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### SIR RALPH GOES HOME TO CLAYDON

Readers will recall that an appeal by London Transport was published in the June issue of *Underground*, asking for good photographs of electric locomotive No.3, "Sir Ralph Verney".

The reason was that the Board were planning to present one of the nameplates from the locomotive to Claydon House, family seat of the Verneys for generations, and a photograph of the loco was required for mounting with the plate.

It is a pleasure to be able to report the success of the appeal. From the photographs submitted by the Society, one from the collection of Ken Benest was chosen, and has been duly mounted with the nameplate - acknowledgement being made to the Society for its assistance.

The nameplate and photograph have been put on display at Claydon House, which is near Bletchley in Buckinghamshire and is the house of Mr Ralph B. Verney. Claydon House was built in 1752-68, and was presented to the National Trust by the Verney family in 1956, so that the public will be able to see the nameplate when they visit the property.

Claydon House and the Verney family have many associations with the former Metropolitan Railway. The house stands on the site of an older mansion in which lived Sir Edmund Verney, a prominent member of the Stuart court, and his son, Sir Ralph Verney, after whom the locomotive was named. Sir Ralph is probably best remembered for having preserved letters, poems, household accounts, shopping lists, and many other domestic documents which collectively have become known as the Verney Papers. These were discovered in a long gallery at the top of the house after being forgotten for many years.

"Sir Ralph Verney" was not the only Metropolitan electric locomotive to have associations with Claydon. Another, No.17, withdrawn from service on the 10th October 1943, was named "Florence Nightingale". Florence Nightingale's sister, named Parthenope, was married to Sir Harry Verney in 1857, and Florence spent many years at Claydon nursing her sister, who in later life was crippled with arthritis. After Parthenope's death she remained at Claydon to look after her brother-in-law, and some of the rooms of the house are now a Florence Nightingale museum.

At one time Sir Harry Verney was a director of the Metropolitan Railway and had other railway interests. He was on the board of the Aylesbury and Buckingham Railway, a single-track line which ran from Aylesbury to meet the Buckinghamshire Railway's Bletchley-Oxford line in a very rural area, fifty miles from London - the junction station being named Verney Junction in Sir Harry's honour.

The Metropolitan, which was building its line towards Aylesbury from London, took over the Aylesbury & Buckingham in 1891. The Metropolitan reached Aylesbury in 1892, and eventually its trains were extended over the Aylesbury and Buckingham to Verney Junction, and the A & B was doubled. For many years Verney Junction had the distinction of being served by trains which included a Pullman car.

During the 1914-18 war, Sir Harry's son, Sir Harry C.W. Verney, became a director of the Metropolitan Railway, and remained a member of the board until the railway was transferred to the London Passenger Transport Board in 1933. He still lives in Buckinghamshire in retirement, and is now the last surviving Metropolitan director; the Society was honoured in 1962, when Sir Harry C.W. Verney accepted the first Honorary Membership conferred by TLURS; he still takes an active interest in Society activities.

The locomotive, "Sir Ralph Verney", is one of 20 built by Vickers Limited at Barrow-in-Furness in 1922-23 for the Metropolitan Railway. Intended for passenger service, these locos were Bo-Bo's, and of 1200 h.p. In 1926 it was decided that they should be named; all but one of the names chosen were those of famous actual or fictitious people connected with the area served by the railway. The exception was No.15, called "Wembley 1924", commemorating the first year of the British Empire Exhibition - the loco being shown at the exhibition in 1925.

It was not until April 1905 that the company decided to exercise, in part, their option with the Metropolitan Amalgamated R. C. & W. Co. Ltd. to take ten further trains at the previously ruling contract price. Seven trains were ordered; they took the now-established formation - 3M, 3T, 1DT, 1DT, 3T, 3M - and further minor improvements were incorporated. It had been resolved that, for the future, auto-couplers should be used in place of the bar type throughout the trains; in due course the earlier vehicles were similarly fitted. Partitions were ordered for certain of the 3rd. class trailers, and roller blind illuminated destination indicator boxes were provided at roof level above the driving positions. The latter did not last long but the cars which had carried them were always readily identifiable by the notch cut to receive them in the down-sweep of the clerestorey. They were replaced in 1911 by the familiar black-and-white enamelled-iron destination plates, at first in a corresponding position above the end doors, but later, with the introduction of the solid-fronted 1921 stock, they were re-positioned immediately below the driver's window, a site which was henceforth standard for all Metropolitan multiple-unit stock until its demise in 1963.

The British Thomson-Houston Co's. tender was accepted in September 1905 - for ten trains, the car-body order being augmented at the same time to cover three additional trains as well as the six spare motor cars referred to in the previous article. It was anticipated that deliveries would be completed by the beginning of March 1906. In November 1905, however, B.T-H. advised that, owing to their prior commitment to equipping the Hammersmith and City trains, they would be unable to supply 150 HP. motors of the type GE 76 specified within the time agreed, but offered to provide temporary service of 56 motors of type GE 69, rated at 200 HP. each, on a rental basis, with the option to purchase outright, or to have them replaced by GE 76 motors, after the completion of the H & C contract.

This offer was accepted, and the first B.T-H. equipped train was put into service on 1st. April 1906, and the other 200 HP. trains in the two months following; the remaining three, with GE 76 motors, were not delivered until mid-September. These cars were numbered:- 200 HP.MCs.57-70, 150 HP.MCs.71-82 (including the six spare cars mentioned above), 1DTs.57-76 and 3Ts.57-76.

By the end of the year, B.T-H. were in a position to produce the GE 76 motors in replacement of the larger type, but as a

reduced price was now acceptable it was decided to retain the GE 69 motors and purchase them outright: it was considered that this would avoid the necessity of lifting the cars concerned, also that with the larger motors it would be possible to work a four-car Inner Circle train with the use of a single motorised unit. This decision was influenced by an ultimatum from the District, intimating that they intended to work their part of the Inner Circle service with four-car trains only, and that if the Metropolitan wished to work longer units they would be required to pay the extra cost of current supplied to them on the South Kensington-Charing Cross-Aldgate section for working any cars in excess of four in their own trains. Furthermore, if they required the District to make up its trains to more than four cars, then that company would require payment for the additional current taken on its own line, and would also make a charge for the manning and car-mileage of the extra vehicles.

It was agreed, therefore, that each company would reduce its Circle trains to five cars each, commencing 18th March 1907, and that from 1st. April the service would be operated on the basis of 50 minutes for the round-trip; moreover, from 1st. July, there would be a further reduction in capacity, trains being formed of four cars only. A very short experience demonstrated that the 50 minutes allowed was quite inadequate, and late running became rife until, after much negotiation, the Metropolitan undertook the working of the entire Circle service on the basis of a 55-minute circuit, commencing 1st. January 1908. This arrangement left the Metropolitan in dire straits, the consequent shortage of motor-cars necessitating the introduction of a miscellany of refurbished steam stock, locomotive-hauled, on the Harrow service. This was supplemented by similarly-operated five-car sets of the saloon trailers rendered redundant by the implementation of the earlier agreement.

In accordance with availability, the Metropolitan operated the new Circle service, in part by sets propelled by two motor-cars each with 150 HP motors, but mainly with sets powered by a single unit equipped with 200 HP machines. The use of these trains, though more economical, occasioned one serious operational difficulty. Each set combined one first with three third-class cars, but, as we have seen, there were no third-class driving-trailers. Now there was no possibility of guaranteeing that the motor-car would always operate at the same end, and first-class ticket-holders faced the necessity of transferring themselves at a moment's notice from one end of the train to the other in search of their exclusive accommodation. This was something for long up with which they would not put (acknowledgements to W.S.C.). Complaints poured in until, in

February 1909, steps were taken to soothe the sundry ruffled dignities.

The solution was to interchange, in fourteen driving trailers, the physical perquisites of first-class travel with the lower-grade comforts of a similar number of third-class trailers. To obviate gaps and duplications in the numbering scheme the car numbers travelled with the upholstery, resulting in a heterogeneous mixture of trailers and driving-trailers in the lists of both types of car. From a list of 1912 which has been preserved to us, we learn that, at that time, the third-class driving-trailers (formerly first-class) were numbered 31, 40-43, 46/7, 50/1, 54/5, 59, 61 & 74. They had formerly carried (not necessarily respectively) the numbers 57/8, 60-65, 67-70, 73 & 75, now allocated to the first-class trailers. The muddle was cleared up, probably circa 1921 when considerable rationalisation took place, and within their own lists the 3DTs were grouped as 37-50, whilst the 1Ts became 57-70, doubtless with the minimum of disturbance. We may note, in passing, that as the result of a reconstruction, 3M No.69 became a 150 HP. car and No.77 a 200 HP. car by an interchange of equipment in 1910.

B.T-H. equipment differed from that of B.W. manufacture in two major respects. Firstly the contactors were directly operated, non-automatically, by electro-magnetic agency; secondly, the control circuits were operated at the full line voltage over a ten-core multiple cable. Now the B.W. system required but nine cores, and the jumper plugs and sockets were correspondingly smaller, whilst the cable insulation was required to withstand only a moderate voltage. Clearly it was impossible to connect B.T-H. and B.W. motor cars in multiple, although unequally matched cars with identical control systems would, in emergency, function under protest, giving a very rough ride.

The trailers set problems also; the 1904 stock had been equipped with B.W. connections on both Up and Down sides, enabling individual cars to be turned end-for-end. Save in one car, no alteration was ever made to the 3Ts., but most of the 1DTs. had B.T-H. connections substituted (on the Up side) at a later date. It is probable that the 1905 B.W. stock was ordered with B.W. connections as before, but that in view of the 1906 B.T-H. order the requirement was varied before delivery to permit of interchangeability with this newest stock: Ellis recorded in February 1907 that this was possible, and there is no evidence for an intervening modification. This same general pattern was followed on all stock ordered down to 1921. Cars thus equipped could be operated with either B.W. or B.T-H. motor cars. Westinghouse motor-cars retained their 9-pin

jumper sockets, but a special jumper cable with a B.T.H. 10-pin socket at one end, and a B.W. 9-pin at the other, enabled through connection to be made. B.W. driving trailers could be incorporated in B.T.H.-powered trains, and vice versa, but under these conditions the control gear was inoperative

Save for the fitting of central doors, and the conversion of a number of trailers to composite trailers in 1912, there is little further to record of these cars: all but one survived unchanged into L.P.T.B. days. The exception was 1DT. No.66, which is entered as "destroyed by fire". The circumstances are unknown, but the event may be ascribed putatively to the year 1925, wherein there was a decrease in the annual returns otherwise unaccounted for. It is extremely probable that this vehicle survives as the L.T. surface lines gauging car G 662. This car is recorded as being in service in 1934, whereas none of the Metropolitan electric stock is recorded as scrapped prior to 1936; certainly the underframe bears a maker's plate dated 1906!

The acquisition of new stock in the 1930-32 period had created a surplus to Metropolitan requirements, and it became possible to loan four complete B.T.H. trains to the Hammersmith & City Railway. This line had not been over-endowed with rolling stock, and it was by no means uncommon for eighteen of its twenty trains to be in service at a time, leaving an entirely inadequate margin for maintenance. To enable such work to be carried out systematically it was the usual thing for Metropolitan stock to be worked in the H. & C. roster, a suitable charge being levied on the Joint Committee. At the time of amalgamation the following cars were so allocated, and were given numbers in the X2XX series reserved for the H. & C. stock:-

3M,	71, 73, 74, 76, 79-82.
1DT,	28, 76.
1T,	62, 67-69.
1/3DT,	5, 6.
3DT,	39, 41, 43, 45, 50.
3T,	34, 60, 62.

Precisely ten years elapsed between the first withdrawal on 1st. May 1936 and the passing of the last survivor. Among the latter were cars allocated to trains loaned to the L.M.S. Railway as war emergency reserve stock. The L.M.S. renumbered them in a separate series -- E1-E24 and kept them at strategic points ready to operate a skeleton service in the event of widespread damage to their regular car sheds. Other trains were retained in similar manner by L.P.T.B. and could be seen on sidings in various parts of the system.

P.R.Davis

As stated previously, various Underground systems throughout the world have been experimenting for more than ten years with automatic train control, and many methods have been tried. The system now being used by London Transport differs from all the others, and has been designed **exclusively** for the Board by its own signal engineers, the majority of the equipment being built by the Westinghouse Brake and Signal Company Limited.

Similar equipment has been used for both the District and Central Line experiments, the basis adopted being dual control. This means that there are two completely separate control systems built in to each train - an automatic driver command circuit and an over-riding safety control. Both are operated by passing electric current, either of a coded nature or of varying frequencies.

The safety code signals take the place of normal lineside signalling, and ensure that the track ahead is clear before a train is allowed to proceed. A safety code must be received continuously, and if this ceases it causes the train to be stopped by an emergency brake application. The safety codes are supplied with current from the mains which is interrupted into codes by means of pendulums operating automatic switches. The different codes needed are produced by pendulums swinging at different speeds; one swinging 180 times a minute produces a code which indicates that the train may safely proceed at a speed of 22 m.p.h., while a faster one swinging at 420 per minute indicates safe conditions for full-speed running.

The slow speed of the safety codes enable them to be easily distinguished by the train equipment from the train command signals, which operate at frequencies of thousands of cycles per second.

The running rails are divided into sections by insulated joints, and the safety signal code currents pass through the length of these sections, the current flow being along one rail, through the wheels and axles at the front of a train using the track, and back through the other running rail. Two coils mounted on the train are affected by this current, and a signal is passed to the train equipment where it is amplified by a transistor amplifier which renders it recognisable to the electrical circuits by its frequency. These circuits are designed to respond only to impulses of the correct frequency for the apparatus they operate.

32 Current from the train battery is supplied to the emergency brake valve whilst a safety signalling code is being received, and this current holds the valve in the closed position. If the signalling safety code ceases to be picked up by the train, current to the emergency valve ceases, releases the valve and so makes an emergency brake application. A speed governor actuated by the wheels of the train is used in conjunction with the 180 code signals to ensure that the train speed does not exceed 22 m.p.h. while this code is being received.

Having provided the coded safety signalling system which ensures that the train cannot run on the track unless it is safe to do so, a separate system, called the automatic driver signal command is provided to initiate all the driving needs. The automatic driver commands are given to the train by current fed into a short section of one running rail, about ten feet long. Current of a special frequency is produced by an electronic generator, the frequency being in the range of thousands of cycles per second. The precise frequency indicates the speed at which the train is required to run at that particular point, and forms a command signal obeyed by the equipment on the train. For simplicity, a value of 100 cycles per second has been used to indicate 1 m.p.h., and so a command signal of a frequency of 1000 c.p.s. would be an instruction to the train that it should be travelling at 10 m.p.h., and likewise one of 3000 c.p.s. would indicate the correct speed as 30 m.p.h.

The principal purpose of the automatic driver command is to apply the brakes for stopping the train accurately at stations. A calculation is made of the speed at which the train should be running at various points along the station platform so as to stop correctly at the end of the platform. From these calculations, automatic driver signal command spots are positioned along the track and provide the speed control of the train as it slows down to a stop. The automatic driver command signal is picked up by induction by a separate coil mounted on the front of the train. In this case, only one coil operates at a time although coils are provided on both sides of the train - enabling the command spots to be placed on either rail as may be convenient. The command signal, having been picked up by the coil, the frequency is counted by an electronic counter, and compared with the frequency being produced by a speedometer generator on the train. If the train is going faster or slower than it should be, electrical circuits cause an application or release of the brakes as needed.



The automatic driver signal command spots are also used to switch off the motors when the train has reached a high enough speed and can coast to the next station. In this case the frequency of the spots is 15,000 c.p.s., which is outside the speed range of the train, and this frequency is recognised by a special circuit in the electronic equipment which gives out the command to switch off the motors.

When a train is ready to leave a station, the train operator closes the doors, by using the usual equipment, now located in the driving cab, and then closes the window in his cab door. This makes a switch and enables him to bring the automatic equipment into operation; to do this, all that is necessary is to press 2 buttons. This causes the brakes to be released and the motors to be switched on, and the train will run entirely automatically under the dual control system until it comes to a halt at the platform of the next station.

The performance of the four sets fitted out for service on the Hainault loop has been very carefully observed by all the engineers concerned since the first day of their operation, for a great deal depends on the results of the experiment. If it is successful, it is intended that the Victoria Line be worked by trains operating on a similar system. So far as can be ascertained, there have been some minor teething troubles, particularly with the stopping of the trains at the right place at the platforms - but these were right at the beginning of the automatic service, and difficulties have decreased as time has passed, and there does not seem to be much trouble now the equipment has become worked in and all the final adjustments made.

Right from the start, passengers have been kept well informed, and the public do not appear to have minded being driven automatically. The latest stage in the experiment has been in the field of public relations. During July 1964 one of the experimental sets was fitted with a public address system for trial purposes, and shortly afterwards another of the trains was similarly fitted out. By means of this equipment, the train operator can, by using a telephone handset fitted beside him in the cab, make announcements to passengers in all the cars through loudspeakers fitted, five to a car, at intervals along the roof. This scheme, once again is intended for adoption on the Victoria Line if it works well.

Finally, it should be recorded that the four sets used for the automatic shuttle service comprise the following cars:-

134      3900-4900-4901-3901;      3902-4910-4911-3903;  
         3906-4906-4907-3907;      3908-4908-4909-3909;

and the last of these sets (3908 etc) is the one in which the automatic equipment is spaced out in the driving ends of the driving motor cars for observation and adjustment.

This concludes what must be a very brief survey of a very complicated and important subject, and the thanks of the author are extended to all those members of the Society who have sent in news and comments on the automatic trains, and to London Transport staff for information supplied - particular mention being given to Mr D.K.Ware, B.Sc.(Eng.), A.M.I.Mech.E, A.M.I.Loco.E., of the Board, for his most informative lecture "Automatic Train Operation on Urban Railways", given to the Traction Course at the Imperial College of Science and Technology, University of London in February 1964. The author was able to attend this lecture by invitation of Imperial College, and would like to thank the College for their courtesy.

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#### RHEOSTATIC TRAIN BRAKING TESTS

In June 1963, tests were commenced on a new electrical system of train braking; these tests have in view the working of the Victoria Line, and, as with the automatic train tests, will help to determine the pattern of operation on that Line when it is opened in 1968.

A 4-car set of tube stock, comprising two 1960 Cravens motor cars with two 1962 stock trailers between them, instead of the more usual trailers used with this stock, has been fitted up for the tests - the actual car numbers being:-

Westbound 3910 - 2736 - 2734 - 3911    Eastbound

Tests have been carried out on the Northfields-Acton Town Piccadilly Line tracks, where the automatic train tests were held, periodically since the beginning of the summer in 1963. The motor cars are seen to hold quite a lot of equipment, the doors of the passenger sections being open during tests, showing apparatus in each doorway; the trailers have appeared to be running with normal equipment.

It is said that the system works by means of surplus power from the motors being dissipated during braking through a rheostat - instead of being returned to the current rails as in the Metadyne system.

NF 326 It is expected that the new High Street entrance to Wembley Central station (Bakerloo Line and London Midland Region) will be ready for use early in 1965. The station rebuilding has been in progress for several months, and at present there is a temporary footbridge and entrance in a side street. The new booking office and toilets will not be completed until later.

NF 327 The discovery of an unexploded 250lb phosphorous bomb on a building site in the City during the morning of Tuesday 28-7-1964 caused chaos within a few minutes. The bomb was near Underground tunnels between Queen Victoria Street and Upper Thames Street, being alongside the District/Circle tunnel near Mansion House station, and directly above the Waterloo and City Line tunnel. Both lines were closed at once, but the District/Circle service was restored after two hours. The bomb was later removed successfully.

NF 328 A nine-year-old boy was killed on the Central Line tracks near Leyton on 7-9-1964, believed to have been electrocuted while trying to prove to his friends that it was safe to go on the track.

NF 329 An Underground guard who rejoined the Sikh religion after becoming a member of LPT staff has been refused permission to wear a turban instead of a cap while on duty.

NF 330 A boy was killed by falling from a south-bound LMR express between South Kenton station and the Conway Gardens footbridge during the evening of 26-8-1964. It is thought that he may have been struck by another, northbound, express while on the track. Bakerloo, Euston-Watford, and main-line trains were considerably delayed.

NF 331 The following set of pre-1938 tube stock, ex-Piccadilly Line, has arrived in Morden sidings:-

DMC 3110 - T 7177 - T 7184 - DMC 3693. The train number shown at the D end (3693) is 09, the A end car being numbered 00. The set was first noted at Morden on 6-7-1964, and was still there on 2-9-1964, appearing on different roads at different times, suggesting that it may be used on service duty. Our correspondent states that it is probably the first pre-1938 stock to come to Morden since 1946, when some stored stock was transferred to Acton for overhaul and then went to the then new Central Line extensions.

NF 332 A dog ran unscathed through the tunnel between Finchley Road and West Hampstead on the night of 11-4-1964. A driver stopped his train to try to catch it, but was not successful, and the dog disappeared after running on to the platform at

West Hampstead. Does this sort of thing often happen?

NF 333 Metropolitan electric locomotives 8 (Sherlock Holmes) and 10 (W.E.Gladstone) have been broken up at Killamarsh, near Sheffield.

NF 334 Ex-Metropolitan steam locomotives L48 and L52 were cut up at Neasden between 17/27-7-1964, and ex-District locos L30 and L31 were cut there between 20/27-7-1964. A correspondent reports that five wagon-loads of the pieces were to be seen in Harrow goods yard on 28 and 29-7-1964.

NF 335 It is reported that Pinner goods yard is to be closed.

NF 336 A derailment in the depot at Upminster disrupted District Line services during the morning peak on 22-7-1964. The derailment blocked the exit lines from the depot, and nine trains were trapped on the depot roads. Normal service was restored after about two hours.

NF 337 A severe storm on the evening of 21-7-1964 disrupted Underground and other rail services because of flooding. On the Finchley Central-High Barnet section of the Northern Line services were brought to a halt because signal cables had been damaged by the heavy rain.

NF 338 Volume 1 of the London Traffic Survey records that work journeys constitute 81% of the London internal journeys by British Railways, 72% of those by Underground, 53% by bus, but only 34% of those by private car. This volume of the survey contains a vast amount of useful information regarding the transport conditions in the metropolis - it is published by the London County Council, but unfortunately costs £6.

NF 339 The Northern City Line service between Finsbury Park and Drayton Park will cease on and from Sunday 4-10-1964, for the Victoria Line work to be carried out, and a bus service will be substituted between the two stations. Arrangements are also being made for season ticket holders to use alternative rail routes from Finsbury Park. Considerable opposition to this suspension of service has been reported - both from the users of the line and from local authorities affected.

NF 340 A students' rag hoax closed Mansion House station for two hours during the afternoon of 16-4-1964, when a "bomb" was found on a train from Ealing. When examined this was found to contain wires connected to batteries, and rag day leaflets. At a hearing later, some students were fined.

NF 341 An unusual sight is reported from Aldgate station. On the afternoon of 17-1-1964, three trains of A stock were in the station at the same time. Two of these were for Uxbridge and the other for Watford, and they occupied the two bay platforms and the Circle Line inner rail platform.

It is reported that LT had intended introducing the new winter timetable on the 7th September, but that difficulties with the unions have delayed its being put into operation for the present.

From information received, it would appear to be just as well for the travelling public that it has been held up. It is not known whether the changes have been dictated by the staff position, or whether the Board have been studying the activities of Dr Beeching too closely, but whatever the reason it would not be right to let such serious reductions in the Board's services to pass unnoticed.

It does not seem that any important changes were contemplated on the Central or Northern Lines, but every other line suffers some cuts, many of them substantial. Some of the details are as follows.

Metropolitan Line Reduction of the early morning service from Hammersmith to Barking on the Hammersmith and City section, and also on the main line.

East London Line Replacement of 4-car sets of Q stock by 6-car PCM stock, but a reduction of the peak-hour service from 6 to  $7\frac{1}{2}$  minute intervals.

Bakerloo Line Reduction of early morning service, and also of the peak-hour service to Watford Junction. The first through train was scheduled at 7.04 a.m. from Watford, instead of the present 5.25 a.m.!

District Line 6-car Q stock trains eliminated, the service to be worked by RB, R6, Q8 and CP6 trains; only R stock will uncouple. Peak service reduced between Gloucester Road and Mansion House from 36 to 32 trains per hour by cancellation of Hounslow service; Mansion House-Barking service also reduced, from 24 to 20 trains per hour. Non-stopping trains to be cut out, all trains calling at all stations and running via the slow road between Gloucester Road and South Kensington. After 8 p.m., the 20-minute Wimbledon-Edgware Road service to be diverted to Mansion House, but an additional service, also 20 minute intervals, to run between Putney Bridge and Edgware Road. Saturday District services show even more cuts, but strangely enough the present Sunday service from the west terminating at Charing Cross is to be extended to Mansion House.

Piccadilly Line Similar reductions, but a decrease in peak-hour running times between Hammersmith and Wood Green by a maximum of 2.m. by elimination of pre-1938 stock.

If this timetable is introduced, it would seem that the District Line will cease to serve Hounslow altogether, the service on that line being left entirely to the Piccadilly.

On the Metropolitan main line, the Amersham service was to be retimed to depart at 30 down and 38 up, reduced by 1 morning and 3 evening peak trains, and the last trains re-timed. Only Amersham trains would run through to the City on Saturdays, with a general reduction from 18 to 14 trains per hour during Saturday business hours. Saturday freight services were to be withdrawn, but to improve the services at the outer ends British Railways diesel trains were scheduled to stop additionally at Rickmansworth and Moor Park in the offpeak hours, and the Chesham newspaper train, also BR, is to carry passengers from Chalfont. In fact, these two changes in BR services have been brought into force with the new timetables on the LMR, but the LT trains are still running to their old schedules, which is causing some delay to LT trains because they are held up the diesels making their additional stops.

It is to be hoped that these proposals are never put into effect, for if they are the public will be much encouraged to provide their own transport, which ultimately will be to no-one's advantage.

#### BOOK REVIEWS

Jackson, Alan A.; Inside Underground Railways; Ian Allan Limited, London; 1964; 64pp.; illustrated by numerous drawings by John W. Wood; price 6/-. Obtainable through the Society - see Notices.

This is the first in a new series of books to be known as "Inside Stories", which are intended for the schoolboy reader. Alan Jackson has provided a good start to the publisher's programme, his book giving a broad outline of all that is needed to make the Underground tick - trains, track, signals, power supply, and safety all being treated, with a concluding chapter on systems elsewhere in the world. There are no photographs, but the drawings are very clear, and in some cases more useful than photos would be. Without doubt a safe "buy" for its intended age group, and contains much of interest to the older enthusiast.

The Rejuvenation of the Waterloo and City Tube: a facsimile reprint of a Railway Gazette Publication of 1940; Electric Railway Society; Sidcup; 1964; 20pp.; 2/-.

A very useful reissue of an interesting publication. The reproduction is by photo-lithographic process, which, although a little uneven is adequate for the purpose, and cannot really be criticised at the price asked. The original publication was illustrated by line drawings and photographs, but the new edition omits the latter for reasons of expense. This might be considered a pity by some, but it is understood that this Society and ERS may be issuing a set of photographs jointly in the near future to supplement the book. This will make a deal of difference to those who want illustrations, and at the same time will not burden those who do not want them with an unnecessary expense. The text covers the early history of the Line, and full details of the modernisation which took place in 1940; a track diagram and gradient profile are both included, together with route map and line drawings showing train layout, tunnel sections and so on. The book should not be missed at the price, as it is difficult to get hold of in the first edition. It is available from the Society.

Clinker, G.R.; Register of Closed Passenger Stations and Goods Depots in England, Scotland and Wales; Volume II (1900-1964); Second Edition; published by the author from Harlyn Bay, Padstow, Cornwall, and available from him only by subscription, £2-5-0d.

This is a much improved version of the first edition, which only included closures from 1923 to 1962, and it is intended to follow it in 1965 with a completely new volume to cover closures from the beginning of the Railway Age to 1899. The present one contains over 6000 entries, with 13,000 dates, and is profusely annotated. A very useful work, one wonders if it could not be expanded eventually to become a complete gazetteer of stations, showing all of them (not only closed ones) and giving all the opening dates as well as closures. In the meantime, the work as presented is invaluable. It is intended to publish half-yearly supplements to keep it up to date, and these will cost 12/6d each from the address above.

Jackson, Alan A. & Croome, Desmond F.; Rails through the Clay - A History of London's Tube Railways; Second Impression, 1964; 408 pp., illustrated; London; George Allen & Unwin Limited; £2-10-0d. The Society can supply - see Notices.

This book was originally reviewed in February 1963, p.16, and this, second, impression only has minor revisions to the text. So anyone with the original issue may rest easy - but anyone who has not yet purchased a copy should do so at once. The Society can supply - but note the price is now 50/-.

Appointments The following appointments have been made:-

Exhibition Organiser P.Holman, 12 Braham House,  
Vauxhall Street, London, S.E.11.  
Assistant Sales Manager R.B.Manley, 35 Montholme Road,  
Battersea, London, S.W.11.

Tube Stock Relics Any member interested in acquiring relics from pre-1938 tube stock is asked to write to the Curator of Historical Relics, C.H.Gooch, at Fairmead, Northway, Pinner, Middlesex, at once enclosing stamped addressed envelope, and stating any particular interest.

Book Orders All books stated as being obtainable from the Society should be ordered by sending the appropriate remittance with order to the General Sales Manager, A.J.S.Milne, at Cherrywood, Peterley, Great Missenden, Buckinghamshire. All books are supplied post free.

Working Layout A group of members are hoping to build a working layout which can be used on exhibition stands. This will be in 00 gauge; at present it seems that the actual layout is well in hand, but help will be needed in the loan of rolling stock once it is ready for use. Any member willing to help is asked to contact R.B.Manley, at the address above.

#### THE TIMETABLE

Saturday 3rd October, 7.15 p.m., Moorgate tube booking hall. Last Northern City Line train from Drayton Park to Finsbury Park (coaches take over from 8 p.m. Saturday to Sunday night, from Monday trains will run from Moorgate to Drayton park only).

Wednesday 7th October 7 p.m. Meeting of the Electric Railway Society to which our members are specially invited for a Talk by our Secretary, N.E.W.Fuller, on "Postwar Rolling Stock Development on the District Line".

Friday 9th October 7 p.m. Illustrated Talk by B.P.Pask of The Transport Ticket Society on Underground Tickets. This meeting will be at Caxton Hall, Caxton Street, London, S.W.1.

Saturday 17th October 10 a.m. Walk over the Alexandra Palace Branch, led by Alan A.Jackson, our Vice-President. The Party will be restricted in number; applications at once to J.E.Echlin, 10 Cophall Road East, Ickenham, Uxbridge, Middlesex, accompanied by a stamped addressed envelope.

Thursday 22nd October 7 p.m. Modellers' Evening in the Restaurant of the Amersham Arms, New Cross Road (opposite New Cross station). Everyone welcome - guests have been invited.

LT FILM SHOW Friday 20th November - details next month.