BRITISH RAILWAY RULE–BOOKS

A brief history and commentary

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I – INTRODUCTION

RAILWAYS AND RULE BOOKS have coexisted from the beginning of public railways and have a long history. Although the travelling public would only rarely be conscious of the detailed contents of rule books, they would probably be comforted by the fact they existed and that staff abided by them. Public interest was stimulated by railway accidents, often sensationalized by the press, and accidents often revealed that a contributory factor was failure on somebody's part to follow the rules correctly, or more often, more than one person failed to follow them. There was then the prospect of delays to train services being caused because the trades unions were operating a 'work to rule', inviting the intriguing question about what was normally expected. Nevertheless, in the railway operating department, the rulebook was crucial and without one the control of several hundred thousand staff would have been impossible and safety unmanageable. This is a story that needs explaining.

Today we recognize that in any industrial business there will be an associated safety risk. Historically, skilled staff went through a formal apprenticeship or there would have been training on the job, of very varying quality. 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. Though hard to imagine now, there were industries where deaths and injuries were not only tolerated but expected. Even so, an accident would disrupt or halt production, or result in direct loss of product or sales. The sudden loss of a skilled worker was an annoyance as training time had been invested, but the loss through accident or injury of unskilled labourers was regarded—until late Victorian times—as an inevitable consequence of 'dangerous' work.

The reliance upon '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. It is perhaps not surprising that there is little evidence of any widespread use of written safety manuals until late Victorian times.

I have struggled to identify any single comparable industry that adopted rules in the same way as railways but the shipping industry is found to offer some parallels. The need for rules has a close parallel in that ships are large and unwieldy and ships' masters needed to control their vessels in a manner that was consistent with the circumstances or the consequences might be disastrous. At best, a collision might cause expensive damage and delay to the ship or loss of cargo or, worse, injury or loss of life of the crew. The worst outcome was loss of lives of passengers, a danger increasing as vessels got much larger, as the unsinkable *Titanic* illustrated all too well in 1912. The parallels with railways do not need further spelling out despite the differing environments. In the days of relatively small and very slow sailing ships formal navigation rules were not considered necessary and masters had to rely on their experience. Once iron-hulled steamships emerged a small number of rules were promulgated by national governments (USA first, in 1838, and Britain in 1846) and these were extended in 1858 and 1863 and after that were coordinated across maritime nations so that ships

operating anywhere in the world would navigate to a common code. The code has been much altered and added to and in 1972 the whole lot was completely overhauled (by coincidence the same was happening on the railways). The rules started off by setting out what lights had to be carried and where, and the shipping version of the rule of the road. These strongly echoed early the early rules for public railways.

The mining industry typifies the general approach to safety in an especially hazardous land-based 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 formal 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 firedamp explosion at Felling colliery where 92 men and boys were killed; the mine owner was less than anxious to publicize 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 were 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 businesses were slowly persuaded that the consequences of substantial and pointless loss could be extremely expensive, and that the risk of serious occurrences were high. It wasn't really until the late twentieth century when it was accepted by competent and reasonable managers that by having and enforcing basic safety rules 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 hurried 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. These recent development have had a profound influence on the way railway rulebooks have been promoted, as we shall see. Whether the result has been outstandingly helpful is something about which there will also be some discussion.

A brief word might be said about 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 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 and Captain Mark Huish (the well-known general manager of the London & North Western Railway) was very active in developing its operational practices and reducing the risk of accidents. The fact that the railway inspectorate (set up in 1840) consisted almost entirely of military men must also have had an influence on the development of rules and procedures.

As we turn particularly 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 research describes how this all came about.

2 – EARLY RAILWAYS

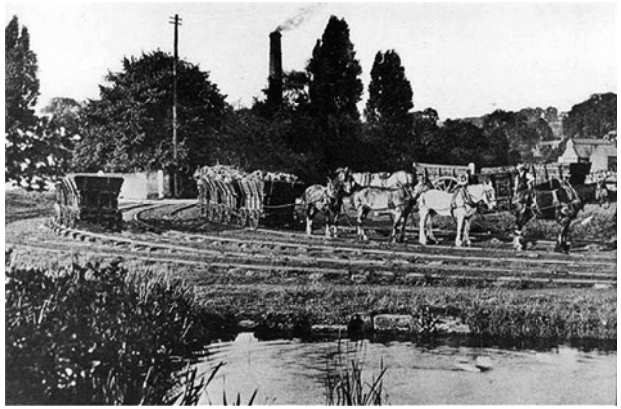
THERE HAVE BEEN RAILWAYS IN BRITAIN for hundreds of years, though the early, primitive railways of the late seventeenth to early nineteenth centuries did not closely resemble the systems that exist today. Quite apart from the obvious lack of physical similarity, the way in which the lines were used and 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 plate-ways 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 distance apart of the vehicle wheels to correspond closely with the track gauge employed.

Apart from these small (but proliferating) railways, slightly larger systems then developed as mounting industrial output produced major distribution challenges. 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 detail appears to have been recorded 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 alone. 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 uncomplicated, we may presume, perhaps,

* The terms tram-way, plate-way, waggon-way and so on are often found in this early period, but for our purposes the differences (such as they were) are not relevant and we will stick to the term railway.



This Victorian photo is of the private tramway designed to convey coal from a pit to the Derby Canal. Although from the photographic age, operating methods would not have changed in half a century. It is probably representative of a railway as an incidental part of a larger industry.

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. This railway later introduced some operational complications. These included a double-track incline relying on gravity but with (manually operated) winding gear available to provide a lifting force if required. In 1812 a rack and pinion system was installed allowing primitive steam locomotives to operate for some years. Each of these advancements would have invited the need for some organized method of working, and there is evidence of the use of a signal which operated in conjunction with the incline. It might be inferred from this background that there must have been 'rules' of some kind but it is doubtful if they were committed to written form (if they did, they have yet to reveal themselves). It must also be borne in mind that during the heyday of these early railways there was little if anything in the way of official 'regulation'. So far as these industrial concerns are concerned, the impact from the development of the Factory Acts, arguably the start of government-inspired 'health & safety', began only in the early Victorian period, and then only very slowly. Even so, it might have inspired some industrial enterprises to write down procedures for operations that had excited the interest of inspectors, though I have not seen much myself from this period that would have affected the operations of these internal railway systems.

3 – PUBLIC RAILWAYS

FROM THE EARLY DAYS OF THE NINETEENTH CENTURY there began to arrive a new sort of railway, the 'public railway'. The first of these railways 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 practice 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 several general user lines had sprung up.

To the extent that some of the canal railways carried public goods or tolerated use by third party vehicles, it can be argued that they were the first public railways and we will be looking at their rules and byelaws which, without doubt, are the first 'railway' rules. The significance of the Surrey Iron Railway is only that it was the first dedicated public railway company and, anticipating the need for good order, it was authorized by Parliament to make rules and byelaws from the start.

* The Surrey Iron Railway was not the first railway to function in consequence of an Act of Parliament; that honour appears to go to the Middleton Railway which obtained an Act in 1757. However, whilst the Middleton laid its lines across highways and third party land it was not a public railway as its main purpose was to transport coal from the Middleton collieries to the docks.

SURREY
Iron Railway.

The COMMITTEE of the SURREY IRON RAILWAY COMPANY,

HEREBY, GIVE NOTICE, That the BASON at *Wandsworth*, and the Railway therefrom up to *Croydon* and *Carshalton*, is now open for the Use of the Public, on Payment of the following Tolls, viz.

For all Coals entering into or going out of their Bason at Wandsworth,	*per Chaldron*,	3d.
For all other Goods entering into or going out of their Bason at Wandsworth	*per Ton*,	3d.

For all GOODS carried on the said RAILWAY, as follows, viz.

For Dung,	*per Ton, per Mile*,	1d.
For Lime, and all Manures, (except Dung,) Lime-stone, Chalk, Clay, Breeze, Ashes, Sand, Bricks, Stone, Flints, and Fuller's Earth,	*per Ton, per Mile*,	2d.
For Coals,	*per Chald. per Mile*,	3d.
And, For all other Goods,	*per Ton, per Mile*,	3d.

By ORDER of the COMMITTEE.
W. B. LUTTLY,
Clerk of the Company.

Wandsworth, June 1, 1804.

The Surrey Iron Railway, arguably the first public railway, allowed anyone with suitable vehicles to use it upon payment of the correct tolls, set out in this notice.

In 1804 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, and as with the Surrey Iron Railway, this 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 existing practices 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. Navigable waterways were sometimes in the hands of navigation authorities who maintained facilities needed for commercial shipping (suck as docks and dredging) and who were authorized to control access and charge tolls to meet costs. In all cases the owners or managers produced their income from toll fees collected from the turnpike, river or canal's users—the owners would not 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 the practices of 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' proprietors, 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. To that extent, we observe (though with crucial differences) a business model quite similar to today and might reflect that it was already in use 200 years ago.

* A turnpike road was a highway upon which Parliament had authorized tolls to be collected for the purposes of improving what we would today call a main road; the name comes from the 'turnpike' gates that controlled access to the roads. Tolls and access were closely regulated by Parliament, hence the need for rules.

4 – 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 centuries 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.

Because vehicles were obliged to use a fixed track, it 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. The track was also prone to breakage if misused—which would also halt traffic, perhaps for some time, with resulting inconvenience. Obstruction was equally undesirable for the owner (who lost toll fees and might have to pay for repairs) 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 become necessary to put some sort of identifiable mark upon the wagons in order to identify who their owners were—the mere word of the wagoners having evidently not proved to be reliable. 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. The Severn & Wye Railway,‡ for example, specified in their byelaws a

* Readers might note that 1794 predates public railways with their own railway Act. The reason is that this canal was an emanation of a canal company which had an Act in that capacity.

† The Ashby Canal Company had powers to operate wagon ways.

‡ A 26-mile line authorized in 1809 as the Lydney & Lydbrooke Railway and opened in 1813

minimum wheel width of ⅞ of an inch, but it proved impracticable to enforce this. It is a point upon which to reflect that the infrastructure owner's concerns about the design and suitability of third party vehicles 200 years ago is exactly parallel to the issues raised today; in the early nineteenth century the requirements were set out in the rules or byelaws whilst today this kind of material has been filtered out into 'standards', which are specialized rules usually relating to engineering issues.

Some early 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; we can only speculate about the particular misfortune that caused this rule to emerge. 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' (we would call them sidings today) and not on the main line.

Many wagon ways were built partially or wholly as double track lines and in some cases the companies decided it would be as well to indicate that trains should travel in a particular direction on each track. For example, on the Severn & Wye line, a byelaw of 1811 laid down that 'all wagons going down to the basin or elsewhere to keep to the left hand or eastern side of the double road to the dam pool and then to the right hand or western side from thence to the basin'.‡ There were rules setting out what should happen if two wagons met between turnouts. The Brecknock & Abergavenny line, for example, laid down that empty wagons would give way to loaded ones, but that if two loaded wagons met the one coming up 'shall turn out for that coming down'. It was forbidden to pull wagons off the line to enable one to pass another, presumably because of the damage likely to be occasioned to the track, and it was necessary for one wagon to set back into a siding or turnout. On the Severn & Wye (where wagons bound for Lydney had priority), the fine for drawing a wagon off the track for the purpose of passing rendered the culprit liable to a 40 shilling fine, a lot of money in those days.

Byelaws usually had something to say about speed. Most wagon ways agreed that speed should not exceed a walking pace, but wording varied.

* This was another railway associated with a canal and relying upon the canal's act for its byelaws.

† The Lancaster Canal also operated a substantial plateway, including inclines with engines. It is known there were numerous accidents on this line and hard to imagine that there were no operational rules though again there is no trace of anything in writing.

‡ The 'rule of the road' that set out left hand running followed highway practice to the extent that on highways it was the custom to *pass* on the left, though that wasn't actually the law until the Highway Act 1834 (and even then there was nothing that said one actually had to *drive* on the left). On a railway, of course, vehicles could not move about so in order to pass on the left one was compelled to use the left hand track. One might reasonably argue that railways legislated to drive on the left before it was compulsory on roads.

The Monmouthshire company prescribed a maximum speed of 4 mph in 1798 whilst the Brecknock & Abergavenny specified 5 mph in 1795. In the former case there was evidently some concern about the wording which became 'a good walk except in case of necessity' in 1828, but was redefined as 5 mph in 1832. We can only wonder at how speed was supposed to be estimated when, even where distances were known, it is unlikely anyone had a convenient means of measuring time. Riding on the vehicles was generally forbidden but some wagon ways required vehicles fitted with a brake where the driver had to ride on the vehicle.

There was considerable variation between the different companies, and between them innumerable other byelaws existed covering all manner of things including trespassing. Many railways provided a path alongside the line for the drivers to use, separate from the path between the rails used by the animals. These paths were sometimes made available for the use of important local worthies but anybody else was regarded as a trespasser and the byelaws provided sanctions for anybody who was caught. Since trespass upon another's property was not of itself a criminal offence, the fact special measures were being taken to bring trespass upon the railway within the purview of the court in these very early days is noteworthy.

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, quarrying 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 in their entirety in Appendix 1. They are an excellent example of early printed regulation and are worth a read. This railway ran 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 (and even the horse drivers were not allowed to travel on the wagons), and following discovery that passengers were in fact being carried the tolls were adjusted in 1826 to capture this apparently useful revenue.

Byelaws also covered the charging mechanism. The Ashby company required wagon drivers to carry a waybill stating exactly what was being carried and in what quantity, together with loading and unloading arrangements, to facilitate the transaction with the tollkeeper. It was usual for byelaws to set out the fines for not having or not producing a waybill. Unsurprisingly canal practice was followed with cash being expected by the toll-keepers although regular hauliers might have a credit account. Fines were levied in the event that correct payment was avoided and special arrangements had to be made where loads were carried intermediately between toll gates in order to satisfy the railway that correct charges were made. Charges were usually levied on a ton-mile

basis which caused the railways to be accurately measured and milestones or mileposts erected. They are still a requirement today (with a grudging concession to metrication)

In summary, we find that the railway byelaws of 200 years ago are a compaction of material which today would be found distributed in the byelaws, the railway rulebook and in various railway group standards.

As an observation, it might be suggested that the byelaws do not go into very much operational detail, even though some of these early railways had quite complicated operational features. In some cases there must have been some quite intricate procedures in place. If they ever were written down, about which there must be doubt, then they have yet to be unearthed. Significantly, the word safety seems to be quite unused and none of the early rules hint at a need to avoid danger or preserve life.

5 – THE DEVELOPMENT OF RAILWAYS AS CARRIERS

AS THESE EARLY PUBLIC RAILWAY or tramway systems gave way to more modern railways, so rules became increasingly necessary. This was 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 there were the development of procedures and safety rules on both the 'ancient' and the public lines (even if they were not written down), and secondly there were rules for the control of the public and goods carriers, often met with byelaws.

After 1804, a number of new lines had opened, all deemed to be public railways. Track technology was gradually improving and malleable iron was now replacing brittle and treacherous 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 operated by third parties. 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 uneasy combination, and that it was 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 eventually replaced 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

* The Stockton was not the first railway to use steam locomotives; that honour appears to go to the Middleton Railway in 1812, but as stated elsewhere the Middleton was not built as a public railway (and in 1847 it became part of the National Coal Board and never part of British Railways).

† We might term this the start of the 'vertically-integrated' railway.

name and wagon number in 3-inch high lettering, and to allow the company to gauge wagons if it felt necessary. 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 also make interesting reading, and might usefully be compared with those of the earlier Hay Railway. They are set out in full in Appendix 2. The distinction between the constitution of the rules and the byelaws may today be thought confusing. Although the Stockton operated both passenger and goods trains there is no record of additional formal rules or any form of signalling. In 1832 the company 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 Stockton railway was at first mainly 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 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 particular 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 fixed 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 were passengers waiting to get on, or else the train would non-stop; stations as we know them to day had yet to be invented. A burning brazier is said to have been used as a form of tail lamp.† One assumes that a burning brazier gave a characteristic bright and flickering light identifiable at a great distance whilst an oil lamp would have been almost useless. On the whole, this sounds as dangerous as the danger it was seeking to avert.

* Two centuries of Railway Signalling, Kichenside & Williams. It will be appreciated that without modern communications it was impossible to know the location of any trains or vehicles, whether they were moving or not, or whether they were on the railway at all.

† Two centuries of Railway Signalling, Kichenside & Williams

6 – THE ORIGIN OF 'MODERN' RAILWAYS

THE FIRST 'MODERN' RAILWAY was the Liverpool & Manchester Railway, opened in 1830, 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 (those often known as tram-roads) survived for well over a century longer as private lines. The future of medium to long-distance passenger and freight transport 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; most of them evolved into stations over time but few facilities were provided at the start.

An 1831 timetable shows there to have been sixteen intermediate stopping points on the Liverpool & Manchester line. These were often staffed only by a policeman whose house could be used as a waiting room in poor weather or at night and where tickets could be issued to those prospective passengers—such as they were—intending to use a train. Stations were usually at road crossing points and at some stations only a gateman was provided, to operate the level crossing gates and assist passengers. Unlike the policemen, the gatemen did not get involved with regulating the trains.

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 for use by the public at large or 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 if it chose to do so, and a schedule of maximum rates was also given in the Act for doing this. 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, there was little need for the tolls and rules for general users, although in the very early days some private trains did run and pay tolls. Nevertheless the future of the Liverpool line was in running its own trains, the passenger ones to a fixed timetable and goods to fit in as well as possible.

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.

From an operating point of view the challenge presented by a long, high speed line was recognized at the start to be difficult, but it was only obvious just how difficult it was after it had been tried. The problem was that before the electric telegraph had been developed, it was impossible to know, after a train had had departed from its starting point, where it was. Because running times were at first very erratic, arrival times at the intermediate stations and destination were not even published, so even

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

along the route expected times were very uncertain. Against this background there had to be the means of reducing the all too obvious risk of a quickly moving train with weak, unsophisticated brakes, running into the back of the one in front if it had stopped for some reason (train reliability then left something to be desired). In circumstances where there was no means of long-distance communication and not certainty over what train was supposed to be where, let alone where it actually was, there was no option but to trust the drivers not to hit anything and to try and give them as much assistance as possible through a robustly constructed system of rules. This was a tall order and one without precedent.

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. Why police? 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 these early 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 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 policemen/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' daylight signal was available for use; 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.

In addition to authorizing tolls, the Liverpool & Manchester's Act of incorporation permitted 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, the distinction between what injunction was a rule, order or bye-law was very vague and 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 in order to authorize rules 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 possibility of confusion arises when using the term 'rules' because by 1831 it was already apparent that some kind of constraints needed to be

* The Liverpool & Manchester Railway, Thomas, 1980
† The Liverpool & Manchester Railway Project 1821-1831, Carlson, p241
‡ The Liverpool & Manchester Railway Project 1821-1831, Carlson, p241

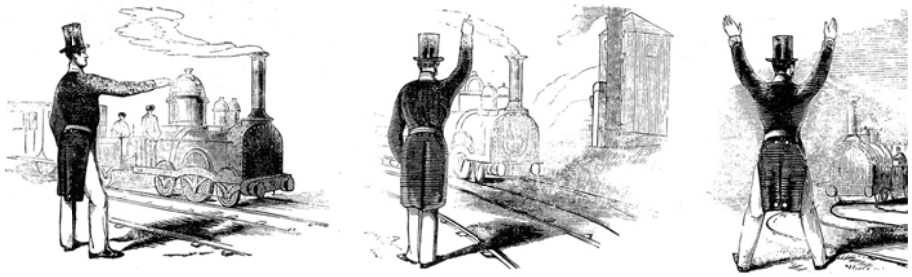
applied to the behaviour of passengers. To quote just one example, some passengers believed it was acceptable to travel on the roofs of the carriages (where there were roofs) as this was tolerated on the stagecoaches of the day. This was dangerous on a railway where speeds were higher and low bridges existed. Passengers were told by means of notices in the trains and in the timetables that this was not acceptable, and neither were various other matters about which the railway disapproved, such as smoking in the enclosed first class carriages. These two examples (of many) were later catered for by railway bye-laws, though the Liverpool Line only introduced its first bye-law in 1838. More generally, railways attempted to control passengers' use of the system by making this class of 'rule' part of the contract of travel between the railway and the passenger, though powers of enforcement were fairly weak.

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 [driver] 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 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."

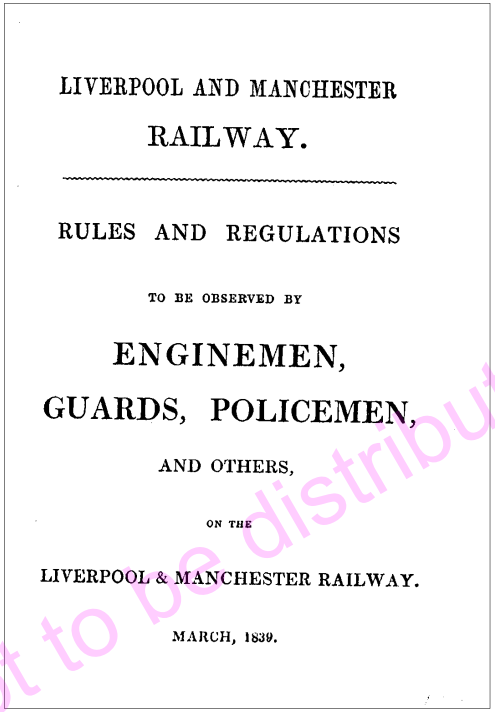
It may be seen that the 'OK to proceed' signal was given by the policeman standing smartly to attention with arms outstretched, and this remained a standard 'signal' for some years; if the policeman stood at ease it meant proceed at caution as another train has passed through within so many minutes. Any other posture, or being absent from his station, was to be interpreted as an 'obstruction danger' signal. From this it follows that drivers had to be very familiar with the police 'stations', particularly in poor weather. Of course, much later rules were still requiring drivers to observe the line and regard the absence of a signal where there ought to be one as a danger signal. How practical this ever was is debatable but at night or in fog it would have been challenging beyond description.

It is worth drawing attention to the fact that employing policemen and gatemen (for the level crossings) to work alone at remote locations where there were perhaps only twelve trains a day, and not many passengers, was another new factor for the new style railways to contend with. How



did they actually spend their time? Certainly in the early days of the Liverpool line local publicans went to a lot of effort to try and sell food and drink to passengers while the trains were stopped, an activity greatly resisted by the company as it delayed trains, caused arguments and led to drunkenness. The existence of a nearby public house and a friendly landlord must have been a temptation for someone with time on their hands and who was more or less unsupervised. I dare say most of the railway staff were efficient in their duties but it was a management challenge with few precedents and gave rise to rules about drinking on duty that were difficult to enforce. A policeman at Newton Junction caused an accident by failing to change a set of points because he fell asleep, causing a derailment. He was fined £3 by magistrates but I do not know if drink had been implicated.

After May 1831, additional rules progressively appeared to supplement or expand on those already in force, sometimes as the result of accidents, including serious accidents at Rainhill and Whiston.* In consequence, rule development proceeded rapidly but in an unplanned way. 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).† The longevity of the requirement for a rear red lamp as a kind of signal of last resort might be noted. In October 1837 new rules were added setting differential speed limits depending on time of year.



LIVERPOOL AND MANCHESTER

RAILWAY.

RULES AND REGULATIONS

TO BE OBSERVED BY

ENGINEMEN,

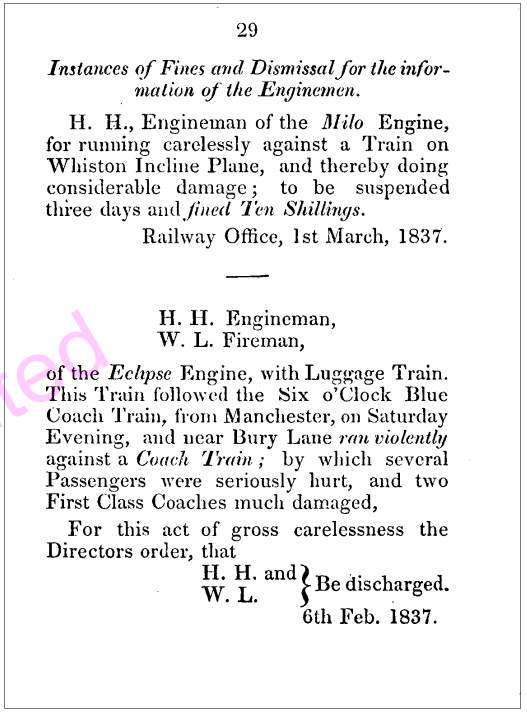
GUARDS, POLICEMEN,

AND OTHERS,

ON THE

LIVERPOOL & MANCHESTER RAILWAY.

MARCH, 1839.



29

Instances of Fines and Dismissal for the information of the Enginemen.

H. H., Engineman of the *Milo* Engine, for running carelessly against a Train on Whiston Incline Plane, and thereby doing considerable damage; to be suspended three days and *fined Ten Shillings.*

Railway Office, 1st March, 1837.

H. H. Engineman,
W. L. Fireman,

of the *Eclipse* Engine, with Luggage Train. This Train followed the Six o'Clock Blue Coach Train, from Manchester, on Saturday Evening, and near Bury Lane *ran violently* against a *Coach Train;* by which several Passengers were seriously hurt, and two First Class Coaches much damaged,

For this act of gross carelessness the Directors order, that

H. H. and W. L. } Be discharged.

6th Feb. 1837.

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 when it was evident the track was capable of it). 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

* The Liverpool & Manchester Railway, Thomas, 1980
† The Liverpool & Manchester Railway, Thomas, 1980

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 and other notices 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 remained in book form and appear to have superseded 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. A large responsibility devolved on the staff who had only judgment and experience to help them estimate the speeds and distances the rules laid down, a matter that was still a problem a century later.

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 (the swapping for a blue lamp had been abandoned by then). 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, the gatemen had a hand-lamp 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.

From 1840, a 'Code of Signals To Be Observed on the Liverpool and Manchester Railway' was promulgated in addition to the 1840 Rules and Regulations (though a copy I have seen is actually dated October 1839).† 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. Note that the code of signals was produced separately from the

* All from March 1839 Rules

† PRO has copies dated 1840 and 1841

rules. Later practice was to combine the publications, though even in the 1860s some railways still produced their code separately.

There were eight regulations plus two general directions about flags and lights. During the day signal flags were deployed. A red flag meant stop, while a blue flag 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, green meant proceed with caution, while a blue light meant stop to pick up passengers. It will be seen already that white for proceed, green for caution and red for stop are in evidence and for 20-30 years this eventually became the national preference.

The other regulations in this 'code' related to provision and colours of head and tail lights, for lineside staff to have a lighted handlamp available, for advising trains to proceed at caution owing to a previous train, and how to cope during foggy or 'thick' weather.

Railways that began after the Liverpool & Manchester had an advantage in being able to use the L&M rules as their model. On the 19th January 1841, all the principal railways (with the exception of the Grand Junction) sent deputations to a 'Signals and Regulations' conference at Birmingham, to consider means of preventing accidents. A uniform system of regulations and signals, submitted for the consideration of each Company, was based on the regulations in force on the Liverpool and Manchester line. This had an influence on new lines being built, saving them the bother of having to come up with a system of rules devised from scratch, 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 & 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 format to those of the Liverpool line, 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 even though their substance was broadly similar, with a few minor developments only.

The North Midland 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 (from which we might conclude that the problem of 'signals passed at danger' was already a known issue).

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 hand-lamp).

If a track were 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 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 Liverpool line 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. The expectation of punctuality is interesting for there was still no way of identifying the actual location of trains.

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.

7 – REGULATION OF RAILWAYS

1840 was a significant year. It was in that year 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 support these extensive powers *any* officer or agent of a railway company, or *any* special constable duly appointed, and *all* such persons as they may call to their assistance, were authorized 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 this provision is still in force, though now regarded as somewhat obscure). The 1840 Act had the effect of separating byelaws 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 government body of railway inspectors, responsible to the Board of Trade. This railway inspectorate 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

* Section 13; repealed by Transport Act 1962.

† Section 16, still in force as amended, though how it would be applied in the fragmented railway might be interesting to see.

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 in force.

8 – DEVELOPMENT OF BYELAWS

THE LIVERPOOL & MANCHESTER RAILWAY seems to have been the first railway to use byelaws in the more modern sense (for regulating behaviour rather than for managing train operation). Even so it seems only to have had a single byelaw before 1840, this was promulgated in 1835 or shortly afterwards in an attempt to stop people smoking in the coaches or at stations, earlier requests not to smoke by mere notice having proved useless.

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 byelaws 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 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 discouraged. 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 privatization 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

* In practice this was usually a senior official on behalf of the President of the Board of Trade.

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. A conscious attempt was made to use plain English rather than the accurately-expressed but archaically presented wording used for so many years previously. In addition there was some re-ordering in an attempt to group like material together.

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 for inspection 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. British Transport Police will be familiar with the bye-laws but it is unlikely any territorial police will be.

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. I'm not aware that the practical difficulty of acquainting oneself with byelaws has actually been tested in the courts (much the same might be said of the conditions pertaining to the issue of tickets).

Byelaws are now available on line but, whilst this is a good thing, it supposes that the travelling public feel it necessary to search them out, or are even aware of their existence.

9 – DEVELOPMENT OF RAILWAYS AFTER 1840

IN THE DAYS WHEN TRAINS TRAVELLED RELATIVELY SLOWLY, the system of driving more-or-less on sight appears to have been adequate. In any case, there was very little option at a time when no practicable means of communication was faster than the train, so it was impossible to communicate any problem or calamity to stations either side to prevent the approach of another train, or even to summon help. 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. This method was hinted at earlier, but to put it simply, 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. The early rules defined the minimum times to be used to separate the trains (both at full speed and at caution) and the mode of signalling to the drivers.*

It also became obvious in the light of experience 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 then 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 company's rule books, often with complete disregard to what neighbouring or interworking companies were doing; occasionally the wording of rules was '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 any following train of the danger far enough away to avoid a collision (or 'protecting' the train as it would now be termed). 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 as seen by the drivers. 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 general rule book until 1848, so the means by which instructions were promulgated to many staff is unclear.

* What the rules never explain is how these times were to be measured, and this remains a mystery.

† Two centuries of Railway Signalling, Kichenside & Williams. It is implied but not stated that these signals had to be operated by staff adjacent to the signal.

Having said that, drivers and firemen are known to have had written rules by 1841 as there is a copy in the National Archives.

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 of positions shown (three, at first) 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.

The adoption of the semaphore to an extent influenced the development of rule books. 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. These general, or 'staff', 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 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 (an approach attempted in later periods too).

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) rulebook of 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.

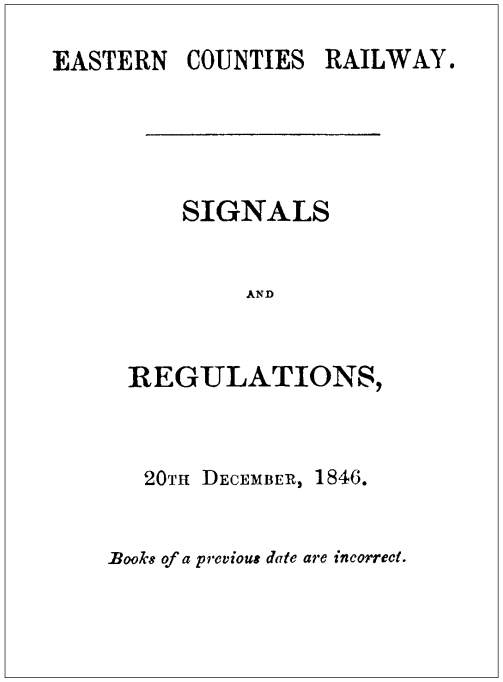
Fixed signals showed some variation but generally conveyed three meanings, 'all right', 'caution' or 'danger'. The ECR, GNR, Y&NMR and LNWR all used semaphores to varying degrees on their systems, and

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



EASTERN COUNTIES RAILWAY.

SIGNALS

AND

REGULATIONS,

20TH DECEMBER, 1846.

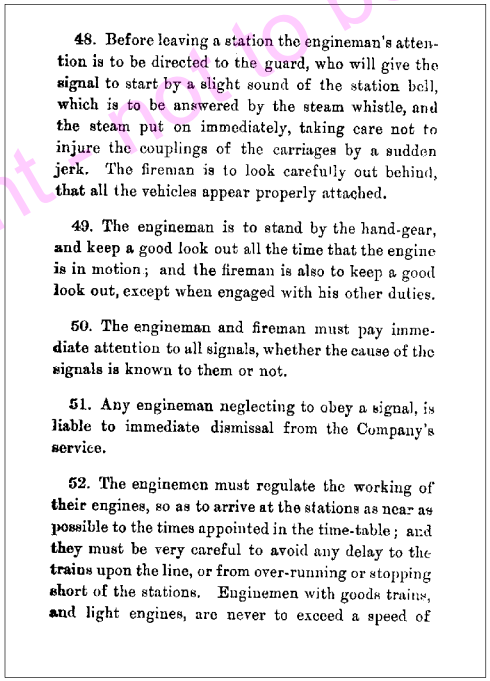
Books of a previous date are incorrect.

* It is beyond the scope of this research to consider the choice of a white light to mean all right and the possibility of confusing signals with something else, especially in towns. I am not aware of any accident caused by this though.

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, presumably just by looking. The Manchester, Sheffield & Lincolnshire Railway (MSLR) rulebook of 1855 adopts a similar system of station and caution signals but states that a train drawing forward beyond a caution signal must not exceed 5 MPH. This raises a question about how trainmen (who were not provided with any form of speedometer for perhaps another century) were expected to judge speed. The MSLR solution was to include within their rulebook a table of engine speeds to be ascertained by comparing the time (in seconds) between successive quarter mile posts, for example a speed of 5 MPH equated to an elapsed time of exactly three minutes. This innovation has not been seen other than in this one book.

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 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 (at the trackside) 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



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

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 distance between trains as often as practicable 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). I should add that no rule book so far viewed by the author explains how these policemen were supposed to ascertain time time between trains, let alone the actual time that needed recording. Possibly they had watches by this early date, but we are not told this.

By way of example of the process in action, 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). The MSLR rules of 1855 adopt a five minutes plus five minutes formula at stations, but at intermediate signal stations (such as a manned siding or level crossing) the 'stop' signal was given only for two minutes while the 'caution' was given for eight, *except* if a train were stopped when the usual station intervals were to be observed. These are mere examples of prevailing practices, and other arrangements and time intervals existed as well.

The other area showing an 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. Once more there is no explanation about how staff were supposed to estimate 400 yards, especially in fog.

The ECR Rules of 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. A mile is a long way and how the luckless trainman could tell he was a mile behind the train is just not explained, let alone what happened if the train sorted out the problem and sped off. This procedure raises dozens of intriguing 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 were 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 MSLR rules had a somewhat similar requirement placed upon guards as had the LNWR rules in the event of a train running slowly, but had to remain 800 yards behind the train until recalled, unless there was an intervening platelayer or station when that was considered far enough. In the event of a stoppage or accident it was merely stated that signals (detonators) had to be laid 800 yards 'beyond the first crossing', or first crossings in each direction if both lines were blocked. 800 yards was also the required minimum distance between trains in any event. These rules were otherwise less than rigorous about setting out detonators in pairs, or putting them down intermediately, and for the first time focused on what had to be done to clear the road, or if possible, to introduce single line working over the unobstructed track. The MSLR rulebook is one of the earlier examples of rules constructed around the roles of different grades of staff rather than by type of activity; this new approach became quite common for the next thirty years or so, but did not endure until recent times when the approach was rediscovered by British Rail.

The shear variation in the regulations is vast, and it is evident that great faith was 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†.

* I have not been able to find out what these were, but they may have been some available naval hand-held signal, noting in the marine world red is used for indicating port (or left).

† For the last 80 years or so this typically appears in the document referred to as the 'Sectional appendix'

The remainder of these early rule books were generally groups of rules aimed at specific grades or groups of staff. Already, though, we see the signs that general operational principles were getting diluted by large quantities of what might be termed 'procedures' for dealing with specific situations, a situation that was to blight the clarity of rule books for many years and arguably still does.

10 – 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, perhaps not always choosing the most suitable of options. 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 were perhaps a couple of hundred or more different railway companies and little common agreement between them in the exact wording of the rules, or 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 soon became inconvenient 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 standardize 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. This development alone was an important factor in the development of modern operating practices and the consequential drafting of the rule books. The telegraph made instant communication possible between all stations and signal posts and was quickly incorporated in the method of train control as it was possible to identify within limits where trains were without having to guess. But 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 rapidly, 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 is perhaps typical of a well-developed rulebook at a period before railway signalling principles were standardized between railways and whilst standardized rules had only partly coalesced. The rulebook applied to all operational railway staff. Following 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

* I must just remind readers that in the 1860s each railway company owned and maintained its track and stations and ran its own trains, we call this vertical integration today. However the rapid expansion of inter-running meant one company's trains and staff might run over neighbouring company's lines as well, and vice versa, so that staff on these though trains had to understand those other company's operating arrangements thoroughly or an accident might result.

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.

By the 1860s, most railways were running their trains over another company's tracks, and vice versa, so the problem of varying rulebooks was becoming all too apparent with the result that a number of the individual companies' rule books produced after 1867 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 operation on the Lickey incline. The emphasis of the rulebook is substantially devoted to operation of the train service in one form or another. It may be noted the rules are a mixture of general matter and of detailed procedures (a problematic mixture that complicated rule books for another century).

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. By the beginning of the twentieth century the block system was universal, and this was supported by 2-position (stop or proceed) semapahores.

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 which either did not wish to follow or which 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' and it became increasingly difficult for companies linked to the country's main railway network to persist with contradictory material.

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. If one had to pick a date when it might reasonably be said that the 130 or so British railway companies all operated to a common set of rules then 1883 would be a reasonable date.*

In later years there was less consistency between the railways in the issue of an entirely new rule book each time the standard changed, but sets of amendments were issued periodically to keep everything in step. As already indicated, the RCH demanded that rule numbers should be consistent between different railway rulebooks. Indeed even when rule books were revised every attempt was made to retain existing rule numbers wherever possible. Inevitably this lead 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.

A significant factor in the standardization of rulebooks was the standardization of operating practices. A succession of accidents from the 1860s highlighted the need for railways to adopt a number of important safety features which were already practicable but were often felt expensive for the perceived benefits. The railway inspectorate tirelessly promoted the adoption of these systems but could not compel railways to do so on existing lines. After several serious accidents, a Royal Commission on Railway Accidents was established in 1875 and to nobody's surprise recommended the adoption of the safety features the inspectorate had been pressing for. The recommendations pressed all railways to:

- interlock points and signals to ensure that routes were set and locked before a train passed over them and no unintended train could enter a route once locked;
- adopt the 'block' system whereby no more than one train could occupy a block section between signal boxes at once; and
- install fail-safe, self-acting, instantaneously operating, continuous brakes capable of being provided on every vehicle and in daily use.

Some railways were already doing some or all of these things but the Commission's specific recommendations allowed the inspectorate to press harder for others to follow. Finally, the Regulation of Railways Act 1889 authorized the Board of Trade to compel railways to install these features and within a few years every railway connected to the main railway network, with a few trifling exceptions, were operating to a common set of operating principles. As part of this the two-position semaphore signal

* There are parallels with today. By 1883 the RCH represented the industry and made rules on the industry's behalf whilst today the Rail Safety & Standards Board does the job.

was virtually universal, showing a horizontal arm meaning stop and an arm lowered at 45 degrees to mean all clear (with red and green lights at night with the same meanings).

By 1904, and perhaps even by 1897, practically all aspects of railway operation had been standardized to an extent, and in consequence the variation between rulebooks was comparatively minor and confined largely to detail. The variations might have been necessary owing to different equipment being in use, or because railways varied in how subsidiary information was issued to staff, such that what one railway might put into a rulebook as supplementary information another might put in a different document. The rules themselves, though, now constituted a single code.

Some small railways felt it not worthwhile to print 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 typesetting (the Great Eastern had its own printing works at Stratford, and their rule books and [later] those of the LNER were produced there; some other large railways also did their own printing).

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 (eleven 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.

Despite the commonality of headings across various rule books, the treatment of the contents varies significantly. The LBSCR 1917 book is as good as any for demonstrating the breadth of coverage, which increase the bulk of the rule book to a total of some 322 pages. These are listed below.

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.

It should not be thought the way the appendices were shown had been standardized, for there was wide variation in content and ordering, or whether an appendix appeared at all. 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.

TABLE SHOWING FOR SEVERAL REPRESENTATIVE RULE BOOKS WHICH APPENDICES WERE INCLUDED

No	Appendix 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)

It is hoped the table is illustrative of the diversity in the way this supplementary information was shown, and invites questions about where else the information appeared if it were not in the rule book. 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 standardization among the new 'big four' companies, though a more comprehensive study took some years longer and finally 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. It was in many ways similar to the 1933 book and although it tolerated the existence of what we might call modern signalling based on colour light displays and power signal boxes covering large areas the drafting was still based around the assumption most signalling was semaphore controlled by nearby signal boxes.

The temptation to BR of producing a different rule book for each region was avoided, but this was just about the only rule-giving document which escaped for virtually all other subsidiary rules and regulations ordaining what had or had not to be done were issued on a regional basis and continued to be so produced for decades longer.

11 – RULES AND THE NATIONALIZED RAILWAY

The 1950 Rulebook

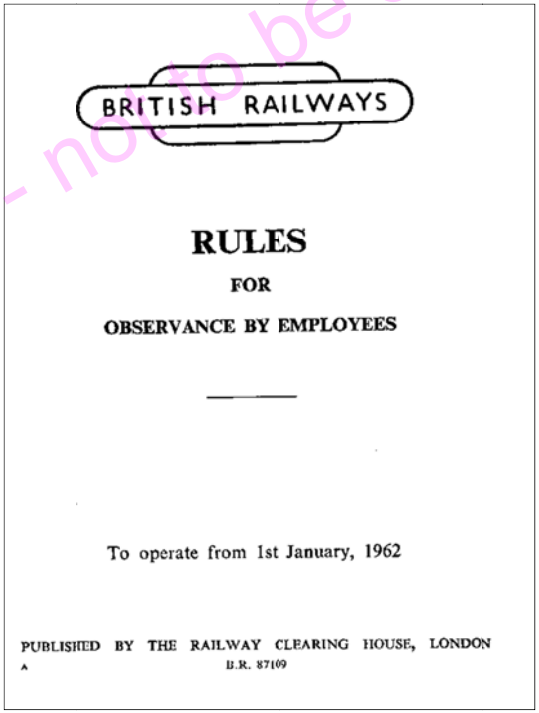
In both format and content the new BR rules were little different from the RCH 1933 rules they superseded, but many of the pre-1948 company differences had now been standardized. The rulebook had no force on London Transport railways, although various sections of line over which LT trains operated were 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 (the British Railway Board took over the functions the following day). 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 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


BRITISH RAILWAYS

RULES

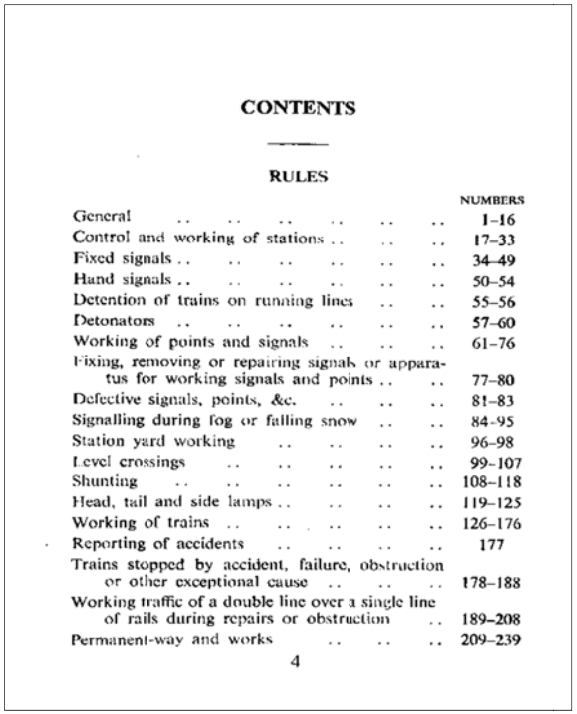
FOR

OBSERVANCE BY EMPLOYEES

To operate from 1st January, 1962

PUBLISHED BY THE RAILWAY CLEARING HOUSE, LONDON

B.R. 87109


CONTENTS

RULES

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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 huge changes that were being made (bearing in mind that the previous book was unchanged in its essential elements for nine decades). 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 significantly 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 (see the image of the contents page). 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 alone 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 Lookoutmen
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 were mainly general statements about 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 fog-signalmen. In contrast, another 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 Fog-signalmen and Duties of Trainmen. Inevitably the result was a little longer, and perhaps duplicative, 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 further step 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 had been 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 and not helped by frequent minor fiddling with rules that then needed time-consuming alterations in rule books (with the inevitable result that alterations might get missed).

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 update problem within manageable bounds, the entire contents of the 1972 rulebook were re-issued periodically, with all changes to date incorporated. This really was far from perfect, but better than writing in, or pasting in, large numbers of changes and being expected to get it right.

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.

It will be noted that prior to 1972 every rule book was small enough to be kept comfortably in a jacket pocket and most companies (including British Railways) actually required employees to have the rule book with them on duty and produce it when required.* This requirement carried over to the 1972 book though it was twice the size and could only possibly fit into the commodious internal jacket pockets with some inconvenience, despite the soft covers. Later editions were issued in thick board covers that did not bend, making them still more difficult to carry. Some grades, of course (eg drivers and guards), had equipment bags with them that could be used to carry the new books but it was asking a lot of other staff actually to carry the book at all times and thus began the slippery transition towards paperwork that had to 'be available', about which more later.

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

* Eg British Railways Rule 7(a).

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) had now to appear elsewhere.

The number of significant alterations made in just twenty years of the 1972 book is remarkable compared with decades of consistency noted earlier. This may be in part because the structural change of 1972 was ambitious and not thought through. However, it is arguable that equivalent change would have been advisable to the 1950 book in the light of huge alterations to working practices. In addition, the rate of change of technology increased significantly during the 1970s and 1980s and this called for a number of significant changes. During the period one might cite the abandonment of regular unfitted freight trains servicing local goods yards and the availability of the BR national radio network as just two huge changes that invited rethinking about the rules.

The 1996 Rulebook

After some years in operation, the new rulebook was found structurally wanting and, notwithstanding several comprehensive revisions, British Rail was becoming unhappy about its form, coherence and usability. In consequence the decision was taken in the early 1990s to move 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 (after a fashion) portable. The new rules came into force during April 1996 and comprised the 'master' rulebook (not on widespread issue), from which were drawn 13 'personalized' (or job-specific) rule books.

This created a further move from a rule book that was 'portable' in the usual sense of the word, as each job-specific book became a massive manual that was impossible to carry about at all, even though still on personal issue. It is unnecessary to labour the obvious shortcomings of this approach beyond the obvious point that in the event of being presented with some unusual occurrence one's rule book would not be to hand at the very moment it might have been most useful. It was perhaps hoped that the revised presentation would make the rules more memorable and that this would make constant reference to the book itself less necessary. In fact, the more procedurally-driven rules perhaps made reference to the detail more necessary rather than less.

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 contract-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. By way of reference, the rulebook became known as the RT3000 rulebook, the rulebook and its derivatives taking this block of numbers in the great panoply of standards and procedures.

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 adequate, despite lack of evidence to the contrary. 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 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. In other words the focus was on presentation and comprehension of contents rather than on the substance of what was being conveyed.

Each of the personalized books used an idiosyncratic method of numbering that would have appealed to a document controller but perhaps seemed a little daunting to users, any one of whom saw only part of the picture. 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). The logic cannot

be faulted, but this can only have made these substantial books that much more daunting.

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 effort was suggested, not to mention the massive logistical exercise involved in accurate and timely distribution). 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) and these were accommodated at the back of the black British Rail rulebook binder. The story of the rulebook 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 rulebook 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 rulebook appendix and incorporate the majority of it in the rulebook 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 Pilotmen
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 best that could be said of all this, is that it was not entirely satisfactory.

12 – RULES AND THE PRIVATIZED RAILWAY

THE FIRST FEW YEARS OF PRIVATE SECTOR RAIL OPERATION involved much upheaval within the industry, including large scale fragmentation and, in particular, the separation of the track operator (and rules-setter) from the various train operators and the engineers who maintained and renewed the network, who were now out-sourced. In this new climate, it soon became obvious that the personalized rulebook route was not the best way forward. 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 (though only two years old).
- 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.

We see that somehow the responsibility for actually determining what a rule needed to be had become detached from the responsibility for communicating the rule to the staff (let alone training them).

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 or the relevant personalized rulebooks).

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 rulebook 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’ (rather than by grade).
- 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. (In fact, precisely the opposite of the personalized approach).
- There should be no actual 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 rulebook.

A significant research project was undertaken by The Occupational Psychology Centre based in Watford who identified the following was required in the new rulebook.

- 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 [this had proliferated in the RT3000 book but was entirely absent in the 1972 book and earlier].

This substantial project finally resulted in the 2003 rulebook (known as the GT8000 rulebook); as issued this contained 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 with rule books 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 too 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. For certain jobs, the few modules needed could be carried around in one's 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 (probably for the first time in 150 years).

The following sets out the contents of the GT8000 rule book as issued.

Ref	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 division
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

The foregoing list represented the rules as they stood in 2012. However, more upheaval was about to take place.

13 – NEW APPROACH TO THE RULE BOOK

THE GT8000 RULE BOOK APPROACH was better than that of its predecessor, but in practice was still found to have significant failings. The challenge, of course, was by now daunting, if only because of the huge bulk of the documentation. Perhaps as relevantly, the fragmentation of the industry meant the rule book was being used by railway employees whose lives were guided all day and every day by the rules, and by contractors who needed to know only some of the rules and who may not have needed to carry them out very frequently (but when they did it was essential to get everything right).

In addition to improving safety by reducing risk it was felt that simplification would reduce network delays by reducing unnecessary steps and improving clarity so rules could be followed faster and without error. The project speculated that 676,000 delay minutes could be saved over ten years, which was felt to be worth £20 million in benefits, using accepted value of time. In addition there was felt to be potential for savings in certain types of rule-intensive work (such as possessions) and in training and document costs.

The RSSB therefore embarked on yet another improvement project known as the 'New Approach To The Rule Book' project to try and make the existing GT8000 approach more user-friendly. The project objectives were to:

- Make the rules clearer and easier to understand for frontline staff.
- Target the publications towards different roles (like track workers, signallers, and drivers).
- Rationalise the content of the Rule Book (including removing information that is considered to be addressed by 'training' and delete content that is only relevant to individual locations or locomotives).
- Engage front-end users in the Rule Book development.
- Align the rules with operational principles (such as maintaining a safe distance between trains, and ensuring that people are kept a safe distance from moving trains).

The review process involved extensive consultation within the industry and task analysis relating to each of the existing modules, sometimes involving watching the rules being implemented. Informed by this work, draft rules were compiled which then formed the basis of workshops to check fitness for purpose and incorporate relevant improvements. The revised drafts were then distributed for review by the standard industry consultation process.

The review was a lengthy process, with the project scoped out in 2008 and authority being given in March 2009 to begin work on the first five modules. It was hoped that the new rules would be in place by 2013. The work acknowledged that the previous two rule book projects had focussed on presentation and had left the substance of the rules (in some cases of great antiquity) untouched. This time the substance of the rules would be scrutinized carefully. The objective of this was:

- Reduction in the mass of rules – mainly achieved by removing repetitive instructions.
- Withdrawal of those rules that are seen as instruction that would form part of the contract of employment between the individual and their employer.
- Removal of rules that merely repeat legislative requirements and are available in other documents.

- Removing the unnecessary duplication of rules in different modules, which will be role specific.
- Recognising that there are different audiences for the rules by introducing targeted publications matched to skill sets.
- Making sure that remaining rules are clear, concise and precise.

As part of this, it was decided to define a short set of principles around which the detailed rules would be crafted. Interestingly, it was finally conceded that it was more important to know what safe outcome was intended than rule detail. This was a major change in thinking.

The project was broken down into three stages:

- Phase 1: Rules for track workers.
- Phase 2: Safe systems of work.
- Phase 3: Operating the railways.

An early decision was to remove (particularly in the case of trackworkers) a substantial number of modules and replace them with a set of handbooks that would not normally be needed by operational grades. The handbooks were to contain a substantial body of procedures that had to be followed and which were not strictly 'rules'.

On that basis, Phase 1 (the first tranche) of work involved modules G1, G2, T5, T6 and T8. These were replaced by new module G1 and five handbooks (HB1-HB5) with effect from 5th June 2010. Phase 2 was divided into three tranches that covered 12 existing modules, to be dealt with in 2010-11 (and began on 4th December 2010), and Phase 3 was divided into eight tranches covering the remaining 31 modules and were dealt with (mainly) in 2012-13. Most of the modules have been updated subsequently, some several times.

It will be convenient to list the handbooks first, as it gives an insight into what was removed from the rulebook itself:

HB1	General duties and track safety for track workers.
HB2	Instructions for track workers who use emergency protection. (5.6.10)
HB3	Duties of the lookout and site warden.
HB4	Duties of a points operator and route-setting agent - moving and securing points by hand.
HB5	Handsignalling duties.
HB6	General duties of an individual working alone (IWA).
HB7	General duties of a controller of site safety (COSS).
HB8	IWA, COSS or PC blocking a line.
HB9	IWA or COSS setting up safe systems of work within possessions.
HB10	Duties of the COSS or SWL and person in charge when using a hand trolley.
HB11	Duties of the person in charge of the possession (PICOP).
HB12	Duties of the engineering supervisor (ES) or safe work leader (SWL) in a possession.
HB13	Duties of the person in charge of the siding possession (PICOS).
HB14	Duties of the person in charge of loading and unloading rail vehicles during engineering work.
HB15	Duties of the machine controller (MC) and on-track plant operator.
HB16	AC electrified lines.
HB17	DC electrified lines
HB18	Duties of a level crossing attendant.
HB19	Work on signalling equipment - duties of the signalling technician.

HB 20	General duties of a safe work leader (SWL) working outside a possession. (6.12.14)
HB21	Safe work leader (SWL) blocking a line. (6.12.14)

The final tranche of updated rules came into force in December 2013 and were reviewed after a year in December 2014, following which some revisions were made. Part of the new philosophy was to extract from the rule book material that was better distributed in some other way (in some cases the rule book duplicated material already distributed a different way). Some material that only affected Network Rail was collected together and formed part of a new Network Rail document called 'National Operating Instructions' the first edition being issued in December 2012.

The RSSB felt that the results of the feedback suggested that the 'New Approach' achieved its aim in producing documents that were found to be more useable than the previous ones and which were found to set out the rules in logical steps, use understandable words and make it quicker to find the information needed.

Although it cannot be said that the position has completely stabilized, the position by mid-2015 was that the following rule book modules were in force, the various rewritings and reorganization of material having resulted in a rather eccentric system of numbering.

AC	AC electrified lines
DC	DC electrified lines
G1	General safety responsibilities and personal track safety for non-track workers
M1	Dealing with a train accident or train evacuation
M2	Train stopped by train failure
M3	Managing incidents, floods and snow
OTM	Working of on-track machines (OTM)
P1	Single line working
P2	Working single and bi-directional lines by pilotman
PoSA	Proceed-on-Sight Authority (PoSA)
S4	Trains or shunting movements detained on running lines
S5	Passing a signal at danger
S7	Observing and obeying fixed signals, Train warning systems, Reporting signalling failures and irregularities
SP	Speeds
SS1	Station duties and train dispatch
SS2	Shunting
T3	Possession of a running line for engineering work
T10	Duties of a designated person (DP) and people working on rail vehicles
TS1	General signalling regulations
TS2	Track circuit block regulations
TS3	Absolute block regulations
TS4	Electric token block regulations
TS5	Tokenless block regulations
TS7	No-signaller token regulations
TS8	One-train working regulations
TS9	Level crossings - signallers' regulations
TS11	Failure of, or work on, signalling equipment - signallers' regulations
TW1	Preparation and movement of trains
TW5	Preparation and movement of trains. Defective or isolated vehicles and on-train equipment
TW7	Wrong-direction movements.

TW8 Level crossings - drivers' instructions.

The various rule book sections exist as a complete set in the master manual but both hard copy and electronic versions of relevant material only are issued to staff by job function as follows:

- Signaller and Signalling Technician;
- Track Workers;
- Train Driver;
- Train Operations Staff.

It will be seen that this is vastly simpler than the arrangements made when the modular rule book was first issued. The ability to carry the book around (or access the latest edition on line) obviously compensates to an extent the greater bulk of the modern book. The electronic versions are searchable and have a bookmark system linked to the contents page. They are viewable on the screens of mobile devices as well as full size computers. In a very real way, this restores the rule book to the pockets of staff as they were until the 1980s when bloating meant they were impractical to carry around.

The problem of keeping documentation up to date is mitigated by confining any alterations (so far as possible) to planned change dates where all altered documentation is reissued and revised documentation placed on line. At the same time, a Rule Book Briefing Leaflet is issued where attention is drawn to every alteration to a rule together with other useful observations, perhaps to explain what the purpose of change is.

The European Railway Traffic Management System (ERTMS) is a challenge to the industry and, in particular, those producing the rule book. ERTMS represents new technology that is available in several flavours. One of these is in-cab signalling and another is the automatic operation of trains. These both represent the need for major changes to some of the rules and minor changes to many others. The system will take decades to introduce throughout the network (assuming it is not overtaken by anything else) and in the meantime it will inevitably be introduced piecemeal requiring a phased changeover and drivers, signallers and others having to be familiar with both old and new systems. It will also require changes to engineering practices, another fruitful source of potential rule change. During the change the old rulebook (or most of it) will continue in force in parallel with modified or entirely new rules relating to operation of ERTMS-fitted trains and track. Clearly both sets of rules must be compatible and allow for trains and staff crossing interfaces.

The testing of ERTMS on the Cambrian lines over the last decade has already met with this challenge and rather than issue supplementary instructions, as would once have been all that would have been felt necessary, an ERTMS version of the rule book has been prepared that contains all the material required. This is an expensive way of dealing with the problem but improves clarity and eliminates the apparent conflicts that other methods of covering special arrangements require. The ERTMS book was available from 24th October 2010 and is updated whenever the equivalent 'normal' sections are updated. Whether, as Network Rail goes digital, this approach is practical for wider application remains to be seen.

14 – OTHER KEY INSTRUCTIONS

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

In addition to the rulebook, it therefore became increasingly necessary to promulgate vast quantities of instructions that dealt with every conceivable type of local 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 the body of 'regulations' though the distinction between a 'rule' and a 'regulation' is somewhat opaque, let alone the distinction between either of these and 'instructions'.

General Appendix

Historically the material in the two appendices just referred to has its distant origins in the working timetables where it was originally convenient to publish such supplementary information. In the early days of railways, train operations were entirely guided by the timetables as the actual position of trains was unknown until arrival; most operating staff were issued with timetables and this was a convenient way to promulgate additional information such as how certain equipment was to be operated (such as defrosting water columns) or procedures to deal with particular things that had to be done, such as ordering special wagons. As the railways grew, and equipment became more diversified, and operations more varied, so it became more convenient to put the information in a separate document. This avoided having to reprint at high cost what was progressively becoming quite bulky information at quite so frequent an interval as the timetables (which often changed monthly).

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. The first is the GWR book

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

Section	*Heading*
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.

The above list might not look very informative but the book runs to 344 pages of close-set type with numerous diagrams and contains a wealth of detailed information about how many aspects of railway work were to be carried out—in detail. Although the material is well mixed up, many sections are set out in a way that explains the duties of various staff and how they were to co-operate in tasks involving several of them A great deal of information is included about station operations, an area hardly covered in the main rule book.

LMSR General Appendix to the Working Time Tables—March 1937

(Part 1)
General Instructions respecting Accidents, Fires etc;
Instructions respecting Electrified Lines;
Instructions respecting Working of Trains;
Miscellaneous Instructions
Modifications of Standard Rules

(Part 2) Sections of The Rule Book

Section	*Heading*
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 but these items bear some resemblance to the material previously included in the rule book appendices and may have worked its way into the general appendix instead. The instructions for operation of slip carriages (in the pre-1933 Rule Book Appendix) is included in Instructions for Working of Trains (in Part 1) and the missing balance may have been absorbed into the block telegraph regulations. The LMS book runs to 95 pages of detailed instructions and is quite different in form to the GWR book although some individual sections are quite similar.

LNER (southern area) General Appendix to the Rules and Regulations and Working Timetables November 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 LNER book runs to 112 pages, again of closely-typeset detailed instructions for dealing with matters under the various headings. Again it is possible to detect some commonality with the LMS and GWR instructions mentioned already, but much material is entirely different.

Southern Railway – General Appendix to the Working Timetables, March 1934.

Additions and exceptions to the Rule Book;
Regulations for working the vacuum brake;
Regulations for working the Westinghouse brake on steam trains;
Ministry of Transport Regulations applicable to mixed trains
Regulations for communication between passenger, guard and driver by means of automatic brake;
Regulations for protection of carriage cleaners, Gasmen, Lampmen and others working on coaching stock;
Regulations for the protection of Brake Fitters, Lifters, Repairers and others working on carriage or wagon stock;
Employees working in or about Electric Traction Shops and Sheds and Sidings;
Workmen engaged in repainting or repairing stop blocks;
Power worked trolley and power worked trolley with trailer;
Engineers department occupation-key instruments;
Accidents affecting the working of the line;
Detonator-placing machines;
Working of trains;
Standard loading gauges;
Passenger train rolling stock;
Loading, etc of merchandise traffic;
Weighing machines and weighbridges;
Yard and shed cranes, slings and lifting gear;
Examination and collection of tickets;
Platform ticket arrangement
Passengers' luggage;
Lost Property, unclaimed luggage, etc;
Acceptance and conveyance of horses, etc by passenger train;
Exhibition of posters, notices, etc;
Lamp rooms and lamps;
Fires or accidents involving threatening explosives etc;
Railway Fires Acts, 1905 and 1923;
Precautions to be taken during frost;
General instructions;
Tunnels.

By some way, this is by far the most extensive contents list of any of the companies and perhaps gives the better flavour of the kind of material included in the General Appendix. In fact the material occupies 152 pages and whilst its breadth is apparently greater than the other companies one can still see a great deal of similarity.

The wide variation between the contents of these books reflects an apparent lack of interest in co-ordination by the RCH, notwithstanding that the companies had some obvious differences in methods that the documents had to reflect (for example electric traction on the Southern). Even so we are left with the feeling that all four companies must have had numerous other documents on issue to cover the obvious gaps in their appendices. These documents were not reprinted very often and are often full of amendments accumulated over some years. I have not attempted to record all versions but suggest the companies produced appendices in the late 1920s when the hiatus of grouping had died down, in 1934 or thereabouts reflecting changes precipitated by the 1933 rule book, and one (or occasionally two) later editions as required in the period until nationalization.

An interesting point to note was that on at least some of the main lines a copy of the General Appendix was bound in the same covers as the Sectional Appendix for the relevant area on which the staff were to work.

Certainly the Southern and LNER did this and it seems a sensible way to keep the operating instructions in one place (the Sectional Appendix is dealt with shortly).

When British Railways was formed the pre-nationalization 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. The 1960 book ran to 120 pages and despite the revised headings some of the contents look very familiar. The 1972 book ran to 132 pages, partly because of new typesetting (probably using new technology) and some material has been exchanged with the new rule book as explained earlier.

The General Appendix just described lacked any table of contents, relying only on an index, but the main headings in the 1960 book 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. Nevertheless new material had been included previously in the rule book and sections had been added to reflect dieselization.

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 rulebook 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

This appendix also has its origins in the body of instructions once included in working timetables, and comprise local instructions relating only to the operation of the trains and stations immediately concerned along particular stretches of line. This 'local' information was in due course plucked from timetables and were published separately, usually arranged to cover the geographical area of the entirety of a small region or railway, or a logical subsection of a larger railway.

The Sectional Appendices (as they were called) also varied widely in form but came to be published as an entirely separate document. 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.

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.

An online version of the Sectional Appendix is available for those in the industry to use; this covers the whole network and is produced by Network Rail. The placing of this and other material online not only saves printing costs but (in theory) ensures material is always up to date.

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 standardization, 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, the trains 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 days.

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 then sat 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. However, under the latest set of rulebook changes a 'DC' electrification module was incorporated from October 2006 into the GE/RT8000 rule book and this deals with all DC lines except Merseyrail and, for some reason, the old Northern City Line systems for which dedicated instructions are provided. The new electrified lines rules are not specific to the old Southern Region but have been widened in scope to include other similar dc lines on the network, mainly in London. These include what are now London Overground's services.

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.

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 colour light signalling and attempted to link everything back to semaphore operation. The 1950 rule book dealt very poorly with colour 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. Are they rules?

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. It will be understood the railway workshops employed tens of thousands of people, safety-critical work was carried out in a difficult environment and the workshops had to adhere to the factories acts and similar legislation which exposed them to inspection. Rules were therefore vital. All these vast workshops have now closed and the need for special rules is now considerably more limited, such rules now being covered by the present railway rule book and local instructions, where required.

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. It is not in itself a rule book but it is a place where rules and rule changes can be promulgated.

* A few early railways had at first had a separate book for explaining the signal codes, but by about 1870 the signal indications were always in the rulebook.

APPENDIX 1 - THE BYELAWS OF THE HAY RAILWAY, 1816

An example of railway rules posted on notice boards for the information of those using an early public 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 Stopgates, 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, providedthe 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.

APPENDIX 2 - THE BYELAWS OF THE STOCKTON & DARLINGTON RAILWAY, 1825

An example of railway rules posted on notice boards for the information of those using an early public railway

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.

(10) Every proprietor of coal, line, 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 bag-age 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.