

Employment Gazette

1	STATISTICS READING ROOM	42 HA301
2	STATISTICS BACK UP	42 ()

12 SEP 1991

BRITISH LIBRARY OF POLITICAL
& ECONOMIC SCIENCE

September, 1991
Volume 99 No 9
Department of Employment

Occasional Supplement No 2

Health and Safety Statistics 1989-90

CONTENTS

Introduction	3	Section 5: Nature and site of injuries	37
Section 1: The overall picture	4	Section 6: Injuries by age and sex	39
Section 2: Background to the statistics	5	Section 7: Injuries by occupation	41
Tables and general notes	6	Section 8: Dangerous occurrences	42
List of tables	6	Section 9: Case safety statistics	43
Section 3: Injuries by severity, industry and employment status	7	Section 10: Enforcement action statistics	44
Section 4: Kinds of accident	7	Section 11: Occupational health	52
		Section 12: Definitions and contact points	74



HSE
Health & Safety
Executive

HEALTH AND SAFETY STATISTICS 1989-90

Introduction

The Health and Safety Executive publishes statistics relating to health and safety at work in the Health and Safety Commission Annual Report and in Supplements to the *Employment Gazette*. The Health and Safety Commission Annual Report contains a number of tables giving provisional figures for the previous financial year and is usually published in December. The Annual Report is the first occasion on which the latest year's provisional statistics are published.

The final figures for each year are published as

Supplements to the *Employment Gazette*. These supplements replace the separate series of Health and Safety Statistics publications which ended with the statistics for 1985-86. The tables in the Supplement are more extensive and detailed than those in the Annual Report. Some commentary is provided on the statistics but the main purpose of the supplement is to provide a reference document covering in detail all the major aspects of the health and safety statistics available to the HSE.

The 1989-90 data shows a significant increase in the number of self-employed people who were injured at work. This is due to a sharp rise in the construction sector where there has been considerable growth in the number of self-employed workers. Major and over 3-day injury numbers increased each year since 1986-87, again mainly due to increases in the construction sector.

There were 206 fatal injuries to non-employed people in 1989-90, much higher than the 121 reported in 1988-89 and due to the inclusion of the 85 fatalities arising from the Hillsborough Stadium disaster.

In 1989-90 over two-thirds of employees were injured in activities where the fatal and major injury rate was higher than in 1988-89. For all reported injuries this figure rises to over 80 per cent. Coal extraction and manufacture of solid fuels, the food, drink and tobacco industry and the manufacture of motor vehicles and parts thereof are examples of industries where there are a significant number of fatal and major injuries. Injury rates were well above average in 1989-90 and the rates had increased in each of the last two years.

Falls from a height being struck by a moving vehicle or being struck by a moving object continue to be common causes of fatal injuries. Slip, trip and falls on the level and falls from a height are the most common causes of major injuries. Handing injuries, lifting and carrying heavy loads, and falls from a height are the most common causes of over 3-day injuries.

The 770 fatal injuries to employees were slightly higher than those reported in 1988-89 and 1987-88, but much lower than the 829 fatalities in 1988-89, of which 165 were caused by the Piper Alpha tragedy. The fatal injury incidence rate in 1989-90 was 1.7 per 100,000 employees, the same rate as in 1986-87 and 1987-88, but because of Piper Alpha, below the 1988-89 rate of 2.4.

Although the fatal injury incidence rate has remained fairly constant over the last few years, the rates in the late 1980s have been well below those in 1960s and 1970s. The shift in employment from sectors such as energy and manufacturing to the generally safer working environments in the service sector has undoubtedly contributed to the longer term decline in the overall fatal injury rate.

CONTENTS

Introduction	3	Section 5: Nature and site of injuries	27
Section 1: The overall picture	4	Section 6: Injuries by age and sex	39
Section 2: Background to the statistics	6	Section 7: Injuries by occupation	41
Tables and general notes		Section 8: Dangerous occurrences	42
List of tables		Section 9: Gas safety statistics	43
Section 3: Injuries by severity, industry and employment status	8	Section 10: Enforcement action statistics	44
Section 4: Kinds of accident	23	Section 11: Occupational health	52
		Section 12: Definitions and contact points	74

SECTION 1: THE OVERALL PICTURE

The previous health and safety statistics Supplement to the *Employment Gazette* was published in November 1990 and contained statistics up to 1988-89. This 1989-90 Supplement is based on the fourth year of reports under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1985 (RIDDOR). These Regulations came into effect on April 1, 1986 and replaced the preceding Notification of Accidents and Dangerous Occurrences Regulations 1980 (NADOR).

Changes in definitions—particularly the definition of a major injury—meant that many of the statistics derived from reports made under RIDDOR were not comparable with those previously reported under NADOR. This third Supplement, based on four years data reported under RIDDOR is able to provide the more detailed analysis of injury data available under RIDDOR given in the first two Supplements. It also draws attention to the emerging trends in the statistics, following the discontinuity brought about by the new Regulations in 1986.

RIDDOR statistics on injuries at work are given in detail in sections 3 to 7 of this Supplement, on dangerous occurrences (section 8), and on gas safety (section 9). No enforcement statistics were published in the 1988-89 Supplement and they are now given in some detail in section 10. Commentary is made on a table by table basis. Occupational ill health statistics (section 11) presented in this report are based on a wider range of sources and the commentary is arranged on a disease by disease basis, rather than table by table.

Injury statistics

In 1989-90, 681 fatal injuries were reported to the HSC/E enforcing authorities, 370 of these were to employees, 105 to self-employed people and 206 to the non-employed.

The 370 fatal injuries to employees were slightly higher than those reported in 1986-87 and 1987-88, but much lower than the 529 fatalities in 1988-89, of which 167 were caused by the Piper Alpha tragedy. The fatal injury incidence rate in 1989-90 was 1.7 per 100,000 employees, the same rate as in 1986-87 and 1987-88, but, because of Piper Alpha, below the 1988-89 rate of 2.4.

Although the fatal injury incidence rate has remained fairly constant over the last few years, the rates in the late 1980s have been well below those in 1960s and 1970s. The shift in employment from sectors such as energy and manufacturing to the generally safer working environments in the service sector has undoubtedly contributed to the longer term decline in the overall fatal injury rate.

Fatal injuries to employees in the manufacturing sector had declined each year since 1984, but in 1989-90 this trend was reversed with the 108 fatalities similar in number to those reported in 1986-87. The fatal injury incidence rate also increased to 2.1 in 1989-90 from 1.8 in 1988-89. Over the last four years fatal injuries in the construction sector have remained steady at approximately 100 each year. Growth in employment in the industry has meant that the fatal injury incidence rate has declined since 1987-88 to 9.4 in 1989-90. The pattern of fairly constant fatal injury numbers is repeated in agriculture although here declining employment has meant that the fatal injury incidence rate has increased over the last few years to 8.1 in 1989-90. The

fatal injury incidence rate in the service sector has remained steady at 0.7 per 100,000 employees over the last three years.

In the early 1980s there was an increasing trend in the number of reported major injuries to employees. In the three years from 1986-87 to 1988-89 major injury numbers declined, as did the major injury incidence rate. The decline in major injury numbers was reversed in 1989-90 with 20,396 reported injuries, compared with 19,944 in 1988-89. Increases in overall employment have meant that there was a proportionally smaller increase in the major injury incidence rate to 91.8 in 1989-90.

The number of reported over 3-day injuries has increased each year since 1986-87 with 165,244 reported in 1989-90. The rate of increase in injuries has been slightly lower than the rate of increase in employment, meaning that the injury incidence rate has declined each year and was 743.4 per 100,000 employees in 1989-90. There is strong evidence of under-reporting of over 3-day injuries, estimated at as much as 50 per cent in some employment sectors. The HSE sponsored a trailer survey to the 1990 Labour Force Survey in order to gain a more accurate estimation of the level of under-reporting. Analysis of the survey results will also provide information that will enable the economic costs to industry of injuries at work to be calculated. The results from the Labour Force Survey trailer should be available in 1991.

The 105 fatal injuries to self-employed people rose sharply from the 80 reported in 1988-89. Much of this increase was in the construction sector where there has been considerable growth in the numbers of self-employed workers. Major and over 3-day injury numbers increased each year since 1986-87, again mainly due to increases in the construction sector.

There were 206 fatal injuries to non-employed people in 1989-90, much higher than the 121 reported in 1988-89, and due to the inclusion of the 95 fatalities arising from the Hillsborough Stadium disaster.

In 1989-90 over two-thirds of employees were in activities where the fatal and major injury rate was higher than in 1988-89. For all reported injuries this figure rises to over 80 per cent. Coal extraction and manufacture of solid fuels, the food, drink and tobacco industry and the manufacture of motor vehicles and parts thereof are examples of industries where, there are a significant number of fatal and major injuries, injury rates were well above average in 1989-90 and the rates had increased in each of the last two years.

Falls from a height, being struck by a moving vehicle or being struck by a moving object continue to be common causes of fatal injuries. Slips, trips and falls on the same level and falls from a height are the most common causes of major injuries. Handling injuries are the most common cause of over 3-day injuries.

The majority of fatal and major injuries are fractures (about 72 per cent) and the most common over 3-day injuries are sprains/strains (about 38 per cent).

Enforcement action

In 1989-90 HSC/E enforcing authorities issued 22,362 enforcement notices. Over 70 per cent of these were improvement notices and a further 27.5 per cent were immediate prohibition notices. The number of notices

issued has been increasing over the last three years.

There were 2,653 prosecutions (informations laid) by enforcing authorities excluding local authorities in 1989-90, 14 per cent higher than 1988-89 and a fifth higher than 1986-87. In 1989-90, 86.3 per cent resulted in a conviction. Although trends in the average fine are complicated by a few large fines the trend over the last few years appears upwards.

Occupational health

The statistical base of HSE's knowledge of work-related illness is not as wide, nor as solid as it would wish. Several new sources of statistical information are being developed to improve the situation, but our main source remains the Industrial Injuries (II) scheme awards of disablement benefit for prescribed industrial diseases. A major new source will be the 1990 Labour Force Survey (LFS) trailer, which recorded individuals' opinions on whether they have been affected by a work-related illness. The first data from this survey will be published in the HSC Annual Report for 1990-91. This information of general scope is supplemented by studies of specific risks and surveillance schemes for some work-related diseases.

The potential damage to the nation's health from work-related illness is demonstrated by the continuing legacy of harm from past exposure to silica, coal dust and asbestos. These substances are now strictly controlled, and here is reason to hope that the risks from current exposure levels are acceptably low. But even now over 1,000 new cases of disease due to past exposure to these substances are awarded disablement benefit each year. For asbestos, a rough estimate of the numbers of premature deaths due to asbestos-related cancer can be based on the national

numbers of deaths due to mesothelioma: this suggests a total of over 2,000 deaths annually. (About 500 of these cases receive II benefit.)

In 1989-90, the effects of past exposure to high levels of noise in the work place were reflected in the diagnosis of over 1,000 new cases of occupational deafness. Past use of vibrating hand-held tools led to the diagnosis of over 2,500 cases of Vibration White Finger. In 1989 over 500 cases of occupational asthma were seen by specialist chest or occupational physicians, and around 200 new cases of this disease are diagnosed each year under the II scheme.

Numbers of cases of occupational dermatitis are probably substantially greater than the number of cases which received benefit from the II scheme even when this scheme covered short-term spells of absence (ie before 1982). Data from the 1980-81 "Morbidity Statistics in General Practice" study implies a national total of nearly 100,000 cases annually¹. In the corresponding period there were 3,960 II injury and-or disablement benefit awards for dermatitis. The results of a pilot survey set up by HSE, also based on GP consultations, suggest that the number of occupational dermatitis cases in 1989 was about 60,000.

Musculoskeletal conditions affect a very large number of people, and work activities will often contribute to the problem. This is an area where it is very difficult to assess the extent of the occupational contribution, both at the individual level and overall. The affected individual is in many ways the best placed to make this judgement, and the responses to the LFS trailer will give valuable information on this question. In the last full year in which injury benefit could be awarded (1981-82) there were 2,828 compensated cases.

¹ "Morbidity Statistics from General Practice 1981-82", HMSO, 1986.

SECTION 2: BACKGROUND TO THE STATISTICS

This Supplement presents statistics of occupational health and safety in the form of data on occupational injuries, occupational ill-health, dangerous occurrences, and gas safety statistics. In addition, it includes statistics on the enforcement action taken by the HSC/E enforcing authorities to ensure compliance with health and safety legislation.

The majority of the data for injuries, dangerous occurrences and gas safety is collected under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1985 (RIDDOR) which came into effect on April 1, 1986. The statistics quoted in this report for 1989-90 represent the fourth year of data collected under RIDDOR and certain trends are now detectable.

Prior to RIDDOR the statistics on injuries and dangerous occurrences were collected under the Notification of Accidents and Dangerous Occurrences Regulations 1980 (NADOR). Comparison of statistics from NADOR with those from RIDDOR is difficult because of definitional changes such as the widening of the definition of a major injury and changing the definition of dangerous occurrences.

Some statistical series are however unaltered by RIDDOR. In particular, the series of fatal injuries is undisturbed as are many of the ill-health statistics which are derived from other sources. In other instances trends detectable under NADOR which although broken by the definitional changes under RIDDOR can now be re-examined to see if they are still continuing. Examples of this include major injury trends and figures for gas safety statistics previously collected under the Gas Act.

The requirement to report injuries causing absence from work for over three days was re-introduced under RIDDOR after a break of three years in which the data had not been available due to the ending of records derived from the Industrial Injury Benefit Scheme. Comparison of numbers of over 3-day injuries reported under RIDDOR with those reported under the Industrial Injury Benefit Scheme suggest there is widespread under-reporting of as much as 50 per cent of these injuries. There is also particular concern over the level of reporting of major and over 3-day injuries to self-employed people.

The format of *Tables 1 to 4* giving the detailed injury statistics has been changed in this Supplement. In earlier Supplements all the injury statistics for a particular year by employment status and by severity were given in a single table. This year separate tables have been prepared for each of the three employment statuses, employees, self-employed and non-employed. There is also an additional table showing the employee injury rates. It is hoped that this form of presentation will be more useful, particularly in detecting trends over time.

Tables and general notes

General notes on the tables

All the tables in this Supplement refer to Great Britain. Except where indicated otherwise, the figures are based either on calendar years or on 12 month periods beginning April 1.

Incidence rates for injuries are based on quarterly employment estimates from the Department of Employment, averaged over the year, and are quoted per 100,000 workers.

The following abbreviations and symbols are used in the tables:

- .. not available
- nil
- nes not elsewhere specified
- p provisional
- SIC 80 Standard Industrial Classification 1980

List of tables Injuries by industry

1. Injuries to employees reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90.
2. Injuries to employees reported to enforcement authorities, (rates per 100,000 employees) analysed by industry and by severity of injury, 1986-87 to 1989-90.
3. Injuries to self-employed persons reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90.
4. Injuries to non-employed persons reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90.
5. Fatal injuries reported to enforcement authorities, analysed by industry, 1981 to 1989-90.
6. Non-fatal major injuries reported to enforcement authorities, analysed by industry, 1986-87 to 1989-90.
7. Over 3-day injuries reported to enforcement authorities, analysed by industry, 1986-87 to 1989-90.

Kind of accident

8. Injuries to employees reported to enforcement authorities, analysed by kind of accident and severity of injury, 1986-87 to 1989-90.
9. Injuries to employees in the agriculture, forestry and fishing sector (SIC 80 Division 0) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90.
10. Injuries to employees in the manufacturing industries (SIC 80 Divisions 2-4) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90.
11. Injuries to employees in the construction industry (SIC 80 Division 5) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90.
12. Injuries to employees in the services sector (SIC 80 Divisions 6-9) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90.
13. Injuries to the self-employed reported to enforcement authorities, analysed by kind of accident and severity of injury, 1989-90.

Nature and site of injury

14. Injuries to employees reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and severity of injury, 1988-89 to 1989-90.
15. Injuries to employees reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by site and severity of injury, 1988-89 to 1989-90.
16. Non-fatal major injuries to employees in the agriculture, forestry and fishing sector (SIC 80 Division 0)

reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.

17. Non-fatal major injuries to employees in the manufacturing industries (SIC 80 Divisions 2-4) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
18. Non-fatal major injuries to employees in the construction industry (SIC 80 Division 5) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
19. Non-fatal major injuries to employees in the services sector (SIC 80 Divisions 6-9) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
20. Non-fatal major injuries to the self-employed reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
21. Over 3-day injuries to employees in the agriculture, forestry and fishing sector (SIC 80 Division 0) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
22. Over 3-day injuries to employees in the manufacturing industries (SIC 80 Divisions 2-4) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
23. Over 3-day injuries to employees in the construction industry (SIC 80 Division 5) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
24. Over 3-day injuries to employees in the services sector (SIC 80 Divisions 6-9) reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.
25. Over 3-day injuries to the self-employed reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90.

Age and Sex

26. Injuries reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by age and sex of injured person and severity of injury, 1989-90:
 - i) employees
 - ii) self-employed persons
 - iii) non-employed persons.
27. Incidence rates per 100,000 employees, analysed by sex and industry.

Occupation

28. Injuries to employees reported to HSE's Factory and Agricultural Inspectorates, analysed by occupation of injured person and severity of injury, 1989-90.

Dangerous occurrences

29. Dangerous occurrences reported to all enforcement authorities, 1986-87 to 1989-90.

Gassing incidents

30. Incidents relating to supply and use of flammable gas, 1986-87 to 1989-90.
31. Dangerous gas fitting notifications, 1989-90:
 - i) by type of appliance
 - ii) by section of installation at fault
 - iii) by reason for fault
 - iv) by type of hazard.

Enforcement notices

32. Enforcement notices issued by enforcement authorities, by type of notice, 1981 to 1989-90.
33. Enforcement notices issued by HSE's Factory and Agricultural Inspectorates, analysed by industry, 1986-87 to 1989-90.
34. Enforcement notices issued by HSE's Factory and Agricultural Inspectorates, analysed by subject of requirement, and type of notice, 1989-90.
35. Enforcement notices issued by HSE's Factory and Agricultural Inspectorates under specific regulations, by type of notice, 1988-89 and 1989-90.

Prosecutions

36. Proceedings instituted by enforcement authorities, analysed by result, 1981 to 1989-90.
37. Proceedings instituted by HSE's Factory and Agricultural Inspectorates, analysed by industry and result, 1986-87 to 1989-90.
38. Proceedings instituted by HSE's Factory and Agricultural Inspectorates, analysed by subject and agent of offence and result, 1989-90.
39. Proceedings instituted by HSE's Factory and Agricultural Inspectorates, analysed by agent involved in offence and result, 1989-90.
40. Proceedings instituted by HSE's Factory and Agricultural Inspectorates, under specific regulations, by result, 1988-89.
41. Proceedings instituted by HSE's Factory and Agricultural Inspectorates, under specific regulations, by result, 1989-90.

Medical statistics

42. Prescribed industrial diseases other than those assessed by Special Medical Boards: new cases qualifying for disablement benefit by disease, 1983-84 to 1985-86; new cases of assessed disablement by disease, 1986-87 to 1989-90.
43. Prescribed industrial diseases other than those assessed by Special Medical Boards: new cases of assessed disablement by award status, 1986-87 to 1989-90.
44. Prescribed industrial diseases assessed by Special Medical Boards: new cases of assessed disablement, by disease, 1981 to 1990.
45. Pneumoconiosis and Byssinosis: new diagnosed by Medical Boarding Centres (Respiratory Diseases) by industry to which the disease was attributed, 1981 to 1990.
46. Pneumoconiosis: New industrial injuries scheme cases diagnosed by Medical Boarding Centres (Respiratory Diseases) in coal mining, asbestos and other industries, by age and percentage disablement, 1987 to 1990.
47. Occupational asthma: new cases qualifying for disablement benefit by causative agent and percentage disability, 1982 to 1990.
48. Deaths resulting in award of industrial death benefit, etc, by scheme and main disease, 1978 to 1987.
49. Cases of occupational disease reported under RIDDOR, 1986-87 to 1989-90.
50. Death certificates mentioning specified asbestos related diseases, 1971 to 1989.
51. Death certificates mentioning mesothelioma, by age and sex, 1968 to 1989.
52. Mesothelioma crude death rates (per million), by region, 1981 to 1989.
53. Lead workers under medical surveillance, 1984 to 1989-90.
54. Lead workers under medical surveillance, by sex, blood-lead level and industry sector, 1989-90.

SECTION 3: INJURIES BY SEVERITY, INDUSTRY AND EMPLOYMENT STATUS

In 1989-90 370 fatal injuries to employees were reported to the HSC/E enforcement authorities, including local authorities. This number was slightly higher than reported in 1986-87 and 1987-88, but much lower than the 529 fatalities in 1988-89, of which 167 were caused by the Piper Alpha tragedy. The fatal injury incidence rate in 1989-90 was 1.7 per 100,000 employees, the same rate as in 1986-87 and 1987-88, but, for the reason above, below the 1988-89 rate of 2.4.

There were 20,396 reported major injuries to employees in 1989-90 compared to 19,944 in 1988-89, the first year, since RIDDOR came into force in April 1986, that there has been an increase in major injury numbers. The increase was concentrated in the construction and service sectors, with the agriculture and energy sectors having marked reductions in major injury numbers. The major injury incidence rate also increased, but, because of the rise in the number of employees in employment, this increase was more marginal, from 91.4 in 1988-89 to 91.8 in 1989-90.

Over 3-day injury numbers have increased in each of the RIDDOR years, with 165,244 reported in 1989-90. Injury numbers increased in the manufacturing, service and construction sectors and declined in the energy sector. The rate of increase in employment in the late 1980s has exceeded the rate of increase in over 3-day injuries and the over 3-day injury incidence rate declined marginally to 743.4 in 1989-90.

Fatal injuries to self-employed people increased markedly in 1989-90 to 105, compared with 80 in 1988-89. Over half the 1989-90 fatal injuries to self-employed people were in construction, where the 54 fatalities were 18 higher than in 1988-89 and over double the number in 1986-87. Self-employment in the construction industry has grown considerably over the last few years. However, the increase

in construction fatalities to self-employed people is higher than the growth in construction self-employment.

Major injuries to self-employed people have increased in each of the four RIDDOR years, with the majority of the increase in the construction sector. A similar pattern of increase is also apparent for over 3-day injuries to self-employed people. The increasing numbers of major and over 3-day injuries to self-employed people reflect the growth in the numbers self-employed, particularly in the construction sector. They may well also reflect improved reporting of these injuries to self-employed people. However, there is still thought to be considerable under-reporting of injuries to self-employed people.

There were 206 fatal injuries to non-employed people in 1989-90, much higher than the 121 reported in 1988-89, and due to inclusion of the 95 fatalities from the Hillsborough Stadium disaster.

Major injuries to the non-employed have decreased in each of the RIDDOR years. There were 11,378 in 1989-90, virtually all of these injuries being in the service sector.

Particular Industries

Figure 1 shows the 15 industrial activities with the highest fatal and major injury rates and figure 2 a similar analysis for all reported injuries. These figures illustrate the very high risks run by workers in construction, railways and a number of manufacturing and extractive industries, in most cases at least double the average for workers in all industries. The 15 activities shown in figure 1 account for 41 per cent of reported fatal and major injuries, as against only 14 per cent of employment. Those in figure 2 account for 39 per cent of all reported injuries and 14 per cent of employment. Both construction and the food, drink and tobacco industry are examples of industrial activities where

there are both high numbers of injuries and high overall injury rates.

In 1989-90, 69.2 per cent of employees were employed in activities (defined by SIC 1980 classes) where the combined fatal and major injury incidence rate was higher than in 1988-89. (26.2 per cent of employees were in activities where the rates had also increased in 1988-89). In many instances the increase was small and in others, despite the increase the rate remained low. Coal extraction and manufacture of solid fuels, the food, drink and tobacco industry and the manufacture of motor vehicles and parts hereof are examples of industries where, there are a significant number of fatal and major injuries, injury rates were well above average in 1989-90 and the rates had increased in each of the last two years. Conversely in other activities, for example metal manufacturing, manufacture of non-metallic mineral products, production of electricity and extraction and preparation of minerals/ores, fatal and major injury rates declined markedly in the last year.

A similar analysis for all reported injuries shows that 80.8 per cent of employees were employed in activities where the injury incidence rate was higher than in 1988-89, 62.4 per cent of employees were in activities where the rates had also increased in 1988-89).

Agriculture

In this sector, which includes forestry and fish farming, there were 65 fatal injuries in 1989-90 compared to 61 in 1988-89. There were 23 fatal injuries to employees in 1989-90, a rate per 100,000 employees of 8.1. Fatalities to self-employed people (who comprise some 46 per cent of the workforce in agriculture) increased from 25 to 30 in 1989-90. There was a small decrease from 15 to 12 in fatal injuries to 'non-employed persons', including 6 children. After an increase in 1987-88, major injuries to employees declined in both 1988-89 and 1989-90. The 403 major injuries to employees in 1989-90 represent a rate per 100,000 employees of 141.9 compared with 151.3 for the

previous year. Major injuries to self-employed people in this sector declined from 132 in 1988-89 to 102 in 1989-90. Over 3 day injuries to employees have increased each year and at 1,496 in 1989-90 were over 43 per cent higher than in 1986-87. In 1989-90 the over 3-day injury incidence rate of 526.8 was nearly 59 per cent higher than in 1986-87.

Energy and water supply industries

There were 31 fatal injuries to employees in this sector in 1989-90, much lower than the 203 in 1988-89, of which 167 arose from the Piper Alpha incident, and comparable with the numbers reported in 1986-87 and 1987-88. The fatal injury rate in 1989-90 was 6.9. The 1989-90 figure of 1,140 major injuries is a third lower than that for 1986-87, numbers have decreased for three successive years. Despite this the sector still has one of the highest major injury rates per 100,000 employees at 253.2. Over 3-day injuries to employees have also declined each year and have dropped by 40 per cent since 1986-87. The sector still has the highest over 3-day injury rate per 100,000 employees at 2,595.3.

Manufacturing industry

The number of fatal injuries to employees in manufacturing increased in 1989-90 to 108, from 94 fatalities in 1988-89. This followed several years since 1984 of declining fatal injury numbers. The fatal injury rate per 100,000 employees increased to 2.1 in 1989-90 from 1.8 in 1988-89.

After the increase in major injuries in 1988-89, the number remained steady in 1989-90. The major injury rate also remained fairly steady at 144.4 in 1989-90. There were 132 major injuries to self-employed people in 1989-90.

The 1989-90 figure of 60,006 over 3 day injuries to employees was 6.9 per cent higher than the figure for 1988-89, with the rate per 100,000 employees also increasing from 1,093.1 to 1,176.5. It is not possible to say with certainty why the trend in major injuries should differ from that for over 3-day injuries. However, HSE has made

Figure 1: Activities with high combined fatal and major rates, 1989/90, for employees by SIC class

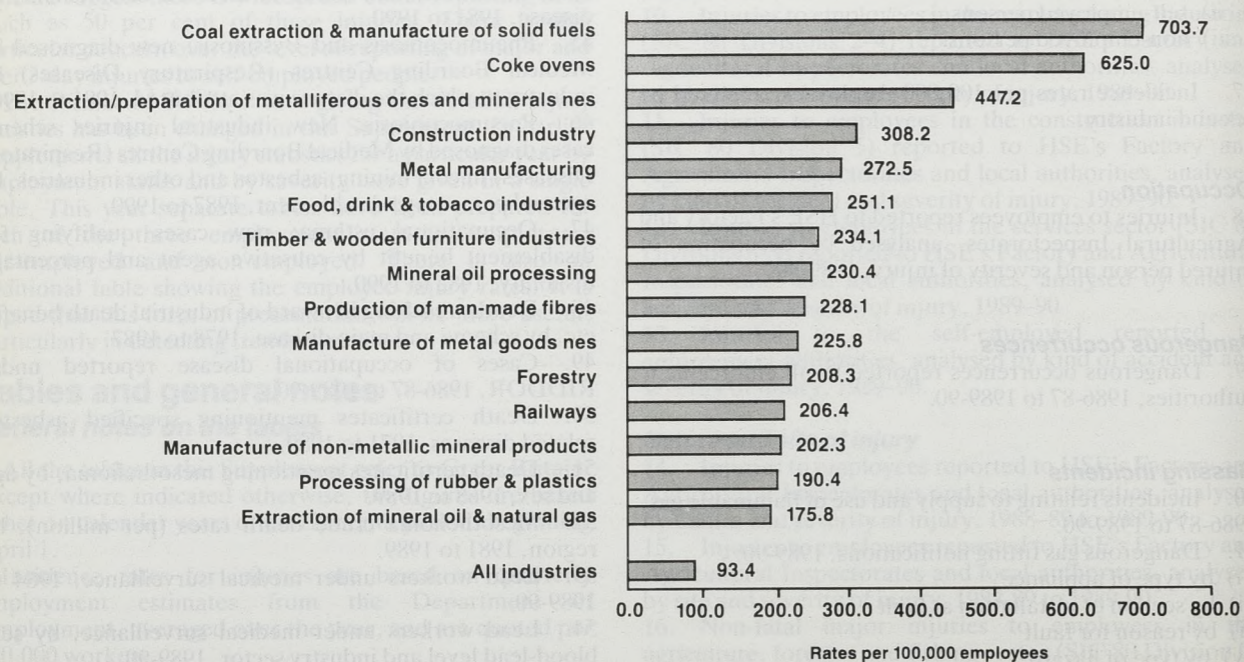
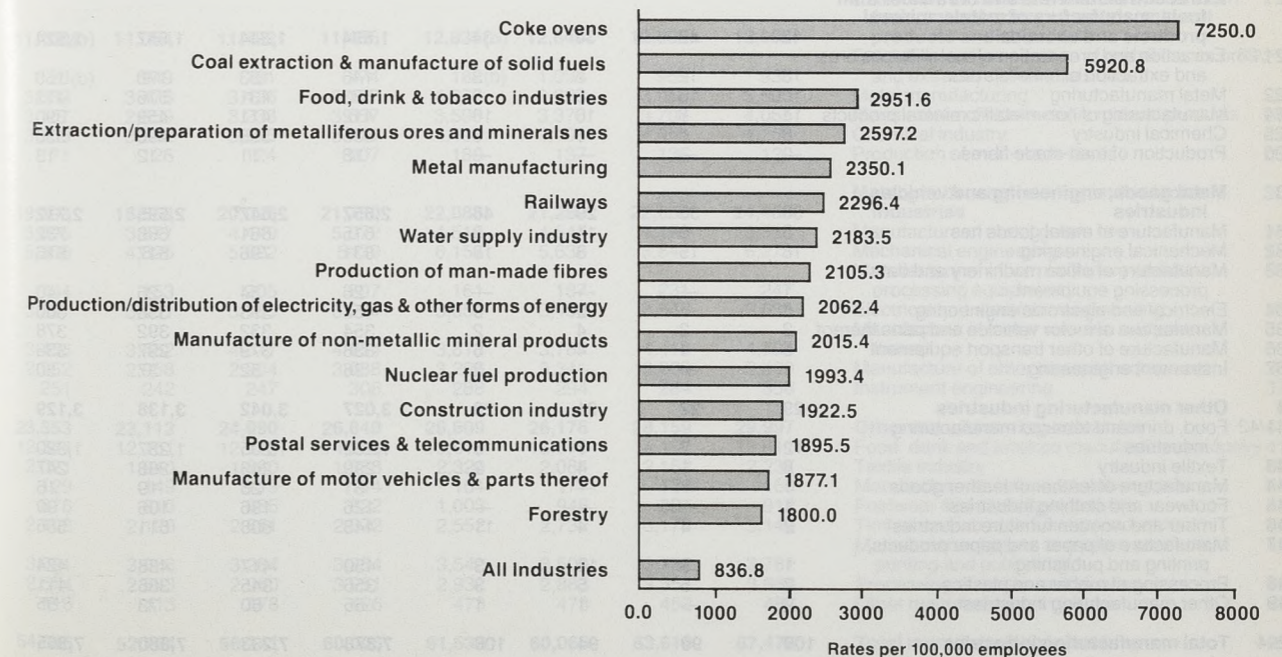


Figure 2: Activities with high rates for all reported injuries, 1989/90, for employees by SIC class



considerable efforts during recent years to improve the level of awareness of the requirements of the reporting regulations among employers and the increase in over 3-day injuries may be due in some degree to better reporting.

Construction

Fatal injuries to employees have remained broadly constant over the last four years at about 100 per year. Increases in the number of employees in the industry have meant that the fatal injury incidence rate in construction has declined to 9.4 in 1989-90. Major injury numbers have increased each year, marginally in 1987-88 but more markedly in 1988-89 and 1989-90. The injury incidence rate increased in the last two years to 298.8 in 1989-90.

Construction accounted for nearly 70 per cent of all reported injuries to self-employed people in 1989-90. The majority of the increase in injuries to self-employed people overall is in the construction sector. The 54 fatal injuries to

self-employed people in 1989-90 were 18 higher than in 1988-89. Fatal injuries to self-employed have more than doubled since 1986-87 during which time employment has increased by 48 per cent. Both major injury numbers and over 3-day injury numbers for the self-employed have increased each year in the construction industry. This may be due to a number of factors such as the increases in numbers self-employed and better reporting.

Services

The service sector has the lowest overall rates for fatal, major and over 3-day injuries. This sector is, however, very diverse and includes activities such as repair of consumer goods and vehicles, railways and transport support services which have fatal and major injury rates comparable with the manufacturing sector. For railways, the fatal and major injury rate in 1989-90 of 206.4 is higher than that for many activities in the manufacturing sector. Other activities such as those connected with retail and financial services have

low injury rates in all categories.

The number employed in the service sector has grown since the early 1980s. Because of the large numbers employed (around 15 million) there are as many fatalities and more major and over 3-day injuries reported in the service sector than in manufacturing.

In 1988-89 there was a sharp increase in the number of fatalities to employees in the service sector to 109, from 96 in 1987-88 and 80 in 1986-87. The 108 fatalities reported in 1989-90 were similar to the numbers in 1988-89. Fatalities to self-employed people increased to 14 in 1989-90. Employee major injury numbers in the service sector declined in 1987-88 and 1988-89 but increased to 8,189 in

1989-90, higher than in 1986-87. The major injury incidence rate also increased slightly to 53.4 but because of the increased employment in the sector remains below the 1986-87 rate of 57.5.

Employee over 3-day injury numbers and rates in the service sector have increased each year. There were 74,405 over 3-day injuries reported in 1989-90, an injury incidence rate of 485.4.

The vast majority of injuries to the non-employed are in the service sector. Numbers reported have declined each year and stood at 11,119 in 1989-90. Many of these are injuries to school-children, elderly people in residential homes and to people taking part in leisure activities.

Table 1 Injuries to employees reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal				Non-fatal major			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
0 Agriculture, forestry and fishing (a)	27	21	21	23	429	498	451	403
01 Agriculture and horticulture	24	20	18	22	401	464	428	373
02 Forestry	3	1	2	—	27	30	20	25
03 Fishing (a)	—	—	1	1	1	4	3	5
1 Energy and water supply industries (c)	30	33	203(d)	31	1,718	1,397	1,262	1,140
11 Coal extraction and manufacture of solid fuels	19	15	19	20	1,052	818	767	664
of which:								
1113 Coal mines	18	13	19	19	994	767	718	622
1114 Open cast coal workings	1	1	—	—	49	46	46	39
12 Coke ovens	—	—	—	1	11	26	8	9
13 Extraction of mineral oil and natural gas (c)	4	9	172(d)	2	92	75	64	75
14 Mineral oil processing	1	1	2	3	45	27	33	41
15 Nuclear fuel production	1	—	—	—	19	20	12	13
16 Production and distribution of electricity, gas and other forms of energy	4	8	8	3	384	335	322	270
17 Water supply industry	1	—	2	2	115	96	56	68
2 Extraction of minerals and ores other than fuels, manufacture of metals, mineral products and chemicals	42	42	34	34	1,694	1,544	1,647	1,524
21/23 Extraction and preparation of metalliferous ores and extraction of minerals nes	13	12	8	3	146	133	170	158
22 Metal manufacturing	10	16	8	5	533	431	516	413
24 Manufacture of non-metallic mineral products	11	8	10	18	412	411	459	390
25 Chemical industry	8	6	8	8	585	558	490	550
26 Production of man-made fibres	—	—	—	—	18	11	12	13
3 Metal goods, engineering and vehicles industries	38	35	29	46	2,657	2,647	2,595	2,712
31 Manufacture of metal goods nes	5	9	11	9	615	661	668	732
32 Mechanical engineering	18	15	8	18	831	796	817	816
33 Manufacture of office machinery and data processing equipment	1	—	—	—	26	34	26	40
34 Electrical and electronic engineering	4	4	2	9	457	393	358	360
35 Manufacture of motor vehicles and parts thereof	3	3	4	2	354	332	392	378
36 Manufacture of other transport equipment	6	4	4	6	338	379	297	336
37 Instrument engineering	1	—	—	2	36	52	37	50
4 Other manufacturing industries	29	22	31	28	3,027	3,042	3,138	3,129
41/42 Food, drink and tobacco manufacturing industries	12	7	7	8	1,262	1,205	1,237	1,320
43 Textile industry	8	1	4	2	299	243	268	247
44 Manufacture of leather or leather goods	1	—	—	—	31	28	19	16
45 Footwear and clothing industries	1	—	—	—	126	136	106	90
46 Timber and wooden furniture industries	2	4	4	11	448	608	611	566
47 Manufacture of paper and paper products, printing and publishing	1	5	10	3	450	417	438	424
48 Processing of rubber and plastics	2	5	5	3	356	345	386	411
49 Other manufacturing industries	2	—	1	1	55	60	73	55
2-4 Total manufacturing industries	109	99	94	108	7,378	7,233	7,380	7,365

SIC 80 Class	Over 3-day				All reported injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
Agriculture, forestry and fishing (a)	1,043	1,349	1,473	1,496	1,499	1,868	1,945	1,922
Agriculture and horticulture	912	1,118	1,213	1,265	1,337	1,602	1,659	1,660
Forestry	127	225	235	191	157	256	257	216
Fishing (a)	4	6	25	40	5	10	29	46
Energy and water supply industries (c)	19,621(b)	15,798	13,728	11,684	21,369(b)	17,228	15,193	12,855
Coal extraction and manufacture of solid fuels	11,660(b)	8,019	6,419	5,071	12,731(b)	8,852	7,205	5,755
of which:								
1113 Coal mines	11,571	7,822	6,266	4,959	12,583	8,602	7,003	5,600
1114 Open cast coal workings	—(b)	158	120	104	50(b)	205	166	143
12 Coke ovens	161	115	104	106	172	141	112	116
13 Extraction of mineral oil and natural gas (c)	584	584	692	693	680	668	928	770
14 Mineral oil processing	153	136	154	163	199	164	189	207
15 Nuclear fuel production	363	375	313	288	383	395	325	301
16 Production and distribution of electricity, gas and other forms of energy	5,150	5,200	4,720	4,219	5,538	5,543	5,050	4,492
17 Water supply industry	1,550	1,369	1,326	1,144	1,666	1,465	1,384	1,214
Extraction of minerals and ores other than fuels, manufacture of metals, mineral products and chemicals	11,100(b)	11,054	11,122	11,436	12,836(b)	12,640	12,803	12,994
Extraction and preparation of metalliferous ores and extraction of minerals nes	23(b)	949	781	774	182(b)	1,094	959	935
22 Metal manufacturing	3,833	3,478	3,426	3,187	4,376	3,925	3,950	3,605
24 Manufacture of non-metallic mineral products	3,167	2,959	3,238	3,657	3,590	3,378	3,707	4,065
25 Chemical industry	3,906	3,542	3,553	3,711	4,499	4,106	4,051	4,269
26 Production of man-made fibres	171	126	124	107	189	137	136	120
Metal goods, engineering and vehicles industries	19,393	18,568	20,029	21,730	22,088	21,250	22,653	24,488
Manufacture of metal goods nes	3,895	3,877	4,449	5,072	4,515	4,547	5,128	5,813
32 Mechanical engineering	5,308	4,825	5,022	5,439	6,157	5,636	5,847	6,273
33 Manufacture of office machinery and data processing equipment	134	153	205	207	161	187	231	247
34 Electrical and electronic engineering	3,397	3,061	3,185	3,264	3,858	3,458	3,545	3,633
35 Manufacture of motor vehicles and parts thereof	3,456	3,452	4,017	4,354	3,813	3,787	4,413	4,734
36 Manufacture of other transport equipment	2,952	2,958	2,904	3,088	3,296	3,341	3,205	3,430
37 Instrument engineering	251	242	247	306	288	294	284	358
Other manufacturing industries	23,553	23,112	24,990	26,840	26,609	26,176	28,159	29,997
Food, drink and tobacco manufacturing industries	12,344	12,161	12,913	14,283	13,618	13,373	14,157	15,611
43 Textile industry	2,021	1,840	1,890	1,988	2,328	2,084	2,162	2,237
44 Manufacture of leather or leather goods	129	149	119	144	161	177	138	160
45 Footwear and clothing industries	876	810	885	822	1,003	946	991	912
46 Timber and wooden furniture industries	2,102	2,120	2,561	2,572	2,552	2,732	3,176	3,149
47 Manufacture of paper and paper products, printing and publishing	3,091	3,086	3,284	3,354	3,542	3,508	3,732	3,781
48 Processing of rubber and plastics	2,574	2,533	2,960	3,251	2,932	2,883	3,351	3,665
49 Other manufacturing industries	416	413	378	426	473	473	452	482
Total manufacturing industries	54,046	52,734	56,141	60,006	61,533	60,066	63,615	67,479

Table 1 Injuries to employees reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal				Non-fatal major			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
5 Construction	99	103	101	100	2,736	2,767	2,907	3,180
6 Distribution, hotels and catering; repairs	22	20	33	31	1,872	2,071	2,061	2,200
61/62 Wholesale distribution (including dealing in scrap and waste materials)	11	9	18	16	432	420	408	467
53 Commission agents	—	—	—	—	1	1	3	—
64/65 Retail distribution	4	4	3	7	852	1,002	963	979
66 Hotels and catering	1	2	1	—	225	300	315	403
67 Repair of consumer goods and vehicles	6	5	11	8	362	348	372	351
7 Transport and communication (e)	34	48	45	44	1,135	1,184	1,258	1,312
71 Railways	10	17	16	9	188	226	310	257
72 Other inland transport	11	16	14	19	228	217	244	291
74 Sea transport (e)	—	2	1	—	10	12	9	11
75 Air transport	—	—	—	1	62	70	39	48
76 Supporting services to transport	7	11	9	12	127	119	129	124
77 Miscellaneous transport services and storage nes	2	2	4	2	107	103	91	105
79 Postal services and telecommunications	4	—	1	1	413	437	436	476
8 Banking, finance, insurance, business services and leasing	8	6	9	10	198	215	211	271
81 Banking and finance	—	—	—	—	59	67	58	59
82 Insurance, except for compulsory social security	—	—	—	—	18	17	20	28
83 Business services	5	3	5	5	84	80	77	114
84 Renting of moveables	3	2	3	3	27	33	41	48
85 Owning and dealing in real estate	—	1	1	2	10	18	15	22
9 Other services	16	22	22	23	4,852	4,466	4,280	4,406
91/92 Public administration, national defence, compulsory social security and sanitary services	12	18	15	9	2,394	1,962	1,792	1,706
93 Education	—	—	2	5	1,311	1,272	1,218	1,301
94 Research and development	—	—	—	1	88	73	77	72
95 Medical and other health services, veterinary services	—	2	—	1	588	679	624	675
96 Other services provided to general public	—	1	1	1	240	229	259	316
97 Recreational services and other cultural services	4	1	4	5	190	185	237	275
98 Personal services	—	—	—	1	38	66	73	61
99 Domestic services	—	—	—	—	3	—	—	—
6-9 Total service industries	80	96	109	108	8,057	7,936	7,810	8,189
Unclassified	10	9	1	—	377	226	134	119
All industries	355	361	529(d)	370	20,695	20,057	19,944	20,396

(a) Excludes sea fishing.
 (b) Excludes over 3 day injuries reported to the Mines and Quarries Inspectorate for non-British Coal Corporation coal mines and for other mining and quarrying activities; figures not readily available.
 (c) Includes the number of injuries in the offshore oil and gas industry collected under offshore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 (d) Data includes the 167 fatalities arising from the Piper Alpha disaster, July 6, 1988.
 (e) Injuries arising from shore-based support services only. Excludes incidents reported under merchant shipping legislation.

SIC 80 Class	Over 3-day				All reported injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
Construction	16,468	16,622	16,597	17,177	19,303	19,492	19,605	20,457
Distribution, hotels and catering; repairs	10,585	11,870	12,489	14,624	12,479	13,961	14,583	16,855
Wholesale distribution (including dealing in scrap and waste materials)	2,090	2,222	2,056	2,420	2,533	2,651	2,482	2,903
Commission agents	4	—	4	1	5	1	7	1
Retail distribution	5,295	6,328	6,882	7,834	6,151	7,334	7,848	8,820
Hotels and catering	953	1,282	1,545	1,910	1,179	1,584	1,861	2,313
Repair of consumer goods and vehicles	2,243	2,038	2,002	2,459	2,611	2,391	2,385	2,818
Transport and communication (e)	11,493	11,969	13,224	14,865	12,662	13,201	14,527	16,221
Railways	2,599	2,473	3,349	2,694	2,797	2,716	3,675	2,960
Other inland transport	1,608	1,570	1,873	2,393	1,847	1,803	2,131	2,703
Sea transport (e)	28	20	51	51	38	34	61	62
Air transport	461	479	468	544	523	549	507	593
Supporting services to transport	711	713	722	906	845	843	860	1,042
Miscellaneous transport services and storage nes	581	520	515	592	690	625	610	699
Postal services and telecommunications	5,505	6,194	6,246	7,685	5,922	6,631	6,683	8,162
Banking, finance, insurance, business services and leasing	1,058	1,082	1,174	1,459	1,264	1,303	1,394	1,740
Banking and finance	341	339	372	459	400	406	430	518
Insurance, except for compulsory social security	110	92	105	109	128	109	125	137
Business services	353	359	428	488	442	442	510	607
Renting of moveables	57	77	108	208	87	112	152	259
Owning and dealing in real estate	197	215	161	195	207	234	177	219
Other services	42,822	44,164	44,381	43,457	47,690	48,652	48,683	47,886
Public administration, national defence, compulsory social security and sanitary services	29,950	28,900	27,008	24,355	32,356	30,880	28,815	26,070
Education	4,537	4,810	5,056	5,439	5,848	6,082	6,276	6,745
Research and development	366	407	373	408	454	480	450	481
Medical and other health services, veterinary services	5,652	7,454	8,132	8,794	6,240	8,135	8,756	9,470
Other services provided to general public	1,417	1,411	2,234	2,418	1,657	1,641	2,494	2,735
Recreational services and other cultural services	693	772	1,149	1,536	887	958	1,390	1,816
Personal services	203	404	426	504	241	470	499	566
Domestic services	4	6	3	3	7	6	3	3
Total service industries	65,958	69,085	71,268	74,405	74,095	77,117	79,187	82,702
Unclassified	1,875	4,264	3,912	476	2,262	4,499	4,047	595
All industries	159,011	159,852	163,119	165,244	180,061	180,270	183,592	186,010

SIC 80 Class	1986-87	1987-88	1988-89	1989-90
Manufacturing industries	11,493	11,969	13,224	14,865
Construction	16,468	16,622	16,597	17,177
Distribution, hotels and catering; repairs	10,585	11,870	12,489	14,624
Transport and communication (e)	11,493	11,969	13,224	14,865
Banking, finance, insurance, business services and leasing	1,058	1,082	1,174	1,459
Other services	42,822	44,164	44,381	43,457
Total service industries	65,958	69,085	71,268	74,405
All industries	159,011	159,852	163,119	165,244

(a) Excludes sea fishing.
 (b) Excludes over 3 day injuries reported to the Mines and Quarries Inspectorate for non-British Coal Corporation coal mines and for other mining and quarrying activities; figures not readily available.
 (c) Includes the number of injuries in the offshore oil and gas industry collected under offshore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 (d) Data includes the 167 fatalities arising from the Piper Alpha disaster, July 6, 1988.
 (e) Injuries arising from shore-based support services only. Excludes incidents reported under merchant shipping legislation.

Table 2 Injuries to employees reported to enforcement authorities, (rates per 100,000 employees), analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal and major injury rate				All reported injury rate			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
0 Agriculture, forestry and fishing (a)	145.0	168.8	158.3	150.0	476.8	607.5	652.5	676.8
01 Agriculture and horticulture	143.0	166.8	158.8	148.4	450.0	552.0	590.8	623.8
02 Forestry	263.2	271.9	193.0	208.3	1,377.2	2,245.6	2,254.4	1,800.0
03 Fishing (a)	..	..	..	..	..	..	..	..
1 Energy and water supply industries (c)	336.0	288.6	308.4	260.1	4,107.8	3,476.9	3,197.9	2,855.4
11 Coal extraction and manufacture of solid fuels	654.6	598.8	673.5	703.7	7,781.8	6,363.8	6,174.0	5,920.8
of which:								
1113 Coal mines	652.5	600.0	679.3	713.8	8,112.8	6,616.9	6,454.4	6,236.1
1114 Open cast coal workings	704.2	618.4	676.5	639.3	..(b)	2,697.4	2,441.2	2,344.3
12 Coke ovens	407.4	1,130.4	400.0	625.0	6,370.4	6,130.4	5,600.0	7,250.0
13 Extraction of mineral oil and natural gas (c)	291.8	239.3	621.1(d)	175.8	2,066.9	1,903.1	2,442.1	1,758.0
14 Mineral oil processing	224.4	129.6	152.2	230.4	970.7	759.3	821.7	1,083.8
15 Nuclear fuel production	124.2	125.0	77.9	86.1	2,378.9	2,468.8	2,110.4	1,993.4
16 Production and distribution of electricity, gas and other forms of energy	168.9	151.7	146.7	125.3	2,411.0	2,451.6	2,244.4	2,062.4
17 Water supply industry	212.1	173.6	105.5	125.9	3,045.7	2,649.2	2,516.4	2,183.5
2 Extraction of minerals and ores other than fuels, manufacture of metals, mineral products and chemicals	245.6	231.5	248.0	216.0	1,815.8(b)	1,845.0	1,889.2	1,801.7
21/23 Extraction and preparation of metalliferous ores and extraction of minerals nes	498.4	460.3	556.3	447.2	..(b)	3,473.0	2,996.9	2,597.2
22 Metal manufacturing	353.1	312.4	390.5	272.5	2,845.3	2,742.8	2,943.4	2,350.1
24 Manufacture of non-metallic mineral products	215.7	220.1	246.5	202.3	1,830.7	1,774.2	1,948.0	2,015.4
25 Chemical industry	186.0	179.3	157.8	172.0	1,410.8	1,305.1	1,284.0	1,316.0
26 Production of man-made fibres	295.1	186.4	206.9	228.1	3,098.4	2,322.0	2,344.8	2,105.3
3 Metal goods, engineering and vehicles industries	116.1	115.5	111.8	119.1	951.9	915.4	965.3	1,057.6
31 Manufacture of metal goods nes	193.8	204.6	202.4	225.8	1,411.4	1,388.8	1,528.9	1,771.7
32 Mechanical engineering	115.4	109.0	106.6	110.1	836.8	757.3	755.8	827.9
33 Manufacture of office machinery and data processing equipment	32.8	40.8	30.6	48.7	195.4	224.2	271.4	300.9
34 Electrical and electronic engineering	81.8	70.9	64.9	65.7	684.9	617.7	639.0	646.7
35 Manufacture of motor vehicles and parts thereof	138.5	128.0	147.8	150.7	1,479.1	1,447.1	1,647.3	1,877.1
36 Manufacture of other transport equipment	133.4	158.0	132.4	142.7	1,278.0	1,378.3	1,409.4	1,431.6
37 Instrument engineering	35.7	50.7	36.1	55.3	278.3	286.8	277.3	380.9
4 Other manufacturing industries	148.2	146.9	150.1	153.0	1,290.4	1,254.7	1,333.5	1,453.5
41/42 Food, drink and tobacco manufacturing industries	230.5	219.1	224.0	251.1	2,464.4	2,417.8	2,549.0	2,951.6
43 Textile industry	131.1	105.9	120.2	123.2	994.4	904.1	955.8	1,106.9
44 Manufacture of leather or leather goods	156.1	133.3	91.3	82.5	785.4	842.9	663.5	824.7
45 Footwear and clothing industries	43.4	45.9	36.0	31.8	342.8	319.2	336.8	322.0
46 Timber and wooden furniture industries	205.5	266.0	255.0	234.1	1,165.3	1,187.3	1,316.7	1,277.5
47 Manufacture of paper and paper products, printing and publishing	95.4	88.7	93.0	87.6	749.5	737.3	774.8	775.3

Table 2 Injuries to employees reported to enforcement authorities, (rates per 100,000 employees), analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal and major injuries				All reported injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
48 Processing of rubber and plastics	182.7	171.4	180.3	190.4	1,495.9	1,411.9	1,545.0	1,685.8
49 Other manufacturing industries	76.3	79.8	98.0	71.2	633.2	629.0	598.7	612.5
2-4 Total manufacturing industries	147.1	144.0	145.5	146.5	1,209.0	1,179.5	1,238.6	1,323.0
5 Construction	293.0	286.8	295.8	308.2	1,994.7	1,947.6	1,928.1	1,922.5
6 Distribution, hotels and catering; repairs	45.0	48.9	47.8	47.6	296.7	326.8	332.6	359.7
61/62 Wholesale distribution (including dealing in scrap and waste materials)	49.6	47.5	45.4	49.9	283.8	293.4	264.7	300.2
63 Commission agents	3.3	3.2	9.0	..	16.5	3.2	21.0	2.8
64/65 Retail distribution	41.2	47.8	44.9	43.6	296.3	348.4	364.7	389.6
66 Hotels and catering	22.7	29.5	30.1	33.5	118.3	155.0	177.3	192.5
67 Repair of consumer goods and vehicles	174.7	167.6	180.2	165.1	1,239.2	1,135.3	1,121.8	1,295.6
7 Transport and communication (e)	92.1	96.3	99.1	100.3	998.1	1,031.5	1,104.6	1,200.3
71 Railways	140.0	174.3	243.5	206.4	1,978.1	1,948.4	2,744.6	2,296.4
72 Other inland transport	62.7	61.3	67.2	73.5	484.6	474.2	554.8	640.7
74 Sea transport (e)	29.6	42.2	29.2	32.9	112.4	102.4	178.4	185.6
75 Air transport	121.8	132.1	60.3	80.3	1,027.5	1,035.8	783.6	972.1
76 Supporting services to transport	146.3	144.1	149.4	149.0	922.5	934.6	930.7	1,141.3
77 Miscellaneous transport services and storage nes	68.4	63.7	54.8	58.1	432.9	379.2	352.0	379.5
79 Postal services and telecommunications	101.6	104.3	100.9	110.8	1,442.6	1,583.0	1,543.8	1,895.5
8 Banking, finance, insurance, business services and leasing	9.5	9.5	8.8	10.6	58.1	56.1	55.7	65.7
81 Banking and finance	10.9	11.6	9.4	9.5	74.2	70.4	69.9	83.0
82 Insurance, except for compulsory social security	7.9	7.0	7.8	10.9	55.8	45.1	48.6	53.4
83 Business services	7.5	6.5	5.9	7.9	37.3	34.5	36.6	40.2
84 Renting of moveables	28.6	32.8	38.7	40.5	83.0	105.0	133.8	205.9
85 Owning and dealing in real estate	8.5	16.3	13.3	18.5	176.8	200.7	147.0	169.0
9 Other services	76.6	68.3	64.3	66.7	750.8	739.9	728.0	720.7
91/92 Public administration, national defence, compulsory social security and sanitary services	127.9	102.4	93.4	91.3	1,720.4	1,596.4	1,488.6	1,388.1
93 Education	81.9	76.9	72.3	75.9	365.2	367.8	371.9	391.8
94 Research and development	79.4	66.1	68.8	75.4	409.4	434.4	402.1	496.9
95 Medical and other health services, veterinary services	44.7	50.1	44.5	47.8	474.1	598.1	624.1	669.1
96 Other services provided to general public	30.2	27.0	29.9	36.9	208.4	192.8	287.1	318.0
97 Recreational services and other cultural services	41.8	38.8	49.1	58.6	191.2	199.9	282.9	380.2
98 Personal services	20.6	35.5	38.4	31.7	130.6	252.6	262.8	289.7
99 Domestic services	..	..	..	..	..	..	..	..
8-9 Total service industries	58.1	55.6	53.2	54.1	529.2	533.7	531.8	539.5
Unclassified	..	..	..	..	..	..	..	..
All industries	100.8	95.7	93.8	93.4	861.9	844.5	841.6	836.8

(a) Excludes sea fishing.
 (b) Figures for over 3 day injuries reported to the Mines & Quarries Inspectorate for non-British Coal Corporation coal mines and for other mining and quarrying activities are not readily available.
 (c) Includes the number of injuries in the offshore oil and gas industry under offshore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 (d) Includes the 167 fatalities and 11 major injuries arising from the Piper Alpha disaster, July 6, 1988.
 (e) Injuries arising from shore based support services only. Excludes incidents reported under merchant shipping legislation.
 .. not available.

Table 3 Injuries to self-employed persons reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal				Non-fatal major			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
0 Agriculture, forestry and fishing (a)	17	31	25	30	72	91	132	102
01 Agriculture and horticulture	15	29	22	26	56	75	99	82
02 Forestry	2	2	3	4	16	16	33	20
03 Fishing (a)	—	—	—	—	—	—	—	—
1 Energy and water supply industries	—	—	2	—	5	6	5	6
11 Coal extraction and manufacture of solid fuels of which:	—	—	2	—	—	3	2	1
1113 Coal mines	—	—	1	—	—	1	2	1
1114 Open cast coal workings	—	—	1	—	—	2	—	—
12 Coke ovens	—	—	—	—	—	—	—	—
13 Extraction of mineral oil and natural gas	—	—	—	—	—	—	—	—
14 Mineral oil processing	—	—	—	—	—	—	—	1
15 Nuclear fuel production	—	—	—	—	—	—	—	—
16 Production and distribution of electricity, gas and other forms of energy	—	—	—	—	3	2	2	3
17 Water supply industry	—	—	—	—	2	1	1	1
2 Extraction of minerals and ores other than fuels, manufacture of metals, mineral products and chemicals	—	1	1	2	15	19	34	30
21/23 Extraction and preparation of metalliferous ores and extraction of minerals nes	—	1	—	—	—	6	10	5
22 Metal manufacturing	—	—	—	1	5	3	1	2
24 Manufacture of non-metallic mineral products	—	—	1	1	6	8	15	13
25 Chemical industry	—	—	—	—	4	2	8	9
26 Production of man-made fibres	—	—	—	—	—	—	—	1
3 Metal goods, engineering and vehicles industries	1	2	4	2	36	30	50	50
31 Manufacture of metal goods nes	—	—	—	—	10	11	14	14
32 Mechanical engineering	1	1	3	2	15	8	11	20
33 Manufacture of office machinery and data processing equipment	—	—	—	—	2	—	3	—
34 Electrical and electronic engineering	—	1	—	—	2	5	8	9
35 Manufacture of motor vehicles and parts thereof	—	—	1	—	2	5	8	6
36 Manufacture of other transport equipment	—	—	—	—	3	1	6	1
37 Instrument engineering	—	—	—	—	2	—	—	—
4 Other manufacturing industries	—	2	2	3	38	51	50	52
41/42 Food, drink and tobacco manufacturing industries	—	2	—	2	9	23	18	13
43 Textile industry	—	—	1	—	3	2	1	1
44 Manufacture of leather or leather goods	—	—	—	—	—	—	—	—
45 Footwear and clothing industries	—	—	—	—	—	1	—	2
46 Timber and wooden furniture industries	—	—	1	—	14	14	20	20
47 Manufacture of paper and paper products, printing and publishing	—	—	—	1	11	9	8	10
48 Processing of rubber and plastics	—	—	—	—	1	2	1	4
49 Other manufacturing industries	—	—	—	—	—	—	2	2
2-4 Total manufacturing industries	1	5	7	7	89	100	134	132
5 Construction	26	40	36	54	443	561	753	927
6 Distribution, hotels and catering; repairs	3	5	6	4	13	28	30	44
61/62 Wholesale distribution (including dealing in scrap and waste materials)	—	4	2	3	3	8	9	15
63 Commission agents	—	—	—	—	—	—	—	—
64/65 Retail distribution	1	1	—	—	2	6	7	5
66 Hotels and catering	1	—	1	—	1	1	4	2
67 Repair of consumer goods and vehicles	1	—	3	1	7	13	10	22
7 Transport and communication	1	3	—	2	15	10	13	12
71 Railways	—	—	—	1	—	—	—	7
72 Other inland transport	1	3	—	1	4	1	3	2
74 Sea transport (b)	—	—	—	—	—	1	3	—
75 Air transport	—	—	—	—	3	2	—	—
76 Supporting services to transport	—	—	—	—	2	5	2	2

Sic 80 Class	Over 3-day				All reported injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
Agriculture, forestry and fishing (a)	108	117	142	130	197	239	299	262
Agriculture and horticulture	80	79	85	89	151	183	206	197
Forestry	28	37	56	41	46	55	92	65
Fishing (a)	—	1	1	—	—	1	1	—
Energy and water supply industries	8	10	10	21	13	16	17	27
Coal extraction and manufacture of solid fuels of which:	—	3	8	13	—	6	12	14
Coal mines	—	3	4	11	—	4	7	12
Open cast coal workings	—	—	4	1	—	2	5	1
Coke ovens	—	—	—	—	—	—	—	—
Extraction of mineral oil and natural gas	1	3	—	—	1	3	—	—
Mineral oil processing	2	1	—	1	2	1	—	2
Nuclear fuel production	1	—	—	—	1	—	—	—
Production and distribution of electricity, gas and other forms of energy	3	2	1	5	6	4	3	8
Water supply industry	1	1	1	2	3	2	2	3
Extraction of minerals and ores other than fuels, manufacture of metals, mineral products and chemicals	21	29	28	44	36	49	63	76
Extraction and preparation of metalliferous ores and extraction of minerals nes	—	4	7	10	—	11	17	15
Metal manufacturing	3	5	4	1	8	8	5	4
Manufacture of non-metallic mineral products	12	16	13	19	18	24	29	33
Chemical industry	6	4	4	14	10	6	12	23
Production of man-made fibres	—	—	—	—	—	—	—	1
Metal goods, engineering and vehicles industries	32	35	47	44	69	67	101	96
Manufacture of metal goods nes	5	9	10	10	15	20	24	24
Mechanical engineering	15	14	21	20	31	23	35	42
Manufacture of office machinery and data processing equipment	—	—	—	—	2	—	3	—
Electrical and electronic engineering	3	4	7	3	5	10	15	12
Manufacture of motor vehicles and parts thereof	1	4	2	1	3	9	11	7
Manufacture of other transport equipment	7	4	7	9	10	5	13	10
Instrument engineering	1	—	—	1	3	—	—	1
Other manufacturing industries	46	48	53	60	84	101	105	115
Food, drink and tobacco manufacturing industries	15	16	19	18	24	41	37	33
Textile industry	1	3	1	1	4	5	3	2
Manufacture of leather or leather goods	1	2	—	—	1	2	—	—
Footwear and clothing industries	1	2	—	—	1	3	—	2
Timber and wooden furniture industries	12	15	18	30	26	29	39	50
Manufacture of paper and paper products, printing and publishing	10	7	5	5	21	16	13	16
Processing of rubber and plastics	4	2	10	6	5	4	11	10
Other manufacturing industries	2	1	—	—	2	1	2	2
Total manufacturing industries	99	112	128	148	189	217	269	287
Construction	704	763	969	1,310	1,173	1,364	1,758	2,291
Distribution, hotels and catering; repairs	24	30	27	28	40	63	63	76
Wholesale distribution (including dealing in scrap and waste materials)	6	11	10	6	9	23	21	24
Commission agents	1	—	—	—	1	—	—	—
Retail distribution	6	11	3	8	9	18	10	13
Hotels and catering	3	2	3	2	5	3	8	4
Repair of consumer goods and vehicles	8	6	11	12	16	19	24	35
Transport and communication	10	14	16	18	26	27	29	32
Railways	—	—	—	9	—	—	—	17
Other inland transport	3	2	1	3	8	6	4	6
Sea transport (b)	1	1	1	—	1	2	4	—
Air transport	2	1	1	2	5	3	1	2
Supporting services to transport	—	6	4	1	2	11	6	3

Table 3 Injuries to self-employed persons reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal				Non-fatal major			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
77 Miscellaneous transport services and storage nes	—	—	—	—	4	—	1	1
79 Postal services and telecommunications	—	—	—	—	2	1	4	—
8 Banking, finance, insurance business services and leasing	—	—	1	—	5	5	2	6
81 Banking and finance	—	—	—	—	—	—	—	—
82 Insurance, except for compulsory social security	—	—	—	—	—	1	—	—
83 Business services	—	—	—	—	3	1	2	—
84 Renting of moveables	—	—	1	—	2	3	—	4
85 Owning and dealing in real estate	—	—	—	—	—	—	—	2
9 Other services	4	—	3	8	47	62	79	76
91/92 Public administration, national defence, compulsory social security and sanitary services	2	—	3	8	22	28	30	23
93 Education	—	—	—	—	4	3	12	12
94 Research and development	—	—	—	—	3	3	2	—
95 Medical and other health services, veterinary services	—	—	—	—	2	7	2	8
96 Other services provided to general public	—	—	—	—	4	4	6	8
97 Recreational services and other cultural services	2	—	—	—	12	16	26	25
98 Personal services	—	—	—	—	—	1	1	—
99 Domestic services	—	—	—	—	—	—	—	—
6-9 Total service industries	8	8	10	14	80	105	124	138
Unclassified	—	—	—	—	1	4	4	5
All industries	52	84	80	105	690	867	1,152	1,310

(a) Excludes sea fishing.
(b) Injuries arising from shore based support services only. Excludes incidents reported under merchant shipping legislation.

Sic 80 Class	Over 3-day				All reported injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
Miscellaneous transport services77 and storage nes	1	2	5	3	5	2	6	4
Postal services and telecommunications 79	3	2	4	—	5	3	8	—
Banking, finance, insurance, 8 business services and leasing	4	6	9	7	9	11	12	13
Banking and finance 81	1	3	2	—	1	3	2	—
Insurance, except for compulsory82 social security	—	—	—	—	—	1	—	—
Business services 83	2	3	4	5	5	4	6	5
Renting of moveables 84	1	—	3	2	3	3	4	6
Owning and dealing in real estate85	—	—	—	—	—	—	—	2
Other services 9	66	106	193	198	117	168	275	282
Public administration, national 91/92 defence, compulsory social security and sanitary services	43	76	150	123	67	104	183	154
Education 93	7	5	8	8	11	8	20	20
Research and development 94	3	2	3	2	6	5	5	2
Medical and other health services,95 veterinary services	2	5	4	12	4	12	6	20
Other services provided to 96 general public	3	4	9	15	7	8	15	23
Recreational services and other 97 cultural services	8	14	19	36	22	30	45	61
Personal services 98	—	—	—	1	—	1	1	1
Domestic services 99	—	—	—	1	—	—	—	1
Total service industries 6-9	104	156	245	251	192	269	379	403
Unclassified	6	1	9	5	7	5	13	10
All industries	1,029	1,159	1,503	1,865	1,771	2,110	2,735	3,280

(a) Excludes sea fishing.
(b) Injuries arising from shore-based support services only. Excludes incidents reported under merchant shipping legislation.

Table 4 Injuries to non-employed persons reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal				Non-fatal major				Total fatal and major injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
0 Agriculture, forestry and fishing (a)	16	10	15	12	58	59	89	65	74	69	104	77
01 Agriculture and horticulture	15	9	15	12	56	58	88	63	71	67	103	75
02 Forestry	1	1	—	—	2	1	1	2	3	2	1	2
03 Fishing (a)	—	—	—	—	—	—	—	—	—	—	—	—
1 Energy and water supply industries	7	2	2	4	30	17	29	16	37	19	31	20
11 Coal extraction and manufacture of solid fuels	—	—	—	—	2	2	2	4	2	2	2	4
of which:												
1113 Coal mines	—	—	—	—	2	1	2	4	2	1	2	4
1114 Open cast coal workings	—	—	—	—	—	1	—	—	—	1	—	—
12 Coke ovens	—	—	—	—	—	—	—	—	—	—	—	—
13 Extraction of mineral oil and natural gas	—	—	—	—	—	—	—	—	—	—	—	—
14 Mineral oil processing	—	—	—	—	—	1	—	—	—	1	—	—
15 Nuclear fuel production	—	—	—	—	—	—	—	—	—	—	—	—
16 Production and distribution of electricity, gas and other forms of energy	5	1	—	—	23	11	24	10	28	12	24	10
17 Water supply industry	2	1	2	4	5	3	3	2	7	4	5	6
2 Extraction of minerals and ores other than fuels, manufacture of metals, mineral products and chemicals	3	—	—	2	17	9	11	3	20	9	11	5
21/23 Extraction and preparation of metalliferous ores and extraction of minerals nes	2	—	—	—	4	4	4	2	6	4	4	2
22 Metal manufacturing	—	—	—	—	1	—	1	—	1	—	1	—
24 Manufacture of non-metallic mineral products	1	—	—	1	3	2	5	—	4	2	5	1
25 Chemical industry	—	—	—	1	9	3	1	1	9	3	1	2
26 Production of man-made fibres	—	—	—	—	—	—	—	—	—	—	—	—

Table 4 Injuries to non-employed persons reported to enforcement authorities, analysed by industry and by severity of injury, 1986-87 to 1989-90

SIC 80 Class	Fatal				Non-fatal major				Total fatal and major injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
3 Metal goods, engineering and vehicles industries	2	—	1	—	17	23	19	6	19	23	20	6
31 Manufacture of metal goods nes	1	—	1	—	3	4	13	1	4	4	14	1
32 Mechanical engineering	—	—	—	—	6	9	2	1	6	9	2	1
33 Manufacture of office machinery and data processing equipment	—	—	—	—	1	—	1	1	1	—	1	1
34 Electrical and electronic engineering	—	—	—	—	5	4	1	1	5	4	1	1
35 Manufacture of motor vehicles and parts thereof	—	—	—	—	—	4	—	1	—	4	—	1
36 Manufacture of other transport equipment	1	—	—	—	1	2	1	1	2	2	1	1
37 Instrument engineering	—	—	—	—	1	—	1	—	1	—	1	—
4 Other manufacturing industries	—	—	3	1	31	25	27	15	31	25	30	16
41/42 Food, drink and tobacco manufacturing industries	—	—	1	—	15	13	9	8	15	13	10	8
43 Textile industry	—	—	1	—	2	1	2	—	2	1	3	—
44 Manufacture of leather or leather goods	—	—	—	—	—	—	—	—	—	—	—	—
45 Footwear and clothing industries	—	—	1	—	2	—	—	—	2	—	1	—
46 Timber and wooden furniture industries	—	—	—	—	2	8	7	3	2	8	7	3
47 Manufacture of paper and paper products, printing and publishing	—	—	—	1	4	1	4	1	4	1	4	2
48 Processing of rubber and plastics	—	—	—	—	3	1	1	1	3	1	1	1
49 Other manufacturing industries	—	—	—	—	3	1	4	2	3	1	4	2
2-4 Total manufacturing industries	5	—	4	3	65	57	57	24	70	57	61	27
5 Construction	14	15	14	11	162	153	132	113	176	168	146	124
6 Distribution, hotels and catering; repairs	10	17	10	22	745	824	879	1,093	755	841	889	1,115
61/62 Wholesale distribution (including dealing in scrap and waste materials)	1	—	1	2	6	17	17	12	7	17	18	14
63 Commission agents	—	—	—	—	—	—	—	—	—	—	—	—
64/65 Retail distribution	7	3	3	4	499	503	584	694	506	587	698	698
66 Hotels and catering	2	14	5	13	229	286	265	377	231	300	270	390
67 Repair of consumer goods and vehicles	—	—	1	3	11	18	13	10	11	18	14	13
7 Transport and communication (b)	2	3	5	5	35	35	24	29	37	38	29	34
71 Railways	—	—	—	—	1	—	1	—	1	—	1	—
72 Other inland transport	—	2	4	3	4	4	5	5	4	6	9	8
74 Sea transport (b)	—	—	—	—	—	—	—	—	—	—	—	—
75 Air transport	—	—	—	1	10	12	8	10	10	12	8	11
76 Supporting services to transport	2	1	1	—	14	10	7	8	16	11	8	8
77 Miscellaneous transport services and storage nes	—	—	—	1	2	2	1	1	2	2	1	2
79 Postal services and telecommunications	—	—	—	—	4	7	2	5	4	7	2	5
8 Banking, finance, insurance, business services and leasing	1	—	7	1	26	31	32	70	27	31	39	71
81 Banking and finance	—	—	—	—	12	13	8	24	12	13	8	24
82 Insurance, except for compulsory social security	—	—	1	—	3	1	1	—	3	1	2	—
83 Business services	—	—	4	1	7	13	16	39	7	13	20	40
84 Renting of moveables	—	—	—	—	1	2	—	1	1	2	—	1
85 Owning and dealing in real estate	1	—	2	—	3	2	7	6	4	2	9	6
9 Other services	30	62	62	148(c)	13,408	11,500	11,188	9,927	13,438	11,562	11,250	10,075
91/92 Public administration, national defence, compulsory social security and sanitary services	8	4	5	8	2,620	1,297	1,198	714	2,628	1,301	1,203	722
93 Education	4	7	6	5	9,527	8,756	8,002	6,280	9,531	8,763	8,008	6,285
94 Research and development	—	—	—	—	—	2	2	1	—	2	2	1
95 Medical and other health services, veterinary services	5	18	20	8	602	636	676	651	607	654	696	659
96 Other services provided to general public	6	14	18	17	410	387	668	719	416	401	686	736
97 Recreational services and other cultural services	7	18	12	110(c)	243	412	635	1,553	250	430	647	1,663
98 Personal services	—	1	1	—	6	10	7	9	6	11	8	9
99 Domestic services	—	—	—	—	—	—	—	—	—	—	—	—
6-9 Total service industries	43	82	84	176(c)	14,214	12,390	12,123	11,119	14,257	12,472	12,207	11,295
Unclassified	7	4	2	—	46	204	184	41	53	208	186	41
All industries	92	113	121	206(c)	14,575	12,880	12,614	11,378	14,667	12,993	12,735	11,584

(a) Excludes sea fishing.
 (b) Injuries arising from shore-based support services only. Excludes incidents reported under merchant shipping legislation.
 (c) Includes the 95 fatal injuries arising from the Hillsborough Stadium disaster, April 15, 1989.

Table 5 Fatal injuries reported to enforcement authorities, analysed by industry, 1981 to 1989-90

SIC 80 Division	Year(a)	Agriculture, forestry and fishing(e)	Energy and water supply industries(b), (d)	Total manufacturing industries(d)	Construction	Service industries(f)	Un-classified	All industries
Employment status								
Employees	1981	31	54	123	105	102	26	441
	1982	27	77	137	100	117	14	472
	1983	29	48	118	118	111	24	448
	1984	29	48	142	100	105	14	438
	1985	20	46	124	104	99	7	400
	1986-87	27	30	109	99	80	10	355
	1987-88	21	33	99	103	96	9	361
	1988-89	21	203(c)	94	101	109	1	529(c)
	1989-90	23	31	108	100	108	—	370
Self-employed	1981	26	—	6	11	10	1	54
	1982	22	—	2	18	6	—	48
	1983	26	1	9	22	7	—	65
	1984	25	—	5	17	13	—	60
	1985	44	—	—	22	5	—	71
	1986-87	17	—	1	26	8	—	52
	1987-88	31	—	5	40	8	—	84
	1988-89	25	2	7	36	10	—	80
	1989-90	30	—	7	54	14	—	105
Non-employed	1981	13	3	5	12	38	—	71
	1982	17	1	5	13	47	—	83
	1983	9	6	7	11	52	—	85
	1984	7	23	3	7	61	4	105
	1985	11	17	5	13	110(g)	3	159(g)
	1986-87	16	7	5	14	43	7	92
	1987-88	10	2	—	15	82	4	113
	1988-89	15	2	4	14	84	2	121
	1989-90	12	4	3	11	176(h)	—	206(h)
Incidence rates (per 100,000)								
Employees	1981	8.8	7.8	2.0	9.7	0.8	..	2.1
	1982	7.8	11.5	2.4	9.7	0.9	..	2.3
	1983	8.6	7.5	2.2	11.6	0.8	..	2.2
	1984	8.8	7.9	2.7	9.8	0.8	..	2.1
	1985	6.1	8.0	2.4	10.5	0.7	..	1.9
	1986-87	8.6	5.8	2.1	10.2	0.6	..	1.7
	1987-88	6.8	6.7	1.9	10.3	0.7	..	1.7
	1988-89	7.0	42.7(c)	1.8	9.9	0.7	..	2.4(c)
	1989-90	8.1	6.9	2.1	9.4	0.7	..	1.7

(a) 1981-85 calendar years—reported under the Notification of Accidents and Dangerous Occurrences Regulations (NADOR) 1980. 1986-87 onwards years commencing April 1—reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1985.
 (b) Includes the number of injuries in the offshore oil and gas industry collected under offshore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 (c) Data includes the 167 fatalities of the Piper Alpha disaster, July 6, 1988.
 (d) Fatal injuries to the self-employed and the non-employed reported to the Mines and Quarries Inspectorate for the years 1981 to 1984 are included with injuries reported to employees.
 (e) Excludes sea fishing.
 (f) Fatal injuries to the self-employed reported to local authorities for the years 1981-85 are included with injuries reported to employees.
 (g) Data includes the 56 fatalities to members of the public in the Bradford City Club fire disaster.
 (h) Data includes the 95 fatalities to members of the public in the Hillsborough Stadium disaster, April 15, 1989.
 .. Not available.

Table 6 Non-fatal major injuries reported to enforcement authorities, analysed by industry, 1981 to 1989-90

SIC 80 Division	Year	Agriculture, forestry and fishing†	Energy and water supply industries** ‡	Total manufacturing industries 2-4	Construction 5	Services industries 6-9	Unclassified	All industries
Employees	1986-87	429	1,718	7,378	2,736	8,057	377	20,695
	1987-88	498	1,397	7,233	2,767	7,936	226	20,057
	1988-89	451	1,262	7,380	2,907	7,810	134	19,944
	1989-90	403	1,140	7,365	3,180	8,189	119	20,396
Self-employed	1986-87	72	5	89	443	80	1	690
	1987-88	91	6	100	561	105	4	867
	1988-89	132	5	134	753	124	4	1,152
	1989-90	102	6	132	927	138	5	1,310
Non-employed	1986-87	58	30	65	162	14,214	46	14,575
	1987-88	59	17	57	153	12,390	204	12,880
	1988-89	89	29	57	132	12,123	184	12,614
	1989-90	65	16	24	113	11,119	41	11,378
Incidence rates (per 100,000)								
Employees	1986-87	136.5	330.3	145.0	282.7	57.5	..	99.1
	1987-88	162.0	281.9	142.0	276.5	54.9	..	94.0
	1988-89	151.3	265.6	143.7	285.9	52.5	..	91.4
	1989-90	141.9	253.2	144.4	298.8	53.4	..	91.8
Self-employed	1986-87	29.0	..	42.6	91.0	4.9	..	26.9
	1987-88	37.1	..	40.7	130.5	5.9	..	31.0
	1988-89	54.3	..	52.1	127.0	6.8	..	39.4
	1989-90	42.0	..	47.1	128.4	7.1	..	41.2

** Includes the number of injuries in the off-shore oil and gas industry collected under off-shore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 † Excludes sea fishing.
 ‡ Due to the small number of self-employed workers in this sector the calculation of injury incidence would not be reliable.
 .. not available.

Table 7 Over 3-day injuries reported to enforcement authorities, analysed by industry, 1986-87 to 1989-90

SIC 80 Division	Year	Agriculture, forestry and fishing*	Energy and water supply industries† **	Total manufacturing industries 2-4	Construction 5	Service industries 6-9	Unclassified	All industries
Employees	1986-87	1,043	19,621‡	54,046‡	16,468	65,958	1,875	159,011
	1987-88	1,349	15,798	52,734	16,622	69,085	4,264	159,852
	1988-89	1,473	13,728	56,141	16,597	71,268	3,912	163,119
	1989-90	1,496	11,684	60,006	17,177	74,405	476	165,244
Self-employed	1986-87	108	8	99	704	104	6	1,029
	1987-88	117	10	112	763	156	1	1,159
	1988-89	142	10	128	969	245	9	1,503
	1989-90	130	21	148	1,310	251	5	1,865
Incidence rates (per 100,000)								
Employees	1986-87	331.7	3,771.8	1,061.9	1,701.8	471.1	..	761.1
	1987-88	438.7	3,188.3	1,035.5	1,660.9	478.1	..	748.9
	1988-89	494.1	2,889.5	1,093.1	1,632.3	478.6	..	747.7
	1989-90	526.8	2,595.3	1,176.5	1,614.2	485.4	..	743.4
Self-employed	1986-87	43.5	..	47.4	144.6	6.4	..	40.1
	1987-88	47.8	..	45.5	140.8	8.8	..	41.4
	1988-89	58.4	..	49.8	163.4	13.4	..	51.4
	1989-90	53.3	..	52.9	181.4	13.0	..	58.6

* Excludes sea fishing.
 † Includes the number of injuries in the offshore oil and gas industry collected under offshore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 ** Due to the small number of self-employed workers in this sector, the calculation of injury incidence rates would not be reliable.
 ‡ Excludes over 3-day injuries reported to the Mines and Quarries Inspectorate for non-British coal mines and for other mining and quarrying activities: figures not readily available.

SECTION 4: KINDS OF ACCIDENT

The 1989-90 figures on kind of accident in table 8 are for employees for all enforcing authorities. The pattern of fatalities is similar to that of 1986-87 and 1987-88 with falls from a height (29.7 per cent), being struck by a moving, including falling object (16.8 per cent) and being struck by a moving vehicle (13.5 per cent), the most common causes

of fatal injuries. The pattern is different from 1988-89 when the 167 fatalities sustained during the Piper Alpha tragedy were recorded as unclassified.

Slips, trips and falls on the same level (28.7 per cent) and falls from a height (22.3 per cent) are by far the most common causes of major injuries, followed next by being

Table 8 Injuries to employees reported to enforcement authorities*, analysed by kind of accident and severity of injury, 1986-87 to 1989-90

Kind of accident	Fatal				Non-fatal major			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
Contact with moving machinery or material being machined	34	18	30	25	1,948	1,990	2,118	2,003
Struck by moving, including flying or falling, object	31	53	46	62	2,444	2,800	2,541	2,752
Struck by moving vehicle	49	55	70	50	635	763	747	772
Struck against something fixed or stationary	—	1	3	2	867	787	808	763
Injured while handling, lifting or carrying	—	2	—	2	1,308	1,374	1,408	1,359
Slip, trip or fall on same level	5	5	8	5	5,480	5,452	5,563	5,852
Fall from a height								
Up to and including two metres	9	5	10	13	1,883	1,920	1,958	2,060
Over two metres	69	67	77	89	1,395	1,338	1,447	1,532
Height not stated	6	6	6	8	780	976	935	959
All heights	84	78	93	110	4,058	4,234	4,340	4,551
Trapped by something collapsing or overturning	38	34	28	36	212	246	247	220
Drowning or asphyxiation	19	15	16	15	32	29	28	19
Exposure to or contact with a harmful substance	6	11	8	9	979	771	702	804
Exposure to fire	3	12	2	8	127	120	106	109
Exposure to an explosion	8	7	7	8	100	80	80	74
Contact with electricity or an electrical discharge	23	20	18	24	353	331	276	305
Injured by an animal	—	—	3	—	70	80	75	75
Other kind of accident	9	33	24	12	499	821	812	657
Injuries not classified by kind	46	17	173†	2	1,583	179	93	81
Total	355	361	529†	370	20,695	20,057	19,944	20,396

* Includes the number of injuries in the off-shore oil and gas industry collected under off-shore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 † Data include the 167 fatalities of the Piper Alpha disaster, July 6, 1988.

Table 8a

Kind of accident	Over 3-day				All reported injuries			
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90
Contact with moving machinery or material being machined	7,066	7,470	7,968	7,848	9,048	9,478	10,116	9,876
Struck by moving, including flying or falling, object	22,594	24,608	25,076	25,662	25,069	27,461	27,663	28,476
Struck by moving vehicle	3,182	3,519	4,254	4,146	3,866	4,337	5,071	4,968
Struck against something fixed or stationary	10,797	10,522	10,811	10,886	11,664	11,310	11,622	11,651
Injured while handling, lifting or carrying	48,609	52,320	53,373	55,513	49,917	53,696	54,781	56,874
Slip, trip or fall on same level	27,836	29,336	30,311	32,087	33,321	34,793	35,882	37,944
Fall from a height								
Up to and including two metres	7,346	7,680	7,272	7,401	9,238	9,605	9,240	9,474
Over two metres	2,081	1,805	1,786	1,918	3,545	3,210	3,310	3,539
Height not stated	3,039	3,637	3,458	3,758	3,825	4,619	4,399	4,725
All heights	12,466	13,122	12,516	13,077	16,608	17,434	16,949	17,738
Trapped by something collapsing or overturning	591	615	608	616	841	895	883	872
Drowning or asphyxiation	34	38	39	39	85	82	83	73
Exposure to or contact with a harmful substance	3,724	4,015	4,123	4,586	4,709	4,797	4,833	5,399
Exposure to fire	564	552	536	631	694	684	644	748
Exposure to an explosion	221	267	231	256	329	354	318	338
Contact with electricity or an electrical discharge	551	562	635	703	927	913	929	1,032
Injured by an animal	598	723	758	913	668	803	836	988
Other kind of accident	6,516	8,080	7,880	7,562	7,024	8,934	8,716	8,231
Injuries not classified by kind	13,662	4,103	4,000	719	15,291	4,299	4,266	802
Total	159,011	159,852	163,119	165,244	180,061	180,270	183,592	186,010

* Includes the number of injuries in the off-shore oil and gas industry collected under off-shore safety legislation and reported to the Petroleum Engineering Division of the Department of Energy.
 † Data include the 167 fatalities of the Piper Alpha disaster, July 6, 1988.

struck by a moving object (13.5 per cent).

Injuries sustained while handling, lifting or carrying account for over 33.6 per cent of reported over 3-day injuries with slips, trips and falls (19.4 per cent) and being struck by a moving object (15.5 per cent) being the next two most common causes.

Trends over time in kind of accident can only be looked at for the last three years as in 1986-87 the injuries reported to the Mines and Quarries Inspectorate were recorded in the not classified by kind category.

For fatal injuries there has been a 41 per cent increase in the number of injuries to employees caused by falls from a height. In 1987-88 this kind of accident was the cause of 21.6 per cent of all employee fatalities, in 1989-90 it was the cause of 29.7 per cent. Fatal injuries caused by being struck by a moving vehicle declined from the 70 reported in 1988-89 to 50 in 1989-90. In contrast, fatalities caused by being struck by a moving object were up from 46 in 1988-89 to 62 in 1989-90.

Major injury numbers increased overall by 2.3 per cent over the last year. The three main kinds of accident contributing to this increase were falls from a height, up 4.9

per cent to 4,551 in 1989-90, slips, trips and falls on the same level, up 5.2 per cent to 5,852 and being struck by a moving, including falling object, up 8.3 per cent to 2,752 in 1989-90. After a decline in 1988-89 there was a 14.5 per cent increase in major injuries caused by exposure to or contact with a harmful substance, to 804 in 1989-90.

Against the background of an overall increase of 1.3 per cent in over 3-day injuries in 1989-90 there was a 5.9 per cent increase in slips, trips and falls on the same level and a 4.0 per cent increase in injuries caused by handling accidents. These two kinds of accident are the two most common causes of over 3-day injuries and accounted for 53.0 per cent of all over 3-day injuries in 1989-90.

Tables 9 to 12 show details of the kind of accidents to employees for 1989-90 causing the injuries reported to the Factory and Agricultural Inspectorates and local authorities in the agriculture, manufacturing, construction and service sectors respectively. Figure 3 takes three common kinds of accident causing fatal or major injuries and compares their distribution between the four sectors. Not surprisingly given the differing natures of the sectors there are very significant differences in this distribution.

Table 9 Injuries to employees in the agriculture, forestry and fishing sector* (SIC 80 Division 0) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90

Kind of accident	Fatal	Non-fatal major	Over 3-day	All reported injuries
Contact with moving machinery or material being machined	4	58	86	148
Struck by moving, including flying or falling, object	1	76	291	368
Struck by moving vehicle	2	38	61	101
Struck against something fixed or stationary	—	10	92	102
Injured while handling, lifting or carrying	—	18	300	318
Slip, trip or fall on same level	—	43	235	278
Fall from a height				
Up to and including two metres	1	48	119	168
Over two metres	4	28	39	71
Height not stated	—	5	13	18
All heights	5	81	171	257
Trapped by something collapsing or overturning	3	7	37	47
Drowning or asphyxiation	2	—	—	2
Exposure to or contact with a harmful substance	1	17	39	57
Exposure to fire	—	1	10	11
Exposure to an explosion	—	2	4	6
Contact with electricity or an electrical discharge	5	1	7	13
Injured by an animal	—	41	91	132
Other kind of accident	—	10	71	81
Injuries not classified by kind	—	—	—	—
Total	23	403	1,495	1,921

* Excluding sea fishing.

Table 10 Injuries to employees in manufacturing industries (SIC 80 Divisions 2-4) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90

Kind of accident	Fatal	Non-fatal major	Over 3-day	All reported injuries
Contact with moving machinery or material being machined	12	1,511	6,104	7,627
Struck by moving, including flying or falling, object	28	963	10,461	11,452
Struck by moving vehicle	10	232	1,526	1,768
Struck against something fixed or stationary	—	296	4,564	4,860
Injured while handling, lifting or carrying	1	547	18,122	18,670
Slip, trip or fall on same level	2	1,609	9,730	11,341
Fall from a height				
Up to and including two metres	4	673	2,494	3,171
Over two metres	20	394	550	964
Height not stated	—	148	743	891
All heights	24	1,215	3,787	5,026
Trapped by something collapsing or overturning	8	84	224	316
Drowning or asphyxiation	1	6	9	16
Exposure to or contact with a harmful substance	6	461	2,324	2,791
Exposure to fire	1	48	193	242
Exposure to an explosion	7	21	106	134
Contact with electricity or an electrical discharge	5	90	210	305
Injured by an animal	—	1	42	43
Other kind of accident	—	107	1,697	1,804
Injuries not classified by kind	—	2	13	15
Total	105	7,193	59,112	66,410

Figure 3: Fatal and major injuries to employees, 1989/90, percentage of total injuries for selected kinds of accident by sector

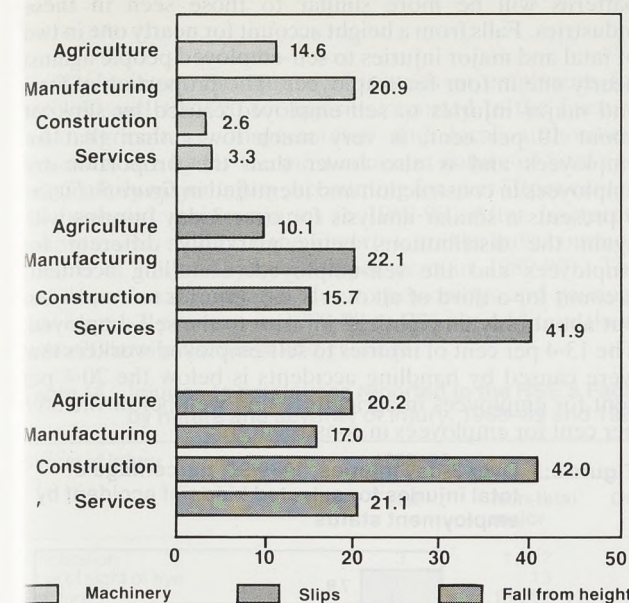


Figure 4: Over 3-day injuries to employees, 1989/90, percentage of total injuries for selected kinds of accident by sector

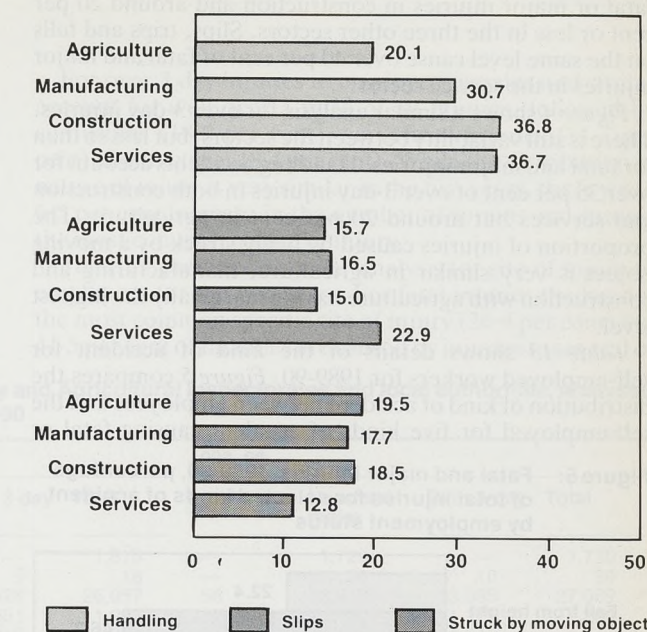


Table 11 Injuries to employees in the construction industry (SIC 80 Division 5) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90

Kind of accident	Fatal	Non-fatal major	Over 3-day	All reported injuries
Contact with moving machinery or material being machined	2	83	252	337
Struck by moving, including flying or falling, object	9	521	3,181	3,711
Struck by moving vehicle	14	143	304	461
Struck against something fixed or stationary	—	93	1,003	1,096
Injured while handling, lifting or carrying	—	195	6,323	6,518
Slip, trip or fall on same level	—	516	2,575	3,091
Fall from a height				
Up to and including two metres	3	466	1,322	1,791
Over two metres	49	742	726	1,517
Height not stated	1	117	350	468
All heights	53	1,325	2,398	3,776
Trapped by something collapsing or overturning	13	66	119	198
Drowning or asphyxiation	3	7	5	15
Exposure to or contact with a harmful substance	—	51	312	363
Exposure to fire	1	12	77	90
Exposure to an explosion	—	8	23	31
Contact with electricity or an electrical discharge	5	107	158	270
Injured by an animal	—	—	40	40
Other kind of accident	—	51	404	455
Injuries not classified by kind	—	2	2	4
Total	100	3,180	17,176	20,456

Table 12 Injuries to employees in the service sector (SIC 80 Divisions 6-9) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by kind of accident and severity of injury, 1989-90

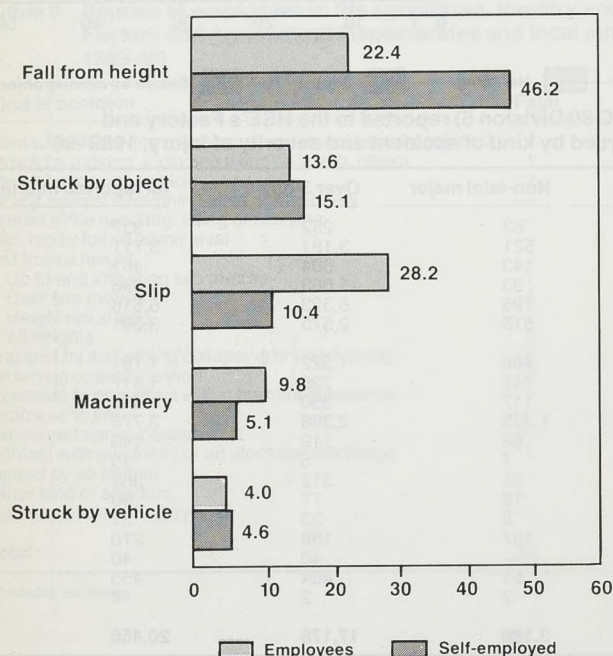
Kind of accident	Fatal	Non-fatal major	Over 3-day	All reported injuries
Contact with moving machinery or material being machined	3	262	1,202	1,467
Struck by moving, including flying or falling, object	20	833	9,150	10,003
Struck by moving vehicle	17	308	2,098	2,423
Struck against something fixed or stationary	—	316	4,326	4,642
Injured while handling, lifting or carrying	1	498	26,320	26,819
Slip, trip or fall on same level	3	3,364	16,409	19,776
Fall from a height				
Up to and including two metres	4	716	2,735	3,455
Over two metres	13	288	470	771
Height not stated	7	667	2,450	3,124
All heights	24	1,671	5,655	7,350
Trapped by something collapsing or overturning	10	46	167	223
Drowning or asphyxiation	7	5	25	37
Exposure to or contact with a harmful substance	1	232	1,701	1,934
Exposure to fire	6	40	239	285
Exposure to an explosion	—	21	97	118
Contact with electricity or an electrical discharge	6	63	212	281
Injured by an animal	—	32	686	718
Other kind of accident	1	237	3,400	3,638
Injuries not classified by kind	—	2	12	14
Total	99	7,930	71,699	79,728

Machinery accidents cause over 20 per cent of injuries in manufacturing but less than 4 per cent in both construction and services. Falls from a height cause over 40 per cent of fatal or major injuries in construction and around 20 per cent or less in the three other sectors. Slips, trips and falls on the same level cause over 40 per cent of fatal and major injuries in the service sector.

Figure 4 shows a similar analysis for over 3-day injuries. There is still variability between the sectors, but less so than for fatal and major injuries. Handling accidents account for over 35 per cent of over 3-day injuries in both construction and services but around 20 per cent in agriculture. The proportion of injuries caused by being struck by a moving object is very similar in agriculture, manufacturing and construction with agriculture having marginally the highest level.

Table 13 shows details of the kind of accident for self-employed workers for 1989-90. Figure 5 compares the distribution of kind of accident between employees and the self-employed for five kinds of accident causing fatal or

Figure 5: Fatal and major injuries, 1989/90, percentage of total injuries for selected kinds of accident by employment status



major injuries. The distribution is markedly different but this reflects the fact that the vast majority of self-employed injuries are in construction or agriculture and their patterns will be more similar to those seen in these industries. Falls from a height account for nearly one in two of fatal and major injuries to self-employed people against nearly one in four for employees. The proportion of fatal and major injuries to self-employed caused by slips, at about 10 per cent, is very much lower than that for employees and is also lower than the proportion for employees in construction and identified in figure 3. Figure 6 presents a similar analysis for over 3 day injuries with again the distributions being markedly different for employees and the self-employed. Handling accidents account for a third of all over 3-day injuries to employees but about only an eighth of injuries to the self-employed. The 13.4 per cent of injuries to self-employed workers that were caused by handling accidents is below the 20.1 per cent for employees in agriculture and well below the 36.8 per cent for employees in construction.

Figure 6: Over 3-day injuries, 1989/90, percentage of total injuries for selected kinds of accident by employment status

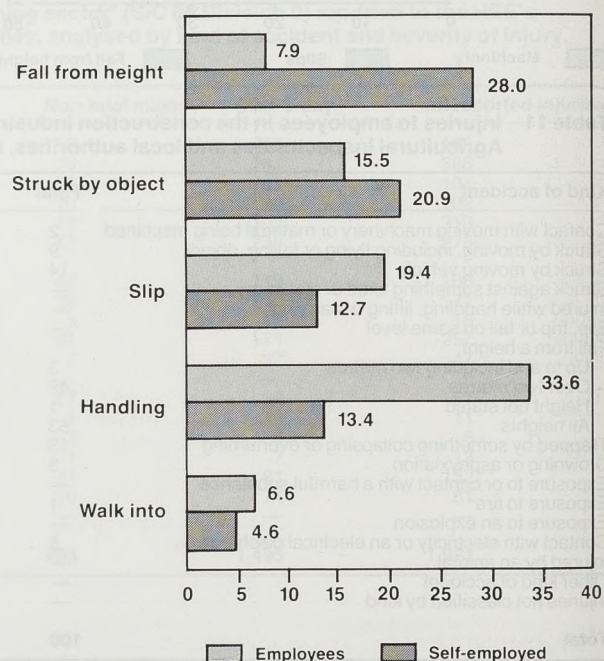


Table 13 Injuries to the self-employed reported to enforcement authorities, analysed by kind of accident and severity of injury, 1989-90

Kind of accident	Fatal	Non-fatal major	Over 3-day	Total
Contact with moving machinery or material being machined	3	69	87	159
Struck by moving, including flying or falling, object	10	203	389	602
Struck by moving vehicle	8	57	57	122
Struck against something fixed or stationary	—	21	86	107
Injured while handling, lifting or carrying	1	52	250	303
Slip, trip or fall on same level	1	146	236	383
Fall from a height				
Up to and including two metres	8	194	229	431
Over two metres	38	367	247	652
Height not stated	3	44	47	94
All heights	49	605	523	1,177
Trapped by something collapsing or overturning	20	49	46	115
Drowning or asphyxiation	3	3	1	7
Exposure to or contact with a harmful substance	1	14	33	48
Exposure to fire	1	16	8	25
Exposure to an explosion	1	2	10	13
Contact with electricity or an electrical discharge	5	33	40	78
Injured by an animal	1	8	15	24
Other kind of accident	—	25	75	100
Injuries not classified by kind	1	7	9	17
Total	105	1,310	1,865	3,280

SECTION 5: NATURE AND SITE OF INJURIES

Table 14 shows the nature of injuries to employees for 1988-89 and 1989-90 for injuries reported to the Factory and Agricultural Inspectorates and local authorities. Fractures are by far the most common nature of fatal and particularly major injury, accounting for over 70 per cent of all fatal and major injuries in 1989-90. After fractures, amputations, mainly of the finger(s), are the most common nature of major injury (9.0 per cent in 1989-90). The number of major injuries due to poisonings and gassings was up 51.3 per cent in 1989-90 to 286. In addition there were 20 fatal poisonings and gassings.

For over 3 day injuries to employees sprains and strains account for well over a third of all injuries, followed by contusions (18.8 per cent), superficial injuries (11.7 per cent) and fractures (8.4 per cent). While the distribution of nature of injury is very similar in the two years, there was a 6.5 per cent increase in the number of sprains and strains, the most common nature of injury.

Table 15 provides a similar analysis for site of injury to employees for the two years. For fatal injuries the head is the most common specific site of injury (26.4 per cent) but 41.5 per cent of fatalities are caused by injuries to several or

Table 14 Injuries to employees reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and severity of injury, 1988-89 and 1989-90

Nature of injury	1988-89				1989-90			
	Fatal	Non-fatal major	Over 3-day	Total	Fatal	Non-fatal major	Over 3-day	Total
Amputation	3	1,812	—	1,815	—	1,725	—	1,725
Loss of sight of eye	—	13	5	18	—	29	10	39
Fracture	47	13,382	12,628	26,057	56	13,918	13,095	27,069
Dislocation	—	42	1,051	1,093	—	30	1,179	1,209
Concussion and internal injuries	22	142	1,210	1,374	21	175	1,248	1,444
Lacerations and open wounds	10	632	13,126	13,768	3	644	12,739	13,386
Contusions	38	373	27,229	27,640	33	413	29,365	29,811
Burns	10	814	4,890	5,714	14	868	5,347	6,229
Poisonings and gassings	24	189	424	637	20	286	504	810
Sprains and strains	1	169	55,942	56,112	—	111	59,600	59,711
Superficial injuries	—	288	17,807	18,095	1	259	18,184	18,444
Natural causes	1	3	8	12	2	4	8	14
Other injuries caused by contact with electricity	12	69	176	257	19	71	231	321
Injuries of more than one of the other natures	64	257	2,129	2,450	54	255	2,444	2,753
Injuries nes	11	77	878	966	25	75	1,066	1,166
Injury not known	67	357	14,010	14,434	89	376	10,952	11,417
Total	310	18,619	151,513	170,442	337	19,239	155,972	175,548

Figure 7: Major injuries to employees, 1989/90, percentage of total injuries for selected natures of injuries by sector

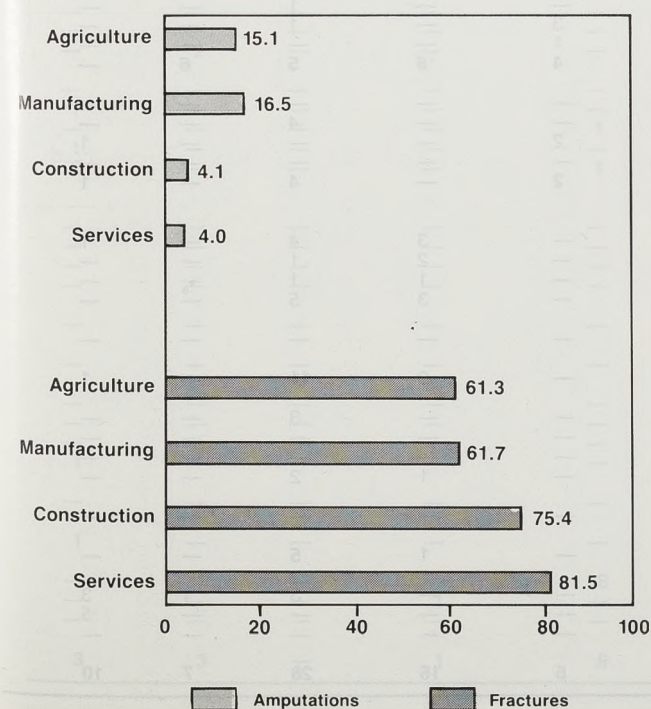


Figure 8: Over 3-day injuries to employees, 1989/90, percentage of total injuries for selected natures of injuries by sector

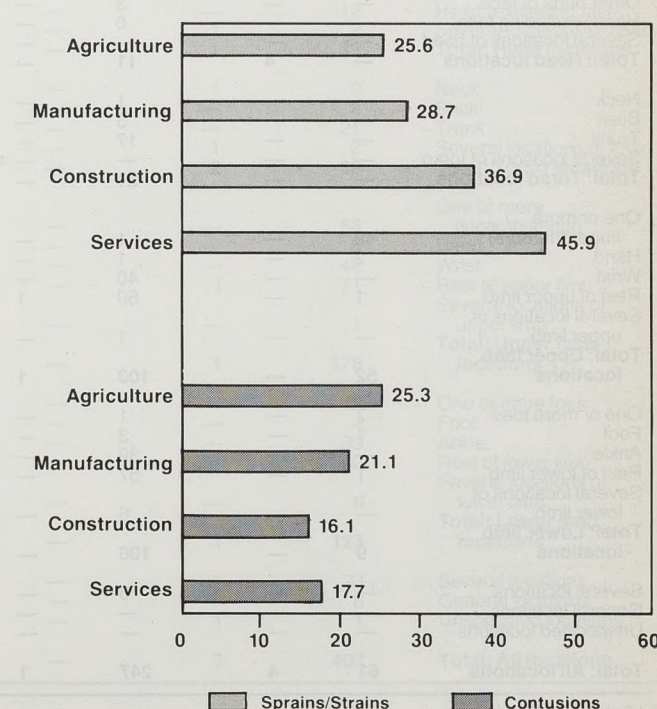


Table 15 Injuries to employees reported to HSE's Factory and Agricultural Inspectorates and local authorities, analysed by site and severity of injury, 1988-89 and 1989-90

Site of injury	1988-89				1989-90			
	Fatal	Non-fatal major	Over 3-day	Total	Fatal	Non-fatal major	Over 3-day	Total
Eye	—	650	3,415	4,065	—	650	3,686	4,336
Ear	—	12	162	174	—	8	140	148
Other parts of face	—	196	1,566	1,762	1	190	1,694	1,885
Head (excluding face)	72	496	3,897	4,465	79	535	4,069	4,683
Several locations of head	9	62	414	485	9	60	404	473
Total: head locations	81	1,416	9,454	10,951	89	1,443	9,993	11,525
Neck	8	61	2,055	2,124	5	68	2,147	2,220
Back	2	448	33,268	33,718	2	453	34,428	34,883
Trunk	28	672	6,571	7,271	33	783	6,949	7,765
Several locations of torso	4	25	449	478	2	20	440	462
Total: Torso locations	42	1,206	42,343	43,591	42	1,324	43,964	45,330
One or more finger/thumb(s)	—	2,153	22,520	24,673	1	2,089	23,006	25,096
Hand	—	355	10,197	10,552	—	366	10,500	10,866
Wrist	—	4,223	3,953	8,176	—	4,360	4,131	8,491
Rest of upper limb	—	3,152	11,451	14,603	1	3,254	12,423	15,678
Several locations of upper limb	—	127	941	1,068	—	155	1,053	1,208
Total: Upper limb locations	—	10,010	49,062	59,072	2	10,224	51,113	61,339
One or more toes	—	102	4,016	4,118	1	103	4,085	4,189
Foot	1	302	9,438	9,741	—	275	10,024	10,299
Ankle	2	2,349	9,607	11,958	3	2,424	10,437	12,864
Rest of lower limb	3	1,951	14,058	16,012	—	1,985	15,123	17,108
Several locations of lower limb	—	114	984	1,098	—	132	1,054	1,186
Total: Lower limb locations	6	4,818	38,103	42,927	4	4,919	40,723	45,646
Several locations	86	843	8,249	9,178	94	956	9,030	10,080
General locations	43	235	590	868	46	278	652	976
Unspecified locations	52	91	3,712	3,855	60	95	497	652
Total: All locations	310	18,619	151,513	170,442	337	19,239	155,972	175,548

Table 16 Non-fatal major injuries to employees in the Agriculture, Forestry and Fishing sector* (SIC 80 Division 0) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	4	—	—	—	6	3	6	—
Ear	—	—	—	—	—	—	—	—	—
Other parts of face	—	—	3	—	—	—	1	—	—
Head (excluding face)	—	—	8	—	3	—	1	—	—
Several locations of head	—	—	—	—	1	—	—	—	—
Total: Head locations	—	4	11	—	4	6	5	6	—
Neck	—	—	1	—	—	—	—	—	—
Back	—	—	3	—	—	—	4	—	—
Trunk	—	—	17	—	2	—	—	—	1
Several locations of torso	—	—	—	—	—	—	—	—	—
Total: Torso locations	—	—	21	—	2	—	4	—	1
One or more finger/thumb(s)	49	—	1	—	—	3	4	—	1
Hand	2	—	1	—	—	2	1	—	—
Wrist	—	—	40	—	—	1	1	—	—
Rest of upper limb	1	—	60	1	—	3	5	—	—
Several locations of upper limb	—	—	1	—	—	—	—	—	—
Total: Upper limb locations	52	—	103	1	—	9	11	—	1
One or more toes	7	—	1	—	—	—	3	—	—
Foot	1	—	3	—	—	—	—	—	—
Ankle	—	—	39	—	—	—	—	—	—
Rest of lower limb	1	—	57	—	—	1	2	—	—
Several locations of lower limb	—	—	6	—	—	—	—	—	—
Total: Lower limb locations	9	—	106	—	—	1	5	—	—
Several locations	—	—	6	—	—	—	3	1	3
General locations	—	—	—	—	—	—	—	—	5
Unspecified locations	—	—	—	—	—	—	—	—	—
Total: All locations	61	4	247	1	6	16	28	7	10

* Excluding sea fishing.

general locations and a further 17.8 per cent have unspecified locations. For major injuries the most common site is the upper limb (53.1 per cent) with 42.6 per cent of these being to the wrist and 31.8 per cent above the wrist, with fractures being the most common cause. The distribution is similar in both years but there is some suggestion that the number of major injuries to the trunk increased in 1989-90.

For over 3-day injuries the most common sites are the torso, primarily the back (22.1 per cent of all over 3-day injuries) and the upper limb, primarily the finger(s) (14.8 per cent of all injuries). Injuries to the back are mainly sprains and strains while finger injuries are a mix of fractures, sprains and strains and lacerations.

Tables 16 to 19 give details of the nature and site of major injuries to employees in the agriculture, manufacturing, construction and the services sector respectively. Figure 7 shows, for major injuries, the different distributions by sector for amputations and fractures. Manufacturing has the highest proportion of reported major injuries that are amputations with, not surprisingly, services having the lowest proportion. For fractures the service sector has the

highest proportion with manufacturing and agriculture the lowest.

Table 20 shows details of the nature and site of major injuries to the self-employed. Just over 70 per cent of these are fractures a similar proportion to that for employees. The 6.9 per cent of major injuries to the self-employed that are amputations is similar to the 9.0 per cent for employees but much lower than the 16 per cent level for self-employed of 1988-89.

Tables 21 to 25 provide a similar analysis for employees to that in tables 16 to 20 but for over 3-day rather than major injuries. Figure 8 shows the different distributions of sprains/strains and contusions in the four employment sectors. Agriculture and manufacturing have lower proportions of sprains/strains than in construction and services. For contusions the proportion is highest in the agriculture sector.

For the self-employed the most common nature of an over 3-day injury is a contusion, accounting for 19.4 per cent of injuries, followed by fractures, 18.2 per cent and then lacerations 16.6 per cent. Only 15.4 per cent of over 3-day injuries to the self-employed result in sprains or strains compared with over a third of those to employees.

Table 16 (Contd)

Nature							Site	
Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total	
—	2	—	—	—	—	—	21	Eye
—	—	—	—	—	—	—	—	Ear
—	—	—	—	—	—	—	4	Other parts of face
—	—	—	—	—	—	—	12	Head (excluding face)
—	—	—	—	—	—	1	2	Several locations of head
—	2	—	—	—	—	—	39	Total: Head locations
—	—	—	—	—	—	1	2	Neck
1	—	—	—	—	—	—	8	Back
—	—	—	—	1	—	—	21	Trunk
1	—	—	—	—	—	1	2	Several locations of torso
2	—	—	—	1	—	2	33	Total: Torso locations
—	—	—	—	—	—	—	58	One or more finger/thumb(s)
—	—	—	—	—	—	—	6	Hand
—	—	—	—	—	—	—	42	Wrist
—	—	—	—	—	—	1	71	Rest of upper limb
—	—	—	—	—	—	—	1	Several locations of upper limb
—	—	—	—	—	—	—	178	Total: Upper limb locations
—	—	—	—	—	—	1	12	One or more toes
—	—	—	—	—	—	—	4	Foot
—	—	—	—	—	—	—	39	Ankle
1	—	—	—	—	—	—	62	Rest of lower limb
—	—	—	—	—	—	—	6	Several locations of lower limb
—	—	—	—	—	—	—	123	Total: Lower limb locations
1	—	—	—	—	—	1	23	Several locations
—	1	—	—	8	—	—	6	General locations
—	—	—	1	—	—	—	1	Unspecified locations
3	3	—	1	9	—	7	403	Total: All locations

Table 17 Non-fatal major injuries to employees in Manufacturing Industries (SIC 80 Divisions 2-4) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature									Total	Site
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation		
Eye	—	8	—	—	1	27	19	142	—	274	Eye
Ear	2	—	—	—	—	1	—	1	—	4	Ear
Other parts of face	—	—	39	—	—	2	—	16	1	61	Other parts of face
Head (excluding face)	—	—	85	—	31	14	11	2	—	169	Head (excluding face)
Several locations of head	—	—	4	—	1	—	1	15	—	25	Several locations of head
Total: Head locations	2	8	128	—	33	44	31	176	1	533	Total: Head locations
Neck	—	—	13	—	1	—	—	2	—	19	Neck
Back	—	—	96	—	1	—	7	—	—	130	Back
Trunk	—	—	176	—	9	7	10	5	13	234	Trunk
Several locations of torso	—	—	1	—	—	1	3	2	1	9	Several locations of torso
Total: Torso locations	—	—	286	—	11	8	20	9	14	392	Total: Torso locations
One or more finger/thumb(s)	1,120	—	70	—	—	123	42	13	—	1,423	One or more finger/thumb(s)
Hand	22	—	46	—	—	58	26	27	—	205	Hand
Wrist	—	—	1,406	2	—	14	5	3	—	1,446	Wrist
Rest of upper limb	8	—	943	6	—	35	15	11	—	1,039	Rest of upper limb
Several locations of upper limb	—	—	34	—	—	7	—	12	—	62	Several locations of upper limb
Total: Upper limb locations	1,150	—	2,499	8	—	237	88	66	—	4,175	Total: Upper limb locations
One or more toes	26	—	23	—	—	1	1	—	—	52	One or more toes
Foot	5	—	84	—	—	8	11	8	—	125	Foot
Ankle	—	—	706	1	—	2	2	—	—	720	Ankle
Rest of lower limb	1	—	574	1	—	13	14	25	—	648	Rest of lower limb
Several locations of lower limb	—	—	34	—	—	—	2	6	—	49	Several locations of lower limb
Total: Lower limb locations	32	—	1,421	2	—	24	30	39	—	1,594	Total: Lower limb locations
Several locations	2	—	105	—	4	5	12	96	1	297	Several locations
General locations	—	—	—	—	—	—	—	1	141	164	General locations
Unspecified locations	—	—	—	—	2	1	—	4	9	38	Unspecified locations
Total: All locations	1,186	8	4,439	10	50	319	181	391	166	7,193	Total: All locations

Table 18 Non-fatal major injuries to employees in the Construction Industry (SIC 80 Division 5) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature									Total	Site
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation		
Eye	—	9	—	—	1	22	10	20	—	96	Eye
Ear	1	—	—	—	—	—	1	—	—	2	Ear
Other parts of face	1	—	20	—	—	2	1	12	—	41	Other parts of face
Head (excluding face)	—	—	73	—	14	17	3	—	1	131	Head (excluding face)
Several locations of head	—	—	1	—	1	—	—	4	—	9	Several locations of head
Total: Head locations	2	9	94	—	16	41	15	36	1	279	Total: Head locations
Neck	—	—	9	—	—	—	—	1	—	13	Neck
Back	—	—	66	1	1	1	10	2	—	97	Back
Trunk	—	—	158	—	10	3	7	1	1	194	Trunk
Several locations of torso	—	—	2	—	1	—	1	—	—	4	Several locations of torso
Total: Torso locations	—	—	235	1	12	4	18	4	1	308	Total: Torso locations
One or more finger/thumb(s)	121	—	8	—	—	26	12	3	—	175	One or more finger/thumb(s)
Hand	—	—	13	—	—	13	4	20	—	54	Hand
Wrist	—	—	596	—	—	4	1	1	—	604	Wrist
Rest of upper limb	1	—	413	3	—	8	1	11	—	445	Rest of upper limb
Several locations of upper limb	—	—	25	—	—	—	1	6	—	33	Several locations of upper limb
Total: Upper limb locations	122	—	1,055	3	—	51	19	41	—	1,311	Total: Upper limb locations
One or more toes	2	—	1	—	—	1	—	—	—	5	One or more toes
Foot	1	—	44	—	—	2	1	1	—	52	Foot
Ankle	—	—	471	1	—	1	4	—	—	483	Ankle
Rest of lower limb	4	—	335	2	—	10	8	5	—	377	Rest of lower limb
Several locations of lower limb	—	—	27	—	—	1	—	3	—	32	Several locations of lower limb
Total: Lower limb locations	7	—	878	3	—	15	13	9	—	949	Total: Lower limb locations
Several locations	—	—	136	1	4	4	7	60	3	278	Several locations
General locations	—	—	—	—	—	—	—	2	13	16	General locations
Unspecified locations	—	—	1	—	4	—	4	6	3	39	Unspecified locations
Total: All locations	131	9	2,399	8	36	115	76	158	21	3,180	Total: All locations

Table 17 (Contd)

Nature	Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total	Site	
										—
—	—	—	—	—	—	—	—	4	Ear	
—	1	—	—	—	2	—	—	61	Other parts of face	
—	3	—	—	2	4	5	11	169	Head (excluding face)	
—	1	—	—	—	2	—	1	25	Several locations of head	
—	62	—	—	3	9	8	27	533	Total: Head locations	
—	—	—	—	1	—	—	1	19	Neck	
11	—	—	—	2	—	—	13	130	Back	
4	2	—	—	1	—	3	4	234	Trunk	
—	—	—	—	—	—	—	1	9	Several locations of torso	
16	2	—	—	4	—	3	19	392	Total: Torso locations	
2	26	—	—	—	9	2	16	1,423	One or more finger/thumb(s)	
—	9	—	—	2	1	2	12	205	Hand	
2	4	—	—	—	—	1	9	1,446	Wrist	
1	7	—	—	4	3	1	5	1,039	Rest of upper limb	
—	—	—	—	—	—	—	—	—	—	Several locations of upper limb
1	—	—	—	—	4	1	3	62	Several locations of upper limb	
6	46	—	—	6	17	7	45	4,175	Total: Upper limb locations	
—	—	—	—	—	—	—	1	52	One or more toes	
—	2	—	—	—	—	2	5	125	Foot	
3	—	—	—	—	3	—	3	720	Ankle	
4	5	—	—	—	—	4	7	648	Rest of lower limb	
—	—	—	—	—	4	—	3	49	Several locations of lower limb	
7	7	—	—	—	7	6	19	1,594	Total: Lower limb locations	
3	1	—	—	3	50	1	14	297	Several locations	
—	—	—	—	16	1	4	1	164	General locations	
—	—	—	—	—	—	5	17	38	Unspecified locations	
33	118	—	—	32	84	34	142	7,193	Total: All locations	

Table 18 (Contd)

Nature	Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total	Site	
										—
—	—	—	—	—	—	—	—	2	Ear	
—	2	—	—	—	—	—	3	41	Other parts of face	
—	4	—	—	4	—	—	15	131	Head (excluding face)	
—	1	—	—	—	2	—	—	9	Several locations of head	
—	31	—	—	4	2	1	27	279	Total: Head locations	
1	—	—	—	—	—	—	2	13	Neck	
7	—	—	—	—	—	—	9	97	Back	
2	—	—	—	1	3	1	7	194	Trunk	
10	—	—	—	1	3	1	18	308	Several locations of torso	
—	—	—	—	—	—	—	—	—	—	Total: Torso locations
1	2	—	—	—	—	1	1	175	One or more finger/thumb(s)	
1	—	—	—	—	2	—	1	54	Hand	
1	—	—	—	—	—	—	1	604	Wrist	
—	—	—	—	1	1	—	6	445	Rest of upper limb	
—	—	—	—	—	—	—	—	—	—	Several locations of upper limb
—	—	—	—	—	—	—	1	33	Several locations of upper limb	
3	2	—	—	1	3	1	10	1,311	Total: Upper limb locations	
—	1	—	—	—	—	—	—	5	One or more toes	
—	1	—	—	—	1	—	1	52	Foot	
2	—	—	—	—	1	—	3	483	Ankle	
1	3	—	—	—	—	2	7	377	Rest of lower limb	
—	1	—	—	—	—	—	—	—	—	Several locations of lower limb
3	6	—	—	—	2	2	11	949	Total: Lower limb locations	
1	—	1	—	3	34	2	22	278	Several locations	
—	—	—	—	—	—	—	1	16	General locations	
—	—	—	—	—	1	1	19	39	Unspecified locations	
17	39	1	—	9	45	8	108	3,180	Total: All locations	

Table 19 Non-fatal major injuries to employees in the Services Sector (SIC 80 Divisions 6-9) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	8	—	—	1	31	11	117	—
Ear	—	—	—	—	—	1	—	—	—
Other parts of face	—	—	47	—	—	1	2	13	1
Head (excluding face)	—	—	88	—	53	21	21	1	—
Several locations of head	—	—	2	—	1	1	2	10	—
Total: Head locations	—	8	137	—	55	55	36	141	1
Neck	—	—	19	—	1	1	1	1	—
Back	—	—	166	2	2	—	6	1	—
Trunk	—	—	221	—	19	7	11	1	27
Several locations of torso	—	—	3	—	—	—	—	1	—
Total: Torso locations	—	—	409	2	22	8	18	4	27
One or more finger/thumb(s)	286	—	23	—	—	54	10	3	—
Hand	3	—	36	—	—	26	3	12	—
Wrist	—	—	2,142	—	—	10	5	3	—
Rest of upper limb	3	—	1,568	5	—	8	3	8	—
Several locations of upper limb	—	—	42	—	—	2	2	3	—
Total: Upper limb locations	292	—	3,811	5	—	100	23	29	—
One or more toes	19	—	9	—	—	—	3	—	—
Foot	6	—	59	—	—	4	2	3	—
Ankle	—	—	1,078	—	—	2	2	—	—
Rest of lower limb	4	—	796	3	—	10	6	9	—
Several locations of lower limb	—	—	26	—	—	—	2	3	—
Total: Lower limb locations	29	—	1,968	3	—	16	15	15	—
Several locations	—	—	139	—	1	1	18	60	5
General locations	—	—	—	—	1	—	—	5	45
Unspecified locations	—	—	1	—	2	—	—	—	—
Total: All locations	321	8	6,465	10	81	180	110	254	78

Table 20 Non-fatal major injuries to the self-employed reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	3	—	—	—	12	6	1	—
Ear	—	—	—	—	—	—	—	—	—
Other parts of face	—	—	7	—	—	3	1	2	—
Head (excluding face)	—	—	54	—	10	7	1	1	—
Several locations of head	—	—	1	—	—	1	1	—	—
Total: Head locations	—	3	62	—	10	23	9	4	—
Neck	—	—	5	—	—	—	1	—	—
Back	—	—	31	—	1	—	8	—	—
Trunk	—	—	51	—	9	3	2	—	1
Several locations of torso	—	—	2	—	—	—	—	1	—
Total: Torso locations	—	—	89	—	10	3	11	1	1
One or more finger/thumb(s)	76	—	2	—	—	14	3	1	—
Hand	2	—	4	1	—	4	3	4	—
Wrist	—	—	165	—	—	3	2	1	—
Rest of upper limb	—	—	171	1	—	4	—	2	—
Several locations of upper limb	—	—	13	—	—	—	1	2	—
Total: Upper limb locations	78	—	355	2	—	25	9	10	—
One or more toes	5	—	2	—	—	—	1	—	—
Foot	1	—	18	—	—	2	2	1	—
Ankle	—	—	157	—	—	—	2	—	—
Rest of lower limb	5	—	159	—	—	8	1	4	—
Several locations of lower limb	—	—	10	—	—	—	—	1	—
Total: Lower limb locations	11	—	346	—	—	10	6	6	—
Several locations	—	—	69	—	—	3	4	33	—
General locations	—	—	—	—	—	—	—	—	6
Unspecified locations	—	—	1	—	1	—	3	—	—
Total: All locations	89	3	922	2	21	64	42	54	7

Table 19 (Contd)

Nature							Site	
Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total	
—	42	—	—	2	5	13	230	Eye
—	—	—	—	—	1	—	2	Ear
—	3	—	—	3	—	1	71	Other parts of face
—	7	—	2	2	3	17	215	Head (excluding face)
—	2	—	—	—	—	—	18	Several locations of head
—	54	—	2	7	9	31	536	Total: Head locations
5	1	—	—	—	—	4	33	Neck
20	—	—	—	—	—	11	208	Back
6	—	2	—	1	6	9	310	Trunk
—	—	—	—	—	—	—	4	Several locations of torso
31	1	2	—	1	6	24	555	Total: Torso locations
—	11	—	1	6	3	3	400	One or more finger/thumb(s)
—	1	—	1	1	1	2	86	Hand
2	—	—	—	2	—	4	2,168	Wrist
2	3	—	1	6	2	4	1,613	Rest of upper limb
—	2	—	—	2	—	1	54	Several locations of upper limb
4	17	—	3	17	6	14	4,321	Total: Upper limb locations
—	—	—	—	—	—	1	32	One or more toes
9	1	—	—	1	—	4	80	Foot
8	2	—	—	5	1	3	1,102	Ankle
—	8	—	—	4	1	9	858	Rest of lower limb
—	—	—	—	7	1	1	40	Several locations of lower limb
17	11	—	—	17	3	18	2,112	Total: Lower limb locations
1	4	—	3	65	3	14	314	Several locations
—	—	1	19	—	4	2	77	General locations
—	—	—	—	—	—	12	15	Unspecified locations
53	87	3	27	107	31	115	7,930	Total: All locations

Table 20 (Contd)

Nature							Site	
Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total	
—	5	—	—	—	—	2	29	Eye
—	1	—	—	—	—	—	14	Ear
—	1	—	—	—	—	—	87	Other parts of face
—	7	—	1	1	1	10	3	Head (excluding face)
—	—	—	—	—	—	—	133	Several locations of head
—	7	—	1	1	1	12	133	Total: Head locations
3	—	—	—	—	—	4	6	Neck
—	1	—	—	—	—	2	47	Back
—	—	—	—	2	2	2	73	Trunk
—	—	—	—	—	—	—	3	Several locations of torso
3	1	—	—	2	2	6	129	Total: Torso locations
—	1	—	—	—	—	2	99	One or more finger/thumb(s)
—	1	—	—	—	1	1	21	Hand
2	1	—	—	1	—	1	171	Wrist
—	—	—	—	—	—	—	183	Rest of upper limb
—	—	—	—	1	—	1	18	Several locations of upper limb
2	3	—	—	2	1	5	492	Total: Upper limb locations
—	1	—	—	—	—	—	9	One or more toes
—	—	—	—	—	1	—	25	Foot
—	—	—	—	—	—	—	159	Ankle
—	—	—	—	1	—	2	180	Rest of lower limb
—	—	—	—	2	—	—	13	Several locations of lower limb
—	1	—	—	3	1	2	386	Total: Lower limb locations
—	—	—	1	24	1	5	140	Several locations
—	—	—	—	—	—	—	6	General locations
—	—	—	1	—	1	2	9	Unspecified locations
5	12	—	3	32	7	32	1,295	Total: All locations

Table 21 Over 3-day injuries to employees in the Agriculture, Forestry and Fishing sector* (SIC 80 Division 0) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	1	—	—	—	9	8	7	—
Ear	—	—	—	—	—	—	—	—	—
Other parts of face	—	—	4	—	—	5	5	5	—
Head (excluding face)	—	—	—	—	17	18	14	1	—
Several locations of head	—	—	—	1	—	1	—	2	—
Total: Head locations	—	1	4	1	17	33	27	15	—
Neck	—	—	1	—	—	—	4	—	—
Back	—	—	5	2	3	—	30	—	—
Trunk	—	—	20	—	6	3	24	1	1
Several locations of torso	—	—	—	—	—	—	2	1	1
Total: Torso locations	—	—	26	2	9	3	60	2	2
One or more finger/thumb(s)	—	—	42	2	—	93	40	—	—
Hand	—	—	19	—	—	34	28	4	1
Wrist	—	—	—	—	—	4	8	—	1
Rest of upper limb	—	—	—	15	—	12	35	1	—
Several locations of upper limb	—	—	3	—	—	—	7	2	—
Total: Upper limb locations	—	—	64	17	—	143	118	7	2
One or more toes	—	—	33	1	—	3	8	—	—
Foot	—	—	44	—	—	14	38	3	—
Ankle	—	—	—	1	—	1	12	—	—
Rest of lower limb	—	—	—	3	—	32	66	1	—
Several locations of lower limb	—	—	1	—	—	—	11	1	—
Total: Lower limb locations	—	—	78	5	—	50	135	5	—
Several locations	—	—	2	1	—	—	37	9	—
General locations	—	—	—	—	—	—	—	—	10
Unspecified locations	—	—	—	—	—	—	1	—	1
Total: All locations	—	1	174	26	26	229	378	38	15

* Excluding sea fishing.

Table 22 Over 3-day injuries to employees in Manufacturing Industries (SIC 80 Division 2-4) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	6	—	—	1	116	176	274	1
Ear	—	—	—	—	—	11	7	7	—
Other parts of face	—	—	85	—	1	130	95	116	2
Head (excluding face)	—	—	—	—	135	392	415	15	2
Several locations of head	—	—	—	—	3	13	25	55	1
Total: Head locations	—	6	85	—	140	662	718	467	6
Neck	—	—	8	1	8	7	34	25	—
Back	—	—	34	13	67	11	803	23	2
Trunk	—	—	333	—	78	36	754	57	27
Several locations of torso	—	—	1	—	1	—	40	6	1
Total: Torso locations	—	—	376	14	154	54	1,631	111	30
One or more finger/thumb(s)	—	—	2,613	117	—	3,421	2,163	204	1
Hand	—	—	651	10	—	1,108	1,079	399	1
Wrist	—	—	1	8	—	226	300	53	—
Rest of upper limb	—	—	4	123	—	415	1,156	272	—
Several locations of upper limb	—	—	12	1	—	44	118	74	—
Total: Upper limb locations	—	—	3,281	259	—	5,214	4,816	1,002	2
One or more toes	—	—	1,002	10	—	46	477	8	—
Foot	—	—	1,124	5	—	139	1,552	325	2
Ankle	—	—	—	8	—	65	551	70	—
Rest of lower limb	—	—	2	66	—	377	1,616	177	—
Several locations of lower limb	—	—	13	1	—	11	187	57	—
Total: Lower limb locations	—	—	2,141	90	—	638	4,383	637	2
Several locations	—	—	21	2	11	52	902	386	16
General locations	—	—	—	—	10	—	—	4	145
Unspecified locations	—	—	3	—	3	—	22	6	4
Total: All locations	—	6	5,907	365	318	6,620	12,472	2,613	205

Table 21 (Contd)

Nature	Site						Total	Site
	Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known		
—	—	24	—	—	—	—	52	Eye
—	—	1	—	—	—	—	2	Ear
—	—	9	—	—	—	—	29	Other parts of face
—	—	6	—	—	—	—	59	Head (excluding face)
1	—	1	—	—	—	—	6	Several locations of head
1	41	—	—	1	1	6	148	Total: Head locations
8	—	—	—	—	—	—	13	Neck
174	2	—	—	—	—	—	225	Back
14	—	1	—	2	—	—	72	Trunk
196	2	1	—	2	—	9	314	Total: Torso locations
—	—	—	—	—	—	—	—	One or more
8	38	—	—	2	1	3	229	finger/thumb(s)
2	18	—	—	—	—	1	107	Hand
14	2	—	—	—	—	—	29	Wrist
37	6	—	1	—	1	1	109	Rest of upper limb
—	—	—	—	—	—	—	—	Several locations of upper limb
63	66	—	1	2	2	5	490	Total: Upper limb locations
—	2	—	—	—	—	—	47	One or more toes
9	9	—	1	—	—	2	120	Foot
52	—	—	—	—	—	—	66	Ankle
52	18	—	—	1	1	6	180	Rest of lower limb
—	—	—	—	—	—	—	—	Several locations of lower limb
1	1	—	—	1	1	2	19	Several locations of lower limb
114	30	—	1	2	2	10	432	Total: Lower limb locations
8	7	—	—	19	—	6	89	Several locations
—	—	—	2	—	3	2	17	General locations
—	—	—	1	—	—	2	5	Unspecified locations
382	146	1	5	26	8	40	1,495	Total: All locations

Table 22 (Contd)

Nature	Site						Total	Site
	Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known		
1	853	—	—	—	3	34	1,577	Eye
—	17	—	—	—	1	7	6	Ear
4	115	—	1	3	8	26	586	Other parts of face
10	381	—	6	14	25	160	1,555	Head (excluding face)
5	42	—	—	11	5	12	172	Several locations of head
20	1,408	—	7	32	79	316	3,946	Total: Head locations
370	17	—	1	1	16	49	537	Neck
8,090	59	—	—	11	44	630	9,787	Back
808	63	1	2	5	19	195	2,378	Trunk
64	2	—	—	3	2	17	137	Several locations of torso
9,332	141	1	3	20	81	891	12,839	Total: Torso locations
—	—	—	—	—	—	—	—	One or more
318	3,394	—	2	114	48	545	12,940	finger/thumb(s)
220	1,142	—	7	30	27	245	4,919	Hand
826	180	—	—	9	16	189	1,808	Wrist
1,632	426	—	13	20	37	435	4,533	Rest of upper limb
—	—	—	—	—	—	—	—	Several locations of upper limb
75	65	—	2	34	3	51	479	Several locations of upper limb
3,071	5,207	—	24	207	131	1,465	24,679	Total: Upper limb locations
16	97	—	—	12	5	87	1,760	One or more toes
360	298	—	1	28	12	267	4,113	Foot
2,246	114	—	—	11	10	165	3,240	Ankle
1,483	554	—	—	47	37	499	4,858	Rest of lower limb
—	—	—	—	—	—	—	—	Several locations of lower limb
51	30	—	—	35	2	29	416	Several locations of lower limb
4,156	1,093	—	1	133	66	1,047	14,387	Total: Lower limb locations
376	273	—	4	502	27	300	2,872	Several locations
—	—	1	24	1	45	17	247	General locations
23	5	—	4	6	9	57	142	Unspecified locations
16,978	8,127	2	67	901	438	4,093	59,112	Total: All locations

Table 23 Over 3-day injuries to employees in the Construction Industry (SIC 80 Division 5) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	—	—	—	—	28	61	35	1
Ear	—	—	—	—	—	3	—	—	—
Other parts of face	—	—	40	—	1	41	17	38	2
Head (excluding face)	—	—	—	—	51	176	67	4	1
Several locations of head	—	—	—	—	—	1	6	6	1
Total: Head locations	—	—	40	—	52	249	151	83	5
Neck	—	—	2	—	1	4	11	3	—
Back	—	—	26	16	40	7	230	5	—
Trunk	—	—	178	—	24	6	258	9	6
Several locations of torso	—	—	—	—	—	1	17	2	—
Total: Torso locations	—	—	206	16	65	18	516	19	6
One or more finger/thumb(s)	—	—	585	19	—	474	319	19	—
Hand	—	—	245	1	—	244	180	98	—
Wrist	—	—	—	3	—	47	56	13	—
Rest of upper limb	—	—	—	52	—	88	255	68	—
Several locations of upper limb	—	—	10	—	—	7	14	21	—
Total: Upper limb locations	—	—	840	75	—	860	824	219	—
One or more toes	—	—	259	1	—	14	67	1	—
Foot	—	—	437	1	—	46	324	26	—
Ankle	—	—	1	5	—	10	126	10	—
Rest of lower limb	—	—	—	19	—	172	479	33	—
Several locations of lower limb	—	—	5	—	—	6	39	10	—
Total: Lower limb locations	—	—	702	26	—	248	1,035	80	—
Several locations	—	—	26	—	2	23	215	87	2
General locations	—	—	—	—	2	—	—	1	14
Unspecified locations	—	—	3	—	2	1	25	3	—
Total: All locations	—	—	1,817	117	123	1,399	2,766	492	27

Table 24 Over 3-day injuries to employees in the Services Sector (SIC 80 Division 6-9) reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	3	—	—	3	95	223	119	5
Ear	—	—	—	—	2	9	10	11	—
Other parts of face	—	—	182	2	1	123	141	70	3
Head (excluding face)	—	—	—	—	285	380	578	12	3
Several locations of head	—	—	—	—	2	16	35	32	1
Total: Head locations	—	3	182	2	293	623	987	244	12
Neck	—	—	9	4	17	6	67	5	—
Back	—	—	53	25	298	13	1,188	10	4
Trunk	—	—	445	—	109	18	857	43	40
Several locations of torso	—	—	—	1	—	—	44	5	2
Total: Torso locations	—	—	507	30	424	37	2,156	63	46
One or more finger/thumb(s)	—	—	1,326	149	—	1,581	953	157	1
Hand	—	—	559	11	—	673	719	451	—
Wrist	—	—	27	16	—	112	267	43	—
Rest of upper limb	—	—	50	256	1	221	1,201	283	1
Several locations of upper limb	—	—	15	1	—	23	99	61	—
Total: Upper limb locations	—	—	1,977	433	1	2,610	3,329	995	2
One or more toes	—	—	931	13	—	36	511	3	—
Foot	—	—	1,079	13	—	180	1,370	141	—
Ankle	—	—	43	12	—	64	585	23	—
Rest of lower limb	—	—	21	122	1	491	2,025	121	1
Several locations of lower limb	—	—	12	1	—	5	160	35	—
Total: Lower limb locations	—	—	2,086	161	1	776	4,651	323	1
Several locations	—	—	30	3	8	68	1,606	288	23
General locations	—	—	—	—	4	—	—	2	141
Unspecified locations	—	—	3	—	6	1	36	5	10
Total: All locations	—	3	4,785	629	737	4,115	12,675	1,920	235

Table 23 (Contd)

Nature	Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total	Site
—	—	328	—	—	—	10	64	527	Eye
—	—	4	—	—	—	2	1	10	Ear
—	—	54	—	—	5	1	23	222	Other parts of face
1	—	132	—	2	3	1	61	499	Head (excluding face)
4	—	11	—	—	1	1	1	32	Several locations of head
5	—	529	—	2	9	15	150	1,290	Total: Head locations
169	—	5	—	—	—	4	24	223	Neck
3,037	—	24	—	—	2	12	290	3,689	Back
304	—	24	—	—	5	6	87	907	Trunk
13	—	—	—	—	2	—	3	38	Several locations of torso
3,523	—	53	—	—	9	22	404	4,857	Total: Torso locations
55	—	599	—	—	16	7	128	2,221	One or more finger/thumb(s)
55	—	312	—	—	6	9	84	1,234	Hand
221	—	49	—	1	1	1	55	447	Wrist
655	—	116	—	1	7	7	164	1,413	Rest of upper limb
18	—	14	—	1	6	—	5	96	Several locations of upper limb
1,004	—	1,090	—	3	36	24	436	5,411	Total: Upper limb locations
3	—	13	—	—	1	—	24	383	One or more toes
102	—	154	—	—	2	2	97	1,191	Foot
870	—	25	—	—	3	—	62	1,112	Ankle
669	—	207	—	—	9	18	217	1,823	Rest of lower limb
23	—	11	—	—	10	2	9	115	Several locations of lower limb
1,667	—	410	—	—	25	22	409	4,624	Total: Lower limb locations
137	—	64	—	3	147	23	107	836	Several locations
9	—	5	—	16	—	14	10	57	General locations
	—	—	—	2	—	10	39	101	Unspecified locations
6,345	—	2,151	—	26	228	130	1,555	17,176	Total: All locations

Table 24 (Contd)

Nature	Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total	Site
4	—	766	—	1	5	28	112	1,364	Eye
—	—	18	—	—	—	10	8	68	Ear
1	—	199	—	—	11	11	44	788	Other parts of face
11	—	346	—	4	11	31	176	1,837	Head (excluding face)
14	—	30	—	—	26	2	20	178	Several locations of head
30	—	1,359	—	5	53	82	360	4,235	Total: Head locations
1,018	—	22	—	—	—	16	101	1,265	Neck
16,318	—	72	—	2	19	42	883	18,927	Back
1,400	—	67	1	—	11	26	230	3,247	Trunk
139	—	5	—	—	8	3	33	240	Several locations of torso
18,875	—	166	1	2	38	87	1,247	23,679	Total: Torso locations
298	—	2,053	—	3	62	21	289	6,893	One or more finger/thumb(s)
271	—	897	—	25	30	22	200	3,858	Hand
961	—	98	—	—	4	11	150	1,689	Wrist
2,911	—	381	—	21	24	39	503	5,892	Rest of upper limb
107	—	49	—	2	28	4	47	436	Several locations of upper limb
4,548	—	3,478	—	51	148	97	1,189	18,768	Total: Upper limb locations
29	—	178	—	—	5	1	77	1,784	One or more toes
710	—	454	—	—	29	11	293	4,280	Foot
4,424	—	133	—	—	28	6	232	5,550	Ankle
3,094	—	857	—	—	57	44	723	7,557	Rest of lower limb
120	—	34	—	—	53	3	50	473	Several locations of lower limb
8,377	—	1,656	—	—	172	65	1,375	19,644	Total: Lower limb locations
1,004	—	438	1	9	779	33	556	4,846	Several locations
53	—	12	3	49	5	58	34	296	General locations
	—	—	—	7	5	19	74	231	Unspecified locations
32,887	—	7,109	5	123	1,200	441	4,835	71,699	Total: All locations

Table 25 Over 3-day injuries to the self-employed reported to the HSE's Factory and Agricultural Inspectorates and local authorities, analysed by nature and site of injury, 1989-90

Site	Nature								
	Amputations	Loss of sight of eye	Fractures	Dislocations	Concussion and internal injuries	Laceration and open wounds	Contusions	Burns	Poisoning, gassing and asphyxiation
Eye	—	—	—	—	—	7	10	6	—
Ear	—	—	—	—	—	2	—	1	—
Other parts of face	—	—	9	—	—	12	6	1	—
Head (excluding face)	—	—	—	—	35	37	17	5	—
Several locations of head	—	—	—	—	—	5	2	1	—
Total: Head locations	—	—	9	—	35	63	35	14	—
Neck	—	—	2	—	—	3	3	1	—
Back	—	—	8	—	8	1	59	—	—
Trunk	—	—	51	—	4	2	29	1	—
Several locations of torso	—	—	—	—	—	—	4	3	—
Total: Torso locations	—	—	61	—	12	6	95	5	—
One or more finger/thumb(s)	—	—	68	2	—	82	23	2	—
Hand	—	—	23	—	—	43	16	12	—
Wrist	—	—	—	2	—	10	4	2	—
Rest of upper limb	—	—	—	15	—	28	20	10	—
Several locations of upper limb	—	—	1	—	—	—	1	4	—
Total: Upper limb locations	—	—	92	19	—	163	64	30	—
One or more toes	—	—	53	—	—	3	8	—	—
Foot	—	—	110	2	—	14	18	5	—
Ankle	—	—	—	1	—	1	17	1	—
Rest of lower limb	—	—	—	6	—	47	44	1	—
Several locations of lower limb	—	—	2	—	—	—	5	2	—
Total: Lower limb locations	—	—	165	9	—	65	92	9	—
Several locations	—	—	7	—	1	7	63	20	—
General locations	—	—	—	—	3	—	—	—	4
Unspecified locations	—	—	—	—	1	—	7	—	—
Total: All locations	—	—	334	28	52	304	356	78	4

Table 25 (Contd)

Site	Nature							
	Sprains and strains	Superficial injuries	Natural causes	Other injuries caused by contact with electricity	More than one of the other natures listed	Other known	Other unknown	Total
Eye	—	32	—	—	—	—	3	58
Ear	—	—	—	—	—	—	—	3
Other parts of face	—	10	—	—	1	1	—	40
Head (excluding face)	—	17	—	—	1	—	8	120
Several locations of head	—	—	—	—	1	—	3	12
Total: Head locations	—	59	—	—	3	1	14	233
Neck	6	1	—	—	—	—	3	19
Back	89	1	—	—	1	—	26	194
Trunk	7	2	1	—	4	1	7	109
Several locations of torso	—	—	—	—	—	—	1	8
Total: Torso locations	102	4	1	—	5	2	37	330
One or more finger/thumb(s)	—	29	—	—	3	—	12	221
Hand	—	23	—	—	—	—	5	122
Wrist	7	5	—	—	—	—	2	32
Rest of upper limb	20	9	—	—	1	2	10	115
Several locations of upper limb	—	—	—	—	4	—	2	12
Total: Upper limb locations	27	66	—	—	8	2	31	502
One or more toes	1	2	—	—	—	—	1	68
Foot	14	8	—	—	2	—	8	181
Ankle	85	2	—	—	2	—	4	113
Rest of lower limb	47	29	—	1	1	2	16	194
Several locations of lower limb	3	2	—	—	3	—	—	17
Total: Lower limb locations	150	43	—	1	8	2	29	573
Several locations	3	10	—	—	29	2	21	163
General locations	—	—	—	—	—	4	2	16
Unspecified locations	—	—	—	—	—	—	8	17
Total: All locations	282	182	1	5	53	13	142	1,834

SECTION 6: INJURIES BY AGE AND SEX

Table 26 shows the age and sex distribution of injuries reported to the Factory and Agricultural Inspectorates and local authorities for employees, self-employed and the non-employed. For employees, 98 per cent of fatal injuries, 77 per cent of major injuries and almost 79 per cent of 3-day injuries were to men in 1989-90. Figure 9 shows the distribution of major injuries by age for employees for men and women. The diagram needs to be interpreted with some caution as the age bands are not all of equal size but there is a noticeable difference between the patterns for men and women with injuries to women peaking later than for men. Although not illustrated a similar pattern can be seen for over 3-day injuries. These differences will be accounted for to some extent by the differing numbers in employment in each of the age groups. The analysis of the incidence rates rather than the numbers is the subject of a separate study which is currently underway.

For the self-employed, all fatal injuries and over 97 per

cent of major and over 3-day injuries were to men. The pattern of injuries by age for self-employed men is similar to that for male employees although the number aged 16-19 is proportionately lower for self-employed, presumably reflecting the lower numbers in self-employment in this age group.

For the non-employed there was a more even distribution of injuries between the two sexes. The bulk of the injuries occur to children with many of the major injuries as a result of pupils taking part in organised sports activities. The elderly, particularly women, also have high numbers and these reflect injuries to people in residential and nursing homes.

Table 27 shows that there are great differences between the injury rates for employed men and women. The all industry fatal injury rate for men in 1989-90 was 3.0 and 0.1 for women. Major and over 3-day injury rates for women are almost invariably less than half the rates for men, who are more likely to be found in the higher risk occupations.

Table 26 Injuries reported to the HSE's Factory and Agricultural Inspectorates and local authorities by age and sex of injured person and severity of injury, 1989-90

Age	Male			Female			All*		
	Fatal	Non-fatal major	Over 3-day	Fatal	Non-fatal major	Over 3-day	Fatal	Non-fatal major	Over 3-day
Injuries to employees*									
Under 16	1	19	24	—	6	9	1	25	33
16-19	19	1,324	7,126	—	349	2,188	19	1,673	9,314
20-24	26	1,880	15,077	—	379	4,060	26	2,259	19,137
25-34	60	3,323	32,152	1	567	5,993	61	3,890	38,145
35-44	66	2,715	26,609	2	711	7,182	68	3,426	33,793
45-54	64	2,436	21,205	4	1,032	7,352	68	3,468	28,561
55-59	45	1,002	7,878	—	625	2,835	45	1,628	10,714
60-64	25	644	4,757	—	257	793	25	901	5,551
65+	10	70	188	—	46	60	10	116	248
Unknown	14	1,402	7,797	—	449	2,667	14	1,853	10,476
Total	330	14,815	122,813	7	4,421	33,139	337	19,239	155,972
Injuries to self-employed									
Under 16	—	—	—	—	—	—	—	—	—
16-19	4	55	83	—	3	1	4	58	84
20-24	7	159	236	—	1	6	7	160	242
25-34	22	300	466	—	6	14	22	306	480
35-44	27	250	266	—	5	8	27	255	274
45-54	12	162	199	—	2	7	12	164	206
55-59	10	44	56	—	3	—	10	47	56
60-64	8	21	31	—	1	—	8	22	31
65+	7	14	8	—	—	—	7	14	8
Unknown	7	267	442	—	2	11	7	269	453
Total	104	1,272	1,787	—	23	47	104	1,295	1,834
Injuries to non-employed†									
Under 16	31	3,895	..	9	2,594	..	40	6,489	..
16-19	31	388	..	4	192	..	35	580	..
20-24	24	80	..	5	62	..	29	142	..
25-34	24	83	..	3	90	..	27	173	..
35-44	13	65	..	1	103	..	14	168	..
45-54	2	38	..	1	110	..	3	148	..
55-59	2	19	..	—	77	..	2	96	..
60-64	9	23	..	—	125	..	9	148	..
65+	24	304	..	12	1,424	..	36	1,728	..
Unknown	8	323	..	3	611	..	11	1,700	..
Total	168	5,218	..	38	5,388	..	206	11,372	..

* Includes injuries where sex was not recorded (Fatal 0, Major 3, over 3-day 20).
† Includes injuries where sex was not recorded (Fatal 0, Major 766).

.. Not available.

Figure 9: Age distribution major injuries, 1989/90

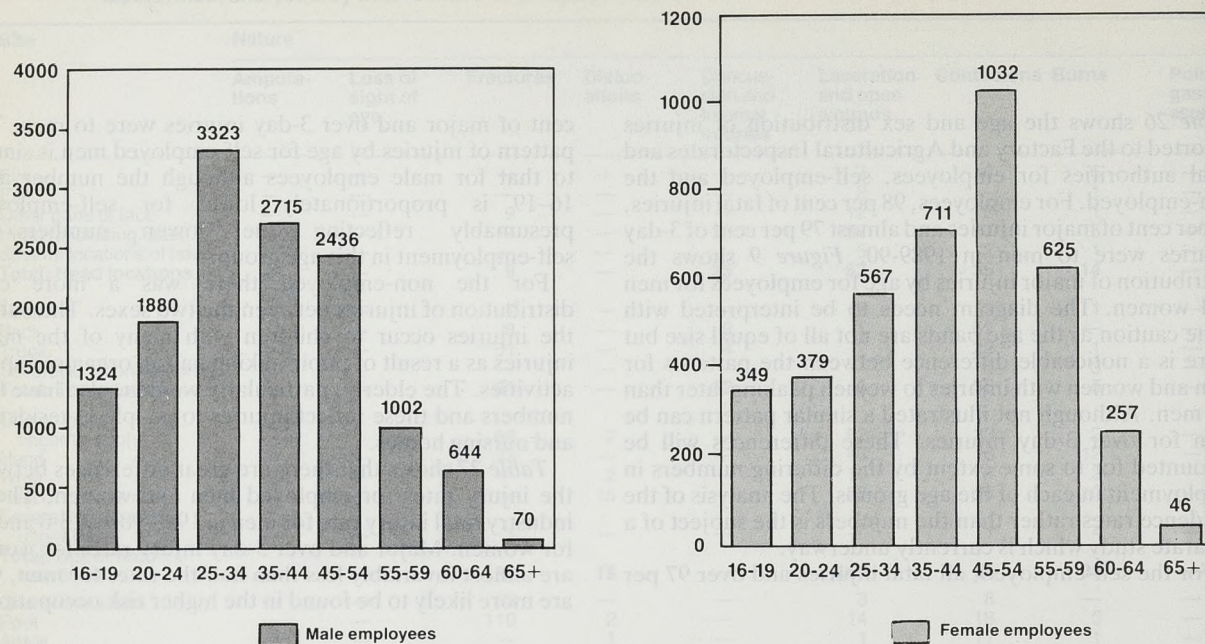


Table 27 Incidence rates per 100,000 employees*: by sex

Industry	Severity of injury†					
	Fatal		Non-fatal major		Over 3-day	
	Male	Female	Male	Female	Male	Female
Agriculture	10.6	1.3	175.3	51.0	596.3	335.9
Energy	8.3	—	301.0	28.0	3,081.0	305.0
Manufacturing	3.0	0.1	176.4	69.1	1,404.0	640.0
Construction	10.8	—	340.9	19.4	1,841.7	102.7
Services	1.4	**	69.7	37.8	733.0	262.9
Total	3.0	0.1	133.5	42.4	1,099.4	317.2

* Includes injuries reported to all enforcing authorities except the Railway Inspectorate for which analysis by sex of injured person is not readily available.
 † Excludes 3 major and 20 over 3-day injuries where sex of injured person not available.
 ** Less than 0.05.

SECTION 7: INJURIES BY OCCUPATION

Table 28 shows the number of fatal, major and over 3-day injuries reported to the Factory and Agricultural Inspectorates by occupation. The occupation classification adopted by HSE is one that has been prepared to meet the needs of the organisation and does not relate to any of the more widely used classifications of occupation. It is likely that in the future the HSE will switch to coding occupation based on the Standard Occupational Classification which will enable comparison of the number of injuries in a particular occupation with comparable employment figures and hence the calculation of injury incidence rates. These rates would allow the direct comparison of risk of injury between different occupations which cannot be

achieved with the simple presentation of injury numbers as given in Table 28.

The most common occupation in the HSE classification is manual production worker which accounts for 27.9 per cent of all reported injuries followed by labourer (9.5 per cent). Occupations associated with the construction industry account for 13.2 per cent of all reported injuries.

The injury statistics reported to HSE do not include injuries as a result of road traffic accidents which occur in the course of work. This is an important factor when looking at those occupations in the table where there is a high likelihood of such injuries.

Table 28 Injuries to employees reported to the HSE's Factory and Agricultural Inspectorates, analysed by occupation of injured person and severity of injury, 1989-90

Occupation	Fatal	Non-fatal major	Over 3-day	Total	Occupation	Fatal	Non-fatal major	Over 3-day	Total
Forestry worker	—	32	244	276	Managerial, administrative, supervisory, clerical	26	1,329	6,357	7,712
Horticultural worker	1	179	2,913	3,093	Manual production	44	4,183	39,008	43,235
Pigman	—	11	54	65	Driver	33	995	8,056	9,084
Poultryman	1	10	55	66	Delivery (eg milk, post)	—	183	2,318	2,501
Seasonal worker	2	21	24	47	Driving instructor	—	1	22	23
Shepherd	—	5	13	18	Refuse collector	—	101	3,865	3,966
Stockman	3	46	116	165	Sales staff, mobile	1	27	93	121
Tractor driver	8	58	168	234	Fireman	1	186	2,718	2,905
Other agriculture	6	161	543	710	Other emergency services	—	97	1,263	1,360
Bricklayer	4	169	1,693	1,866	Meter reader	—	10	188	198
Carpenter/joiner	3	398	3,996	4,397	Other peripatetic worker	—	69	1,092	1,161
Demolition worker	7	37	113	157	Academic staff	1	413	1,091	1,505
Electrician	10	349	1,978	2,337	Technician	2	72	309	383
Glazier	—	38	373	411	Other education	1	82	317	400
Ground worker	4	62	315	381	Doctor	—	8	26	34
Painter, decorator	5	207	1,140	1,352	Nurse	—	234	4,004	4,238
Paviour, roadman	5	78	1,931	2,014	Other health service	—	75	706	781
Piling hand	—	18	52	70	Welfare, social worker	1	220	2,076	2,297
Plasterer	—	38	453	491	Window cleaner	—	9	17	26
Plumber, pipe-fitter	5	175	2,341	2,521	Caretaker	3	114	706	823
Scaffolder	5	106	433	544	Cleaner	—	451	3,064	3,515
Slater, roof worker	10	138	445	593	Catering staff	1	356	2,443	2,800
Steel erector	3	82	137	222	Leisure services	—	45	190	235
Steel fixer	—	27	86	113	Porter	—	43	599	642
Steeplejack	1	5	6	12	Prison warder	—	12	82	94
Welder	4	168	1,399	1,571	Sales staff, in stores	—	22	94	116
Other construction trades	7	328	1,127	1,462	Other personal service	3	152	1,221	1,376
Electrical linesman	2	30	281	313	Other, including not known	11	1,540	10,734	12,285
Electrical fitter	2	128	1,181	1,311	All occupations	310	16,991	137,826	155,127
Electrical joiner	1	15	100	116					
Communications engineer	2	104	1,228	1,334					
Diver	3	5	80	88					
Labourer	49	1,783	12,939	14,771					
Maintenance personnel	29	951	7,210	8,190					

SECTION 8: DANGEROUS OCCURRENCES

Incidents which are reportable as dangerous occurrences are defined and listed in RIDDOR. The list is selective, the aim being to obtain information about those incidents which have a high potential to cause death or serious injury, but which happen relatively infrequently. A dangerous occurrence is reportable whether or not someone is injured.

Trends in numbers of dangerous occurrences have to be treated with some caution as there are no estimates of the extent to which reportable dangerous occurrences are left unreported. The number of dangerous occurrences in a particular category is subject to fluctuation and may be

influenced by a particular incident(s) which receives wide publicity in the year. *Table 29* summarises the available statistics on dangerous occurrences since 1986-87 and shows that the most commonly reported dangerous occurrence is a failure, collapse or overturn of lifting machinery (911 reported in 1989-90). The next most common is the uncontrolled or accidental release of a potentially harmful substance or pathogen (696 in 1989-90). There are no clear trends for these more common dangerous occurrences. Of the rarer dangerous occurrences, incidents involving the collapse or part collapse of scaffold over 5 m high have increased each year

Table 29 Dangerous occurrences reported to all enforcement authorities, 1986-87 to 1989-90

Code	Type of dangerous occurrence	1986-87	1987-88	1988-89	1989-90	
Part 1						
01	Failure, collapse or overturning of lifting machinery, excavator, pile driving frame or mobile powered access platform	886	831	888	911	
02	Failure or collapse of passenger carrying amusement device or safety arrangement at a fair	16	16	23	15	
03	Explosion, collapse or bursting of any closed vessel including boiler, above or below atmospheric pressure	247	209	178	165	
04	Electrical fault causing fire or explosion and plant stoppage for over 24 hours	202	191	119	142	
05	Explosion or fire due to ignition of process materials, waste or finished products and stoppage for over 24 hours	343	358	365	375	
06	Uncontrolled release or escape of one tonne or more of highly flammable liquids or flammable gas	80	91	104	86	
07	Collapse or part collapse of scaffold over five metres high	76	97	104	115	
08	Collapse or partial collapse of (a) any building or structure under construction involving over five tonnes of materials or (b) any floor or wall of a building used as a place of work	85	93	79	106	
09	Uncontrolled or accidental release of potentially harmful substance or pathogen from certain equipment or sites	820	753	631	696	
10	Unintentional ignition or explosion of explosives	76	82	137	137	
11	Failure or collapse of a lifted freight container or part thereof	16	13	38	32	
12	Bursting, explosion or collapse of a pipe-line or any part thereof or the ignition of anything in a pipe-line (excluding water pipe-lines)	114	96	74	93	
13	Overturning or serious damage to the tank while conveying by road prescribed dangerous substances or the uncontrolled release or fire involving the substance being conveyed	69	49	71	107	
14	Uncontrolled release or escape of a dangerous substance, or a fire involving the dangerous substance, when being conveyed by road in a vehicle	32	21	35	44	
15	Failure of breathing apparatus in service	31	33	36	54	
16	Plant or equipment coming into contact unintentionally with overhead electric cables or causing an electrical discharge	252	235	250	220	
17	Accidental collision between locomotive or train and other vehicle liable to have caused a reportable injury	23	17	15	21	
Part 1	(Notifiable in relation to any place of work)	Total	3,368	3,185	3,147	3,319
Part 2	(Notifiable in relation to mines)	Total	349	367	268	255
Part 3	(Notifiable in relation to quarries)	Total	27	30	25	25
Part 4	(Notifiable in relation to railways)	Total	—	—	—	—
	Other not elsewhere classified	439	518	710	551	
	All dangerous occurrences	4,183	4,100	4,150	4,150	

Notes: 1. The table excludes occurrences in the oil and gas industry reported to the Petroleum Engineering Division of the Department of Energy, under offshore safety legislation.
2. The table excludes occurrences notified to the Railway Inspectorate under the Railway (Notice of Accidents) Orders. Full details of occurrences notified under this order can be found in the Department of Transport annual report on the safety record of the railways in Great Britain.

SECTION 9: GAS SAFETY STATISTICS

Table 30 gives details of incidents and injuries relating to the supply and use of gas (including both piped gas and bottled LPG) as collected under RIDDOR.

The number of incidents involving explosion or fire has fluctuated over the four years with numbers lowest in 1988-89. Fatalities, at 15, were much higher than the six reported in 1988-89 and were more in line with the 12 reported in both the years previous to 1988-89.

Incidents involving carbon monoxide poisoning were at their lowest level in 1989-90 over the four years. Fatalities in 1989-90, at 34, were lower than in the two previous years and similar to numbers reported in 1986-87.

Table 31 shows an analysis of the 2,034 returns concerning dangerous gas fittings for 1989-90. The most common type of appliance involved was a boiler (35.8 per

cent) followed by a gas fire (other than decorative-fuel effect) (14.5 per cent). The most common section of the installation at fault was ventilation provided for the open flued appliance (including ventilation but excluding flue) (42.0 per cent), followed by faults on the installation pipe (17.4 per cent) and then faults with the flue (serving open flued appliance) (16.6 per cent).

The main reason for the fault was the manner of installation (66.8 per cent) followed by modification or alteration to the appliance (16.8 per cent).

The most common specific hazard identified was inadequate ventilation (25.4 per cent) followed by gas leak (20.2 per cent) and then inadequate removal of products of combustion (20.1 per cent).

Table 30 Incidents relating to supply and use of flammable gas*, 1986-87 to 1989-90

Year	Number of incidents†			Number of fatalities			Number of non-fatalities		
	Explosion/ fire	Carbon monoxide poisoning	Total	Explosion/ fire	Carbon monoxide poisoning	Total	Explosion/ fire	Carbon monoxide poisoning	Total
1986-87	60	71	131	12	35	47	58	85	143
1987-88	71	77	148	12	48	60	72	76	148
1988-89	45	81	126	6	41	47	42	94	136
1989-90	68	62	130	15	34	49	67	88	155

* Mainly piped gas but also includes bottled LPG.
† An incident can cause more than one fatality or injury.

Table 31 Dangerous gas fitting notifications, 1989-90

Type of appliance	Number	Percentage of total	Reason for fault	Number	Percentage of total
Boiler (including circulator)	729	35.8	Design	37	1.8
Instantaneous water heater	94	4.6	Construction	32	1.6
Combined fire/boiler unit	205	10.1	Manner of installation	1,358	66.8
Warm air unit	66	3.2	Modification/alteration	341	16.8
Gas fire (other than decorative/fuel effect)	295	14.5	Servicing/maintenance	46	2.3
Convactor	17	0.8	Age/lack of servicing	12	0.6
Decorative gas log and other fuel effect appliance	81	4.0	Interference (outside agency)	39	1.9
Cooking appliances	130	6.4	Consumer misuse	11	0.5
Other	54	2.7	Other	79	3.9
Not known	36	1.8	Not known	58	2.9
Not applicable	327	16.1	Not applicable	21	1.0
Total	2,034	100	Total	2,034	100

Section of installation at fault	Number	Percentage of total	Type of hazard	Number	Percentage of total
Service pipe	64	3.1	Gas leak	410	20.2
Gas meter	106	5.2	Gas leak plus ignition (ie resultant fire/explosion)	28	1.4
Installation pipe	353	17.4	Open flued or flueless appliances installed in a bathroom	143	7.0
Open flued appliance (including ventilation but excluding flue)	854	42.0	Inadequate removal of products of combustion	408	20.1
Room sealed appliance	155	7.6	Inadequate ventilation	517	25.4
Flueless appliance (including ventilation)	32	1.6	Other	461	22.7
Flue (serving open-flued appliance)	338	16.6	Not known	30	1.5
Other	82	4.0	Not applicable	37	1.8
Not known	35	1.7	Total	2,034	100
Not applicable	15	0.7			
Total	2,034	100			

SECTION 10: ENFORCEMENT ACTION STATISTICS

Action taken by HSE Inspectorates and other enforcing authorities, including local authorities, to ensure compliance with the Health and Safety at Work Act 1974 and associated legislation ranges from general advice through to the issue of enforcement notices and prosecution. Tables 32 to 41 in this section provide detailed analysis of these notices and prosecutions.

Enforcement notices

Table 32 shows the distribution and trends by type of notice issued by all enforcing authorities. The most common type of notice is the improvement notice which requires employers to take specific remedial action within a specified time limit. In 1989-90 improvement notices accounted for over 70 per cent of all notices, and the numbers issued have increased each year since 1985. The 15,790 improvement notices issued in 1989-90 was a 42.9 per cent increase on 1985. The majority of other notices issued were immediate prohibition notices which stop a work activity until a risk is eliminated. These accounted for 27.5 per cent of all notices in 1989-90. Numbers of immediate prohibition notices increased sharply in 1987-88 and 1988-89 when there were major enforcement initiatives aimed at small construction sites. Numbers have remained at this high level in 1989-90. Deferred prohibition notices which stop a work activity within a specified time limit accounted for less than 2 per cent of all notices in 1989-90 and show no obvious trend over the years.

Table 33 is an analysis, by industry, of the number of enforcement notices issued by the Factory and Agricultural Inspectorates only. In every industry identified, except energy and water supply and agriculture, the number of notices issued in 1989-90 was markedly higher than in

Table 32 Enforcement notices issued by enforcement authorities, by type of notice, 1981 to 1989-90*

Notices issued (by type)	Improvement	Deferred prohibition	Immediate prohibition	Total notices
1981	12,315	408	2,779	15,502
1982	13,030	472	2,794	16,296
1983	12,265	410	3,395	16,070
1984	12,238	399	3,339	15,976
1985	11,051	453	3,025	14,529
1986-87	13,317	496	3,767	17,580
1987-88	14,191	524	5,966	20,681
1988-89	14,983	419	6,214	21,616
1989-90	15,790	430	6,142	22,362

* 1981 to 1985 calendar year, 1986-87 onwards, year commencing April 1.

Table 33 Enforcement notices issued by HSE's Factory and Agricultural Inspectorates, analysed by industry, 1986-87 to 1989-90

Standard Industrial Classification 1980	1986-87	1989-88	1988-89	1989-90
Agriculture, forestry and fishing	0	5,097	3,908	3,803
Energy and water supply industries	1	20	12	20
Extraction of mineral ores other than fuels: manufacture of metals, mineral products and chemicals	2	409	517	556
Metal goods, engineering and vehicles industries	3	1,028	1,338	1,444
Other manufacturing industries	4	1,141	1,595	1,785
All manufacturing industries	2-4	2,578	3,450	3,785
Construction	5	1,041	2,877*	2,749*
Service industries	6-9	611	833	876
Unclassified		115	20	7
All industries		9,462	11,100	11,240

* Reflects the major enforcement initiatives aimed at small construction sites during the period May 1987 to September 1988.

1986-87. In agriculture the number of notices issued in 1989-90 was over 20 per cent lower than in 1986-87. In energy and water supply the number of notices issued by the Factory and Agricultural Inspectorates is usually small.

Table 34 shows the offence or requirement for which the notice was issued. These statistics are for the Factory and Agricultural Inspectorates only. Notices can cover more than one offence or requirement. In 1989-90 the 7,522 improvement notices contained 10,668 requirements of which 35 per cent were for requirements connected with the fencing and construction of machinery. 13 per cent of requirements in improvement notices were issued for health-related matters. The pattern is somewhat different for immediate prohibition notices, where the 4,156 issued contained 7,695 requirements, 44 per cent of these requirements related to precautions against falls from a height. A further 23 per cent of requirements in immediate prohibition notices were related to matters connected with the fencing and construction of machinery.

Table 35 shows the specific regulations under which the notices were issued. The increase in improvement notices overall shown in Table 32 is due partly to notices issued under new regulations such as the Control of Substances Hazardous to Health and the Noise Regulations, and partly to the sharp increases in the number of notices issued under the Control of Pesticides Regulations (up from 540 improvement notices in 1988-89 to 983 in 1989-90), and the Highly Flammable Liquids and LPG Regulations (up from 266 to 482). The Control of Pesticides Regulations were the Regulations quoted most frequently in improvement notices in 1989-90.

The Construction (Working Places) Regulations, although 14 per cent lower in number than in 1988-89, were by far the most common Regulations quoted in immediate prohibition notices. This drop possibly reflects the end of the special enforcement initiatives referred to above. Immediate prohibition notices issued under the Agriculture (Power Take-off) Regulations and the Electricity (Factories Act) Special Regulations both showed marked reductions compared with 1988-89.

Prosecution

HSE's prosecution statistics are based on the informations laid by inspectors before Magistrates in England and Wales, and changes preferred in Scottish Courts. Each information laid or charge preferred relates to a breach of an individual legal requirement, and one case

may involve one or more of these breaches. The number of informations laid (and charges preferred) by enforcing authorities excluding local authorities increased quite markedly in 1989-90 (Table 36) and was over a fifth higher than in 1986-87. The proportion where a conviction was obtained dropped slightly in 1989-90 to 86.3 per cent from 89.8 per cent in 1988-89. Trends in the average level of fine are complicated by very high fines awarded against some companies by the higher courts. However, whether or not these particularly high fines are included in the calculation the average fine in 1989-90 was substantially higher than in 1988-89. The number of prosecutions by local authorities remained quite level for the last three years, although their

conviction rate rose sharply in 1989-90 to 93.1 per cent compared with 81.7 per cent in 1988-89.

Table 37 shows the prosecutions analysed by industry for the Factory and Agricultural inspectorates only. The pattern is similar to that for notices with an increase in the number of informations laid in all industries except agriculture and energy and water supply. Prosecutions for offences in the agriculture sector were down by over 13 per cent in comparison with 1986-87 but 21.5 per cent higher than in 1988-89. The average penalty for a conviction in the agriculture sector in 1989-90 was £250, much less than half that in any other sector. Moreover agriculture was the only sector where the average fine was lower in 1989-90 than in

Table 34 Enforcement notices issued by HSE's Factory and Agricultural Inspectorates, analysed by subject of offence or requirement and type of notice, 1989-90

Offence or Requirement	Type of notice issued			Total
	Improvement	Deferred prohibition	Immediate prohibition	
Notifications and records				
Notification of occupation out-work commencement of construction operation, use of radiation, overtime, etc	17	—	11	28
Notification of accident, case of disease, overdose of radiation, dangerous occurrences, etc	6	—	—	6
Affixing of notices, keeping registers, etc	87	2	6	95
Total	110	2	17	129
Safety organisation				
Failures in safety organisation matters relating to safety committees, appointment of competent people	117	—	21	138
Giving of information to employees or public safety policy, company report defects	330	2	—	332
Giving of instruction and training	92	1	19	112
Giving of supervision	3	—	2	5
Carrying out of work by unqualified person	22	—	7	29
Total	564	3	49	616
Health				
Cleanliness—general provisions	291	4	18	313
Precautions against inhalation or contact with dust, fume, vapour, gas or other toxic substances: Carcinogens, mutagens and teratogens	34	3	7	44
Dusts				
Crocidolite	9	—	32	41
Asbestos other than crocidolite	35	—	145	180
Silica	9	2	12	23
Silicates	—	—	—	—
Cotton and vegetable dusts	6	—	—	6
Man made inorganic fibres	5	—	—	5
Other fibrogenic dusts	11	—	—	11
Other dusts nes	159	5	18	182
Pathogens	36	6	21	63
Other toxic and corrosive substances	399	18	70	487
Labelling of toxic and corrosive substances	8	—	5	13
Supply, manufacture, import or use of unsafe or prohibited substances	19	—	—	19
Medical examination requirements	2	—	2	4
Matters connected with the working environment nes	156	1	12	169
Noise	143	—	4	147
Matters involving ionising radiations	14	1	1	16
Matters involving non-ionising radiations	—	—	—	—
Other matters of the external environment	16	3	2	21
Total	1,352	43	349	1,744
Safety				
Design, manufacture, import or supply of unsafe machinery, plant or appliance	36	—	13	49
Matters connected with the fencing and construction of machinery	3,778	132	1,755	5,665
Use of lifts, hoists, cranes and other lifting machines, lifting gear or devices	153	18	247	418
Matters connected with the use of unsafe plant	380	20	247	647
Precautions against falls from height	299	2	3,374	3,675
Transport matters	18	—	29	47
Safe handling and custody of livestock	32	—	—	32
Handling methods, storage methods nes	544	—	26	570
Use of electricity	365	9	391	765
Dangerous buildings and structures	403	6	316	725
Unsafe systems of work (nes) other than handling or storage	230	13	502	745
Other safety matters nes	209	5	183	397
Total	6,447	205	7,083	13,735

Table 34 Enforcement notices issued by HSE's Factory and Agricultural Inspectorates, analysed by subject of offence or requirement and type of notice, 1989-90

Offence or Requirement	Type of notice issued			
	Improvement	Deferred prohibition	Immediate prohibition	Total
Fire				
Matters connected with the use of flammable substances	188	16	45	249
Matters concerned with the storage of flammable substances	386	5	17	408
Other fire precautions	20	4	6	30
Total	594	25	68	687
Dangerous materials				
Matters concerning the handling, storage and the transport of dangerous materials	781	6	23	810
Matters concerning the supply, testing, etc. of substances labelling giving information about precautions	14	—	1	15
Total	795	6	24	825
Licensing offences				
Matters concerning licensing conditions under Nuclear Installations Act 1965	—	—	—	—
Other licensing matters	1	—	—	1
Total	1	—	—	1
All matters in connection with explosive substances				
	31	1	5	37
Welfare				
Washing and bath accommodation	384	1	10	395
First-aid and medical arrangements	25	—	—	25
Other welfare matters	86	—	3	89
Total	495	1	13	509
Protective equipment and clothing				
The provision of protective clothing nes	114	2	55	171
The provision of protective equipment nes	82	4	26	112
Total	196	6	81	283
Hours of employment				
Employment of children	—	—	—	—
Employment of young people	—	—	—	—
Employment of women	—	—	—	—
Total	—	—	—	—
Notices against employed people				
Taking forbidden articles into mines, explosives stores, etc	—	—	—	—
The use of protective equipment	2	—	—	2
Other	—	—	—	—
Total	2	—	—	2
Failure to comply with improvement or prohibition notice				
	—	—	—	—
Insurance				
The insurance of employed people	—	—	—	—
Other	81	—	6	87
Total offences quoted	10,668	292	7,695	18,655
Actual number of notices issued	7,522	179	4,156	11,857

1988-89. The highest average fines were in the industries associated with the extraction of mineral ores other than fuels, the manufacture of metals and mineral products and chemicals. Here, the 1989-90 average fine was £1,233 almost double that of 1988-89.

Table 38 provides a detailed analysis of the subject or general area of the offence and the more specific agent (machine/hazard) of offence leading to the prosecution. The most common subject of offence in 1989-90 was poor control of physical standards, quoted in 27.6 per cent of all informations laid. Many of these involved machine tools and process machinery.

Table 39 looks only at the specific agent of the offence. The most common specific agent in 1989-90 was process machinery, followed by any type of conveying, lifting and

hoisting machinery and then machine tools.

The specific regulations under which prosecutions were taken are shown in Table 40 for 1988-89 and Table 41 for 1989-90. In both years the most common specific regulations were the Construction (Working Places) Regulations. Whilst immediate prohibition notices relating to the Agriculture (Power Take-Off) Regulations have been noted earlier as decreasing between 1988-89 and 1989-90 the number of informations laid increased from 72 in 1988-89 to 86 in 1989-90. Prosecutions relating to the Control of Asbestos at Work Regulations were up from 21 in 1988-89 to 52 in 1989-90. Prosecutions under RIDDOR were down from 143 to 100 whilst, under the Road Traffic (Carriage of Dangerous Substances in Packages etc) Regulations prosecutions were up from 14 to 52.

Table 35 Enforcement notices issued by HSE's Factory and Agricultural Inspectorates under specific* regulations, by type of notice, 1988-89 to 1989-90

Regulations	Number of requirements made†							
	1988-89				1989-90			
	I	DP	IP	Total	I	DP	IP	Total
Abrasive Wheels Regs 1970	5	4	10	19	4	—	7	11
Agriculture (Avoidance of Accidents to Children) Regs 1958	—	—	—	—	—	—	12	12
Agriculture (Circular Saws) Regs 1959	9	—	19	28	3	—	3	6
Agriculture (Field Machinery) Regs 1962	137	2	70	209	106	1	53	160
Agriculture (Ladders) Regs 1957	3	—	5	8	1	—	4	5
Agriculture (Power Take-off) Regs 1957	341	8	351	700	250	11	284	545
Agriculture (Safeguarding of Workplace) Regs 1959	56	3	1	60	49	—	2	51
Agriculture (Stationary Machinery) Regs 1959	173	1	40	214	125	—	24	149
Agriculture (Tractor Cabs) Regs 1974	16	—	10	26	15	1	9	25
Asbestos (Licensing) Regs 1983	—	—	7	7	—	—	6	6
Blasting (Castings and Other Articles) Special Regs 1949	3	—	3	6	1	3	3	7
Classification, Packaging and Labelling of Dangerous Substances 1984 and 1986	4	—	4	8	3	—	1	4
Construction (General Provisions) Regs 1961	22	12	314	348	16	3	272	291
Construction (Health and Welfare) Regs 1966	75	—	18	93	59	—	20	79
Construction (Lifting Operations) Regs 1961	18	—	203	221	7	—	115	122
Construction (Working Places) Regs 1966	12	71	2,901	2,984	37	1	2,496	2,534
Control of Asbestos at Work Regs 1987	17	—	82	99	16	1	117	134
Control of Lead at Work Regs 1980	41	—	17	58	65	1	7	73
Control of Pesticides Regs 1986	540	1	16	557	983	1	9	993
Control of Substances Hazardous to Health Regs 1988	—	—	—	—	467	11	28	506
Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regs 1981	9	2	2	13	7	—	11	18
Dangerous Substances in Harbour Areas Regs 1987	8	—	—	8	2	—	—	2
Diving Operations at Work Regs 1981	—	—	9	9	—	—	7	7
Docks Regs 1988	—	—	—	—	2	—	11	13
Electricity (Factories Act) Special Regs 1908 and 1944	328	1	380	709	272	13	241	526
Examination of Steam Boilers Regs 1964	10	1	—	11	1	—	—	1
Gas Safety (Installations and Use) Regs 1984	6	—	3	9	12	—	5	17
Grinding of Cutlery and Edge Tools Regs 1925 and 1950	13	—	—	13	1	—	—	1
Grinding of Metals (Miscellaneous Industries) Regs 1925	14	1	—	15	12	—	—	12
Health and Safety (First Aid) Regs 1981	24	—	—	24	24	—	—	24
Highly Flammable Liquids and LPG Regs 1972	266	4	25	295	482	15	45	542
Horizontal Milling Machines Regs 1928	17	—	30	47	49	1	14	64
Ionising Radiations Regs 1985	12	12	—	24	13	1	—	14
Iron and Steel Foundries Regs 1953	11	—	—	11	15	1	7	23
Noise at Work Regs 1989	—	—	—	—	119	—	2	121
Non-ferrous Metals (Melting and founding) Regs 1962	13	—	—	13	7	—	1	8
Poisonous Substances in Agriculture Regs 1984	24	—	—	24	8	1	4	13
Pottery (Health and Welfare) Special Regs 1950	39	—	1	40	6	—	—	6
Power Presses Regs 1965 and 1972	52	3	43	98	56	4	25	85
Protection of Eyes Regs 1974	2	—	1	3	5	—	1	6
Reporting of Injuries, Diseases and Dangerous Occurrences Regs 1985	6	—	—	6	8	—	—	8
Road Traffic (Carriage of Dangerous Substances in Packages etc) Regs 1986	3	—	6	9	13	—	8	21
Sanitary Accommodation Regs 1938 and 1974	17	—	—	17	16	—	—	16
Shipbuilding and Shiprepairing Regs 1960	8	—	19	27	5	—	10	15
Woodworking Machines Regs 1974	188	14	132	334	183	19	151	353
Grand totals	2,542	140	4,722	7,404	3,525	89	4,015	7,629

* Regulations quoted in 5 or more requirements in either of the financial years 1988-89 or 1989-90.
† I = Improvement; DP = Deferred Prohibition; IP = Immediate Prohibition.

Table 36 Proceedings instituted by enforcement authorities, analysed by result, 1981 to 1989-90

HSE Inspectorates and HSC Agencies*	Date of hearing								
	1981†	1982†	1983	1984	1985	1986-87	1987-88	1988-89	1989-90
Total informations laid	1,892	2,351	2,238	2,209	2,321	2,199	2,337	2,328	2,653
Informations where result recorded	1,838	2,261	2,133	2,130	2,258	2,120	2,337	2,328	2,653
Of which convictions	1,654	2,065	1,941	1,944	1,915	1,771	2,053	2,090	2,289
Average penalty per conviction (£)	189	233	252	313	436	410	792‡	541	783††
Local authorities**									
Informations laid	516	468	511	585	451	613	725	731	713
of which convictions	446	402	421	525	417	530	629	597	664

* Excluding local authorities.
 † HSE's Factory, agricultural, mines and quarries inspectorates only.
 ** Penalty data not available.
 ‡ Includes fines totalling £750,000 imposed against BP. If these convictions are excluded the average fine for 1987-88 would be £427.
 †† Includes a fine of £100,000 imposed against Nobels Explosives. If this conviction is excluded the average fine for 1989-90 would be £739.

Table 37 Proceedings instituted by HSE's Factory and Agricultural Inspectorates, analysed by industry and result, 1986-87 to 1989-90

Standard Industrial Classification 1980	Informations laid				Convictions				Average penalty per conviction £				
	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90	1986-87	1987-88	1988-89	1989-90	
Agriculture, forestry, fishing	0	423	381	302	367	335	310	256	327	166	178	304	250
Energy and water supply industries	1	20	17	9	9	17	14	9	9	343	54,288*	606	894
Extraction of mineral ores other than fuels: manufacture of metals, mineral products and chemicals	2	131	131	164	140	100	123	149	123	715	573	633	1,233
Metal goods, engineering and vehicles industries	3	360	338	387	491	329	316	365	425	381	470	529	852
Other manufacturing industries	4	329	490	461	477	294	454	431	450	448	403	527	692
All manufacturing industries	2-4	820	959	1,012	1,108	723	893	945	998	454	450	545	827
Construction	5	624	759	685	781	461	654	599	658	488	471	590	762
Service industries	6-9	193	190	209	279	155	153	196	247	473	483	625	896
Unclassified		88	15	81	3	59	15	62	3	556	354	330	1,333
All industries		2,168	2,321	2,298	2,547	1,750	2,039	2,067	2,242	413	786†	530	732

* Includes the BP fines totalling £750,000. The average fine without these convictions would be £836.
 † Includes the BP fines totalling £750,000. The average fine without these convictions would be £420.

Table 38 Proceedings instituted by HSE's Factory and Agricultural Inspectorates, analysed by subject and agent of offence and result, 1989-90

Subject and agent of offence	Informations laid	Result					Adjournment sine die	Total penalties (£)	Average penalty per conviction (£)
		Convictions	Informations withdrawn*	Informations dismissed	Not proven (Scotland)	Total penalties (£)			
Organisation contribution									
Inadequate standard of training or instruction	190	156	14	17	2	1	142,055	911	
Involving: machine tools	23	21	—	2	—	—	15,450	736	
process machinery	24	19	2	3	—	—	12,150	639	
any type conveying, lifting, hoisting machinery	12	8	2	1	—	1	20,500	2,563	
storage or use of flammable/explosive liquids, gases, solids	23	21	1	1	—	—	12,700	605	
storage or use of toxic liquids	14	9	4	1	—	—	2,500	278	
storage or use of toxic solids/dusts	12	10	1	1	—	—	10,650	1,065	
transport	26	24	1	1	—	—	18,450	769	
other agents	56	44	3	7	2	—	49,655	1,129	
Inadequate supervision	143	98	13	32	—	—	122,450	1,249	
Involving: process machinery	21	19	2	—	—	—	16,350	861	
any type conveying, lifting, hoisting machinery	18	17	1	—	—	—	22,400	1,318	
transport	10	9	1	—	—	—	30,100	3,344	
other agents	94	53	9	32	—	—	53,600	1,011	
Inadequate standard of maintenance	201	174	17	5	—	5	128,460	738	
Involving: machine tools	16	16	—	—	—	—	12,250	766	
process machinery	70	60	7	2	—	1	32,720	545	
any type conveying, lifting, hoisting machinery	38	34	1	1	—	2	26,850	790	
transport	19	16	2	1	—	—	4,090	256	
other agents	58	48	7	1	—	2	52,550	1,095	
Failure to provide a permit to work system	5	5	—	—	—	—	4,700	940	

Table 38 Proceedings instituted by HSE's Factory and Agricultural Inspectorates, analysed by subject and agent of offence, and result, 1989-90

Subject and agent of offence	Informations laid	Result					Adjournment sine die	Total penalties (£)	Average penalty per conviction (£)
		Convictions	Informations withdrawn*	Informations dismissed	Not proven (Scotland)	Total penalties (£)			
Failure of a permit to work system	9	8	1	—	—	—	8,500	1,063	
Poor control of physical standards	702	653	26	18	—	5	493,530	756	
Involving: machine tools	107	102	3	—	—	2	57,350	562	
process machinery	246	235	4	5	—	2	189,800	808	
any type conveying, lifting, hoisting machinery	58	56	2	—	—	—	43,200	771	
storage or use of flammable/explosive liquids, gases, solids	30	26	1	2	—	1	24,475	941	
storage or use of toxic solids/dusts	30	23	2	5	—	—	21,250	924	
transport	16	15	1	1	—	—	6,500	433	
welfare	32	32	—	—	—	—	9,470	296	
other agents	183	164	14	5	—	—	141,485	863	
Unsafe system of work—routine job production	163	148	13	2	—	—	123,425	834	
Involving: machine tools	19	18	—	1	—	—	9,300	517	
process machinery	45	40	5	—	—	—	27,450	686	
any type conveying, lifting, hoisting machinery	17	17	—	—	—	—	19,500	1,147	
transport	14	12	1	1	—	—	5,650	471	
other agents	68	61	7	—	—	—	61,525	1,009	
Unsafe system of work—maintenance job	70	66	3	1	—	—	113,450	1,719	
Involving: process machinery	14	13	—	1	—	—	8,500	654	
any type conveying, lifting, hoisting machinery	10	10	—	—	—	—	57,250	5,725	
other agents	46	43	3	—	—	—	47,700	1,109	
Unsafe system of work—transient job	346	297	28	19	—	2	228,225	768	
Involving: any type conveying, lifting, hoisting machinery	37	30	3	2	—	2	18,900	630	
storage or use of flammable/explosive liquids, gases, solids	13	12	1	—	—	—	23,100	1,925	
storage or use of toxic solids or dusts	22	14	8	—	—	—	11,350	811	
transport	17	16	—	1	—	—	10,550	659	
other agents	257	225	16	16	—	—	164,325	730	
Inadequate traffic control system including: separation of vehicles and persons	10	10	—	—	—	—	26,450	2,645	
Other organisation contributions	559	498	30	22	—	9	210,142	422	
Employee contribution									
Defeating safety devices	8	7	1	—	—	—	3,600	514	
Guarding or safety device provided but not used	19	17	1	1	—	—	7,100	418	
Using equipment obviously defective	18	15	2	1	—	—	3,225	215	
Improper use of equipment including: interference with equipment or appliance	9	9	—	—	—	—	2,675	297	
Failure to comply with or misinterpretation of instructions including failure to isolate danger	20	15	3	2	—	—	4,755	317	
Failure to use personal protective equipment	2	2	—	—	—	—	225	113	
Failure to give necessary warning to others	20	19	—	1	—	—	3,950	208	
Going into hazardous situations	5	5	—	—	—	—	3,050	610	
Driver or operator judgement/error	9	8	—	1	—	—	1,550	194	
Assault	1	1	—	—	—	—	400	400	
Horseplay	3	3	—	—	—	—	230	77	
Using unsafe or dangerous methods of handling or lifting	6	3	3	—	—	—	800	267	
Riding or standing in unsafe position	10	9	1	—	—	—	2,010	223	
Other employee contribution including insufficient information to identify cause	19	16	2	1	—	—	6,775	423	
Total informations laid	2,547	2,242	158	123	2	22	1,641,732	732	

* Includes withdrawal of alternative informations.

Table 39 Proceedings instituted by HSE's Factory and Agricultural Inspectorates, by agent involved in offence and result, for hearings completed in 1989-90

Specific agent of offence	Informations laid	Result						
		Convictions	Informations withdrawn*	Informations dismissed	Not proven (Scotland)	Adjournment sine die	Total penalties (£)	Average penalty per conviction (£)
Machine tools	232	218	4	8	—	2	124,550	571
Process machinery	491	449	24	15	—	3	320,815	715
Any type of conveying, lifting, hoisting machinery	235	213	12	5	—	5	252,200	1,184
Storage or use of:								
Flammable/explosive liquids, gases, solids	124	113	5	5	—	1	84,855	751
Toxic liquids	49	43	5	1	—	—	41,175	958
Toxic gases	13	13	—	—	—	—	10,650	819
Toxic solids or dust	76	58	12	6	—	—	53,100	916
Nuisance dusts	8	8	—	—	—	—	5,650	706
Any other materials not listed above	49	41	4	3	—	1	65,250	1,591
Confined spaces	27	24	3	—	—	—	57,800	2,408
First aid/medical	12	12	—	—	—	—	9,350	779
General fire safety	2	2	—	—	—	—	400	200
Livestock, animals	3	3	—	—	—	—	2,500	833
Noise	1	1	—	—	—	—	1,800	1,800
Notifications, notices, registers	200	173	15	8	—	4	60,410	349
Personal protective equipment	16	15	1	—	—	—	5,125	342
Transport	160	147	8	5	—	—	100,875	686
Welfare—all aspects including heating, lighting, cleanliness, washing, etc	67	62	2	1	—	2	16,270	262
Other/not relevant	782	647	63	66	2	4	428,957	663
All offences	2,547	2,242	158	123	2	22	1,641,732	732

* Includes withdrawal of alternative informations.

Table 40 Proceedings instituted by HSE's Factory and Agricultural Inspectorates under specific regulations, by result, for hearings completed in 1988-89

Regulations	Informations laid	Convictions	Informations withdrawn*	Informations dismissed	Adjournment sine die	Total penalties (£)	Average penalty per conviction (£)
Abrasive Wheels Regs 1970	7	7	—	—	—	1,700	243
Agriculture (Avoidance of Accidents to Children) Regs 1958	14	13	1	—	—	1,460	112
Agriculture (Field Machinery) Regs 1962	31	27	2	2	—	4,350	161
Agriculture (Ladders) Regs 1957	3	1	2	—	—	150	150
Agriculture (Power Take-off) Regs 1957	72	66	6	—	—	13,085	198
Agriculture (Safeguarding of Workplaces) Regs 1959	2	2	—	—	—	300	150
Agriculture (Stationary Machinery) Regs 1959	12	5	7	—	—	1,750	350
Agriculture (Tractor Cabs) Regs 1974	6	5	1	—	—	470	94
Asbestos Regs 1969	4	3	—	1	—	500	167
Asbestos (Licensing) Regs 1983	14	13	1	—	—	2,825	217
Control of Asbestos at Work Regs 1987	21	21	—	—	—	11,000	524
Classification, Packaging and Labelling of Dangerous Substances Regs 1984 and 1986	8	7	1	—	—	5,450	779
Construction (General Provisions) Regs 1961	62	52	5	4	1	34,450	663
Construction (Health and Welfare) Regs 1966	15	14	—	1	—	3,150	225
Construction (Lifting Operations) Regs 1961	49	46	2	1	—	31,550	686
Construction (Working Places) Regs 1966	231	204	13	14†	—	103,005	505
Control of Lead at Work Regs 1980	10	7	3	—	—	3,550	507
Control of Pesticides Regs 1986	12	10	—	2	—	3,300	330
Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regs 1981	11	11	—	—	—	6,225	566
Electricity (Factories Act) Special Regs 1908 and 1944	21	19	1	1	—	10,650	561
Gas Safety (Installation and Use) Regs 1984	52	51	1	—	—	12,050	236
Grinding of Metal Regs 1925	2	1	1	—	—	400	400
Highly Flammable Liquids and LPG Regs 1972	16	16	—	—	—	10,150	634
Horizontal Milling Machines Regs 1928	11	11	—	—	—	5,150	468
Ionising Radiations Regs 1985	5	5	—	—	—	1,250	250
Notification of Accidents and Dangerous Occurrences Regs 1980	3	3	—	—	—	1,300	433
Notification of Installations Handling Hazardous Substances Regs 1982	1	1	—	—	—	3,000	3,000
Pottery (Health and Welfare) Special Regs 1950	9	7	—	2	—	800	114

Table 40 Proceedings instituted by HSE's Factory and Agricultural Inspectorates under specific regulations, by result, for hearings completed in 1988-89

Regulations	Informations laid	Convictions	Informations withdrawn*	Informations dismissed	Adjournment sine die	Total penalties (£)	Average penalty per conviction (£)
Power Presses Regs 1965	41	33	4	4	—	13,540	410
Reporting of Injuries, Diseases and Dangerous Occurrences Regs 1985	143	132	5	6	—	29,010	220
Road Traffic (Carriage of Dangerous Substances in Packages etc) Regs 1986	14	14	—	—	—	4,850	346
Sanitary Accommodation Regs 1938	1	1	—	—	—	50	50
Shipbuilding and Ship-repairing Regs 1960	5	5	—	—	—	2,550	510
Woodworking Machinery Regs 1974	68	64	3	1	—	26,600	416
All regulations	976	877	59	39	1	349,620	399

* Includes withdrawal of alternative informations.
† Includes one information 'not proven'.

Table 41 Proceedings instituted by HSE's Factory and Agricultural Inspectorates under specific regulations, by result, for hearings completed in 1989-90

Regulations	Informations laid	Convictions	Informations withdrawn*	Informations dismissed	Adjournment sine die	Total penalties (£)	Average penalty per conviction (£)
Abrasive Wheels Regs 1970	1	—	1	—	—	—	—
Agriculture (Avoidance of Accidents to Children) Regs 1958	18	17	—	1	—	1,820	107
Agriculture (Field Machinery) Regs 1962	31	30	—	1	—	6,625	221
Agriculture (Ladders) Regs 1957	3	3	—	—	—	700	233
Agriculture (Power Take-off) Regs 1957	86	79	7	—	—	19,520	247
Agriculture (Safeguarding of Workplaces) Regs 1959	2	2	—	—	—	300	150
Agriculture (Stationary Machinery) Regs 1959	2	2	—	—	—	950	475
Agriculture (Tractor Cabs) Regs 1974	4	4	—	—	—	750	188
Asbestos (Licensing) Regs 1983	14	7	6	1	—	2,900	414
Asbestos (Prohibitions) Amendment Regs 1988	1	—	1	—	—	—	—
Control of Asbestos at Work Regs 1987	52	47	1	4	—	40,400	860
Classification, Packaging and Labelling of Dangerous Substances Regs 1984 and 1986	5	5	—	—	—	2,400	480
Construction (General Provisions) Regs 1961	55	49	3	2	1	57,900	1,182
Construction (Health & Welfare) Regs 1966	23	23	—	—	—	1,370	60
Construction (Lifting Operations) Regs 1961	56	49	4	3	—	36,975	755
Construction (Working Places) Regs 1966	209	185	16	8	—	89,750	485
Control of Lead at Work Regs 1980	8	8	—	—	—	2,200	275
Control of Pesticides Regs 1986	25	20	4	1	—	6,750	338
Control of Substances Hazardous to Health Regs 1988	2	2	—	—	—	1,200	600
Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regs 1981	23	19	3	1	—	10,975	578
Diving Operations at Work Regs 1981	30	8	—	22	—	850	106
Docks Regs 1988	3	3	—	—	—	2,550	850
Electricity (Factories Act) Special Regs 1908 and 1944	21	18	1	2	—	8,050	447
Gas Safety (Installation and Use) Regs 1984	2	2	—	—	—	200	100
Grinding of Metals Regs 1925	70	64	2	4	—	44,530	696
Highly Flammable Liquids and LPG Regs 1972	2	2	—	—	—	300	150
Horizontal Milling Machines Regs 1928	17	14	—	2	1	13,050	932
Ionising Radiations Regs 1985	10	10	—	—	—	4,100	410
Iron and Steel Foundries Regs 1953	25	21	1	3	—	21,100	1,005
Non-ferrous Metals (Melting and Founding) Regs 1962	1	1	—	—	—	250	250
Poisonous Substances in Agriculture Regs 1984	1	1	—	—	—	150	150
Power Presses Regs 1965	49	41	5	3	—	100	100
Protection of Eyes Regs 1974	1	1	—	—	—	21,400	522
Reporting of Injuries, Diseases and Dangerous Occurrences Regs 1985	1	1	—	—	—	500	500
Road Traffic (Carriage of Dangerous Substances in Packages etc) Regs 1986	100	89	2	8	1	27,570	310
Sanitary Accommodation Regs 1938	52	49	3	—	—	19,950	407
Shipbuilding and Ship-repairing Regs 1960	1	1	—	—	—	150	150
Woodworking Machinery Regs 1974	6	6	—	—	—	6,750	1,125
All Regulations	1,085	945	64	69	7	488,685	517

* Includes withdrawal of alternative informations.

SECTION 11: OCCUPATIONAL HEALTH

Introduction

The term occupational ill health includes a wide range of conditions, from those which are unequivocally work-related (eg lead poisoning, asbestosis etc) to conditions with multiple causes, some of which are occupational in origin. In this second category the link with occupational factors can only be recognised by statistical means, by demonstrating that the prevalence of the condition is consistently higher among groups of workers

Figure 10: The difference between Injury and Sickness benefit, as a percentage of Sickness benefit

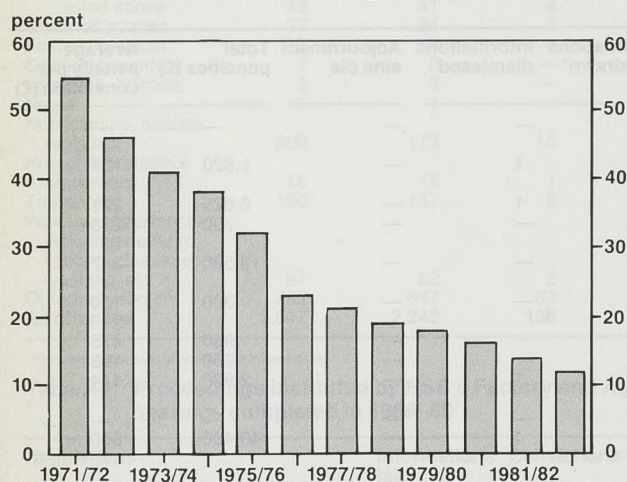
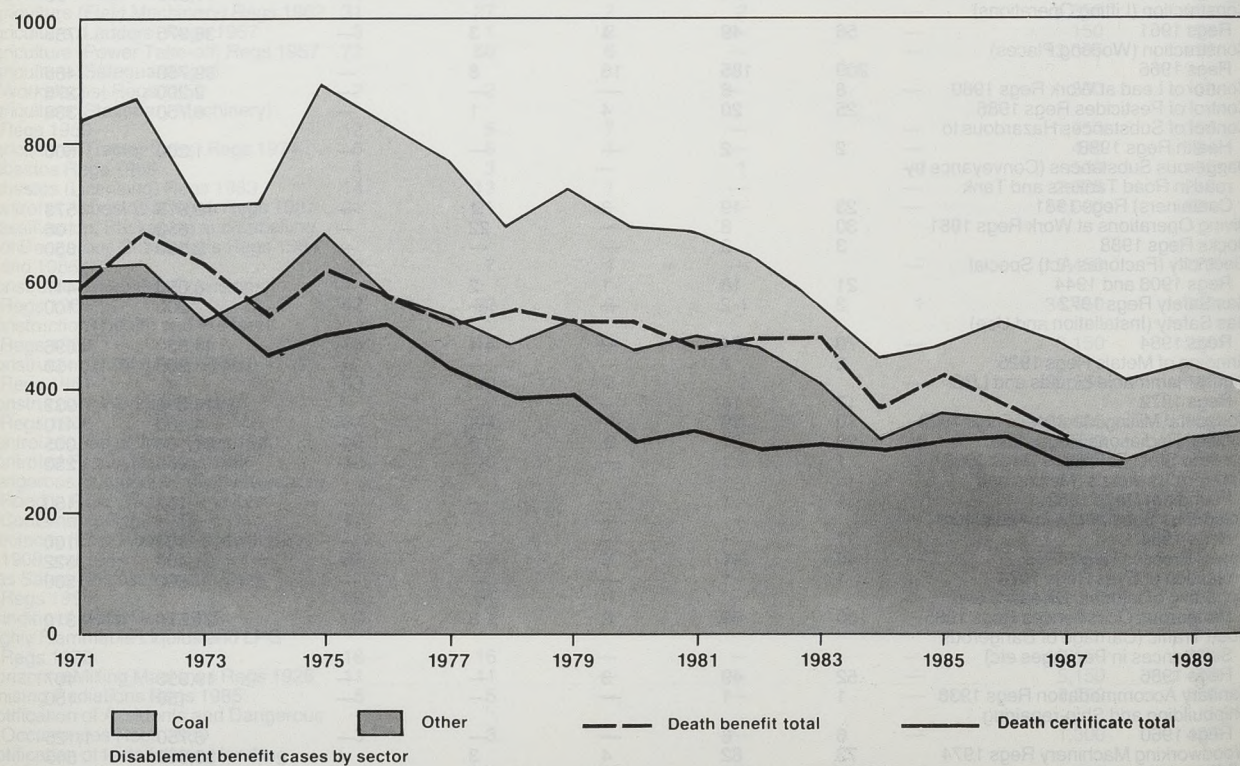


Figure 11: Pneumoconiosis (other than asbestosis)



Figures for 1990 do not include cases awarded by Medical Appeals Tribunals (see Table 45)

exposed to the occupational factor in question. Conditions in the second category range from the well established (eg lung cancer in asbestos workers) to the more speculative (eg 'sick building syndrome'). The potential elasticity of the term, combined with the difficulty of estimating numbers for the less exclusively occupational categories, allows a wide range of estimates of the total number of cases of occupational disease. The resulting variability can be illustrated by comparing crude annual rates of occupational disease recorded in different countries' statistics. Data for 1987 drawn together by the OECD² show rates of reported disease varying from 1 case per 100 employees in Sweden to 1 per 1,000 in France; and rates of compensated disease ranging from 1 case per 400 in Switzerland to 1 case per 4,500 for Great Britain. These figures do not mean that, in reality, France and Great Britain have the best, and Sweden and Switzerland the worst, occupational disease records: they demonstrate the variety of possible interpretations of the term 'occupational disease' and the difficulty of recording its extent.

The only comprehensive and consistent data for occupational disease in the UK are provided by the records of awards for 'prescribed disease' under the Industrial Injuries Scheme administered by the Department of Social Security (DSS). Although the figures are affected from time to time by changes in the rules defining benefit

² OECD Employment Outlook 1990—Chapter 4.

entitlement, the system has the advantage that all cases are individually examined and validated. The figures represent an absolute lower limit to the numbers of cases occurring. Trends can, with some caution, be taken to reflect real changes in incidence although they can also be affected by changes in propensity to claim benefit.

There are, however, two important discontinuities in the Industrial Injuries scheme data. The first is between 1982-83 and 1983-84, when injury benefit was for the generality of claimants—replaced by Statutory Sick Pay. The second follows the introduction, for claims lodged after October 1, 1986, of a new general rule under which only those with disability assessed at 14 per cent or more qualify for benefit (pneumoconiosis, mesothelioma and byssinosis are excepted from this rule). Cases with lesser disability are still recorded, and qualify for Reduced Earnings Allowance (REA) if earning potential is impaired (REA was withdrawn—for new cases from October 1990). This change has substantially reduced the numbers qualifying for disablement benefit, and seems also to have reduced the numbers making claims, probably because in many cases it will be clear that they will not qualify for any benefit.

A further factor to be borne in mind when interpreting data drawn from the compensation system is the value of the compensation available (Figure 10).

Between 1971 and 1983 the relative value of Injury Benefit (payable for sickness absence due to prescribed disease), as compared to Sickness Benefit (payable for any sickness absence) fell. In cash terms the difference between these two benefits was £2.75 per week throughout this period. In 1971 this represented a 55 per cent bonus on top of Sickness Benefit: in 1983 the Injury Benefit bonus was only 11 per cent. The impact of this change on individuals' propensity to claim benefit will not be straightforward, but it seems likely that the erosion in value of the differential between Injury and Sickness Benefits will have led some

claimants to decide that the extra money was not worth the additional complication of claiming it. The value of disablement benefit—for which there is no corresponding 'alternative' benefit—increased in real terms from £56/week in 1971³ to £71/week in 1989.

In what follows, each disease—or related group of diseases—is considered in turn, summarising the appropriate data from the Industrial Injuries Scheme in a series of Figures, together with data from other sources when this is available. The general commentary is followed by tables for each of the main data sources, giving the detailed figures. Additional information on the sources is given in the final section, 'Notes on tables'.

General commentary

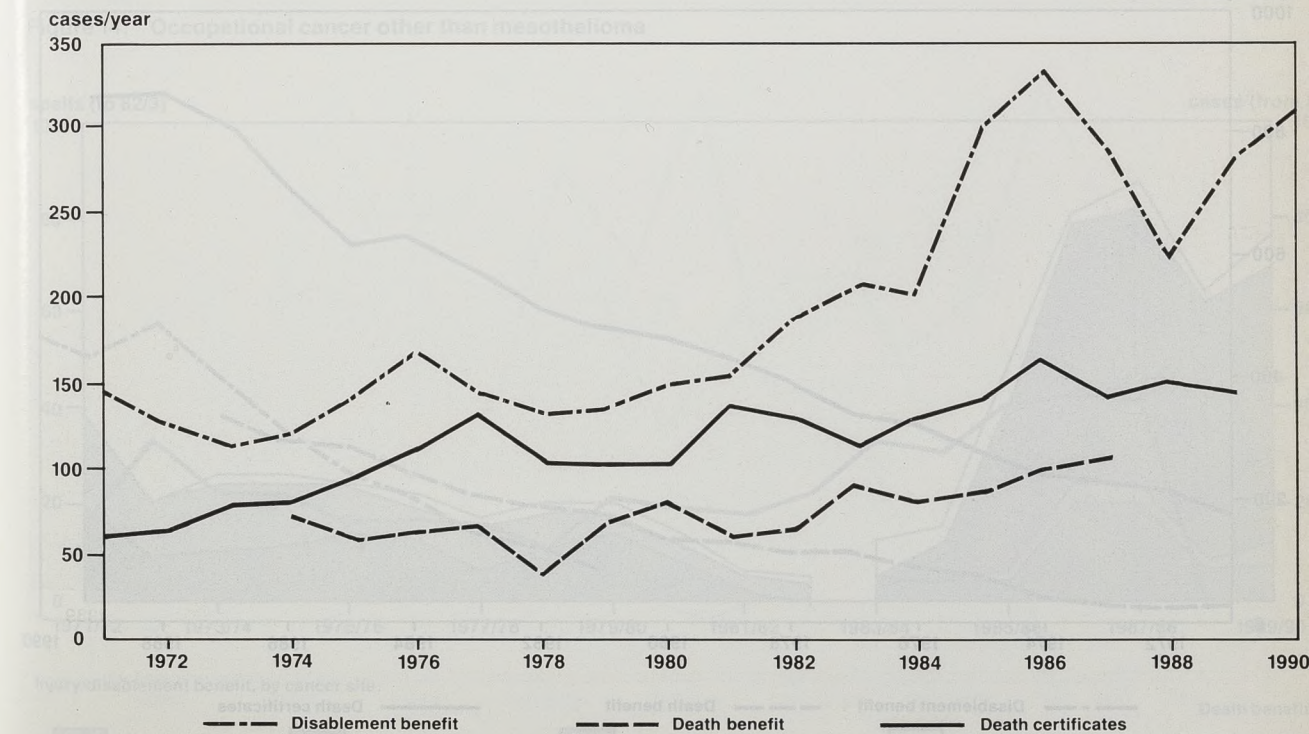
Pneumoconiosis (other than asbestosis)

The rules governing the award of Disablement Benefit for pneumoconiosis have not been affected either by the abolition of Injury Benefit nor by the restriction of benefit to cases with higher levels of disability. Knowledge of the disease and of the arrangements for compensation are widespread within the main affected industries: mining, quarrying, foundries and potteries. The figures for compensated cases can therefore be expected to give a reasonably accurate reflection of the incidence of disease. This is borne out by the similar trends shown by the three available series: Disablement Benefit, Death Benefit and deaths with pneumoconiosis as their registered underlying cause (figure 11).

Pneumoconiosis is a disease that takes a long time to develop. Only in exceptional cases will the disease be produced in less than ten years, and most cases appear between 15 and 30 years from first exposure. This means

³ Revalued to 1989 prices.

Figure 12: Asbestosis



Figures for 1990 do not include cases awarded by Medical Appeals Tribunals (see Table 45)

that the cases now coming forward largely reflect the working conditions of ten and more years ago.

Due to the long and variable delay from first exposure to the onset of detectable disability, the broad trend of the figures is more informative than any detailed fluctuations from year to year about changes in the incidence of these diseases; and, by implication, changes in the conditions that produced them. In these broad terms, the figures show a steady decline in pneumoconiosis other than asbestosis.

Asbestos-related disease

Three diseases have been unequivocally linked to asbestos exposure: asbestosis, mesothelioma, and lung cancer. By definition, every case of asbestosis is due to asbestos; the association with mesothelioma is also very strong, though there is a 'natural' background incidence of about 2 cases/million/year (ie about a hundred cases per year nationally). For lung cancer the situation is different, since the predominant cause of this cancer is smoking. Asbestos exposure increases the risk of disease both in smokers and non-smokers, (though, in absolute terms, much more so for smokers than non-smokers). Lung cancer is a prescribed disease in connection with asbestos provided the individual shows some other clinical sign of asbestos exposure (asbestosis, or pleural thickening), as well as evidence of occupational asbestos exposure. All three of these diseases display long delays from first exposure to diagnosis: typically 15 to 25 years for asbestosis and up to 40 years for lung cancer and mesothelioma.

For asbestosis (figure 12), Disablement Benefit awards show a continuing, but erratic upward trend. They fluctuated between 100 and 200 per year through the 1970s and early 1980s, rose to a maximum 329 in 1986, then fell back to 225 in 1988, rising again to 306 in 1990. Throughout this period awards of death benefit have grown from around 70 in the early 1970s to just over 100 in

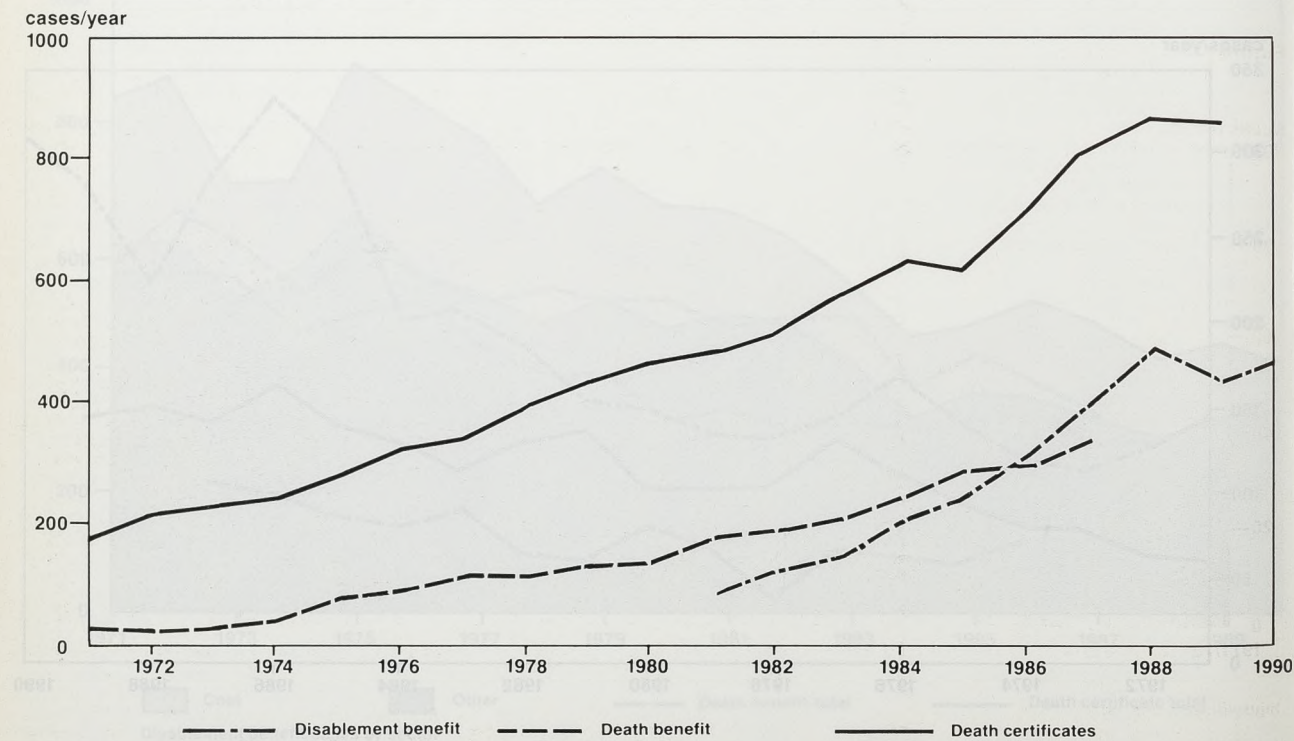
1987. Death certificates mentioning asbestosis (excluding those also mentioning mesothelioma), show a somewhat stronger increase from similar levels in the mid-1970s to around 145 in 1989.

From 1974 to 1986 the proportion of disablement benefit awards for asbestosis falling into the different percentage disablement categories (table 46) remained very stable. In 1987 the percentage of awards assessed at 10 per cent or less fell from about a third to about a fifth of all awards. In a similar way the median age of first diagnosis had been constant at just under 60 up to the beginning of the 1980s, it then began to rise slowly and is now around 64. These two fairly recent trends might indicate a tendency for individuals to claim benefit later in the course of the disease than previously.

The figures for mesothelioma (Figure 13 and table 50) show a strong and continuing increase over the past 20 years, with about 850 deaths in 1989. Part of the increase up to the early 1970s may have been due to increasing awareness of mesothelioma and its significance. The typically long delay between first exposure to asbestos and death from mesothelioma means that the deaths now occurring are in the main due to exposures in the 1940s and 1950s. The major reductions in exposure levels and in the use of crocidolite since the early 1970s and the more recent contraction in the exposed workforce are not expected to show up in the mesothelioma mortality figures for some years to come.

The numbers of awards for mesothelioma have risen steeply in recent years, though they fall well short of the numbers recorded on death certificates (currently over 800 a year). Although both sources are imperfect, the death certificate series (table 50) probably gives a more reliable picture of trends in the incidence of this disease than the numbers of Disablement Benefit awards (table 44), since death certification will not be affected by

Figure 13: Mesothelioma



Note: 1987 is last full year for Death Benefit. Disablement Benefit figures not available for years to 1980.

changes in compensation rules or their application, nor by changes in individuals' propensity to claim compensation.

Table 51 gives a breakdown of deaths from mesothelioma by sex and age for seven three-year periods from 1969-71 to 1987-89. The proportion of these deaths that were in males rose from 77 per cent in 1969-71 to 86 per cent in 1987-89, reflecting the higher rate of increase in male deaths over the period. Comparing 1987-89 with 1969-71 there was a five-fold increase in male deaths while female deaths increased at a little more than half this rate.

Comparing the two most recent six-year periods, there are very appreciable increases in the numbers of male deaths in each age group, especially among the over 55 age group where there was a 73 per cent rise. For females there were increases, in the over 65 age group only.

Mesothelioma death rates (per million) are given for Great Britain and the standard regions in table 52 for 1981-89. The trend in the male rates for Great Britain is still strongly upwards. For females the rate for 1984-86 was only a little more than in 1981-83, though there was a subsequent increase in 1987-89.

For both sexes the rates in the Northern region are the highest, being more than twice the national average for males and only a little less than double for females. Each region shows an increase on male death rates for 1987-89 compared with 1981-83. With the smaller numbers the pattern of female regional rates is a little more variable, with increases apparent for 1987-89 compared to 1984-86 in all but two regions (the East Midlands and East Anglia), and what appears to be a reversal of a trend of falling or stabilising rates between 1981-83 and 1984-86 in five regions (Yorkshire, the North West, the West Midlands, the South East excluding Greater London and Scotland).

Asbestos-related lung cancer as a prescribed disease has given rise to an average of 57 awards/year over the last three years (see figure 14 below). Studies of particular groups of asbestos exposed workers suggest that the numbers of excess lung cancers produced is—roughly, and

with considerable variation from study to study—double the number of mesotheliomas. This suggests that the actual number of lung cancer cases attributable to asbestos exposure is currently well over 1,000 per year. Many of these cases may not be recognised as such by the sufferers or by their doctors. There is no clinical feature by which lung cancers caused by asbestos can be definitively distinguished from cases in which asbestos has not been involved.

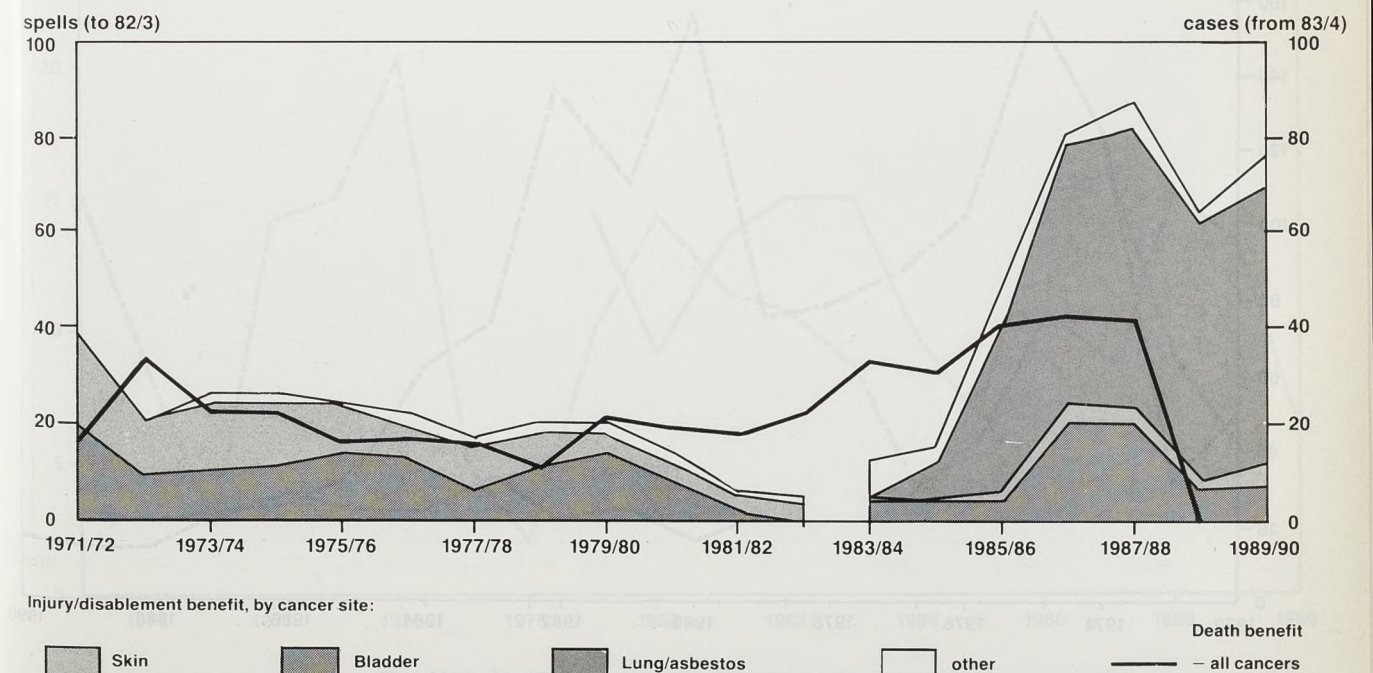
Other occupational cancers

Apart from asbestos-related lung cancer, some other established occupational carcinogens have been prescribed: aromatic amines (bladder cancer), nickel (nasal and lung cancer), wood and leather dusts (nasal cancer), vinyl chloride (angiosarcoma of the liver), mineral oil and some other substances (skin cancer). The numbers of awards for these cancers are summarised in figure 14. As for asbestos-related lung cancers, most cases attributable to these causes are likely to remain undetected and, consequently, uncompensated.

No estimate of the total numbers of cancers due to work-related factors can be accurately made, and it is important to remember that for a multi-factorial disease such as cancer, several separate causes may be needed, none of which is sufficient on its own to produce the disease. To speak of cancers being 'caused' by an occupational exposure may be true in the sense that the removal of that exposure would have led to the avoidance of the cancer, but the removal of other contributing causes would also have the same effect. In a review of the numbers of 'avoidable' cancers Doll and Peto⁴ estimated that around 4 per cent of cancers (with a range of acceptable estimates from 2 per cent to 8 per cent) could be avoided by the elimination of all work place carcinogenic risks (including asbestos exposure). This would imply an annual total of about 5,000 premature deaths from work-related cancer in Great Britain.

⁴"The Causes of Cancer", R Doll and R Peto, OUP 1982.

Figure 14: Occupational cancer other than mesothelioma



Injury/disablement benefit, by cancer site:

Legend: Skin (light grey), Bladder (dark grey), Lung/asbestos (medium grey), other (white), Death benefit - all cancers (solid line).

Occupational asthma

Summary data for occupational asthma are shown in figure 15, with detailed figures given in table 47. Benefit became payable for this condition when linked with a specified range of substances (agents one to seven in the table) from March 1982. From September 1986, seven new categories of sensitising agents were added to the list; totals

for the original list and for the additional categories are shown separately in the table and in figure 15.

Occupational asthma has a much more rapid onset than the pneumoconioses, and awards can be expected to reflect working conditions within a much shorter time-scale. However, the numbers of compensated cases in the early

Figure 15: Occupational asthma by sensitising agent group

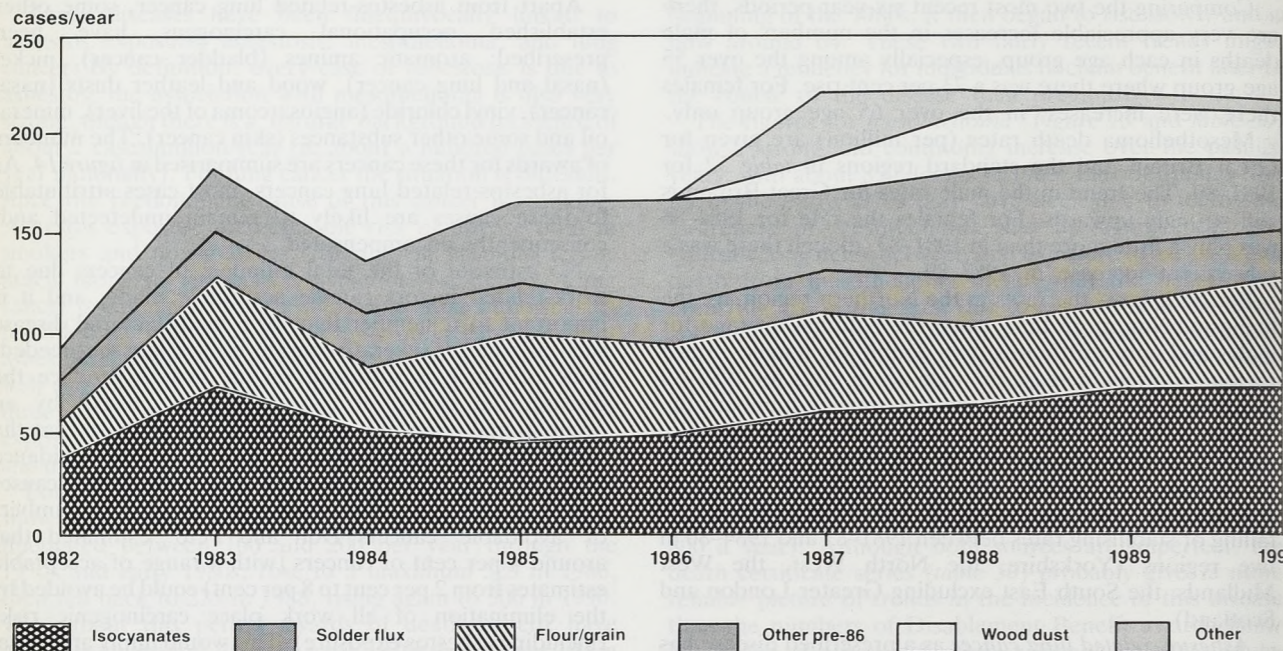
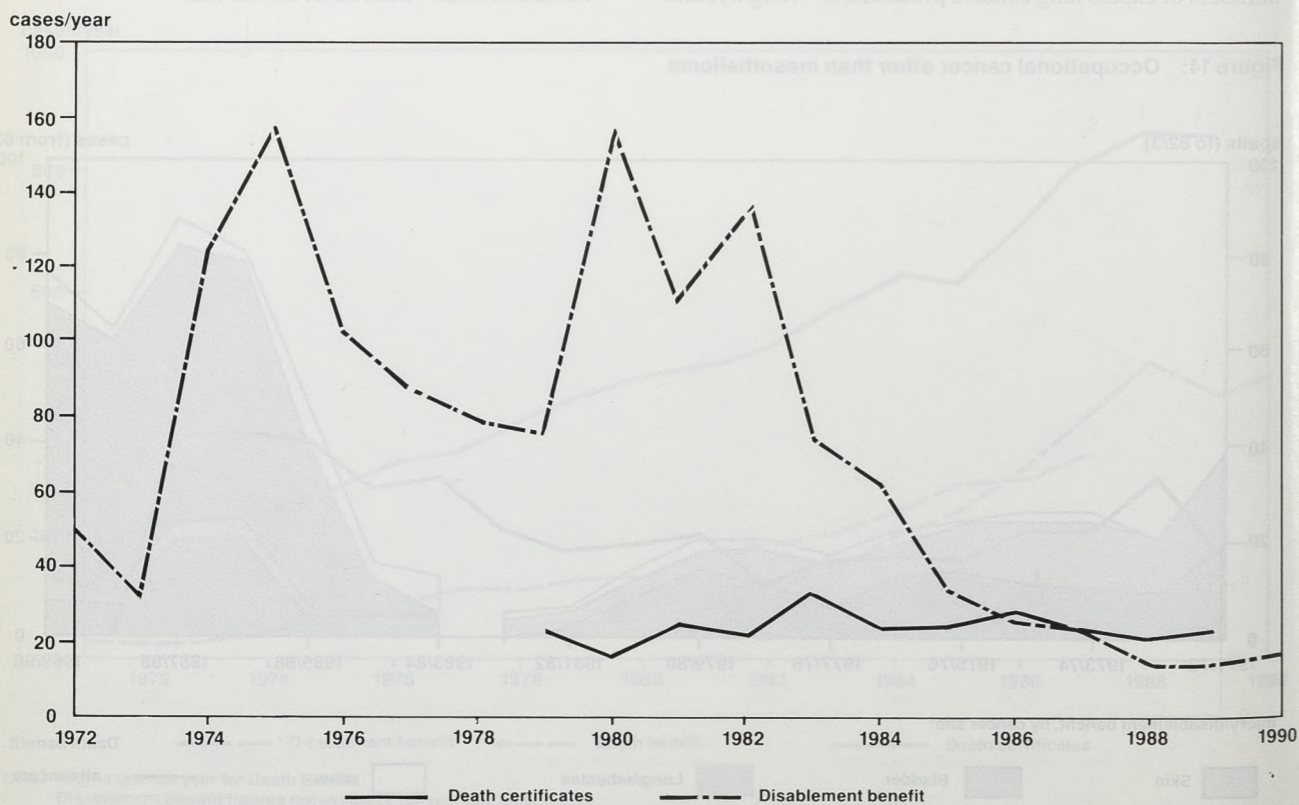


Figure 16: Byssinosis



years of prescription may be affected by the spread of knowledge of the possibility of compensation and by the fact that awards can be made retrospectively within ten years of exposure to prescribed conditions.

For the original list of agents, the total shows a small but steady increase from an average 139 in first three years to an average 186 in the last three years. The extension of the list of prescribed agents in September 1986 produced 49 additional awards in 1987, falling to 28 in 1990.

Three main categories account for over 75 per cent of cases: isocyanates, soldering flux, and flour/grain. Most cases (70 per cent overall) are assessed at 10 per cent disability or less, and very few at more than 50 per cent. The pattern of severity is similar for all sensitising agents.

Since the beginning of 1989, the Epidemiological Research Unit at the London Chest Hospital, in collaboration with the British Thoracic Society and the Society of Occupational Medicine, and funded by HSE, has operated a reporting scheme for cases of occupationally-related respiratory disease seen for the first time by occupational and chest physicians throughout the United Kingdom. In this scheme ("Surveillance of Work-related and Occupational Respiratory Disease"—SWORD), 554 new cases of asthma were reported in the course of 1989, and 564 in 1990. A detailed analysis of the 1989 data has been published by the SWORD team⁵. This analysis showed that only half of the cases reported in the SWORD scheme were due to prescribed agents. Within this group of cases the pattern of sensitising agents was broadly similar to that among compensated cases, though with isocyanate cases more dominant among the SWORD cases (43 per cent), than among the compensated cases (29 per cent). The SWORD analysis of asthma rates showed strong regional variations which were only partially explained by differences in the geographic distribution of industry. If these differences are

interpreted as indicating the extent of under-reporting within the SWORD scheme, they imply a national incidence between two and three times the recorded level (and, consequently, up to six times the number of compensated cases).

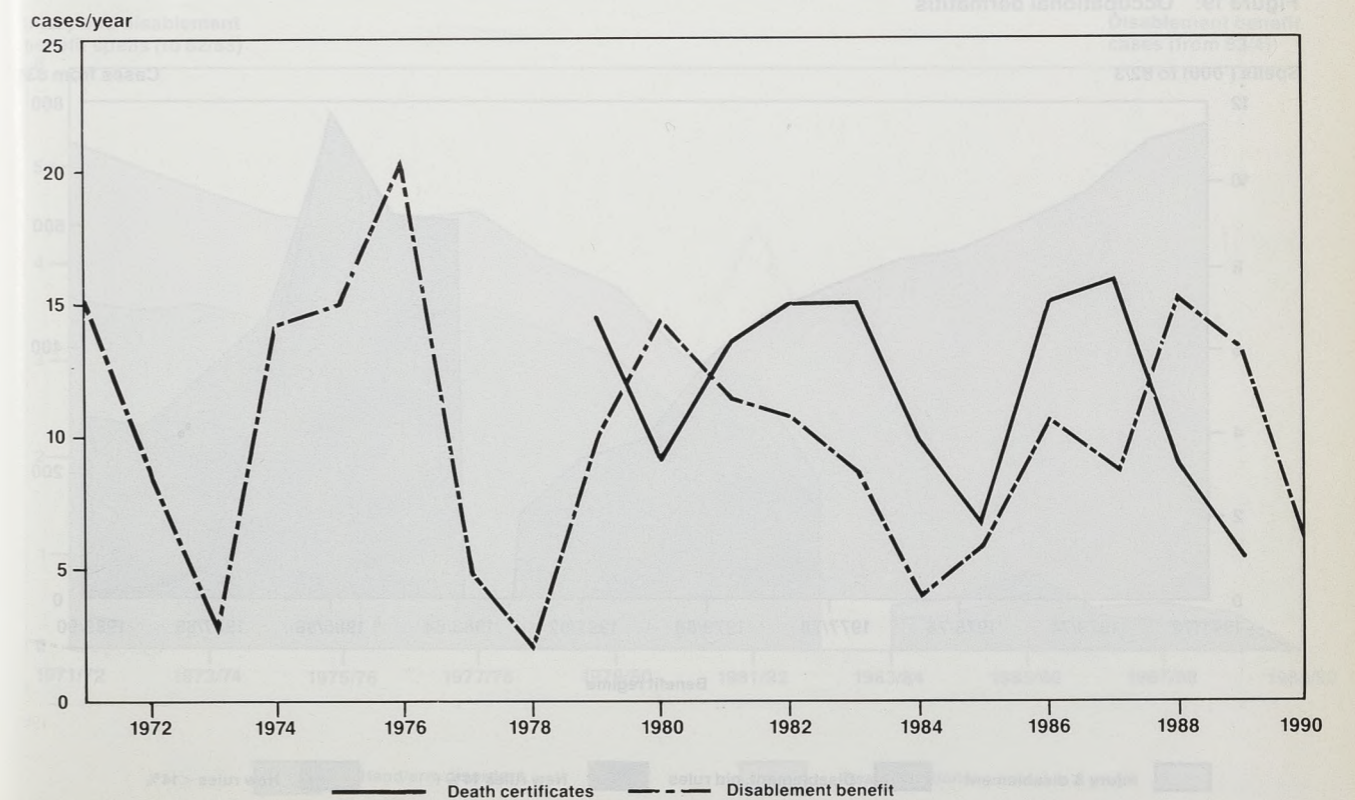
Byssinosis, Farmers' Lung etc

Byssinosis is an illness associated with exposure to cotton dust with both acute and, in some cases, long-term effects. The numbers of cases have decreased steadily, although changes in the compensation rules, most recently in 1979, have periodically produced sharp increases in the numbers of compensated cases. The numbers of death certificates with byssinosis recorded as the underlying cause of death (separately identifiable only from 1979), have remained constant at around 25 deaths per year (figure 16). The numbers of byssinosis cases recorded by SWORD in 1989 and 1990 was 30.

Farmers' Lung is an allergic reaction to fungal spores, particularly those which grow in mouldy hay. Similar conditions are suffered by other groups of workers—for example mushroom pickers—with similar exposures. Few cases—around 10 per year—are recorded through the compensation system (figure 17). One explanation for this will be that many farmers are self-employed and therefore cannot claim benefit under the Industrial Injuries Scheme. The numbers of deaths ascribed to Farmers' Lung (and related conditions), is around the same level, which suggests, since the disease rarely progresses to a life-threatening level, that there are substantially more cases than those receiving compensation. The SWORD figures record 57 cases of this type of disease in 1989 and 44 in 1990.

⁵ "Occupational respiratory disease in the UK 1989". British Journal of Industrial Medicine, 1991; 48: 292-298.

Figure 17: Farmer's lung



Building-related Sickness

This heading covers a range of mostly ill-defined illness which can be due to features of the indoor environment, mainly associated with air conditioning and humidification, but also, in some cases, with lighting. Because in most cases the symptoms are non-specific—headache, runny nose, loss of concentration—the presence of building-related sickness can be difficult to detect, and it can never be diagnosed with certainty at the individual level. This creates obvious difficulties in estimating the scale of the problem. Surveys commonly show doubling in the

prevalence of a range of relatively minor respiratory symptoms. But although the symptoms are seldom serious the efficiency loss to an organisation in which, perhaps, 20 per cent of their workforce are unnecessarily below par can be considerable. The WHO has estimated that 30 per cent of new or re-fitted buildings are subject to this problem. Unless care is taken over the design of new buildings and the correct operation of air quality control systems, the problem will grow. The SWORD register records 32 sporadic cases of building-related illness in 1989 and 1990, plus a further 190 cases identified in outbreaks, but in the

Figure 18: Occupational infections

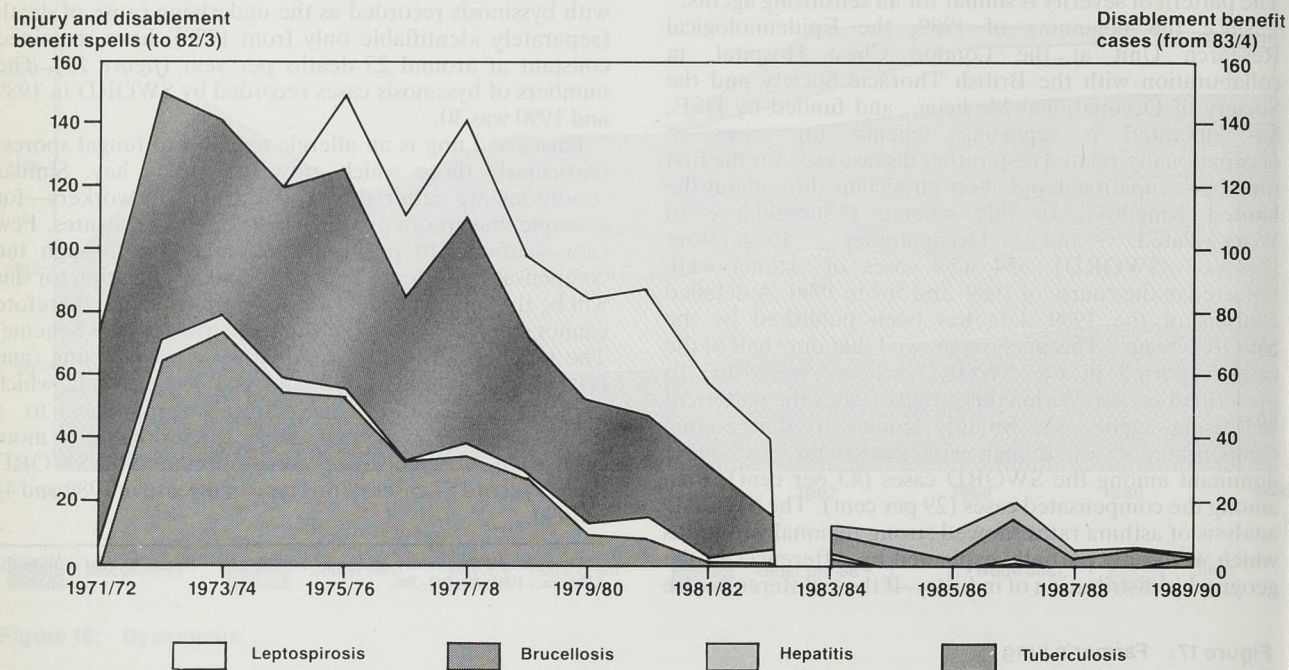
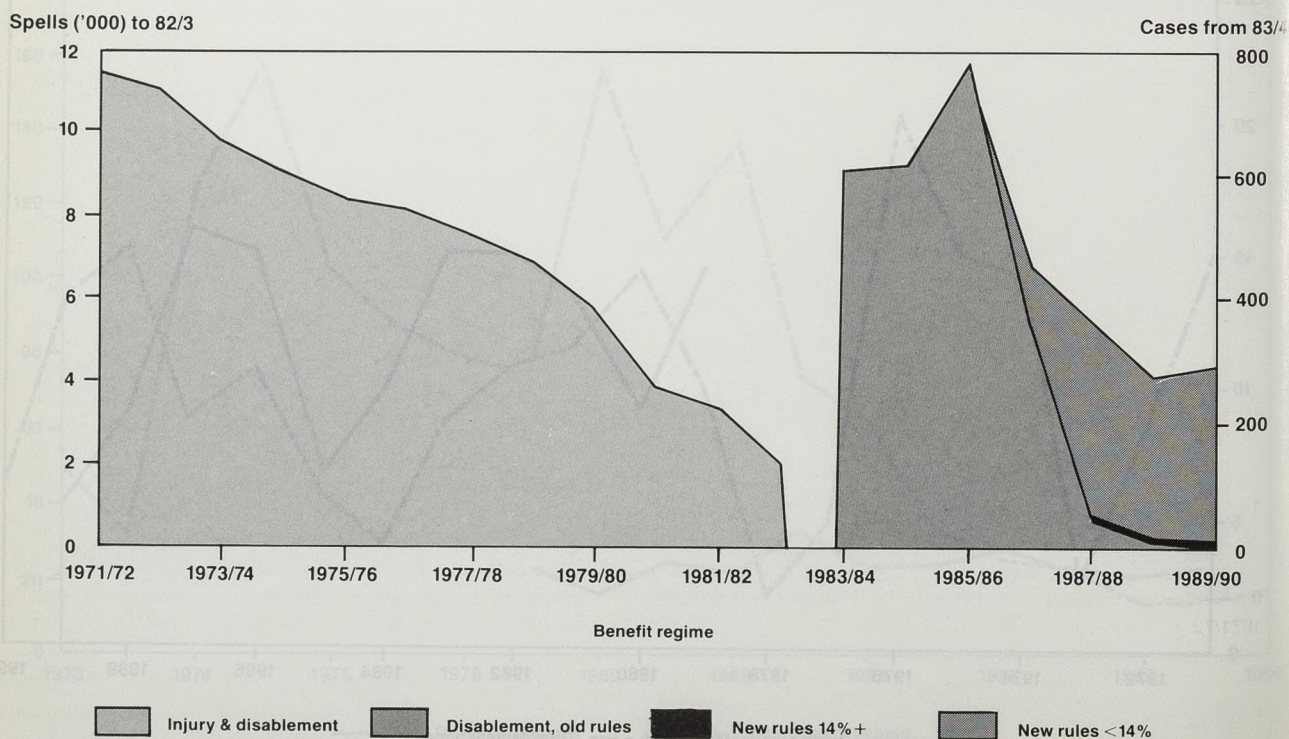


Figure 19: Occupational dermatitis



nature of this disease, the majority of cases are unlikely to be seen by either occupational or specialist chest physicians.

Infections

There are two broad categories of job in which some infections are an occupational risk:

workers in contact with animals—live or dead (farmers, vets, slaughtermen);

workers in contact with human sources of infection (medical staff, sewage workers).

For all these risks, only rough estimates of case numbers can be made.

About 40 cases of *leptospirosis* are recorded annually by the Communicable Disease Surveillance Centre (CDSC) where occupation is the most plausible cause. Serological surveys of dairy farmers have demonstrated high prevalences of antibody to *leptospira hardjo*, which implies there may be a considerable burden of sub-clinical—and overt but non-serious—disease which is due to this organism but not recognised as such.

Around 10 cases of *brucellosis* and 50 of *orf* are recorded annually by CDSC. Most of these are occupational (or para-occupational for example farmers' families).

CDSC recorded 16 cases of *psittacosis* (ornithosis) in 1988 among people with occupational exposure to birds.

An average of 12 cases/year of *coxiella burnetii* infection are recorded among farm and abattoir workers. The true figure may be substantially higher. The total of such cases is about 130/year, and for most of these no indication of the infection source is given.

The number of cases of *hepatitis B* infection among health care workers is falling, presumably as a result of vaccination. Annual totals recorded from 1985 to 1988 were 47, 39, 29 and 24 (31 of these cases were acquired abroad). Contact history is only recorded in about 60 per cent of cases, so these figures will be under-estimates. In 1988, 34 cases of *hepatitis A* were associated with health care and sewage workers in CDSC returns.

Between 1981 and 1984 CDSC recorded 129 cases of *tuberculosis* among health care workers—an average of 32 cases/year. This is about double the number awarded benefit for TB as a prescribed disease.

Hepatitis, TB, brucellosis and leptospirosis are all prescribed diseases. However, since cases will only very rarely be disabling in the long term, the current incidence of these infections will not be reflected in payments of Disablement Benefit. This is borne out by a comparison of

Figure 20: Estimates of the annual number of cases of occupational dermatitis drawn from GP surveys

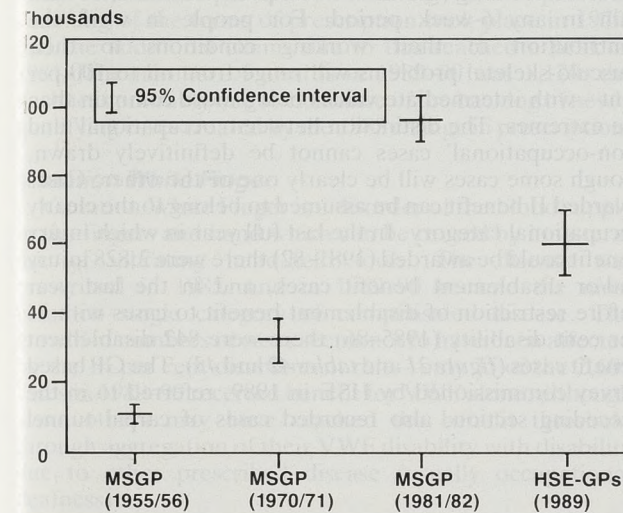
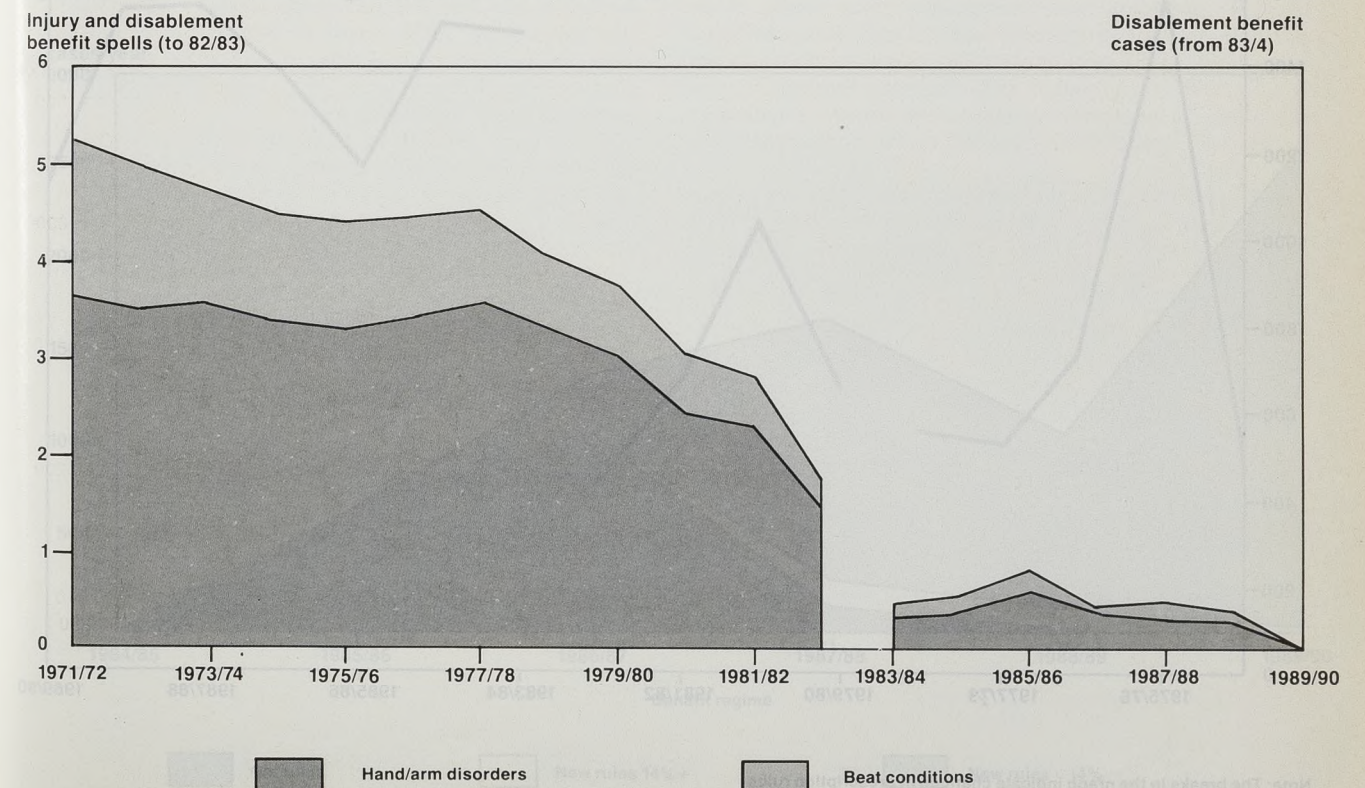


Figure 21: Musculo-skeletal disorders compensated cases ('000)



the likely number of cases as recorded in CDSC records—over 100 per year—with the figures shown in figure 18 for compensated cases—less than 20 per year since the removal of Injury Benefit (see also tables 42 and 43).

Dermatitis

The risk of dermatitis caused by allergic or irritant reaction to substances used or handled at work is present in a wide range of jobs. However, in the workforce as a whole, the prevalence has fallen as conditions have improved and as the number of 'dirty' jobs has contracted. Figure 19 shows that the annual number of cases of compensated occupational dermatitis (strictly, the number of spells of sickness absence due to dermatitis for which Industrial Injury Benefit was paid) fell from over 10,000 in 1971-72 to about 2,000 in 1982-83 (the ten months to March 1983, the final period for which Injury Benefit was normally payable).

Over the next three years (1983-84 to 1985-86) the numbers of Disablement Benefit cases rose from about 600 to nearly 800. The introduction of the 14 per cent rule had an immediate effect on the numbers of cases diagnosed, and the numbers recorded dropped from 464 to 285. In the four years since this last change (1986-87 to 1989-90) only 25 of the 996 cases positively assessed under the new rules qualified for any benefit.

There are two alternative sources for data on occupational dermatitis, both based on records of general practitioner consultations. The "Morbidity Statistics from General Practice" (MSGP) surveys (1955-56, 1970-71 and 1981-82) each give data on consultations for occupational dermatitis, though the definitions used have not been exactly the same in the three surveys. In the first six months

of 1989, the HSE commissioned a survey based on 73 GPs from all parts of the country, who recorded the number of cases of occupational dermatitis which they saw in the survey period.

Estimates of the annual number of cases nationally implied by these four GP-based surveys are shown in figure 20: 11,000 in 1955-56; 35,000 in 1970-71; nearly 100,000 in 1981-82 and 60,000 in 1989. These changes cannot be directly interpreted as trends since the underlying definitions—and their interpretation by the participating doctors—will not be exactly comparable but they do not appear to be consistent with the substantial fall in case numbers implied by the compensation data.

Musculo-skeletal disorders

Musculo-skeletal conditions affect a very large number of people, both in work and out of it. For example, nearly half of all working age adults will experience some low back pain in any 6-week period. For people in work the contribution of their working conditions to their musculo-skeletal problems will range from nil to 100 per cent—with intermediate values being more common than the extremes. The distinction between 'occupational' and 'non-occupational' cases cannot be definitively drawn, though some cases will be clearly one or the other. Cases awarded II benefit can be assumed to belong to the clearly occupational category. In the last full year in which injury benefit could be awarded (1981-82) there were 2,828 injury and/or disablement benefit cases, and in the last year before restriction of disablement benefit to cases with 14 per cent disability (1985-86) there were 842 disablement benefit cases (figure 21 and tables 42 and 43). The GP based survey commissioned by HSE in 1989, referred to in the preceding section, also recorded cases of carpal tunnel

syndrome (CTS)—symptoms caused by the entrapment or compression of nerves in the wrist—which can be caused by repetitive twisting and gripping. The participating GPs judged that about half of the cases of CTS which they saw were either caused or exacerbated by the patients' work. On this basis the observed rates of work-related CTS were 0.8 per 1,000 in women and 0.4 per 1,000 in men. This would imply a national annual incidence of 20,000 work-related cases for which medical advice was sought.

Occupational deafness

The most numerous single category of new awards for Disablement Benefit is for occupational deafness (figure 22 and tables 42 and 43), for which awards reached a peak in 1987 to 1989 following a change in qualifying conditions introduced on October 1, 1983. From that date, claimants need only have worked ten or more years in prescribed noisy conditions—previously it was 20 years. A previous widening of the terms of prescription took place in 1979, and the additional claims due to this reached a peak in 1981. The number of awards in 1989-90 was 1,128: the decline is probably due to clearance of the backlog of newly qualifying cases created by the 1983 change in prescription.

Vibration White Finger

Vibration White Finger is a disorder of the blood supply to the fingers and hand which can be caused by long-term use of vibrating hand-held tools. The disease was prescribed in 1985, and in 1989-90 became the most common single category of compensated disease. The growth in numbers of cases seems not to have been affected by the 14 per cent disablement rule—only 35 of the 2,601 cases in 1989-90 received benefit for VWF alone, although some others may have reached the benefit threshold through aggregation of their VWF disability with disability due to other prescribed disease (usually occupational deafness).

The damage caused by vibration is chronic rather than immediate, and the cases diagnosed this year will be the product of at least five years, and in some cases more than 20 years exposure to vibration. The HSE recently published a survey of exposure to hand-arm vibration in Great Britain. The conclusions of the survey are summarised in the following table:

Estimated numbers of workers using vibrating tools, by sector

Sector	Thousands	
	Total	(of which High Usage*)
Manufacturing	289	(115)
Public utilities	9	(4)
Agriculture	29	(9)
Forestry	5	(4)
Construction	94	(22)
	426	(154)

* High usage was defined as 'all day' use for construction workers, and more than 4 hours/day at least once a week or more than 30 minutes/day on 2 or more days/week for other sectors.

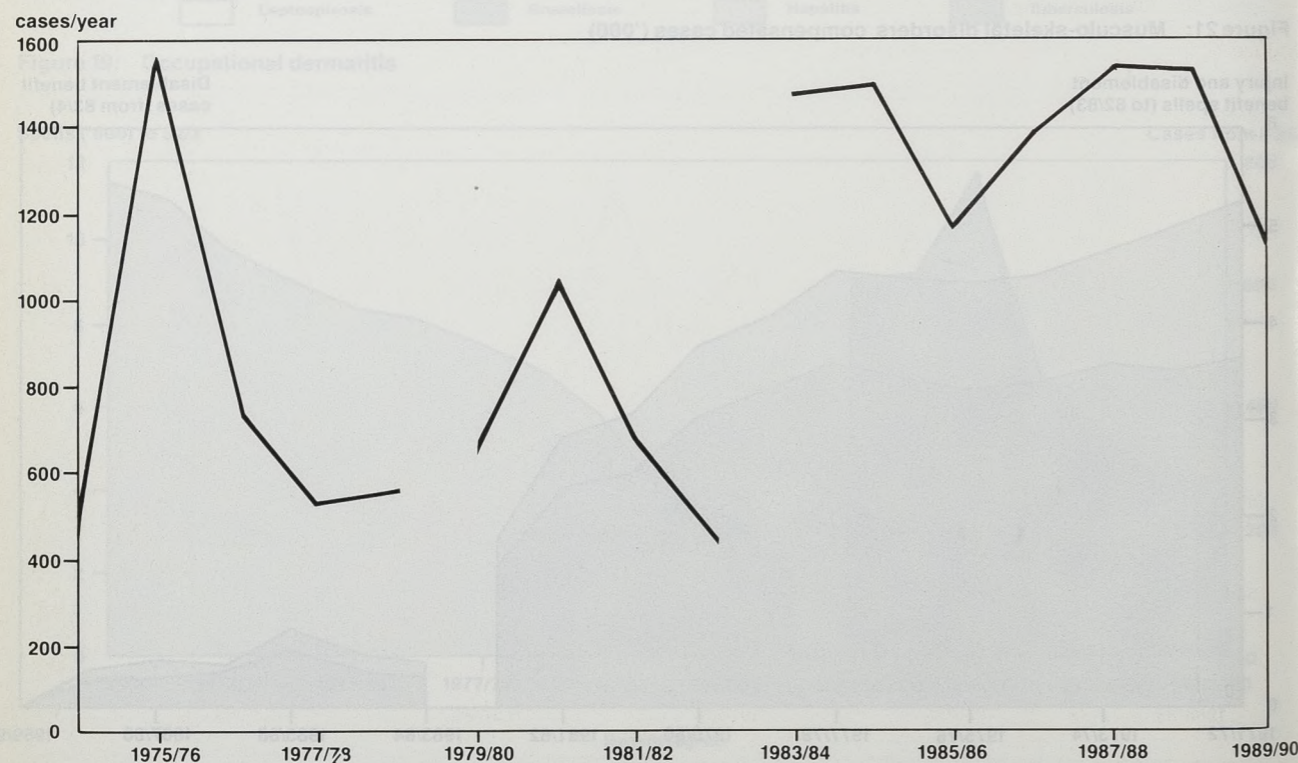
The point above which usage is described as "high" is set fairly low, and workers with exposures below this level are unlikely to develop VWF. In the high use category the chances of developing VWF will depend on the vibration levels generated by the tools used, and on the number of years exposure.

Acute poisoning

Acute poisoning by chemicals at work is reportable under RIDDOR as an industrial accident (and, for some substances, also as a reportable illness). Around 2,000 cases are reported annually, with 20 to 30 fatalities.

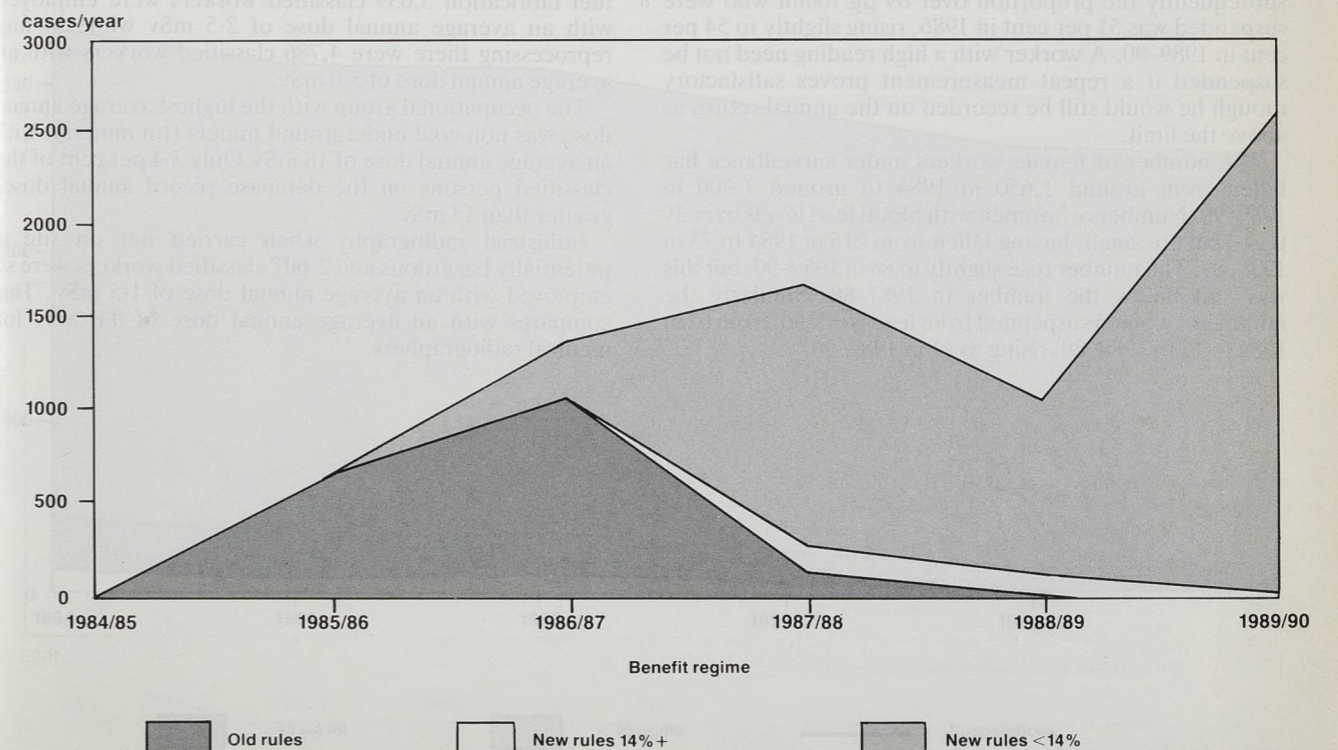
A study commissioned by HSE of cases of poisoning by industrial chemicals in 1985 based on a 10 per cent sample of attendances at NHS Accident and Emergency Departments showed that 6 per cent of attendances for

Figure 22: Occupational deafness – disablement benefit



Note: The breaks in the graph indicate changes in prescription rules

Figure 23: Vibration White Finger disablement benefit cases



poisoning arose from work place exposures. This implies an annual national total of about 14,000 cases. The commonest categories of substance were acids, alkalis, irritant vapours and solvents. There were no deaths in the sample, and the discharge rate was higher than for other types of poisoning, suggesting a higher proportion of precautionary attendances.

Exposure to lead

The Control of Lead at Work Regulations 1980 require regular medical examination of all workers with significant exposure to lead by an Appointed Doctor. The examination includes measurement of workers' blood lead levels. Annual returns from Appointed Doctors give a summary for each work place of the maximum blood lead level recorded for each worker under surveillance. Data drawn from these returns is shown in figures 24, 25 and table 53.

Figures for 1984-86 refer to calendar years; the more recent figures for 1987-88 and 1988-89 were collected on a financial year basis (April 1-March 31). The regulations prescribe that when a male worker's blood-lead level exceeds a certain limit (79 $\mu\text{g}/100\text{ml}$ from 1984 to 1985 but lowered to 69 $\mu\text{g}/100\text{ml}$ in 1986) the responsible doctor will consider whether he should be suspended from working with lead. For females of reproductive capacity a lower limit of 39 $\mu\text{g}/100\text{ml}$ is prescribed, above which the doctor will consider suspension from work.

The number of males under surveillance has remained stable at around 22,000 or 23,000 in recent years. The figures for 1989-90 continue the general trend of declining numbers of men with elevated blood lead levels. The number of men over 79 $\mu\text{g}/100\text{ml}$ has fallen each year since 1984 apart from a brief rise in 1987-88; there were 168 men recorded as having such levels during 1989-90 compared with 366 in 1984. Similarly there have been falls in the number of men over 69 $\mu\text{g}/100\text{ml}$, which in 1986 was set as the revised limit above which suspension would be considered; there were 534 men over this limit in 1989-90 compared with 694 in 1986. In 1985 74 per cent of males over 79 $\mu\text{g}/100\text{ml}$ were suspended from work, while subsequently the proportion over 69 $\mu\text{g}/100\text{ml}$ who were suspended was 51 per cent in 1986, rising slightly to 54 per cent in 1989-90. A worker with a high reading need not be suspended if a repeat measurement proves satisfactory though he would still be recorded on the annual return as above the limit.

The number of female workers under surveillance has fallen from around 1,650 in 1984 to around 1,300 in 1989-90. Numbers of women with blood lead levels over 39 $\mu\text{g}/100\text{ml}$ are small, having fallen from 215 in 1984 to 73 in 1988-89. The number rose slightly to 88 in 1989-90, but this was still below the number in 1987-88. Similarly the number of women suspended from lead work fell from 62 in 1984 to 12 in 1988-89, rising to 21 in 1989-90.

Table 54 shows the distribution of blood levels by industrial sector in 1989-90. The lead battery industry, smelting, refining and casting, and work with metallic lead and alloys employed the most males under surveillance. For women, potteries, glazes and transfers, glass making and the lead battery industry were the main areas of employment.

The sectors having the highest proportions of men exceeding 69 $\mu\text{g}/100\text{ml}$ in 1989-90 were scrap, demolition, and lead batteries, with 14.7, 6.3 and 6.1 per cent respectively of their men over the limit, though the actual numbers in the scrap industry were small. For women the data are given as numbers rather than percentages since the numbers of women who exceed the 39 $\mu\text{g}/100\text{ml}$ level are very small. Most of the 88 such women were employed in the lead battery, potteries glazes and transfers, and badge and jewellery enamelling sectors.

Occupational exposure to ionising radiation

Large numbers of workers are exposed to ionising radiation of artificial or natural origin in the course of their employment. The National Radiological Protection Board (NRPB) have estimated the numbers to be 160,000 and 100,000 respectively. Only those workers who are formally designated as classified persons under the Ionising Radiations Regulations 1985 are required to be the subject of personal dosimetry, although many other workers are also routinely monitored for other purposes. Summarised information on radiation doses received by classified persons is submitted by dosimetry services to a Central Index of Dose Information (CIDI) operated on behalf of HSE by the NRPB. From the annual reports prepared by CIDI it will be possible to observe trends in the radiation exposure of different groups of workers. The first report covers the year 1986.

In that year there was a total of 56,044 classified workers for whom the average annual dose was 2.3 mSv. Large numbers of workers are exposed to ionising radiation in the course of nuclear reactor operations (5,654) and maintenance (8,813) for whom the average annual doses were 2.8 mSv and 3.0 mSv respectively. In the course of fuel fabrication 5,039 classified workers were employed with an average annual dose of 2.5 mSv while in fuel reprocessing there were 4,786 classified workers with an average annual dose of 5.0 mSv.

The occupational group with the highest average annual dose was non-coal underground miners (tin miners), with an average annual dose of 18 mSv. Only 3.4 per cent of the classified persons on the database record annual doses greater than 15 mSv.

Industrial radiography when carried out on site is potentially hazardous and 2,607 classified workers were so employed with an average annual dose of 1.5 mSv. This compares with an average annual dose of 0.8 mSv for medical radiographers.

Figure 24: Blood lead levels - Males

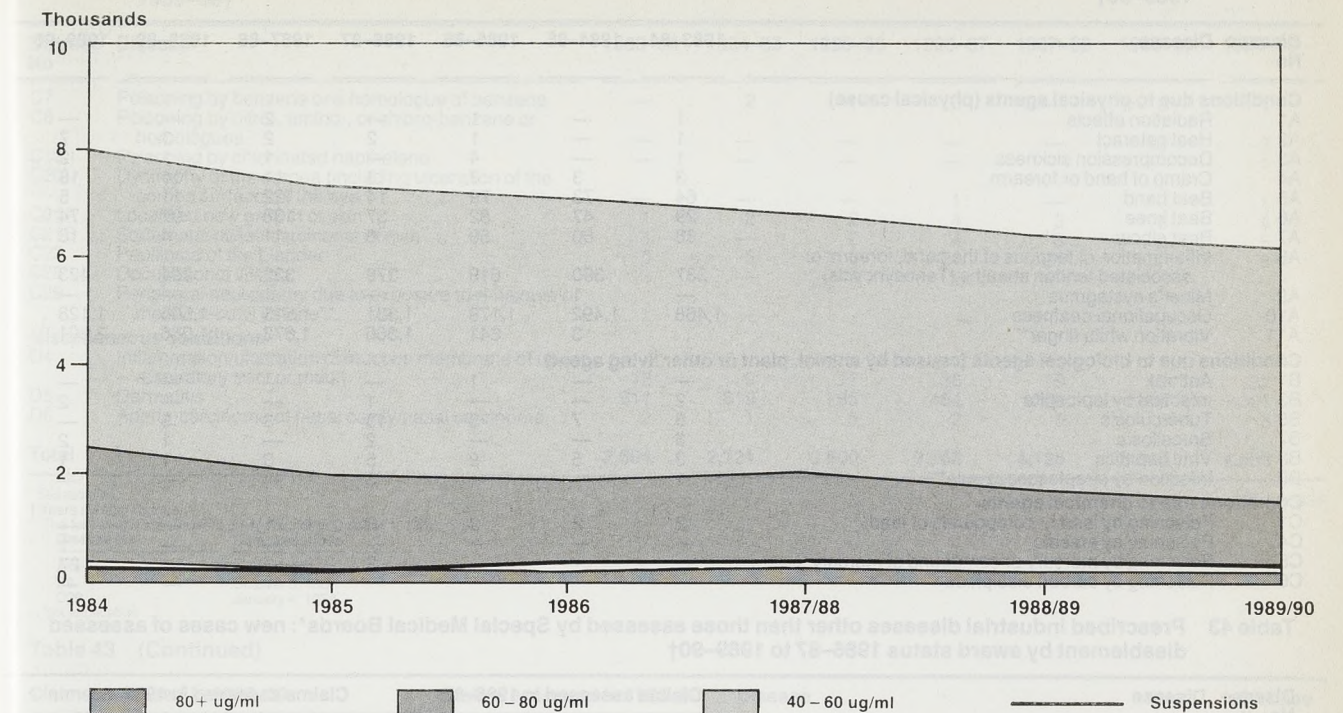


Figure 25: Blood lead levels - Females

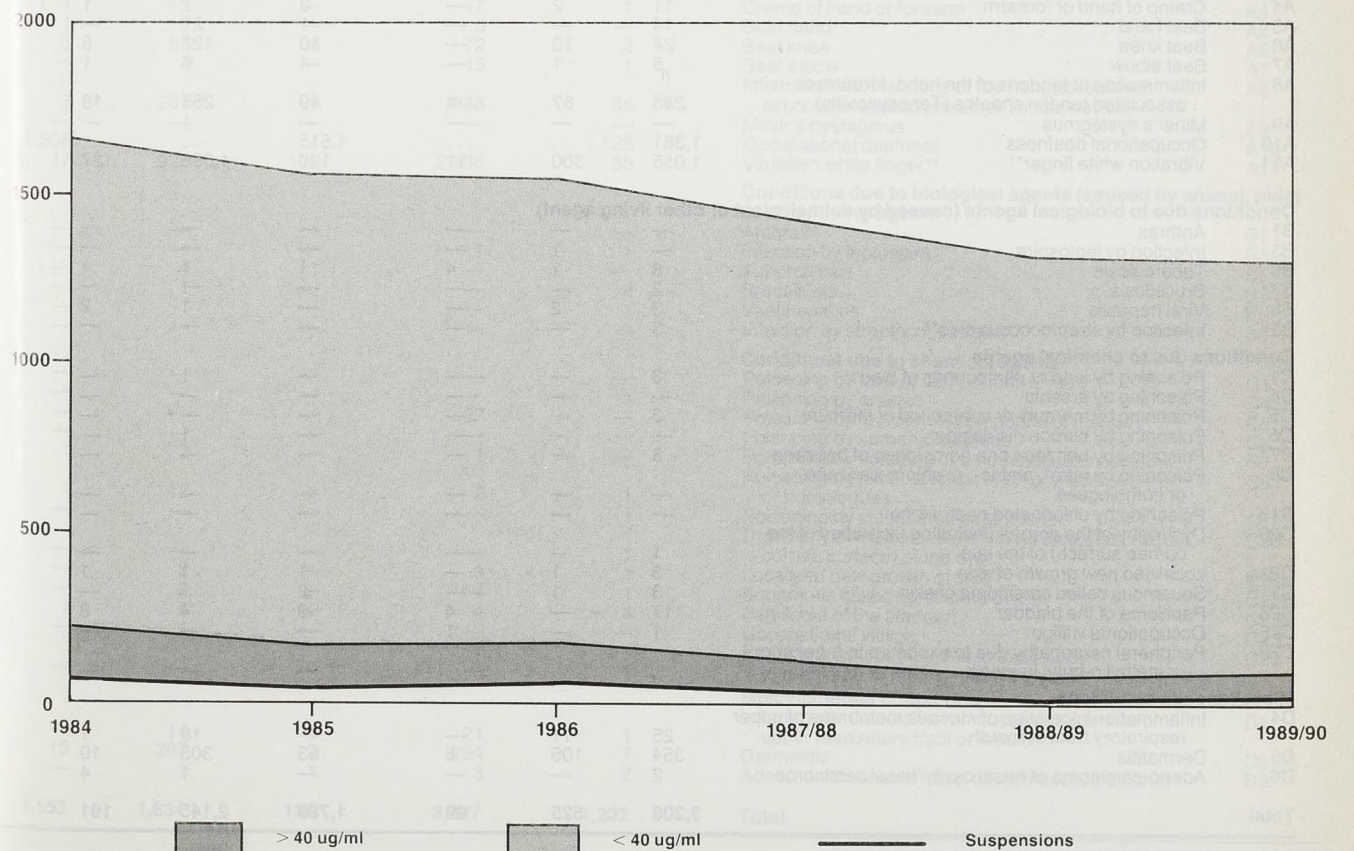


Table 42 Prescribed industrial diseases other than those assessed by Special Medical Boards*: new cases qualifying for disablement benefit by disease, 1983-84 to 1985-86†; new cases of assessed disablement by disease, 1986-87 to 1989-90†

Disease No	Disease	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
Conditions due to physical agents (physical cause)								
A1	Radiation effects	1	—	1	—	2	—	—
A2	Heat cataract	1	—	1	2	2	3	7
A3	Decompression sickness	1	—	4	—	1	1	2
A4	Cramp of hand or forearm	3	3	3	13	11	14	18
A5	Beat hand	64	73	79	14	22	11	5
A6	Beat knee	29	47	82	37	138	97	74
A7	Beat elbow	38	60	59	6	11	4	16
A8	Inflammation of tendons of the hand, forearm or associated tendon sheaths (Tenosynovitis)	337	390	619	376	322	294	423
A9	Miner's nystagmus	—	1	—	—	1	—	—
A10	Occupational deafness	1,468	1,492	1,179	1,381	1,515	1,506	1,128
A11	Vibration white finger**	—	3	641	1,366	1,673	1,056	2,601
Conditions due to biological agents (caused by animal, plant or other living agent)								
B1	Anthrax	—	—	1	—	—	—	—
B3	Infection by leptospira	2	—	—	1	—	—	2
B5	Tuberculosis	6	7	3	13	3	5	—
B7	Brucellosis	3	—	—	2	—	1	2
B8	Viral hepatitis	3	5	9	5	3	1	1
B9	Infection by streptococcus suis**	1	—	—	3	—	—	—
Conditions due to chemical agents								
C1	Poisoning by lead or compounds of lead	2	2	2	3	1	—	—
C4	Poisoning by arsenic	—	—	—	—	—	—	1
C5	Poisoning by mercury or compound of mercury	—	—	—	3	—	—	27
C6	Poisoning by carbon disulphide	—	—	—	—	1	—	—

Table 43 Prescribed industrial diseases other than those assessed by Special Medical Boards*: new cases of assessed disablement by award status 1986-87 to 1989-90†

Disease No	Disease	Claims assessed in 1986-87			Claims assessed in 1987-88		
		Old Rules Payment	New rules assessment 1-13 per cent (No benefit)	14 per cent† (Benefit paid)	Old Rules Payment	New rules assessment 1-13 per cent (No benefit)	14 per cent (Benefit paid)
Conditions due to physical agents (physical cause)							
A1	Radiation effects	—	—	—	—	2	—
A2	Heat cataract	2	—	—	—	1	1
A3	Decompression sickness	—	—	—	1	—	—
A4	Cramp of hand or forearm	11	2	—	3	7	1
A5	Beat hand	14	—	—	1	21	—
A6	Beat knee	24	13	—	10	122	6
A7	Beat elbow	5	1	—	4	6	1
A8	Inflammation of tendons of the hand, forearm or associated tendon sheaths (Tenosynovitis)	285	87	4	49	255	18
A9	Miner's nystagmus	—	—	—	—	1	—
A10	Occupational deafness	1,381	—	—	1,515	—	—
A11	Vibration white finger**	1,055	300	11	140	1,396	137
Conditions due to biological agents (caused by animal, plant or other living agent)							
B1	Anthrax	—	—	—	—	—	—
B3	Infection by leptospira	—	1	—	—	—	—
B5	Tuberculosis	8	1	4	1	1	1
B7	Brucellosis	2	—	—	—	—	—
B8	Viral hepatitis	3	2	—	—	1	2
B9	Infection by streptococcus suis**	3	—	—	—	—	—
Conditions due to chemical agents							
C1	Poisoning by lead or compounds of lead	3	—	—	—	1	—
C4	Poisoning by arsenic	—	—	—	—	—	—
C5	Poisoning by mercury or compound of mercury	3	—	—	—	—	—
C6	Poisoning by carbon disulphide	—	—	—	—	1	—
C7	Poisoning by benzene or a homologue of benzene	3	—	—	—	—	—
C8	Poisoning by nitro-, amino-, or chloro-benzene or homologues	—	—	—	—	—	—
C13	Poisoning by chlorinated naphthalene	—	—	—	—	—	—
C20	Dystrophy of the cornea (including ulceration of the cornea surface) of the eye	1	—	—	—	—	—
C21a	Localised new growth of skin	3	1	—	1	1	1
C21b	Squamous celled carcinoma of skin	3	1	—	2	1	—
C23	Papilloma of the bladder	17	—	4	9	4	8
C25	Occupational vitiligo	1	—	1	—	—	—
C29	Peripheral neuropathy due to exposure to n-hexane or methyl n-butyl keytone	—	—	—	—	—	—
Miscellaneous conditions							
D4	Inflammation/ulceration of mucous membrane of upper respiratory tract or mouth	25	11	—	—	18	1
D5	Dermatitis	354	105	5	53	305	10
D6	Adeno-carcinoma of nasal cavity/nasal carcinoma	2	—	—	—	1	4
Total		3,208	525	29	1,789	2,145	191

See footnotes to table 42.

Table 42 Prescribed industrial diseases other than those assessed by Special Medical Boards*: new cases qualifying for disablement benefit by disease, 1983-84 to 1985-86†; new cases of assessed disablement by disease, 1986-87 to 1989-90†

Disease No	Disease	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
C7	Poisoning by benzene or a homologue of benzene	—	2	1	3	—	3	1
C8	Poisoning by nitro-, amino-, or chloro-benzene or homologues	—	—	—	—	—	13	3
C13	Poisoning by chlorinated naphthalene	—	—	—	—	—	—	1
C20	Dystrophy of the cornea (including ulceration of the cornea surface) of the eye	—	—	—	1	—	—	1
C21A	Localised new growth of skin	1	2	2	4	3	2	4
C21B	Squamous celled carcinoma of skin	1	—	2	4	3	2	5
C23	Papilloma of the bladder	5	5	5	21	21	7	8
C25	Occupational vitiligo	3	—	—	2	—	1	—
C29	Peripheral neuropathy due to exposure to n-hexane or methyl n-butyl ketone**	—	—	—	—	—	—	1
Miscellaneous conditions								
D4	Inflammation/ulceration of mucous membrane of upper respiratory tract or mouth	12	9	17	36	19	15	22
D5	Dermatitis	611	619	785	464	368	285	301
D6	Adeno-carcinoma of nasal cavity/nasal carcinoma	2	1	5	2	5	2	5
Total		2,594	2,721	3,500	3,762	4,125	3,323	4,659

* See table 44.

† Years starting October 1.

** The following diseases were prescribed after October 1, 1983:

Disease No	Date prescribed
A11	April 1, 1985
B9	October 3, 1983
C29	January 4, 1988

... Not applicable.

Source: DSS

Table 43 (Continued)

Disease No	Disease	Claims assessed in 1988-89		Claims assessed in 1989-90	
		Old Rules Payment	New rules assessment 1-13 per cent (No benefit) 14 per cent (Benefit paid)	Old Rules Payment	New rules assessment 1-13 per cent (No benefit) 14 per cent (Benefit paid)
Conditions due to physical agents (physical cause)					
A1	Radiation effects	—	—	—	—
A2	Heat cataract	2	1	4	3
A3	Decompression sickness	1	—	—	2
A4	Cramp of hand or forearm	13	—	17	1
A5	Beat hand	10	—	5	—
A6	Beat knee	86	8	72	2
A7	Beat elbow	4	—	15	1
A8	Inflammation of tendons of the hand, forearm or associated tendon sheaths (Tenosynovitis)	7	281	6	388
A9	Miner's nystagmus	—	—	—	35
A10	Occupational deafness	1,506	—	—	1,128
A11	Vibration white finger**	17	926	113	2,566
Conditions due to biological agents (caused by animal, plant or other living agent)					
B1	Anthrax	—	—	—	—
B3	Infection by leptospira	—	—	1	1
B5	Tuberculosis	4	1	—	—
B7	Brucellosis	1	—	—	2
B8	Viral hepatitis	1	—	—	1
B9	Infection by streptococcus suis**	—	—	—	—
Conditions due to chemical agents					
C1	Poisoning by lead or compounds of lead	—	—	—	—
C4	Poisoning by arsenic	—	—	—	1
C5	Poisoning by mercury or compound of mercury	—	—	27	—
C6	Poisoning by carbon disulphide	—	—	—	—
C7	Poisoning by benzene or a homologue of benzene	1	2	—	1
C8	Poisoning by nitro-, amino-, or chloro-benzene or homologues	—	—	—	1
C13	Poisoning by chlorinated naphthalene	—	—	—	—
C20	Dystrophy of the cornea (including ulceration of the cornea surface) of the eye	—	—	—	—
C21a	Localised new growth of skin	2	—	3	1
C21b	Squamous celled carcinoma of skin	2	—	4	1
C23	Papilloma of the bladder	1	4	2	4
C25	Occupational vitiligo	1	—	—	—
C29	Peripheral neuropathy due to exposure to n-hexane or methyl n-butyl keytone	—	—	—	1
Miscellaneous conditions					
D4	Inflammation/ulceration of mucous membrane of upper respiratory tract or mouth	14	1	21	1
D5	Dermatitis	267	3	294	7
D6	Adeno-carcinoma of nasal cavity/nasal carcinoma	1	1	3	2
Total		1,553	1,634	136	3,427
					1,232

Source: DSS

Table 44 Prescribed industrial diseases assessed by Special Medical Boards: new cases of assessed disablement by disease, 1981-90

Disease No	Disease	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
B6	Farmer's lung	12	11	8	4	6	11	8	15	13	7
C15	Poisoning by nitrous fumes	—	4	1	—	—	—	3	—	—	—
C17	Beryllium poisoning	1	2	1	—	—	2	4	3	—	2
C18	Cadmium poisoning	2	3	4	1	2	3	3	2	—	2
C22b	Primary carcinoma of bronchus or lung in nickel workers	—	—	1	5	2	3	—	—	—	1
D1	Pneumoconiosis*	734	733	670	577	702	747	652	562	661	709
D2	Byssinosis*	108	133	72	56	37	26	23	13	15	18
D3	Diffuse mesothelioma	93	123	148	201	245	305	399	479	441	462
D7	Occupational asthma† **	..	95	183	137	166	166	220	222	220	216
D8	Lung cancer in asbestos workers†	..	..	..	..	8	34	55	59	54	58
D9	Bilateral pleural thickening†	..	..	..	..	61	111	115	114	125	146
D10	Lung cancer†	..	..	..	..	..	..	..	..	4	5
Total		950	1,104	1,088	981	1,229	1,408	1,482	1,469	1,533	1,626

* See also tables 45 and 46.
† The following diseases were prescribed after January 1, 1981.

Disease No.	Date Prescribed
D7	March 29, 1982
D8	April 1, 1985
D9	April 1, 1985
D10	April 1, 1987

** See also table 47.
.. Not applicable.

Source: DSS

Table 45 Pneumoconiosis and Byssinosis: new cases diagnosed by Medical Boarding Centres (Respiratory Diseases)* by industry to which the disease was attributed†, 1981-90

Industrial Injuries Scheme Cases	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Pneumoconiosis										
Coal mining	493	467	402	330	364	357	325	299	339	344
Other mining and quarrying:										
Slate	27	24	12	8	7	11	6	3	8	2
Other-except refractories	15	13	5	7	1	12	12	9	3	5
Asbestos**	140	172	199	186	273	312	247	202	268	306
Foundry workers										
Iron foundry workers	9	10	10	13	17	17	13	12	10	9
Steel foundry workers	2	3	7	—	1	1	5	6	6	4
Non-ferrous foundry workers	2	4	—	1	—	1	1	2	—	3
Steel dressers	3	2	5	3	6	2	2	3	2	—
Pottery manufacture	10	17	14	9	14	10	18	11	9	6
Refractories†	5	3	5	5	3	6	3	6	4	7
Other attributable industries	28	18	11	15	16	18	20	9	12	23
Total	734	733	670	577	702	747	652	562	661	709
Byssinosis										
Cotton	108	124	67	53	36	25	23	13	15	..
Flax	—	9	5	3	1	1	—	—	—	..
Total	108	133	72	56	37	26	23	13	15	18
Cases diagnosed by Medical Appeal Tribunals										
Pneumoconiosis (excluding asbestosis)	26	25	25	30	21	28	36	32	26	..
Asbestosis	13	13	13	14	28	17	35	23	12	..
Byssinosis	2	2	2	7	—	1	2	2	—	..
Total	41	40	40	51	49	46	73	57	38	..
PBMDB scheme cases††										
Pneumoconiosis	37	25	44	30	18	17	28	20	18	14
Byssinosis	3	—	—	—	—	—	—	—	—	—
Overall total: Pneumoconiosis and Byssinosis	923	931	826	714	806	836	776	652	732	741

* Formerly known as Pneumoconiosis Medical Panels.
† The industry to which the disease is attributable is in some cases defined occupationally.
** Cases where mesothelioma was also diagnosed are excluded, and shown in table 44.
†† Including the mining, quarrying and processing of refractory material.
‡ The figures of Pneumoconiosis, Byssinosis and Miscellaneous Diseases Benefits scheme cases refer to years ending September 30.
.. No longer available.

Source: DSS

Table 46 Pneumoconiosis. New industrial injuries scheme cases diagnosed by Medical Boarding Centres (Respiratory Diseases) in coal mining, asbestos and other industries, by age and percentage disablement†, 1987-90

Sector Age	1987					1988				
	Percentage disablement assessed					Percentage disablement assessed				
	10 or less	20 30 40	50 60 70	80 90 100	Total	10 or less	20 30 40	50 60 70	80 90 100	Total
Coal mining										
Under 30	—	—	—	—	—	—	—	—	—	—
30-34	—	—	—	—	—	—	—	—	—	—
35-39	1	—	—	—	1	—	1	—	—	1
40-44	2	—	—	—	2	2	—	—	—	2
45-49	7	—	—	—	7	1	—	—	1	2
50-54	16	2	—	—	18	13	—	1	—	14
55-59	12	4	—	—	17	6	3	—	1	10
60-64	24	22	—	—	46	20	16	2	2	40
65-69	37	29	—	—	68	31	23	1	2	57
70-74	28	36	1	—	68	33	34	1	3	71
75 and over	34	55	8	—	98	30	52	15	5	102
All ages	161	148	9	7	325	136	129	20	14	299
Asbestos workers**										
Under 30	—	—	—	—	—	—	—	1	—	1
30-34	—	—	—	—	—	—	—	—	—	—
35-39	—	—	—	—	—	1	1	—	—	2
40-44	3	1	—	—	4	1	1	—	—	2
45-49	3	8	—	—	11	3	7	—	—	10
50-54	5	8	1	—	17	5	8	—	1	14
55-59	11	24	—	—	39	9	15	3	1	28
60-64	11	36	3	—	59	12	32	5	4	53
65-69	13	29	1	—	54	7	34	4	8	53
70-74	6	20	4	—	37	3	12	3	6	24
75 and over	3	13	2	—	26	—	11	—	4	15
All ages	55	139	11	42	247	41	121	16	24	202
Other										
Under 30	—	—	—	—	—	—	—	—	—	—
30-34	—	—	—	—	—	—	—	—	—	—
35-39	—	1	—	—	2	—	—	—	—	—
40-44	—	2	—	—	3	1	—	—	—	1
45-49	3	—	—	—	3	1	1	—	—	3
50-54	2	1	—	—	3	2	3	—	1	6
55-59	11	5	—	—	17	2	3	—	—	5
60-64	6	6	—	—	12	5	6	—	1	12
65-69	15	4	1	—	20	3	8	—	1	12
70-74	4	4	2	—	10	3	7	1	1	12
75 and over	4	5	1	—	11	6	3	1	—	10
All ages	45	28	4	3	80	23	31	3	4	61
Total										
Under 30	—	—	—	—	—	—	—	1	—	1
30-34	—	—	—	—	—	—	—	—	—	—
35-39	1	1	—	—	3	1	2	—	—	3
40-44	5	3	—	—	8	4	1	—	—	5
45-49	13	8	—	—	21	5	8	1	1	15
50-54	23	11	1	—	38	20	11	1	2	34
55-59	34	33	—	—	73	17	21	3	2	43
60-64	41	64	3	—	117	37	54	7	7	105
65-69	65	62	2	—	142	41	65	5	11	122
70-74	38	60	7	—	115	39	53	5	10	107
75 and over	41	73	11	—	135	36	66	16	9	127
All ages	261	315	24	52	652	200	281	39	42	562

* See footnote to table 45.

Source: DS

† Under a study provision a person found to be suffering from pneumoconiosis qualifies for a pension at the 10 per cent rate even if he or she has no discernible respiratory disablement arising from the disease.

** Cases where mesothelioma was also diagnosed are excluded and shown in table 44.

Table 46 (Continued)

Sector Age	1989					1990				
	Percentage disablement assessed					Percentage disablement assessed				
	10 or less	20 30 40	50 60 70	80 90 100	Total	10 or less	20 30 40	50 60 70	80 90 100	Total
Coal mining										
Under 30	—	—	—	—	—	—	—	—	—	—
30-34	1	—	—	—	1	—	—	—	—	—
35-39	—	—	—	—	—	—	—	—	—	—
40-44	2	—	—	—	2	1	—	—	—	1
45-49	4	—	—	—	4	—	1	1	—	2
50-54	15	2	—	—	17	11	1	—	—	12
55-59	13	5	—	—	19	4	10	—	—	14
60-64	19	8	—	—	29	25	10	2	1	38
65-69	29	41	4	—	75	38	29	6	1	74
70-74	27	36	4	—	67	34	34	1	—	69
75 and over	38	73	11	—	125	45	72	14	3	134
All ages	148	165	19	7	339	158	157	24	5	344
Asbestos workers**										
Under 30	—	—	—	—	—	—	—	—	—	—
30-34	—	—	—	—	—	—	—	—	—	—
35-39	—	—	—	—	—	—	—	—	—	—
40-44	1	3	—	—	4	1	—	—	1	2
45-49	4	5	1	—	11	—	6	—	—	6
50-54	2	10	2	—	16	3	15	—	1	19
55-59	6	35	3	—	47	10	34	5	3	52
60-64	12	50	3	—	67	16	43	2	8	69
65-69	18	25	4	—	54	11	44	4	3	62
70-74	4	25	5	—	39	13	33	7	6	59
75 and over	2	23	5	—	30	5	27	3	2	37
All ages	49	176	23	20	268	59	202	21	24	306
Other										
Under 30	—	—	—	—	—	—	—	—	—	—
30-34	—	—	—	—	—	—	—	—	—	—
35-39	—	—	—	—	—	—	—	—	—	—
40-44	1	—	—	—	1	3	1	—	—	4
45-49	—	—	—	—	—	1	1	—	—	2
50-54	2	1	—	—	3	1	—	—	—	1
55-59	2	3	—	—	6	3	—	1	—	4
60-64	6	7	—	—	13	3	6	—	—	9
65-69	3	6	2	—	12	7	8	2	1	18
70-74	4	6	1	—	11	6	6	—	—	12
75 and over	3	2	1	—	8	1	7	1	—	9
All ages	21	25	4	4	54	25	29	4	1	59
Total										
Under 30	—	—	—	—	—	—	—	—	—	—
30-34	1	—	—	—	1	—	—	—	—	—
35-39	—	—	—	—	—	—	—	—	—	—
40-44	4	3	—	—	7	5	1	—	1	7
45-49	8	5	1	—	15	1	8	1	—	10
50-54	19	13	2	—	36	15	16	—	1	32
55-59	21	43	3	—	72	17	44	6	3	70
60-64	37	65	3	—	109	44	59	4	9	116
65-69	50	72	10	—	141	56	81	12	5	154
70-74	35	67	10	—	117	53	73	8	6	140
75 and over	43	98	17	—	163	51	106	18	5	180
All ages	218	366	46	31	661	242	388	49	30	709

Table 47 Occupational asthma: new cases qualifying for Disablement Benefit, by causative agent and percentage disability 1982-90

Agent	1982	1983	1984	1985	1986	1987	1988	1989	1990
1 Isocyanates	39	74	51	46	48	60	64	72	73
of which: 13 per cent or less	35	58	43	33	31	29	20	20	16
50 per cent or more	1	—	2	—	1	—	2	3	1
2 Platinum salts	3	9	4	9	12	9	12	6	5
of which: 13 per cent or less	3	9	4	9	10	4	7	—	2
50 per cent or more	—	—	—	—	—	—	—	—	—
3 Hardening agents	5	12	14	19	28	18	31	24	22
of which: 13 per cent or less	4	10	9	13	13	9	9	9	2
50 per cent or more	—	1	—	1	1	—	2	1	—
4 Soldering flux	21	24	27	25	20	21	24	30	23
of which: 13 per cent or less	17	15	19	18	9	8	1	2	2
50 per cent or more	—	2	1	—	1	1	2	3	1
5 Proteolytic enzymes	4	3	1	6	—	6	2	3	3
of which: 13 per cent or less	4	2	—	2	—	1	—	—	1
50 per cent or more	—	—	—	—	—	—	—	—	—
6 Animals/insects	4	7	8	7	12	7	9	9	7
of which: 13 per cent or less	4	6	6	3	11	2	2	3	4
50 per cent or more	—	—	—	1	—	—	—	—	—
7 Flour/grain	19	54	32	54	46	50	40	43	55
of which: 13 per cent or less	19	34	24	34	28	23	8	15	8
50 per cent or more	—	1	1	2	1	3	1	2	3
8 Antibiotics	—	—	—	—	—	—	—	—	—
of which: 13 per cent or less	—	—	—	—	—	—	—	—	—
50 per cent or more	—	—	—	—	—	—	—	—	—
10 Wood dusts	—	—	—	—	—	15	28	25	23
of which: 13 per cent or less	—	—	—	—	—	6	8	4	5
50 per cent or more	—	—	—	—	—	—	—	1	2
11 Ispaghula	—	—	—	—	—	—	—	1	—
of which: 13 per cent or less	—	—	—	—	—	—	—	—	—
50 per cent or more	—	—	—	—	—	—	—	—	—
13 Ipecacuanha	—	—	—	—	—	—	1	—	—
of which: 13 per cent or less	—	—	—	—	—	—	—	—	—
50 per cent or more	—	—	—	—	—	—	—	—	—
14 Azodicarbonamide	—	—	—	—	—	4	5	3	3
of which: 13 per cent or less	—	—	—	—	—	1	1	1	1
50 per cent or more	—	—	—	—	—	—	—	—	—
Totals:									
Agents 1 to 7*	95	183	137	166	166	171	182	187	188
Agents 8 to 14†	—	—	—	—	—	49	40	33	28
All agents	95	183	137	166	166	220	222	220	216
of which: 13 per cent or less	86	134	105	111	111	96	56	55	41
50 per cent or more	1	4	4	4	4	5	7	12	7

Note: There have been no awards for the following agents:
(9) Cimetidine, (12) Castor bean dust
* Agents prescribed from the start of the prescription.
† Agents added to prescribed list with effect from September 1, 1986.

Source: DSS, HSE

Table 48 Deaths resulting in award of Industrial Death Benefit, etc by scheme and main disease, 1978-87*

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Industrial Injuries Scheme										
Asbestosis	41	74	78	65	70	92	79	87	100	104
Other pneumoconiosis	548	535	510	474	482	482	367	436	375	338
Byssinosis	14	9	12	10	9	10	5	12	11	6
Farmer's lung	—	3	2	2	3	8	3	5	4	1
Papilloma of the bladder	8	10	15	7	12	13	9	9	9	15
Mesothelioma	109	131	133	175	190	202	249	288	290	335
Other prescribed diseases	16	16	13	23	16	33	30	45	40	44
Total I.I. Scheme	736	778	763	756	782	840	742	882	829	843
Pneumoconiosis, Byssinosis and Miscellaneous Diseases Benefit Scheme										
Asbestosis	2	—	2	1	—	—	—	—	—	—
Other pneumoconiosis	63	61	67	40	44	38	48	31	24	38
Byssinosis	1	1	—	—	—	—	—	—	—	—
Other diseases	15	15	12	9	10	11	19	9	21	20
Total PBMD Scheme	81	77	81	50	54	49	67	40	45	58
Certification that death was due to the disease (Workers' Compensation scheme)										
Other pneumoconiosis	54	60	66	68	48	60	50	40	40	22
Total WC scheme	54	60	66	68	48	60	50	40	40	22
Total all schemes	871	915	910	874	884	949	859	962	914	923
of which pneumoconiosis (including asbestosis and byssinosis)	723	740	735	658	653	682	549	606	550	508

*Death Benefit is not payable after April 10, 1988: 1987, is the last full year of data.

Source: DSS

Table 49 Cases of occupational disease reported under RIDDOR, 1986-87 to 1989-90

Disease	1986-87	1987-88	1988-89	1989-90	Corresponding DSS PD number
Poisoning by					
1a Acrylamide	—	—	—	—	C19
1b Arsenic	—	1	2	—	C4
1c Benzene	—	1	—	—	C7
1d Beryllium	—	—	—	3	C17
1e Cadmium	1	1	2	1	C18
1f Carbon disulphide	—	—	—	—	C6
1g Diethylene dioxide	—	—	—	—	C11
1h Ethylene oxide	—	—	—	—	—
1i Lead	3	5	6	4	C1
1j Manganese	—	—	—	—	C2
1k Mercury	2	1	—	—	C5
1l Methyl bromide	—	2	—	1	C12
1m Nitrochlorobenzene	3	—	2	—	C8
1n Oxides of nitrogen	—	1	—	—	C15
1o Phosphorus	4	2	3	2	C3
2 Chrome ulcer	11	19	14	6	—
3 Folliculitis	5	1	1	—	—
4 Acne	—	1	—	1	—
5 Skin cancer	3	—	1	4	C21
6 Radiation skin injury	—	6	2	1	Part A1
7 Occupational asthma	71	46	59	57	D7
8 Extrinsic alveolitis	4	13	7	5	B6
9 Pneumoconiosis	13	5	4	6	Part D1
10 Byssinosis	—	—	1	2	D2
11 Mesothelioma	8	13	9	4	D3
12 Lung cancer (asbestos)	1	1	—	—	D8
13 Asbestosis	11	15	—	9	Part D1
14 Lung cancer (nickel)	—	—	—	—	C226
15 Leptospirosis	5	12	7	9	B3
16 Hepatitis	29	25	23	20	B8
17 Tuberculosis	14	11	9	7	B5
18 Pathogenic infection	20	6	16	15	—
19 Anthrax	—	—	—	—	B1
20 Bone cancer	—	—	—	—	Part A1
21 Blood dyscrasia	1	—	—	—	—
22 Cataract	3	7	—	—	A2
23 Decompression sickness	—	25	71	34	A3
24 Barotrauma	—	—	1	—	—
25 Nasal/sinus cancer	—	1	—	2	C22A/D6
26 Angiosarcoma	—	—	—	—	C24A
27 Urinary tract cancer	—	6	1	5	C23
28 Vibration white finger	69	96	55	104	All
Total	281	323	296	305	

* These three RIDDOR categories form part of DSS PD D5 (dermatitis), not separately identifiable in DSS figures. Dermatitis in general is not reportable under RIDDOR.

Table 50 Death certificates mentioning specified asbestos related disease
For the period ending: March 31, 1989

Disease	Year of death								
	1971	1972	1973	1974	1975	1976	1977	1978	1979
Asbestos									
A Together with lung cancer	32	44	43	33	49	53	59	60	46
B Together with mesothelioma	29	40	30	65	50	74	53	85	76
C Alone or together with other diseases	33	24	34	41	48	63	73	49	56
Total A + C	65	68	77	74	97	116	132	109	102
Total asbestosis deaths (A+B+C)	94	108	107	139	147	190	185	194	178
Mesothelioma									
Of Pleura	104	125	138	146	169	198	212	235	264
Of Peritoneum	12	19	25	20	19	31	22	31	34
Of Pleura and Peritoneum	4	0	3	3	5	4	6	13	6
Site not specified	58	67	57	76	78	82	96	111	130
D Total mesothelioma deaths (includes B above)	T 178 M 139 F 39	211 168 43	223 181 42	245 187 58	271 219 52	315 258 57	336 276 60	390 327 63	434 341 93
Total number of deaths (A+C+D)	243	279	300	319	368	431	468	499	536

Note: 1989 figures are provisional.

Table 50 (Continued)

Disease	Year of death									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Asbestos										
A Together with lung cancer	56	77	75	60	60	66	84	58	78	70
B Together with mesothelioma	68	65	79	89	86	87	65	109	89	96
C Alone or together with other diseases	46	60	53	61	69	74	82	86	74	75
Total A + C	102	137	128	121	129	140	166	144	152	145
Total asbestosis deaths (A+B+C)	170	202	207	210	215	227	231	253	241	241
Mesothelioma										
Of Pleura	259	308	325	408	474	411	378	470	452	457
Of Peritoneum	38	24	28	33	43	32	40	39	48	41
Of Pleura and Peritoneum	7	5	16	9	10	13	12	14	17	12
Site not specified	154	135	135	123	97	159	272	285	343	343
D Total mesothelioma deaths (includes B above)	T 458 M 355 F 103	472 398 74	504 413 91	573 478 95	624 538 86	615 531 84	702 601 101	808 702 106	860 749 111	853 729 124
Total number of deaths (A+C+D)	560	609	632	694	753	755	868	952	1,012	998

Table 51 Death certificates mentioning mesothelioma, by age and sex, 1969-89

	1969-71	1972-74	1975-77	1978-80	1981-83	1984-86	1987-89
	MALES						
0-44	20	24	40	42	60	55	69
45-54	57	102	146	168	167	204	268
55-64	170	187	244	303	429	554	663
65-74	119	174	237	355	416	531	739
75+	39	49	86	155	217	326	441
Total	405	536	753	1,023	1,289	1,670	2,180
FEMALES							
0-44	13	7	13	17	16	18	10
45-54	20	20	17	23	26	18	28
55-64	41	43	51	78	81	66	88
65-74	33	52	59	96	89	108	129
75+	17	21	29	45	48	61	86
Total	124	143	169	259	260	271	341
Total	529	679	922	1,282	1,549	1,941	2,521

Table 52 Mesothelioma crude death rates (per million) by region

Region	1981-83	1984-86	1987-89	Region	1981-83	1984-86	1987-89
MALE				FEMALE			
North	29.74	45.68	58.48	North	4.60	6.53	7.74
Yorkshire and Humberside	15.88	16.74	23.00	Yorkshire and Humberside	4.50	3.45	5.24
North West	14.77	19.16	24.77	North West	3.81	3.65	5.29
West Midlands	8.88	7.96	11.93	West Midlands	2.03	2.03	2.68
East Midlands	14.77	13.04	17.90	East Midlands	2.89	3.37	2.84
South West	19.44	25.76	31.04	South West	1.32	2.00	2.99
East Anglia	14.20	15.55	22.45	East Anglia	3.78	3.33	2.61
South East (excluding Greater London)	19.29	29.26	31.34	South East (excluding Greater London)	3.43	3.44	3.93
Greater London	12.85	15.91	28.24	Greater London	3.03	4.38	5.18
Wales	8.32	13.68	13.95	Wales	1.37	1.61	1.16
Scotland	18.34	21.24	32.06	Scotland	2.62	1.26	3.42
Great Britain	16.12	20.77	26.93	Great Britain	3.08	3.20	4.05

Table 53 Lead workers under medical surveillance, 1984 to 1989-90

Maximum measured blood-lead ug/100ml	1984		1985		1986		1987-88		1988-89		1989-90	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
<40	14,785	1,436	16,072	1,389	15,912	1,375	15,310	1,300	16,820	1,240	16,195	1,216
0<60	5,482	179	5,314	128	5,206	138	4,819	97	4,751	66	4,713	82
0<70	2,138	28	1,749	30	1,190	15	1,241	21	1,038	6	947	6
0<80	—	—	—	—	477	11	523	4	441	1	366	0
70 and over	366	8	247	3	217	4	239	1	196	—	168	0
Total under surveillance of which: 70 and over	22,771	1,651	23,382	1,550	23,002	1,543	22,132	1,423	23,246	1,313	22,389	1,304
Suspensions from work	254	62	183	37	351	57	388	33	340	12	286	21

Table 54 Lead workers under medical surveillance, by sex, blood-lead level and industry sector 1989-90

Sector	MALES					FEMALES			
	Percentage in blood-level category (ug/100ml)					Total under surveillance	<40	40+	Total under surveillance
	<40	40-59	60-69	70+	Total under surveillance				
Smelting, refining, alloying, casting	70.1	22.9	5.2	1.9	6,014	168	4	172	
Lead battery industry	47.7	37.3	8.9	6.1	4,327	182	44	226	
Badge and jewellery enamelling and other vitreous enamelling	87.9	6.9	3.5	1.7	58	73	12	85	
Glass making	65.7	29.5	3.3	1.5	1,302	258	6	264	
Manufacture of pigments and colours	83.0	14.6	2.0	0.5	652	61	0	61	
Potteries, glazes and transfers	82.5	16.4	1.0	0.2	530	272	17	289	
Manufacture of inorganic and organic lead compound	91.3	7.6	0.7	0.4	1,640	22	0	22	
Shipbuilding, repairing and breaking	93.0	4.1	1.2	1.7	172	0	0	0	
Demolition industry	60.6	25.3	7.8	6.3	791	0	0	0	
Painting, building and vehicles	94.8	4.1	0.9	0.2	652	0	0	0	
Work with metallic lead and lead containing alloys	78.6	18.4	2.1	0.8	2,738	76	2	78	
Other processes	91.0	7.4	1.0	0.6	3,316	103	1	104	
Scrap industry	54.3	23.9	7.1	14.7	197	1	2	3	
All sectors	72.3	21.1	4.2	2.4	22,389	1,216	88	1,304	

SECTION 12: DEFINITIONS AND CONTACT POINTS

Lists of formal definitions Injuries

The source of occupational injury data is reports to enforcing authorities made under the Notification of Accidents and Dangerous Occurrences Regulations 1980 (NADOR) for the years 1981 to 1985 and the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations, 1985 (RIDDOR) from 1986-87 onwards, when publication of the statistics was changed to a financial year basis.

The duty to report injuries rests with the 'responsible persons'. In the case of a reportable accident to an employee, this would be the employer. For a self-employed sub-contractor it would be the main employer or contractor. Depending on the type of premises, the report has to be made to the Health and Safety Executive or to certain enforcing authorities, such as local authorities.

The definition of a fatal injury includes a death occurring up to a year after the accident.

Major injuries

RIDDOR extended the definition of notifiable major injuries and, consequently, data based on reports made under NADOR and RIDDOR are not comparable. General trends may be determined by the examination of the individual series.

Counts of major injuries occurring from April 1986 are based on the definition given in the RIDDOR Regulations. This was referred to in Section 2 and is given in full here for reference. Regulation 3(2) of RIDDOR lists the following injuries or conditions:

- (a) fracture of the skull, spine or pelvis;
- (b) fracture of any bone:
 - (i) in the arm or wrist but not in the hand;
 - (ii) in the leg or ankle, but not in the foot;
- (c) amputation of:
 - (i) a hand or foot; or
 - (ii) a finger, thumb or toe, or any part thereof if the joint or bone is completely severed;
- (d) the loss of sight of an eye, penetrating injury or chemical or hot metal burn to an eye;
- (e) injury including burns requiring immediate medical treatment, or loss of consciousness, resulting from an electric shock from any electrical circuit or equipment, whether or not due to direct contact;
- (f) loss of consciousness resulting from lack of oxygen;
- (g) decompression sickness requiring immediate medical treatment (unless 1981 Diving Operations at Work Regulations apply);
- (h) Acute illness or loss of consciousness resulting from absorption of substance by inhalation, ingestion or through the skin;
- (i) acute illness requiring medical treatment where there is reason to believe that this resulted from exposure to a pathogen or infected material;
- (j) any other injury which results in the person injured being admitted immediately into hospital for more than 24 hours.

RIDDOR also reinstated the employer's duty to report injuries resulting in an absence from work for more than three days. Trends in the numbers of such injuries reported for the first four years under RIDDOR are beginning to emerge.

Injuries to employees (including trainees), self-employed persons and also non-employed persons are reportable if they are judged to have arisen from work activity. However, not all accidents to people arising from work activity are reportable under RIDDOR. The statistics exclude:

- accidents giving rise to three or fewer days off work;
- assaults on staff;

road traffic accidents involving people travelling in the course of their work, which are covered by road traffic legislation.

accidents reportable under separate merchant shipping, civil aviation and air navigation legislation;

accidents to members of the armed forces;

fatal injuries to the self-employed except when they are working at premises under the control of someone else at work;

those accidents notified under the Poisonous Substances in Agriculture Regulations 1984 which are exempt from RIDDOR;

injuries to passengers travelling on a railway and members of the public injured on railway premises.

Local authority statistics

The local authorities copy individual RIDDOR reports to HSE's Local Authority Unit (LAU). These copies form the source for the local authority RIDDOR injury contribution to the tables. It is estimated that local authorities copy to the LAU nearly 90 per cent of the reports that they receive from employers.

Dangerous occurrences

RIDDOR extended the schedule of dangerous occurrences that had been reportable under NADOR. These occurrences are reportable whether or not anyone is injured. The categories are selective and aim to secure information about incidents which have a high potential for causing death or serious injury. Under-reporting also affects this series of data and the numbers in each category can vary substantially from year to year.

Gas safety statistics

The data for 1981-82 to 1985-86 presented in previous publications were compiled from notifications under the Gas Act 1972. Since 1986-87 they have been compiled under regulation 6(1) of RIDDOR. The two series are not comparable: for example those compiled under the earlier system include incidents which did not cause death or injury whereas RIDDOR does not require these to be reported. Figures relating to carbon monoxide poisoning need to be treated with caution as this type of poisoning can be particularly difficult to diagnose.

Occupational health statistics

The figures in the detailed tables derive from three sources:

cases of prescribed disease compensated under the

Industrial Injuries Scheme run by the DSS;

death certificates mentioning either asbestosis or mesothelioma, which are copied to the HSE by the Office of Population Censuses and Surveys (OPCS); and

maximum levels of blood-lead recorded in the course of medical surveillance of lead workers under the 1981 Lead Regulations.

Prescribed diseases—general

The industrial Injuries Scheme compensates workers (or their dependents) injured or killed by an accident at work or suffering from a prescribed disease. The self-employed are not covered by this scheme. Diseases are only 'prescribed' in connection with defined occupations or occupational conditions. For example, tuberculosis is a prescribed disease, but only in respect of individuals whose occupation involves contact with a source of tuberculous infection. Diseases are only prescribed if some occupational cause is well established, and if terms of prescription can be framed in such a way that most cases falling within the terms will be of genuine occupational origin.

Where there is a long delay between the cause of a disease and its appearance, it is difficult both to identify and prove occupational causes, and to frame satisfactory terms of prescription. Even when this is done, the numbers of awards will probably understate the disease's incidence, because individuals may be unaware of the possible occupational origin of their disease.

Three principal benefits have been payable under the Industrial Injuries Scheme:

Injury benefit (until March 1983), a special, higher rate of sickness benefit was payable to people absent from work because of prescribed disease. The abolition of this special rate of benefit from April 1983 means that this information is no longer available.

Disablement Benefit is paid in cases where the disease has led to some long-term loss of function;

Industrial Death Benefit (up to April 1988) was paid to a worker's dependents where death is caused or materially accelerated by the prescribed disease.

The information that can now be drawn from the Industrial Injuries Scheme relates only to cases of prescribed disease leading to some degree of long-term disability. For claims lodged after October 1, 1986, and for all diseases except pneumoconiosis, byssinosis and mesothelioma, benefit is only paid if disablement is assessed at 14 per cent or more. In order to illustrate the impact of the rule change, the figures for 1986-87 to 1988-89 are divided into three categories: awards made under the old rules (payment for all positive assessments); awards made under the new rules (with disability assessed at 14 per cent or more); and assessments of 1 to 13 per cent under the new rules (no benefit paid). This breakdown is shown in table 43. For 1989-90 the number of 'old rules' awards is not separately available, but can be assumed to be very low.

Disablement benefit (Tables 42-47)

The figures for awards of disablement benefit are derived differently for different diseases. In particular, figures for diseases where compensation is assessed by a 'Special Medical Board' (SMB) are compiled on a calendar year basis and have been available for some years (table 44). Statistics for other diseases (tables 42 and 43) are compiled for years starting on October 1 and (with the exception of occupational deafness) became available on

the current basis from October 1983 after reorganisation of statistical record keeping within the DSS in the wake of the abolition of Industrial Injury Benefit.

The effect of this was that figures for total awards of Disablement Benefit for non-SMB diseases (other than deafness) then became available for the first time (previously most Disablement Benefit awards were not counted separately from Injury Benefit awards). As Injury Benefit was never payable for occupational deafness, the statistical basis for this disease was not affected.

The totals for pneumoconiosis and byssinosis awards are shown for completeness in table 44; more detailed information on these diseases is given in tables 45 and 46.

Industrial Death Benefit

Table 48 shows figures for deaths resulting in the awards of Industrial Death Benefit. The basis for the compilation of these figures has been changed in this table from that used in the past. There can be considerable delays between a death occurring, a claim being lodged and an award being centrally notified. The practice in the past has been to count awards to the year of death, provided the central notification was received in the same or the next year. If the notification was delayed by longer than this, it was counted to the year prior to the year of notification. The proportion of awards with late notification varies from year to year and has tended to increase in recent years.

To remove the consequent distortion, table 48 now counts awards in the actual year of death from 1983 onwards. For years prior to 1983, accurate year of death figures cannot be recovered from the records and the figures shown are compiled on the old basis.

Industrial disease reported under RIDDOR

Table 49 shows the number of reports of occupational disease received under RIDDOR. These regulations require employers to report all cases of a defined list of diseases occurring among their employees where:

They receive a doctor's written diagnosis; and

the affected employee's current job involves the work activity specifically associated with the disease.

The diseases and their associated occupational conditions are listed in schedule 2 to the Regulations. The schedule is very largely derived from the DSS Prescribed Diseases List, though with some omissions—notably the five most common diseases: dermatitis, tenosynovitis, and the 'beat' conditions. Most of the RIDDOR disease categories can be related to a corresponding DSS prescribed disease in tables 42, 43 or 44. Comparison of these figures suggests substantial under-reporting under RIDDOR, particularly for diseases with long induction periods (for example, the pneumoconioses and occupational cancers).

Asbestosis and mesothelioma recorded on death certificates (tables 50-52)

The figures in table 50 are derived from information recorded on death certificates. They show the numbers of death certificates issued each year on which either asbestosis or mesothelioma (or both) are mentioned. Some death certificates mentioning both conditions do so in ways which suggest that the word 'asbestosis' is being used to indicate the role of asbestos in causing mesothelioma, rather than the existence of an asbestos induced lung fibrosis, which is what the word should strictly mean. Consequently the trends in deaths from asbestosis per se are probably better reflected by the figures for asbestosis without mention of mesothelioma, rather than the total of certificates mentioning asbestosis.

Enquiries

Enquiries about statistics for injuries arising from work activity, dangerous occurrences, enforcement action and gas safety should be addressed to:

Statistical Services Unit
Health and Safety Executive
Room 512
Daniel House
Stanley Precinct
Bootle
Merseyside L20 3QZ
(Tel: 051 951 4604/4862)

Enquiries about occupational ill health statistics should be addressed to:

Epidemiology and Medical Statistics Unit
Health and Safety Executive
Room 244
Magdalen House
Stanley Precinct
Bootle
Merseyside L20 3QZ
(Tel: 051 951 4542/4540)

Enquiries about Social Security statistics should be addressed to:

Department of Social Security
Central Office
Newcastle upon Tyne
NE98 1YX
(Tel: 091 213 5000)

Enquiries about domestic accident statistics should be addressed to:

Department of Trade and Industry
Room 305
10-18 Victoria Street
London SW1H 0NN
(Tel: 071 215 3215)

Enquiries about road traffic accident statistics should be addressed to:

Department of Transport
Romney House
43 Marsham Street
London SW1 3PY
(Tel: 071 276 8785/8786)