The LONDON MIDLAND and SCOTTISH RAILWAY

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The

RAILWAY INSPECTORATE

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Railway safety is supervised through the Railway Inspectorate on behalf of Her Majesty's Government. Their chief functions being--

1. ***The inspection and statutory approval of new works on railways carrying passenger traffic.***
2. ***Accident investigation, including the holding of inquiries.***
3. ***Technical advice to the Minister of Transport on general railway matters.***

Contents.

Acknowledgments.
Halsbury's Statutes of England 2nd edition. – Railways and Canals.
Michael Addison.
Tom Rolt – Red for Danger.
Paper by Brigadier C. A. Langley, 1961.
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Chapter 1 - Introduction and Staffing.

The Railway Inspectorate was formed in 1840 once the success of rail transport was established. In the same year the first Regulation of Railways Act *(An Act for Regulating Railways)* was passed, that required companies to give one months notice of the opening of a new railway. The President of the Board of Trade (BOT) was given powers to appoint Inspecting Officers of Railways. The first being Lt. Col. Sir Frederick Smith of the Corps of the Royal Engineers and the last being Major Rose who retired in 1988 when the position became an appointment made by the Health and Safety Executive (HSE). The appointment is now made from the HSE of a mid-career railway employee and is now by public advertisement. As stated the Inspectorate was, until 1988, recruited from the Corps of The Royal Engineers who were responsible for the organisation and running of railways overseas in times of war. To this end several military railways existed for training purposes with perhaps the Longmoor Military Railway in Hampshire being the best known. Readers will also be familiar with several classes of War Department locomotives such as the Riddles 2-8-0, 2-10-0, Stanier 8F and the USA Transportation Corps S160 class 2-8-0 to name a few. In 1960 the staff comprised of the Chief Inspector of Railways, three Inspecting Officers of Railways, the Senior Railway Employment Officer and three Railway Employment Officers together with a small clerical section. The Inspecting Officers undertake the Inspection and approval of new works, investigation of train accidents, failures and accidents to passengers. The Railway Employment Inspectors investigate accidents to railway staff, including contractor's employees and to others on railway business and historically included drovers travelling with cattle and of Travelling Post Offices etc. Her Majesty's Railway Inspectorate (HMRI) became part of the Department of Transport until 1990 when it was transferred to the HSE. Following the move to the HSE, train crash investigations tended to be dealt with as a Public Inquiry presided over by a High Court Judge with the findings published. The transfer to the HSE proved to be unpopular and under the 2004 rail revue the Railway Inspectorate was transferred from the HSE to the Office of Rail Regulation on 2nd April 2006. The Railways and Other Guided transport Systems (Safety) Regulations 2006 (ROGS) now provides the regulatory regime with a common approach for rail safety on all systems including tramways, light rail (including London Underground) and heritage railways. This is supported by the rail Safety and Standards Board (with members from Network rail, all train operators, rolling stock companies and suppliers) formed in 2003 as a recommendation from Lord Cullen's public enquiry into the Ladbroke Grove accident. The aim is to share knowledge and promote bets safety practice. The result of the move to the HSE saw the Railway Inspectorate no longer having any involvement with guided bus, trolley bus and most cable hauled transport systems. The HMRI ceased to exist as a separate department in May 2009 when a single regulatory body covering both safety and economic issues was created, known as the Safety Directorate, although the 180 inspectors are still known as Her Majesty's Railway Inspectorate.

Chapter 2 - Historical and Railway Safety Acts.

The 1840 Act also required railways to notify the BOT of any accident that had taken place although at this time the BOT had no power to order an enquiry as such power was held by

the Inspectorate. The first inquiry was in August 1840 (Howden, Hull & Selby railway). Only new engineering works were subject to inspection with no control being exercised over the design and construction of locomotives and rolling stock. It was, however, due to Sir Frederick Smith and others criticising the bad conditions that 3rd class passengers endured in open trucks that brought about the Cheap Trains Act of 1844. *(An Act to attach certain conditions to the construction of future railways authorised by any Act of the present or succeeding Sessions of Parliament; and for other purposes in relation to Railways).* This forced the railway companies to run one train per day in each direction at an average speed of at least 12 miles per hour at a cost of no more that one-penny per mile for 3rd class passengers. The carriages had to be provided with seats and protected from the weather and the design approved by the Inspecting Officers acting on behalf of the BOT. The trains became known as the Parliamentary's and ran until the passing of The Cheap Trains Act, 1883 (*an Act to amend the Law relating to Railway Passenger Duty, and to amend and consolidate the Law relating to the conveyance of the Queen's forces by Railway),* when it was repealed.

Prior to the introduction of the 'Block System' trains ran under the time interval system, and unpunctuality was rife. Inspector Captain Melhuish, found, during his first inspection in 1840, that this was often due to clocks in different towns varying in time by as much as 10 to 15 minutes, and it was because of his suggestion that London time should become the standard on all railways, becoming known as "railway time"

In 1871 another Regulation of Railways Act *(An Act to amend the Law respecting the Inspection and Regulation of Railways*) was passed that gave the BOT more powers and defined the powers of the Inspecting Officers with the holding of official accident inquiries legalised that included the setting up of formal Courts in special cases. On 28th December 1879 the Tay Bridge collapsed leading to the appointment of one of the few formal Courts (a judicial inquiry) to investigate the disaster. All the 75 passengers and crew perished, the bridge having only been opened six months earlier. It was then debated as to whether construction should have been supervised by the Inspecting Officers, a view not taken by the BOT. The president of the BOT, Joseph Chamberlain, gave the Governments thinking towards railway safety in the following extract*. "If any public department was entrusted with the power and the duty of correcting and guaranteeing the design of those engineers who are responsible for railway structures, the result would be to check and control the enterprise which has done so much for this country, and to substitute for the real responsibility which rests on the railway engineer the unreal and delusive responsibility of a public office".*

As a direct result of the Armagh accident, the Regulation of Railways Act, 1889 (*An Act to amend the Regulation of Railways Act; and for other purposes*) was passed. The accident took place on 12th June 1889 when a full train of 15 vehicles fitted with a non-automatic brake failed to reach the top of a severe gradient. The train was then divided when the rear portion ran back, having not been properly secured, into a following train that had left Armagh 20 minutes later in accordance with the time interval allowed. Seventy-eight passengers were killed and 260 injured. The new Act finally gave the BOT powers to force the following –

(a) To adopt the block system on all or any of their railways open for the conveyance of passengers.

(b) To provide for the interlocking of points and signals on or in connection with any of such railways.

(c) To provide for and use on all their trains carrying passengers continuous brakes complying with the following requirements -.

1. The brake must be instantaneous in action, and capable of being applied by the engine driver and guards.
2. The brake must be self-applying in the event of any failure in the continuity of its action.

3. The brake must be capable of being applied to every vehicle in the train, whether carrying passengers or not.
4. The brake must be in regular use in daily working.
5. The materials of the brake must be of a durable character, and easily maintained and kept in order.

It should be pointed out that many railway companies had applied these three safety features (lock, block and brake), not necessarily to the whole of their lines, but with the passing of the Act it became mandatory. The 1889 Act also dealt with other issues such as sending returns of overtime to the BOT, penalties for fare avoidance and passenger tickets to have the fare printed thereon etc.

The Light Railways Act 1896 *(An Act to facilitate Construction of Light Railways in Great Britain)* was designed to lower the standards of railway construction and therefore reduce the cost. The Act modified the approach of the HMRI as lower criteria applied. It was initially meant to benefit new construction although it has in recent years also been utilised as a means of downgrading ex main line railways, with a modern application to heritage railways such as the West Somerset Railway etc. When considering light railways Colonel Stevens immediately comes to mind with his Shropshire & Montgomery Light Railway, The Weston, Clevedon & Portishead Light Railway to name but two.

As the end of the nineteenth century approached, attention was drawn to the safety of railway employees together with excessive hours being worked by railway staff. This state of affairs had been noted by the Inspecting Officers, who then sought to reduce such accidents that were often due to fatigue etc. The result was the passing of the Railway Employment (Prevention of Accidents) Act, 1900 (*An Act for the better Prevention of Accidents on Railways*) that gave the BOT power to make rules to remove and reduce the risks and dangers to those in railway service. The Act also authorised the appointment of Assistant Inspecting Officers to carry the Act into effect. These officers inquired into the more serious accidents to railway employees under the powers of the 1871 Act. The 1900 Act and its subsequent amendments referred to –

1. Brake levers on both sides of wagons.
2. Labelling wagons.
3. Movement of wagons by propping and tow roping.
4. Steam or other power brakes on engines.
5. Lighting of stations or sidings where shunting operations are frequently carried on after dark.
6. Protection of point rods and signal wires, and position of ground levers working points.
7. Position of offices and cabins near working lines.
8. Marking of fouling points.
9. Construction and protection of gauge glasses
10. Arrangement of tool-boxes and water gauges on engines.
11. Working of trains without brake vans upon running lines beyond the limits of stations
12. Protection of permanent way men when relaying or repairing permanent way.

In 1919 the Ministry of Transport (MOT) was formed and took over railway matters from the BOT, the first Minister being Sir Eric Geddes. In 1921 jurisdiction over Irish railways ceased.

The Road and Rail Traffic Act of 1933, brought railway legislation up-to-date.
Section 21 of the Act amplified the provisions regarding the type of work that required the Ministers approval before new lines could be brought into use and the conversion to electric lines as follows:-

1. Any railway or portion of railway used for the conveyance of passengers.

2. Any additional line, deviation line, station, junction or level-crossing which forms part of or is directly connected with a railway used for the public conveyance of passengers.
3. Any railway that is adapted for electric traction.

In addition the railways agreed to submit for approval all schemes involving "new or altered methods of signalling". Again there was no mention of rolling stock, although an exception had been made with the introduction of "tube" railways when a clause was introduced requiring drawings of rolling stock to be submitted to the BOT to ensure that adequate precautions had been taken against the risks of electric shock and fire.

The Transport Act of 1947 nationalised British Railways and placed them under the control of the British Transport Commission that was charged with providing an efficient, adequate and economical system of public transport with due regard to safety and operation but did not alter the powers of the Railway Inspectorate.

Chapter 3 - The First Inspections and Early Requirements.

This was made by Captain Melhuish on 28th October 1840, and from that time every new line was inspected. There were no procedures laid down but the Inspectors studied the practices in use by the numerous companies who were building new lines throughout the UK. The Inspectorate did much to ensure that the highest standards of design and workmanship were forthcoming, and the lines, when opened, were in a safe condition. With this experience the railway companies were circulated advising them of the main safety measures that the Inspecting Officers were seeking before any new railways could be opened. This was known as the BOT (later MOT) Requirements, the first issue was on 29th April 1858. Further issues followed with bridging first mentioned in 1860, when it was specified that the maximum permissible stress in wrought iron was not to exceed 5 tons per square inch. Steel was first referred to in 1877 when a maximum stress of 6½ tons psi was permitted. Four years later cast iron was banned in bridges except in the form of arched ribbed girders when the material was in compression. Requirements for signalling were also extended over the years as developments took place. The grouping of signal and point levers was first recommended in 1860 when the first elementary interlocking rules were given. In 1892 the interlocking of distant signals with home and starting signals was enforced and the same year saw the standardisation of the signal lamp indications as green for "All right" and red for "Danger". Yellow for "Caution" was only introduced in 1925, the year colour light signals were first mentioned.

Inspections.

No inspection was required for goods lines, goods loops and marshalling yards that may be built without any reference to the Ministry as long as passenger working was not involved. The requirements were not lodged in any legal document, and could be relaxed or altered with due regard for safety, at the discretion of the Inspecting Officer. Before new work was commenced the railway company submitted plans to the MOT for approval. These were examined by the Inspecting Officers, and, in the case of major works, meetings were often arranged with the company concerned in order to settle any difficulties or alterations considered desirable. The Minister's provisional approval was then given, subject to inspection when completed, when the Inspecting Officer submitted a report to the Minister that gave a short description of the work, recommending any modifications considered desirable. The Minister's approval was then given subject to compliance with the Inspecting Officers recommendations. This procedure only applied to new work and not renewals or maintenance as required in certain other countries.

Accident Investigation.

The Railways (Notice of Accidents) Order, 1945 set out the types of accident to be reported as below.

1. All accidents to passenger trains, and to goods trains on or affecting a passenger running line.
2. Mechanical and structural failure, failures of certain defined classes including broken tyres, axles and rails.
3. All cases of trains becoming divided, and all breakages and other failure of couplings on passenger running lines.
4. Accidents to any persons working, travelling, having business or trespassing on the railway, except that incidents to railway servants only have to be reported if they are absent from duty for more than three days.

Modern transport and communication has assisted a process whereby a regionally based 'on call' HMRI can be notified very quickly after a reportable accident and he can decide if his attendance is required or if he will wait for the written report. The HMRI will normally instruct that things should not be touched/moved until he arrives – except to make things safe where there is danger of further mishap. Every train accident report is scrutinised by an Inspecting Officer and those of special interest circulated to the Chief Inspecting Officer and the other Officers. Questions are raised with the Company concerned on matters of doubt. If the accident involves a passenger train fatality then Inquiries are invariably held, as in other cases, when the cause is not obvious or other circumstances prevailed. Inquiries are normally held following serious derailments or collisions involving passenger trains even if there are no fatalities or serious injuries. The decision rests with the Chief Inspecting Officer. Reports on accidents to passengers are also scrutinised by an Inspecting Officer. Many of these relate to passengers alighting from a train in motion or falling out of the carriage or leaning too far out of the window etc, most of which are not possible today with the modern rolling stock. Most of the non-railway movement accidents (ie no train involved) are of a minor nature, with half occurring on the London underground often whilst ascending or descending on escalators. Staff accidents are reported to the Senior Railway Employment Officer who then referred them to the Chief Inspecting Officer if he thought an inquiry should be held that included virtually all fatal accidents. Today an HMRI will attend the scene of most staff accidents. Most of these related to being knocked down when working on the permanent way, coming into contact with overhead electric wires and shunting accidents. Train accident inquiries are held by an Inspecting Officer who normally opens proceedings and hears the evidence in public although it could also be held in private if it was thought that a witness might be prejudiced regarding future criminal proceedings if he gave evidence in public. The Inspecting Officer is not therefore concerned with criminal negligence, or with civil liability. His sole objective is to ascertain the cause of the accident, and, if necessary, make recommendations to prevent such accidents happening again. His inquiry is totally independent of any inquiry the railway may make but the evidence taken at the railway inquiry is always available to the Inspecting Officer. Railway trade unions attend to assist the Inspector. When the examination of witnesses is complete the public proceedings are closed, but generally further protracted investigations have to take place before a final conclusion is reached. Eventually the report is published and sent to the railway management for their observations on the Inspecting Officers findings, but the Minister has no power to enforce recommendations. The Railway Employment Inspectors conduct their inquiries on similar lines, except the public and press are not normally present, nor are the reports normally published in the same way as train accident reports. Each year the Chief Inspecting Officer publishes an annual report on all railways in Great Britain, including British Railways, London Transport and other undertakings not taken over at Nationalisation in 1948. The report includes a brief description of all train accidents, including level crossings, and the cause of failures analysed. A section covers non-movement accidents to passengers and railway servants and statistical information, averages and comparisons to previous years. The whole year is reviewed with a short conclusion expressing the Chief Inspecting Officers opinion with regard to the main factors affecting the years working from a safety viewpoint.

Statistical

Year	Pass. Killed	Pass. Injured	Staff Killed	Staff Injured	**Others Killed	**Others Injured	Staff Employed
1920	6*	684*	372*	4407*	4*	7*	*766,381
1926	13	765	181	2970	Nil	10	689,264
1932	4	214	3	59	9	35	
1938	11	533	7	62	12	49	
1944	12	33	8	18	14	3	
1948	39	77	14	29	21	14	
1956	Nil	474	3	78	15	38	593.245
1964	5	244	9	40	16	57	421,522
1970	2	236	7	78	10	36	273,000
1976	Nil	210	8	64	10	16	245,000
1982	Nil	3 (147)	8	12 (80)	3	3 (19)	221,000
1988	34	75 (540)	2	6 (62)	4	3 (19)	159,000
1993/4	Nil	5 (129)	Nil	84 (91)	9	2 (15)	148,000
2003/4	Nil	26	2	Nil (4)	8	18	132,000

* Denotes the figures include Ireland.
** Denotes other persons killed or injured at level crossings, travelling Post Office staff etc.
Figures in brackets were minor injuries.
The 1988 figures were influenced by the Clapham accident.

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This monologue belongs to a series produced by members of the LMS Society to provide a background to the activities and achievements of the LMS Railway during its existence from 1st January 1923 to 31st December 1947

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