

# The Formation and Early Development of The Mines Inspectorate

\*By Eur Ing B Job, CEng, FIMinE

## SYNOPSIS

The Mines Inspectorate was formed in response to mounting public concern over the rising death tolls in mining accidents. The principle of government intervention in industry had previously been established with the Factory Acts. Attention had then been drawn to the mining industry with the shocking disclosure of the harsh working conditions of women and children. Their employment below ground was consequently prohibited by the 1842 Act. In 1850 the first mines inspectors who made examinations, both above and below ground, were appointed with enforcement of the law as their main objective. They were few in number but as the enormity of their task became apparent so their numbers increased. They had been fiercely opposed by the coal owners but as their good work became accepted then further Acts were passed, thus progressively extending legislative control over the mining industry and hence requiring greater enforcement. The inspectors widened the scope of their work to include social issues and so the Inspectorate grew in size, power and influence.

## 1. INTRODUCTION

The 'Act to Provide for the Inspection of Coal Mines' was passed in 1850 in response to pressure from within and outside parliament. The public were appalled at the rising number of deaths in the mines and demanded that action be taken. The principle of government intervention had already been established with the passing of the Factory Acts. The Government's attention was drawn to mining following the shocking disclosure of the miserable working conditions of women and children in the mines; this led to the 1842 Act to prohibit their employment. The Factory Acts had suffered from a lack of provision for enforcement; a point not entirely neglected in the Coal Mines Act. It had been fiercely opposed and drastically amended and was intended as a temporary mea-

sure to remain in force for five years only. But under its provisions four inspectors were appointed in November 1850 to report on all fatal accidents in the coal mines of England, Scotland and Wales.

By 1855 the good work of the Mines Inspectors had been so well accepted that another Act was passed. This restated the provisions of the 1850 Act, but extended it to include the important requirement that ventilation must be constantly produced through underground workings. In 1860 the Act was again repeated and extended. This Act was 'permanent', thus the mines inspectorate gradually became established as a permanent institution. Metal mines came under the jurisdiction of the Mines Inspectorate following the Metalliferous Mines Act of 1872 and quarries following the Quarries Act of 1894. Some fatal accidents did, of course, occur at metal mines and quarries but these are minimal when compared to coal mines, and undoubtedly the majority of the inspectors' time was devoted to coal mining.

## 2. THE BACKGROUND

Duckham said, "one of the remarkable aspects of the Victorian period in particular is the slow but sure rejection by society of much of its own violence and crudity and a growing concern over social justice." The reasons for this change in attitudes during the last century are highly complex but here we might usefully mention two; the increasing effect of Benthamite reforms and the emergence of what we might generalise as a middle class.

Although Jeremy Bentham died in 1832 his disciples were very active in government. Webb summarised their principles as "Administrative commissions, central control and local inspection...." But they were not entirely 'humanitarian' as they believed that men were free to make their own contracts, and hence did not need the protection of the law. However, they did not extend this principle to women and children, and this was to prove crucial.

"The importance of the professions and the professional classes can hardly be overrated", W J Reader claimed, "they form the head of the great English middle class, maintain its tone of independence, keep up to the mark its standard of morality and direct its intelligence." Thus the particular marks of the professional middle class were seen as independence, morality and intelligence. The professions, as we know them, are very much a Victorian creation. The period saw a dramatic increase in the number of doctors, lawyers and, of course, engineers and they had a dramatic impact on the social and political conditions of the day.

## 3. THE EFFECT OF EARLY FACTORY ACTS

Factories used processes that were both standardised and, compared to the mines, easily visible and hence simpler to police. The factory legislation tended to concentrate on working condition rather than on safety, but in terms of its origin the Mines Inspectorate has more in common with the Factory Inspectorate than with any other.

Although a cotton manufacturer himself, Sir Robert Peel had declared that he was aghast to discover the working conditions in his own mills. The disclosure of the terrible working conditions of factory workers, especially women and children, resulted in a public outcry for legislative intervention, particularly on behalf of the children who were considered unable to protect their own interests. Peel introduced the 'Health and Morals of Apprentices Bill' to Parliament in 1802. It became law in spite of opposition from the mill owners. This was the first Factory Act and, although very limited in its scope and largely ineffective, it is important as it established the principle of legislative interference in industry.

However, the problem was not resolved. Peel introduced another Bill which eventually became law in 1819. This prohibited the employment of children less than nine years of age and restricted the working hours of those aged from nine to

\*Mr Job is Senior Lecturer, Staffordshire University.

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thirteen to twelve hours a day. It only applied to cotton mills and was commonly regarded as having failed due to the lack of enforcement powers; both parents and employers combined to render it ineffective.

The acts of 1825 and 1831 attempted to use age certificates to prevent the employment of under-age children. It was soon said that these Acts "were as unsuccessful as the earlier ones. No way had been found of enforcing any of them." (Henriques, U, 1971). When the 1833 Act was introduced, it was unique in that four commissioners (later called inspectors) were appointed. They were given exceptionally wide judicial and executive powers and, although the intention was for them to prevent sweated labour, they showed a wide concern for the health, moral and social welfare of factory workers. Thus, the principle of government representatives investigating and reporting upon industrial life had been established. A growing reaction against 'laissez-faire' and an increasing interest in humanitarianism resulted in a general feeling that the strides made in the factories should be taken elsewhere.

#### 4. CHILDREN IN THE MINES

The cause was taken up by Lord Ashley (later the Earl of Shaftesbury), a man of eloquence and intellectual power. He persuaded a largely unwilling parliament to set up a Royal Commission to 'inquire into the Employment of Children in Mines and Trades'. It encompassed those areas not already covered by the Factory Acts and was appointed in October 1840. Although strictly applying to children (ie those thirteen or younger), Queen Victoria issued an instruction in February 1841 to include the condition and employment of adolescents. Four commissioners were appointed of whom two were factory inspectors and the other two were Benthamites. They were "disinterested men, cool analytical and unsentimental, they were model social scientists.... interference with 'free agents' they opposed, but children might be protected." (Ward, J T, 1962).

Their First Report, published in April 1842, dealt with mines and associated mineral dressing and smelting. Practically all of this report was devoted to coal mining and, on the suggestion of one of the commissioners, it included 26 vivid drawings to catch the eye. It is true to say that the report commented on the good working conditions of some coal mines but in general it was a terrible indictment of the appalling conditions inflicted upon the majority of the children. It caused a sensation. The public could scarcely believe that such suffering could occur in a civilised country. The report claimed: "Even infants of three or four years of age were frequently taken down the pits," and "one collier took his child, only three years of age, underground with him and it was made to follow him into the workings and there hold a candle, and when exhausted with fatigue was cradled upon the coals until his return home at night." Whilst this may have been exceptional it was certainly the rule for children of seven and eight to work below ground, often for 12 hours or more and never saw daylight except on Sundays. As 'door trappers' they would spend their time in solitude silence and darkness. As they became older they would soon progress to tasks which were ruinous of both health and morality; "their backs were bent, their muscles irregularly and abnormally developed and their tempers warped." (Nelson Boyd, R, 1879).

The report aroused even stronger public pressure than the 'Employment of Children in Factories Report' from nine years before. Parliament was forced to act quickly and in June 1842, Lord Ashley introduced a bill to prohibit the employment in mines of all females and boys less than 13 years of age. In a famous speech Ashley described the appalling working conditions of the women and children; "for two hours the House listened so attentively that you might have heard a pin drop.... many men, I hear, shed tears." Ashley had every reason to believe that the bill would pass easily through Parliament, but it met substantial opposition in the House of Lords. The coal owners tended to be members of the land owning aristocracy and were more powerful than the middle class cotton mill owners had been. So great was the danger of losing the bill that concession after concession was hurriedly made to disarm the more moderate opposition. Ashley was bitterly disappointed with his measure in its final form, yet it demanded improvements and laid the foundation for future statute.

#### 5. THE ACT OF 1842

The 'Act to Prohibit the Employment of Women and Girls in Mines and Collieries and to regulate the Employment of Boys' became law in August 1842. Initially, it did not contain any power for enforcement and a clause empowering the Home Secretary to appoint inspectors "if and when he shall see fit" was only added during its passage through the committee stage. (Hansard, LXV, 1842). The attitude of the Government may be gauged by the fact that the first (and only) inspector was not appointed until November 1843. This was a pioneering piece of legislation in that it allowed Government intervention in mining but it was accurately described by Thomas as "a well-nigh perfect piece of ad-hoc legislation - the worst abuses were removed, but there was no constructive planning, and no effort was made to work out elements of a progressive long-term policy."

The man selected for the onerous task of 'Inspector' was Hugh Seymour Tremeneheere. He was a man of considerable talent and ability. He had been the first Inspector of Schools, but his stringent report on the monitorial system in 66 London schools was extremely resented by the British and Foreign School Society. An impasse developed and in his diary he said they "were not likely to work harmoniously with the Government while I continued Inspector. Yet the Government could not with any justice set me aside...." (Edmonds, E L and O P, 1965). Thus the vacancy for a Mines Inspector was fortuitous and Tremeneheere's 'promotion' was a logical step. The method of inspection that he had evolved for the schools was equally applicable to the mines.

He used lawyers to collect evidence in the various localities and he acted like a Commissioner of Inquiry. He believed in mutual trust and persuasion; he "took both sides into my confidence and, as it were, brought both sides together, through myself. I bore with good humour all the hard things they said about government interference. In fact, by exercising towards them all the courtesy at my command, I kept on good terms with them.... and had not a word of complaint from any." (Edmonds, E L and O P, 1965).

He had the power to enter and examine any mine or colliery at any time to report on working conditions but not on safety. It is perhaps significant that he did not make any underground visits

and although his title was 'Inspector of Mines' he himself said; "it was absurd, as I had nothing to do with the Inspection of Mines." (Edmonds, E L and O P, 1965).

However, his contribution must not be underestimated. H S Stephenson, Chief Inspector of Mines, accurately said in the foreword to Edmond's book; "The appointment of a single inspector was certainly inadequate to the immense task, but, if only one were to be appointed, it is difficult to conceive of a better choice than Tremeneheere. A man of uncompromising honesty and unchallengeable integrity, forthright and fearless in his dealings with ministers, managers and men, he set an example to his successors for which they remain indebted to this day."

#### 6. OPINIONS AND PRESSURE FROM THE PUBLIC

In 1812 the Felling Colliery (Brandling Main), Durham, exploded killing 92 men and boys. This prompted the Reverend John Hodgson and James Wilkinson to form the 'Sunderland Society' in 1813. Its stated aims were to enquire into the causes of colliery disasters and to devise means of preventing them. They enlisted the help of Sir Humphrey Davy who brought his logical mind and knowledge of gases to bear on the problem of methane ignition so that he developed his safety lamp in a remarkably short space of time. Following Davy's invention the Society seemed to regard its work as complete, however, the problem of ignitions and explosions in mines continued unabated.

The Government responded to public pressure by appointing a House of Commons Select Committee in June 1835, "to enquire into the nature, causes and extent of those lamentable catastrophes which have occurred in the mines of Great Britain." The Committee thought that, "great benefit might be fairly and sanguinely anticipated from men of known ability being encouraged to visit the mines...." They failed to obtain accurate information as to the number of lives lost in colliery accidents; the returns from some mining districts were defective and some did not reply at all, so the annual total of fatalities was unknown. They anticipated; "great advantages to the public and to humanity from the circulation of the mass of valuable evidence they had collected." But Nelson Boyd said its circulation was limited and it "was soon consigned to the shelves of various libraries where it remained, rarely consulted and almost unnoticed."

The explosion at the St Hilda Colliery, Durham, where 52 died in 1839 prompted James Mather to instigate the formation of the 'South Shields Committee'. The exclusively non-mining members carried out research and inspections at their own expense over a four year period. Their report was partly overtaken by events, but it did have the merit of first exposing in a clear and comprehensive manner the nature of some of the accidents and hence of making some valuable suggestions for their prevention. Its most important recommendation was the systematic inspection of coal mines: "it is surprising then that coal mines of Great Britain so vital to her health and prosperity, should be left entirely to the unassisted efforts of individuals without organisation or even supervision of the state."

The second worst disaster to date occurred at the Haswell Colliery, Durham, in 1844. Petitions were sent to the Queen and Prime Minister asking for a commission of enquiry. The Government

created a sensation by appointing Professor Michael Faraday and Sir Charles Lyell to report on the incident. Unfortunately, their suggestions were regarded as impractical by mining men, although all agreed it would be beneficial for "a body of evidence being collected together and put on record respecting the casualties in mines." (Nelson Boyd, R, 1879). The colliers were not satisfied and petitioned the House of Commons. In response Sir Henry de la Beche and Dr Lyon Playfair were appointed to make a general inquiry into 'explosive and other noxious gases.' They recommended, "a careful and judicious inspection of convenient districts by competent persons," but unfortunately they suggested that this inspection, already strenuously opposed by the coal owners, should be financed by a tax on the coal raised.

In 1845, and again in 1846, there were explosions where de la Beche and other leading scientists were requested to report on the incidents. In each case they commented on the lack of discipline in the management of the colliery, the great ignorance of the work force and the very defective ventilation. They strongly supported the principle of government inspection.

Whereas in 1767, the editor of the Newcastle Journal had been obliged by the Duke of Northumberland to stop drawing attention to pit accidents, disasters were now widely featured in the newspapers (Pollard, M, 1984). Public pressure increased with the publicity given to a series of colliery explosions, fuelled by claims that after the explosion at Kirkless Hall Colliery, Wigan, six men were left underground and the owners refused to allow anyone to descend to ascertain if they were dead or alive, and later that the six men were "bricked up and could not escape." (Nelson Boyd, R, 1879).

Further petitions were sent from the mining districts; Coroner's Juries repeatedly urged government supervision; the Miners' Association urged that every colliery should be inspected at least four times every year and learned people criticised Parliament for its lack of progress. Thus 'pressed on all sides' the bill for the 'Inspection of Coal Mines' was introduced in 1850.

## 7. THE ACT OF 1850

The arguments for and against the Act were set out in the House of Commons and the House of Lords during the discussion stage. No one denied that the colliers needed guarding from "appalling accidents which, without any warning or preparation, converted scenes of busy industry to scenes of mourning and desolation." (Hansard 1850, CX11). However, the Earl of Malmesbury urged the Government to have some regard for the interests of the mine proprietors. Lord Brougham accepted the regulation of the employment of women and children but thought there was no case for interfering with the rights of labour and property and no justification for regulating the coal mines (Hansard, 1850, CX11). The degree of responsibility to be taken by the inspectors for the management of the mines caused much concern, but it was generally agreed that they should take no responsibility for the day to day operations nor interfere with the mode of running the mines. However, the Marquess of Londonderry said that "he saw no reason for the bill if it did not so interfere," and he finally protested against the bill "as the most mischievous and unjust measure that could be imagined." (Hansard, 1850, CX11).

In spite of strenuous opposition in the Upper House the bill passed through parliament,

receiving its third reading in July 1850; it then gained the Royal Assent, becoming effective in November. The Act provided, amongst other matters, for the appointment of government inspectors vested with the authority to enter into and examine any colliery, underground and surface, at any time and enquire into all matters related to safety. The inspectors could point out any danger perceived and if not remedied in a reasonable time they could report it to the Secretary of State. Colliery proprietors were required to notify any fatal accident and coroners were required to give notice of any subsequent inquest.

Four inspectors were appointed; Matthias Dunn, Joseph Dickinson, Charles Morton and J Kenyon Blackwell. Soon after his appointment, the latter resigned to take up the more lucrative post of colliery viewer and he was replaced by Herbert Mackworth. The coalfields of England and Scotland were divided into four districts and an inspector was appointed to each (see Figures 1, 2, 3 and 4), having the duty to attend every inquest, examine the workings, inquire into the causes of accidents and suggest means for their prevention. The immediate effect was for every colliery to make an attempt to put their house in order in anticipation of the expected visit. But the inspectors were faced with an almost overwhelming task and they could only make underground inspections following a serious accident. As the years went by without a visit the collieries deteriorated once more. Thus, the inspectors did not have the anticipated immediate impact, but the principle of Government upholding standards of management and overseeing the general safety and welfare of the colliers was established.

## 8. THE INSPECTORS AND THEIR DISTRICTS

Tremenheere was consulted on the selection of the first inspectors and according to A J Cassell, the available evidence shows that "the Home Office made every effort to select the most able and practical men." The little biographical material which is available shows that Morton was born in 1811. He took honours in chemistry, geology and mathematics at Edinburgh University followed by a varied career as a mining engineer. He was active in education, taking a leading role in founding the Mechanics Institute at Sheffield and the Yorkshire Geological and Polytechnic Society. He retired in 1866 in direct consequence of the strain of the Oaks Colliery explosion, although he lived for many more years, dying in Southport aged 71. Dunn was nearly 50 when appointed. He had been a pupil and later assistant to the famous John Buddle. He had published books which became standard works and earned a reputation for integrity and honesty, but as a check viewer in the north eastern coalfield for many years he was reputedly dogmatic in preferring experience to theory (Mining Journal, February 1855). He also retired in 1866 from ill-health. Dickinson was born in 1818; he worked on Tyneside and in South Wales before moving to the Nithsdale Ironworks, Scotland, in 1847. Whilst there he earned a reputation for taking a keen interest in scientific subjects, conducting a variety of experiments himself. He showed sympathetic understanding of the harsh working and social conditions of the miners, yet was sharply critical of men who endangered themselves or others (Wood, K, 1987). By contrast, Mackworth was the nephew of a baronet. Born in 1804, he was offered a Professorship in Geology at the age

of 27. He worked at collieries in South Wales and as a railway engineer. He was said to have, "the most fertile and enquiring mind of the early inspectors" and "his conception of his duties was much wider than his colleagues." (Cassell, A J, 1962).

A Select Committee was set up in 1852 to report on the Mines Inspectorate. It concluded that the inspectors were underpaid, they should have more power and the inspection districts were far too large. Thomas Wynne was appointed to take over part of Dickinson's district and in the following year Robert Williams and William Lancaster were appointed to cover Scotland in place of Dunn. Again, satisfaction was generally expressed over these appointments, but, interestingly the evidence suggests that the inspectors were not held in high regard by the Home Office. They were paid £400 per annum plus travelling expenses. Tremeneheere had been paid £700 on his appointment; every factory inspector received £1000 including expenses and even the Inspector of lunatic asylums received £900. In 1860 a request for an increase received the comment "It is true that the present salary would not command the services of first rate men.... The present inspectors are not, with one or two exceptions, first rate men." (H O 45/711).

Initially, the inspectors had little statutory power and, apart from recording fatalities, they had little impact. But their efforts were generally well received; the *Mining Journal* in March 1853 reported David Mushet, a colliery owner, as saying that "the inspectors appear to have done as well as it is possible.... some have shown great judgement and discrimination." Attempts to overturn the Inspection Act had come to nothing and the view of the inspectors with the recommendations of the Select Committee Report of 1854 was incorporated into the next Act, which was again intended to run for five years.

Moves were made to further increase the number of inspectors. This was favoured by the *Mining Journal* and most of the inspectors, although Dunn in his report for 1854 surprisingly claimed that, "the appointment of any more inspectors was unnecessary and would tend to diminish the importance of the office." This time the selection was preceded by an examination. There were 150 applicants but the result met with less satisfaction; the *Mining Journal* claimed in December 1855 that amongst those chosen, "there should not be one entitled to be considered as eminent...." The choice of the youthful Thomas Evans, who happened to be Dickinson's brother-in-law, came in for particular criticism.

In 1856 12 districts were established with an inspector in charge of each. These districts (see Figure 5) remained unaltered for many years, the only changes in the Inspectorate resulting from death or retirements.

## 9. THE ROLE OF THE INSPECTOR

In contrast to the appointment of Tremeneheere or the early factory inspectors, who were described by Duckham as 'political appointees', the mines inspectors were all mining engineers. They could speak with authority to management and could call on their experience to solve mining problems.

Indeed, this was their role: to see that the mining legislation was observed, to investigate and rectify complaints from all sources and to be available for consultation with management and to offer advice.

# INSPECTORS AND DISTRICTS

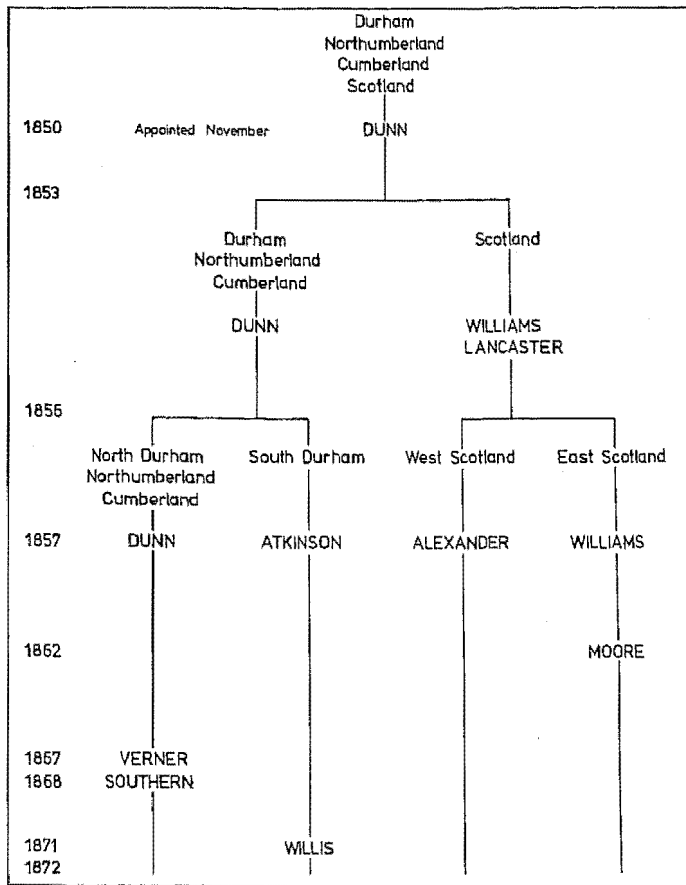


Figure 1

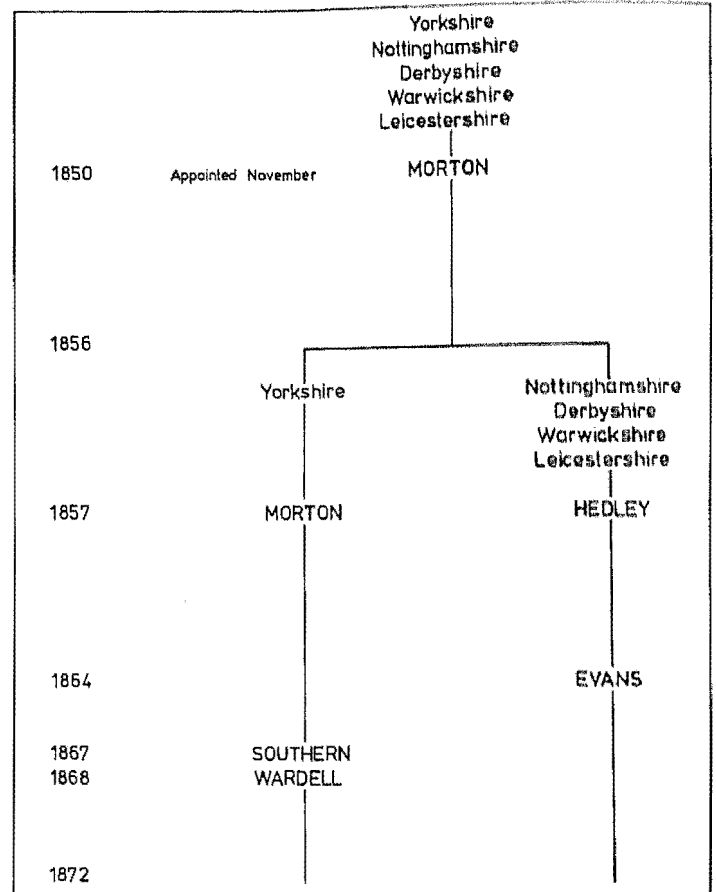


Figure 2

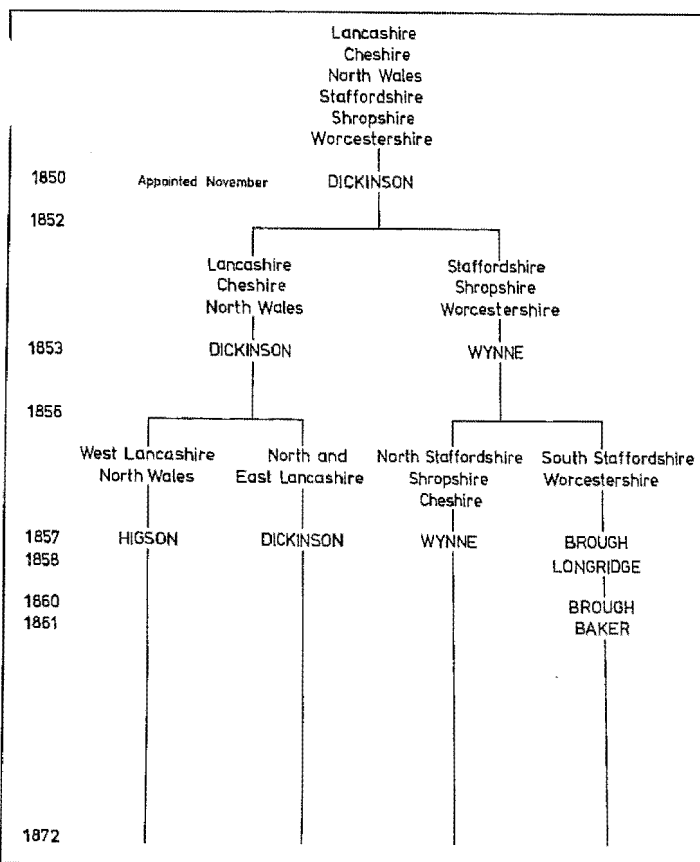


Figure 3

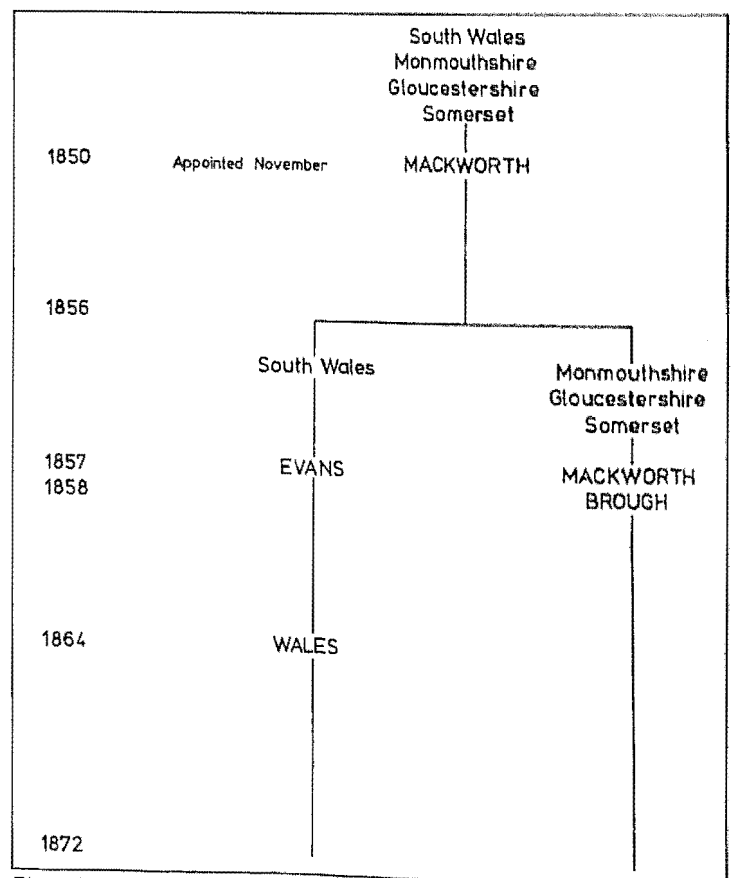


Figure 4

# Map of the Districts Assigned to the Inspectors of Mines.

Under the Coal Mines Regulation Act 1856

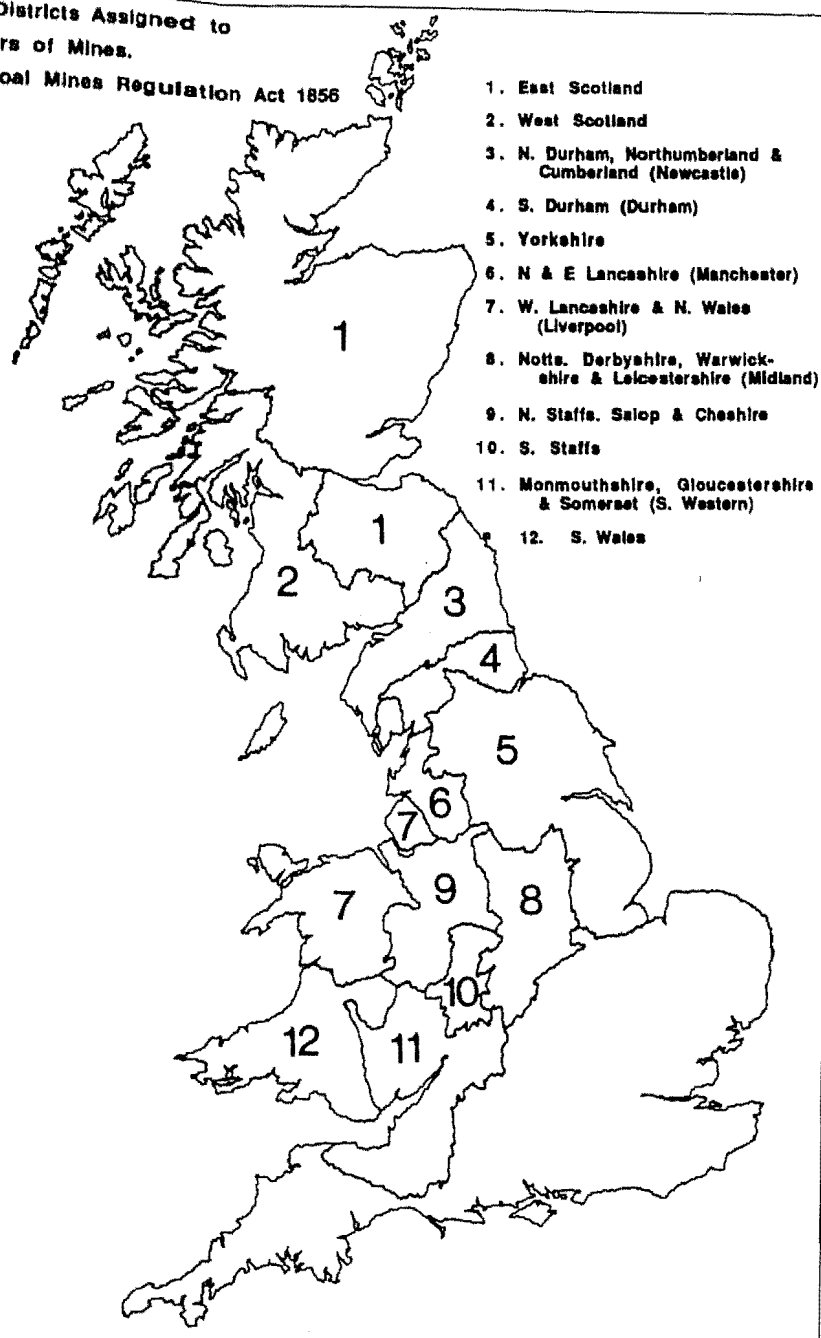


Figure 5

Dickinson and Dunn had publicly argued for government inspection and it may be supposed that Morton and Mackworth strongly supported the same principle. This explains their selection by the Government. Why they accepted can only be conjectured. They suffered a substantial drop in salary, which was only partly offset by consultancy work. The appeal no doubt lay in being offered a novel appointment which gave them freedom of action to promote a cause they firmly believed in. As the years passed their salary improved, but the Government exerted increasing control over them. In 1853 Palmerston wrote to each inspector to inquire if they accepted external work. Dickinson replied that he was "so fully occupied that he had been obliged to refuse private practice." (HO 87/2) but the others did carry out consultancy work. In 1855 it was expressly forbidden, but as late as 1860 Hedley was still taking it on and it may be supposed that it did not

entirely cease until their salaries reached a realistic level. Another example of the Home Office exerting its control was the requirement in 1860 that every inspector should submit weekly reports or diaries in the manner of the Assistant Poor Law Commissioners or Factory Sub Inspectors. The requirement was regarded by the mines inspectors, "as a humiliating supervision of their work and a reflection on their conscientiousness." (Cassell, A J, 1965). Dickinson said, "I cannot divest myself of the idea that some neglect or distrust is implied." (HO 45/7006/3). As the diaries appear to contain little more than a list of collieries visited, the exercise would appear to have been a matter of principle rather than of practical value. At first, the inspectors either refused to submit their diaries or sent them in very late, but gradually they were forced to comply and by December 1865 the only offender appears to have been Wynne.

After the passing of the 1855 Act, the inspectors had specific rules to enforce, but the problem, with so many infringements, was which to tackle first. Before it was a requirement to nominate a manager, they had difficulty in identifying the responsible person if they wished to prosecute. However, they had no general mandate to instigate prosecutions and each case had to be submitted to the Home Office first. They then had a problem in that colliery owners often acted as presiding magistrates in mining cases. In particular, Mackworth tried to prosecute many coal owners who were also local magistrates. Not surprisingly he had very little success. When he did obtain a conviction the fines were paltry, and in 1856 he claimed, "the operation of the Act is seriously obstructed and retarded." Finding impartial juries was another problem. In 1852 Mackworth complained that he "had found jurors to be working under the same employers as the deceased and in some instances not one jurymen has been able to sign his name." The jury had the choice of verdict of 'Accidental Death' or 'Manslaughter'. Believing that in many cases the deceased had partly contributed to their death by their own negligence, although the management was also partly to blame, they would often opt for the less severe charge of 'Accidental Death', thus preventing any subsequent prosecution. The inspectors such as Dunn also had some difficulty with the coroners. When questioned why he had prevented Dunn from asking questions, one replied that, "as the Justices had cut down his fees for adjourned inquests he should close the enquiry as speedily as possible..." (HO 45/7007).

With time there was a general increase in the number of prosecutions. The inspectors felt that this was one way of making progress, but it can be seen why they preferred the easier path of persuasion. However, the biggest problem was undoubtedly the immensity of the task facing them. The inspector worked extremely long hours without any clerical or secretarial assistance. He was always available for emergencies and would work from home, as no office was provided. All correspondence would be carried out at night, "requiring many hours hard laborious work," as he might send and receive about 4000 letters during the year. Even in a compact district a considerable amount of time was spent in travelling. He might make as many as 200 colliery visits during the year, but most would be in response to accidents and the rest to solve specific problems. There was simply no time for unannounced visits and it was hardly surprising, therefore, that managers could claim that they, "did not see an inspector from one year to the next."

## 10. CONCLUSIONS

Most of the inspectorates with which we are familiar today were established in the period 1830 to 1860. The degree to which this was a deliberate policy of putting Bethamite ideas into practice has been much debated by historians. But there can be no doubt that the Government was forced to act by external and internal pressures and this began a revolution in social administration with central functions exercised by central power.

It was appreciated that exact knowledge was required before action could be taken, hence the unprecedented use of the Select Committee and Royal Commission. They revealed the true horrors of the employment of women and children and the harsh reality of the miners' working conditions.



The discussion was now out in the open and attitudes were changing from that of the Chief Constable of Oldham who claimed there was, "more bother and talk about killing a dog than killing a collier." (Pollard, M, 1984). The Act prohibiting the employment of women and children may now seem a very small step. Its practical impact was undoubtedly limited but it was vital to pave the way for the later Acts, requiring official inspection.

Progress was not easily won; the powerful coal owners fought every step of the way and won many battles even if they lost the war. At first, the inspectors were largely ineffectual; they recorded fatalities and attempted to curb the worst abuses. At the end of the first five year period after appointment, the inspectors continued in office with greater power and with more legislation to enforce. They acquitted themselves well and gradually gained in strength and influence.

Certainly their duties required them to spend too much time on administration and attendance at coroner's inquests. They were criticised for not making enough underground visits and their small number compared to the size of the industry rendered preventative action virtually impossible. Even the *Colliery Guardian*, then the voice of the coal owners, could say in 1858 that, "The Act was passed in defiance of the urgent remonstrances of many of the leading coal owners, and hence a large amount of prejudice had to be mollified. The gentlemen first appointed as inspectors had an arduous task before them, for they had to exercise their obnoxious powers in such a way as to command respect and conciliate confidence. Upon the whole they did their work well...." But were they effective in making mining safer? Certainly the *Mining Journal* claimed in 1857 that the hoped for reduction in accidents did not materialise. However, production had risen dramatically, initially doubling every 18 years and then more rapidly, and manpower increased correspondingly, with a large proportion of inexperienced workers. But accidents and fatalities, although they increased, did not rise in direct proportion. Morton began in 1864 by expressing the yearly production for his district in terms of, "tons for each Yorkshire collier killed," and as a 'mortality rate' of deaths compared to the number of men employed. Other inspectors followed his lead and thus they were able to show an improving trend. Figure 6 summarises this generally downward curve, admittedly with some peaks and troughs, with the biggest improvement being in the earlier years, as might be expected.

Wardell claimed in 1877, "Surely inspection.... may be credited to some extent with such a marked and improved result." A study of the figures shows that they were most successful in the areas of shaft accidents and explosions (although the latter was partly offset by the increasing severity of coal dust explosions), where simple solutions were effective in solving the worst problems. As time went on this became more difficult to achieve, but it can be shown that by 1872 the collier was half as likely to be killed at work as he was in 1851.

Of course other factors may take some of the credit for the improving safety record. Certainly there were improvements in technology, particularly in winding and ventilation, and the introduction of safer working practices. But the inspectors were instrumental in urging managers to adopt these improvements. They carried out a variety of experiments themselves, varying from determining the efficiency of various fans and

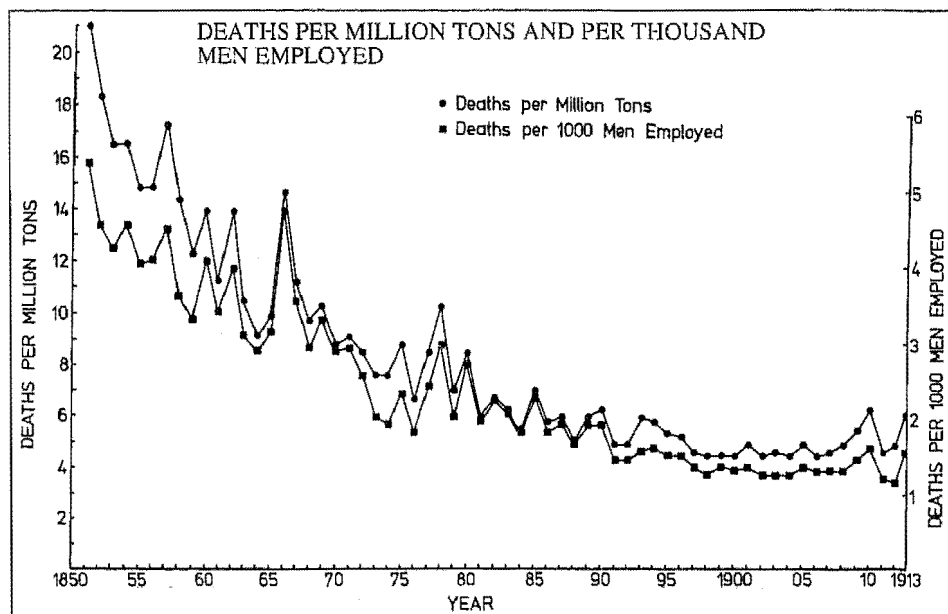


Figure 6

ventilating machines to the success of so-called 'flameproof' explosives. Thus, they held a wide view of their responsibilities and took for example, an active part in promoting mining education. As each of these topics could command a separate paper of its own, it is not therefore intended to expand on these subjects here.

This deserved praise for the mines inspectors is not to suggest that they were beyond criticism. Robert Williams was threatened with dismissal for indolence in 1854 and Peter Higson was accused of never going further than the bottom of the pit, a claim which was widely publicised in spite of being strenuously denied. In later years, the castigation of William Galloway, Assistant Mines Inspector, for promoting the explosibility of coal dust theory, culminating in his resignation from the Inspectorate, and subsequently the inspector brothers, W N and J B Atkinson, for their support of the 'Galloway heresy', was particularly reprehensible. The delay in accepting the explosibility of coal dust was crucial, and many lives could have been saved if the establishment had kept a more open mind on the subject. Finally, the Inspectorate may be criticised for not winning the wholehearted support of the colliers or, in particular, of their unions. For their part the unions were sharply critical of the inspectors. For example, after the explosion at Blantyre Colliery, Lanarkshire, in 1877, Alexander Macdonald of the Miners' National Association, accused them of "devouring the bread of idleness"; the inspector's warnings were issued too late and "inspection was a farce." (Duckham, H & B, 1973). No doubt the concept of presenting a 'good image' would have been alien to them but a little good publicity would not have gone amiss and at least the workmen might not then have continued to request inspectors "from their own class."

In recent years, all of the different inspectorates have come under scrutiny and have had to justify their position. Critics of the Mines Inspectorate have questioned the lack of prosecutions or have suggested that a higher degree of compliance with statutory provisions might be achieved in other ways. However, a look at the history of the Mines Inspectorate shows that persuasion, backed by the threat of prosecution, was not only effective during the last century, but was, in reality, the only approach the inspector could

adopt. These points will not be developed further except to say that any meaningful discussion can only take place with a knowledge of the Inspectorate's historical context and an appreciation of their long tradition.

In conclusion, it may be stated that the collier has become increasingly safer at work. The major factor has been legislation and its enforcement. This represents a tremendous achievement by the Mines Inspectorate. They have exhibited exemplary devotion to duty and leadership; their good work has continued to the present day and there is no doubt that many lives have been saved by their great efforts.

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## 12. DISCUSSION

**I Brown** (Wakefield):

- (i) Queen Victoria showed great interest in social conditions: did she have any influence in abolishing the employment of women and children in mines?
- (ii) Assistant Inspectors were in post very early on: when were they first appointed?

**Author:**

- (i) Indeed it was the direct action of Queen Victoria which extended the scope of the Royal Commission of 1840 to include 'young persons' as well as infant labour.

Whilst she does not appear to have made any subsequent intervention, there is no doubt that her interest would have been noted.

- (ii) Following the appointment of the first inspectors it became apparent that they were faced with an enormous task. Consequently, their numbers were gradually increased and their work load was further eased by the appointment of assistant inspectors under the 1872 Act.

**P Williams** (Chester): I congratulate Mr Job on his paper but would say that more influential than Queen Victoria were the revolutions taking place around the world and royalty was losing its standing.

In the early days, between 1835 and 1850, the Geological Survey was established and could be called upon to give assistance in mining aspects. Is there evidence that this was used to assist in setting up the inspectors?

**Author:** The period under discussion saw the start of 'Professionalization' and it has been noted that the Government took the radical step of inviting the leading scientists of the day to inquire into some of the larger colliery disasters. In the case of the Waunfawr Colliery explosion in 1846, Sir Henry De La Beche was assisted by Mr Warrington Smyth, Mining Geologist to the Geological Survey. Smyth was subsequently asked to comment on the explosions at Round's Green, Dudley, and Burgh Colliery, Lancashire in 1846 and Darley Main in 1849. He generally supported the principle of government intervention and in this sense may be said to have helped pave the way for inspection.

**F Thompson** (Northwich): It is a well known fact that Mackworth and Dickinson referred to many deaths due to poor health rather than accidents. Did you find this in your research?

**Author:** The inspectors regarded the promotion of good ventilation as their principle aim. This

was not only to remove explosive gas but to provide a healthier working atmosphere. You are quite right that the inspectors expressed grave concern over the deaths due to poor health, but these were impossible to quantify. It was the deaths from major accidents, and particularly the deaths from explosions, which aroused the public's alarm and sympathy. When figures began to be collated it quickly became apparent that explosions were not responsible for the majority of fatalities.

**E Hassall** (Newcastle): At this time canals were used for transportation of coal and other commodities. Was there any control over the construction of canals and was there any legislation for the canals?

**Author:** Because of the difficulties of road transport the initial development of the canal system and later the railway network was vitally important to the growth of the mining industry. Examples can be found of mining engineers, and indeed inspectors, who gained experience from canal or railway construction, particularly as many required expert tunnelling expertise. Thus, there is a link between canals and mining, but as to the question of canal legislation, I regret that is beyond the scope of my research.

## 13. VOTE OF THANKS

**F Thompson** (Northwich): It is a great pleasure for me to give this Vote of Thanks on the presentation of this most excellent paper. It was 10 years ago when I met Mr Job and he spoke then of his interest in the Inspectorate. I fully appreciate the great difficulties he has encountered in tracing the history and even more so with not being in the Inspectorate. He has dealt with the Sunderland Society and the South Shields Committee and the birth of the Inspectorate. It was a brilliant presentation and well worthy of publication. I call on all the members and visitors to show their appreciation for an excellent paper.