

BRITISH RAILWAY RULE BOOKS

By

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Part I – Origins

INTRODUCTION

In any industrial business there is usually going to be an associated safety risk. Historically, in many businesses skilled staff went through a formal apprenticeship while in other businesses there would have been some sort of training on the job. Until the later part of the Victorian era, these training methods were probably more focused towards the maintenance of high standards of workmanship, or the prevention of financial loss to the owner rather than the safety of the workforce. An accident would disrupt or halt production, or result in direct loss of product or sales. The loss of a skilled worker was an annoyance as training time had been invested, but the loss of unskilled labourers was almost regarded—in early Victorian times or earlier—as an inevitable consequence of ‘dangerous’ work.

The reliance on ‘on the job’ training was understandable when manual skills predominated and in any case the standard of education was such that many manual workers would not have been able to read or write—these basic skills did not receive serious attention until the education reforms of 1870. There is therefore little written evidence of any widespread use of safety manuals until late Victorian times.

The mining industry typifies the general approach to safety in an especially hazardous environment. Collieries have a very long history and are self-evidently dangerous places. Existing in large numbers mainly under entirely separate and independent ownership there was no safety coordination or knowledge sharing, and accidents (of which there were huge numbers) were not disclosed unnecessarily. Such safety improvements as the safety lamp were brought about by independent parties spurred by a desire to reduce the carnage, and there was little leadership from colliery owners. In 1812, for example, there was an especially horrific fire-damp explosion at Felling colliery where 92 men and boys were killed; the mine owner was less than anxious to publicise the causes of the incident and it was left to a local parson to broadcast the cause. This set off a train of events which resulted in recommendations to improve ventilation of mines and the introduction of the safety lamp, objectives achieved mainly through peer pressure as the government was slow to interfere. It was not until 1850 that the government was shamed into creating a mining inspectorate but it was another five years before parliament required all coal mines to adopt a ‘general safety code’ with additional “special rules” designed for the local conditions. Although the formalization of rules was a step forward an enquiry into the dreadful explosion near Pontypridd in 1913, where there were 439 deaths, revealed at least fourteen breaches of regulations designed to stop this type of accident, so enforcement of the rules was at best patchy and at worst simply ignored, the rules being regarded perhaps as mere inconvenience or perhaps simply beyond the capability of the management of the day.

The coal mining industry was not untypical of a dangerous business slow to adopt a formal set of rules ultimately designed to facilitate uniformity, ease of training and safety improvements by introducing a measurable standard designed to save lives and reduce loss. It wasn’t until the late Victorian period when proprietors of potentially dangerous business discovered that the probability of substantial and pointless loss was very high and could be extremely ex-

pensive, and it wasn't really until the late twentieth century when it was accepted by competent and reasonable managers that by addressing safety issues they could run their businesses more efficiently—it was better business to prevent a serious accident than to deal with the aftermath of one. A number of serious avoidable accidents (like the Piper Alpha oil rig disaster), and the usual after-the-event legislation helped hone this view, but it is nevertheless accepted that it is good business to be safe, and efficient safety and procedure manuals are very much part of this process.

A brief word might be said on long-standing organizations that have had procedures manuals for many years, and the extent to which (if at all) these influenced anybody else. The earliest manuals yet considered are probably those of the Royal Navy, which have certainly had written instructions since 1701 (the earliest identified, entitled *Sailing and Fighting Instructions for HM Fleet*, with *Queen's Regulations* apparently emerging in 1844). The Army, or branches of it, also has long standing instructions which found their way into the Army's set of *Queen's Regulations* (the earliest distillation of Army instructions unearthed is dated 1686). Inspection of a late Victorian copy of these regulations indicate they were very much focused on a rigid command and control structure that enabled a vast body of men distributed around the world to function as one body. There was little 'process' or specific 'safety' material in it, and thus these documents did not readily lend themselves as a model for other organizations to follow. Nevertheless managers who had served in the army would doubtless have been influenced by the way that military discipline produced uniformity of output.

Turning now to the railway industry, it must first be said that its origins may be found at the forefront of the industrial revolution and that there was therefore little in the way of precedent. Like other industries of the day, railway businesses were privately owned and at first quite unregulated. It is of interest that the industry was amongst the first to establish the need for a uniform method of working, and this article describes how this all came about.

EARLY RAILWAYS

There have been railways in this country for hundreds of years, though the early, primitive railways of the late seventeenth to early nineteenth centuries did not resemble anything like the systems that exist today. Quite apart from the obvious lack of physical similarity, the way in which the lines were used and operated was also very different from modern practice. The earliest lines were an integral part of the industries they served, being used to transport mineral products around mine workings, quarries, ironworks and similar early industrial enterprises. The common requirement to move very heavy and unwieldy materials with a single horse or small group of men was the spur to developing low-friction running surfaces such as those which characterized 'rail'-ways.

The early trackwork consisted of wooden (later iron) rails mounted on blocks, or plateways that offered a flat surface and a guidance flange; the advantage of a plateway was that it allowed certain ordinary carts to use the railway. The true 'railway', which came a little later, required the use of more specialist vehicles using wheels with either one or two flanges in order to keep them on the rails. In either case it was necessary for the vehicle wheels to be the right distance apart for the track gauge employed.

Apart from these small (but proliferating) railways, slightly larger systems then developed as mounting output produced major distribution problems. Minerals were often transported around the country by coaster, and railways served to transport minerals to the nearest dock on a navigable river, or even to small ports. The evolution of canals during the later eighteenth century began to solve the awkward problem of distributing products around the interior of the country, particularly to areas some way from navigable rivers. Nevertheless canals (preferring level land) could not usually be brought close to the hilly territory which characterized many mineral workings; railways therefore developed to bring minerals from the workings down to the canal level, where exchange sidings and a dock would be provided (a few canals sponsored their own railways as feeders). Some of these lines would be several miles long, and sometimes include very steep gradients requiring working by ropes. Such systems were generally worked by the mine or quarry concerned, and would generally follow routes over a single owner's land; lines such as these were constructed until at least the late nineteenth century, and in latter days would be built to serve a more modern railway for onwards transmission of produce instead of a canal.

Little is known about the mode of operation of these lines. The movement of minerals from source to the point where outside carriers would take over was integral with the rest of the activities within such mineral workings; it is very doubtful if any specialist rules existed for the 'railed' element. But even if nothing were written down, *procedures* there must have been, even if self evidently obvious. First fill your wagon, then attach your horse, then pull wagon to the canal-side (perhaps having to set points on the way), then empty wagon into barge, then return wagon to holding siding for later use... One can imagine procedures developing rapidly on the first occasion a loaded wagon rolled away, or when overloading caused a wagon to tip over. So long as life was this simple we may presume, perhaps, that such procedures were simply handed down from one generation of workers to the next.

Few of these early railways had any statutory basis; they were merely a means of private conveyance of materials over private property all in the possession of the proprietor, or occasionally in the hands of several landowners whose permission (or wayleave) was obtained. The first railway to employ an act of Parliament to support its construction was the Middleton Railway, in 1758; the railway was promoted by Charles Brandling who owned some coal pits and the railway facilitated the movement of coal to Leeds. The Act was required to give him the right to demand compulsory wayleaves over others' lands. The line was laid with wooden rails allowing horse drawn carts to operate, but was re-laid with edge rails around 1807.

From the early days of the nineteenth century there began to arrive a new sort of railway, the 'public railway'. The first of these was the Surrey Iron Railway, opened in 1804 between Wandsworth and Croydon. Technically it was little different from its predecessors: the main change was in the way it was promoted and managed, for it followed canal practise closely. The result was a private 'way', authorized by Parliament, upon which carriers (ie the public at large) could operate suitable vehicles upon payment of tolls. The vehicles were, of course, wagons used to convey goods and minerals, and were propelled usually by horses, either walking between the rails or along an adjacent towpath. Groups of wagons hauled together became the first trains — there were advantages in spreading loads among a group of smaller wagons, especially when brittle iron rails were in use. However, some of the canal companies

which also built feeder railways had also made these lines available to a variety of users, so in practice a number of these general user lines had sprung up.

In the same year Parliament authorized the Oystermouth Railway, opened in 1806 between Swansea and Oystermouth (and, later, Mumbles Pier). This, too, was intended for the conveyance of coal, iron-ore and limestone in horse-drawn wagons, but as with the Surrey Iron Railway this, too, was intended to convey anybody's traffic for a toll. However, in 1807 the company obtained parliamentary authority to carry passengers; it did not do so on its own account but sold for £20 a concession to do so for a year to a Mr Benjamin French, who operated tram like passenger vehicles pulled by horses, the service starting on 25th March 1807. This was possibly Britain's first UK rail franchise, and turned out to be lucrative as subsequent concessions were let for larger sums of money to multiple contractors, the concession fees in effect being paid in lieu of tolls.

The origins of **railway** rules may well have started with those for turnpikes, navigable rivers and then canals, rather than with the early private railways. Both turnpikes and canals were 'public' ways under 'private' control; turnpikes were rights of way managed (usually for a term of years) by a public trust, while canals were generally under private ownership. In both cases the owners or managers produced their income from toll fees collected from the turnpike or canal's users — neither would normally act as carriers. The fact that a variety of users could use these ways at will meant that there was a need for some sort of regulation — both for the maintenance of good order and to ensure the turnpike or canal owners' interests were looked after (particularly with regard to payment of the tolls). These requirements had obviously to be communicated to the vehicle operators or other users: the principle requirements, together with rates and tolls, were often painted on boards situated within convenient sight of the users.

In following turnpikes and canals, the Surrey Iron Railway and similar concerns would have been able to take advantage of the experience already gained in dealing with comparable problems, resulting in similar solutions being implemented.

In understanding the environment in which the earliest form of railway regulation was imposed, it is important to remember that the lines described above merely constituted the land, trackwork, toll-houses and ancillary structures. Of the permanent staff provided by the railways' proprietor, there would have been very few, and would have included people such as toll collectors and enough to provide a minimum of maintenance. Although a few concerns also made wagons or horses available for the conveyance of goods, many did not do so and the general public were able — indeed obliged — to provide their own conveyances without further assistance from the railway.

EARLY RULES, REGULATIONS AND BYELAWS

The modern road transport phenomenon of the selfish parking where they like, and of road haulage proprietors tolerating the overloading of vehicles, appears to have been inherited from our ancestors who made use of the railed highways two hundred years ago. It was not very long before the railway owners identified the need to introduce legally enforceable regulations in order to control what might otherwise have been regarded as common sense.

The need for vehicles to be tied to a fixed track meant that railways differed from roads (and to a lesser extent canals) in a number of ways; in particular the obstructing of the line with a wagon would bring **all** traffic to a halt, and the track was prone to breakage if misused — which would also halt traffic, perhaps for some time. Obstruction was equally undesirable for the owner (who lost toll fees) and other users (whose goods would be delayed).

Regulation was introduced through the medium of bye-laws, as had proved necessary on canals. These were a feature of ‘statutory companies’ and were, in effect, rules made by the companies which were enforceable by law (so far as the courts deemed them reasonable). Byelaws seem to have originated towards the end of the eighteenth century, and in their application to railways initially tackled the obvious areas of wagon gauge, laden weight and brakes.

By way of examples, a 1794 byelaw of the Brecknock & Abergavenny company required that *every wagon used on the Rail Roads belonging to this company shall have double brakes*. The railways of the Monmouthshire Canal Company had a byelaw in 1795 that dictated a maximum gross laden weight of 70 cwt, but a number of rail breakages had brought this down to 30 cwt by 1799 and then restored it to 70 cwt by 1830 by way of three intermediate stages. The Lancaster railway was imposing a 40 cwt limit in 1800 and the byelaw imposed a penalty of one shilling for each hundredweight in excess.

Most of the penalties imposed by the byelaws just described were enforceable upon the wagon **owners**, and it is not surprising to see that it had soon found itself to be necessary to put some sort of identifiable mark upon the wagons in order to identify who their owners were — the word of the wagoners evidently having not demonstrated the necessary reliability. The Hay Railway required the name and address of the owner, and his wagon number, to be conspicuously marked on the wagon (1816 byelaws); the Ashby company went further by making it illegal to use a fictitious name and address. By 1811, the Monmouthshire company only required numbers but made it an offence for the wagon driver to refuse to give information about the owner. Later this company required owners to register all their wagons at the company’s head office (as were their canal boats) so that lists of authorized wagon weights could be given to the toll keepers.

It also became necessary to specify the wheel gauge in the byelaws, together with such things as wheel width and type of flange — the use of wrongly gauged vehicles apparently being a source of damage.

Some Byelaws were enforceable on the wagon drivers, particularly those resulting from vehicle misuse. The driver had usually to ensure, for example, that his load did not project so that it might collide with other wagons, or the fences or track, and that it was safely secured. If the wagon derailed he had to get it back on the rails as quickly as possible (on the Hay Railway he had to get it back within fifteen minutes or get it completely clear of the line). In 1806 the Monmouthshire company required drivers to carry a ‘Jack, or Lever’ to help manoeuvre a derailed wagon back onto the rails, and prohibited the use of the horses for this purpose. The Lancaster company had a similar byelaw in 1807. Several companies made it an offence to continue to draw any wagon which had got off the rails, noting the damage caused by this carelessness. The byelaws of at least one company imposed a fine for each yard above the first ten that a derailed vehicle was moved.

Byelaws existed to ensure that a driver was ‘not to suffer his wagon to run against another’, to stop unnecessarily so as to obstruct the line, and an empty wagon could only be left on the

main line with the consent of the company's agent. On the Ashby line, if a wagon continued to obstruct the line after the driver had been requested to remove it, a fine was imposed of five shillings an hour for the time the obstruction continued as well as the agents being given powers to take more summary action. At night, wagons had to be left on the 'turnouts' and not on the main line.

There was considerable variation between the different companies, and between them innumerable other byelaws existed covering all manner of things ranging from trespassing to rules dictating which wagon was to give way if two approached each other in different directions.

It was common for the byelaws to be displayed prominently on notice boards, although posters and handbills are known (though one might wonder if the extent of the infringements of these directions was itself a reflection of a general inability to read). Clearly the 'operational' nature of these byelaws meant that they were, in effect, amongst the first railway rules — though we are, as yet, a little way from the concept of a rulebook.

It is a little doubtful if the 'private' railways of the coal, iron and mineral industries quite fall into main rulebook story. The lines were concentrated on private land, out of the way of the public, and were just another part of the general mining or production process. Indeed, safety concerns about the railway element of those industries probably ranked amongst the lowest priority in comparison with the other dangers of quarrying or mining. There may, of course, have been some rules for significant areas of danger, such as in the operation of inclined planes where things needed to be done in the right order if catastrophic results were to be avoided. Whether such 'rules' were originally written down is another matter.

The Byelaws of the Hay Railway are known and are reproduced below, as an early example of printed regulation. This line ran mainly between Brecon and Hay on Wye and was opened in part in 1816. Tolls were charged dependent on the type of merchandise, varying between 1½d and 6d per ton. No provision was made within the scale of tolls for carrying passengers (though horse drivers were not allowed to do travel on the wagons), and following discovery that passengers were in fact being carried the tolls were adjusted in 1926 to capture this apparently useful revenue.

BYELAWS OF THE HAY RAILWAY

THE HAY RAILWAY COMPANY

At their Special General Assembly holden on the Eleventh Day of June, One Thousand, Eight Hundred and Sixteen, for the Government and good Order of the Railway.

I. THAT the Owner or Owners of every Wagon, to be used on this Railway, shall cause his, her, or their Name and the Number of the Wagon to be marked in large Letters and Figures thereon; and shall, within three Days after the Wagon is put on the Road cause the same to be weighed and registered by the Toll Clerk at one of the Company's Weighing Machines; and the Weight marked in conspicuous Characters on each Side thereof; and the Owner or Driver of any Wagon on the Railway, that is not so marked, weighed, and registered, shall, for each Offence, forfeit and pay any sum not exceeding Forty Shillings, nor less than Ten Shillings.

II. THAT no Wagon shall be permitted to pass on this Railway, the Wheels and Axles of which are not fitted to the Gage of the Rails, or which is so constructed in any of its Parts as to injure or tend to injure the Railway, or impede the Passage thereof, but the same shall and may be stopped, unloaded, and turned out of the Road by any of the Company's Servants, or Workmen, and the Owner thereof shall forfeit and pay for every such Wagon the sum of Forty Shillings.

III. THAT no Wagon shall be suffered to pass on this Railway that shall, with its Lading, exceed Fifty Hundred Weight, except the Lading be in one entire piece. And the Owner of any Wagon laden contrary to this Direction, shall, for each Offence, forfeit and pay the sum of Forty Shillings.

IV. THAT if the Lading of any Wagon shall project from its sides or ends, so as to injure the Railway or

Fences, or interrupt the Passage of other Wagons; or, if from want of proper Repair or Neglect, the Contents of any Wagon shall on its Passage be scattered in the Railway, so as to clog the Plates, or in any way injure the Plates or Road, or impede the Passage of the same, the Driver of such Wagon shall, for either Offence, forfeit and pay any sum not exceeding Forty Shillings nor less than Twenty Shillings.

V. THAT if any Driver of a Wagon, or other Person, shall draw or turn any Wagon out of the Road across the Rails, except the same from accident or bad construction is disabled from proceeding, he shall for each Offence forfeit and pay the sum of Twenty Shillings.

VI. THAT if a Wagon shall, by accident, get off the Plates the driver of the same shall immediately use every effort to replace it; and if it shall have been dragged out of its Track more than ten yards, he shall for every yard it shall have been so dragged over and above ten, forfeit and pay the sum of Five Shillings.

VII. THAT if the Driver of a Wagon shall be seen riding thereon, or shall put his Horse or Horses beyond a walking Pace, he shall, for either Offence, forfeit and pay the sum of Ten Shillings.

VIII. THAT if any Driver of a Wagon shall unnecessarily halt his Horse or Horses, so as to obstruct the Passage of the Railway, he shall, for each Offence, forfeit and pay any sum not exceeding Five Pounds, nor less than Ten Shillings.

IX. THAT if any Person shall wilfully do any other act or thing, not before mentioned, whereby the free Passage of the Railway is in any way obstructed, or impeded, or which shall in any way injure or tend to injure the Railway, or any of the Works connected therewith, such person shall, for every such Offence, forfeit and pay any sum not exceeding Five Pounds, nor less than Ten Shillings.

X. THAT if any person shall take off a Linch Pin, Washer, Wheel, or any other part of the Apparatus belonging to a Wagon used on this Railway, without the consent of the Owner thereof, he shall, for each Offence, forfeit and pay any sum not exceeding Five Pounds, nor less than Twenty Shillings.

XI. THAT any Driver or Owner of a Wagon who shall have a Tram Nail in an Axle Tree, (instead of a proper Linch Pin,) or have a Tram Nail in any other part of a Wagon shall, for each Offence, forfeit and pay the sum of Twenty Shillings.

XII. THAT no Driver of a Wagon shall, in consequence of any accident happening thereto, delay or impede the Passage of the Railway for more than fifteen Minutes, but if, at the expiration of that time, he shall not have repaired the Damage, so that the Wagon is enabled to proceed, he shall, with all possible speed, remove the same from the Road, on pain of forfeiting, for each Offence against this direction, the sum of Forty Shillings.

XIII. THAT no Wagon, not immediately in use, shall be suffered to remain on the Line of Railway, or on any Passing-Place belonging thereto, except with the consent of the Company's Agent, under a Penalty to the Owner or Driver Thereof of Twenty Shillings for each offence.

XIV. THAT when Wagons, travelling in opposite directions, shall meet on any other Part of the Railway, than the Tunnel, the Driver, who shall be proceeding towards Brecon, shall immediately draw back his Team to the Passing-Place behind him, and remain there till the others have gone forward, on pain of forfeiting for each Offence against this Direction, any sum not exceeding Five Pounds, nor less than Ten Shillings.

XV. THAT all persons, having occasion to convey any Goods, Wares or Commodities on any part of the Railway short of the Public or Private Wharfs, and without passing through either of the Stoppages, shall obtain a Consent in writing, for that purpose, from one of the Company's Agents, or from one of the Toll Clerks, for the time being, (which consent such Agent or Toll Clerk is directed to grant immediately on application being made to him; and shall deliver to such Agent or Toll Clerk a just account of the Weight and Description of the Goods intended to be so conveyed; and any Owner or Driver of a Wagon, or other Person who shall, with intent to avoid Payment of the Tonnages, payable to the said Railway Company, load, unload, or take into or from any Wagon any Goods, Wares, Merchandize or Commodities whatsoever, liable to pay such Tonnages, at any other place than upon the Public or Private Wharfs upon or belonging to the said Railway; or if any persons shall do any other act, with intent to evade the Payment of such Tonnages, every such person, so offending, shall for every such Offence, forfeit and pay any sum not exceeding Five Pounds, nor less than Ten Shillings.

XVI. THAT all Wagons arriving at the Company's Wharfs to be loaded or unloaded, shall be under the controul of the Company's Agent and Wharfinger for the time being, and shall be shifted or removed as he shall direct, with a view to the general Convenience of the trade; and any Owner or Driver of a Wagon, who shall refuse to submit to any such reasonable directions, shall, for each Offence, forfeit and pay any sum not exceeding Forty Shillings, nor less than Ten Shillings.

XVII. THAT no Wagon shall be permitted to pass along this Railway at any other times than between the hours of six in the morning and six in the evening, during the months of November, December, January, and February; between the hours of five in the morning and eight in the evening, during the months of March, April, September, and October; and between the hours of four in the morning and nine in the evening, during the months of May, June, July and August, in every year, without the consent of the Company's Agent or Toll Clerk for the time being, except such Wagon shall have been unavoidably delayed from accident, under a penalty to the Driver thereof of Twenty Shillings for each Offence.

XVIII. THAT the hours during which the Gates of the Company's Wharfs shall remain open, shall be the same as those in which the Wagons are allowed to travel on the Railway; and if any Trader, Wagoner, or other person shall refuse to quit any of the Wharfs, at the time the Company's Wharfinger is authorized to close the Gates, upon being required by him so to do, such Trader, Wagoner, or other person, shall, for such offence, forfeit and pay any sum not exceeding Five Pounds, nor less than Ten Shillings.

XIX. THAT if any Driver of a Wagon, or other person, shall break the Lock, or force a passage through any of the Company's Stopgates, he shall, for each Offence, forfeit and pay the sum of Five Pounds.

XX. THAT no person shall make a Road across, or break Gaps through, or in any way injure or destroy, or cause to be injured or destroyed, any part of the Fences belonging to the said Railway, upon pain of forfeiting for every such Offence, any sum not exceeding Five Pounds, nor less than Forty Shillings.

XXI. THAT no Wagon be allowed to pass on the said Railway, or Business be done at any of the Wharfs on Sundays, Christmas Day, Good Friday, or on any Day of Public Fast or Thanksgiving.

XXII. THAT no Wharfinger, Clerk or other Servant of the Company shall, under any pretence or colour whatever, ask, demand, or receive for doing any part of the business incident to his Employment for the Company, any other pay or gratuity whatsoever, than what shall be paid him by the said Company.

XXIII. THAT all persons convicted in any Penalty under either of the aforesaid Bye Laws, shall, over and above the said Penalty, pay all Fees and Expences attending such Conviction, provided the said Penalties, Fees, and Expences shall not altogether exceed the **sum** of Five Pounds.

XXIV. THAT one Half of the Penalty or Penalties inflicted on any Offender or Offenders, for breach of any of the foregoing Bye Laws, Orders and Regulations, shall be paid to the Informer on Conviction of the Offender.

GENERAL DIRECTIONS

For the Toll Clerks, Servants, and Workmen employed by the said Company throughout the Line of Railway.

THEY are respectively required to take notice, that the several Bye Laws, Orders, and Regulations, as above printed, are observed and obeyed by all Parties whomsoever, within their several Departments, as far as they are able. And they are respectively required to give the earliest information of any Offences committed by any Person or Persons within their knowledge or observation to the acting Magistrate, nearest to the places where any such Offences shall be committed, in order that the Offender may be punished according to Law; and in all cases of doubt or difficulty, such Toll Clerk, Servants, or Workmen, are required to consult the Company's Clerk, or Agent, previous to proceeding. And these Instructions they are required strictly to observe on pain of the Company's Displeasure.

BY ORDER OF THE COMPANY,

JAMES SPENCER, Clerk.

THE DEVELOPMENT OF RAILWAYS AS CARRIERS

As these early public tramway systems gave way to more modern railways rules became increasingly necessary, either because physical conditions required things to be done in a particular way, or as a result of accidents which highlighted specific dangers or significant potential for loss of goods or excessive delay — perhaps even loss of life. Two threads emerge: firstly the development of procedures and safety rules on both the 'ancient' and the public lines (even if they were not written down), and secondly rules for the control of the public and goods carriers, often met with byelaws.

After 1804, a number of new lines had opened, again all deemed to be public railways. Track technology was gradually improving and malleable iron was now replacing cast iron rail, improving reliability and speed. The Oystermouth line passed byelaws in 1806, just prior to the line opening, just as the Surrey Iron had done. The byelaws were displayed on or about the railway to be visible to anyone using it and this became the pattern.

By the time the Stockton & Darlington Railway opened in 1825 philosophies had progressed very little, it too being conceived as a goods line available to all comers. As with the Oystermouth line two decades earlier the carriage of passenger traffic suggested itself, again in the form of horse-drawn vehicles. Prospects looked healthy and four separate coaching proprietors came forward (the vehicles being exact replicas of the road coaches of the day, though on flanged wheels).

Apart from the carrying of passenger traffic, the Stockton & Darlington Railway also differed from most of its predecessors in that it successfully employed the use of some steam

locomotives, although horses still predominated. But amongst these interesting developments the Stockton company was still viewed as a 'toll road' for the carriage of such traffic, vehicles and motive power as presented itself — providing such users met the restrictions imposed by the byelaws. By the early 1830s it was becoming obvious that horses, steam locomotives, goods, passengers and innumerable operators were an unhappy combination, and that it was going to be impractical to make the railway available to all comers for ever. The coach operators were thus bought out by the railway company, and it will be appreciated that this move produced a new element in the history of rulebooks — the arrival of a railway's own 'operating' staff, in addition to those they already had who provided the infrastructure. In due course the Stockton railway also went into the goods cartage business, and steam engines were to replace horses for ordinary haulage. This was the dawn of a very different approach to railway operation, and one that in a very short time superseded the old ways.

As the last of the 'old' railways we might perhaps examine the Stockton & Darlington's regulations. These were initially laid down in ten 'rules' set out in the company's Act of incorporation of 19th April 1821, which established fines for those failing to preserve order and security on the railway. These were of a fairly general nature. Two rules had attached to them the massive (for the day) fine of £5, these required wagons to be especially constructed for the railway, to bear the owner's name and wagon number in 3-inch high lettering, and to allow the company to gauge wagons if it felt fit. By July 1826 these rules were supplemented by 24 byelaws and 5 rules concerning wagons taking to sidings, all of these suggesting that there were shortcomings in the original rules which were discovered as an early result of operational experience. These are also reproduced below. The distinction between the constitution of the rules and the byelaws is confusing. Although the S&D operated both passenger and goods trains there is no record of additional formal rules or any form of signalling. The company in 1932 contemplated erecting three huge visual telegraph stations to provide some form of communication along the line but the proposal was blocked by an influential landowner, and driving 'on sight' was all that could be done.*

The S&D was essentially at first single track. The issue of possible collisions did not really arise because of the low speeds involved, but vehicles could only pass each other where there were sidings (or more correctly loops), so drivers had to be alert to spot a train coming the other way and stop at a loop or take a view about which was nearer a loop if trains encountered each other between them. By 1833 locomotives were used universally, and the track had been doubled, with one road for each direction of traffic, so these irksome difficulties were at an end.

The S&D did have some signalling at the inclines where rope haulage was in use. These involved either gongs or disks to indicate the state of readiness of the various staff involved and indicate to the engineman when to start and stop the rope. This must have required some procedure to be adopted but it may not have been written down.

In addition there seem to have been some night signals, found necessary with increased locomotive working and higher speeds. A board marked 'signal' (but a lamp at night) was mounted ahead of the level crossings to remind drivers to sound a warning bell (locomotives were not then fitted with whistles). Similarly, lamps were placed at the stopping places if there

* Two centuries of Railway Signalling, Kichenside & Williams

were passengers waiting to get on, or else the train would non stop. A burning brazier is said to have been used as a form of tail lamp.*

STOCKTON & DARLINGTON RAILWAY

Extract from the Act of Parliament in the second year of George IV, concerning the before-named railway.

- (1) Everyone who neglects or refuses to give to the tollkeeper a written statement of the quantity of goods or other objects in the wagon or other vehicle, a written proof of their origin and destination, or refuses to show a waybill or who imparts wrong information, or who consigns or delivers any part of the load to another point than is shown on the bill of lading, incurs a fine of not more than 10 shillings.
- (2) Whoever rides, leads, or drives a horse, mule, donkey, cow, or any other cattle on to the railway or on to any place belonging thereto, incurs a fine of not more than £2.
- (3) Everyone who passes across this railway with a wagon or other vehicle which is not constructed specially for the way, with the exception of the possessor of the adjacent land; or on a public or private road, incurs a fine of not more than £5.
- (4) Every owner of a wagon who neglects to register his name and address and the number of his wagon or vehicle with the clerk of the company, and who neglects to paint on it the name and number in white letters at least 3in. high on a back ground, or who refuses to allow the wagon to be gauged or measured at the expense of the company, incurs a fine not exceeding £5.
- (5) Damage of any kind which is caused to the railway, or to the material going along it, or to the adjacent land, by any wagon or other vehicle, or by the wagon driver or other person belonging to it, when such damage does not exceed £20, the author of the same shall repay the amount of the damage, and in addition, shall incur a fine not exceeding £2.
- (6) Whoever neglects to shut gates made over the railway through which he has passed, incurs a fine not exceeding £2.
- (7) Every yard inspector who gives anyone priority in the loading or unloading of wagons incurs a fine not exceeding £2.
- (8) Whoever leaves a wagon standing on the railway and thereby obstructs the way, if he refuses to remove it when requested to do so, incurs a fine of not over 5 shillings.
- (9) Whoever trespasses on the railway, and demolishes or destroys any part of it, or steals anything from it, incurs the same punishment as that incurred for a felony.
- (10) Tollkeepers who demand or raise a larger toll than that set down by the company, incur a fine not over £5.

Fines fixed by the Bye-laws of the Railway Company; brought into operation 11 July 1826

- (1) Every attendant who leaves unattended his horse, wagon, or locomotive engine, which travel on the railway, incurs a fine not over 10 shillings.
- (2) Every attendant who, at the request of a shareholder, agent, or official of the railway company, refuses to give his baptismal and family names, his place of abode or the name of his master, incurs a fine, not exceeding £2.
- (3) Everyone who draws away a wagon except by the special turnout points, incurs a fine not over £5.
- (4) Everyone who goes over the railway one hour before sunrise or later than one hour after sunset, without written permission from the company or its agent, incurs a fine, not over £2.
- (5) Every wagon driver or owner of wagons, of which the track width does not measure 4 ft 5½ in. from the outside of the wheelrims, the breadth of the wheels 3 in., and the distance centre to centre 4 ft incurs a fine, not over 5 shillings.
(N.B. The distance of the axles is, however, only 38½ in. Rheinl.)
- (6) Every wagon driver or owner who does not have a suitable brake, with which to regulate the speed, incurs a fine of not over £2.
- (7) Every wagon driver who allows coal, stone, or other material, which fall from his wagon, to remain lying on the railway; and thereby obstruct the line, incurs a fine not over £2.
- (8) Every wagon driver, who does not at once inform an official of the company, when a wagon passing along the railway has broken or displaced a rail, incurs a fine not over £2.
- (9) Everyone who refuses to deposit, in the place appointed by the depot overseer, goods or merchandise which ought to be unloaded from a ship, wagon, or other vehicle at a depot of the company, must bear the cost of any damage arising out of such refusal, and in addition incurs a fine not over £2.

* Two centuries of Railway Signalling, Kichenside & Williams

(10) Every proprietor of coal, lime, minerals, lead, goods, or merchandise, who leaves these on the railway for too long a time, so that the haulage is hindered, must compensate the company for the cost of removing them.

(11) Every agent or toll collector who is either an owner or part owner of wagons or horses which pass over the railway, or the merchants or traders in beverages, foodstuffs, and goods of other kinds put on the railway, without written permission of the committee or sub-committee, incur fine not over £5.

(12) Everyone who travels with empty wagons on the railway, and refuses to take to the siding when loaded wagons approach, incurs a fine of not over 10 shillings

(13) Everyone who refuses to take to the siding when a locomotive engine approaches, incurs a fine of not over 10 shillings

(14) Every attendant of a locomotive engine who allows anyone at all, apart from the assistants or agents of the company, to travel on the engine or wagons connected with it, incurs a fine of not over 10 shillings

(15) Every engine attendant, vehicle or wagon driver, who leaves the coupling chains or bars of the wagons anywhere on the railway, except in the depots or at the foot of the eastern slope of the Brusselton incline, incurs a fine of not over 10 shillings

(16) Every engine attendant, vehicle or wagon driver, who carries coal, good, or other materials in the company's wagons, and neglects to lubricate the axles of these wagons properly, incurs a fine of not over £1.

(17) Everyone, apart from the agents and servants of the company, who travels on a wagon or locomotive engine on the railway, without permission of the company or its agents, incurs a fine of not over 10 shillings

(18) Every engine attendant or wagon driver who neglects to inform the company or its agents when a wagon or vehicle collides with something on the railway, incurs a fine of not over 10 shillings

(19) Every engine attendant or wagon driver who neglects to put the wedge in the points in the position corresponding with the main line, incurs a fine of not above £1.

(20) Every engine attendant or wagon driver who takes to the siding and neglects to place the wedge in the points so that the wagons can follow down the side line, incurs a fine of not more than £1.

(21) Everyone who puts coal, stone, lime, wood, or other materials on the railway, or on the side path of the same, incurs a fine of not over £1.

(22) Every agent or servant of the company who neglects immediately to inform the sub-committee or one of the clerks of the company, of the infringement of one of the above regulations, when such comes to his notice, incurs a fine of not over 10 shillings.

(23) Every owner or driver of a wagon on the railway, which is used for the transport of passengers, who refuses to follow the directions and rules of the company, its committee or sub-committee, regarding the departure of coaches or other vehicles from Darlington, Stockton, or any other point on the line, or the positioning of any coach or other vehicle, or who acts against these rules, incurs a fine of not over £2.

(24) Every proprietor or driver of a coach or other vehicle intended for the transport of passengers on the railway, who, with the exception of the passenger's effects, takes on other parcels or baggage weighing more than 28 lb, incurs a fine of not over £2.

Regulations concerning taking to the Sidings

(1) When a train of loaded wagons going down the line meet another loaded train coming up the line, the first takes to the siding, except when the wagons meet between the sidings; in this case the loaded wagons going up are taken back, down the line, to the nearest siding.

(2) All empty wagons going up or down take to the nearest siding, when they meet loaded wagons.

(3) Locomotive engines need not take to the sidings, except when meeting one another, in which case the empty train takes to the siding.

(4) A passenger coach need not take to the siding, except when it meets a locomotive engine or a train of loaded wagons.

(5) For the infringement of these rules, a fine is incurred, not exceeding 10 shillings.

THE ORIGIN OF 'MODERN' RAILWAYS

The first 'modern' railway was the Liverpool and Manchester Railway, opened in 1825, the opening ceremony taking place on 15th September. The line was laid out for relatively high

speeds (for the day) and employed steam traction from the beginning. From this point onwards the old-style railways went into gradual decline, though some (often known as tram-roads) survived for well over a century longer. The future lay in well-engineered and mechanically powered lines. Stations as we might know them today were provided at the extreme ends of the line but a number of intermediate stopping points were provided along the way where passengers could get on or off but did not have many (or any) facilities. An 1831 a timetable shows there to have been sixteen locations; these may or may not have all been of the same character, and while most of them evolved into stations over time it seems there was little there at the start.

Although events were to take a different turn in practice, the railway was at first conceived as a development of the Stockton & Darlington and saw itself as a railed turnpike facilitating public use or use by third party carriers. Accordingly the enabling Act authorized a range of maximum tolls to be charged for various classes of goods and animals, and for people. However (unlike the Stockton when it opened), the Liverpool & Manchester Railway was also authorized to convey people, animals and goods in its own vehicles, and a schedule of maximum rates was also given in the Act for doing so. Both these schedules were to be 'printed on boards in large and legible letters and mounted at every public wharf and on every stopgate and tollhouse along the railway'.* To enforce these tolls, and to ensure safety along the line, byelaws could be made of a similar character to those of the Stockton and Darlington. Because the railway decided to focus on carrying traffic itself, it is most probable that the byelaws were never promulgated and the tolls never posted; though the requirement to publish the rates and charges for carrying goods and passengers would still seem to have been necessary.

The Railway had realized from the beginning the potential for collisions implied by the higher speeds and heavier trains compared with those of its predecessors, a responsibility made more important by the encouragement of substantial passenger traffic. These responsibilities were met by the adoption of various safety procedures over and above those common on the older lines.

The principle safeguard involved the existence of Policemen stationed at about one mile intervals along the line (perhaps the origin of the term 'station'), with the policemen (employed by the railway) making visual signals to the trains about the presumed state of the road ahead. Special hand signals were also available to indicate that waiting passengers required the train to stop. Although one might draw a certain parallel between these early policemen and our more modern police on 'point duty' controlling street traffic, one needs to remember that policing in the modern sense was almost non-existent outside London at that time, and that the wide ranging responsibilities of the railway police (for example in greasing pointwork) could not be held to be in any way odd. They were nevertheless sworn in as special constables and had certain security and public order duties as well as railway operating duties. In later years the 'railway' aspect of their work became increasingly the province of railway operations specialists, leaving the policemen to evolve slowly into a service comparable with the civil police. (Railway Police were originally catered for in railway rule books but their changing role

* The Liverpool & Manchester Railway Project 1821-1831, Carlson

inevitably demanded they should have their own, and they now function largely in accordance with police guidelines from the Home Office).

Certainly by 1833 so-called fixed signals began to appear; still operated by the signalmen they could show a red or a white light by means of post-mounted lamps. It has been suggested these were initially only used at night when a policeman's hand signal would have been nearly invisible. Equally a lamp signal was difficult to read in daylight and by 1834 a 'mechanical flag' signal was available for use in daylight; this comprised a square flag shaped board that was turned to face the traffic to indicate "stop", and turned end on, rendering it invisible, to mean "proceed". These necessary improvements would have required the rules and byelaws to be updated.

The Liverpool & Manchester's Act of incorporation authorized the company to make 'rules, orders and bye-laws' for the safe and efficient running of the concern and to publish and exhibit them. At first it seems there was only the most arbitrary distinction as to the heading under which these requirements fell, and, such as they were, each was as liable to apply to passengers as staff. On 30th May 1831 the L&M board recorded that the 'Rules and Regulations' had been signed by the magistrates and that printed copies in large placard form were to be posted up.* Other sources suggest that the new rules were to have had effect from March 1831, but this is not necessarily inconsistent with the previous statement.† It is of interest that, in accordance with the Act, the blessing of the magistrates was still felt necessary and that publication by placard was adopted. The rules were described as 'comprehensive' and from what is known seem to have been reasonably detailed, covering, apparently, matters such as which trains certain fares applied to.‡ These rules would seem to have been the first railway rules designed for a modern railway.

The following extract from a description of the Liverpool & Manchester Railway explains the position as it would appear to have been around 1833.

- "The Company keep a police establishment, who have station houses at intervals of about a mile along the road. These stations form also depots for passengers and goods from or to any of the intervening places.
- "The duties assigned to these men are to guard the road, to prevent or give notice of any obstruction, and to render any assistance in the event of an accident occurring. To do this effectually they keep up a continual line of communication. They are guided by a code of regulations issued by the Board of Management.
- Their directions to the engineer are given by signal. When a train approaches within a certain distance of a station the policeman presents himself and signifies a clear road by assuming an erect posture with arms outstretched. Should he take the position of 'stand-at-ease' the engineer is aware that some obstruction exists.
- "When a passenger is waiting at a station, a red flag is hoisted by day and a swinging lamp by night.
- "In travelling in the dark the last carriage of every train carries astern a revolving lamp, one side of which is red and the other blue. As long as the train is in motion the red light presents itself to whatever follows, but at the instant of

* The Liverpool & Manchester Railway, Thomas, 1980

† The Liverpool & Manchester Railway Project 1821-1831, Carlson, p241

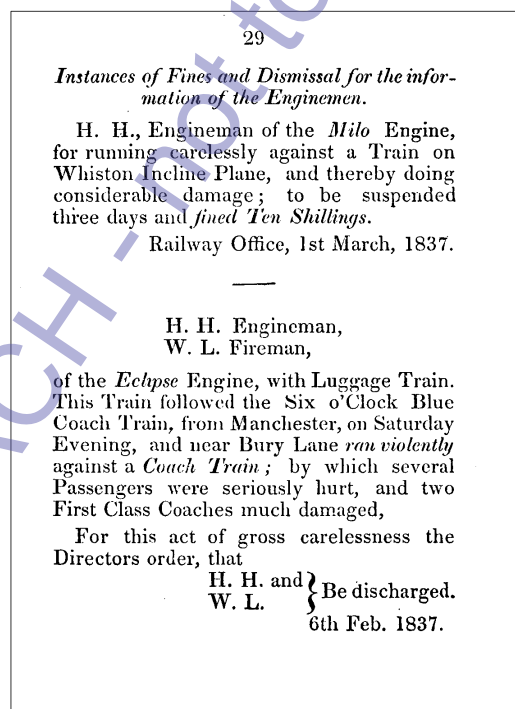
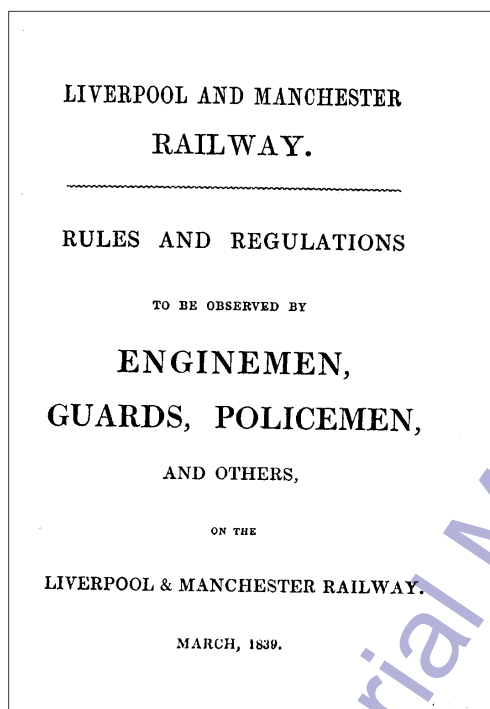
‡ The Liverpool & Manchester Railway Project 1821-1831, Carlson, p241

stopping the blue light is turned outwards. The engineer of the next train sees this change and is enabled, by checking the velocity of his engine, to avoid a collision that would be tremendous.

- The fire of the engine is sufficient to give warning to the policeman or to any object on the road of the approach of the train."

It may be seen that the 'OK to proceed' signal was given by the policeman standing smartly to attention, and this remained a standard 'signal' for some years; if the policeman adopted any other posture, or was not to be found at his station, then this had to be interpreted as an 'obstruction danger' signal. From this it follows that drivers had to be very familiar with the police 'stations'.

After May 1831 additional rules appeared at intervals to supplement or expand on those already in force. In consequence rule development proceeded rapidly but in an unplanned way.



Most changes resulted from undesirable experiences that, on the Liverpool & Manchester Railway, included serious accidents at Rainhill and Whiston.* In August 1831 trains were required to display red or yellow lamps (front and rear) depending on whether they were travelling towards Manchester or Liverpool respectively. This had been altered by 1833 when at the rear of a train a red lamp had to be shown, except when the train was stationary when the lamp had to display a blue light (there is a suggestion this was achieved automatically by a revolving lamp).† In October 1837 new rules were added setting differential speed limits depending on time of year.

The early rules imposed a maximum speed limit of 20 MPH, but required trains to slow down approaching public level crossings, at locomotive watering places and when running along high embankments (the maximum general speed limit was subsequently much elevated

* The Liverpool & Manchester Railway, Thomas, 1980

† The Liverpool & Manchester Railway, Thomas, 1980

when it was evident the track was more than satisfactory). After some accidents rules were introduced requiring the gateman, policeman or guard to go back 300 yards behind a train that had stopped to give warning to any train following. Various staff fatalities required introduction of new rules, such as one preventing vehicles being uncoupled while in motion, or preventing porters packing luggage on top of vehicles after a train started. Not all carelessness could be legislated against, and drunkenness, which was prohibited anyway, contributed to several accidents. It took some years before a safety culture began to develop within this entirely new environment.

It is recorded that the energetic Henry Booth (the L&M's Secretary) published the first 'book' of rules in 1833 (presumably replacing the placards, which would not have been an effective way of publishing information for a permanent operating staff). This may conceivably have been the first railway rule book, as such, though it is difficult to prove beyond doubt there was nothing earlier on any of the railways in the UK.

By March 1839 the L&M rules had increased to fifty, still mainly concerned with the movement of trains; these rules were in book form and appear to supersede all earlier rules. This rule book did not contain copies of any byelaws (unlike many later books) but did conclude with a few salutary examples of punishment inflicted on unfortunate staff who had infringed rules during 1837. The 1839 book was evidently reprinted with further amplification the following year.

Of the principle rules in the 1839 book, numbers 1 and 2 were concerned with the need to ensure as far as possible that trains only travelled in the direction of travel appropriate for the track unless suitable precautions were taken. Rule 4 required engines travelling in the same direction to travel not less than 600 yards apart (900 yards on gradients). Rule 10 required trains to stop when signalled to do so—even if the reason were not obvious. Several rules applied to specific locations or practices and highlighted the need for procedures to be followed closely by the staff (following incidents where rule flouting was felt to be prevalent). The need to warn following trains in the event of undue delay, accident or failure was also highlighted, presumably following accidents.

The signalling arrangements are of interest. After dark, each train carried a bullseye signal lamp on the last vehicle showing a red light, which the breaksman had to check regularly. In earlier regulations the lamp was swapped for a blue one if the train stopped, but this refinement was evidently now felt unnecessary. Trains carried a white bullseye lamp on the leading engine (two on Grand Junction trains which by then were sharing the line). The signals given by policemen or gatemen are a little vague and may have been amplified elsewhere. It seems that at night gatemen had a handlamp which could show a red or white light. If a train were required to stop to pick up passengers a red light would be shown, but if it were not required to stop then a white light was to be shown. However, if a previous train had passed by only 'a few minutes before' then the white light would be waved from side to side to signify caution. In the event of an accident or emergency the red light would be waved from side to side, meaning 'stop' (this could also be showed if the previous train had passed through only 'three or four minutes before'.* What procedures endured during daylight are not set out, though (as already mentioned) it is known some fixed flags or signals were in use.

* All from March 1839 Rules

From 1840 a 'Code of Signals for To Be Observed on the Liverpool and Manchester Railway' was promulgated in addition to the 1840 Rules and Regulations.* We cannot be sure this was the earliest code (it probably wasn't) but it made a number of changes, partly as a result of the directors having examined the signalling arrangements on the new London & Birmingham Railway.

During the day signal flags were deployed. A red flag meant stop, while a blue lamp meant a second class train should stop to pick up passengers or luggage. A black flag meant proceed slowly, line under repair. Any flag or lamp waved violently also meant stop. At night a stationary white light meant proceed, while a white light waved from side to side meant caution and up and down meant stop. The red light seems to have disappeared except for use as a tail lamp. At stations, a white light meant proceed, while a blue light meant stop to pick up passengers.

Railways that began after the Liverpool & Manchester had an advantage in being able to use the L&M rules as their model. There is no doubt that some railways did this at first, but as time went by railways diversified in the equipment used and in their operational requirements. Their own experiences and accident records naturally varied too. All this led to an increasing tendency for rule books to differ between railways, and there was little in the way of co-ordinated development. For example it took some disquieting occurrences on the Great Western Railway as late as 1840 before they insisted on trains in the same direction travelling on designated tracks: other railways had done this earlier. Nevertheless, the Liverpool and Manchester Railway Rules of 1839-40 served as a useful model for a number of railways, and even made their presence felt in the USA where more than one railway adopted them as a model, suitably modified for local conditions.

The North Midland Railway opened in 1840 and their 1842 rules (entitled Signals & Regulations) appear very similar in form to those of the L&M, 63 rules divided one from the next by a centred rule number using roman numerals. There, however, the similarity ends as the structure of the rules is entirely different to those of the L&M. The substance of the rules is broadly similar to L&M practice, with a few minor developments only.

The signals comprised lamps by night and flags by day, red for 'stop', green for 'caution' and white for 'all right'. Any signal waved side to side also meant caution, while any signal waved up and down meant stop. Failure to show correct signals invited a fine of one day's pay. Other rules required drivers to stop at red signals and ascertain the cause, and to slow down at greens; a day's pay was forfeit if the driver neglected signals.

Each train had to carry a red tail lamp on the last vehicle. 'Extra' trains carried two lamps or a lamp and a red board. Enginemen, switchmen, policemen and platelayers were issued with the necessary coloured flags and one tri-colour lamp (an early positive reference to the familiar railway handlamp).

If a track was under repair and unsafe, a red signal was to be shown half a mile before the site. If the works only required a train to slow down a green signal was shown just a quarter mile back. There were several rules governing when and how rails were to be removed.

There were various rules prohibiting trains or engines to be held on the main line, they were to be shunted into a siding if possible, and the engine 'thrown out of gear' with scotches

* PRO has copies dated 1840 and 1841

under the wheels. If a train were detained on the main line a red signal had to be shown half a mile back, but the rule does not explain who was responsible for this.

Trains were forbidden to approach within half a mile of the one in front, but the rules do not say how this was to come about. At stations (a new term, the L&M used the expression stopping places) trains were not to proceed within ten minutes of the one in front. Goods trains had to be shunted out of the way if a passenger train were expected within 15 minutes, as were slow passenger trains if the next one were a fast.

An enginemen injuring a train could be fined or dismissed, but injuring other staff is not referred to. Accidents which did happen had to be reported at the earliest opportunity or a fine would ensue. The rulebook and general timetable had also to be kept on the person of every employee, or face a fine of five shillings.

REGULATION OF RAILWAYS

1840 was a significant year in that the first of several Railway Regulation Acts was passed. It spelled the end of railways as 'common providers' (although third party carriers were already a rarity) and they thus became monopoly carriers on their own systems; as a result, in the wider public interest, there began an increasing degree of state concern in the way the railways performed. Among the provisions of the 1840 Act was a requirement for railways which had been authorized by special act to make *Bye-Laws, Orders, Rules or Regulations where there was a penalty imposed upon persons other than railway servants* to have such Bye Laws etc confirmed by the Board of Trade. Furthermore, a requirement was made for any future bye-laws to be authorized by the Board of Trade, and any provision enabling bye-laws to be authorized by others (for example magistrates, or quarter sessions court) was repealed.

A separate section of the Act made it a specific offence for any engine driver, guard, porter, or other servant to be drunk while employed upon the railway, or commit any offence against any of the bye laws, rules or regulations of such company, or to wantonly, maliciously, or negligently obstruct engines, trains or carriages or to create or tolerate a dangerous situation. To back up this fairly comprehensive section of the act power was given to **any** officer or agent of **any** railway company, or **any** special constable duly appointed, and **all** such persons as they may call to their assistance, to seize and detain the member of staff at fault and **anyone** aiding and abetting.

A further section created criminal offences of trespassing on the railway and refusing to quit, and of obstructing or impeding a railway officer or agent in the execution of his duty, again with authority to seize and detain. If these sound like police powers, they are. As mentioned earlier, organized police outside London were scarce, and order had somehow to be maintained on the railway for reasons of safety. A number of rule books recited this sobering section as a warning to staff. (Remarkably these provisions are largely still in force, though they are now regarded as somewhat obscure). The 1840 Act had the effect of separating bye-laws for public behaviour from rules and regulations for staff behaviour (the wider applicability of byelaws such as to embrace staff seems to have come later).

Further Railway Regulation Acts followed in 1842, 1844, 1851, 1868, 1871 and 1889. Taken together, these covered a wide field of intervention, but in only a few cases had a direct impact on day to day operation. One area was the establishment and later expansion of a Rail-

way Inspectorate who passed new passenger railways as safe, approved new works and investigated accidents; the latter activity, in particular, had a close relationship with rule book development where the rules were found inadequate. The 1889 Act allowed the Board of Trade (in practice the railway inspectorate) to order any railway company to introduce, amongst other things, the block system (a method of working where knowledge of the definite position of trains was mandatory, rather than time-interval assumption), the interlocking of signals and points, and a safe continuous braking system on all passenger trains. Mandatory rules were later required in consequence of the Prevention of Accident Rules 1900 and 1902, issued by the Board of Trade to ensure that a variety of dangerous situations were properly guarded against; for example, Rule 9 (1902) required undertakings to provide a look-out (or apparatus) to give adequate warning of an approaching train to men working on the line. This would have been translated into one or more rules in each of the railways' own rule books. Some of these Acts were subsequently updated (eg the Road and Rail Regulation Act 1933 overhauled the Inspectorate's powers of inspection and approval), but in some cases the old Acts are still very much in force.

DEVELOPMENT OF BYELAWS

The Liverpool and Manchester Railway seems to have been the first railway to use byelaws in the more modern sense (for regulating behaviour rather than for train operation). Even so it seems only to have had a single byelaw before 1840, this was promulgated some short time after 1835 in an attempt to stop people smoking in the coaches or at stations, earlier exhortations by mere notice having proved entirely ineffectual.

Even after the constraints imposed by the 1840 Act, bye-laws continued to be made by the various railway companies as they saw fit by virtue of a range of legislation. From 1845 bye-laws could only be made under the Regulation of Railways Act of that year and required approval of a secretary of State, rather than a magistrate; they were generally published in timetables with extracts sometimes appearing in trains. To have any hope of successful prosecution byelaws had to be prominently displayed at stations so that intending passengers had the opportunity of acquainting themselves with them; this was usually accomplished by means of placards or posters — a relic of the early way of conveying this information. Although having had to be approved by the Board of Trade, byelaws until 1905 had gradually managed to alienate the courts with the result that success in prosecution had become problematic. As railway byelaws had effectively lost legal credibility and were seen as unreasonable, the railways finally agreed to address the more repugnant aspects of them and in that year the railways all made new byelaws; one effect of this was to produce a considerable convergence of content between the various company's efforts. It seems the Board of Trade (which had to approve the bye laws in any case) co-ordinated this exercise by producing 'model' bye laws which the various companies could adjust to suit their particular circumstances, though deviations from the model were not encouraged. Byelaws based on the 1905 model clauses were introduced over the following year or two and, having succeeded in their object lasted largely unchanged (despite new model clauses in 1912) until 1926 when fresh byelaws were made to suit the post-grouping period — these, in turn, being succeeded by new ones post nationalization. Further byelaws were made by both British Railways and London Transport in 1963, the

1962 Transport Act designated both bodies as capable of making byelaws, and this superseded the authority of the 1845 Act. Both sets of byelaws were then identical with each other and continued in force, substantially unaltered, for many years.

On main line railways looming privatisation caused the Railways Act 1993 to be promulgated. The industry was to be split into a network operator (Railtrack, now Network Rail) and a large number of train operating and maintenance companies. The Act provided for these bodies to have their own byelaws, although for several years the byelaws actually operated by the industry still followed the earlier British Rail model. Finally, the Secretary of State for Transport (following a long period of consultation) issued new model byelaws on 19th December 2000 and ordained that they should come into effect from 18th February 2001. Railtrack and the various train operators each adopted the new model byelaws prior to that date. London Underground was not subject to the Railways Act but also adopted the new model with effect from the same date, but using its existing powers under the 1962 Act. The new byelaws were laid out in sections in a much clearer and more logical way than hitherto, and with a number of changes having been made.

Byelaws are legally required to be published. As noted above this was once done by having them displayed at stations (and maintained fully legible) but this requirement was abolished in 1950, although the practice continued for a little while. From then on it was necessary to have copies available at ticket offices, but this requirement too was abolished by the 1962 Act, which only required byelaws to be available at the head office (though, for reasons of practicality, they are still supposed to be available for inspection at ticket offices). Separate copies of the byelaws are circulated to staff as part of their own rules and regulations and in theory staff ought to be familiar with them, partly so they themselves can comply, but largely so they can identify breaches by the public. Byelaws issued to staff usually come with guidance about their enforcement and tend to discourage direct intervention by staff except in emergency; enforcement is now regarded as largely a police matter.

With byelaws now so little available (and actually quite hard to procure or even read during many rail journeys from unstaffed stations) one is tempted to wonder quite how ordinary members of the public are expected to know the peculiar regulations that restrain their actions. It is perhaps good enough to presume that 'normal' behaviour and observance of warning signs will usually ensure compliance.

DEVELOPMENT OF RAILWAYS AFTER 1840

In the days when trains travelled fairly slowly the system of driving more or less on sight appears largely to have been adequate. As speeds and train loadings improved, so driving solely on sight became increasingly less safe. To counter this, 'time interval' working became the usual method of operation. The policemen regulated the trains so that they were not allowed to depart from their stations unless a sufficient interval had passed since the previous train.

It also became obvious fairly quickly that ambiguous police signals needed to be improved upon and they were required to carry and use flags by day and lamps by night. As a further move to improve visibility signalling equipment was fixed to posts where the elevated position was more visible at a distance. These changes (and many more resulting from experience) were rapidly embodied into successive editions of each companies' rule books, often with

complete disregard to what neighbouring or interworking companies were doing, but occasionally with rules 'borrowed' from other companies word for word.

While the time interval system was simple to operate and independent of 'national' time standards, it had the obvious disadvantage that if a train broke down between stations then the following train might well run into it. Thus rules had then to be developed to ensure that in the event of breakdown the crew immediately went back to warn the following train of the danger far enough away to avoid a collision. Needless to say, such a system was unable to prevent a number of accidents from happening, most, fortunately, of a relatively minor nature; it says something for the staff of those days that it worked as well as it did.

The earliest of the railways which opened after the L&M did not use fixed signals initially, but very quickly came to do so. The London & Birmingham (1837) gradually installed disk signals to show 'danger', while the Great Western (1838) deployed its first fixed signal at Reading in 1840 (this was a disk or ball, whose presence indicated 'all right'). The latter is referred to in an accompanying instruction to enginemen that has survived; a small number of other locations received similar signals, but from 1841 the GWR standardized on a disk and crossbar signal which showed a red disk to mean 'stop' or a red crossbar to mean 'all right', the arrangement being rotated through a right angle to change indications. Lamps also mounted on the rotating post repeated the indications at night with a red or white light respectively.* It has been suggested the GWR did not have a formal rule book until 1848, so the means by which instructions were promulgated is unclear.†

The first semaphore signal was deployed on the London & Croydon Railway in 1841. Inspired by early government sponsored signalling stations provided primarily for conveying naval messages between London and the dockyards, 'semaphore' signalling comprised an arrangement of a pair of wooden arms that rotated at one end where they were mounted to a post. By moving each of the two arms to one of eight positions throughout its circle of rotation, individual letters could be spelled out according to an agreed code. The arrangement was designed to convey messages clearly over a considerable distance. For railway work only one arm was needed and the number positions shown (three) was more than sufficient. The advantage of the semaphore was its clear indication at a distance, and the fact it could show three positions (or more) against the two of a disk. This led the way to introduce a 'caution' indication as well as 'all right' and 'stop'; nevertheless the introduction and spread of the semaphore was a slow process, but a steady one.

Examination of a number of early rule books (pre-1860) shows the diversity of approach that existed. It is evident that rulebooks had moved on significantly in just five years between 1842 and 1847. From about 1847 they all included an initial section devoted to general rules which applied to all staff (which was not present in the L&M rules of 1839). While each railway tackled this section slightly differently, in all cases things were kept brief and there is some evidence of copying. The rules covered the need to work exclusively for the company, the need to obey orders promptly, the consequences of disobedience, not being drunk, need to wear uniform and so on. The Great Northern Railway rules of 1850 unusually included a

* Two centuries of Railway Signalling, Kichenside & Williams

† Railway Magazine, 1957

requirement that men should be able to read and write amongst the briefest of general rules; perhaps other railways declined to accept illiterate staff earlier in the appointment process.

The manner by which the rest of the rules were arranged varied somewhat, although they mainly grouped the rules around the signals that were given to the trains followed by sections which applied to different grades of staff.

Dealing with 'Signals' first, the sections were usually subdivided into the different types of signal. The Eastern Counties Railway (ECR) rules of 1846 shows a policeman-type person holding his arm horizontally to signify all right, vertically for caution and both arms raised for danger. The London & North Western Railway (LNWR) rules 1847 has their policeman issued with a flag. Continuing L&M practice, all right is shown by the policeman standing to attention with flag to the shoulder not showing itself. Caution is signified with green flag raised (meaning previous train passed within seven minutes) or lowered (meaning track defect). Danger is signified by waving a red flag. The York & North Midland Railway (Y&NMR) deals briefly with hand signals, but suggests that red (danger), green (caution) or white (all right) flags were used during the day, with similar coloured lamps at night. However when the proper equipment was not available anything waved from side to side meant caution, or up and down meant danger. The Great Northern Railway (GNR) rules of 1850 used both the Y&NMR and ECR systems by day, depending on whether the proper flags were available, or the Y&NMR lamp colours at night.

Fixed signals showed some variation but generally conveyed three meanings, 'all right', 'caution' or 'danger'. The ECR, GNR, Y&NMR and LNWR all used semaphores to varying degrees on their systems, and in the 1840–1860 period most railways would have been introducing them. Each of the four railways referred to had diagrams that showed 'all right' to have been shown by the semaphore arm dropping vertically so it was parallel to the post and for practical purposes invisible. 'Caution' was shown by the arm lowered 45 degrees, while 'danger' was given by the arm being shown horizontal. The rules all emphasised that the relevant arm was the one on the left side of the post as seen by the driver (sometimes posts had an arm on the right hand side, but this related to traffic from the other direction). At night, when the semaphores were invisible, signals were given by red (danger), green (caution) or white (all clear) lights. Each rule book, incidentally, made clear that 'caution' meant 'slacken speed'.

The LNWR 1847 and ECR 1846 rules suggest that semaphores were the only fixed signals in use on their lines. The LNWR also had (at least in some locations) additional semaphores on the approach to stations that were operated by cables. These only showed 'all clear' and 'caution' indications and seems to have been the earliest use of what were later called 'distant' signals, though they were called 'auxiliary' signals here, and were simply to give drivers advanced warning of the station signals.

The Y&NMR also had plentiful quantities of an earlier standard signal which comprised a large square plate on which was displayed a coloured disk. The plate was turned towards the direction of traffic to mean 'stop' and end on (making it invisible) to mean 'go on'. The coloured disk was probably red as the company used red to mean danger, but the rule does not actually say. This railway also had wire operated auxiliary signals (called 'auxiliary or distant signals') which comprised a rectangular red plate with notched corners (the rule describes these as 'square'), meaning 'stop' when displayed, or 'go on' when turned out of the way. Both

types of signal were equipped with lamps on the same rotating post such that different colours were shown depending on whether trains were to stop or go on. The rules are not at all clear about which of the three lamp colours were used on these two-position signals, though information from elsewhere shows these to have been red and white. Separate rules show that on this railway the auxiliaries were not used in the same way as those on the LNWR, but to protect the station area while it was occupied by a train or was obstructed for some other reason.

Although the GNR 1850 rules show they only used semaphores, they adopted the then novel approach of mentioning the signalling systems of other railways over which they ran trains. The rules note that the Manchester, Sheffield and Lincolnshire, the Midland and the South Yorkshire Railways used the same signals as the GNR, the York & North Midland used a red board (red light at night) for danger and no signal (or white light at night) for all clear; in fact this describes the auxiliary signals, and it is possible the station disks had all gone by 1850. The Lancashire and Yorkshire evidently used a signal like the Y&NMR except instead of a board a centrally mounted arm with a red disk on each end was shown as the danger signal. The GNR book also mentions some interesting working required at small stations which had only one signal post (covering both directions of traffic) which of necessity had to be mounted in the centre of the platforms. Trains had to stop at the signal then draw forward (if possible to a point so the whole train was now beyond the signal) once it was established it was safe to do so.

Each rulebook then moves on to describe the use and meaning of detonating or exploding signals, each taking its own approach. The ECR rule book is unusual in the detail gone into in describing the procedures to be adopted for controlling traffic. There are several sections, each starting with the words 'Instructions for the Management and Method of (for example) Giving the Signals'; this sets out with singular clarity what each person involved had to do, when, for how long and with what object. This approach anticipated by a century and a half

EASTERN COUNTIES RAILWAY.

SIGNALS

AND

REGULATIONS,

20TH DECEMBER, 1846.

Books of a previous date are incorrect.

48. Before leaving a station the engineman's attention is to be directed to the guard, who will give the signal to start by a slight sound of the station bell, which is to be answered by the steam whistle, and the steam put on immediately, taking care not to injure the couplings of the carriages by a sudden jerk. The fireman is to look carefully out behind, that all the vehicles appear properly attached.

49. The engineman is to stand by the hand-gear, and keep a good look out all the time that the engine is in motion; and the fireman is also to keep a good look out, except when engaged with his other duties.

50. The engineman and fireman must pay immediate attention to all signals, whether the cause of the signals is known to them or not.

51. Any engineman neglecting to obey a signal, is liable to immediate dismissal from the Company's service.

52. The enginemen must regulate the working of their engines, so as to arrive at the stations as near as possible to the times appointed in the time-table; and they must be very careful to avoid any delay to the trains upon the line, or from over-running or stopping short of the stations. Enginemen with goods trains, and light engines, are never to exceed a speed of

that which others struggled to achieve in the latter half of the twentieth century. That it was not pursued as an appropriate method at the time is a regrettable and unintended outcome of a series of amalgamations and the pursuit of a standardized approach.

It would be tedious to pursue differences between all rules in even the four books already described. However it is necessary to say a few words about time interval working. The L&M railway forbade trains to operate more closely to each other than 600 yards (or 900 yards down an incline). The only other form of regulating distance between successive trains was a requirement on gatemen to show a 'caution' signal if a previous train had passed within the previous 'few minutes', though elsewhere it is suggested 'few' might mean three or four minutes. This was perhaps all very well when trains proceeded quite slowly and there were few of them, but braking efficiency was poor and as speeds rose the stopping distance was soon found to be quite insufficient. Where a train had stopped irregularly staff had to go back to warn any following train, but if a train was simply making slow progress for some reason then it was impractical to send anyone back and it was possible through inattention, poor weather or some other reason for a fast train to catch up a slow one and in certain circumstances a collision was inevitable. With no means of communication between stations, all that could be done was to try and regulate the trains at frequent intervals so that the probability of catching up the one in front was mitigated. And so was borne the time interval system.

Although it was implemented in slightly different ways, the principle was that the station policeman would note the time of departure of each train and for so many minutes would prevent any train from following. Once that time had elapsed he would then show a caution signal for so many more minutes, so that a driver would proceed at reduced speed. Only after that second interval had elapsed would he show 'all clear' (trusting to good fortune that it was in fact clear to the next station).

By way of example, the Eastern Counties Railway Rulebook of December 1846 required policemen to show the danger signal for five minutes, then the caution signal for a further five minutes, after which the all clear signal was given. Modified rules applied in poor weather. The LNWR rule book of 1847 used slightly complicated variations of the time intervals. For stopping trains the usual five minutes was allowed for showing successively the stop and caution signals, but on the Liverpool and Manchester section 'stop' was only three minutes. For light engines and express trains (an early use of this term) not stopping at the signal station, the stop signal was not shown at all, just the caution signal for five minutes. The Y&NMR rules of 1852 make it clear that no train shall follow another within five minutes, but make no reference to any subsequent cautioning (only their semaphore signals could show 'caution' but it seems this indication was not yet in common use). These are mere examples of prevailing practice, and other arrangements and time intervals existed as well.

The other area of showing interesting variety of approach was how to deal with accident or stoppage so as to prevent a following train colliding. The only way of dealing with this was to send someone back along the line to attract the attention of the next train so it had a chance to stop. The L&M (1839) rules are not a model of clarity and at first sight only have a warning system for use in fog. Rule 32 states that where a train stops at a station in fog the gateman or policeman (where available, or otherwise the firemen) was required to run back 400 yards to warn a following train. It is not explained how the warning be given, or how the staff were called back, or how a number of other things were done, but it is early evidence of the need

to warn a subsequent train. Rule 34, however, notes that in the event of an accident the Policeman or Gateman shall follow the foggy weather rule (32) for giving a warning.

The ECR Rules 1846 require the Under Guard to protect the train following accident or stoppage by going back half a mile, placing a detonator at 200 yards intervals as he proceeded, and two detonators on arrival at the appointed place. The ECR thoughtfully considered how to retrieve the trainman when the problem was dealt with; he was to be summoned by the engine whistle retrieving the detonators as he returned, but leaving a single detonator at the half mile point as a warning. The ECR book has a great deal more to say as to how other eventualities were to be dealt with and it must be said was a very thorough work.

The LNWR rules (1847) required the under guard (or guard if there was no under guard) to go back a mile, putting one detonator down every 300 yards until he reached his post where two detonators were put down and a hand signal given to any approaching train. When the problem had been dealt with, and the guard by some unspecified means was aware he could stand down, he was not to return to his own train but proceed to the previous station and 'get on by some other train'. Presumably this was to avoid further delay. A policeman would follow a similar procedure if a hazard were discovered before a train had arrived. A further refinement adopted by the LNWR was to recognise the danger of a train running too slow. If a train could not proceed faster than 6 MPH the 'Junior Guard or some other competent person' had to get off and traipse along a mile behind it ready to show a caution signal to a following train. It is implied but not stated that if the trainman caught up his train at a station he could get on it if the problem had been sorted out. This procedure raises dozens of questions about its utility and practicality, not to mention the hazard of the trainman getting run over.

The GNR rules (1850) required 'the Policeman, Platelayer (if available), Guard, Under Guard, or other person' to go back immediately three quarters of a mile, placing two detonators at quarter mile intervals, and having reached his post had to put down two more detonators and at night he had to burn 'Red port fires'. If an approaching train was encountered before he had reached his post he had to put detonators down immediately and do whatever else he could to stop the train. It is of some interest that the GNR required two detonators to be put down each time, and this may have resulted from these devices not being very reliable. The sheer variation in the regulations is vast, and it is evident that great faith was evidently placed upon the trains not failing. Most of these early books contained a host of regulations that were location specific, and this was a feature later removed from the rule book and placed elsewhere.

The remainder of these early rule books were generally groups of rules aimed at specific grades or groups of staff.

THE STANDARDIZATION OF RULEBOOKS

It was perhaps inevitable that the almost entirely uncoordinated growth in the number of new railways in the 1830s and 1840s resulted in each of the companies formulating its own separate system of rules. To an extent this was necessitated by the equally diverse range of train

signalling systems and other equipment which they chose to use, but in many cases procedures differed between railways for the most arbitrary of reasons.

Naturally many new railways copied or adapted the rules, practices and procedures of existing companies. For example the South Staffordshire Railway adapted the rules of the Midland Railway when it opened in 1847, although they were redrafted in 1855 on the model of the London & North Western Railway — with some modification.

Although the early rulebooks were modest affairs their contents were to expand rapidly. New instructions and procedures were continually proving necessary to guard against danger or delay (often as the result of an accident), and the increasingly obvious requirement for safety of operation as train speeds increased and trains got heavier was a further spur to rule modification. Nevertheless, there was little common agreement between the companies in the exact wording of the rules, nor in the various signals used in the working of traffic or in emergencies. At first it was of perhaps no great importance, but as railways began to link together, amalgamate and promote through working this lack of common agreement began to create inconvenience and generated an increasing potential for misunderstanding.

A growth in railway accidents in the 1840-41 period persuaded several railway directors that there was a need for a measure of consistency between the companies. As a result, representatives of nineteen railways met on 19th June 1841 to approve a set of rules 'proposed to be observed by enginemen, guards, policemen, and others on all railways'. The resulting pamphlet consisted of twelve elementary rules of no great complexity, and one might have felt that these would have been found non contentious. Rule 1 required enginemen to observe the 'rule of the turnpike', and to keep to the left-hand road. Rule 2 required special precautions to be observed if wrong line working were necessary. Rule 3 required trains to keep a half-mile apart. Rule 4 required enginemen not to abandon their charge on a running line, Rule 5 stated that 'coach' (ie passenger) trains were to be given preference over others. The remaining rules were equally straightforward.

Although the proposed rules were agreed among some of the major companies of the day, it does not appear that they gained any general recognition among railways, although they were undoubtedly an influencing factor for some of them. The exercise nevertheless proved the value of consultation between railways and was an element in the creation of the Railway Clearing House (founded in 1842), which later achieved much in its attempts to standardise railway operation.

Of course, standardization of the rules was only one factor; standardization of the fixed equipment to which the rules applied was very much another. The forms of train control emerging both during and after the 1840s relied to an increasing extent on mechanical devices to indicate to drivers the state of the line ahead. Similarly, signal and point controls were being concentrated in individual 'signal boxes', with the electric telegraph as a means of communication between them. It was almost perverse the way in which each company adopted individual signalling indications and bell codes with apparent disregard for those used even on neighbouring lines. Indeed there are examples where some of the indications used to indicate danger on one company were the precise reverse to those used on another, and great care was needed where companies interworked.

By about 1860, when there were still six quite different signalling systems in common use, the situation was becoming intolerable. The amount of through-working was increasing rap-

idly, and it was becoming the practice for locomotives (and their drivers) to work trains for the whole of their journeys instead of being changed at company boundaries, which was common hitherto. This increasingly placed their drivers in the uncomfortable position of needing to remember exactly who owned the bit of railway they were travelling over in order to interpret the signals correctly.

As if to exemplify this difficulty, there was a particularly serious accident at Kentish Town (LNWR) in September 1861 where a North London Railway train ran into an LNWR train killing 16 and injuring 317 passengers. The fact of the North London trainmen not being issued with an LNWR rulebook, and the rules being different, was considered a significant factor. There were other incidents too, further raising concern within the Railway Clearing House (RCH). In April 1862 they established a sub-committee to recommend a rule book for the use of drivers and guards running over foreign lines. Little immediate action resulted despite yet another accident, in August, where differing rulebooks were implicated. This one occurred at Market Harborough when two Midland Railway trains crashed — the station being worked under LNWR rules with which the Midland men were not issued.

The Great Western Railway rulebook of March 1863 may perhaps be regarded as a representative example of a relatively early rulebook applying to all operational railway staff. In addition to the usual general requirements placed upon all staff there were then rules describing the operation and meaning of the signals and of the time interval system, rules dealing with delays, accidents and poor weather and general instructions for Superintendents, Station Masters, Guards, Police and Porters. A section then follows covering passengers, their luggage and passes etc. A wide variety of separate rulebooks were produced for other sections of staff, for example workshop staff and number-takers; many of the larger railways followed a similar practice, though with little inclination to get contents in any way uniform.

By 1865 the RCH established a further committee to look into the question of a common set of rules, spurred partly, perhaps, by a potential threat of legislation as much as by the worsening accident records. The final result appeared in June 1867 entitled '*Rules for Working over Foreign Lines*'. It consisted essentially of a distillation of accumulated rules of the major companies framed so as to avoid interference with the existing rules. The three-position semaphore system of signalling was printed at the beginning of the book though there was an appendix illustrating the different systems in use by some companies. It was the intention that the RCH rules be printed as a supplement to the railway companies' own rule books, at least initially, and hope was expressed that in due course the RCH book would be adopted in entirety.

To a significant extent this happened, and in a number of the railways' rule books produced after 1867 individual companies had adopted the RCH supplementary rules as their own standard. The Midland Railway '*Rules and Regulations for the Guidance of Officers and Men*' of June 1871 may be cited as typical. The main part of the book consists of 150 rules divided into a number of sections and spread over 115 pages. There then follows several pages of regulations for working single lines by train staff, thence extracts from Acts of Parliament. The RCH '*Rules for Working Over Foreign Lines*' occupy the next 52 pages, while the description of signalling used on other railways follows on within the final 23 pages. The book has a preface describing its own signals; the rules themselves are divided into groups, there are rules for five different groups of staff, a set of general rules, and some rules specific to opera-

tion on the Lickey incline. The emphasis of the rulebook is substantially devoted to operation of the train service in one form or another. Already it may be noted the rules are a mixture of generalisations and of detailed procedures.

Progress towards the widespread adoption of the 'Foreign Lines' supplement had been so satisfactory that in 1874 a committee of the railway superintendents was created to formulate a standard rulebook intended for universal application. The result was a modified and expanded series of model rules that, significantly, were now entitled '*The Rules and Regulations to be observed by all persons in the service of the Railway Companies*'. The new rules were approved at the railway General Managers Conference, together with the caveat that it was desired that the rules be adopted by **all** companies and that any special requirements of individual companies should be met by means of special instructions which would be not inconsistent with the RCH rules.

Real progress towards a significant improvement in railway safety was resulting from the spread of the electric telegraph, which provided a means of long distance, instantaneous communication. This allowed messages to be passed between adjacent stations and, in turn, introduced an element of certainty as to whether trains which had departed from one station had actually reached the next. This was the beginning of the 'block' system where trains were separated by space, rather than time. Semaphore signals of the two-position pattern, and with notched distant arms, were also emerging as the country's standard, and again assisted the process of rule standardisation.

The RCH 'model Rules' (entitled '*Rules and Regulations for Working Railways*') were finally completed and approved in March 1876. It was a significant step forward and included major expansion of the instructions for operating the electric telegraph. No appendix of non-standard systems of signalling was needed — the semaphore being used almost exclusively by now. The new book also improved upon the general duties and responsibilities of staff. The total number of model rules was now 383, divided into fifteen principle sections, six of which were devoted to the specific duties of various grades of staff. One section (of two rules) was devoted to the adopted of 'standard' time (Greenwich time) throughout all railways, and the means of transmitting the correct time to all stations.

So far as possible the various railways were encouraged to adopt the model rules from 1st July 1876. A major recommendation accompanying the model rules was that all companies should use the same numbering system for their rules and that variations from the standard rules should be indicated by the use of a different typeface.

While many companies did indeed introduce rulebooks based upon the new model there were nevertheless some who either did not wish to follow or who produced their own books with a number of major inconsistencies, occasionally in fundamental respects (such as the meaning of certain signal aspects). However, over the next few years most of the major companies had adopted the 'Rules'.

The RCH issued substantially revised standard sets of rules in 1883, 1889, 1894, 1897 and 1904, and the railway companies generally took the opportunity to revise their own rule books at the same time. In later years there was less consistency between the railways in the issue of an entirely new rule book, but sets of amendments were issued periodically to keep everything in step. One feature which the RCH demanded was that rule numbers should be consistent between railways. Indeed even when rule books were revised every attempt was made to re-

tain existing rule numbers wherever possible. Inevitably this led to some curiosities and a number of supplementary rules with suffix letters; in the 1897 revision many of the rules were re-arranged and the whole lot were renumbered. By 1904, of course, practically all aspects of railway operation had been standardized to an extent, though not always without the help of legislation. The 'block' system of working was now a legal requirement (encouraging spread of two-position semaphore signals), as were continuous braking systems and the interlocking of signals with points.

Some small railways felt it not worthwhile to produce their own rule books, perhaps because of the heavy printing costs necessary. There is some evidence (for example the Liskeard and Looe Railway) that they issued the RCH standard rulebook instead, with company specific rules written into the blank spaces provided or, perhaps, issued as separate documents. One might have considered that the railway industry would have obtained rule books from a single printer, enabling the bulk of the text to be set only once, thereby reducing costs to the industry as a whole. In fact several printers were used, and evidence suggests each did their own independent setting (the Great Eastern had its own printing works at Stratford, and their rule books and (later) those of the LNER were produced there).

Towards the end of the nineteenth century, the quest for uniformity was further pursued by incorporating within the rulebooks some further regulations for the improved understanding of certain operations, though some variation in practice may be noted. The LSWR rulebook of 1897 includes **two** appendices, both for the safer operation of single lines. The first appendix concerns itself with 'train staff and ticket' regulations, and the second with the working of single lines by pilot guard. On the other hand the 1897 GNR book (repeated in 1916) recites both these appendices and adds a third one — for the operation of single lines by 'one engine in steam'. The Great Central rulebook of 1897 contains these three and a further eight appendices (11 in all). In complete contrast the 1912 LSWR book and 1923 GWR book contain no such supplements, though similar requirements were undoubtedly published elsewhere.

In most cases the presentation of the appendices did not change very much for over a twenty year period. The Great Central (and no doubt one or two other railways) published all the appendices but practice varied very widely and some were omitted by certain railways, confined to certain sections of line, or published separately or in other instructions. The following table is purely illustrative but gives the flavour of the wide-ranging inconsistency in what was originally intended to be a uniform process.

No	Title	GCR 1897 and 1912	Mid Ry 1904	Met Railway 1904	GNR 1897 and 1916	LNWR 1923
I.	Train signalling on single lines by staff and ticket.	Yes	Yes	Not applicable	Yes	Yes
II.	Working of single lines by Pilot Guard.	Yes	Yes	Not applicable	Yes	Yes
III.	Working of single lines by one engine in steam.	Yes	Yes	Applicable to Oxford & Aylesbury Tramroad only	Yes	Yes
IV.	Working of non-block goods lines.	Yes	Yes	Not applicable	Not applicable	Yes
V.	Working of Westinghouse or vacuum brakes, and BoT requirements.	Yes	Yes	Yes – but for Vacuum Brake only	In Appendix	Yes – but for Vacuum Brake only (Separate instructions for London)
VI.	Block Telegraph Working on Double Lines.	Yes	In Appendix	Published in Block Signalling Regulations	Separate Instructions	Separate Instructions
VII.	Lock and Block system of train signalling.	Yes	Not applicable	Published in Block Signalling Regulations	Not applicable	Not applicable
VIII.	Working of single lines by electric train staff block.	Yes	In Appendix	Not applicable	Separate Instructions	Separate Instructions
IX.	Block telegraph working on single lines worked by electric tablet or electric train staff block.	Yes	In Appendix	Published in Regulations for working Chesham Branch	Separate Instructions	Separate Instructions
X.	Working of slip carriages.	Yes	Yes	Not applicable	Separate Instructions	In Appendix
XI.	Communication between guard and driver by automatic brake.	Yes	In Appendix	Yes	Separate Instructions	Yes, includes passenger communication
XII.	Working of communication cords between passengers, driver and guard.	Yes	In Appendix	Not applicable	Separate Instructions	Protection of staff working on vehicles
XIII	Instructions for Protection of [staff] Working on Coaching Stock	Yes (1912 only)	-	-	-	(see above)

Despite the commonality of headings the treatment of the contents varies significantly. The LBSCR 1917 book produces a partially similar list of headings (though in a different order), all of which are included to produce a document totalling some 322 pages. By way of contrast, these LBSCR appendices are listed below, but it will already be seen that although the ‘rules’ were largely standardized there was nevertheless still considerable variation between the companies in their practices.

LBSCR REGULATIONS LISTED IN APPENDICES.

1. Train signalling by Block Telegraph (double line)
2. Train signalling by Block Telegraph (single line), staff and ticket.
3. Train signalling on single lines by staff and ticket.
4. Working of single lines by Pilot Guard.
5. Working of single lines by electric train staff block.
6. Working of single lines by one engine in steam.
7. Working of non-block goods lines.
8. Working of slip carriages.

9. Communication between guard and driver (electric or chain).
10. Working of Westinghouse or vacuum brakes, and BoT requirements.
11. Electrified Lines, general rules and instructions.
12. Electrical Department Rules and Instructions.

Nor did diversity end here. The LNWR rule book also incorporates a section at the back listing many rule variations between their own and other companies, the variations being laid out in company order.

The grouping of the major railways in 1923 provided further scope for rule standardisation among the new 'big four' companies, though a more comprehensive study took longer and resulted in a new RCH standard rule book in 1932. This was adopted wholly in January 1933 by three of the big four companies, and with some modification by the London, Midland & Scottish Railway, who claimed exceptional circumstances. The 1933 book contained no supplementary information (such as the Appendix); this was now entirely relegated to other publications. The 1933 rules were also adopted by the Underground Group and the Metropolitan Railway (their rules are covered in another monograph about rules, but suffice to say here that London Transport and the main lines shared a common rule book until 1969).

The 1933 company rule books continued to operate upon nationalization on 1st January 1948, though not for long. The main line companies were inherited by the Railway Executive of the British Transport Commission and it was soon decided that a standard book was required for 'British Railways' (as the Railway Executive was known). Rapid progress was made, allowing a new BR rulebook to be adopted on 13th June 1949; issued in the name of the Railway Executive, it came into operation on 1st January 1950.

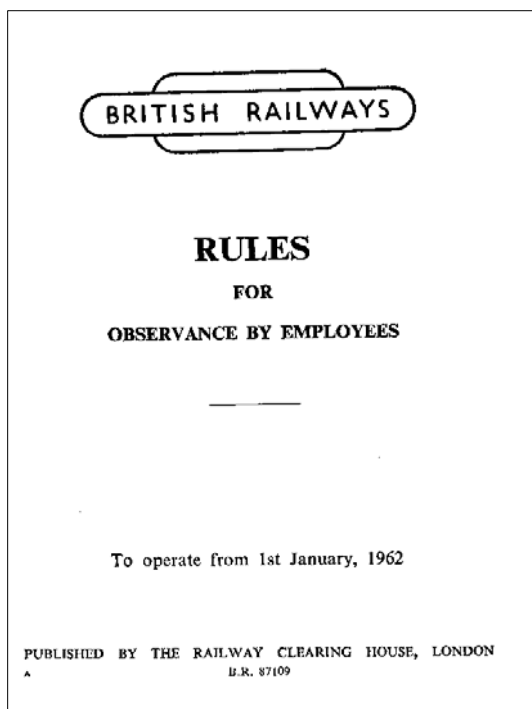
THE NATIONALIZED RAILWAY

The 1950 Rulebook

In both format and content the new BR rules were little different from the RCH rules they superseded, but many of the pre-1948 company differences had now been standardized. The rulebook had no force on London Transport railways, although various sections of line over which LT trains operated were subject to British Railways rules; whilst by no means identical, they were at least not inconsistent. The Railway Clearing House still functioned, though it is not clear how much input it had into the British Railways rulebook.

An updated version of the 1950 rulebook came into effect on 1st January 1962. By now the Railway Executive had been abolished, and British Railways was managed directly by the British Transport Commission. However this time the revised rulebook was actually published in the name of the Railway Clearing House (which had been transferred to the Commission in May 1954). It was both the first and the last time that the RCH had produced an operational rulebook (rather than model rules) — the RCH was disbanded on 31st March 1963. At various intervals supplements were issued with revised or additional rules.

In passing, it might be noted that the railways of southern Ireland (CIE) had inevitably followed British practice closely since partition in 1922. On 1st January 1967 they introduced a



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Level crossings	99-107
Shunting	108-118
Head, tail and side lamps	119-125
Working of trains	126-176
Reporting of accidents	177
Trains stopped by accident, failure, obstruction or other exceptional cause	178-188
Working traffic of a double line over a single line of rails during repairs or obstruction	189-208
Permanent-way and works	209-239

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new rulebook strikingly similar to the RCH standard of 1933 with a few updates; it is perhaps ironic that the last iteration of this long-standing work should have been produced in Ireland.

The 1972 Rulebook

The 1950 rule book remained in force until 1st October 1972 when a completely revised British Rail rulebook was introduced, in loose leaf format and divided into nineteen logical sections; occasional amendment leaflets were issued which often included substitute pages. Perhaps quaintly, it followed the (more than) century old tradition of referring to a resolution of the Board 'that the Rules now submitted are hereby approved and adopted for observance...', which was passed by the British Railways Board on 11th November 1971; the same wording was used in 1949 by the Railway Executive.

The 1972 rulebook was accompanied by an explanatory leaflet that set out the nature of the changes that were being made. It drew attention to the way that wherever practicable the updated rules 'set out the duties of individual grades of staff ... separately' but that it was important that where a rule was being applied all staff should familiarise themselves with the whole rule. From this it will be seen that for the first time in a century there was now a profoundly new approach to setting out the rules—clarity. The leaflet explains that in most cases the rules themselves were the same as previously in all their essential elements. Where there had been significant changes they were listed in the leaflet together with a summary of the main change. There was also a conversion table that translated the old rule numbers into those that applied in the new book, and a further table that showed which instructions previously published in the 'General Appendix' had now been incorporated into the rulebook.

The 1950 rulebook and its forebears had usually contained rules that started at '1' and carried on to the end. Nevertheless the body of rules had almost always been divided into logical sections by means of section headings that divided one block from the next. The sections

were not separately numbered or lettered, and the contents simply referred to the blocks of rules to which the heading referred. The 1972 rulebook adopted a somewhat different system: each logical block of rules was placed in a different division, each one of which was lettered. Within each division there were multiple sections, each of which was sequentially numbered. This produced a book with multiple (and not entirely consistent) levels of heading and indent. Generally each section related to the duties of specific staff, though in some cases the sections at the start were called 'Principle' and 'Method', which set the scene. Within each section sub-sections and in some cases sub sub-sections set out the specific rules. All this was designed to improve clarity, but it did so by somewhat increasing bulk and inevitably introduced a degree of repetition. Sometimes one single set of circumstances (for which the 1950 book would have been provided with a single rule) would now be addressed by multiple rules, each in a different place, which reflected the requirements placed upon different grades of staff. No index was provided, and it was evidently thought that the layout made it easy to find things.

The Sections contained within the 1972 rulebook at time of issue were as follows:

- A Employment and Discipline
- B General
- C Fixed Signals
- D Handsignals
- E Signals, Points, Track Circuits and other Signalling Equipment - Failures, Repairs and Renewals
- F Detonators
- G Level Crossings
- H Working of Trains
- J Shunting
- K Detention of Trains on Running Lines
- L Signalling during Fog or Falling Snow
- M Trains Stopped by Accident, Failure, Obstruction or Other Exceptional Cause
- N Working Traffic of a Double Line over a Single Line of Rails during Repairs or Obstruction
- O General Duties of Staff of Engineering Departments
- P Safety of Men Working on or about the Line - Appointment of Look-outmen
- Q Protection of Engineers' Trains Working on a Running Line Not in the Absolute Possession of the Engineer.
- R Loading or Unloading of Engineer's Materials to and from Rail Vehicles which may be Moved
- S Protection of Hand Trolleys on a Running Line Not in the Absolute Possession of the Engineer
- T Engineering Work, Obstruction of the Line, and Temporary Speed Restrictions

Although there would seem to be a marked similarity between the material in the 1972 book and its predecessors the contents had been subject to considerable rearrangement. The

main change (apart from general updating) was the rewriting of the rules from what in the main were general statements as to what had to happen (or what was prohibited from happening) to the specific actions that had to be undertaken by specific staff. By way of example one might look at section 'L' (Signalling during fog or Falling Snow). The old book had 12 rules on this subject, numbers 84-95. Although covering a wide range of different sub topics, about half of the bulk was devoted to some very specific procedures that had to be followed by fogsignalmen. In contrast one of these rules simply related to there being a need to ensure that a sufficient supply of detonators, hand lamps and flags had to be kept on hand at stations, with no specific person being responsible. In the 1972 rulebook this was all redrafted into sections: Duties of Stationmasters, Duties of Signalmen, Duties of Track Chargemen, Duties of Fogsignalmen and Duties of Trainmen. Inevitably the result was a little longer, but it was clearer and freer of ambiguity.

It might be noted that the section on Stations had disappeared. In fact the section on Stations in the 1950 rulebook said very little on the subject either and was merely a section into which all sorts of obscure material was put. The 1972 book accommodated the few surviving clauses elsewhere but the rest was discarded as obsolete (for example rule 30 had required horses heads to be held if a train passed). Nevertheless the 1972 book had clearly moved a step further towards being a manual concerned only with the movement of trains and the protection of staff and equipment during derangement or engineering work.

The old printed book format was an imperfect instrument to keep up to date. Changes to rules were promulgated through weekly instructions that ended up either as manuscript adjustments or with the updated rule in printed form cut out and pasted on top or alongside. It was up to staff to keep their own book up to date. Consolidated sets of changes were published occasionally for the benefit of staff issued with new rulebooks as it was otherwise impossible to know what the changes had been since original publication. The official expectation was that staff would go through the consolidated changes and rather than amend the dozens of rules by hand simply to note that the rule had been altered and that it was necessary to cross-refer to an amendment book. This was far from satisfactory.

The loose-leaf system is also seriously wanting. It is easy to see how the circulation of updated pages ought in theory to ensure that rulebook pages were always up to date. An urgent change would still be issued through a weekly notice but would in due course (together with less urgent changes) be issued in sets of amended pages that replaced the old ones entirely. The defects include:

- the muddle that can ensue when by accident the wrong pages are discarded or new pages not received or inserted—where widespread changes were made this could produce perplexing results with duplicate rules and chaotic page numbering;
- the laborious method required to issue new books well into their currency—there was only one way to do this—each set of amendments had to be dealt with in strict turn, old pages discarded and new inserted, with the pile of discarded pages often larger than the entire rulebook and the possibility of error significant.

To contain the problem within manageable bounds the entire contents of the 1972 rulebook were re-issued periodically, with all changes to date incorporated.

Certainly the 1972 Rulebook was entirely re-issued in 1985 to incorporate eleven sets of changes made since 1972 and substantially updated again in 1990. Mechanically, the book had

changed prior to 1985 from being a red soft-covered document to a black hard-backed ring binder.

During revision it had been somewhat simplified and by 1990 ran to just fifteen sections (Sections F, G, L, O, Q were removed, and U—Temporary and Emergency Speed Restrictions—had been added). There had also been a considerable number of other changes to title and content, with extensive changes made to the areas of track protection and engineering work on the track.

By December 1990 the contents were as follows:

- A Employment and discipline
- B Duties of employees on or near the line
- C Signals
- D Passing signals at danger and/or making movements in the wrong direction
- E Failure, repair, renewal and maintenance of signalling equipment
- H Working of Trains
- J Shunting
- K Detention of trains or vehicles on running lines or loops
- M Trains stopped by accident, failure, obstruction or other exceptional incident
- N Single line working
- P Appointment of lookouts
- R Loading or unloading of rail vehicles during engineering work
- S Protection of hand trolleys on running lines not under absolute possession
- T Protection of engineering work and obstruction of the Line
- U Temporary and emergency speed restrictions

It may perhaps be seen that in this final form the 1972 rulebook was now a more balanced and clear affair; the removal of the various minor or highly specific sections reduced the bulk slightly though those instructions (which were not by any means necessarily withdrawn) now needed to appear elsewhere.

The 1996 Rulebook

After some years living with the new rulebook and notwithstanding several comprehensive revisions British Rail was still unhappy about its form, coherence and usability. In consequence the decision was taken in the early 1990s to move substantially further towards the goal of job specific instructions and write a new 'master' rulebook that would be distributed by means of job-specific subsets to the various grades of staff. By this means it was possible to write yet more procedurally-based instructions and to include explanatory diagrams while keeping the information needed by each grade still portable. The new rules came into force during April 1996 and comprised the 'master' rulebook (not on widespread issue) from which were drawn 13 'personalised' (or job-specific) rule books.

With railway privatisation in the wind an issue arose as to who 'owned' the rulebook and, for that matter, wider responsibility for safety compliance within the fragmented and con-

tract-based rail industry. In the end it was concluded that a safety framework used widely in the oil industry would be used. This required every organization controlling trains and infrastructure to have a 'Safety Case' setting out in some detail how safety was to be managed. The decision was made for Her Majesty's Railway Inspectorate to approve the infrastructure controller's safety case (ie that of Railtrack) and for the latter to approve the safety cases of the train operators. As Railtrack was in control of the infrastructure, and therefore needed assurance that the operators and their trains were safe, they already had or were producing rafts of standards with which people had to comply on or around the railway. It was natural that to this was added responsibility for the railway rulebook, which henceforth was considered to be just another railway standard to which all must comply. Railtrack set up a Safety and Standards Directorate to manage all of this, and inherited the rulebook revision process begun by British Rail from whom they took over in April 1994. The new rulebook was signed off in February 1996 and the personalized versions distributed shortly thereafter.

To maintain a degree of independence from the operating organizations the Safety and Standards Directorate operated independently from the contract and engineering parts of Railtrack, and perhaps more importantly it was also removed from the operating organization, the first time that a rulebook had been so far removed from operational command. In a sense it was the worst of all worlds, as this separation from commercial pressure was not seen as sufficiently adequate. In consequence the directorate was established as a stand-alone company called Rail Safety (but still owned by Railtrack) in 1999 and further distanced in 2003 when it became part of the wholly independent Rail Safety and Standards Board. It is thus with the RSSB that responsibility for the rule book now lies.

The 1996 personalized rulebook comprised the following sections:

Book Number	Contents	Railtrack Standard
	Master Rule Book (Section numbers similar to those in 1972 book)	GO/RT 3000
1	Extracts from Rule Book – Section A	GO/RT 3001
2	Extracts from Rule Book – Section A, B(i)-B(iii), C, F, S and T(ii)	GO/RT 3002
3	Persons Operating Signalling Equipment	GO/RT 3003
4	Train Driver	GO/RT 3004
5	Passenger Guard	GO/RT 3005
6	Passenger Guard, Freight Guard and Shunter	GO/RT 3006
7	Freight Guard and Shunter	GO/RT 3007
8	Person in Charge of Platform	GO/RT 3008
9	Person in Charge of Train Operations	GO/RT 3009
10	On-Track Machine Driver	GO/RT 3010
11	Person in Charge of Railway Infrastructure	GO/RT 3011
12	Person Working on Rail Vehicles	GO/RT 3012
13	Person Working on Signalling Equipment	GO/RT 3013

Each personalized rulebook was laid out in chapters (called Sections) using colours along the page edge to help distinguish one Section from another. Each Section of the personalized rulebooks represented a Section in the master rulebook, though only those Sections applicable to the personalized version concerned was reproduced. The headings used within each Section were common to all rulebooks incorporating that Section, though there could be variations in the text to reflect the different job function.

The list of Sections that could be deployed was as follows:

- A General Responsibilities, Safety and Security.
- B(i) Your Safety when Walking on or near the Line
- B(ii) Your Safety when Walking on or near the Line (includes Person in Charge of Work, Lookout, Site Warden.
- B(iii) Your General Duties when on or near the Line
- B(iv) Your Safety when Working on Rail Vehicles
- C Signals
- D Passing Signals at Danger and Making Movements in the Wrong Direction
- E Failure, repair, renewal and maintenance of signalling equipment
- F(i) Manual Operation of Power Operated Points
- F(ii) Your Duties if acting as Handsignalman
- G Your Duties when Working at a Passenger Station
- H Working of Trains
- J Shunting
- K Detention of Trains or Vehicles on Running Lines or Loops
- M Trains Stopped by Accident, Failure, Obstruction or other Exceptional Incident
- N Single Line Working
- R Loading or Unloading of Rail Vehicles during Engineering Work
- S Protection of hand trolleys on running lines not under absolute possession
- T(i) Not used*
- T(ii) Protection of engineering work when Engineer does NOT Take Possession of the Line
- T(iii) Protection of engineering work when Engineer does DOES Take Possession of the Line
- T(iiiA) Protection of engineering work in sidings
- U(i) Temporary Speed Restrictions
- U(ii) Emergency Speed Restrictions

The similarity of Section headings with those of the 1972 book (in its final form) may be noted, and it is quite evident that evolution was the watchword, not revolution.

Each of the personalized books used an idiosyncratic method of numbering that would have appealed to a document controller but seems unduly daunting to users. Each section of each personalized book was devoted to the body of subject matter set out in the preceding list of headings, but nevertheless had its own self-contained numbering. Most, but not all, sections began with a main heading (numbered '1') called 'Principles' with the next heading '2' called 'Definitions'. Beyond that all paragraph headings were of the form x.n.n or x.n.n.n where 'x' was the rulebook number, and 'n' represented the paragraph and subparagraph numbers. It was contrived that in each rulebook the n.n.n numbers corresponded to the same headings from the master rulebook, even though there might be differences in the text reflecting the different job responsibilities. These numbers were used largely to order the material

within each of the separate rule books but bore no obvious relation to the originating rule number. It may be seen that to refer to a specific rule it might be necessary to quote a number such as 'B(iii) 9.3.1.3' (need for a person in charge of train operations to look after and replenish detonators).

During 1996 various amendments to the rules had shown themselves to be necessary. This was profoundly more complicated than hitherto as separate sets of amendments were necessary for the master and 12 of the 13 personal Rule Books (a 1000 per cent increase in printing and production was suggested, not to mention the massive logistics exercise). The first set of supplements was issued to take effect from 7th December (though a fall back date of 1st February 1997 was agreed in the event that the task of production overwhelmed the system). In this round of amendments numerous changes previously notified by other means were included, and there were no amendments necessary for Rule Book number 1.

It is necessary to digress for a moment. The 1972 Rule Book had during its later stages of existence acquired a set of fifteen appendices (together known as the Rule Book Appendix) that were accommodated at the back of the black British Rail Rule Book binder. The story of the Rule Book Appendices are covered in more detail later but suffice to say here that the fifteen covered a wide variety of assorted instructions some dealing with quite general matters (like Level Crossings) and others with specifics such as Power Operated Doors. The Appendix remained in force after the introduction of the 1996 Rule Book and staff had to retain their black binders (but without the Rule Book pages) to house the Appendix.

The second 1996 Rule Book supplement came into effect on 7th February 1998 and included a further significant raft of changes. More significantly it had by then been decided to abolish the Rule Book Appendix and incorporate the majority of it in the Rule Book proper. This inevitably meant major rearrangement and resulted in fourteen new sections appearing. Some changes to operating principles were also made (such as the abolition of the PICOW (Person In Charge of Work) in favour of new arrangements. The few parts of the Appendix not incorporated in the new rules were issued separately, mainly by train operating companies operating the specialist equipment to which the rule related (for example automatic couplers).

The principle changes included introducing the following entirely new sections:

- L Level Crossings
- P(i) Working of Single Lines
- P(ii) Working of Single and Bi-directional Lines by Pilotment
- Q(i) Engineer' Self Propelled On-Track Machines
- Q(ii) Rail Mounted Maintenance Machines
- Q(iii) Self-Propelled Road/Rail Recovery Vehicles
- V Broken Rails and Bridge Strikes
- W Bad Weather affecting Railway Infrastructure
- Y Accidents

In addition much material was added to section H, requiring various other movements of material to or from the original section H; it was finally recast as follows:

- H(i) Working of Trains – Normal Arrangements
- H(ii) Working of Trains – Out of Course Working and Defective Vehicles

- H(iii) Working of Doors on Passenger, Parcels and ECS trains
- H(iv) Working of the Automatic Brake on Locomotive Hauled and Multiple Unit Trains.

The supplement also gave early warning that Personalized Rule Book number 1 was to be withdrawn during 1998.

In 1999 Section M was split into two; the first part [M(i)] 'Trains stopped by Train Accident, and [M(ii)] 'Trains Stopped by Failure and Provision of Assistance'.

By the beginning of 2003 some ten supplements had been issued to the 1996 Rule Book. Where it had proved practical to do so, each page of each Rule Book was replaced where there had been some alteration, pages with no alterations were left alone. Unfortunately this was only really possible when the number of changes was comparatively small. When more widespread changes were needed it affected the page numbering and in the end it seems to have proved easier to reprint and reissue entire sections, and (on at least one occasion) entire rulebooks. The cost was immense but unavoidable given the approach taken and widespread distrust that staff would methodically keep books up to date by making hand-written changes. Because of this, the contents of the master Rule Book (and derivatives) were entirely replaced in August 1999, at colossal expense, to achieve purely moderate textual updating.

THE PRIVATIZED RAILWAY

During the first few years of private sector rail operation and the considerable changes that accompanied it, it soon became evident that the personalized rulebook route was not an entirely satisfactory one. Apart from anything else the number of staff undertaking a variety of different jobs rose considerably, somewhat defeating the original objective.

In 1998 an industry conference was held to review the suitability of the personalized Rule Book for the privatized industry and determine the way forward. The conclusions from this conference were:

- The personalized Rule Book is not suitable for the privatized industry.
- There is a significant risk of the introduction of ambiguity when reproducing the same rule in several different forms.
- The rules are in some case ambiguous.
- The rules are often written in outdated English and are particularly difficult for new entrants to the industry to understand.
- The rules have evolved over time and in some cases the original reason for the rule has been lost.
- The process for amending and updating the rules was complex, required a significant resource and was far from robust (there was clear evidence that a significant number of revisions never reached all of the holders of the master Rule Book or one of the personalized Rule Books).

A decision was therefore taken at the conference that the 1996 Rule Book should be rewritten and a remit for the project was established.

Although the original remit was formed at the conference in 1998, it has developed as the project has progressed. The following captures all the principle points of the later remit against which the new Rule Book was drafted.

- Each rule should be written only once and contained in one place.
- The rules should be published in modules that are focused on a work situation or an activity, for example 'shunting'.
- Each module should contain all the rules relating to the activity for all employees. So the 'shunting' module will contain all the rules for every person involved - eg drivers, shunters, signallers, guards etc. (precisely the opposite of the personalized approach).
- There should be no change to the rules as such except where they are found to be either wrong or in conflict.
- Any ambiguity found between different rules should be corrected even if that means changing a rule.
- The rules should all be re-drafted using 'plain English' with the objective of obtaining the Plain English Campaign's 'crystal mark' for each module.
- Future revisions or amendments to the rules should be promulgated by the issue of a revised module. The process of having to carry out 'cut and paste' amendments to the issued document would cease.
- Professional advice would be sought on the use of colour, diagrams and layout of the text.

The following is a breakdown of the key stages of the project.

- A dedicated team was established within Rail Safety (later the RSSB) to carry out the project.
- The existing master Rule Book was analysed in detail and a draft modular structure established.
- A template for the modules was developed and agreed, with input from design and occupational psychology specialists.
- Every rule was carefully reviewed against the remit.
- The wording of each rule was carefully redrafted using the guidelines of the Plain English Campaign.
- All of the rules relating to a specific activity were collected together and checked for ambiguity or conflict. Where necessary the rules have been corrected.
- All diagrams have been thoroughly reviewed and re-drawn. A significant additional number of new diagrams have been added in. Advantage has been taken of new technology available to make the diagrams simpler, more realistic and easier to understand.
- A number of seminars and workshops have been held throughout the country to obtain the views of those who have to use the Rule Book.
- A significant research project was undertaken by The Occupational Psychology Centre based in Watford who identified the following was required in the new Rule Book.
 - simplified text
 - elimination of phrases which are a source of misunderstanding such as 'ahead of', 'in advance of' and 'in rear of'
 - shorter sentences of around 15 to 20 words
 - clearer diagrams with correct detail supplemented by text

- improved and more meaningful headings to aid the search for information
- an index to help find topic areas
- a simplified paragraph and clause number structure avoiding multiple indents and cluttered numbering
- rationalized use of colour, especially in text.

The 2003 rulebook as issued contains 52 'Modules' each of which is designed to comprise a self-contained set of rules. The intention is that all jobs on the railway are assessed for their particular work content and are issued on a personal basis with those particular modules that are relevant to their work. To that end a Railway Group Standard (GE/RT8051 – Rule Book-Module Selection) has been published so that all organizations in the industry will know the approach to follow. With the much wider range of duties undertaken by staff these days it is intended to be a vastly less complicated means of communicating what is relevant than the so-called system of personal rule books that proved to much 'broad brush' and resulted in the distribution of large quantities of paper, quite a lot of it not relevant. The modules were A5 format and varied in thickness between about 6 pages and 80, depending on the nature of the material. It may be seen that for certain jobs the few modules needed could be carried around in ones pocket (impossible under the 1996 regime).

Although the substance of the rules was by and large unchanged, the radically new format was regarded as needing a period for training and familiarization and was therefore issued in June 2003. The opportunity has been taken to incorporate the Train Signalling General Instructions and the Train Signalling Regulations (unchanged for some years) and thereby put all key train movement instructions in one place.

Module Reference	Module Title
	Personal safety and general responsibilities (G)
G1	General safety responsibilities
G2	Personal safety when walking on or near the line, or when on the lineside
	AC electrified lines (AC)
AC1	AC electrified lines Part A Dangers of the system, description of equipment, personal safety and communications Part B Emergency procedures
AC2	AC electrified lines - Working on or near to the OLE
AC3	AC electrified lines Working of trains
	Mishaps, incidents and extreme weather (M)
M1	Train stopped by train accident, fire or accidental diversion
M2	Train stopped by train failure
M3	Not used
M4	Floods and snow

M5	Managing accidents
	On-track plant and machines (OT)
OTP	On-track plant
OTM	Working of on-track machines (OTM) outside a possession
	Signals (S)
S1	Signals and indicators controlling train movements
S2	Observing and obeying fixed signals
S3	Train warning systems (AWS and TPWS) and reporting signalling failures and irregularities
S4	Trains or shunting movements detained, or vehicles left, on running lines
S5	Passing a signal at danger
	Permissible speeds and speed restrictions (SP)
SP	Speeds
	Station working, shunting (SS)
SS1	Station duties and train dispatch
SS2	Shunting
	Track and signalling work (T)
T1A	Failure, renewal and maintenance of signalling equipment
T1B	Working of trains during failure, maintenance and renewal of signalling equipment
T2	Protecting engineering work or a hand trolley on a line not under possession
T3	Possession of the line for engineering work
T4	Possession of a siding for engineering work
T5	Operating power-operated points by hand
T6	Walking as a group and working on or near the line
T7	Safe systems of work when walking or working on or near the line
T8	Handsignalling duties
T9	Loading and unloading rail vehicles during engineering work
T10	Protecting personnel when working on rail vehicles and in sidings
T11	Movements of engineering trains under T3 arrangements
T12	Protecting personnel carrying out activities on the line that do not affect the safety of the line
	Train Signalling (TS)
TS1	Signalling general instructions
TS2	Track circuit block regulations
TS3	Absolute block regulations
TS4	Electric token block regulations
TS5	Tokenless block regulations
TS6	Instructions for out-of-gauge loads

TS7	No-signaller token regulations
TS8	One-train working regulations
	Train Working (TW)
TW1	Preparation and movement of trains - General
TW1 Addendum	Additional instructions Protecting personnel when servicing and repairing vehicles
TW2	Preparation and movement of multiple-unit passenger trains
TW3	Preparation and movement of locomotive-hauled trains
TW4	Not used
TW5	Preparation and movement of trains - Defective or isolated vehicles and on-train equipment
TW6	Working single lines with or without a train staff or token
TW7	Wrong-direction movements
TW8	Level crossings

Part 4 - OTHER KEY INSTRUCTIONS

So far the description of the 'rules' has been confined to a particular publication known as the rule book. Although an imperfect tool, the rule book focused on the more basic principles of railway operation and at least in theory shunned detail or localized instructions, or those concerned with particular pieces of equipment.

Beyond the rule book it was necessary to promulgate vast quantities of instructions that dealt with every conceivable type of equipment, all sorts of special or unusual situations, or localized operating practices at each and every location on the railway. Three documents, in particular, were significant in setting out the general body of subsidiary instructions: the General Appendix and the Sectional Appendix to the Working Timetables (or sometimes the Rule Book or both), and the Block Signalling Regulations. It is convenient to refer to all this subsidiary material as a body of regulations though the distinction between a 'rule' and a 'regulation' is somewhat opaque.

General Appendix

Historically the material in the two appendices has its distant origins in the working timetables where it was convenient to publish such supplementary information. As the railways grew, and equipment became more diversified, and operations more varied, so it was convenient to put the information in a separate document; this also avoided having to reprint everything each time the timetables changed.

The General Appendix, as its name implies, contains a body of regulations and information that could have application anywhere on the railway. There was considerable variation between what the different railways produced as the following examples show.

GWR—1st August 1936**General Appendix to the Rule Book**

Section

- I (a) Additions to the standard rules;
- I (b) Extracts from Regulations for Train Signalling on double and single lines;
- I (c) Matters relating to the Working and Maintenance of Points and Signals;
- II General Instructions affecting the Working of Trains (passenger and Freight);
- III General Instructions affecting the Loading and Conveyance of Merchandise and Livestock;
- IV Instructions concerning Station Work;

LMSR—March 1937**General Appendix to the Working Time Tables**

- General Instructions respecting Accidents, Fires etc;
- Instructions respecting Electrified Lines;
- Instructions respecting Working of Trains;
- Miscellaneous Instructions
- Modifications of Standard Rules

SECTIONS OF THE RULE BOOK

Section:

- V Working on Single Lines by Staff and Ticket
- VI Working on Single Lines by one engine in steam;
- VII Working on Single Lines by Pilot Guard
- VIII Working on Goods Lines where Absolute Block not in operation;
- IX Working of Automatic Vacuum Brake
- XI Communication between Passenger, Guard and Driver by means of Automatic Brake
- XII Protection of staff working on Vehicles.

The numbering of the second block would seem to imply that the sections have been drawn from some larger body of material. Whether the balance was published elsewhere or was obsolete is not known. However the instructions for operation of slip carriages (in the pre 1933 Appendix) is included in Instructions for Working of Trains and the missing balance may have been absorbed into the block telegraph regulations.

LNER (southern area) 1947

- Instructions for working Single Lines and No Block lines;
- Continuous Brakes;
- Instructions affecting General Working of Trains;
- Regulations for Protecting Staff working on Vehicles;
- Modifications to Rules and Block Regulations;
- Instructions Regarding Train Signalling;
- Accidents, Mishaps and Breakdowns;
- Explosives, flammable Liquids, Fires etc;
- Loading and Miscellaneous Instructions.

The wide variation between the contents of these books reflects an apparent lack of interest in co-ordination by the RCH.

When British Railways was formed the General Appendices continued in force on the lines to which they related until it became possible, through massive rationalization, to condense the useful material into a single book that applied throughout the network (the temptation to produce regional appendices was resisted). The consolidated Appendix was issued in 1960 (in the name of the Railway Clearing House) and again in 1972 (to reflect the changes consequent upon the new rule book, and this time issued by British Railways).

The BR book was entitled General Appendix to Working Timetables and books of Rules and Regulations, which seems comprehensive enough. It lacked any table of contents, relying only on an index, but the main headings were as follows:

Rules (*few*)
Regulations
Working of Points and Signals
Detonators
Shunting
Working of Passenger and Freight Trains
Accidents
Station and Platform Working
Fires
Arrangements During Frost or Snow
Miscellaneous.

The layout of the 1972 appendix was extremely similar to the 1960 one. Both contained (amongst much highly varied material) comprehensive instructions to station staff about how to deal with and release consignments of homing pigeons.

In 1981 the General Appendix was issued in loose-leaf format. The familiar material appeared in Part I and included the following:

1. General Operating Instructions;
2. Traction;
3. Working of Passenger and Parcels Trains;
4. Working of Departmental Trains;
5. Station and Depot Working;
6. Accidents, Fires and Bad Weather

Part II contained a range of Working Instructions relating to brakes, couplers and certain types of train.

Despite the entirely new format much old material still appeared, though the instructions for dealing with homing pigeons were a little shorter.

In 1990 the General Appendix was abolished. The requisite material was re-issued in the form of an Appendix to the Rulebook, dated 2nd June 1990, and included within the rule-book covers.

The Appendix was actually a consolidation of separate appendices and other instructions, as listed below. They vary from general to highly specific, lack any form of coherence and by no means mopped up all the varied miscellaneous instructions that continued to be promulgated.

- 1 Accidents, Incidents and Bad Weather
- 2 Working of Trains—General Instructions
- 3 Working of Passenger, Parcels and Empty Coaching Stock
- 4 Power Operated Doors
- 5 Working of Freight Trains
- 6 Working of the Automatic Brake on Locomotive-hauled Trains
- 7 Automatic Couplers
- 8 Automatic Warning System
- 9 Level Crossings
- 10 Single Lines
- 11 Class 101-144 and 302-312 Trains
- 12 Engineers' Self-Propelled On-Track Machines and Road/Rail Vehicles
- 13 Departmental Trains
- 14 Rail-Mounted Maintenance Machines
- 15 Installation of New Points and Disconnection of Redundant Points

As mentioned in the Rule Book section of this work the Appendix was abolished entirely in 1998 and the contents were largely assimilated in the main Rule Book.

Sectional Appendix

The Sectional Appendices also varied widely in form but were usually published to cover the geographical area of the entirety of a small region or railway, or a logical subsection of a larger railway. Sometimes a Sectional Appendix would be published as an entirely separate document and sometimes it would be bound in with the General Appendix for convenience. The Full title was *Sectional Appendix to Working Timetables* and reflects the origin of the content as having been supplementary information in the timetables until it became too voluminous (and inefficient to reprint every time a timetable came out).

A typical format was to divide the entire railway into sections of line and list the various instructions or points of information that related to each section, station, signalbox or siding in order. Frequently this would be done by means of tables laid out in geographical order that showed facilities at stations or junctions. Local instructions or rules would follow in text form. Formats varied widely but sometimes vast sets of (often tabular) material followed setting out other local or highly specific instructions. All this included lists of signal boxes, distances between station/boxes, whistle codes to be used, means of access to private sidings, and so on.

Sectional Appendices are still necessary, even though the local facilities and variety in train operation has been hugely simplified. They are currently produced on the basis of the former Railtrack Zones but no doubt Network Rail will in future produce them by one or more regional area. The current format (based on South West Zone) is to produce the historic geographic tabular material first, showing distances and local arrangements; today local track diagrams are also included. A further section shows route availability for different types of stock across the area. Another section shows local instructions applicable and finally there is a traction appendix and a section on dangerous goods. Formats vary between zones and it is significant that content is provided by the local zone management and train operator, and not by RSSB or its forerunner, Rail Safety.

Block (and other) Signalling Regulations

The other well-established document developing separately from the rule books were the Block Signalling Regulations, which specifically laid down the procedures to be adopted by both signalmen and trainmen in the operation and of the signals. These regulations also received a lot of attention from the RCH and resulted in some standardisation, notably in the signal box bell codes—a matter hastened after a serious accident at Canonbury in December 1881 when the signalman on one railway mistook the bell code used by a different company that owned the next signalbox. The regulations were re-issued at intervals. In pre-nationalization days the regulations were generally issued as separate documents but it might be seen that the Great Central put them in the rule book and the Midland in the General Appendix, so practices certainly varied.

In the days of the British Transport Commission the regulations were latterly issued in the name of the Railway Clearing House and were entitled 'Regulations for Train Signalling and Signalmen's General Instructions'. The 1st October 1960 edition (the first under nationalization) included a supplement, produced on a regional basis, relating largely to the type of block instruments in use in the regions concerned (though there were other regional variations inherited from the 'big four').

A new edition came into use in October 1972 (lacking the supplement) and a loose-leaf edition emerged in 1988, much revised in 1990, into which various regionally based supplementary instructions issued throughout the previous few years could be inserted.

The 'Regulations for Train Signalling and Signalmen's General Instructions' were abolished in December 2003 when the regulations were worked into the general body of new rules issued by the RSSB. This was entirely reasonable as the signalling instructions were safety-critical and perhaps the only surprise is that it hadn't been done much earlier.

Electrified Lines Instructions

When electric trains appeared on the main line railways in the early years of the twentieth century the rules needed to accommodate them. Two factors had to be addressed. First there were existing rules that needed adaptation to cater for electric trains, as they or their staff did not necessarily act or behave as steam-hauled trains and their crews. For example they didn't have firemen or (necessarily) a second person in the cab who could act as fireman. Secondly electrification itself presented a whole host of new hazards and conditions for which there was a further need for rules.

The London, Brighton and South Coast Railway issued instructions for operating its overhead electrified system in 1908, modified in 1909 and 1913. These included modifications to existing rules (to adapt them for electric train working) and rules to cater for the electrification system itself and the hazards it presented. These seem to have been subsumed into the LBSCR rule book that came into effect in 1917 and appear as Appendix 11. In 1926, under Southern Railway control, they were again issued as a separate book, this time including instructions for using the Westinghouse Brake. These special rules went out of use when the overhead system was abolished a few years later.

The London & South Western Railway used a third rail direct current system. They too promulgated special instructions for their electrified network and an issue dated September

1915 has been noted. The content follows the same pattern as that for the LBSCR but obviously adapted for the extra complication that the third rail presented. The Southern Railway re-issued the instructions in an updated form in June 1925 and although further updated these seem to have done service until well into nationalization.

When finally the Southern Region came to the conclusion that it was necessary to consolidate and update the instructions a vast body of peripheral material (largely train-specific) was also included. The new instructions were issued with effect from 7th November 1966. They also included regulations for the Southern's small quantity of 750 Volt overhead line (in place in certain South Eastern yards).

Revised instructions (still dealing only with Southern Region dc lines) came into effect from September 1976, though it was a cheap production compared with its predecessors. Apart from updating the regulations the book was laid out in a slightly simpler manner and most references to the operation of trains and their brakes was shifted to the Sectional Appendix.

The dc electrified lines instructions still sit outside the main body of rules and were updated and re-issued by Railtrack (in loose leaf form) in 1994, though subsequently reissued more than once to incorporate modifications. The new electrified lines rules are not specific to the old Southern Region but have been widened in scope to include other dc lines on the network. These include what are now London Overground's services and the Liverpool-Southport line each of which had previously their own long lineage of special instructions.

The other main system of electrification in the UK is the overhead system, now almost completely 25kV ac but some of which has been adapted from lower voltage ac or dc systems, all of which is of post-war origin.

Special operating instructions were issued for the following overhead-electrified sections of railway (though the list is illustrative rather than complete):

- Manchester – Sheffield – Wath, 1500V dc 1952 and 1954, Eastern & London Midland Regions;
- Liverpool Street – Shenfield, 1500V dc 1949, Eastern Region;
- Liverpool Street and Fenchurch Street – Chelmsford and Southend Victoria, 1500V dc 1956, Eastern Region;
- Great Eastern Lines (all), 25/6.25kV ac, 1960, Eastern Region;
- BR (LT&S line), 25/6.25kV ac, 1961, Eastern Region;
- BR (LMR) 25/6.25kV ac, 1960, London Midland Region;

In 1967 (by which time dc overhead had all but been superseded by ac distribution) the overhead line instructions were consolidated into a single book 'Working Instructions for AC Electrified Lines' issued by BR on a non-regional basis with effect from 3rd June. A separate set of extracts was issued to staff that did not need the whole book.

From around 1999 the ac electrified lines instructions became a stand-alone module of the rule book (called Section Z it would go in the loose leaf book but was in practice only issued as required). From the inauguration of the 2003 rule book ac electrification instructions comprise modules AC1, AC2 and AC3 of the new modular book. There are now no separate instructions. As with the rules for train signalling it is perhaps surprising this safety critical material was not absorbed earlier and that dc electrified lines instructions have not yet gone the same way.

Signalling

What was regarded as 'normal' signalling, in terms of indications given and meaning attached, has always been addressed in the main rule book, together with various safety and emergency instructions. Novel types of signalling (usually some variety of coloured light system) were usually covered in separate area-specific instructions.

There was little consistency in how this was achieved. The LMSR's Mirfield system was covered in the Sectional Appendix while separate instructions were issued for the Euston-Watford system (the last version with effect from 1st December 1959, also covered North London Line and the electrification system). The LNER published in 1938 a guide to coloured light signalling and attempted to link everything back to semaphore operation. The 1950 rule book dealt very poorly with coloured light signalling (there wasn't much about then) and it wasn't really until the 1972 book that semaphore operation began to appear the less dominant system.

For specific signalling alterations special notices were usually issued, often containing track and signalling diagrams. Where necessary these also contained location-specific instructions. They were supposed to be retained for local use but it was never terribly clear when the documents were fully superseded and railways never quite worked how to make an effective link with the main body of regulations. They are of necessity still issued today but many of the old objections still apply.

Other publications

Numerous other publications existed, and in too much bulk to describe comprehensively. In the early days, for example, what little there was to be said about policing appeared in the normal railway rule book but after a few years the rapidly expanding material disappeared into separate manuals. Railway Police manuals appearing between the wars were largely digests of useful law but the LNER manual also contains 76 rules for their police officers.

Engineering departments also benefited from the application of supplementary rules to cover working practices which in some cases were remote from the operational railway. Various types of rolling stock or specialist equipment also required supplementary rules to be issued.

Perhaps one of the most important documents is the weekly operating notice (this has existed for a century or more under a variety of different names). The notice is in essence a frequent and relatively reliable means of circulating urgent changes to the rules as well as a vast body of temporary or transient information.

APPENDIX I - THE RULES

Examples of the development of two rules in order to illustrate the changes in style that have occurred over the years.

What has been described so far is very much the framework that surrounds the promulgation of rule books and, apart from a few examples of very early rules, little has been said about the rules themselves or about how they changed over time.

Stylistically railway rules have for most of their existence been written in the third person and have thus lacked directness. They have had to strike a balance between the simplicity that can be achieved through brevity and generalization on the one hand, and the comprehensiveness necessary to address situations where all concerned must do things correctly if disaster is to be avoided on the other, like Single Line Working. In early days much was left to the common sense of the staff involved and in consequence things were left unsaid. On discovery that this gave rise to inappropriate risk-taking, or that common sense was less common than thought, or that different people would tackle situations in different ways, then rules were expanded to standardize behaviour. This was a very uneven process as it resulted in extensive expansion of the rules governing the activities considered likely to harbour the greatest risk potential. Similarly railway accidents would often throw up shortcomings in the rules (as well as in their application) that would be addressed by adding material (stuff was rarely taken out), not all of it sitting happily in the existing body of text.

It would be unfair to suggest that prior to 1972 rule book clarity was not sought, but with the rules having a quasi-legal status it was perhaps inevitable that precision of meaning (however wordy) was considered the greater goal.

Prior to 1972 the rule books were organized very much by topic, and each individual rule was intended to encompass all that needed to be said on one particular matter. This was a goal achieved with only partial success. One of the shortest rules in the 1950 book is Rule 166. *“Prisoners and insane persons, with their escorts, must not be placed with other passengers, but in a separate compartment.”* This rule is concise and stands quite on its own in the section relating to working of trains. By comparison another very short rule (number 89) reads as follows. *“Signalmen must enter in the Train Register the time each fogsignalman commences and leaves duty.”* This rule appears concise but is intimately linked with a whole series of rules about fogsignalmen and arguably would sit better as a subparagraph in rule 87 which is all about organizing fogsignalmen. In contrast, Rule 55 is entirely devoted to the potentially dangerous circumstances surrounding the detention of trains on running lines, and could have had a whole section to itself; in consequence it runs to seven separate clauses, four of which are divided into sub-clauses, and there are four accompanying notes whose status is not entirely clear but seem to have the same status as the rest of the rule. There are other extraordinarily long rules, like number 217 which goes on for 9½ pages and is all about obstructing the track for repairs.

It is not in fact very easy to track any one rule from its earliest manifestation to the present day. However the following seeks to track the issue of trains coming apart over the course of 140 years or so. This must be taken as illustrative of how a straightforward and foreseeable occurrence requiring consistency of approach has been addressed over a century or so.

Train becoming divided

A train coupling failure was a fact of life in the earliest days of railways and is not unknown today. The rules have to address two associated issues. The first is, having noticed a breakaway, what to do about the two moving portions of train. The second is what to do when each portion has come to rest safely (if one of them derails or crashes it is no longer a breakaway—it's an accident for which other procedures apply).

The Lancashire & Yorkshire Railway had the following to say in Rule 153 of its 1869 rule book.

153. -If any part of a train becomes detached when in motion, care must be taken not to stop the train in front before the detached part has stopped; and it is the duty of the guard or breaksman of such detached part to apply his break in time to prevent a collision with the carriages or wagons in front, in the event of their stopping.

The imperative here was to prevent the rear portion crashing into the front one. What is to be done after the stoppage isn't explained; presumably the train staff were expected to re-couple the train as best they could and carry on. Separate rules dealt with any resulting accident.

The following represents the 1950 rule book's requirements for a divided train. The rule had not in fact changed very much over the previous forty years. It can be seen that most of the verbiage now addresses the problem of disposing of the portions safely until such time as they could be re-coupled. Significantly Rule 183 covers not only accidental dividing of a train but also intentional dividing where it isn't possible for the whole train to proceed as a single train. By this means the entire body of rules for working multiple portions of train are brought together. In fact this serves to make a quite simple rule very complex; if a train becomes uncoupled and the two portions stop close to each other (as would any train fitted with continuous brakes) then only clause (i) would be relevant.

182. A Driver, on seeing a green hand signal waved slowly from side to side from a signal box, must understand that his train is divided, exercise great caution and look out for the rear portion. The green hand signal waved slowly from side to side is also the authority for the Driver to pass the signal controlling the entrance to the section ahead worked from the box at which the green hand signal is exhibited should that signal be at Danger, but when doing so he must understand that the line ahead is not necessarily clear and that he has been allowed to enter the section for the purpose of avoiding or reducing the force of a collision with the rear portion and must keep a good look-out ahead. The green hand signal must not be exhibited unless it is intended that the front portion of the divided train should enter the section in advance.

183. (a) When a train or portion of a train is left on any running line from accident or inability of the engine to take the whole forward, or from any other cause, the Driver must not return for it on the same line, except as ordered in clauses (f), (g) and (i) of this Rule, but must cross on to, and travel along, the proper line, and must re-cross at the nearest point behind the part left, which he must push before him until convenient to go in front again with the engine. If there be a crossover road immediately in front of the train, and the operation can be performed within sight of the

Signalman, the Driver may use such crossover road for the purpose of attaching his engine in front of the train.

- (b) In cases where it is necessary to divide a freight train on an incline, owing to the inability of the engine to take the whole forward, both portions must, where practicable, be worked up the incline with the brake van in the rear. When a train is divided in this way at a station, or at an intermediate signal box, where a portion of the train can be disposed of, it will generally be found most convenient to shunt the front portion of the train into a siding, and take the rear portion forward first (with the brake van attached in rear) to the next station or signal box where there are means of disposing of it.

After the first portion of the train has been disposed of, the engine must return on the proper line, with the brake van, for the purpose of working forward the other portion of the train which has been left behind, and the brake van must, in that case also, be attached in the rear.

- (c) Where a train is divided in a section between two signal boxes a tail lamp must not be carried on the engine or last vehicle of the front portion of the train before reaching the signal box in advance, where the Driver must stop and inform the Signalman of the circumstances; if the engine or front portion of the train has to pass into the next section a tail lamp must then be placed in the rear. The Signalman must not give the "Train out of section" signal until he has satisfied himself that the whole of the train has arrived.

After sunset, or during fog or falling snow, or if the division is made in a tunnel, the man who divides the train must place 3 detonators, 10 yards apart, on the line not less than 100 yards ahead of the portion left behind.

In the case of the train being accidentally divided the Guard in charge after protecting the rear portion must then return and place 3 detonators, 10 yards apart, on the line not less than 100 yards ahead of the portion left behind, afterwards taking the most expeditious steps to obtain assistance.

A white light must be placed on the leading vehicle of the rear portion before that portion is propelled to the signal box in advance or drawn back to the signal box in rear.

- (d) When two Guards are employed with a train which has to be divided in a section the Guard in charge, after putting on the rear brake and securing the rear portion of the train so that it will remain stationary, must go back and protect it in accordance with Rule 179. The other Guard must uncouple the train, and ride on the front portion.

When there is only one Guard with the train, the Fireman must uncouple and ride upon the front portion, and the Guard must take the necessary measures to protect the rear portion. Where a Fireman is not provided the Guard must perform the uncoupling before protecting the rear portion.

The Guard or Fireman travelling with the front portion must ride upon the last vehicle or the nearest suitable vehicle thereto. If there is no suitable vehicle he may ride on the engine.

- (e) If the last vehicle of the front portion is not suitable for the Guard or Fireman to ride upon in accordance with clause (d), the Guard or Fireman must, before leaving with the front portion, take such steps as will enable him to be in a position to assure the Signaller on arrival at the box in advance that the front portion of the train has arrived complete.

In the case of trains drawn by single manned diesel or electric locomotives, the Driver only will proceed with the front portion and he must take steps to enable him to be in a position to assure the Signaller that the front portion of the train has arrived complete.

- (f) If it be found necessary to return to the train or rear portion of the train in the wrong direction; from the signal box in advance, the Driver must, send his Fireman to the Guard to obtain his written authority to the Signaller at the first signal box in advance, authorising him to allow the engine to return from that point in the wrong direction (see Form A at end of Rule) and without this authority the Signaller must not allow the engine to return in the wrong direction to its train. The Signaller must retain this order. After giving such authority the Guard must continue to protect his train in the rear. In the case of trains or engines the driving cabs of which are single manned, the Driver will be responsible for obtaining the "Wrong Line" order from the Guard.

If the train, or rear portion of the train, has been left a short distance ahead of a signal box and is standing in such a position that the engine returning for it in the wrong direction will have to pass over any points worked from that signal box, the Guard, before issuing the "Wrong Line" order, must have it countersigned by the Signaller.

In the event of an engine assisting the train in the rear, the Guard's "Wrong Line" order must be countersigned by the Driver of that engine.

If, after the issue of the "Wrong Line" order form, it is subsequently found more convenient to remove the train or portion of train by an engine from the rear, the Guard must not allow his train to be moved until the "Wrong Line" order form has been returned to him.

If the front portion of the train cannot be disposed of at the first signal box in advance, and provided the two portions can be recoupled, the front portion may be allowed to set back under the authority of "Wrong Line" order form A (see end of Rule). If it is necessary for the engine and front portion to proceed to a signal box further ahead, the Driver must, if there is no cross-over road at the first signal box, obtain from the Signaller there, before proceeding, a "Wrong Line" order (Form D-see Rule 184) to return in the wrong direction from the box in advance. If, however, there is a crossover road at the first signal box the engine must be returned

on the proper line of rails to that signal box and be there crossed to the line on which the rear portion of the train is standing, so that the engine shall not travel in the wrong direction further than is necessary.

A "Wrong Line" order form must be issued for each occasion on which it is necessary for the engine to return in the wrong direction, as described above.

In the event of a train or portion of a train being left on a running line after the engine has been detached and removed from the line, and it is necessary for an engine to remove the train or for a breakdown van train to travel in the wrong direction from the signal box in advance, the Guard must issue a "Wrong Line" order (Form A) which must be conveyed to the Signaller at the first signal box in advance and the provisions of this Rule must be observed so far as they apply.

- (g) When a train is brought to a stand on any running line, owing to the failure of the engine or from any other exceptional cause, it may be necessary for the engine coming to the assistance of the train or for the breakdown van train to travel in the wrong direction from the signal box in advance. In such a case the Driver of the disabled train must write out an authority on Form B (see end of Rule), for the Signaller at the first signal box in advance to allow the assisting engine, or the breakdown van train to travel in the wrong direction to the disabled train. The Fireman of the disabled train must hand the written authority to the Signaller, and accompany the assisting engine, or the breakdown van train, to his train, advising the Driver where, and under what circumstances, the disabled train is situated; the Signaller must retain the authority and show it to the Driver before allowing the assisting engine or breakdown van train to proceed in the wrong direction. The Driver of the disabled train after giving the order for the assisting engine or the breakdown van train to travel in the wrong direction, must not allow his train to be moved until the assisting engine or the breakdown van train arrives, unless satisfactory arrangements have been previously made to prevent the assisting engine or breakdown van train from coming in the wrong direction, and his Fireman has returned and handed the "Wrong Line" order back to the Driver.

If the train has stopped a short distance ahead of a signal box, and is standing in such a position that the assisting engine or breakdown van train travelling in the wrong direction will have to pass over any points worked from that box, the Driver before issuing the "Wrong Line" order, must have it countersigned by the Signaller.

After sunset, or during fog or falling snow, or if the disabled train is left in a tunnel, the Fireman when proceeding to the signal box in advance must place 3 detonators, 10 yards apart, on the line not less than 100 yards ahead of the disabled train.

If there be no crossover road at the first signal box and it be necessary for assistance to be obtained from a signal box further ahead, the Fireman must, before proceeding to such signal box, obtain from the Signaller at the first signal box a

"Wrong Line" order (Form D-see Rule 184) to return in the wrong direction from the signal box in advance.

Should it be necessary for the leading engine of a double-headed train to be detached either for the purpose of assisting a disabled train or examining the line, and such engine requires to return to its train in the wrong direction in accordance with this clause, "Wrong Line" order form B must, when the train is standing in advance of the signal box, be issued by the Driver of the train engine and countersigned by the Signaller.

A "Wrong Line" order must be issued for each occasion on which it is necessary for a train to travel in the wrong direction, as described above.

- (h) The Driver, when returning for the portion of his train that has been left behind, or when pushing such portion of his train, or the Driver of the assisting engine or the breakdown van train as the case may be, must not pass any signal box without the permission of the Signaller.
- (i) If, after a train has become accidentally divided between two signal boxes and the front portion has not arrived at the home signal for the box in advance, the Driver requires to set back from a point in the section, the front portion may be set back to the rear portion, provided the two portions can be recoupled, but, before moving, the Driver must send his Fireman to the Guard who is protecting the rear portion for a written authority to set back (see Form C at end of Rule). The Driver must retain this order.

If the engine or any vehicle of the front portion returning for the rear portion in the wrong direction will have to pass over any points worked from the signal box near which the rear portion is standing, the Guard, before issuing the "Wrong Line" order, must have it countersigned by the Signaller.

In the event of an engine assisting the train in the rear, the Guard's "Wrong Line" order must be countersigned by the Driver of that engine.

- (j) In the case of trains or engines the driving cabs of which are single manned, the Driver must carry out the duties of the Fireman.
- (k) When it is necessary for the Driver of a single manned engine or train to issue a "Wrong Line" order, he must himself go forward and deliver it to the Signaller at the box in advance.

The 1972 rule book takes an altogether different approach, but does not seek to alter what has to be done. This time the instructions are specific to trains becoming divided by accident, and the actions to be taken by individual members of staff are spelt out.

**Section M. Trains Stopped by Accident, Failure,
Obstruction or Other Exceptional Cause****4. Duties of Trainmen—Divided Train****4.1 Trainmen becoming aware of division**

4.1.1 When a Driver becomes aware that his train has become divided and there is any risk of the rear portion colliding with the front portion, he must continue to run forward but must not pass a stop signal at Danger unless authorised by the Signalman.

He must also make every effort to attract the attention of Drivers of approaching trains by giving a series of short blasts on the horn and where possible by exhibiting a red headlight or handsignal.

4.1.2 When a Driver on passing a signal box sees a green handsignal waved slowly from side to side by the Signalman, he must understand that his train is divided, exercise great caution and look out for the rear portion. This handsignal is the authority for the Driver to pass at Danger the section signal but when doing so the Driver must understand that the section is not necessarily clear and that he has been allowed to enter the section for the purpose of avoiding or reducing the force of a collision with the rear portion of his train.

Note: The exhibition of the green handsignal must not be regarded by Drivers as authority to pass an intermediate block home signal at Danger.

4.1.3 In all cases, when the Guard becomes aware of the division he must immediately apply the brake in order to stop the rear portion. The Driver of any locomotive assisting in the rear must co-operate in bringing the rear portion to a stand.

4.2 Action when front portion brought to a stand

4.2.1 If the Driver is unable to see the rear portion and he considers that it is safe to bring the front portion to a stand, or the front portion is brought to a stand at a signal at Danger, he must immediately place a track circuit operating clip and three detonators, 20 yards apart, opposite his locomotive, on the adjacent line(s) on which trains approach from the opposite direction. The Driver must then proceed along the off-side of the train (right-hand side in the running direction) to the rear of the front portion to ascertain whether any other line(s) is in fact obstructed or damaged. He must also count the number of vehicles in the front portion and see whether the coupling or hook on the rear vehicle is fit for use.

4.2.2 If any line(s) used by trains travelling in the opposite direction is found to be obstructed, normal detonator protection of such line(s) must be carried out as quickly as possible.

4.2.3 If no other line(s) is obstructed, the Driver after reaching the last vehicle of the front portion must continue back to meet the Guard in order

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Section M. Trains Stopped by Accident, Failure, Obstruction or Other Exceptional Cause**4. Duties of Trainmen—Divided Train (cont'd)**

to arrange clearance of the line. If there is a telephone, giving communication with a signal box, in the immediate vicinity or if in going back the Driver comes to a signal box or telephone, he must advise the Signalman of the circumstances and unless the Signalman instructs otherwise, go back to meet the Guard.

4.2.4 Where the driving cab is double-manned, the Secondman must carry out the duties laid down for the Driver.

4.3 Action when rear portion brought to a stand

4.3.1 When the rear portion of a divided train has been brought to a stand the Guard must secure it to prevent it moving and unless he can see the front portion must place a track circuit operating clip and three detonators, 20 yards apart, opposite his brakevan, on any other line(s) used by trains travelling in the same direction.

4.3.2 The Guard must then go forward on the off-side of the train (right-hand side in the running direction) to ascertain whether any other line(s) is obstructed or damaged. He must also count the vehicles in the rear portion and see whether the coupling or hook on the leading vehicle is fit for use.

If any other line(s) is found to be obstructed the normal detonator protection of such line(s) as well as the line in rear of the second portion must be carried out. The Guard must advise the Signalman by telephone or by proceeding to the signal box as soon as possible.

4.3.3 When no other line(s) is affected, the Guard must go back and carry out detonator protection on the line on which his train is standing. He must then return and place three detonators, 20 yards apart, at least 300 yards ahead of the rear portion and must also use the quickest means available to advise the Signalman of the circumstances.

4.4 Action when portions can be recoupled

4.4.1 If it is found possible and safe, having regard to gradients and load of the train, to recouple the two portions, this must be done but in the circumstances mentioned in clause 4.4.2 of this Section, the Driver must personally first obtain the Signalman's permission.

4.4.2 If the movement to recouple will require to pass over points the Trainmen must satisfy themselves that the points are in the correct position and if they are worked from a signal box the Driver must personally obtain the Signalman's permission before the movement is commenced. The Signalman's permission must also be obtained if the movement requires to pass over a level crossing equipped with automatic half-barriers or is to be made on a Track Circuit Block line. The Guard must give handsignals as

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Obstruction or Other Exceptional Cause****4. Duties of Trainmen—Divided Train (cont'd)**

necessary during the setting back movement, which must be made with caution. In all cases the train which has been recoupled must be stopped at the next signal box or telephone and the Driver must inform the Signalman of the action which has been taken.

4.5 Action when portions cannot be recoupled

4.5.1 If it is not practicable to recouple the train, the first portion must be taken forward to the nearest place where the vehicles can be shunted clear of the line. A tail lamp must not be placed on the front portion before it reaches the next signal box; if the front portion has to proceed beyond that signal box, a tail lamp must then be attached. On a Track Circuit Block line, a tail lamp may be attached to the front portion after agreement is reached between the Signalman and the Trainmen.

4.5.2 The Driver must, before going forward with the front portion, take such steps as will enable him to be in a position to assure the Signalman at the appropriate time, that the front portion has arrived complete.

4.6 Action when rear portion stopped near signal box

If the Guard of a train which has come to a stand near a signal box becomes aware that the train is divided, he must advise the Signalman if this can be done promptly. If, however, this is not possible or the Guard is aware that trains are being worked under the Time Interval system, he must immediately protect the line on which his train is standing, afterwards advising the Signalman.

Periodic revision of the 1972 book produced the following update.

9. DUTIES OF DRIVERS AND GUARDS—DIVIDED TRAIN**9.1 Becoming aware of division**

9.1.1 If the Driver realises that his train is divided and there is any risk of the portions colliding, he must continue forward until he can safely stop but not pass any signal at Danger unless authorised. He must also alert the Driver of any approaching train. If he sees a green handsignal waved slowly from side to side at a signal box, he must understand that his train is divided.

9.1.2 If the Guard or Driver of any assisting locomotive realises that his train is divided, he must, where possible, immediately stop the rear portion.

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9.2 Action to be taken

9.2.1 The Driver and Guard must ensure that the following action is taken as quickly as possible:

- (a) a track circuit operating clip is placed on any other line unless it is certain that no other line is affected
- (b) both portions are secured
- (c) full detonator protection is carried out on any other line which may be obstructed
- (d) normal protection is carried out on the line on which the divided train is standing
- (e) the Signaller is advised of the circumstances
- (f) the vehicles in each portion are counted in order that the whole train can be accounted for
- (g) the couplings are examined to see whether they may have damaged the permanent way (in which case the Signaller must be informed) and whether the portions can be recoupled

9.2.2 The Guard is responsible for securing the rear portion and for the protection of the line on which the train is standing and any obstructed line used by trains in the same direction.

9.3 If portions can be recoupled

9.3.1 If this can safely be done and provided the wrong direction movement will not pass over any level crossing, the portions must be recoupled. The following instructions must be observed:

- (a) the Driver must personally obtain the Signaller's permission if the movement is to pass over any worked points or is to be made on a Track Circuit Block line
- (b) any points must be checked to ensure that they are in the correct position for the movement
- (c) the movement must be made cautiously under the control of the Guard's handsignals
- (d) the Driver must inform the Signaller after the train has been recoupled, stopping specially if necessary. The train must also be stopped at the first convenient place for examination by M. & E.E. staff

9.3.2 Severed train heating or lighting connections may be **live** and must not be touched until the heating and lighting circuits have been switched off. The connections may then be secured to enable the vehicles to be moved but the circuits must not be switched on again until authorised by M. & E.E. staff.

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9.3.3 A competent person must be provided on a D.O. train to carry out the Guard's duties in this clause 9.3.

9.4 If portions cannot be recoupled

9.4.1 If the portions cannot be recoupled, the Guard must place three detonators 300 yards (or 300 metres) ahead of the rear portion and the front portion must be worked forward. On other than a Track Circuit Block line, a tail lamp must not be exhibited until the train reaches the next signal box.

9.4.2 The Driver must not take the front portion beyond the next signal or, if that signal is not equipped with a telephone, the next signal box without ensuring that the Signaller understands that a portion has been left behind. He must also advise the Signaller when the front portion has arrived complete.

The Driver must also stop immediately before leaving a single line section and then place three detonators on the line behind the front portion.

9.5 Damaged couplings to be handed in

Where practicable, any damaged couplings or other parts must be recovered and given with a report of the circumstances to the nearest Area Manager.

The 1996 rule book presented the same rule as follows:

<p>4.6 ACCIDENTAL DIVISION OF A TRAIN</p> <p>4.6.1 Becoming aware that your train is divided</p> <p>4.6.1.1 If you see the Signaller waving a green handsignal slowly from side to side, you must understand that your train has become divided.</p> <p>4.6.1.2 If there is a risk of the two portions of the train colliding, you must:-</p> <ul style="list-style-type: none"> • continue forward with the front portion of the train to a point at which you can safely stop where there is no risk of the 	<p>2/96</p> <p>Rule Book No. 4</p> <p>Page M.31</p>
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rear portion colliding. You must **not** pass any signal at Danger **unless** you are authorised to do so

- alert the Driver of any train approaching in the opposite direction

4.6.1.3 If you are the Driver of an assisting locomotive and you become aware that the train you are assisting has become divided, you must attempt to stop the rear portion.

4.6.2 **Action you must take**

4.6.2.1 Make sure you carry out the following as quickly as possible if your train becomes divided:-

- (a) a track circuit operating clip is **immediately** placed on **each other line unless** you are absolutely sure that no other line is affected. Remember, the rear portion of your divided train might have derailed or have been involved in a collision
- (b) both portions of the train are secured
- (c) full detonator protection is carried out on any other line which may be obstructed
- (d) normal protection is carried out on the line on which your divided train is standing
- (e) tell the Signaller what has happened
- (f) the number of vehicles is counted in both portions so that you can account for the whole of your train
- (g) the couplings where the division took place are checked to see if:-
 - they might have damaged the track or lineside equipment. If you think that this might have happened, tell the Signaller
 - the two portions can be re-coupled and there is no

damage to the couplings which will prevent this from happening

4.6.2.2 If there is a Guard on your train, the Guard will:-

- assist you with carrying out the requirements in clause 4.6.2.1
- secure the rear portion of the train while you must secure the front portion
- carry out the protection on:-
 - the line on which your train is standing, **and**
 - any other line used by trains running in the **same direction** which is obstructed.

You must carry out protection on any line used by trains travelling in the **opposite direction**.

4.6.3 **If you can recouple the two portions**

4.6.3.1 If it can be done **safely**, you must recouple the two portions of the divided train. Make sure you:-

- (a) ask the Signaller for permission if the movement will:-
 - pass over any **worked points, or**
 - be made on a **Track Circuit Block line**
- (b) check that any points are in the correct position for the movement you require to make
- (c) make the movement **slowly**. If there is a Guard on the train, the Guard will give you the appropriate handsignals to control the movement. If there is **no** Guard on the train, you must **wait for a competent person** to arrive to do this
- (d) tell the Signaller when the two portions are recoupled, stopping your train specially to do so if necessary

- (e) stop the train at the first suitable place where it can be examined by a Rolling Stock Technician

4.6.3.2 You must **not** recouple the two portions if the front portion will in setting back in the wrong direction, pass over **any level crossing**.

4.6.3.3 Make sure if there are severed train heating or lighting connections that you:-

- do **not** touch them until the circuits have been switched off. **They could be live**
- secure the connections so that the train can proceed
- **do not** switch the circuits back on until they have been examined by a Rolling Stock Technician

4.6.4 If the portions cannot be re-coupled

4.6.4.1 You must:-

- place three detonators 300 metres (or 300 yards) **ahead** of the rear portion. The Guard will do this if there is one on the train
- proceed forward with the front portion

4.6.4.2 Make sure:-

- on all lines **except** Track Circuit Block lines, you do **not** put a tail lamp on the rear of the front portion **until** you reach the next signal box. Tell the Signaller when you have arrived with the front portion complete
- you do **not** pass beyond the next signal, or if that signal is not equipped with a telephone, the next signal box, **until** you have told the Signaller that you have left the rear portion of the divided train in the section. **Make sure the Signaller understands this**

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4.6.4.3 On a single line section, you must before you leave the section, place three detonators on the line behind the front portion.

4.6.5 Damaged couplings to be handed in

Make sure you or the Guard hand in any damaged couplings or other parts together with a report to either:-

- the person in charge, **or**
- the Rolling Stock Technician, **or**
- your Supervisor

The 2003 Rulebook has further improved the instructions

Train stopped by train accident, fire or accidental division

section

6

Accidental train division

The people responsible: driver, guard (if provided), signaller

driver,
guard (if
provided)

6.1 Immediate actions

You must carry out the requirements of sections 2.1 and 2.2 as appropriate.

guard (or
driver of a
DO train)

6.2 Passenger train - safety of passengers

You must:

- find out whether anybody might have fallen from the train
- secure gangway end doors, if you can do this
- make sure passengers are in a safe position on the train.

driver

6.3 Securing the divided train

a) Driver's actions

You must make sure both portions of the train are secure and all the vehicles are accounted for.

You must tell the guard (if provided) about the situation.

You must then check the couplings where the train has divided to see if:

- they might have damaged the track or lineside equipment (if so, tell the signaller), and
- there is any damage to them which prevents recoupling the portions.

b) Guard's actions

If you are travelling in the rear portion, you must secure it if possible.

guard (if provided)

You must then find out from the driver what action is to be taken with the train.

driver

6.4 If the two portions can be recoupled

a) Before setting back with the front portion

If the two portions can be recoupled and it is safe to do so, you must:

driver

- get the personal authority of the signaller for the movement
- reach a clear understanding with the signaller as to what is required.

You must not set back with the front portion if it would involve going over an automatic level crossing unless it is under local control.

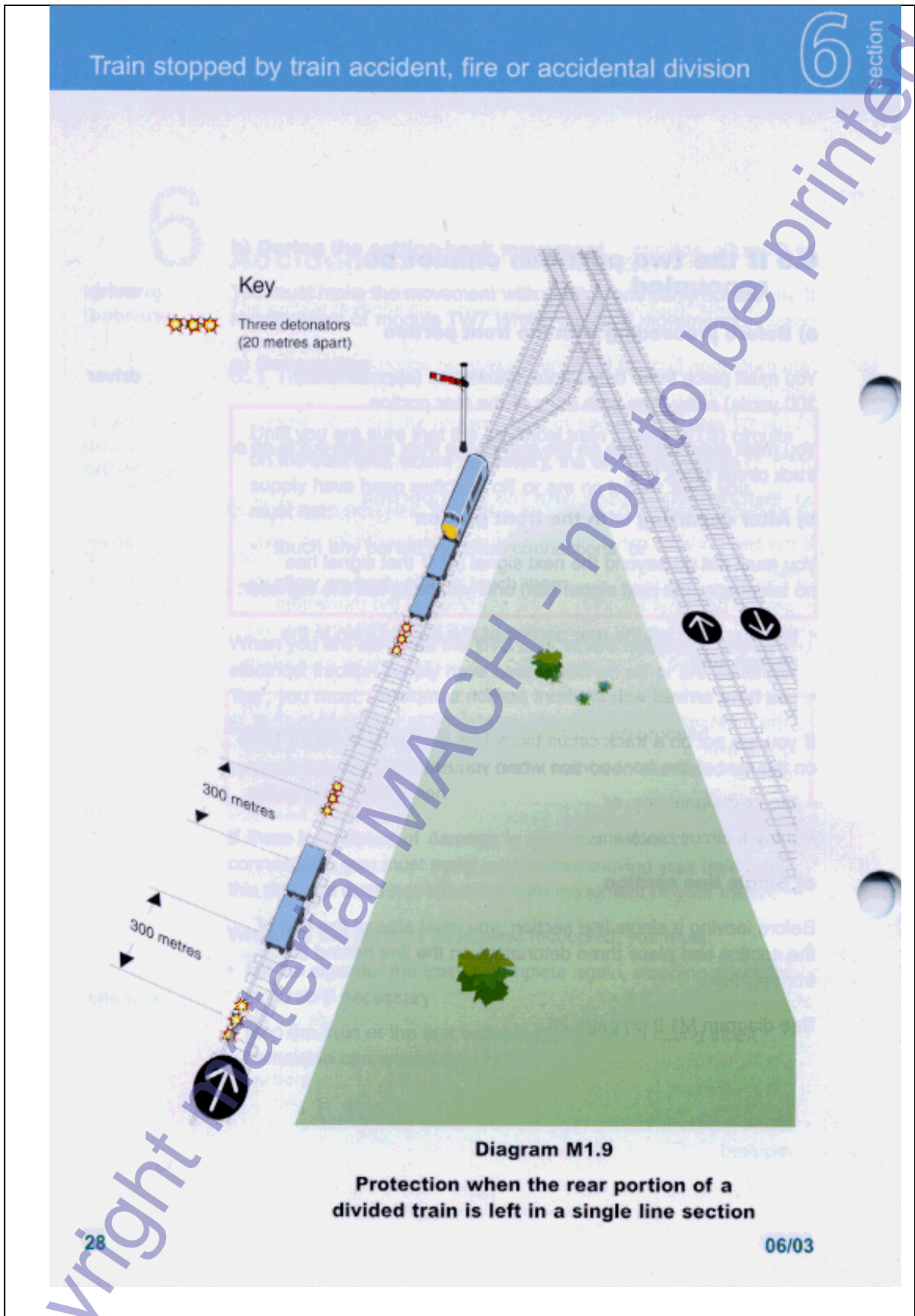
You must:

- arrange, if necessary, for the movement to be controlled by handsignals by a competent person (who could be the guard, if provided, but only if competent to do so)
- sound the horn as a warning.

signaller

You must:

- give the driver permission to set back with the front portion only if it is safe to do so under the requirements of module TW7 *Wrong-direction movements*
- reach a clear understanding with the driver as to what is required.



Train stopped by train accident, fire or accidental division

6
section**b) During the setting-back movement**

driver

You must make the movement with caution and carry out the requirements of module TW7 *Wrong-direction movements*.

c) Recoupling

Until you are sure that the electrical train supply (ETS) circuits on the train and, where necessary, the electrical traction supply have been switched off or are no longer 'live', you must not:

- touch any parted electrical connections, or
- allow anybody else to touch them.

When you are sure that the ETS and, where necessary, the electrical traction supply have been switched off or are no longer 'live', you must:

- secure the connections so that the train can proceed
- not switch the ETS back on until it has been examined by a rolling stock technician.

If there is evidence of damage to electrical cables or connections, you must make sure before moving your train that this damage does not affect the safe movement of your train.

When the two portions have been recoupled, you must:

- tell the signaller the train is complete again, stopping specially to do so if necessary
- stop the train at the first suitable location so a rolling stock technician can examine it.

6.5 If the two portions cannot be recoupled

a) Before proceeding with the front portion

You must place three detonators 300 metres (approximately 300 yards) away from both ends of the rear portion.

You must put a tail lamp on the rear of the front portion if it is on a track circuit block line.

b) After departing with the front portion

You must not go beyond the next signal (or, if that signal has no telephone, the next signal box) until you have told the signaller:

- that you have left the rear portion of the divided train in the section, and
- you have arrived with the front portion complete.

If you are not on a track circuit block line, you must put a tail lamp on the rear of the front portion when you reach:

- the next signal box, or
- a track circuit block line.

c) Single line section

Before leaving a single line section, you must stop at the end of the section and place three detonators on the line behind the front portion.

See diagram M1.9 on page 28.

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