashford, a maximum of 86, 69 minimum at Westenhanger before further PWR slacks and a stop. The Net time was 78 minutes, an average of 60 miles per hour with 460 tons, close to the locomotives reported operating performance criteria.

Merchant Navy Class 4-6-2 No.21C2 was tested on the Waterloo to Bournemouth route with 16 coaches, 520 tons, on the 17th and reached Bournemouth in 112¾ minutes despite a maximum limit of 75 miles per hour, 77 was the actual maximum noted. The official record indicated: Byfleet in just over 24 minutes at 77 miles per hour, an increase after a signal check to 28 before Woking to 48 at Brookwood, 54 at MP31 and 75 at Hook, Worting Junction passed in 52 minutes 3 seconds, Southampton in 79 minutes 3 seconds, Net time to Bournemouth c.109 minutes.

Date: July 7th 2002

Southern Boat Trains and Air Specials post War

The outstanding performance on these tests was the start from Victoria to Knockholt by No.21C2, 1,650-1,750EDHP between Herne Hill and Sydenham Hill, 1,800-1,900 between Orpington and Knockholt. [If 69 was sustained at Westenhanger 1,800-1,900]. The performance to Southampton did not involve such high outputs and on a non stop run to Bournemouth, water consumption was an issue, Woking to Basingstoke 1,500-1,600EDHP average.

Whilst the new locomotives were being tested in preparation for the restoration of the "Golden Arrow" and "Bournemouth Belle", the older pre-grouping ones continued on important duties. H2 Class 4-4-2's Nos.2423 and 2425 handled the Newhaven Boat train to the 80 minute schedule competently, normally ten coaches and three or four vans, if more a pilot was taken eg on 7th August 1945 B4 Class 4-4-0 No.2054 with No.2423.

There were several slots during the day for BOAC air specials from Victoria to Bournemouth. The 19.08 schedule was; Wimbledon [via Streatham Junction] 19.26½, Worting Junction 20.29 and Christchurch [for Hurn airport] stop 21.24. The train continued to Bournemouth West, arrival 21.42. Up there was a slot at 15.00 ex Bournemouth West, Christchurch 15.20, Wimbledon pass 17.19 and Victoria arrival 17.37. Locomotives on this service during May 1945 included four T9, one L12, five D1 or E1 and five L Class 4-4-0's. The service operated until April 1946, normal formation consisted of one Pullman car, one Pullman restaurant car, two first class coaches and a luggage van. There were three trains on the 14th September to Bournemouth or Poole from Waterloo, with E1 Nos.1165 and 1497 and T9 No.728.

The inaugural Channel Islands Boat to Southampton from Waterloo ran at the end of June 1945, initially five coaches, restaurant car and a van, motive power an Urie King Arthur Class 4-6-0 or a Schools Class 4-4-0.

The heaviest regular train at this time was the Southampton to Newcastle.

New Southern motive power was displayed on the 3rd August 1945 when Nine Elms based Merchant Navy Class 4-6-2's took the 05.40, 08.30, 09.30 and 10.30 ex Waterloo. All Bournemouth duties had Lord Nelson Class 4-6-0's. Other Classes regularly appeared on Bournemouth trains, particularly the mixed traffic S15 Class 4-6-0's. J.G.Webber timed No.846 with 450 tons on the 11.20 from Southampton [09.20 ex Weymouth] It sustained 46-47 miles per hour from Winchester to Micheldever, reached a maximum of 68 at Byfleet and was delayed in the later stages, Net time 95 minutes, schedule a generous 99 minutes, 1,050-1,100EDHP after Winchester. Urie S15 No.506 had 13 coaches on the 18.30 ex Waterloo, booked first stop Southampton in an ample 103 minutes, on the 29th September. A Schools Class 4-4-0 on the 11.20 from Southampton a few weeks later with 450 tons had five out of course checks, Net time to Waterloo was 90 minutes. On the 24th August the 17.05 Bournemouth West to Waterloo with 13 coaches was entrusted to a T9 Class 4-4-0, No.706 which was observed arriving and leaving Woking in fine style, but whether to schedule was not recorded.

Date: July 7th 2002

Southern January 1947 timetable

An Urie King Arthur Class 4-6-0 No.748 on the 15.09 ex Waterloo at the beginning of December 1945 with 340 tons passed Woking in 31¾ minutes and stopped at Winchester after a signal check at the Junction in 82¾ minutes, schedule 82 minutes.

As part of the build up of the post war service some L12 Class 4-4-0's were transferred to Brighton depot. The 09.40 Brighton to Bournemouth usually had No.430, the 11.30 to Plymouth as far as Salisbury Nos.423 or 428, an Eastleigh based D15 Class 4-4-0 took the 11.00 to Cardiff. Occasionally a B4X or T9 Class 4-4-0 appeared and on the 17th December West Country Class 4-6-2 No.21C117 was on the 11.30.

The Southern Railway - despite the aftermath of War - a shortage of passenger coaching stock, [450 less coaches than in 1939] - an elderly locomotive fleet [at the end of 1946 19 percent of them were over 50 years old, comparative figures for the other British Railways were GWR 6.5%, LNER 14% and LMS 15%] - an interrupted electrification programme - attempted a return to pre-war Service standards. Additional distractions included the post war fuel crisis, the bad winter of 1946-7 and the Government's announcement it intended to nationalise the British Railway system.

C.J.Allen writing at the beginning of 1948 said. "It is beyond dispute that during and since the War, the Southern Railway, now the Southern Region of the national octopus has not merely provided the recorder of locomotive performance with appreciably the highest general standard of steam locomotive running in Great Britain, but in various directions is giving demonstrations that are superior even to the best of those in pre war days". Whilst Allen was almost certainly thinking of the performance of the Merchant Navy Class 4-6-2's on the Salisbury to Exeter section, when stating that pre war levels of performance were exceeded, good performances were achieved on the Eastern and Central Sections and to Southampton and Bournemouth.

The Bournemouth and Weymouth service was gradually restored to pre war standards, the January 1947 timetable very much one in the throes of improvement. The best train was the "Bournemouth Belle", reinstated the previous October, 125 minutes to Bournemouth including a stop at Southampton and exactly two hours back to Waterloo. The weekday loading in December 1946 was eight Pullman cars, with another two cars added at the weekends. The Lord Nelson Class 4-6-0's often hauled the train with these comparatively modest loads and on Christmas Eve modified Urie Class King Arthur No.755 appeared. However at times loads were heavy, on 26th October it was seen at Southampton with Merchant Navy Class 4-6-2 No.21C20 and 13 coaches, probably 550 tons Gross.

The 10.30 and 18.30 ex Waterloo ran to Southampton, the first stop in 89 and 96 minutes, the 15.20 and 16.35 to Winchester in 81 and 82 minutes, the 11.30, 13.30 and 21.00 [Channel Islands Boat Train] to Basingstoke in 57, 62 and 56 minutes.

Date: July 7th 2002

Southern [Western Section] "Bournemouth Belle" performance in 1947

West of Bournemouth schedules were similarly varied, the 09.20 ex Weymouth allowed 22 minutes for the 15.0 downhill miles from Dorchester South to Wareham, the 17.20 five minutes less. Similarly from Dorchester to the next stop Wool, 10.0 miles, 14½ minutes for the 12.00 ex Weymouth and only 11½ minutes for the 07.38. The 07.38 gave the quickest overall time from Weymouth to London, 3 hours 21 minutes with seven stops, the best Down time 3 hours 17 minutes by the 10.30 ex Waterloo with five stops.

The weekdays "Bournemouth Belle" reportedly kept good time, not so at weekends when loads were heavier, although delays were probably more to do with line occupation than locomotive frailties. Rev.R.S.Haines made a return journey in 1947, 500 tons and Merchant Navy Class 4-6-2 No.21C12. The start from Waterloo was slow, Clapham Junction 8 minutes 3 seconds and Woking 29 minutes 19 seconds. The 23.4 miles from there to Basingstoke were run in one second under 23 minutes with a minimum of 58 miles per hour at MP31 and a maximum of 73 at Hook. Winchester was passed in 68 minutes 23 seconds and after a signal check the stop at Southampton effected in 83 minutes 27 seconds. The continuation to Bournemouth took 35 minutes 50 seconds, 82 and 33½ minutes Net. In the Up direction Brockenhurst was passed in 17 minutes 59 seconds from Bournemouth, [Christchurch to Sway nine and a quarter minutes] and Southampton reached, after a PWR slack, in 34 minutes 20 seconds. From the restart No.21C12 reached 60 miles per hour by Eastleigh, passed in 9 minutes 38 seconds and fell to 50 at Litchfield, 27 minutes 39 seconds. There was a PWR slack before Worting Junction, 83 miles per hour at Brookwood, MP31, 48.2 miles passed in 49 minutes 40 seconds and after a signal stop plus various other delays Waterloo reached a quarter of an hour late, 98¾ minutes. Net times for the two stages were 32½ and 82 minutes. Number 21C12 developed 1,450-1,500EDHP average from Woking to Basingstoke and 1,540-1,590 from Eastleigh to Winchester, falling to 1,260-1,310 at Litchfield.

C.J.Allen travelled on the footplate of Merchant Navy Class 4-6-2 No.21C14 in 1946 with ten Pullman cars, 420 tons Down and as a passenger with 410 tons Up. Hampton Court Junction was passed in 19 minutes 21 seconds after various checks, then with 75 miles per hour at Byfleet, 66 at MP31 and 77 at Hook, Worting Junction three minutes early, 52 minutes 8 seconds from Waterloo. The Woking to Basingstoke took two seconds under 20 minutes, an average of 1,375-1,425EDHP. [Regulator opening gave 130 pounds per square inch in the steam chest with the cut off 20 percent at Hampton Court Junction, 15 percent at Woking and 20 percent before Basingstoke. The Bulleid valve gear was a far from precise piece of equipment; in fact to be brutal the chain link system was archaic]. Time to Southampton, after delays for signals between Winchester and Eastleigh was 84 minutes 10 seconds with the continuation to Bournemouth run in 34 minutes 36 seconds. In the Up direction Bournemouth to Southampton took 33 minutes 34 seconds. The start from Southampton was good, 60 to 61 miles per hour sustained on the 1/252 to Litchfield.

Date: July 7th 2002

Southern [Western Section] performance 1946-47

Worting Junction was passed almost four minutes early, 32 minutes 48 seconds, after easy running Hampton Court Junction two and a quarter minutes early in 66 minutes 17 seconds and with signal checks before and after Clapham Junction, Waterloo was reached in 86 minutes 57 seconds. The EDHP between Eastleigh and Litchfield was 1,450-1,500.

D.S.M.Barrie noted some speedy snippets west of Bournemouth. T9 Class 4-4-0 No.337 in 1946 with 170 tons ran from Dorchester to the next stop at Wareham in 15 minutes 3 seconds, with 82 miles per hour at Wool. A year later Lord Nelson Class 4-6-0 No.852 with 310 tons ran Dorchester to Wool in 10 minutes 18 seconds start to stop with a maximum of 86 miles per hour. Not all running was as lively as this; indeed the timetable did not require it.

J.G.Webber travelled behind Lord Nelson Class 4-6-0's with 415 tons between Waterloo and Winchester on three occasions in; 77 minutes 23 seconds, 75¼ minutes Net - 79 minutes 10 seconds, 76¼ minutes Net - 76 minutes Net. On the first No.854 ran the Woking to Basingstoke stretch in 25 minutes 3 seconds, on the third the minimum at Litchfield was 49 miles per hour. Maxima before Winchester on the first two were 70 and 69 miles per hour. Lord Nelson No.852 in 1946 on the 13.30 ex Waterloo reached Basingstoke in 59½ minutes with 425 tons, without exceeding 65 miles per hour. Number 856 with 310 tons improved on the Basingstoke to Surbiton schedule [49 minutes] by seven minutes without exceeding 70 miles per hour.

The new Bulleid Pacific's permeated beyond the Southern Railway in 1946 and 1947; on the 22nd January 1947 one hauled the 14.18 Oxford to Bournemouth. The first to visit Weymouth, also Great Western territory, was West Country Class 4-6-2 No.21C105 on the 18th August 1947. Number 21C105 arrived on the 13.30 ex Waterloo and left on the 18.30 to Waterloo with nine coaches and a T9 Class 4-4-0 No.719 as pilot to Dorchester.

Central section steam workings, as pre War, were concentrated on the Oxted lines and the Redhill to Reading line. Oxted line train weights increased during the War and in 1947 eight corridor-coaches was common at peak times. Even with the I3 Class 4-4-2 Tank's, [they replaced the smaller I1X's at Tunbridge Wells West during the War], such loads were definitely a challenge. O.S.Nock travelled on the footplate of I3 No.2028, on the Saturday 12.24 London Bridge to Tunbridge Wells with 275 tons. The initial 17 minutes schedule to the stop at East Croydon was kept despite a signal check, New Cross Gate was passed in five and a quarter minutes at 50 miles per hour, the minimum at the top of the 1/100 at Forest Hill was 33. The train stopped at all stations after East Croydon. Schedule from Selsdon to Sanderstead, 0.65 miles at 1/83 and 1/110, was two and a half minutes, with Regulator full open and the cut off in full gear it took 2 minutes 55 seconds. Overall schedule from Sanderstead to Oxted was 22 minutes, with one minute allowed at each of the three stops, Riddlesdown, Upper Warlingham and Woldingham, actual running time 19 minutes 53 seconds, overall time 21 minutes 17 seconds, 25 seconds average for each station stop.

Date: July 7th 2002

Southern [Central Section] Oxted Lines performance 1945-47

The Riddlesdown to Upper Warlingham stretch took 5 minutes 21 seconds, with a maximum of 34 miles per hour [schedule five minutes] Woldingham to Oxted 6 minutes 32 seconds with 57 before the stop. Time was gained on the later downhill sections, Hurst Green to Edenbridge 5 minutes 58 seconds with a maximum of 58 miles per hour and Cowden to Ashurst 4 minutes 28 seconds [schedule five minutes]. The final three miles from Groombridge to Tunbridge Wells West were run in 5 minutes 37 seconds with 41 miles per hour attained on the rising grades, full Regulator and 45 percent cut off.

O.S.Nock also travelled on the footplate of J1 Class 4-6-2 Tank No.2325 with the 11.18 ex Victoria in November 1947, six coaches plus two vans, 225 tons Gross. The large Tank' coped easily, Balham passed exactly in nine minutes before signal checks caused an arrival one and a half minutes late at East Croydon [schedule 17 minutes], Riddlesdown to Upper Warlingham to schedule, 4 minutes 57 seconds, the overall time from Sanderstead to Oxted 22 minutes 17 seconds, downhill Hurst Green to Edenbridge and Cowden to Ashurst took 6 minutes 25 seconds and 4 minutes 30 seconds, Groombridge to Tunbridge Wells in six minutes with full Regulator and 35 percent cut off.

To overcome difficulties with the heavier trains the two 4-6-2 Tanks' hauled some of the Tunbridge Wells Business services, N Class 2-6-0's, transferred from Exmouth Junction to Stewarts Lane worked from London to Brighton and Q Class 0-6-0's appeared on passenger duties. There were only two Down semi-fasts from Victoria in 1947, the 15.55 and 18.10.

Norman Harvey timed N Class 2-6-0 No.1851 with 260 tons on the 15.55. It passed Riddlesdown in 6 minutes 10 seconds at 38 miles per hour from the East Croydon start before signals checks, Woldingham in 13 minutes 35 seconds at 25 miles per hour and reached Oxted in 18 minutes 9 seconds after 60 maximum [schedule a tight 16 minutes]. It recovered the lost time by running the 5.3 miles to Edenbridge in 6 minutes 46 seconds with 67 miles per hour maximum [schedule 8 minutes] and the 10.1 miles to the next stop at Eridge in 12 minutes 43 seconds [schedule 14 minutes]. Speeds after Edenbridge were 36 miles per hour at Hever, 52 at Cowden, 6 minutes 5 seconds, and 66 on the favourable grades to Ashurst. Nock timed a U1 Class 2-6-0 No.1890 on the same train, it reached Oxted in 16³/₄ minutes from East Croydon with 32 miles per hour at Sanderstead, 44 at Upper Warlingham and 39 minimum at Woldingham. Oxted to Edenbridge took six and three quarters minutes with a maximum of 72 miles per hour and time was kept to Eridge with 37 miles per hour at Cowden and 68 at Ashurst. The N Class No.1855 developed 975-1,025EDHP at Sanderstead the U1 790-840.

The U1 Class 2-6-0's seldom sparkled on the Oxted lines, for whatever reason footplate crews appeared to handle them more gently than the two-cylinder locomotives. A typical U1 performance recorded with No.1906 in May 1947 on the 16.50 Victoria to Brighton, the actual running time from East Croydon to Ashurst stopping at most stations was 48 minutes 21 seconds, the schedule 44¹/₂ minutes, maximum before Edenbridge 58 miles per hour.

Date: July 7th 2002

Southern [Central Section] Q Class 0-6-0's on the Oxted Lines 1946-47

A B4x Class 4-4-0 No.2070 on the 18.10 ex Victoria on 22nd July 1947 had the normal nine coaches as far as East Croydon. The start from Victoria with 315 tons was good, Clapham Junction 6 minutes 10 seconds, Balham Junction 9 minutes 21 seconds at 30 miles per hour, schedule 10 minutes and then 50 before Streatham before signal checks led to a two minutes late arrival at Croydon. The three coaches for stations to Tunbridge Wells were detached at East Croydon, the remaining 200 tons taken to the next stop, Oxted in 16 minutes 53 seconds, schedule 17 minutes. Speeds were 26 miles per hour at Sanderstead, 48 at Upper Warlingham and 35 minimum at Woldingham. South Croydon to Woldingham took 9 minutes 48 seconds, 650-700EDHP. The continuations to Edenbridge and Eridge were run in 6 minutes 41 seconds and 12 minutes 52 seconds, schedule 9 and 14 minutes, maxima were 69 and 62 miles per hour, Cowden passed in 5 minutes 56 seconds.

Q Class 0-6-0's worked certain London to Tunbridge Wells trains; No.543 was loaned to Tunbridge Wells depot, they could be turned on the small turntable. They also worked some London to Brighton and Eastborne trains, No.543 on 3rd April 1947 had six coaches on the 16.02 Victoria to Eastborne via Eridge relief and attained 63 miles per hour at Thornton Heath before East Croydon. A Redhill Q regularly hauled the Sunday 08.34 London Bridge Brighton via East Grinstead and Sheffield Park. Norman Harvey noted No.541 on the 14.30 Victoria to Tunbridge Wells with a seven coaches 215 tons, improve on the 57½ minutes schedule to Edenbridge including stops at all nine stations after East Croydon, actual 54 minutes 27 seconds. It reached 48 miles per hour at Streatham Common, maintained schedule to Upper Warlingham, lost a minute to Woldingham, a few more seconds to Oxted and ran the downhill stretch to Edenbridge in 8 minutes 10 seconds with 61 maximum. [Ref.10] Number 544, also with 215 tons maintained schedule on the 18.30 London Bridge to East Grinstead with a minimum of 29 miles per hour at Forest Hill and a maximum of 57 at Crowhurst South Junction. Number 541 on the 18.48 ex Victoria with six corridor-coaches attained 55 miles per hour at Streatham Common after the Clapham Junction stop and maintained 54 on the rise to Selhurst.

The Q Class 0-6-0's, although not ideal passenger locomotives partially solved a problem, the Southern undoubtedly envisaged that many of the Oxted line services would be electrified shortly. They were included in the February 1946 Report of the committee on Proposed Extensions of Electrification and the subsequent revised proposals presented to the Board for routes East of a line from Reading to Portsmouth.

The use of various six coupled locomotives minimised the need to employ the I1X Class 4-4-2 Tank's on the heavier trains. A derailment at Victoria station on July 17th 1946 led to cancellation of certain trains and the first Central Section steam departure after the 14.30, the 18.48 consisted of eight coaches with I1X No.2598. The schedules to Clapham Junction and to the next stop at East Croydon were six and 13 minutes, the actual times taken eight and three quarters and 16 minutes.

Date: July 7th 2002

Southern [Central Section] punctuality on the Oxted Lines 1945-47

The larger I3 Class 4-4-2 Tank's as has been noted could keep time with eight coaches. A Stewarts Lane Sunday I3 diagram involved two return trips to Tunbridge Wells West. Number 2081 on 19th May 1946 had 150 and 270 tons on the 11.54 and 19.42 ex Tunbridge Wells. Starting from Oxted, Woldingham was passed in 6 minutes 39 seconds and 8 minutes 15 seconds at 50 and 40 miles per hour. The mid-day train stopped at Sanderstead, 8.0 miles, in 12 minutes exactly, three minutes inside schedule and the evening one, delayed by signal checks reached East Croydon a few seconds late, schedule 19 minutes. Both reached 60 miles per hour at Upper Warlingham. O.S.Nock timed No.2076 on the 16.11 Lewes to Victoria with 225 tons when MP17¼ was passed in seven minutes exactly from the Oxted start, equivalent to passing Woldingham in slightly under eight minutes. Speed at the top of the 1/132 was 28 miles per hour, with full Regulator and 27 percent cut off.

The use of the 2-6-0's and the 4-6-2 Tank's on the morning and evening trains improved punctuality greatly. J1 Class 4-6-2 No.2325 was a regular performer on the 07.42 ex Tunbridge Wells and the 17.20 return from London Bridge. K Class 2-6-0's worked some passenger trains; the 15.38 Haywards Heath to London Bridge via East Grinstead was one, part of Duty 806 which included two freight workings. On November 1st and 2nd 1946 K No.2344 hauled the 08.00 Brighton to Victoria via East Grinstead and the following Sunday No.2348 took the 08.34 London Bridge to Brighton via East Grinstead. At this time the only active B4X Class 4-4-0, No.2073 regularly hauled the Saturday 13.42 London Bridge to Tunbridge Wells West and Tonbridge.

The Plymouth and Cardiff trains to and from Brighton were another instance of poor punctuality aggravated by increasing train weights, the D15 and L12 4-4-0's were the culprits, although the L12's were used more on the Bournemouth train. To overcome the problem three Schools Class 4-4-0's [by this time they were permitted to work over the bridge at Bursledon] were allocated to Brighton, the first one noted at work on November 12th 1946. [A year previous West Country Class 4-6-2 No.21C117 had been used on the 11.30 ex Brighton and in August 1946 No.21C135]

Schools Class 4-4-0 No.929 with 205 tons on December 7th left Brighton four and a half minutes late, passed Shoreham in 8 minutes 29 seconds and stopped at Worthing [schedule 16½ minutes] in 14 minutes 7 seconds after a maximum of 65 miles per hour. The 17 and 10 minutes schedules to the two next stops, Barnham Junction and Chichester were improved on, 15 minutes 38 seconds and 8 minutes 57 seconds with a maximum of 59 miles per hour. Chichester was left one and a half minutes early, signal checks then caused it to be five minutes late at Havant reduced to four minutes by Fareham. It left there three and a half minutes late after addition of the Portsmouth coaches, the load now 380 tons. The 23 minutes schedule to the next stop at Southampton was exceeded by 1 minute 50 seconds; the minimum on the 1/70 at Bursledon was 33 miles per hour. As the correspondent noted at the time the introduction of the Schools appeared to have improved timekeeping between Brighton and Fareham but not afterwards.

Date: July 7th 2002

Southern [Central Section] West of Brighton

The Schools, because of weight considerations were prohibited from taking a pilot between Fareham and Southampton. [Ref.11] O.S.Nock travelled on the footplate of a T9 Class 4-4-0 modified for oil firing with the 14.33 ex Portsmouth to Bristol and 215 tons. The locomotive was worked on full Regulator and 25 percent cut off on the adverse sections, the time from passing Fareham to the stop at Southampton was 24 minutes. [Ref.12]

In the Eastbound direction Schools Class 4-4-0 No.922 with ten coaches on the Cardiff service maintained the 38 minutes schedule from Salisbury to Southampton exactly, 38 minutes 1 second. Shortly after this the trains were suspended on weekdays as a result of the National fuel crisis, through services to other Railways were favourites for suspension. [The Bournemouth to Birkenhead, normally worked by a King Arthur Class 4-6-0 or a Schools' as far as Oxford and the Newcastle train, worked by a GWR locomotive from Basingstoke were also casualties]. The Plymouth to Brighton train on June 22nd 1947 arrived at Brighton ten minutes late made up of six coaches hauled by U Class 2-6-0 No.1617. The Bournemouth train ran on Saturdays only during the summer of 1947, on the first two days, June 21 and 28, motive power was B4X Class 4-4-0 No.2073.

The 03.25 London Bridge to Brighton was a rare animal, a Brighton Main Line steam passenger train. Overall schedule was 82 minutes including stops at Redhill, Three Bridges and Haywards Heath. It was an Atlantic duty, an older H1 Class 4-4-2 until the closure of New Cross Depot at the end of 1946; after this Bricklayers Arms diagrammed a Schools Class 4-4-0. The Newhaven Boat trains and the restored single return service from Reading to London Bridge also involved steam workings over sections of the Brighton Main line.

H2 Class 4-4-2's Nos.2422, 3, and 5 continued to haul the Newhaven Boat trains in 1946 and 1947, punctuality was good with 370-380 tons. The regular path involved a departure from Victoria at 10.05 and an arrival back at 20.32. If the train was run in duplicate and no H2 was available a U1 Class 2-6-0 was employed [on July 15th 1947 a Schools Class 4-4-0 did the honours]. There were occasions when the H2's greater loads, on the 10th August 1946 No.2423 had 412 tons Tare, probably 440 tons Gross and ran from Three Bridges to Coulsdon North including the rise to Quarry in 14 minutes. It was subsequently stopped by signals at Clapham Junction, from where with a hot big end it limped into Victoria.

The inclement weather at the beginning of March 1947 caused an increase in steam hauled passenger trains, ice on the rails followed by flooding severely interrupted electric services. Typical examples of steam substitute trains included: 13.25 Up "Brighton Belle" on the 3rd and 4th March replaced by a BOAR leave train of 11 coaches hauled by N Class 2-6-0 No.1410 - from the 10th to the 13th the 18.00 ex Victoria, eight coaches, hauled by U Class 2-6-0 No.1810 ran via Oxted and Horsted Keynes, a serious landslide north of Horsted Keynes then caused delays on this route, Brighton was reached one Evening at 21.00.

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Southern [Central Section] steam to the rescue March 1947

The 07.44 ex Brighton the following morning also ran via Horsted Keynes and Oxted, 2 hours 1 minute to Victoria, a 50% improvement on the previous Evening - 18.00 ex Victoria on the 16th ran via the Main line hauled by an H2 Class 4-4-2 - 22.28 semi-fast on the same evening was cancelled - the 23.00 had U Class 2-6-0 No.1811, it became a stopping service and took two hours to reach Brighton. [Ref.13]

Race Days also brought out steam power on the Central Section, the Royal train to Tattenham Corner on June 5th 1947 left Victoria at 12.10. The four Pullman cars, hauled by West Country Class 4-6-2 No.21C157 arrived punctually, as Royal trains were accustomed to do, at Tattenham Corner at 12.53. The same train ran to an identical schedule two days later and returned to London as an ordinary service after the meeting, with the addition of three first class coaches. It left Tattenham Corner at 17.24 and reached Victoria at 18.12 [Ref.14] [The previous year No.21C129 with four Pullmans passed East Croydon in 17 minutes, Purley in 22 minutes and reached Tattenham Corner in 42 minutes.] Locomotives employed on Lingfield race Meeting trains nine days later included U Class 2-6-0 No.1812, U1 Class 2-6-0 No.1909 and an I3 Class 4-4-2 Tank.

The best weekday trains on the Eastern Section Folkestone main line in January 1947 were the 16.15 and 19.15 ex Charing Cross, both scheduled to Folkestone in 85 minutes including the stop at Waterloo, the 13.15 with the same stop reached Ashford in 69 minutes. In the Up direction the 11.05 and 17.05 from Folkestone ran to Charing Cross in 85 minutes including the stop at Waterloo, the 14.35 from Ashford to Waterloo in 71 minutes. The best trains on the Chatham route were the Business services from Cannon Street at 16.45, 17.15, 17.45 and 18.15. The 17.15 and 18.15, first stop Whitstable in 78 and 76 minutes, reached Margate in 103 and 107 minutes. The 16.45, first stop Faversham in 67 minutes, reached there in 113 minutes, the 17.45, with nine stops was nine minutes slower overall. The best two daytime trains from Victoria to Margate, the 08.35 and 21.35 with six and eight stops took 2 hours 6 minutes and 2 hours 1 minute. The four Up morning business trains from Margate, 06.22, 06.45, 07.36 and 07.55, with eight, ten, two and five stops reached Cannon Street in 126, 129, 103 and 106 minutes. The best trains to Victoria were the 08.50, with three stops in 109 minutes, and the 17.28, non stop in 101 minutes.

The "Golden Arrow" Continental commenced post-war operation in April 1946, there was a trial run on the 13th, the first Public service ran on the 15th, Merchant Navy Class 4-6-2 No.21C1 headed the train appropriately on the first day and for two weeks after that. It then returned to its own depot, Exmouth Junction and a West Country Class 4-6-2 assumed responsibility, No.21C135 was a regular. C.J.Allen travelled on the footplate when the 100 minutes schedule from Victoria to Dover was kept with three and a half minutes to spare with 390 tons. There were checks for signals before Herne Hill, for PWR slacks at or before Sydenham Hill, Tonbridge and Dover, the first two to 5 and 15 miles per hour.

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Southern [Eastern Section] Bulleid Pacific performance 1944-47

Bickley Junction was passed a quarter of a minute early, schedule 23 minutes and Sevenoaks three and minutes and a quarter early, schedule 39 minutes. Speeds were 35 miles per hour at Bickley, 46 at Orpington and 39 at Knockholt. When recovering subsequently from a PWR slack after Tonbridge the locomotive was driven with 185-190 pounds per square inch in the steam chest [boiler pressure 240-260 pounds per square inch] and 25 percent cut off, the Regulator was then closed further to give 115-120 pounds per square inch in the steam chest. This level of working produced a time of 18½ minutes over the 21.3 miles from Paddock Wood to Ashford with a maximum of 79 miles per hour and a minimum of 72. The hardest locomotive working was earlier, recovering on the 1/101 between Herne Hill and Sydenham Hill, cut off was 40 percent, steam chest pressure 200-230 pounds per square inch, boiler pressure 260-270 pounds per square inch.

The Brussels boat train, inaugurated the same day as the "Golden Arrow", left Victoria at 09.20 ran via Maidstone East and stopped Ashford 10.25. The normal formation was nine coaches, one Pullman car and two vans with a King Arthur Class 4-6-0 often No.764 [return a Dover Schools Class 4-4-0].

West Country Class 4-6-2's hauled the better Kent Coast trains, the usual Up duties included the three morning services to Cannon Street plus: 07.34 Margate to Charing Cross via Dover and Tonbridge - 09.40 ex Margate via the same route with the 4-6-2 from Ramsgate - 17.10 Ramsgate to Victoria via Chatham. In the Down direction, the 16.45, 17.15 and 17.45 ex Cannon Street and the 21.35 ex Victoria were West Country Class duties.

Dr.P.Ransome Wallis, a regular traveller between Herne Bay and London, enjoyed a footplate trip from Margate to Cannon Street and back to Ramsgate via Dover. The 07.20 ex Ramsgate, 320 tons with West Country Class 4-6-2 No.21C167 gained one and a half minutes on the initial 15 minutes schedule from Margate to Herne Bay. It reached 68 miles per hour and fell to 53 on the two miles at 1/100 with Regulator three-quarters open, steam chest pressure 210 pounds per square inch [with boiler pressure at 275 pounds per square inch]. Cut off was 20 percent, the Regulator was opened fully towards the top of the 1/100, there was a slight signal check approaching Herne Bay.

Time was kept to the next stop at Whitstable and the departure from there was 20 seconds late. The journey onwards to London was spoilt from a locomotive point of view by fog, particularly bad around the Medway Towns area and in the London Suburbs. Thirty-three to 35 miles per hour was maintained on the 1/100 to Sole Street with Regulator three-quarters open, 210 pounds per square inch in the steam chest [boiler pressure at 240 pounds per square inch] and 30 percent cut off. This represented an EDHP of 1,050-1,100 suggesting either the locomotive slipped or the Bulleid valve gear gave incorrect readings, or perhaps a combination of both, P.R.Wallis observed that the rails were wet and continuous sanding took place. The train ultimately reached Cannon Street in 97 minutes from Whitstable after passing Chislehurst in 69¾ minutes, schedule 79 minutes.

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Southern [Eastern Section] performance 1946-47

The 13.15 ex Charing Cross, also 320 tons with Battle of Britain Class 4-6-2 No.21C166, ran to Ashford in a Net time of 64½ minutes including a 45 seconds stop at Waterloo. New Cross to Knockholt took 15 minutes 55 seconds with the locomotive driven on seven-eighths open Regulator and cut off at 20 percent, an EDHP of 925-975. Tonbridge was passed in 39 minutes 25 seconds after a maximum 82 miles per hour at Hildenborough, before a stop for signals at Paddock Wood. The restart, with two-thirds open Regulator and 15 percent cut off was good, Pluckley 15.6 miles, passed in 16 minutes 17 seconds at 75 miles per hour and Ashford reached in 72 minutes from Charing Cross, three minutes late, after signal checks. The lost time converted to a 55 seconds early arrival at Dover with easy running. The load was reduced to seven coaches at Folkestone, 240 tons, 20½ miles per hour was maintained on the continuously curving 1/70 gradient up to Gunton tunnel with Regulator full open, boiler pressure 240 pounds per square inch, the steam chest ten pounds lower and 40 percent cut off. [Ref.15]

Eastern Section schedules did not extend the West Country/Battle of Britain Class 4-6-2's, with a reasonable number of out of course checks they could be maintained by a King Arthur Class 4-6-0 or a Schools Class 4-4-0. The Pacific's, with their large fire grates were more able to maintain time when coal was mainly dust. C.J.Allen published a log he personally recorded from Folkestone to Waterloo with Schools No.939 with 390 tons. Ashford was passed in 18 minutes 8 seconds, Tonbridge in 43 minutes 20 seconds, Knockholt in 62 minutes 13 seconds and London Bridge in 79 minutes 13 seconds. Speeds were 71 miles per hour maximum before Tonbridge, 33 entering Sevenoaks tunnel and 68 maximum at Hither Green. The average EDHP between Tonbridge and Knockholt was 800-850. [Ref.16]

Concurrent with the introduction of the new Pacifics the older inside-cylinder 4-4-0's continued on some main line trains. An L1 Class 4-4-0 diagram included the 04.50 London Bridge to Margate, via Redhill, Ashford and Canterbury East and the even more circuitous 14.40 ex Margate via Dover and Redhill, the return trip was almost 230 miles. O.S.Nock travelled on No.1756 with 275 tons from Ashford to Redhill and 180 tons after removal of the Reading portion onwards to Cannon Street. The first 20.4 miles from Ashford took 21 minutes 17 seconds with a maximum of 74 miles per hour, achieved with full Regulator and 28 percent cut off to Chart, 22 percent afterwards. There were signal checks at Paddock Wood, Tonbridge was reached to time. With full Regulator and cut off at 30 percent from the Tonbridge restart, subsequently adjusted to 28 percent the L1 attained 54 and 53 miles per hour at Penshurst and Edenbridge with an average of 52.1 between the two, an EDHP of 775- 825 on this uphill stretch. [Ref.17]

Norman Harvey recorded E1 Class 4-4-0 No.1504 on the 09.25 Charing Cross to Hastings between Tunbridge Wells and Hastings with 285 tons in February 1946. It left Tunbridge Wells Central six minutes late, gained one minute to the next stop at Wadhurst, schedule nine minutes, with 46 miles per hour reached at Frant and another two and a half minutes to Robertsbridge,

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Southern [Eastern Section] Hastings Line performance 1946-47

Schedule 14 minutes, with 68 miles per hour at Ticehurst and 72 at Etchingham, the actual time was 11 minutes 26 seconds. The schedule to Crowhurst was kept and with efficient station working afterwards Hastings reached on time. One can speculate as to whether the lost time to Tunbridge Wells was because the locomotive was a last minute substitution and hence not properly prepared when leaving London or whether a change of footplate crews at Tonbridge made the difference.

In the Up direction, Schools Class 4-4-0 No.921, with a light train, 270 tons, in June 1946, toyed with the 19.10 ex Hastings. Crowhurst to Robertsbridge took 10 minutes 20 seconds, schedule 11 minutes, with a maximum of 70 miles per hour. The 24 minutes Robertsbridge to Tunbridge Wells schedule was cut by four minutes, with 61 miles per hour maximum after Etchingham, 41 at Wadhurst and 47 at Frant. A series of signal checks and stops resulted in a loss of eight minutes from Tunbridge Wells to Sevenoaks, schedule 21 minutes, most of which was regained to Waterloo, 26½ minutes, a gain of seven and a half minutes. Speed reached 56 miles per hour at Dunton Green, fell to 50 at Knockholt, 7 minutes 22 seconds from Sevenoaks, with the maximum after limited to 70 New Cross was passed in 19 minutes 25 seconds. Net running time Crowhurst to Waterloo, with three stops was 76½ minutes. [Ref.19]. Not all trains on the Hastings line were as light, the 07.27 Hastings to Cannon Street on Mondays, after the addition of the Bexhill portion at Crowhurst necessitated a D or L Class 4-4-0 as pilot to the Schools.

The 15.25 Charing Cross to Wadhurst, normal weight 255 tons usually had one of the two superheated E Class 4-4-0.s, Nos.1036 or 1275. S.A.W.Harvey recorded three journeys in 1947. Starting from London Bridge, No.1036 twice and No.1275 once passed Orpington in 17 minutes, 18 minutes 12 seconds and 17¾ minutes, average speeds from Hither Green to Elmstead Woods were 43.5, 40.5 and 38.7 miles per hour. Number 1275, after the poorest performance over this section reached 56 miles per hour on the easier gradients through Orpington, 700-750EDHP, and all three were then delayed by signals before the Sevenoaks stop.

Even the Stirling 4-4-0's occasionally appeared on the Main lines, at the end of November 1947, a B1 Class 4-4-0 was booked to the 13.40 Margate to Maidstone East, No.1453 on the 1st December. The Sheerness branch trains regularly involved the F1 Class 4-4-0's, the Saturday 14.02 Sheerness to Chatham, was allowed 15 minutes for the ten and three quarter miles from Kemsley Halt to the next stop at Gillingham. Three days after the official Nationalisation of the Railways, F1 No.1215 reached 60 miles per hour on this train with an ex. SE&C set plus three corridor coaches. On the same day B1 No.1449 hauled seven coaches on the 16.23 Faversham to Chatham.

The Stirling 4-4-0's were always much in evidence on Hop-pickers specials. In 1946 there were special trains to and from London Bridge Low Level, serving mainly Headcorn, Maidstone West and Hawkhurst with some to Faversham, Selling, Canterbury East and Bodiam.

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Southern [Eastern Section] Hop Pickers specials 1946-47

Locomotives noted at Tonbridge on Hop-picker's specials included: seven B1, five F1, ten D1, three D, five E including the two superheated members, one E1, two L and one L1 Class 4-4-0's - two N1 and one U Class 2-6-0's - three C Class 0-6-0's. The normal train formation, six coaches from a former SE&C eight or nine coach sets, plus three or four vans. Some loaded more heavily, on the 14th September BI No.1446 had nine coaches, 268 tons Tare, on the 16.18 London Bridge to Maidstone West via the Dartford loop line. The train was reported, running steadily on the non stop run from Gravesend to Maidstone. B1 Class 4-4-0 No.1445 on the 22nd September with the 18.05 ex Yalding ran to London Bridge via Crowhurst South Junction, Oxted and Lewisham Junction passing over the Selsdon to Woodside line. Similar arrangements were made in 1947. There were 18 special trains to London Bridge on 7th September 1947 returning "friends of Hop-pickers". Six ex Hawkhurst branch, six ex Maidstone West, one ex Robertsbridge and five from stations beyond Paddock Wood on the Main line. Five ran via Oxted and the Mid Kent Line. An F1 Class 4-4-0 hauled the 16.43 ex Hawkhurst; three others had B1 Class 4-4-0's.

Locomotive performance on the Southern in 1947 could be bad, even the ebullient Norman Harvey had to admit a journey from Victoria to Sittingborne behind U Class 2-6-0 No.1610 with 375 tons was poor. [Ref.20] He wrote that "truly was this a disappointing trip". Number 1610 lost eight and a quarter minutes from Bromley to Chatham, another minute on each of the subsequent stages to Gillingham and Sittingborne, running time from Bromley to Sittingborne was 60¼ minutes, schedule 50 minutes. Maxima between Bromley and Chatham were 65 and 64 miles per hour at Farningham Road and before Rochester, the minimum at Sole Street 34.

The Southern Railway however kept on trying to the end, the Night Ferry service was reinstated in from December 15th 1947.

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