

## Electrification West of Staines

*By Mick Hutson - BRS Newsletter April 1973*

During the 1930's, the combination of the massive trade depression and a severe lack of any new investment resulted in unemployment totals that were alarming even before the post-1945 ideas of full employment. Government therefore decided to encourage the major railway companies to undertake construction works to relieve unemployment, by providing loans at low interest rates for the purpose. Consequently, in 1935 the Railway Finance Corporation was granted the sum of £30 million for loaning to the railways concerned in exchange for a guarantee that it would be used on works that would relieve unemployment and also for 2.5% interest. All the Companies took advantage of the scheme; it financed the G.W.R.'s Westbury and Frome cut-off lines, as well as the reconstruction of Caerphilly Works. The Southern Railway succeeded in obtaining the sum of £6 million for its proposals, which were primarily concerned with the electrification of existing routes and the construction of certain suburban lines in the South West London area. The largest of these schemes was the electrification from Hampton Court Junction to Portsmouth Harbour and Alton, which was commenced in 1935, but it also included several branch lines.

Among these lines were the extensions West of Staines, to Reading, Ash Vale Junction and Weybridge. These lines had been opened at varying times during the previous Century, and, except for a short section between Sturt Lane Junction and Ash Vale Junction, were all of double track. The train services were complicated; the line from Staines to Reading was worked as a through service from Waterloo, as were the trains to Aldershot via Camberley and Ash Vale. However, the Weybridge line was served largely by a push-and-pull service worked by T1 class 0-4-4T locomotives, from Staines. The Waterloo and Reading and Aldershot services were handled by Drummond 0-4-4T locomotives of the M7 class, although A12 class 0-4-2's also worked some trains. Freight services over the lines concerned were heavy, especially from Reading to the relatively new (built in 1920) marshalling yard at Feltham, and also from Byfleet, on the main Southampton lines, to Staines via the Weybridge line. These services were handled by the massive Urie 4-6-2 tanks of the H16 class, as well as various 4-6-0 and 0-6-0 locomotives. One other feature of the line's operation needs to be described, this being the Ascot Race Week in mid-June. For this purpose Ascot Station was equipped with water and turntable facilities; locomotive sheds also existed at Reading, Staines and Chertsey, although the latter two were only of single track.

Train services were somewhat infrequent, although the Reading trains were by no means sluggish; the M7s were very free running, and had plenty of long stretches of track on which to demonstrate this, especially between Reading and Wokingham Junction, the intermediate stations (Earley and Sindlesham Halt) being served by a mixture of Reading to Redhill trains of the South Eastern section, and the Reading to Blackwater auto-train service. Trains also generally ran non-stop from Staines to Waterloo; calling intermediately only in the rush-hours.

The Five Year Plan, produced in 1935, was to cost £5,929,811. It was to provide for equipping the running lines and carriage sidings concerned with third rail electrification at 600 volts d.c. (the cost covering the whole scheme including Portsmouth); no goods sidings were to be converted, as this would create practical difficulties over safety, and the Southern had no main-line electric locomotives anyway until 1949. Numerous trackside electric sub-stations had to be provided to transform and rectify current from 33,000 volts a.c. to 600 volts d.c., as well as child and animal proof fencing and new cattle guards at level crossings, not to mention the many local variations and alterations to be described below, and of course, the new rolling stock.

Electric trains had been running to Windsor from Staines and Waterloo under an earlier Southern scheme; and work started on converting the railway from Staines to Virginia Water, Chertsey and Weybridge in October 1935. Current was supplied by two rectifier sub-stations, fed from Woking, and some carriage sidings at Chertsey were electrified; the old steam shed was closed. The new stock provided consisted of 28 2-car units, formed from old LSWR steam stock with electrical apparatus and driving cabs added, and mounted on standard Southern underframes, and classified 2-NOL. They were given batch numbers from 1863 to 1890, and were identical to stock built earlier for the Brighton and Eastbourne electrifications of 1934/5 and numbered from 1813 to 1862. The units ran to Staines coupled to a Windsor train, which was formed of similar units; at Staines the train divided, as it still does today, and the two units went their separate ways. The service was instituted on a half-hourly off-peak basis and with twenty minute intervals at peak periods; trains ran non-stop to Richmond from Staines. Staff training runs with the new stock were commenced between Weybridge and Virginia Water on 30 November 1936; public services began on 3 January 1937.

Electrification of the railways from Virginia Water to Reading and Aldershot and Guildford commenced in 1937, once work on the Weybridge line had ceased. The lines to be dealt with were a total of 68 route miles, which were to cost £23,000 per route mile, a total of approximately £1 million for the whole scheme. Needless to say, with such a large scheme the detail alterations were numerous. Station platforms were lengthened to a total of 540 feet and at Virginia Water a new goods yard was provided.

At Reading, new berthing sidings were required, and Vachel Road bridge had to be rebuilt to allow conductor rail clearance; this was finished on 19 November 1938. Ascot Station was more of a problem, since it was in effect two separate stations; the original of 1856 and the later alterations of 1878, which was parallel but to the South of the main line. Since it was proposed to divide trains at Ascot, a new spur was constructed from the Camberley line to join the Reading line on the Western side of the station, this spur being controlled by a new 'glasshouse' signal box ('B' box), which was opened on 16 October 1938. Two electrified carriage sidings were provided at the Eastern end of the station, and the layout of tracks and platforms modified. The original 'A' signal box which stood at the original junction of the two lines was now relegated to use only at times of race meetings. The original 1878 station became used for stabling stock, since two platforms sufficed for normal operations.

High tension a.c. power was supplied by the Electricity Generating Board's sub-station at Reading and was fed to ten rectifier sub-stations which were located alongside the railway, and whenever possible in goods yards to assist replacement of machinery (as at Bagshot and Bracknell). The sub-stations were controlled, as the Weybridge ones, from the control room at Woking.

The new services, unlike the Weybridge trains, had been classified as 'semi-fast'; that is the greater route distance required some form of corridor to enable passengers to have access to the lavatory. The result was units numbers 2117 to 2152 built during 1938. They were identical to the units built for the Portsmouth electrification, numbers 2001 to 2116, and were a new construction on Southern standard underframes. They had an internal corridor within each coach of the 2-car unit, although there was no connection for passengers between the two vehicles. They seated 24 first class and 84 Third Class passengers, and their total unladen weight was 74tons 15Cwt. They proved to be very popular with both staff and passengers; not only were they of relatively modern design and being electric reasonably clean, but they demonstrated their ability to reach up to, and over, 80 miles per hour, exceeding expectations in this field. The thirty six new units were classified as 2-BIL, and

worked indiscriminately with the units of the same design that had been constructed for other electrification schemes.

Trial and staff training services began running on 30 October 1938, although not all of the works had been completed. The formal opening took place on 30 December 1938 and public services began operating from 1 January 1939.

Trains now divided at Ascot, one portion going to Ascot and Guildford the other to Reading. The electrics stopped intermediately between Wokingham Junction and Reading, and between Aldershot and Guildford; trains ran non-stop from Staines to Waterloo. As on the Weybridge line, a half hourly off-peak frequency was instituted; this meant an increase in the number of trains serving these lines of 85%. Peak services ran at twenty minutes intervals. Other important developments were that not only were journeys speeded up, but now all Aldershot line trains ran to Waterloo, where previously some had terminated at Ascot. Another innovation was a peak Ascot to Woking service; it used the South-South East curve at Virginia Water and was a reminder of the original plan for a branch (under the 1856 Staines, Wokingham and Woking Junction Railway Act) to Woking from Virginia Water via Chobham. The new electrics hauled the Ascot race traffic for the first time over the week of 13 to 16 June 1939; to provide increased first class seating some 4-COR express units were temporarily drafted in from the Portsmouth line, cleaned up a bit, and labelled as 'First Class Only'.

The results of the electrification were dramatic. It encouraged the growth of the commuter belt on the Southern slopes of the Thames Valley. It made the railway more competitive against largely parallel, but considerably slower, bus services, and in the days of inter-company rivalry gave the Southern a competitive position with the Great Western Railway at Reading. It encouraged the growth of the towns of Camberley, Chertsey, Wokingham, Ascot and Bagshot, and its existence influenced the siting of the new town at Bracknell in 1946. But perhaps the most apparent indications of its success are shown by the following figures for passengers using the lines to Reading and Camberley; in 1938, before electrification, 1,500,000 passengers were carried, but, in 1947, this had risen to 4,750,000, a figure that cannot be explained away by petrol rationing and the results of the War. Like other electrifications elsewhere, it has demonstrated that railway electrification works wonders for traffic and revenue.