The LONDON MIDLAND and SCOTTISH RAILWAY

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The LMS SIGNAL and TELEGRAPH DEPARTMENT

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Introduction.

In the early days of railways only two types of engineer were required – one to deal with civil matters, involving the maintenance of the permanent way, bridges, tunnels buildings etc and another to deal with the provision of satisfactory motive power and rolling stock usually known as the Locomotive Superintendent. With the advent of signalling – a signal engineer or superintendent was required, which, being connected with permanent way naturally fell under the civil engineer When telegraphs appeared on the scene a Telegraph Superintendent or Engineer became necessary, but telegraphs only require light current. Later, when heavy current electricity arrived, an Electrical Engineer was required, when it was convenient to then place the Telegraph Superintendent in his department. It seems the Electrical Engineer could fall into the domain of the Civil Engineer or designated Chief Mechanical & Electrical Engineer. No doubt this depended on the size of the Railway Company, as for example, the LNWR being a huge concern would require a separate department as opposed to the smaller lines.

The Midland Railway evolution in these fields was obviously painful and worth recounting and was no doubt repeated in one form or another on the other major railways. The MR Telegraph Department, prior to 1899, was in the charge of a Telegraph Superintendent who also dealt with electrical matters. At this time the use of electricity was relatively small. However, it's use was growing as revealed in M.R. Board minute dated January 1899, where, when recording an increase in the salary of W.E.Langdon, refers to his post as Electrical & Telegraph Engineer. Later, a Way & Works minute of June 1899 stated that the Telegraph Department, would, in future, be known as the Electrical Department suggesting that electricity use had been growing to such an extent something had to be done. Small generating plants had been built across the Midland system since 1882 together with its associated lighting schemes. It was from this background that Josiah Sayers emerged in 1882, as in January 1894 his salary was increased from £220 to £225, his designation being Superintendent of Electric Lighting. A Mr Preece also held a similar position, on slightly higher salary. In January 1902, Sayers, now Chief Superintendent of Electric Light, had a salary increase from £340 to £450. When W.E Langdon retired in late 1902, the electrical and telegraph departments were divided, as Way & Works minute refers to the *" Re-arrangement of the Electrical Department with effect from 1st January 1903*". The' Railway Engineer' dated February 1903 reported that "the Telegraph branch being supervised by the Engineers Department under J.Sayers and the Electric Lighting and Power branch being supervised by the Locomotive Department under R.M.Deeley".

In early 1902 James Dalziel, who had joined the M.R. in 1899 as an electrical inspector, was appointed Assistant Electrical Engineer, suggesting he was working under Deeley. In 1903, Dalziel was placed in charge of electrical construction and the electrical shop at Derby – with electrical maintenance coming under William C. Goodchild. In 1905 he was placed in charge of the hydraulic and general drawing office, and in 1914 was made Chief Electrical Assistant to the Chief Mechanical Engineer, in charge of electric power and lighting. In 1916 he took responsibility for the Company's petrol and electric road motor vehicles. The transfer of electrical responsibility to the Locomotive Department would undoubtedly have come about due to the much wider use of electricity from c.1900. A split responsibility for certain electrical matters had already developed as R.M Deeley, a locomotive man, was appointed Chief Inspector of Boilers and Electric Motors for the whole system way back in 1893. With more power stations built, electric motors were re-placing shaft and belt drive systems within the works and no longer could electricity be expected to be within the domain of a light current telegraph engineer nor for that matter the Chief Engineer. Resident electrical engineers were in post at various large centres and were most likely placed under the control of the respective District LocomotiveSsuperintendents. When Sayers was appointed head of the telegraph department his salary was increased from £400 to £600 and his designation reverted back to his pre 1899 title as Telegraph Superintendent.

These changes were reflected right up to director level, as pre 1902, Langdon, acting as Electrical and Telegraph Engineer of the Electrical Department was responsible to J.A.McDonald, the Chief Engineer, who in turn answered to the Directors on The Way & Works Committee. However after 1903 Deeley, the Locomotive Superintendent, answered to the Directors of the Locomotive Committee. It is easy to see that with disciplines such as signals and telegraphs being in different departments, conflicts could easily arise inter-departmentally as we shall see. It took many years before the Civil Engineer or CME relinquished their responsibility for electricity (although this did revert back later), signalling and telegraph matters, recognizing the fact that electricity together with railway signalling and telegraphs warranted their own departments.
The Electrical Engineers of the larger railway companies were in the forefront of electricity distribution and generation as railway towns such Crewe relied on the LNWR for a domestic supply. There was also the experience gained with the use of electricity for traction purposes with the early electrification schemes. In 1923 the LMS had no fewer than forty-eight power stations of which five were for traction purposes, generating 136,156,462 units rising to 157,988,991 units in 1930. Small wonder then, that eminent railway electrical engineers such as Herbert Jones of the Southern Railway and F.A.Cortez Leigh of the LMS were appointed on the newly constituted 'London Joint Electricity Authority' in 1925.

Chapter 1 - The organization of the Signal and and Telegraph Departments from the 1923 amalgamations until 1929.

On the 31st. December 1921 signal engineering on the lines which were to become the new LM&S Company over the following 18 months, were in the hands of the Engineer's Departments of the various constituent and subsidiary companies. On the smaller companies (Highland, Furness, Maryport & Carlisle, Cockermouth Keswick & Penrith, Stratford & Midland Junction) it was the direct responsibility of the Engineer himself, while the larger constituents (London & North Western, Midland, Lancashire & Yorkshire, Caledonian, Glasgow and South Western) employed a Signal Superintendent within the Chief Engineer's department, and similarly the North Stafford Railway employed an inspector in-charge of the signal section. At this time the Great Western Railway was the only railway to have an independent signal and telegraph department. The LNWR, L&Y, and Midland manufactured signalling equipment in their own signal works, but the other companies bought in equipment (and in some cases, design work and planning) from outside contractors.

Table 1 shows the signal and telegraph engineers/superintendents of the major constituent company's of the LMS together with the civil and electrical engineers to whom they largely reported.

Railway	Civil Engr.	Signal Engr.	Electrical Engr.	Telegraph Engr.
GSWR	T.Keeling	W.Bryson	-	G.Russell
Highland	A.Newlands	E.F.Lowe	-	L.McLaren
Cal.Rly.	W.A.Patterson	A.Stevens	A.S.Hampton	A.S Hampton
LNWR	E.F.C.Trench	J.T.Roberts	H.E.Obrien	A.D.Hill
L&YR *	W.H.Coomber	R.G.Berry	H.E.Obrien	A.D.Hill
Midland Rly.	J.Briggs	W.C.Acfield	J.Dalziel	J.Sayers
NSR	C.G.Rose	-	A.F.Freak	A.F.Rock

*The LNWR and LYR had amalgamated in December 1921.

It was only natural, therefore, that the new company should initially adopt the same managerial structure as the larger constituents. In order to implement a measure of immediate centralized control and co-ordination, EFC Trench, Engineer of the LNWR since 1909, was appointed as Chief Engineer of the LM&SR from 1st.January 1923. For the first few months the other Engineers of the previous organizations worked under him, but controlling their own departments in the same way as before. However Mr. Trench had a plan for a more systematic management structure, envisaging the functioning of his department through three English and two Scottish Divisions. An opportunity to take the first step towards this goal soon presented itself since D.L.Rutherford, the Engineer of the Furness Railway, was due to retire on 3rd. July 1923. From that date the new Northern Division of the LM&SR Engineer's Department came into operation, based at Barrow and comprising the lines of the former Furness, Whitehaven Cleator & Egremont, Cockermouth Keswick & Penrith and Cleator & Workington Junction Companies as well as the West Cumberland District (and the Lancaster and Carlisle section, i.e. Lancaster District) of the LNWR but extended to Preston. There was no signalling design staff in the Northern Division Engineer's office at Barrow, all design and supply being handled by Crewe.

On the same day there were some boundary changes to give a more efficient split between the Western and Manchester Divisions in the area of south Lancashire. The former (the direct descendent of the LNWR Engineers Department) now took over all Lancashire and Yorkshire lines west of the LNWR main line, whilst the latter took over all LNWR lines east thereof to Manchester Exchange, adding to them the territory of the former L&YR. The former North Staffordshire Railway was made a part of the Western Division, its erstwhile Chief Engineer, C.G.Rose, becoming a District Engineer and losing responsibility for signals and telegraphs, which went to Crewe. At this stage the Midland Division (former Midland Railway) remained unchanged, although a degree of internal reorganization took place from 1st. August. The final change to the structure of the Engineer's Department in 1923 was the transfer of all Midland Railway lines in South Wales to the Western Division.

The visible effects of this reorganization, as far as signalling was concerned, were that equipment of the standard designs of Crewe, Derby and Horwich began to appear beyond the limits of the old companies' lines. The Western and Northern Divisions were supplied with equipment from the ex LNWR signal works at Crewe, with new equipment, including signal boxes and lever frames being manufactured to

the LNWR designs. This explains, for example, the appearance of LNWR cabins on the former North Stafford and Furness Railway lines and on the western end of the former L&YR. The Midland Division was the least affected in the 1923-28 period. Derby works continued to produce modular signal box structures' although the Midland railway 6" centre tappet frame was superseded by the 4½ "centre "REC" version in 1923. The Manchester Division continued to utilize Horwich signal shops for the production of new equipment, but quickly abandoned the L&Y (Railway Signal Company inspired) design of signal cabin, turning instead to the LNWR type, which thus became standard on three of the four English Divisions. L&Y pattern lever frames, again Railway Signal Company inspired continued to be produced until 1927, but without the embossed company name. After that date REC standard frames were fitted in the then standard ex LNWR signal boxes. This combination of LNW box and REC frame was not used for new cabins on any other division, however some LNW design cabins did receive replacement REC frames post 1930.

E. C. Trench had already retired, and been replaced as Chief Engineer from 1st. February 1927 by Alexander Newlands (formerly of the Highland Railway and more recently Divisional Engineer, Western Division). Newlands took over Trench's plan for three English Divisions with 17 Districts in place of 21, and actively pursued it, starting with the November 1927 meeting of the Works Committee and the December meeting of the full Board. In the meantime, by quirk of fate, the Signals Assistant at Crewe (J.T.Roberts) who had held that position under the LNWR and LMS Western Division and the Signal Superintendent at Derby (W.C.Acfield) of the MR and LMS, Midland Division, Engineer's departments had retired on 30th.June and 25th.August 1927 respectively. In an attempt to promote integration and dilute the continuing partisan attitudes of the pre-grouping organizations, each man's assistant was promoted to the other post from 1st.May 1928, so that Alfred Oldham, Assistant to Roberts at Crewe and a lifelong LNWR man, went to the Derby post and likewise Herbert E. Morgan went to Crewe. This also resulted in a number of promotions of more junior men within each Division, but perhaps it was felt that the District staff would not be so steeped in pre 1923 practices as the former Headquarters – now, Divisional staff. Both posts were designated as "Signals Assistant". Whereas Roberts and Acfield had received salaries of £1800 and £1700 respectively, their successors only received £850 and £1000.

The Works Committee had delayed confirming these appointments until the Board had approved the departmental reorganization. As it turned out, the three final Divisions were to have their headquarters at Derby, Crewe and Manchester, Barrow being relegated to District status, so a Signals Assistant was still required in each place as before. During this period all Divisional Signal and Telegraph Engineers were compelled to submit their signal schemes for approval to the Chief General Superintendent at Derby. He and his staff obviously found their differing ideas very confusing, which was further aggravated by the fact that whilst mechanical signals and their maintenance was the responsibility of the signal superintendent, who reported to the Chief Civil Engineer, the telegraph and electric signals were the responsibility of the telegraph superintendent who reported to the Chief Electrical Engineer. There was, however, an anomaly with regard to the "Crewe Power" installations at Euston, Crewe and Manchester, which were maintained by signal assistants responsible for both mechanical and power signalling. The LMS Electrical Department had been created in 1925 combining the "telegraph" and "power" sections of the former companies, including Camden/Watford, Manchester/Bury, Liverpool/Southport and Heysham electrifications.

Moving slightly ahead, but to complete the picture regarding the LMS Electrical Department, the board meeting held on 29th July 1937, made the Chief Mechanical Engineer responsible for the Electrical department with the appointment of C.E.Fairburn on 1st October 1937 at a salary of £3500 as deputy CME under W.A.Stanier. Fairburn become Chief Mechanical & Electrical Engineer on 1st April 1944 on Staniers retirement on a salary of £5000 p.a. **Table 2** lists the pre – consolidation staffing from 1923. From 1925, telegraphs were the province of the Electrical Engineer.

Table 2 - LMSR Civil Engineer's Department - Signalling Staff & Telegraph Staff. England & Wales.
(As at 1/1/1923 with alterations up to 1/1/1928). *Compiled by Reg. Instone SRS*

Division	Designation or Location	Salary	Salary	Salary	Remarks
Western Division Crewe HQ					
J.T Roberts	Signal. Assistant to Div. (Civil) Eng.	1375	1700 c.1/23	1800 1/26	Retired. 30/6/27
A.Oldham	Assistant to above	720	770 c.1/23	850 1/1/25	Appt. Signal Asst Derby 1/5/28
M.Meacher	Chief Draughtsman	480	500 c.1/23	525 c.1/26	

P.W Hardman	Draughtsman	380	405 c.4/23	425 c.1/26	
C.M Hitchcock	Draughtsman	370	396 c.1/23	415 c.1/26	
P.Bell	Draughtsman	315?	365 c.1/23		
A Stevens	Chief Clerk	425	500 1/1/25	525 1/1/28	
F.Grundy	Deputy Chief Clerk	400	450 1/1/25		Appointed Chief Clerk, Derby 1/11/25 £500
Inspectors					
W.R Jones	Watford	515	550 1/1/25		
J.M.Mottram	Rugby	415	440 c.1/23	465 c.1/26	
F.J.Dutton	Walsall	400	425 1/1/25		To Heaton Norris 2/8/26
E.Hickman	Walsall	380			From 1926
J.Starkey	Stafford	465	490 1/1/25		
J.Harding	EdgeHill	300	390 2/8/26		
E Osborne	Edge Hill	515	550 11/25		
G.Forall	Heaton Norris				Retired c.1/8/26
F.J.Dutton	Heaton Norris			455 2/8/26	
E.E.Grinham	Warrington	285			To Abergavenny 1/11/23
E.Hickman	Warrington		375 1/11/23		To Walsall £380? 1926
T.Mackrell	Tyldesley	375	400 1/1/25		
H.Jones	Lancaster	470	500 1/1/25		
A.Hinton	Conway	445			
E Hickman	Abergavenny	300			To Warrington 1/11/23
E.Grinham	Abergavenny		300 1/11/23	400 c.1/26	
W.J Garness	Stoke				
R.Armstrong	Barrow	345			
Electrical Staff					
F.A.C Cortez-Leigh	Divisional Electrical Engineer.	2000			Sal. reduced from £2500 c.1/22 & reinstated 1/8/1924.
G.Broughall	Assistant to above.	1100			
P.D Michod	Assistant.	850			
L.W Swainson	Senior Assistant Crewe	800	850 1/1/25		
S.J.D Billington	Asst. to Electrical Engineer.	650	750 1/3/25		
C.F Davis	Asst. to Electrical Engineer.	600			Above six located at Euston.
A.Taylor	Assistant Crewe.	580			
P.Lomas	Junior Asst. (Telegraphs) Crewe.	450	475 c.1/23	500 1/1/25	
C.W Slingo	Assistant (Telegraphs).	500	500 c.1/23	525 1/1/25	Retired
G or O? Hammond	Works Manager (Telegraphs).	480			
A.Morton	Asst. Works Manager (Telegraphs)	375	400 c.23	400 1/7/27	

E.J.Dudley	Chief Draughtsman Crewe	400			To Derby £450 1/11/25
A Stevens	Chief Clerk	425	500 1/11/25		
S.Brownhall	Chief Staff Clerk Euston	470	470	520 1/3/28	
J.H.Harris	Personal Clerk	360	375 1/11/23		
District Assistants	**(Late Inspectors).**				
W.V.Sturgess	Watford	525	550 1/1/25		Retired 1926?
O.G.W Carter	Rugby		350 1/25		
M.H.Brady	Birmingham		575 1/25		
J.C.Norris	Stafford	500	525 1/1/25		
A Taylor	Crewe		580 10/25		
A.D.Clayton	Warrington		525 1/26		
H.J.Hill	Tyldesley	375	400 1/1/25		
G.Morris	Lancaster	320			
	Conway				
S.Heap	Abergavenny	350	375 1/11/23		
T.F.Scragg	Stoke	400			
Midland Division Derby H.Q.					
W.C.Acfield	Signal Superintendent.	1650	1700 c.1/26		Retired 25/8/27
H.E.Morgan	Chief Assistant to Acfield	580	630 1/1/25		Appointed Signal Asst. Crewe 1/5/28.
J.R.Downes	Chief Draughtsman.	515	550 1/1/23	600 1/1/28	
F.Bell	Draughtsman.	350	375 1/1/25	400 1/1/28	
T.Guest	Acting Asst. to Sig. Asst. late 1928.	335		360 1/1/28	
G.Holt	Telegraphs ?			375 by 12/29	
B.W.Cooke	Signal Works Manager.	515	550 1/1/25		
Signal Inspectors					No records prior to 1929.
F.W Whittingham	St.Albans	300+65			
A. Pickering	Derby	350+85			
F.W Pickering	Leeds	300+110			
A.J.Fossey	Skipton	300+45			
E.Elks	Bromsgrove	300+65			
S.Beighton	Bristol	300+100			
Swansea ?					
Electrical Staff					
J. Dalziel	Chief Electrical Assistant.	1650			Appointed Asst. Elec. Engr. LMS HQ 1/3/25 £1900
J.Sayers	Telegraph Superintendent	2000			Appt'd Telegraph Superintendent LMS 1/3/25 £2300
A.B.Wallis	Chief Maintenance & Tech. Asst.	550			New Works Asst. LMS 1/11/25 £650
G.E Brownhall	Personal Assistant.	375			Appointed Personal Clerk 1/11/25 £425
H.H.Dyer	Technical Inspector	400	450		

			1925		
S.E Brearley	Cable Inspector	350	420 1925		
G.E Williamson	Electrical Inspector	350			Draughtsman London 1/9/26 £390
T.Bucknall	Technical Assistant.	375	400 1/7/27		
J.W.Lewsley	Technical Assistant.	375	400 1/7/27		
R.Meakin	Chief Draughtsman (Telegraphs).	480	500 c.1/23		
H.O.Morrison	Lineman (Electrical ?).	350			To London 1/9/26 £390
G.H.Burrows	Clerk				
Telegraph Maintenance Inspectors					
J.D Brown	Derby	350	380 1/12/23		Retired 1925 ?
S.W.Spendlove	Skipton	350	380 1/12/23		
W.G.Palmer	Sheffield	350	380 1/12/23		
A.J.Ault	Gloucester	320	360 1/12/23		
W.E.Sowter	Bedford	350	380 1/12/23		
D.R.White	Barking	360	380 1/12/23		
Telegraph Construction Inspectors					
J.Buxton	Derby	350			
A.J.Dobbs	Leeds	350			Retired 1926 ?
W.H.S.Colburn	Gloucester	350			Retired 1926 ?
O.H.Bennet	Bedford	350			
J.B. Barnard	Inspector (New Works).		380 1/1/25		
Manchester Division - Hunts Bank H.Q.					
R.G.Berry	Signals Assistant	1000			
V.H.Openshaw	Assistant to above	500	575 c.1/23	600 1/1/25	£650 by 12/29
J.M.Garside	Draughtsman				Maybe Civil Engrs Staff ? Retired 1/9/23
A.Johnson	Draughtsman	350	370 1/9/23		Maybe Civil Engrs Staff ?
R.H.Whitehead	Draughtsman	350	375 1/1/25		
W.Barnes	Draughtsman (Telegraphs?)	325			
Signal Inspectors	**(No record prior to 1929)**				
W Mickle	Miles Platting	360+130			
H.Cook	Blackburn	350+65			
W.F.White	Ravensthorpe & Thornhill	350+85			
Electrical Staff					
H.E.O'Brien	Divisional Electrical Engineer				Retired 1925
H.W.Moore	Telegraph & Elecrical Assistant	650	700 1/1/25		
A.Lund	Divisional Electrical	700			

	Engr. Horwich				
T Settle	Chief Clerk	460			To Crewe1/3/26
J.Douglass	Chief Draughtsman Horwich	450			To Euston £500 1/11/25
W.E.Hands	Draughtsman Horwich	370			To London £400 1/9/26
Telegraph Inpectors.					
F.Beaumont	Telegraph Inspector Mcr. Victoria.	350	*	400 1/1/27	*Chief Telegraph Insp. Div.B £375 1/4/23
W.Dean	Dist..Asst.(late Inspector) Mcr.	335			

Study of table 2 shows that salaries of the electrical engineers were slightly higher than the signal engineers' on the LNWR, about the same on the MR apart from Josiah Sayers who received £2000 per annum, even so the salaries paid to senior staff by the railway were seemingly excellent at this time.

A draughtsman c.1930 would receive about £5 per week and in my own case my 1955 salary as a draughtsman in the motor industry was only £468 per annum twenty five years later. It is worth recalling that a semi-detached house could be bought for £450 in 1938.

One also might speculate as to why the salary of the LNWR Chief Electrical Engineer F.A.Cortez Leigh, being £2500, was reduced by 20% to £2000 around January 1922 – but to see it reinstated in August 1924?.

Table 3 - 1928 Lists of some LMS Electrical and Telegraph Staff.

Note the Electrical Dept was separated from the Civil Engineers in 1925.

Euston

Chief Electrical Engineer – Lieut. Col. F.A.Cortez Leigh.

Assistant Electrical Engineer – J Dalziel.

Euston

Divisional Electrical Engineer – Lieut.Col.Percy Michod.

Crewe

District Electrical Engineer Laurence Swainson.

Glasgow

Divisional Inspector, Electrical Engineers Office – William Brown.

Glasgow.

Telegraph Supt. – Alfred S.Hampton.

Manchester Hunts Bank.

Telegraph and Electrical Assistant- H.W.Moore.

Derby

Telegraph Supt. – Josiah Sayers.

Job titles are interesting in that H.W Moore was designated an Electrical and Telegraph engineer.

Table 4 – 1928 LMS Civil Engineers Organization.

Table 4.

1928 LMS CIVIL ENGINEERS ORGANISATION.
(As listed in the LMS Magazine, June issue)

Chief Civil Engineer. Antony Newlands

Divisions	Northern (Manchester)	Western (Crewe)	Eastern (Derby)	Scottish
Div.Civil Engr	E.H.Townsend	W.E.Thornhill	H.P.Miles	D.McClellan
Div.Signal Assistants	R.G.Berry	H.E.Morgan	A.Oldham	L.P.Lewis
Districts	Barrow T.D Mason	N.Wales – Bangor J.Briggs	Stoke C.G.Rose	Highland – Inverness A.H.McMurdo
	Lancaster F.G.T.Adams	Liverpool – Edge Hill T.M.Fowke	Derby – North J.Brunton	Northern – Perth H.Riach
	Leeds C.B.Trye	Crewe A.Turnbull	Derby – South F.H.Frere	S.Eastern – Edinburgh J.C.Tod
	Blackburn G.Stoker	S.Wales – Abergavenny A.T.G.Posnett	Northampton – Castle Stn H.A.Hull	Central – Glasgow R.W.Gairns
	Manchester – Exch. Stn E.H.d'E.Darby	Walsall G.A.Grimoldby	London – 149 Camden Rd F.J.Greasley	South Western – Glasgow J.W.Melville
	Bradford Low Moor S.O.Cotton	Watford A.Wood-Hill		

The new LMS organisation

On 1st. January 1926 the top management of the LMS Railway was re-organised on American lines with the appointment of Sir Josiah Stamp as its President. He was assisted by four vice-presidents, appointed on 1st January 1927, namely Stanley H.Hunt, John H. Follows, Robert Whyte Reid and John Quirey, each of which had definite areas of responsibility, breaking down those previously carried by the General Manager H.G.Burgess who was to retire on 31st March 1927. R.W.Reid died following an operation on 29th. March 1929 when Sir Harold Hartley C.B.E ,F.R.S. was appointed Vice President of the Executive of the Company and Director of Scientific Research with effect from 1st February 1930, at a salary of £5000 p.a. it was Hartley who became head of the recently formed LMS Consolidated Signal and Telegraph department. Sir Harold retired on 31st. December 1945 by which time his salary was £7,500. The four Company Vice Presidents were now T.W.Royle, J.A.Pope, G.L.Derbyshire and R.A.Riddles but I cannot say which one was responsible for the Signal and Telegraph Department.

The years 1928 and 1929 were a period of turmoil for the Engineering Department, and the signal engineers in particular, no doubt helped by the fact that power signalling had been accepted as the way forward. The LMS having brought into use such schemes as Bow Road to Barking and Manchester Victoria and Exchange, and, with other schemes being planned the difficulties of liasing with other departments were all too apparent, culminating in the formation of the consolidated Signal and Telegraph Department in May/August 1929. No doubt both the chief civil and electrical engineers did not take kindly to their resultant loss of responsibility arising from the impending transfer of many of their staff. In the same vein the staff being transferred would be extremely concerned as to where their future lay, would they be better or worse off, where would they be located and where would they be on the family tree etc?

Chapter 2 – The formation of the consolidated Signal & Telegraph Department in 1929.

The final stages of the reorganization were still being implemented, when, on 24th January 1929, the LMSR Board decided that it was necessary to create an entirely new department to take charge of both the signal and the telegraph work. The staff and equipment of the telegraph section of the electrical department, which was then abolished, and those of the Signal Assistants to each Divisional Engineer were brought together under the control of a Signal and Telegraph Engineer (S&TE) reporting directly to the appropriate Vice President of the Executive. It might have been expected that one or other of the Signals Assistants would have been promoted to the new post. However the Board appreciated the benefit of bringing in an outsider who had no loyalties to any of the LMS constituent companies. And so Arthur Frank Bound, came over from the LNER, at a salary of £2000 to take up his duties from 20th.May 1929. It is interesting to note that Bound's designation within the Board minutes never included the word "Chief" although on increasing William Wood's salary to £2750 0n 26th October 1945 "Chief" was used, being the one and only time. Clearly Bound was very highly regarded as on 26th. March 1929 a large gathering of his LNER colleagues met at Liverpool Street Station under the chairmanship of Mr W.G.P.Maclure, the Locomotive Running Superintendent, Southern Area. Mr Charles J, Brown, Engineer Southern Area made the presentation consisting of a gold cigarette case inscribed by past and present members of Mr Bound's staff, a gold chronometer, a Cromwellian clock and a pair of binoculars from the engineering and other LNER departmental staff. Mrs Bound was presented with a shingle set. Mr Brown referred to the loyal and faithful service which Mr Bound had rendered to the LNER, and while they were sorry to see him leave, they were gratified to feel that the LMS had chosen Mr Bound to fill what would be the premier signalling position in this country (he could have said the world). Following a review of the situation, Bound, on 24th. July 1929, submitted, with the approval of the Executive Committee, his proposals for the organization of his Department, to take effect from 1st. August 1929, which included the retention of four divisions with headquarters at London (Eastern), Crewe (Western), Manchester (Central) and Glasgow (Northern), his own headquarters being at Derby, which included a drawing office. Table 5 details these senior appointments, their previous posts and salaries. As it turned out not many relocations were required, most retained their positions, and, with but two exceptions, all had an increase in salary.

Table 5

Name	Present Position	Proposed Condition	Present Salary	Proposed salary	With Effect from
P.D.Michod	Dist. Elec Engineer Euston	Principal Ass.to S&TE Derby	£1000	£1500	1/6/1929
R.G.Berry	Sig.Ass't. N.Division Manchester	Indoor Ass't. (Signals) Derby	£1000	£1000	1/8/1929
T.Guest	Sig. D'man (Acting Sig. Ass) Derby	Ass. Locking & Design (Mech)Derby	£360	£500	1/8/1929
P.Lomas	Sen. Ass't. Derby	Ass.Locking & Design (Elec) Derby	£550	£650	1/8/1929
T.Bucknall	Sen. Ass't. Derby	Tech. Ass't. Derby	£400	£450	1/8/1929
H.W.Moore	Tel.& Elec.Ass't. Manchester	Outdoor Ass. (Sigs)Derby	£700	£900	1/8/1929

H.H.Dyer	Tech. Insp. Derby	Ass't. (Sigs) Derby	£450	£550	1/8/1929
J.R.Edwards	Tech. Ass't. Derby	Ass't.Comm-Unications Derby	£250	£350	1/8/1929
S.E.Brearley	Cable Insp. Derby	Ass.(Cables) Derby	£420	£500	1/8/1929
F.Grundy	Chief Clerk Derby	Chief Clerk Derby	£500	£600	1/6/1929
B.W,Cooke	Works Man Derby.	Works Ass't. Derby	£550	£650	1/6/1929
A.S.Hampton	Div. Elec. Engineer Glasgow	Div.S&T Eng (Scotland) Glasgow	£1250	£1400	!/6/1929
L.P.Lewis	Sig. Sup. (Scotland Glasgow	Sig. Sup. (Scotland) Glasgow	£800	£800	1/8/1929
W.R.Jones	Dist. Ass't. Crewe	Div.S&TE Manchester	£550	£1000	1/8/1929
H.E.Morgan	Sig. Ass't. To Div. Eng.Crewe	Div. S&TE Crewe	£850	£1000	1/8/1929
A.Oldham	Sig. Ass't. To Div. Eng.Derby	Div. S&TE London	£1000	£1200	1/8/1929
V.H.Openshaw	Sig. Ass't. Manchester	Ass.(Signals) Manchester	£600	£650	1/8/1929

Richard Golding Berry, who was in post, as Signals Assistant at Manchester, (In the same way as Morgan and Oldham were for Crewe and Derby respectively) was offered a post at Derby but being a chronic arthritic, declined, and retired on 31st. October 1929. An interesting anomaly was created in

Scotland for the sake of economy, insofar that the Divisional Electrical Engineer, A.S Hampton, who had previously supervised the telegraph work, should act as a Joint Officer to be known in future as Divisional Signal and Telegraph Engineer (Scotland), and that the present Signal Superintendent, L.P.Lewis, whose duties remained unaltered, should retain his designation and report to the new Signal and Telegraph Engineer in the same way as he had previously reported to the Divisional Civil Engineer. Accordingly, the latter gentleman was one of those who did not receive an increase in salary together with R.G.Berry. The revised District organization was not put into place until 1st.August 1930, there being 17 Districts within the S&T department, virtually matching those of the Chief Civil Engineer's Department. It seems that H.E.Morgan settled in nicely at Crewe soon becoming critical of what he considered to be antiquated methods, especially the "Crewe Power" system which he disliked greatly. One of Morgan's draughtsmen, S.Williams, was working on the scheme to provide automatic signalling on the Euston/Watford electrified lines, which was very nearly complete, when Oldham requested Bound to appoint him as his assistant, which was agreed. Morgan countered by suggesting - that as Wiliams possessed all the knowledge appertaining to the Euston/Watford scheme the London Area should be transferred to the Derby (Eastern) Division, which was also agreed by extending the Eastern Division to include Cheddington on the Euston/Crewe main line. This explains why the Eastern Division includes this part of what might be considered to be Western Division territory.

Table 6

LMS S&T Staff as listed in the LMS Magazine, dated March 1931 - Directory of Signal Engineers.

Divisional Engineers

A S Hampton	Divisional Signal & Telegraph Eng. 302 Buchanan St. Glasgow
H.E.Morgan	Crewe
W.R.Jones	Manchester
A.Oldham	Derby

District Assistants

Eastern Division (Derby).

Watford	A.J. Ault.
Bedford	A.Pickering.
Nottingham	H.W.Holt
Sheffield	C.W.Phillips
Stoke	F.T.Scragg

Western Division (Crewe).

Warrington	J.C.Norris
Birmingham	M.H.Brady
Stafford	E.E.Grinham.
Chester	J.C.Barlow.
Rugby	J.H.Mottram.
Abergavenny	J.Harding

Northern Division (Manchester, Hunts Bank).

Manchester	H.J.Hill
Blackburn	W.Dean.
Lancaster	H.Jones.
Barrow	T.H.Clark.
Leeds	C.H.Bennet.
Sowerby Bridge	G.Morris

Scottish Division.

L.P Lewis Signal Supt. (Scotland) 302 Buchanan St. Glasgow.
L.F.Lowe Dist. S&T Supt. Inverness. (Position lapsed in 1932).

Other significant transfers of lines included the ex Midland Railway north of Swinton/Wath Road Junction to the Northern Division, the NSR and Crewe-Manchester line to the Eastern Division and the ex Midland lines from Tamworth to Birmingham, Gloucester and Bristol to the Western Division. Bound's office at Derby was set the task of designing and/or specifying standard equipment and practices to be used throughout the company's territory. From 1929 all S&T equipment design was done in the Headquarters Drawing Office. During 1932 two university graduates were recruited specifically to design signal structures etc. being Harry Birchenough and Jim. Wright. They were later to produce papers read to the Institute of Railway Signal Engineers on such design. Information was passed to the Divisions by way of "Engineering Serials" and loose leaf binders into which drawings were categorized, a system continued by the London Midland Region of British Rail. The last serial to be

issued by the LMS was probably No. 142 in 1947. The Divisional Drawing Offices were then restricted to drawing up plans and details of signalling works at specific locations I.e. showing how the standard equipment was to be utilized and arranged. Whilst at Derby, Bound occupied the office suite formerly used by Josiah Sayers, the former Midland Railway Telegraph Superintendent. On Monday 12th. February 1934 "Euston House" was formally opened following which the Signal and Telegraph Department H.Q. moved from Derby to London to occupy the seventh floor. At the same time the Eastern Division headquarters moved from London to Derby. **Diagram 1** shows the way the department was organized at that time, showing also subsequent changes which, apart from the 1938 re-organization, appear to be remarkably few, the principle amendments being :-

1. Originally Bound had two assistants, P.D.Michod and W.Wood but when Michod retired on 30th. June 1933 he was not replaced leaving Wood as sole Assistant Signal and Telegraph Engineer, at his same salary of £1500 p.a.

2. On 26th. May 1937 Bound stated to the Works Committee that a temporary organization was to be set up to deal with Government Loan Works Schemes within his Department. S.Williams - New Works Assistant (£700),.E.Brearley - New Works Assistant (Cables),(£600), J.E.Glisbey - Assistant (Colour Light Signals etc) (£400). They were all based at Euston and to be responsible for colour light re-signalling schemes such as Rugby, Wigan, Preston, Crewe etc.

3. A signal sighting committee was formed in 1936 under T.E.Scott who was previously Signal Assistant at Crewe. The Signal Sighting Committee came under the jurisdiction of the Chief Operating manager. Other signalling employees in the COMs department were G.W.Langford (Signal Sighting Assistant , Crewe £550), J.Killin (Development Assistant, Signalling, Euston, £550), F.O.Garratt (Head Office Inspector, Signalling, Euston, £425) and A.I.Bromley (Senior Clerk, Signalling, Euston, £380) and there may have been others.

4. An experimental section was formed in 1936 under P.Lomas, to deal with Hudd automatic train control, wheel counters etc. When Lomas retired in 1946 John Currey took over to complete the work on Hudd ATC and to later develop the British Railways AWS ATC.

5. The Cheshire Lines Committee – The LMS took over the responsibility for signalling from 1st October 1936. The CLC did not employ a special signal engineer, the duties being covered by their own General Engineer up to that time. The CLC did have their own S&T workshop in Warrington that was closed in 1937.

6. The Development section headed by C.G.Derbyshire was suppressed in 1940 when Derbyshire was seconded to R.A.Riddles in the Ministry of Supply.

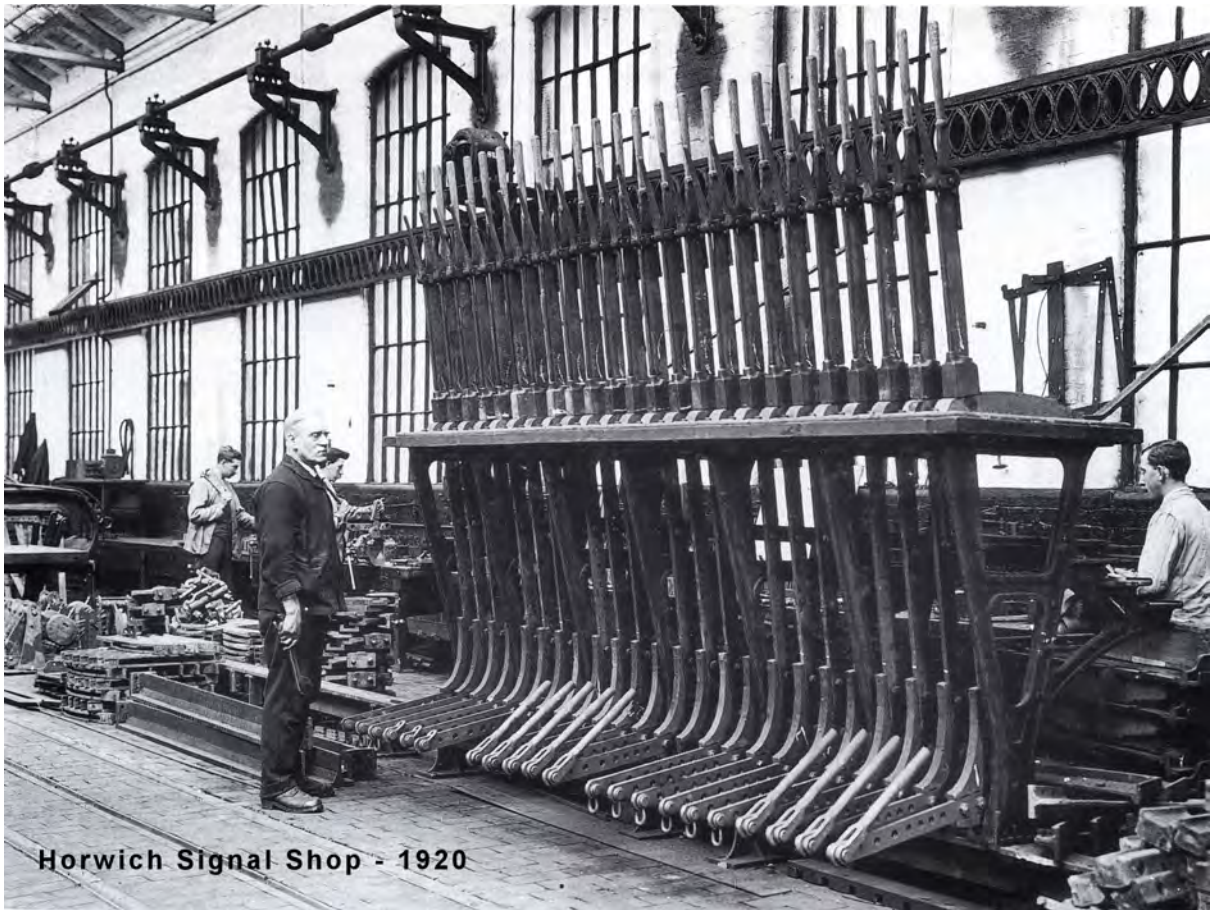
Of the three signal works, Horwich had closed in 1927 when production of L&Y designs finally ceased. Closure of Derby signal works was implemented in 1932, with manufacture of REC frames and other equipment transferred to Crewe. By then standardisation of equipment design was well under way.

The Midland Railway Signal Works alongside the River Derwent at Derby that closed in 1932 with the work transferred to Crewe.

V.R.Anderson Collection

The Interior of the Midland Railway Signal Works on 7th July 1927.

British Rail



The Lancashire and Yorkshire Railway Signal Shop at Horwich in 1920.

Noel Coates collection.

The LMS ex London & North Western Railway Signal and Telegraph Department offices at Crewe, built in 1903/4 and occupied by the then Signal and Electrical Department in 1904. The S&T workshops and stores were behind these offices.

Richard Foster .

The Crewe District Signal and Telegraph Engineers coach LMS 45010 seen here hauled by GWR '2021' class tank at Bicslade Wharf on a GWR/LMS joint line. The coach was used for many tours of inspection on the Crewe S&T Division. It had an observation compartment at one end equipped with chairs and tables and could be used as a dining room. In the centre were compartments including a kitchen with a gas cooker and sink, a toilet and bath and also a bedroom. The other end was fitted as an office with desks and cupboards, It had been made for J. Follows, late superintendent of the Midland Railway.

Photo Tom Guest.

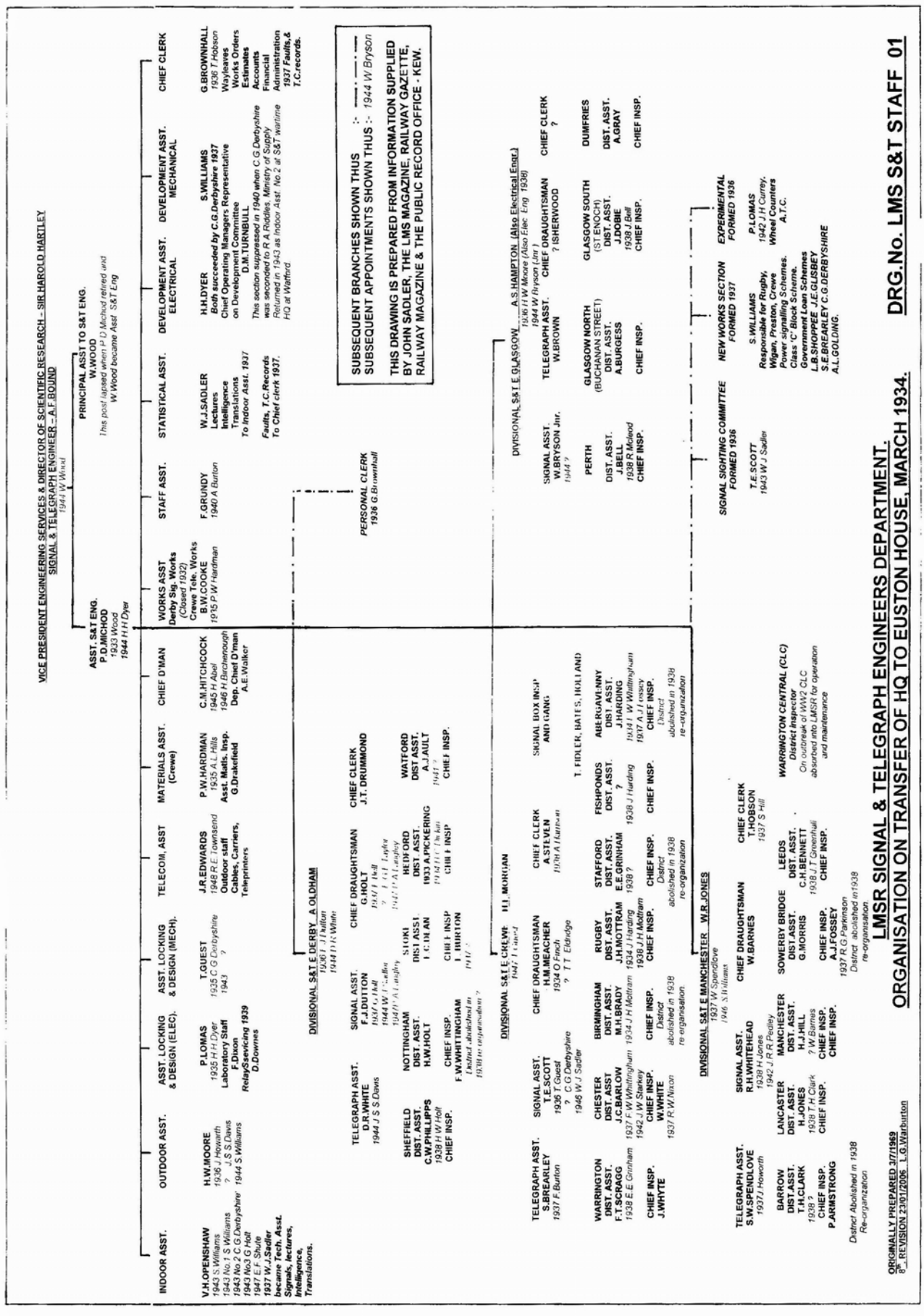


Diagram 1 - The LMS Signal and Telegraph Engineers Department organisation on transferring to Euston House in March 1934

The 1938 Re-organization.

The Works Committee were advised by Bound, at their meeting on 27th July 1938, that the following revisions had been made with effect from 1st July 1938 regarding his department in England. The 17 English Districts under 17 Signal and Telegraph Assistants and District Chief Inspectors had been re-distributed and reduced to 12 areas, each having a Signal and Telegraph Area Technical Assistant. He went on to report that the positions of the District Chief Inspectors had been saved and had been partially absorbed in new posts of Divisional Technical Assistants in The Divisional Signal and Telegraph Engineers existing offices in Derby, Crewe and Manchester respectively. They were to deal with new works, estimating etc, the idea being to allow the new Technical Assistants and their Inspectors to concentrate more on their technical and supervisory duties.

The new areas were :-

Eastern Division, Derby.

	Area Tech Asst.	Salary
Watford	A.J.Ault	£550
Bedford	H.C.Dickin	£550
Stoke-on-Trent	F.C.Dean	£550
Sheffield	H.W.Holt	£575

Western Division, Crewe.

Rugby	J.H.Mottram	£600
Bristol	J.Harding	£550
Chester	F.W.Whittingham	£550
Warrington	E.E.Grinham	£600

Northern Division, Manchester.

Manchester	H.J.Hill	£600
Bolton	W.Dean	£600
Leeds	J.T.Greenhall	£500
Lancaster	T.H.Clark	£525

The re-organization was stated to have saved £2880 p.a. in salaries after allowing for salary increases of £325 p.a.

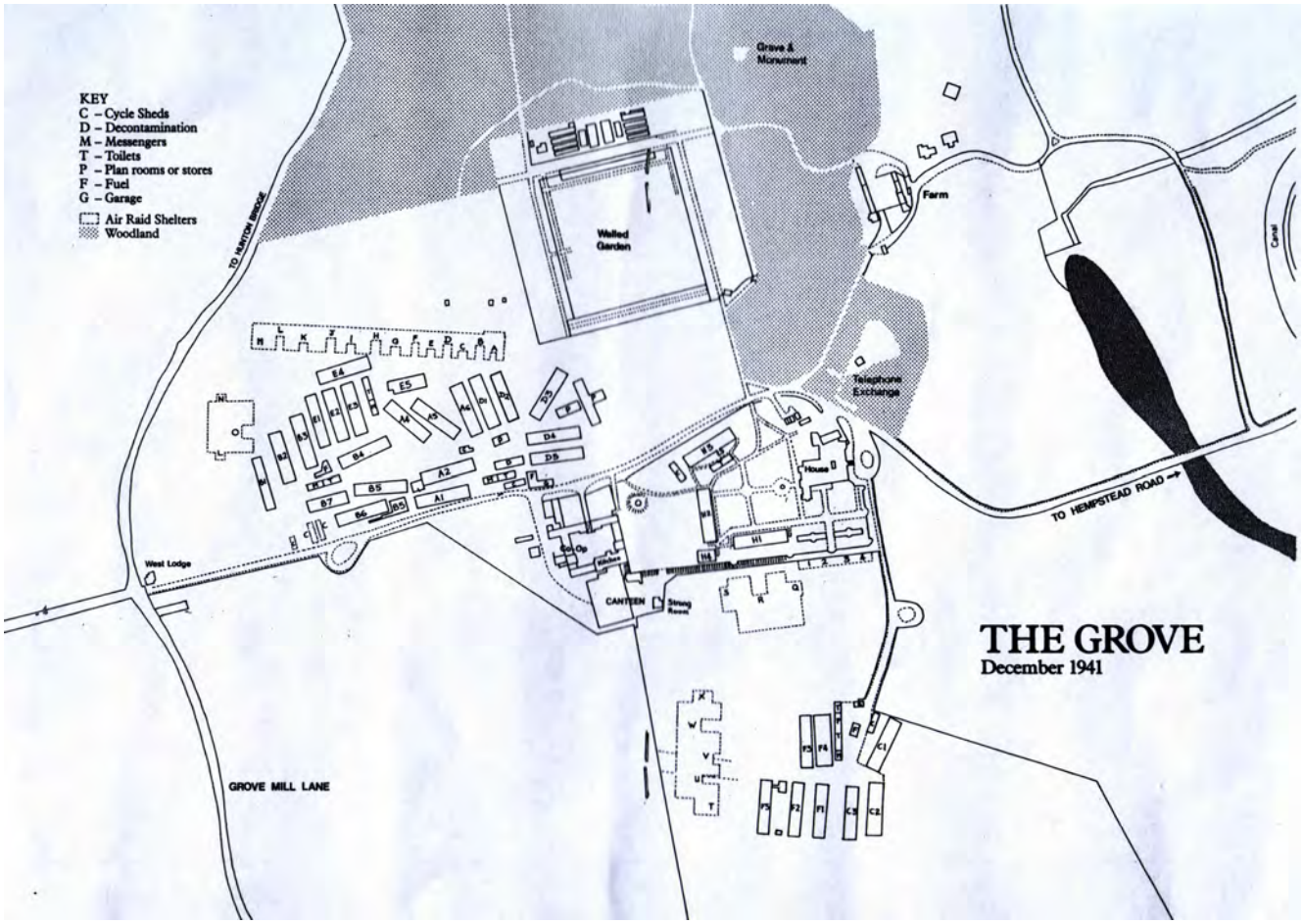
DIVISION	NORTHERN	EASTERN	WESTERN	SCOTLAND
H.Q.	MANCHESTER	DERBY	CREWE	GLASGOW
DISTRICTS	LANCASTER	STOKE	WARRINGTON	PERTH
	LEEDS	SHEFFIELD	CHESTER	GLASGOW N.
	BOLTON	BEDFORD	RUGBY	GLASGOW S.
	MANCHESTER	WATFORD	BRISTOL	DUMFRIES
	C.L.C. WARRINGTON			

Map showing the 1938 Signal and Telegraph Department Divisions

Chapter 3 - The wartime headquarters and Nationalization.in 1948.

"The Grove" at Watford Hertfordshire, which was the LMS wartime headquarters, originally belonging to the Earls of Clarendon. Lord Stamp and the Vice Presidents, together with their staffs, occupied the ground and first floor. The top floor was originally the servant's quarters and was occupied by the chief officers with Bound and Wood having a small room at the back overlooking the stables and outhouses. "The Grove" later became the British Transport Commission Work Study Training Centre and is now an prestigious hotel of there same name..

During the 1939/45 War the Signal and Telegraph Department together with other Chief Officers of the LMS were temporarily relocated at "The Grove" Watford. An expenditure of £150,000 was authorized at the Board meeting on 27th.April 1939 for the LMS subsidiary company "Lineside Estates" to purchase "The Grove" which was a 60 room mansion standing in 300 acres. The money authorized included a sum of £70,000 to prepare the property for occupation by LMS key staff from Euston and St. Pancras in wartime. This amount was spent on the provision of 39 huts, a movement building where staff organized wartime rail traffic and air raid shelters.



Map of The Grove in 1941, the Grand Union Canal can just be seen on the Right of the picture.

The long road to "The Grove" crossed the Grand Union Canal by a narrow bridge. The heavy traffic across the bridge was controlled by LMS 3 aspect colour light signals operated by a watchman in an elevated cabin on the south-east corner of the bridge. Later, when "The Grove" passed to British Railways, the lights were operated automatically. Mike Addison stated in "The Signalling Record issue 98" (the magazine of the Signalling Record Society), that the LMS relocated 2,200 staff to "The Grove" on Friday 1st. September 1939, with a further 2,300 following on Monday 4th September. On the other

hand, the LMS published book "LMS at War" by George Nash stated "and on Monday, September 4th, 3000 staff were at work in their new establishment". The publication also noted that during the war "that thousands of miles of telephone line were erected by the Signal and Telegraph Engineers Department, who in the course of time also erected 100 new signal boxes (5,400 additional levers and 2,800 new signals). "The Grove" eventually became the British Railways School of Management that finally closed its doors on 31st March 1995 and was sold on 16th February 1996, re-opening as a hotel in August 2003.

Mr Bound's Drawing Office staff at "the Grove" during World War 2 – Left F.Dudley, fourth from left, C. M.Hitchcock, Chief draughtsman 1934 – 1945. Right hand side with pipe A.E.Walker; Others in the picture are possibly Harry Abel (who was the Chief Draughtsman 1944/5) Walter Whitby, Jack Salt and Able's daughter who was a tracer.

Table 7 – 1947 list of LMS Divisional Signal and Telegraph Engineers, prior to Nationalization, now responsible to W.Wood and his deputy H.H.Dyer.

Division	Div. S&T Engineer
Crewe	H. E. Morgan
Derby	D.R.White
Manchester	W.Spendlove
Glasgow	W.Bryson Jnr.

With nationalization only a few days away, the final tribute was made at the Works Committee meeting held on the 17th December 1947 (minute 474) when the following was Minuted :- *"The Chairman – Sir Francis Joseph - expressed the Committee's real appreciation of the excellent services which had been rendered to the Company by the Chief Civil Engineer and the Signal & Telegraph Engineer (Chief not mentioned) and their staffs, and the Committee desired that an expression of their gratitude be conveyed to all members of the Staffs concerned, particularly for their successful efforts in overcoming the very great difficulties of keeping the lines in good condition and open for traffic since the beginning of the war".* A similar appreciation was made back in 1940, following much German bombing, when Sir Francis Joseph, chairman of the Board, at the meeting held on 26th. September 1940, when referring to air raid damage, "expressed the Committee's high appreciation of the fine work done by Mr.Wallace (Chief Civil Engineer) and Mr. Bound and their staff in repairing the damage and keeping the lines open for traffic. The Board endorsed this and requested the Chairman to notify the officers".

In studying the LMS minute books it was interesting to note that most if not all LMS management and senior staff received salary increases in 1947. No doubt due to the pending Nationalization condition whereby staff would be no worse off under state ownership.

Summary

In trying to sum-up the early LMS years with regard to signal staff, one can only conclude it lacked leadership. There was no single person to lay down policy as the people in charge were civil engineers as indeed they were for telegraph matters until the separate electrical department was set up in 1925. We have seen that such fragmentation made the planning of colour light schemes very difficult and so a consolidated S&T Department was clearly the very obvious solution. So – who was best able to do the job? Of the existing LMS Signal Superintendents probably H.E.Morgan was the most likely candidate as he was capable and being 47 was about the right age. As far as other railways were concerned the GWR S&T Dept. was not particularly dynamic, although it had, in 1927, installed the Ferreira / Insell route system at Newport (Mon) but even this utilized semaphore signals. The Southern Railway was very active with the provision of colour light schemes in its congested surburban system south of the Thames, however its able Signal Superintendent W.J.Thorrowgood had only recently retired being replaced by Lt. Col. G.L.Hall. The LNER had two excellent signal engineers by way of A.E.Tattersall and A.F.Bound. It was Bound who installed the first 3-aspect colour light signals in this country between Marylebone and Neasden in 1922 and who had also devised a system of contact ATC with Mr. Rowland known as the "Reliostop", both in use on the Great Central Railway and it was Bound who landed the most prestigious S&T job in the world. Bound did for LMS signalling what Stanier did for locomotives and very clearly both were brilliant appointments.

Chapter 4 – The LMS S&T Department in World War 2.

Personnel

The organisation of the S&T Department is concluded here with recognition of the tremendous effort made by the staff during WWII with the preparation and construction of war schemes, repair of bomb damage and so on. Staff members were also called up or volunteered for service in the war. This chapter covers the time up to March 1944 from a staffing viewpoint as A.F.Bound retired in that year, although by this time there was little doubt as to the outcome of the war, but nevertheless there are sure to have been a few more casualties and possibly honours and commissions not included here as it was, in part, prepared from a report written by A.F.Bound, the Signal & Telegraph Engineer, covering the period 1939 to 1944.

LMS Signal & Telegraph Department staffing 1938 to 1943.

Year	WAGES STAFF				SALARIED STAFF					Total Female Staff	Total Wages Staff F. included.	Total Salaried Staff F. included.	Grand Total
	Conciliation		Artizan		Clerical		Technical		Super-visory				
	Male	Female	Male	Female	Male	Female	Male	Female					
1938	3,058	11	947	11	132	53	160	14	125	89	4,027	484	4,511
1939	2,969	11	906	12	120	55	146	15	133	93	3,898	469	4,367
1940	3,034	11	912	12	118	57	152	16	128	96	3,969	471	4,440
1941	2,988	12	871	33	103	65	147	17	127	127	3,904	459	4,363
1942	2,952	41	852	38	94	64	145	17	129	160	3,883	449	4,332
1943	2,927	38	818	52	91	64	139	17	127	171	3,835	438	4,273

The above table shows the total staffing of the department when it can be seen the number employed dropped by 238 between 1938 and 1943 and unsurprisingly the number of women employed increased by 90. Wages staff were reduced by 192 and salaried staff by 46. At the outbreak of the war 244 men were immediately called up, being 175 Reservists or Territorials, with the remainder as volunteers, 42% were from the labouring grades which at that time could be replaced, the biggest problem lay with the loss of 11 skilled instrument makers from the Crewe, Gresty Road Telegraph Shops, where for more than two years overtime had been worked to keep pace with demand. Linemen and their assistants were also a serious loss with 49 leaving the department. The Government schedule of reserved occupations fortunately allowed the majority of staff to be retained and thereafter most losses during the war years were confined to retirement, ill health or to other industry, also men were allowed to remain at work after reaching the retirement age of 65.

Up to and including March 1944 the number of serving staff were:-
Salaried Staff (England & Wales) 47 or 12%.
Wages Staff ditto 291 or 9%.
Salaried Staff (Scotland) 5 or 6%.
Wages Staff ditto 59 or 9%.

Casualties :-
5 men missing and believed killed.
1 man accidently drowned.
1 man accidently killed.
11 men Prisoners of War.
3 men discharged due to War Injuries.

Commissioned Staff
Navy – 2 Lieutenants.
Army – 2 Lieut. Colonels; 3 Majors (1 discharged); 1 Captain & 6 Lieutenants.
Air Force – 1 Flying Officer and 1 Pilot Officer who was killed in action.

Decorations
C. Nelson an Installer at Willesden – DCM.
H.J.A.Dyer a Fitter at Barking – DFM.
G.Morris an Inspector at Preston – mentioned in London Gazette, December 1940. Distinguished service France & Flanders.
V.Mitchell an Area Technical Assistant at Bolton ditto.
D.S.Jewell a Technical Assistant at Headquarters – mentioned in The London Gazette.
S.Hollinshead a Labourer at Tyldesley – Received an official letter in connection with his remarkable courage in his first action at sea with the 2nd Maritime Battery when one aircraft appeared to have fallen to Hollinshead's gun individually.
T.Brown a Messenger at the Divisional Office Glasgow – Mentioned in despatches in respect of Personal Occurrence – extinguishing fire in FAF Armoury.

Civil Awards
J.H.Mottram the Area technical Assistant at Rugby – MBE.
A.Wilson a Lineman at Poplar – Mentioned in Supplement to London Gazette.
J.J.Freshwater a Ganger at Barking – BEM.

As far as the LMS as a whole is concerned, according to G.C.Nash, in the book 'LMS at War', the LMS contributed 44,375 serving personnel of which over 1,500 never returned and more than 1,000 were taken prisoner. In the course of their service they received over 150 decorations and were mentioned in despatches on 88 occasions. For gallantry during the "blitz" 54 awards were made by the King to LMS railwaymen.

Military Assistance
Was afforded by the Royal Engineers at the time of the intensive bombing in 1940/1 in rendering appreciable help in repairing air raid damage, usually consisting of 12 men with an officer in charge. Such help was given at Willesden, Barking, Liverpool, Birmingham and Bristol. Unfortunately no real forward planning could be carried out as these squads were all liable to recall by the Military Authorities at a moments notice, which led to little reliance being placed on such assistance. Scotland was more fortunate with considerable assistance being given to the LMS over an extended period to provide many miles of new telephone circuits.

Circuit Construction
New telephone circuits were provided to meet the Chief Operating Manager's requirements indicated by the fact that over 4,000 single wire miles of 200-lb copper wire (over 350 tons) were erected throughout the System, together with several miles of multi-core air spaced cables. The gangs achieved nine to ten miles of single wire per week, a very creditable performance. Transport to the work sites and the feeding of the men were major wartime problems only solved by whole-hearted co-operation of the gangs and their supervisors. Assistance was rendered by squads of Royal Engineers from Edinburgh placed at the disposal of the LMS in connection with improved telephone facilities on the Highland Line. Work commenced in August 1941 with two Officers and sixty other ranks supplementing the railway gangs with the work proceeding in the following order:-
Inverness to Wick and Thurso.
Dingwall to Kyle of Lochalsh.
Inverness to Keith – Aviemore and Perth.
Perth to Aberdeen.
The Highland scheme was completed in September 1942 when the party was split up with 20 men being transferred to the LNER with the remainder assisting railway gangs in the erection of the new Perth - Balquhidder leg of the Perth – Oban circuit.
Assistance was also given by a number of men from the above squad with additional men from Edinburgh in connection with the work at Dunragit on the Dumfries – Stranraer Line.

Operational Problems on the West Highland Line.
This is reproduced from the LMS S&T Wartime report that gave a small insight into the major part played by the railways of Britain in WWII, and this in only one very small part of Scotland.

A paradoxical feature of wartime rail traffic in Scotland was that lines which in peacetime normally carried light traffic, was burdened with abnormally heavy traffic. As far as the north of Scotland was concerned, this was caused by naval bases on the east and northern coasts, and in the south by the provision during the war of a new port at Cairnryan, near Stranraer.
Both the areas above were served by single lines, and prior to the war, facilities did not exist for a close headway of trains. In the north, seven additional signal boxes had to be provided at the undermentioned places between Stanley Junction and Aviemore as well as moving the existing signal box at Dalanarath to a new position to give a better spacing between block posts.

Moulinearn, Balsporran, Inchmagranachan, Etteridge ,Dalraddy, Balavil and Edenden Bridge.

In the south, in the Stranraer area, the presence of a large number of troops in Northern Ireland, made it necessary to handle heavy traffic over the single line between Stranraer and Castle Douglas and between Challoch Junction and Girvan. The loops at the passing places on both these l;ines were very short and could only cross trains of from 15 to 30 wagons. In order to give crossing facilities for double headed trasins of from 15 to 60 wagons and one brake van, the loops at the under mentioned places were lengthened.

Between Challoch Junction and Girvan - Pinmore, Pinwherry, Barrhill, Glenwhilly and New lace.
Between Stranraer and Castle Douglass – Crossmichael, Creetown, New Galloway, Palnure, Lochskerrow, Newton Stuart, Gatehouse of Fleet, Kirkcowan, Glenluce and Castle Douglass.

At Challoch Junction, where the single lines from Girvan and Castle Douglas meet, three colour light signals were installed on each converging leg of the junction to give simultaneous acceptance of trains travelling in the Stranraer direction, from those two points. In addition, to avoid delay in exchanging tokens, non-token working was introduced between Dunragit and Glenluce. This single line section was the first in Scotland to have continuous track circuiting. To handle the increased traffic from and to Girvan and Castle Douglass over a common stretch of line between Dunragit and Castle Kennedy, a distance of about 2¾ miles, the latter was doubled.

The gradient towards Challoch Junction from Girvan and Castle Douglas directions is approximately 1 in 100 falling. This called for the provision of electrically operated catch points, provided with sand drags, worked from Dunragit box, about 1¼ miles away. These sand-drag points protected the junction and the single line beyond Dunragit station.
Access to the branch line serving the new sea port and numerous sidings was given through a connection from the single line situated 1/4 mile north of of Stranraer; the connection and usual protecting signals were operated from a new box named Cairnryan Junction. The branch line and the sidings were installed and worked by the Royal Engineers.

Appreciation.

The War ended in Europe on 8th.May 1945 and the first Board meeting following victory was held on 24th.May when an address was sent to Their Majesties as follows – Board Minute 4937 with Sir Robert Burrows in the Chair, in the absence of The Hon. Lord Royden, C.H.

"May it please Your Majesty,

The Directors of the LMS present their humble duty and ask permission to express to you on behalf of the stockholders and servants of the LMS Railway their sincere and respectful congratulations on the unconditional surrender of the common enemy on the Continent. It is a matter of pride to all associated with the LMS Railway that under Your Majesty's Ministries, the Company has played no small part in helping to bring about a victorious end of the war. Vast numbers of troops, ammunition and stores have been conveyed under conditions of exceptional difficulty; workshops created for the manufacture of rolling stock have been adapted to the construction of aeroplanes and the accoutrements of war; a large number of staff has been called to the colours and many others have been rostered for duty where their technical qualifications have been needed for the prosecution of the war. In all their arduous efforts the spirits of all ranks have been heartened by the presence among them of Your Majesty and The Queen on the many occasions on which you have travelled over the LMS Railway, and it is the sincere and devout wish of all that you may be long spared to rule over an empire of peace".

The war against Japan ended on 13th August 1945, but with no Board meeting until 27th September, this event surprisingly received no mention.

Works Committee Minute 1974 dated 24th July 1929 stated that four weeks ending on 19th May 1929 2,439 signal staff were employed with a gross cost of £33,544. Four weeks ending 15th June 2,443 staff were employed, the gross cost being £33,193. (This latter figures would give an average wage of £3.40 per week or £3/8/0d). Presumably these statistics did not include Salaried staff?

Chapter 5 – Chief and Divisional Engineers

Arthur Frank Bound – pictured here at an Institute of Railway Signal Engineers Council meeting in 1933. He was born on 23rd. August 1878 at 10 Cambridge Street, Tunbridge Wells, the child of Frank (who was a grocer) and Jane Minter Bound He commenced work on the London Brighton and South Coast Railway in Brighton Works in 1894 as a premium apprentice under R.J. Billington. In 1898 he moved to Vickers as a draughtsman. In 1903, he was appointed as outdoor assistant with The British Power Railway Signal Company working on the low pressure signalling schemes on the London and South Western Railway. In November 1903 he took a post on the Great Central Railway as Assistant Signal Superintendent, and in April 1906 became the Signal Superintendent, later to become Signal Engineer, Southern Area of the London and North Eastern Railway following the amalgamations. He was appointed Signal and Telegraph Engineer of the LMS Railway on 20th. May 1929 with a salary of £2000, increased to £2500 on 1/4/1930. On 1st June 1932 the Board increased his rank to that of Chief Officer. He was President of the Institution of Railway Signal Engineers in 1925. Bound reached the age of 65 on 23/8/1943 when he was relieved of his day to day duties in order to prepare detailed reports with regard to signalling in the post-war years. He was placed on superannuation on 31st. August 1944 but retained as a consultant with a fee of £1750 p.a..He died on the 5th.October 1957 at Bognor Regis aged 79, his wife Florence Lucy was present at his death.

Lieut. Col. Percy Douglas Michod O.B.E. - entered the service of the LNWR in 1893 in the telegraph department becoming Works Manager of the department in 1897 and Senior General Assistant in1898. In 1903 he became Northern Division Assistant, Signal and Telegraphs and two years later was made Chief Telegraph Assistant. He was commissioned in the Cheshire Railway Battalion of the Royal Engineers, firstly in the Territorial Army, and, when World War 1 broke out in the British Expeditionary Force. He was awarded the O.B.E.in January 1919 and gazetted out of the army with the above rank in October 1919 In 1925 he was appointed District Electrical Engineer, Euston in the electrical department of the southern area of the LMS becoming Assistant Signal & Telegraph Engineer in 1929 under Bound Signal and Telegraph Engineer in 1929 under Bound at a salary of £1500. He retired on 30th. June 1933 and died on 8th March 1945.

William Wood - Commenced his career on the North Stafford Railway as a premium pupil. In 1908 he raised and trained the North Midland Divisional Telegraph Company of the Royal Engineers within the territorial army with men from both the railway and post office when he was their commanding officer. He was, in 1911, appointed Assistant Telegraph Superintendent of the North British Railway succeeding A.F. Clement as Telegraph Superintendent in 1912. Not long after he took over responsibility for all electrical power and lighting. Subsequently he was responsible for the electrical and telegraph work, including all electrical work in connection with signalling in the Scottish Area of the LNER, actively engaged on signalling schemes. He joined the LMS in 1933 as Principal Assistant to the Signal and Telegraph Engineer, Derby, on a salary of £1500. On the retirement of P.D.Michod on 30th June 1933 he was appointed Assistant Signal and Telegraph Engineer under Bound on 1st July 1933 with no increase in salary. His salary prior to 1st. November 1943 was £1800 after which date it was increased to £2000 following Bounds' release from daily duties On the retirement of Bound he was appointed Chief Signal and Telegraph Engineer at a salary of £2500 from 1st. August 1944, Wood was then 57 years old and in 1947 his salary was increased to £3000. He was president of the Institution of Railway Signal Engineers for the 1930 Session.

Mr. W. Wood
Appointed Signal & Telegraph Engineer, L.M.S.R.

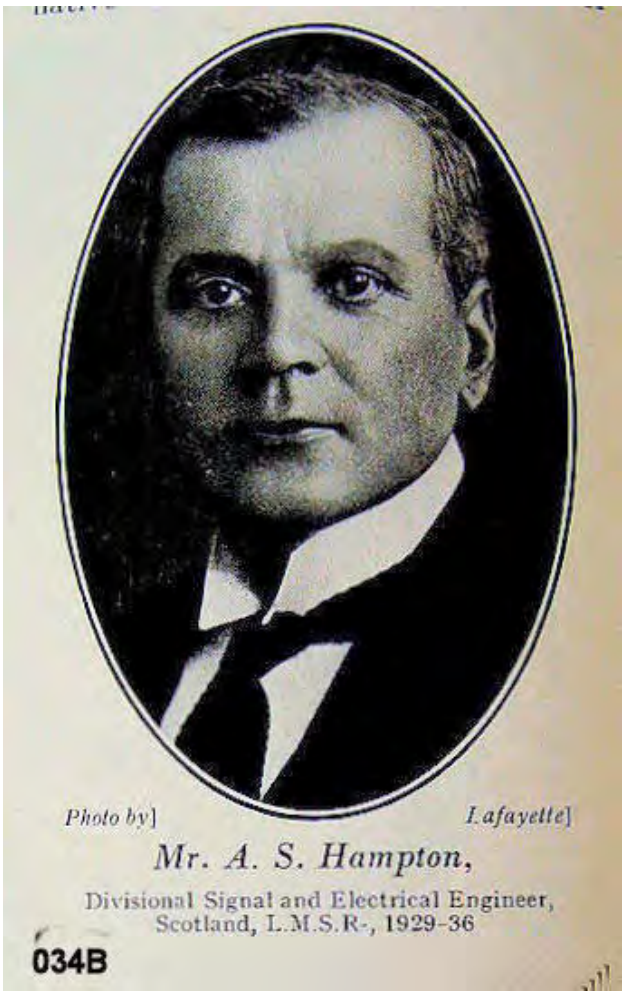


Photo by] *Lafayette]*
Mr. A. S. Hampton,
Divisional Signal and Electrical Engineer, Scotland, L.M.S.R., 1929-36
034B

Alfred Smith Hampton – served an apprenticeship with the Woodside Electrical Engineering Company before joining the Telegraph Department of the Caledonian Railway as a draughtsman. He became Chief Assistant to the Telegraph Engineer in 1910 and was appointed Telegraph and Electrical Engineer to the Caledonian Railway in 1920. On the grouping of the railways in 1923 he was LMS Divisional Electrical Engineer (Scotland). On 1st. June 1929 he became Divisional Signal and Telegraph Engineer (Scotland) with a salary of £1400, and retired in May 1936.

Wilfred Cozens Acfield – seen here on the left around 1910 with the great signal engineer W.R.sykes. Acfield was apprenticed with Saxby and Farmer where he gained considerable experience in signalling and other engineering work. He became Signal Superintendent of The London Brighton and South Coast Railway from 1896 to 1906 when he became Signal Superintendent of the Midland Railway at Derby. He was a foundation member of the Institution of Railway Signal Engineers and it's President in 1922. He served on the Railway Executive Committee on Permanent way and Signalling and retired as Signal Superintendent, LMSR Derby on 25th. August 1927 and died on 22nd. March 1948.

MR. W. C. ACFIELD,

Mr. R. G. Berry,

Signal Assistant, Manchester, L.M.S.R., 1911-29.

Railway Gazette 1st November 1929.

Richard Golding Berry.- commenced work as a draughtsman on the LYR in 1890 in the civil engineers office moving to the signal department in 1891. On the retirement of H. Raynor-Wilson he became Assistant Signal Engineer under Cyril Beuziville Byles and L&Y Signal Superintendent when Byles emigrated to Australia in 1911. When the L&Y and LNW Railways amalgamated in 1922 he became Signal Engineer, Manchester. Bound would have been happy to have Berry as his assistant but being a chronic arthritic he chose to retire which he did on 31st October 1929. He was president of the IRSE in 1929 and died in France on 21st April 1931.

John Troughton Roberts – entered LNWR service in Crewe works in 1885 as a pupil of F.W.Webb. He was foreman of Crewe steam shed in 1890 and the following year transferred to the signal department under Arthur M.Thompson in January 1891. In 1903 he was appointed Chief Assistant, Electrical and Signal Dept. and when Thompson retired in 1912 became Signal Superintendent under the Chief Engineer E.F.C.Trench. He retired as Signal Assistant LMSR Crewe on 30th June 1927.

Herrbert Edward Morgan – joined the signal department of The Taff Vale Railway in 1896, firstly in the drawing office, then the workshops and later the line. In 1902 he joined the Westinghouse Power Signalling Company as a draughtsman engaged on Metropolitan Railway schemes and also electro pneumatic schemes in various parts of the world. In 1905 he joined The W.R.Sykes Interlocking Signal Company and was resident engineer on the installation of electro mechanical signalling at Victoria Station on the LB&SCR, following which, between 1909 and 1911 he was signal engineer responsible for design, estimating and manufacturing. He joined the Midland railway in 1911 as Signal Inspector for the Appleby District before becoming Assistant to the Chief Signal Inspector at Derby in 1912 and Chief Signal Inspector in 1913. He was commissioned in The Royal Engineers in 1916 returning to The Midland Railway in 1922 as Chief Assistant to The Signal Superintendent, Derby - Mr W.C.Acfield. He retained this position on the formation of the LMS until Acfield retired on 25th.August 1927, when, on 1st. May 1928 when he was transferred to Crewe as Signals Assistant to District (Civil) Engineer, Crewe. In 1929 he was appointed Divisional Signal and Telegraph Engineer, Crewe with a salary of £1000, increased in £100 steps to £1400 on 1st October 1944. He was President of The Institution of Railway Signal Engineers for the Year 1935, and retired in 1948 and died in Ilfracombe on 2nd. February 1970 .


Mr. H. E. MORGAN.
Modern Transport 21/4/1928 P043A


MR. A. OLDHAM,
Appointed Divisional Signal and Telegraph Engineer, London, L.M.S.R.

Alfred Oldham – joined The London and North Western Railway at Crewe Works in 1890, subsequently being transferred to the signal engineers department where he became Chief Draughtsman. In 1913 he became Assistant Signal Superintendent to J.T.Roberts, continuing as such on the formation of the LMS. When Roberts' retired on 30th. June 1927 he was appointed Signal Assistant to Divisional (Civil) Engineer Derby on 1st. May 1928 with a salary of £1000. On 1st August 1929 he was made Divisional Signal and Telegraph Engineer Crewe with his salary increased to £1200 He retired on 14th. August 1935 with over 45 years service..


Harry William Moore AMIEE

Henry William Moore – was an ex L&YR man, who, up to 1929 was Telegraph and Electrical assistant to Richard Golding Berry, the Signal Assistant, Northern Division at Manchester. On the 1st August 1929 he was appointed Outdoor Assistant (Signals) Derby (HQ) with a salary of £900. When A.S.Hampton retired in 1936 Moore replaced him as Assistant Mechanical and Electrical Engineer and Signal Engineer, Glasgow and he had charge of locomotives for a short time until his position was clarified. He retired in 1944.

William Richard Jones - commenced his railway career at Crewe, spending ten years in the LNWR Signal Engineers drawing office before being placed in charge of signalling in the Stafford and Birmingham District. He then moved to Watford to take charge of the mechanical and electrical signalling of the London District. He held that position for twenty four years before being appointed Divisional Signal and Telegraph Engineer, Manchester on 1st. August 1929 with a salary of £1000, retiring in July 1937 having served the railway for over 50 years..

Sebert Walter Spendlove – Joined the Midland Railway in 1897 in theTelegraph Dept at Derby spending three years at various locations. In 1909 he was appointed to the Northern Division at Skipton where he was in charge of the 6.6kv electric traction at Heysham together with the wireless equipment on the Belfast steamers. In 1925 he was appointed District Assistant (Telegraphs) at Lancaster on £480pa. In 1929 he moved to Manchester as Assistant (Telegraphs) on £575pa. 1937 saw him as Divisional S&T Eng. Manchester following the retirement of W. R. jones on £1000pa.. In 1945 his salary was £1500, retiring on 30/9/1946 and succeeded by Sidnay Williams.

Some LMS personnel at the March 1934 meeting of The Institution of Railway Signal Engineers – top to bottom :-

Alfred Oldham – Divisional S&T Engineer Derby. Henry William Moore – Outdoor Assistant (Signals) Derby. Herbert Hedley Dyer – Development Assistant Derby HQ. E.W.Hallam – not an LMS employee, formerly Signal Superintendent of The South Eastern and Chatham Railway. Samuel Lear Glenn – British Power Railway Signal Company. Herbert Edward Morgan – Divisional Signal & Telegraph Engineer, Crewe), W.S.Roberts – The Railway Signal Company.

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