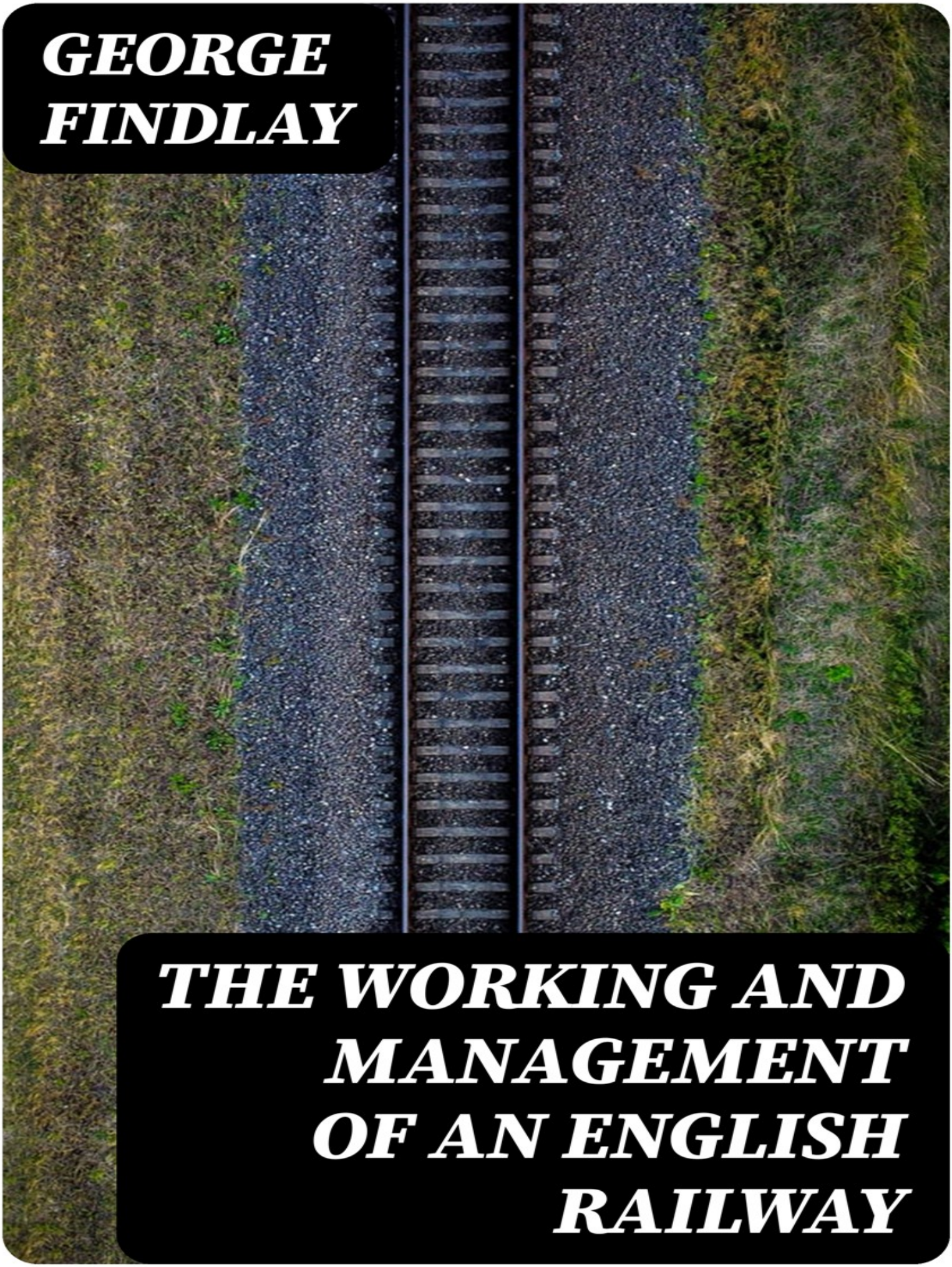
GEORGE FINDLAY



THE WORKING AND MANAGEMENT OF AN ENGLISH RAILWAY

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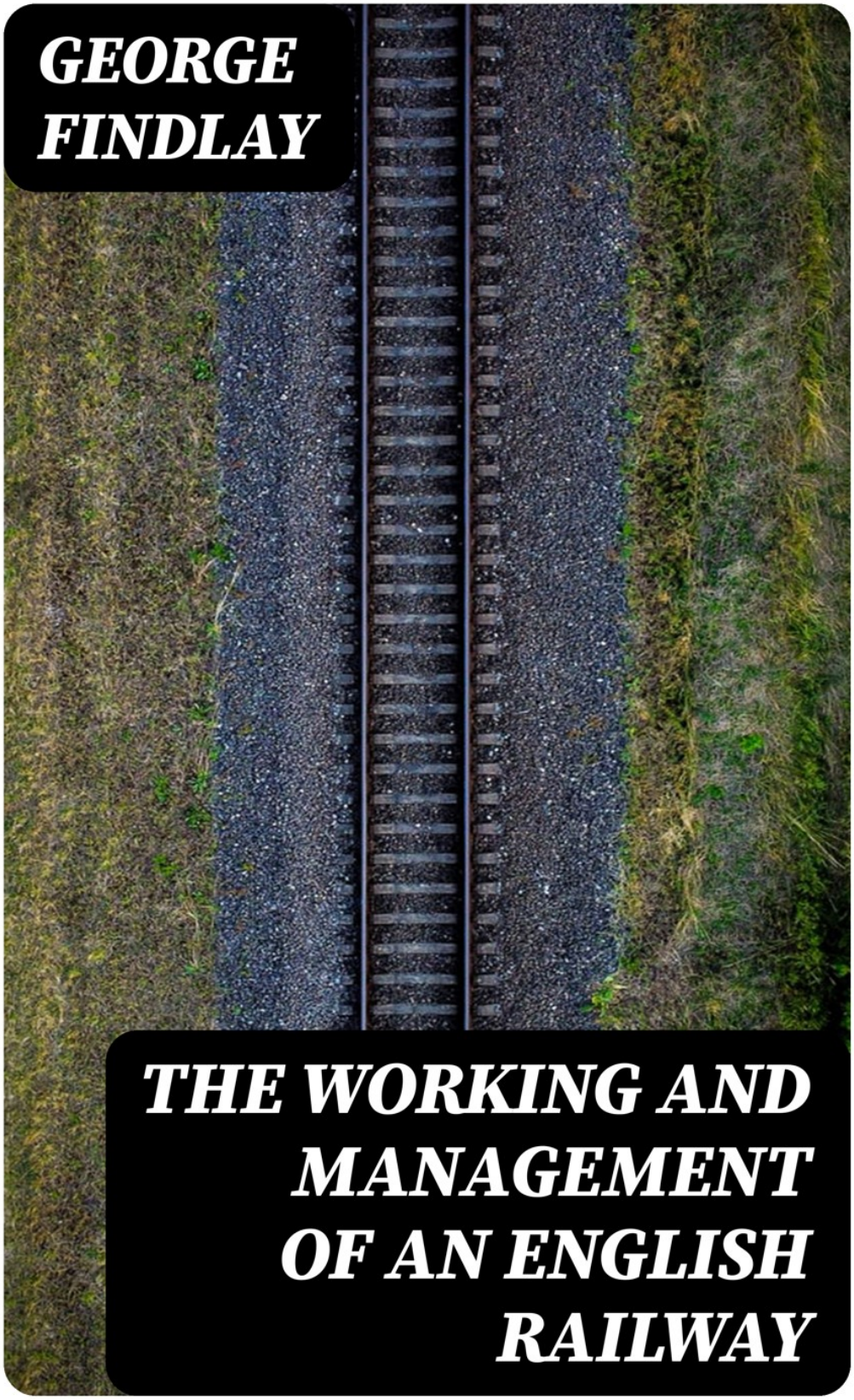

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George Findlay

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EAN 8596547086963

DigiCat, 2022
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CHAPTER I.

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INTRODUCTORY AND RETROSPECTIVE.

IT may at first sight appear that the subject of "The construction, working, and management of an English Railway " is one calculated only to enlist the attention of a limited class, namely, of those who are, or may be, directly or indirectly, connected with the working of railways, either in this country or abroad, but a little reflection will probably suffice to show that the theme is one which should appeal to a much larger circle of readers, and,:n fact, to almost every class of the community. If the attention of an individual is drawn to any new law, any fresh discovery or social reform calculated to promote his personal comfort or well-being, his interest is at once aroused; and the circumstance that, in this case, the revolution has been effected and the benefit is actually being reaped should surely not suffice to rob the subject of its interest. The railway, in its present phase of development, enters so intimately into the social life of the community in its every detail, and has become so potent a factor in its every movement and operation, whether of business or of pleasure, that it must clearly be material for every individual to know something of the great agency which does so much for his happiness and welfare, and to realise clearly what are its obligations and liabilities towards himself, and what he has a right to expect from it. Such knowledge it is hoped this work may impart; but it has the further aim of constituting a practical guide or hand-book for those who,

whether in this country or in our numerous colonies, may find it necessary, for whatever reasons, to acquire a knowledge of the principles upon which a great English railway is constructed and managed, and the methods and appliances by means of which its business is carried on.

It is not the intention of the present writer to enter into a detailed history of the conception and growth of the railway system from its earliest period to the present time. The story is one full of interest, and, having been recounted by many other and abler pens, may, in its main features, be said to be fairly well known. It may not, however, be out of place to allude, briefly,- to the state of things which prevailed before the genius of a great engineer and the courage and enterprise of a few Liverpool merchants inaugurated the enormous social revolution which has since displayed such extraordinary development, and has so greatly contributed to the happiness and prosperity of the human race.

If we go no further back than the commencement of the present century, only a few years before the first railway was projected, we find that, although the difficulties of earlier locomotion had been to some extent obviated by the introduction of fast and well-appointed coaches, running between some of the most important cities in the kingdom, the only means of communication between the smaller towns was by means of post-chaises, or private carriages for the wealthy, and, for the less well-to-do, the humble carrier's cart or the slow and ponderous stage waggon. Travelling was so expensive a luxury that a journey was only undertaken under the most pressing necessity; many of the

roads were so ill-constructed that in bad weather they were almost impassable, besides being at all times infested by highwaymen and footpads. Merchandise was conveyed from town to town by heavy and slow-moving waggons, and the cost of land carriage between Manchester and Liverpool, a distance of not more than thirty miles, was forty shillings per ton. To-day, Manchester bales are carried to Liverpool by railway at six shillings and tenpence per ton, and they are conveyed to London, a distance of upwards of 180 miles, for twenty-five shillings per ton. In those days, a journey from London to Birmingham, if all went well, and no mishaps were encountered, occupied ten or twelve hours at the least; while now. a man of business may break his fast in London, be in Birmingham before noon, transact his affairs, and be back in town before dinner. At that time a journey from London to Scotland was something to ponder well upon before it was undertaken, for, apart from heavy expense and dangers, difficulties and fatigue to be encountered, it occupied several days; whereas now, a traveller may leave London at 8.0 p.m. or 8.50 p.m.; can retire to rest as comfortably as if he were, in a well-appointed hotel, and awake in the early morning to find himself in Glasgow or Edinburgh, or even further north. Merchants are able to be in frequent personal communication with their correspondents in the most distant towns; young folks, exiled from their homes in pursuit of their various careers, are enabled to spend even the shortest holiday in the family circle; letters posted in the evening are read at breakfast tables hundreds of miles distant the following morning; coals and every necessity of life are cheapened to the

consumer, and every branch of business has been enormously stimulated and developed by the facilities thus brought to bear upon it; and, in fact, the speed and certainty with which the inland and import and export trade of the country is carried on are nothing less than astonishing. Goods are punctually collected, carried hundreds of miles between all the most important towns in England, and delivered to their consignees within the day of twenty-four hours, and even between England and places in Scotland, and the seaport towns of Ireland, within forty-eight hours. The Yorkshire manufacturer who attends the London wool sales today can have the wool he purchases in his warehouse to-morrow. The Lancashire cotton spinner will buy cotton in the Liverpool market one day, and it will probably be in actual consumption in his mill the next. Dead meat from Scotland and from abroad, poultry, butter and eggs from Ireland, vegetables, fruit, and all perishable goods of the kind, are despatched by the growers with the narrowest possible margin of time to catch a particular market; and all this is done with the utmost certainty and punctuality, making allowance, of course, for trifling miscarriages, which will occur in every large business, often from circumstances that no foresight could control.

Such are a few of the advantages which have resulted to the community from the invention of railways, but the list might be multiplied indefinitely.

The first dawn of the idea of a railway was, no doubt, about the beginning of the seventeenth century, when some inventive genius hit upon the plan of laying down parallel blocks of timber to form tram-roads in the vicinity of mines,

to enable the mineral products to be drawn more easily by horses to the riverside. More than a hundred years later (about the year 1768), as we are told by Mr. Francis in his admirable "History of the English Railway," cast-iron rails were substituted for the wooden blocks, and this was a distinct step in advance. By the commencement of the nineteenth century, the application of steam as a motive power was no longer unknown, for it had been applied to the working of stationary engines in mines and elsewhere, and, in fact, as early as 1804, a machine had been constructed at a Welsh ironworks, which moved upon rails, drawing after it a load of ten tons of bar iron, and which was, to all intents and purposes, a locomotive engine. The construction of the Stockton and Darlington Railway followed in 1821, but the first railway made with public money, and for the public benefit, and which marks the birth of the railway system as we know it to-day, was the Liverpool and Manchester. The conflict which was sustained by the promoters of that undertaking with the forces of ignorance and prejudice was really the decisive one, and when the struggle was over and the battle had been won, the floodgates of enterprise were opened wide and the era of railways had commenced.

About the year 1820, the relations between Manchester, as the great manufacturing town of the north, and Liverpool, as the nearest shipping port, had created a large traffic between the two places, for the conduct of which the road waggons and canal barges had proved to be totally inadequate. In the year 1821, therefore, a committee of merchants of Liverpool was formed to draw up a scheme for

the construction of a railway or tramway between Liverpool and Manchester, the question of the motive power to be employed being left for a time an open one as between horses and the steam engine, with which Mr George Stephenson was then experimenting. There was no idea at first of conveying passengers, but the scheme grew in importance as time went on, until at length it aroused a perfect storm of enthusiasm on the one side and of embittered opposition on the other. Much has been said and written as to the incredible lengths to which that opposition was carried by the enemies of the undertaking, and the story is one not without its painful, as well as its ludicrous, features, but it need not here be enlarged upon. Suffice it to say that every weapon that the prejudice and narrow-mindedness of the many, or the alarmed avarice of the few, whose interests were threatened by the impending change, could devise was brought to bear without scruple, even to the length of personal abuse and calumny levelled against the promoters. The most absurd statements were gravely put forward and believed in; the smoke of the engines would kill the birds, cattle would be terrified, and cows would cease to give their milk; the sparks from the engines would set fire to the houses and manufactories on the line of route; the race of horses would become extinct, and many other direful consequences would ensue, amidst which the absolute ruin of the country would shrink to the insignificance of a detail! The first surveys had to be accomplished, in many cases, by stealth, and were, in some cases, resisted to the extent of the employment of armed force.

After the lapse of sixty years, we can afford to smile at the folly of those who seriously maintained such theories as these; but the opposition to be encountered was no laughing matter, we may be sure, to the earnest pioneers of the new movement who had staked their means and their reputations upon the issue of the undertaking, and devoted themselves heart and soul to the effort to carry it to a successful termination. At length, in March, 1825, the survey, in spite of all difficulties, had been completed, and the Bill was in Committee; but, after a lengthened discussion, extending over thirty-seven days, and chiefly owing to the opposition of the landowners and canal proprietors, it failed, and its enemies were for the time being triumphant. The sequel, however, shows that their exultation was premature and but short-lived.

The simile of Dame Partington striving with her mop to keep back the waves of the Atlantic is one sufficiently trite and well-worn, but it recurs almost irresistibly to the mind in contemplating the futile and hopeless attempt of these enemies of progress to arrest the march of that tremendous social revolution which, within the span of a single generation, was destined to change the whole face of the earth.

Nothing daunted by their first failure, the great engineer and his courageous backers returned to the charge. A fresh survey was made, by which many of the difficulties which had been raised were overcome or circumvented; the Bill was re-deposited in the ensuing session of Parliament, and this time the enterprise of its promoters was rewarded by success. The Bill received the Royal assent on the 7th May,

1826; the works were at once vigorously proceeded with, and the railway was actually opened for public traffic on the 16th September, 1830. It was, however, of a very different construction to the well-appointed and perfectly equipped railways of the present day. It consisted, it is true, of a double line of rails; but those rails were of so light a description that they soon succumbed to heavy wear and tear, and large sums had afterwards to be expended in taking them up and replacing them with others of a more substantial character. Instead of the timber sleepers, now universally in use, the rails were laid upon huge stone blocks, soon to be found expensive and unsuitable. The passengers were conveyed, either in open cars, unsheltered from the weather, or in covered carriages only a degree less comfortless, and presenting a strong contrast to the luxuriously appointed vehicles in which the traveller of to-day is accommodated. The trains, at first, started at irregular intervals, and were few and far between, and it was not until after some time had elapsed that the time-table became a recognised institution. The journey between Liverpool and Manchester, which is now easily accomplished in forty-five minutes, occupied at that time an hour and a half. Of the engines employed, more will be said hereafter; but it will be readily believed that they were of an extremely primitve character compared with those of a later date. As first projected, the railway terminated, at the Liverpool end, at Crown street, near Edge Hill, and omnibuses were employed for conveying the passengers to and from the City; but this was soon found to be a great hindrance to the development of the traffic, and in the session of 1832

powers were obtained for the construction of the tunnel under the City to Lime Street, which was completed and opened for traffic in August, 1836. Despite all its shortcomings, however, the undertaking was, from the very outset, a much greater success than even its authors had ever ventured to predict, and indeed their anticipations proved to have fallen almost ludicrously short of the results actually realised. They had expected to earn £10,000 a year from passenger traffic, whereas in the first year after the opening the receipts from that source were £101,829. They had estimated the gross receipts from merchandise at £50,000 per annum, but in 1833 the actual amount received was £80,000. From the very commencement, the shareholders obtained a dividend at the rate of 8 per cent, per annum, afterwards rising to 9 and 10 per cent, and remaining at the latter figure for some years.

The great success of the Liverpool and Manchester railway, as might naturally have been expected, let loose a flood of railway enterprise all over the country. Lines were soon projected between all the towns of any importance in the kingdom and even between remote; villages. One enthusiast went so far as to propose a railway under the sea between Dover and Calais, and was no doubt looked upon by his contemporaries as a fitting candidate for a lunatic asylum, but probably the distinguished promoter of the Channel Tunnel scheme of to-day may hold a different opinion upon that point. The most important result that immediately followed, however, was the revival of the scheme which had previously been mooted, but had been abandoned, for the construction of a railway between

London and Birmingham. The Bill for this line, which was the parent of the London and North-Western Railway, was first deposited in November, 1831; but, after passing the House of Commons, was thrown out in the House of Lords on the 10th July, 1832. The opposition to this Bill was as unscrupulous, and of precisely the same character, as that which its precursor—the Bill for the Liverpool and Manchester Railway—had had to encounter; but in the end it was overcome, and the line, having been sanctioned in 1833, was finally opened to the public in 1838.

For the purposes of this work, it is not necessary to follow, step by step, the gradual, yet rapid, development of the railway system throughout the country. It will be sufficient to record that by an Act obtained in 1846 the London and Birmingham, the Grand Junction (with which, under an Act obtained earlier in the same year, the Liverpool and Manchester Railway had already been incorporated), and the Manchester and Birmingham Railway Companies were amalgamated under the title of the "London and North-Western Railway Company." During the lapse of time since that period this Company has gradually absorbed the South Staffordshire, the Chester and Holyhead, the Lancaster and Carlisle, and some forty smaller companies, many of which, for a time, were only leased, and retained their separate capitals with varying rates of interest and, in some cases their independent boards of directors. But in 1877 an Act was obtained, commonly called the "Consolidation Act," the effect of which was to weld all these separate companies into one homogeneous undertaking, the London and North-Western

Railway, as it exists to-day, having a consolidated stock of upwards of £108,000,000, possessing more than 1,800 miles of railway, with nearly 650 stations, and employing a staff or an army, as it may be called, of 55,000 men.

It may here be stated that, although much of what follows may be taken as being more or less generally applicable to all the principal railways of the United Kingdom, yet the one, the working of which is more particularly described in the succeeding chapters, is the London and North- Western, with which the writer has been connected for a great number of years, and with which he naturally therefore possesses a more intimate acquaintance than with any other.

CHAPTER II.

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MANAGEMENT.

THE administration of the London and North-Western Railway is carried on by the Chairman, two Deputy-Chairmen, and a Board of thirty Directors, five of whom retire annually, but are eligible for reelection. Any shareholder may become a director by election, provided he possesses the qualification of holding ordinary stock to the value of one thousand pounds. The full Board of Directors meets once a month, viz., on the third Friday in every month, but the members are also organised in a number of smaller committees, called "Committees of the Board," which also meet once a month and deal with various branches of the business. For instance, there is a "Special Committee," consisting of sixteen members, which holds its meetings intermediately between the meetings of the full Board and devotes itself to much the same class of business; a "Finance Committee" of seven members; a "Permanent Way Committee" of ten members, at which the engineers attend, and which accepts tenders, approves contracts, orders relaying and repairs, and generally authorises all expenditure connected with the permanent works of the railway; a "Locomotive Committee" of ten members, which deals with all matters relating to the engine works at Crewe, the carriage works at Wolverton, the waggon works at Earlestown, and everything connected with the rolling stock of the railway and with the steamboats. There are also a "Fares and Rates Committee" of eight members, and a "Debts and Goods Claims

Committee" of ten members, the titles of which sufficiently indicate their functions, and an important committee called the "Traffic Committee," composed of fifteen members, which approves changes in the staff and in the pay of the Company's servants, authorises expenditure upon new works, and deals, besides, with a variety of other matters connected with the discipline of the staff and the working and accommodation of the traffic. In addition to these there are smaller committees for the hotels and refreshment rooms, for legal and medical business, and for stores. At the meetings of the full Board, which are presided over by the Chairman of the Company, the minutes of all these various committees are submitted and approved or otherwise as the case may be, and the Board also deals with Parliamentary matters, questions of policy, proposals for new works involving large expenditure, and, generally, with all business of the first importance affecting the Company. The present Chairman of the Company, as is pretty well known, is an extremely hard worker, and has for many years devoted the whole of his time and his great talents for administration and finance to the service of the Company which he has done so much to place in its present position at the head of the railway enterprise of the country.

The executive management of the line is carried on by a General Manager, a Chief Goods Manager with two assistants (one for the outdoor working, and one for the indoor work, the making of rates, etc.), and a superintendent of the line with one assistant. These two last-named officials deal with the working of the trains, both

goods and passenger, and all things pertaining to the movement of the traffic.

For administrative purposes, the entire system is divided into ten sections or districts, each of which is under the control of an officer of tried and practical experience, termed the "District Superintendent," having his offices at some central point, who is responsible for the train arrangements of his own district, the conduct of the traffic and the discipline of the staff. Each of these officers has under him an assistant and several travelling inspectors who regularly visit every station and signal post and investigate and report upon everything that is going on in the district, these men being, moreover, encouraged to make suggestions for the improved working of the trains and the avoidance of irregularities, any such suggestions always receiving careful consideration. In some of the less important districts the District Superintendents are responsible for the goods work at the stations as well as the conduct of the passenger traffic, and in that case they are answerable both to the Chief Goods Manager and to the Superintendent of the line; but, in six of the more important districts, they are relieved of the management of the goods business (except as to the working of the trains) by district officers of equal rank with themselves, who are called "District Goods Managers," and who are responsible to the Chief Goods Manager at Euston. The same principle is followed out with regard to the management of the stations, at the majority of which a single agent is placed in charge of both the goods and passenger traffic, while at 18o of the most important stations there are two officials, one of

whom, called the "Station-master," attends to the passenger work, and is accountable to the District Superintendent,and the other, styled the "Goods Agent," is responsible for the goods working, and is under the control of the District Goods Manager.

It will thus be seen that the chain of responsibility and of supervision is a very complete one, and, in fact, the secret of organising the management of a great service, such as this, is nothing more than a carefully arranged system of devolution combined with watchful supervision. It is not, of course, practicable for the General Manager to superintend in person the every-day actions of the porter or the signalman, but these latter act under the immediate direction of the Station-master, the Station-master is accountable to the District Superintendent, the District Superintendent to the Superintendent of the line, the Superintendent of the line to the General Manager, and the General Manager to the Chairman and Directors. If anything goes wrong, or any mishap or irregularity occurs, each of these has to bear his own share of the responsibility in turn, and thus all are kept on the alert, and each one has an interest in seeing that those subordinate to him are fit and capable in every way to discharge the duties placed upon them.

There are two "Conferences" held every month (so called to distinguish them as meetings of *Officers* from the meetings of the *Directors*, which are termed "Committees"). The first is called the "Officers' Conference," and meets monthly, the meetings being held usually, but not invariably, at Euston. It is presided over by the General

Manager, and is attended by the chief officers at headquarters, and by the whole of the district officers, both goods and passenger. One of the most important functions of this Conference is to discuss and decide upon all alterations of the train service, but it also deals with mishaps and irregularities in working, and considers the causes that have led to them, and the means of preventing a recurrence. Proposals for the alteration of rules and improved arrangements for conducting the traffic are also debated, and, broadly speaking, all matters affecting the working of the line, or the running of the trains come within the purview of this Conference.

The second of the two Conferences is termed the "Goods Conference," which also meets once a month, usually on the day preceding the meeting of the Officers' Conference, its chairman being the Chief Goods Manager, and the members being confined to those district officers who are responsible for the goods working. This Conference takes no cognizance of train arrangements, which are dealt with entirely by the Officers' Conference, but concerns itself with questions relating exclusively to the conduct of the goods traffic, such as mileage and demurrage, outstanding freight accounts, the supply of waggon stock, ropes and sheets, claims for goods lost, damaged, or delayed, cartage and agency and kindred subjects.

The minutes of both these Conferences, which are printed for more convenient distribution to all concerned, are submitted for approval to the Board of Directors, and until they have been so approved, the recommendations contained in them are not valid and cannot be acted upon.

The fact of all the country officers being brought together at headquarters once a month, primarily for the purpose of attending these Conferences, forms a very essential and valuable feature in the working of the line. They have thus the opportunity of meeting one another, comparing notes and exchanging experiences, besides which each of them in turn enjoys the advantage of a personal interview with the General Manager and with the other chief executive officers, in order to seek advice or instruction upon important and, perhaps, delicate matters which for various reasons can better be dealt with orally than by means of written reports. On the other hand, the chief officers themselves derive benefit from being brought in contact with the men who are engaged from day to day in supervising the actual working of the traffic, and are kept well posted in everything that is going on all over the system.

Another important feature is the system of periodical inspections. From time to time, some of the directors, accompanied by the chief officers, the engineers, and the district officers concerned, go over each district, visit the stations, and inquire into cases of alleged inadequate accommodation or other matters calling for attention. At other times, the chief officers, unaccompanied by the directors, visit the districts, inspect the stations, examine personally the principal station-masters and inspectors, and satisfy themselves by careful inquiry that all the rules and precepts laid down for the efficient conduct of the traffic, and the safety of the line, are being scrupulously carried out throughout the system. Thus nothing is left to chance or to the possible carelessness of subordinates, but a jealous

watchfulness is constantly exercised to ensure that all the necessary precautions that experience has dictated and authority has laid down are thoroughly and effectually observed.

Every servant of the Company, on his appointment, is presented with a copy of the "Rules and Regulations," and is expected to make himself master of its contents, but more especially of the section relating to the branch of the service to which he belongs. This book contains a complete *résumé* of the rules laid down for signalling, for the use of the block telegraph, and for the working of the line generally, and an intimate acquaintance with its contents is indispensable to any man who desires to make himself proficient in his duties. The book also contains the disciplinary rules of the service, and every *employé*, when on duty, is required to have his copy about his person so that he cannot plead ignorance of his instructions as an excuse for neglect of duty.

The system of control over the expenditure of the Company's money is a very complete one. The general theory is that no expenditure whatever is incurred without the direct sanction of the Directors, expressed by a minute of some committee approved by the Board. The district officers are, indeed, allowed to make some small necessary payments, but even for these the vouchers are submitted monthly, and, after being carefully examined, are passed by the Finance Committee. No work is done by any of the engineering departments, except ordinary maintenance and repairs, without a minute of the Directors to sanction it, and, in like manner, no claim is paid, except those of very trifling

amount, without the authority of the "Goods Claims Committee."

As might be expected, in an undertaking of such magnitude, and with a constantly fluctuating but nearly always growing, traffic, the Executive at headquarters is daily inundated with suggestions and recommendations for alterations and increased accommodation at stations and depôts, but these undergo a very searching examination before any effect is given to them. We will suppose, for example, that a goods agent conceives it to be necessary for an additional siding to be laid down at a station. He makes a report to that effect to the Manager of the district; the latter inquires into the facts on the spot, and, if he concurs in the necessity, reports his recommendation to the General Manager. The latter consults, in the first instance, the Chief Goods Manager or the Superintendent of the line, as the case may be, and, if his report be favourable, authorises the Engineer to prepare a plan and estimate. The plan, when ready, is subjected to the criticism of the District Officer, the Chief Officer, and of the General Manager, and, if all are satisfied, the Directors are next asked to authorise the necessary outlay. But even this is not all, for, finally, the plan has to be signed by the Chairman of the Company before the Engineer commences operations, and that gentleman, who keeps a watchful guard over the Company's purse strings, has to be convinced that the expenditure is not only desirable, but actually unavoidable, before his signature is obtained. Thus the shareholders may rest perfectly easy in the assurance that their money is not dissipated in needless accommodation works.

One very important part of the management of a railway, as may be easily imagined, is the arrangement of the train service. The entire service is re-organised twice in the year, viz., in the spring, to provide for the summer months, when the passenger traffic is heavy and the goods and coal traffic light; and again in the autumn, with a view to the winter months, when, conversely, the passenger traffic is light and the goods and coal traffic heavy. As far as is practicable, the changes are confined to these two periods; but, owing to fluctuations of business, the growth of new neighbourhoods, and all kinds of local and special circumstances, there is really no month in the year when a number of train alterations do not have to be considered and decided upon. This is done, as before stated, at the monthly meetings of the Officers' Conference, held during the third week of every month, and between that time and the end of the month the time-tables have to be revised and reprinted. No one who has ever glanced with an intelligent eye at the time-table of a great railway will be surprised to learn that this operation is one of the most complicated nature, and involving great labour and considerable skill. This will be apparent if it be borne in mind that, supposing, for instance, a train running from London to Scotland is altered in its timing ever so slightly, it involves the necessity of altering all the trains running on branch lines in connection with it, and many other trains which are affected by it A train service is, in fact, like a house of cards; if the bottom card be interfered with, the whole edifice is disarranged, and has to be built up afresh. Remembering all this, and the pressure under which the work must be done,, the wonder is not so much that an

occasional error creeps into a time-table, as that such marvellous accuracy is, on the whole arrived at.

The time-tables of the London and North-Western Railway are printed at Newton-le-Willows, where the contractors for printing and stationery, Messrs. McCorquodale & Co., have their headquarters. To that town, within a few days of the train alterations having been decided upon by the Officers' Conference, there repairs a clerk from each of the ten districts who is called the "time-table clerk," and with these ten clerks comes an official from the office of the Superintendent of the line to supervise their labours and assist them with his experience. Taking the minutes of the Officers' Conference as their guide, these clerks proceed to revise the time-table, each working out the times for his own section of the line, but all comparing notes as they proceed so as to ensure a harmonious result. As they progress, the results of their labours are placed in the hands of the printers who are on the spot, and the proof-sheets are afterwards revised and corrected by the clerks who have prepared them, and this is how the time-table of the North-Western Railway is produced.

It is extremely difficult to lay down any hard and fast rules for the efficient management of the whole or a section of a large undertaking. If the man who is called to the task has a talent for organisation and administration, he will be a law to himself, and if he does not possess these qualifications, no stereotyped rules will avail to supply their place. There are, however, certain maxims which are elementary and upon which it may be worth while to insist, and these may be briefly summed up as follows:—

(1.) Every man should be chosen with special reference to his suitability for the duties he is called upon to perform. To use a familiar aphorism there should be no "round pegs in square holes."

(2.) Care should be taken that every man entrusted with a responsible duty is thoroughly trained for its performance and competent, before the responsibility is cast upon him.

(3.) Every man should be fairly remunerated for his labour, and should be, as far as it lies with the management to make him so, a cheerful and contented servant. A discontented man makes a bad servant, for his mind is often pre-occupied by his own real or fancied grievances when it should be concentrated on his employer's business.

(4.) Every man should have his duties thoroughly defined and should know exactly what is required of him. To use another aphorism, "What is every one's business is no one's business," or, in other words, a piece of service which is equally the duty of two or three men is likely to be well performed by neither, for each will shift it on to the others if he can, and the one who ultimately discharges it, will do so grudgingly, thinking the others might have done it rather than himself. Moreover, if, after all, it is neglected, it is difficult to fix the responsibility for the omission on any one individual.

(5.) There should be, at all times, active and vigilant supervision in every branch of the service. It is not enough that every man should be fit for his duties and trained for their performance, but it must be the duty of someone to see that he actually does perform them, and that no slackness or carelessness is allowed to supervene in

carrying, on the working from day to day. The railway service is pre-eminently one requiring for its efficient conduct a high degree of smartness, alacrity, energy, and zeal on the part of every individual engaged in it.

To anyone who may be called upon to occupy the position of a chief official in any great undertaking, such as the one herein described, one or two hints, the result of the writer's practical experience of five-and-thirty years, may not be without their value. The first discovery that any man makes on his being appointed to such a post is that if the day consisted of forty-eight hours instead of twenty-four, and every hour were devoted to his office, his time would still be insufficient to meet the demands on it. It thus becomes essential to economise time as a most precious commodity, and this is best accomplished by acting strictly upon the following maxims:—

(1.) Choose your subordinates carefully and well, and let them be men you can thoroughly rely on. Do not concern yourself too much with points of detail, with which you must be fully conversant, but with which they are just as well able to deal as you are, and reserve yourself for such matters of moment as they are not competent to decide without your authority and experience.

(2.) Before any question is submitted to you for decision, insist upon having all the details filled in, and all the facts before you, so that you may not have to apply your mind to it a second time, but may decide it once and for all with a full knowledge of all its bearings.

(3.) Always decline steadily to attempt to do two things at once. If you are giving an audience to one person, be it a

head of department, or any other, let your door be rigidly closed to everyone else for the time being. Let "one at a time" be always your maxim, and act upon it strictly. The man in authority who is seen continually surrounded by a throng of subordinates and striving to meet all their demands at once is the man who, by reason of excessive wear and tear, is most likely to break down in mid-career and fail either in health or intellect; but the man who steadily concentrates his brain power upon one thing at a time, never wasting a moment, but never flurried or hurried, is the man who gets through the greatest amount of work with the least toil and harassment to himself and in the shortest possible time.

(4.) Always make a point of refusing (except, of course, in special circumstances) to see chance callers, who will otherwise occupy the best part of your time with trivial matters which could just as well be attended to by your subordinates. It is a good plan to make it a rule to see no one without an appointment made beforehand either in writing or through your secretary, or else without previously knowing their name and the nature of their business. It is very amusing, at times, to see the pertinacious attempts which are made to break through this rule, and it can only be maintained inviolate by the agency of a wily and imperturbable secretary, and an office which can only be approached through his. The man who has had a box delayed, the woman who conceives she has been overcharged in her fare, the discharged footman who seeks employment as a porter, will each and all insist upon seeing the general manager; each believes that no one else can or

will give them a satisfactory answer, and it is often very difficult to get them even to disclose their business to another person.