Health and safety in manufacturing in Great Britain, 2014

Contents

Summary

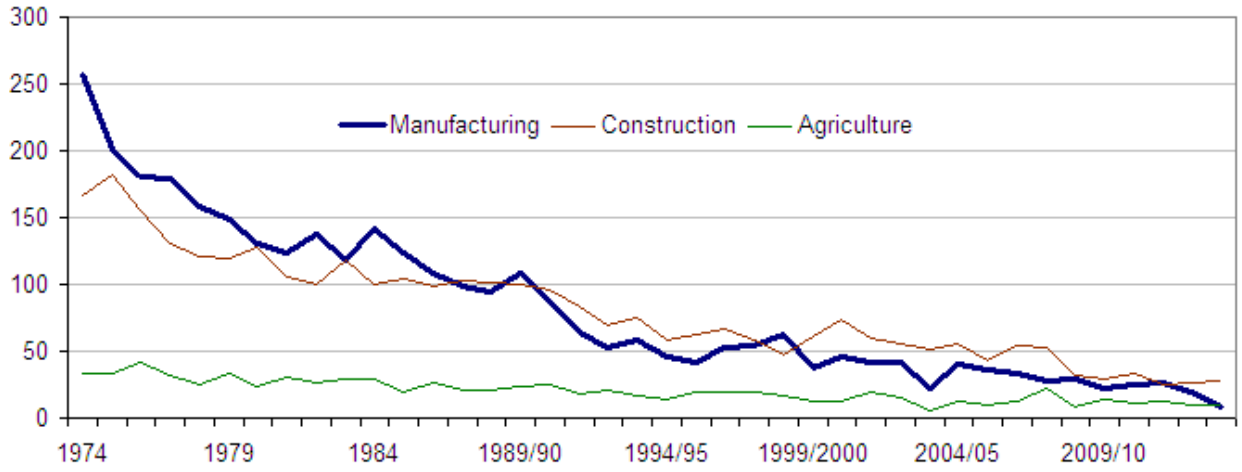
The information in this document relates to Health and Safety Statistics for 2013/14. The document can be found at www.hse.gov.uk/statistics/industry/manufacturing/

In 2013/14 manufacturing accounted for around 10% of both the British workforce, and of fatalities. However, nearly one in five (18%) reported non-fatal injuries to employees were in manufacturing. There have been reductions in injury and ill health rates over the past decade. More recently, however, rates seem to be flattening out – see Figure 1.

The latest results (2013/14) in manufacturing show:

- there were 14 fatal injuries to workers compared to an average of 26 in the previous five years – less than a quarter (23%) of the number 20 years ago (RIDDOR);
- there were 13 595 reported non-fatal injuries to employees and an estimated 74 thousand cases of all self-reported injuries. (RIDDOR and LFS);
- about 14% of reported major/specified injuries and 11% of over-seven-day injuries involved contact with moving machinery (RIDDOR);
- food manufacture had the highest number of major/specified injuries, with a rate of reported injury more than twice that of manufacturing as a whole (RIDDOR);
- about two thousand occupational cancer deaths each year resulted from past exposures in the manufacturing sector (Cancer Burden Study, 2010);
- an estimated 3.7 million working days were lost, 2.6 million due to ill health and 1.1 million due to injury, making a total of 1.4 days lost per worker (LFS).

Figure 1 Numbers of fatal injuries to employees (RIDDOR) 1974 to 2013/14p



What is manufacturing?

HSE uses the SIC 2007[1] classification scheme to define industries. Under SIC 2007, manufacturing (Section C) includes:

Industry / Manufacture of	Division
Food products	10
Beverages	11
Tobacco products	12
Textiles	13
Wearing apparel	14
Leather and related products	15
Wood and products of wood and cork, except furniture; articles	16
Paper and paper products	17
Printing and reproduction of recorded media	18
Coke and refined petroleum products	19
Chemicals and chemical products	20
Basic pharmaceutical products and pharmaceutical preparations	21
Rubber and plastic products	22
Other non-metallic mineral products	23
Basic metals	24
Fabricated metal products, except machinery and equipment	25
Computer, electronic and optical products	26
Electrical equipment	27
Machinery and equipment n.e.c.	28
Motor vehicles, trailers and semi-trailers	29
Other transport equipment	30
Furniture	31
Other manufacturing	32
Repair and installation of machinery and equipment	33

Motor vehicle repair (MVR) is included in wholesale and retail trade; repair of motor vehicles and motorcycles, not in manufacturing. However, a few references are included, because of the links with manufacturing.

Economic context

The Office for National Statistics estimates that manufacturing output increased by 3.6% between Q2 2013 and Q2 2014[2]. However, manufacturing output was still 4.4% below the pre-downturn peak in Q1 2008.

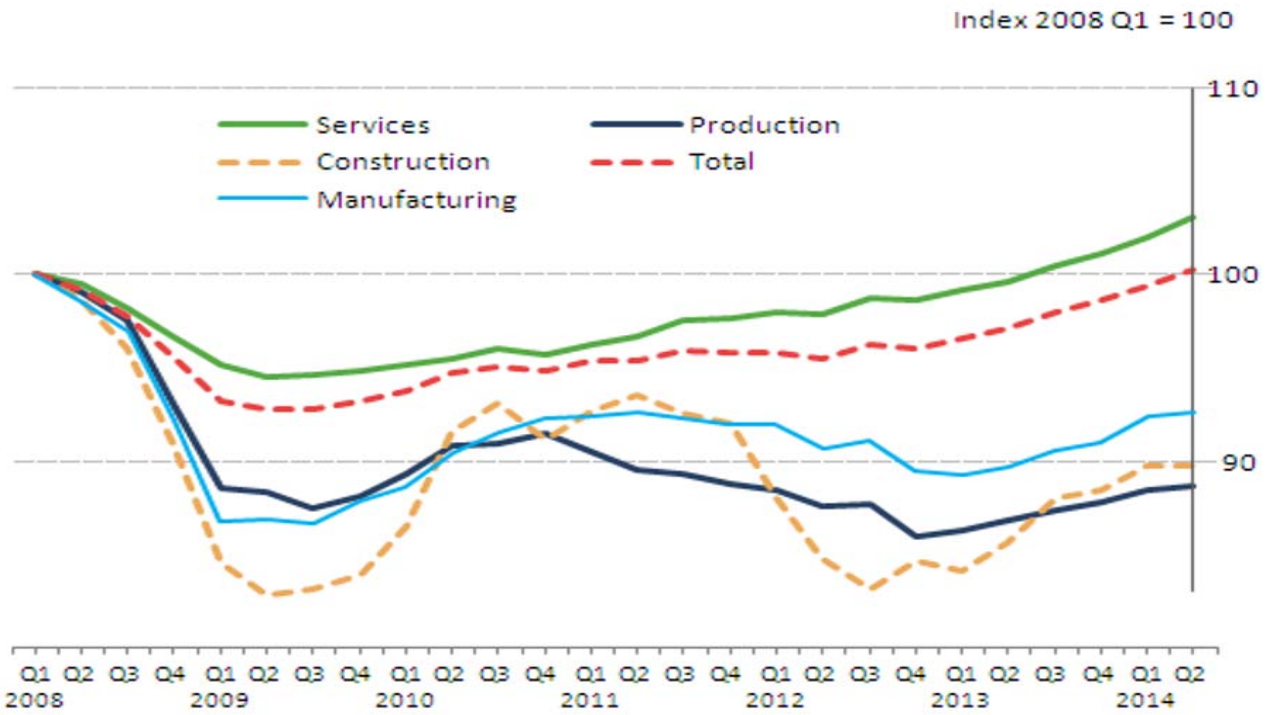
Main changes[3], compared with a year ago, were in manufacture of:	Change
rubber, plastic products & other non-metallic mineral products	↑ 10.6%
transport equipment	↑ 3.5%
basic metals & metal products	↑ 4.1%
coke & refined petroleum products	↓ 14.6%
textiles, wearing apparel & leather product	↓ 6.3%
electrical equipment	↓ 4.1%

[1] www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html

[2] www.ons.gov.uk/ons/dcp171778_376723.pdf page 36.

[3] Index of Production - www.ons.gov.uk/ons/dcp171778_376429.pdf page 11. See also www.ons.gov.uk/ons/dcp171778_379451.pdf

Figure 2 GDP and main components relative to 2008 Q1 level



Source: Office for National Statistics[4]

[4] www.ons.gov.uk/ons/dcp171778_376723.pdf page 10

Ill health

Overall, musculoskeletal disorders and stress

According to the Labour Force Survey in 2013/14 an estimated 87 000 people whose current or most recent job in the last year was in the manufacturing sector suffered from an illness (longstanding and new cases) which was caused or made worse by this job (WRIIND2). The associated rate, 2 880 (2.9%) per 100 000 people working in the last year, was not statistically significantly lower than the average for all industries (3 990 per 100 000 – 4.0%).

Examining the rates for total cases (longstanding and new cases) using smoothing techniques, which aim to reduce irregularities (random fluctuations) in the time series, suggests a downward trend. The smooth trend indicates a fall of around 31% between 2001/02 and 2013/14, with a range of possibilities (95% confidence interval) 20% to 42%.

Table 1 Ill health data sources and latest figures

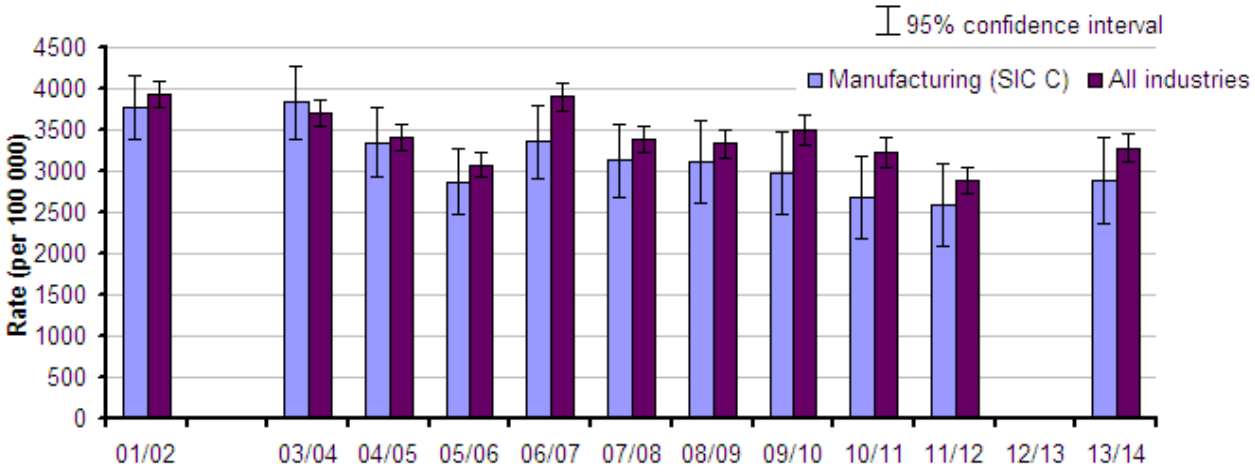
Health issue	**THOR – estimated rate of new cases of work-related illness per 100 000 persons (2013 and 3 year average 2011 to 2013)**	**LFS – estimated rate of new cases of self-reported illness per 100 000 employed in the last 12 months (3 year average 201011, 2011/12, 2013/14)**
Work-related ill health	(Table THORGP04) Higher than the rate for all industries. 1.4 times the rate for all industries in 2013. 1.5 times the rate for all industries averaged over three years.	1 160 (Table WRIIND4_3YR). This is statistically significantly lower than the all industry rate of 1 460. There were an estimated 34 000 new cases of illness caused or made worse by a current or most recent job.
Work-related musculoskeletal disorders	(THORGP05). Higher than the rate for all industries. 1.6 times the rate for all industries in 2013. 1.7 times the rate for all industries averaged over three years.	450 (MSDIND4_3YR) Not statistically significantly different from the all industry rate (480).
Mental ill-health/self-reported stress, depression or anxiety	(THORGP06), Lower than the rate for all industries. 0.8 times the rate for all industries in 2013. 0.9 times the rate for all industries averaged over three years.	440 (STRIND4_3YR) This is statistically significantly lower than the all industry rate (670).
		The values quoted above are the central estimates from the LFS survey. The respective tables include the confidence interval (an indicator of the reliability) for each estimate.

The Labour Force Survey (LFS) and voluntary reporting of occupational diseases by doctors (THOR and THOR-GP) provide data about health risks in different industries and occupations. When comparing results, however, it is important to understand that cases reported under THOR have been diagnosed by doctors while those reported under LFS are cases of self-reported illness caused or made worse by current or most recent job for people working in the last 12 months.

Additional data, for example, for previous years may be found in the various tables.

An estimated total of 2.6 million working days, or 0.99 days per worker, were lost in 2013/14 due to self-reported work-related illness (Table WDLIND, but see also WRIIND6_3YR). This is similar (not significantly different) to that of 0.83 days per worker for all industries. The estimated time lost due to illness is over twice that lost due to injury.

Figure 3 Estimated rates of total cases of self-reported work-related illness caused or made worse by their current or most recent job for people working in the last 12 months (LFS)



Skin, respiratory and other disorders [5]

From THOR, between 2008 and 2013p, the estimated average rate per 100 000 persons in manufacturing of contact dermatitis reported by dermatologists to EPIDERM was six compared with four for all industries (THORS05). However, there is substantial variation within manufacturing:

- manufacture of chemicals had a rate of 18;
- manufacture of basic metals – 13;
- printing and reproduction of recorded media – 11.

Both THOR and the IIDB scheme figures continue to implicate isocyanates and flour/grain as responsible for a high proportion of new cases of occupational asthma. Cutting oils and coolants, wood dusts and welding fumes are also significant factors. These agents are all common in different parts of manufacturing and motor vehicle repair.

Airborne materials from spray painting or manufacturing foam product; dusts from flour or grain/cereal; airborne materials while welding, soldering or cutting/grinding metals; dusts from stone, cement, brick or concrete were all significant causes of "breathing or lung problems". Again these are common in parts of manufacturing.

The parts of manufacturing with the largest number of reports were ship building/repair and basic iron/steel/ferro-alloy manufacture. (www.hse.gov.uk/statistics/causdis/respiratory-diseases.pdf)

The rate of new assessments of cases of vibration white finger under IIDB, averaged across the three years from 2011 to 2013, was 5.9 per 100 000 workers in manufacturing, compared to 1.2 across all sectors. Manufacturing had had very high rates of all IIDB prescribed diseases compared to the all-industry rates. For example: the rate of carpal tunnel syndrome was 4.5 per 100 000 compared to 0.9 across all sectors; of occupational deafness was 4.1 compared to 0.5; of asthma was 3.2 compared to 0.4. (IIDB10)

[5] For a discussion of the sources used in producing HSE Statistics, see www.hse.gov.uk/statistics/sources.htm.

Occupational Cancer

About a quarter of occupational cancer registrations and deaths are attributable to occupational carcinogen exposure in the manufacturing industry. There are around 2 200 deaths and 3,900 registrations that are attributed to the past exposure to occupational carcinogens (eg substance or occupational circumstance) each year.

Past exposure to mineral oils and asbestos have contributed to a large proportion of the current burden of occupational cancer, accounting for 17% of registrations and 13% of deaths respectively for all industries. Dioxins and silica are significant occupational carcinogens. Past exposure to shift work and working as a welder or painter are also significant contributors to the current burden of occupational cancer. (CAN04 and CAN05)

Further information is available from our cancer page or from research report 931 “The burden of occupational cancer in Great Britain.”[6]

[6] www.hse.gov.uk/research/rrhtm/rr800.htm

Injuries[7]

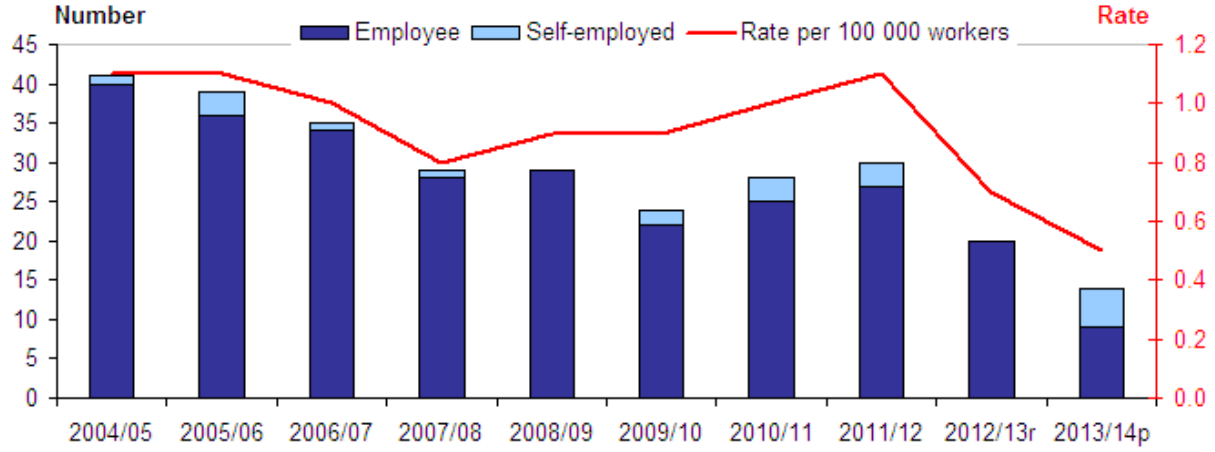
Overview

Manufacturing accounts for about one in ten British employees, but almost one in five of reported injuries to employees (10% fatalities, 17% major/specified, 18% over-seven-day) in 2013/14p. The Labour Force Survey (LFS) estimates that around 15% of all reportable non-fatal injuries occurred in Manufacturing, based on three-year average 2011/12 to 2013/14.

Fatal injuries

In 2013/14p there were 14 fatal injuries to workers, compared to an average of 26 in the previous five years. This equates to a fatal injury rate of 0.5 per 100 000 workers. This is also lower than the average rate of 0.9 per 100 000 workers for the previous five years.

Figure 4 Number and rate of fatal injuries to workers in manufacturing (RIDDOR)



There were about eight times as many employee fatal injuries in the first five years after the Health and Safety at Work Act 1974 (1975 to 1979, average 174) as in the most recent five years (2009/10 to 2013/14p, average 21). Over the past 40 years, manufacturing employees' fatal injury rates have fallen to a quarter of their 1974 level**. (Figure 1 page 2).**

Manufacture of food and of fabricated metal products accounted for three each of the fourteen worker fatalities in 2013/14p. Over the five years from 2009/10 to 2013/14p, these two industries had most fatal injuries.

The main causes of worker fatalities were:

Table 2 Kinds of fatal injuries to workers, 2009/10 - 2013/14p

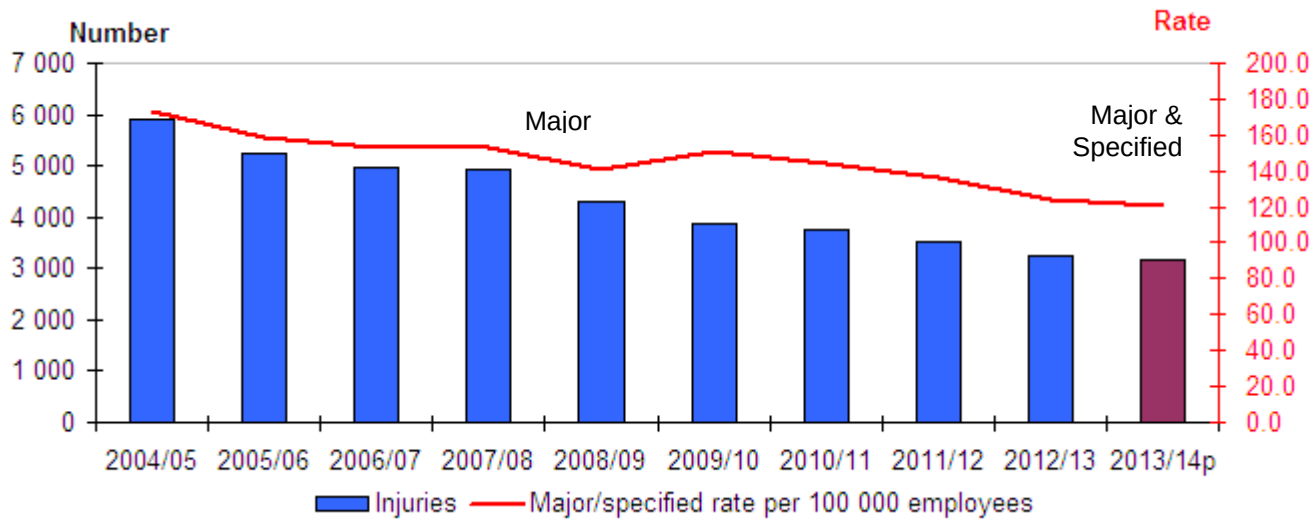
Kind of injury	% of fatal injuries in manufacturing,	% of fatal injuries in all industries
Struck by object	27%	14%
Contact with machinery	15%	8%
Fall from height	15%	25%
Trapped by something collapsing	8%	9%
Struck by moving vehicle	7%	14%
Exposed to fire	5%	1%
Another kind of accident not listed on RIDDOR form	11%	14%

[7] In 2011/12, the RIDDOR reporting system changed. There were also changes to what injuries had to be reported in 2012/13 (over 3 to over 7 day absence) and mid-way through 2013/14 (from major to specified injuries). www.hse.gov.uk/statistics/sources.htm#riddor provides further explanation).

Major/specified injuries

In 2013/14p, there were 3 159 reported major/specified injuries to employees – a rate of 120.8 per 100 000 employees. In the previous five years there were an average of 3 737 major injuries with a rate of 139.1 per 100 000 employees. The general downward long-term trend in both the numbers and rates may be levelling off.

Figure 5 Number and rate of major/specified injuries to employees in manufacturing (RIDDOR)



The main causes of reported major/specified injury to employees included:

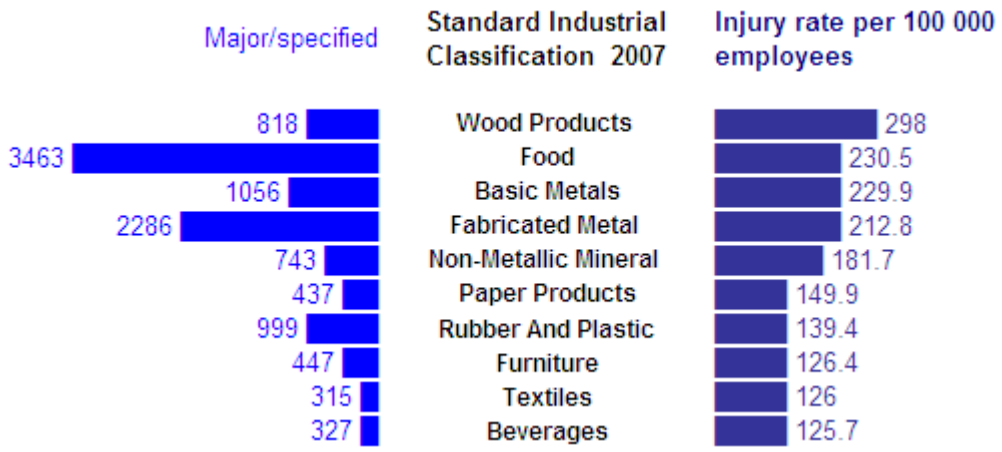
Table 3 Kinds of major/specified injury to employees

	Manufacturing 2013/14p	Manufacturing 2009/10 to 2013/14p	All industries 2009/10 to 2013/14p
Slip, trip, fall same level	29%	30%	41%
Contact with machinery	14%	15%	4%
Struck by object	13%	15%	11%
Lifting and handling injuries	11%	13%	10%
Fall from height	13%	12%	15%

Excluding the general category of “Other manufacturing”, Manufacture of wood/wood products and food products have the highest rates of major/specified injuries (298.0 and 230.5, averaged between 2009/10 and 2013/14p).

Food manufacture has the largest number of reported major/specified injuries (693 per year, on average). Fabricated metal products had the next largest number (457). These two industries accounted for 33% of reported major/specified injuries in manufacturing.

Figure 6 Manufacturing industries with major/specified injury rates above 100 per 100 000 employees, 2009/10 – 2013/14p combined (RIDDOR, excluding unspecified manufacturing)



Over-three-day and over-seven-day injuries

In 2013/14p, there were 10 436 reported over-seven-day injuries to employees – a rate of 399.0 per 100 000 employees. Over the previous five years there were an average number of 14 227 over-three/over-7-day's absence injuries, with a rate of 529.7 over-three/over-7-day's absence.

Figure 7 Manufacturing industries with rates of absence injury above 500 per 100 000 employees, 2009/10 to 2013/14p combined (RIDDOR, excluding unspecified manufacturing)

As with major/specified injuries, rates for reported over-seven-day injuries vary widely between different manufacturing industries. Manufacture of food products had a rate of 925.3 per 100 000 employees in 2013/14p. Manufacture of food products also had the highest number of reported over-seven-day injuries (2 886).

The change from over-three-day to over-seven-day reporting makes it difficult to judge if there has been a reduction in the number and rate of non-fatal non-major injuries. Analysis indicates that the trend in the over-three/seven-day injury rate may be beginning to flatten out, following a period of sustained reduction. See www.hse.gov.uk/statistics/causinj/over-7-day-adjust.htm for further information and a longer-term quarterly series of over-three/seven-day injury reports.

The main causes of reported over-seven-day injury to employees included:

Table 4 Kinds of over-seven-day and over-three-day injury to employees

	Manufacturing 2013/14p	Manufacturing 2009/10 to 2013/14p	All industries 2009/10 to 2013/14p
Lifting and handling injuries	30%	33%	33%
Slip, trip, fall same level	18%	19%	24%
Struck by object	12%	13%	10%
Contact with machinery	11%	11%	3%

Labour Force Survey (LFS) injuries and days lost

Results from the Labour Force Survey (averaged over 2011/12 to 2013/14) showed:

- manufacturing sector had statistically significantly higher rates for all non-fatal injuries than for all industries;
- the manufacturing sector accounted for around 17% of over-7-day absence injuries;
- the estimated rate of over-seven-day absence injury was 850 per 100 000 workers (0.85%). This was statistically significantly higher than the corresponding average rate of 500 per 100 000 workers (0.52%) across all industries (INJIND4_3YR); and
- there were an estimated 74 thousand cases of all self-reported workplace non-fatal injury per year (INJIND3_3YR).

In 2013/14 the estimated total number of working days lost (full-day equivalent) due to workplace injury attributed to the current or most recent job was about 1.14 million equating to 0.43 days per worker. The estimated average rate for all industries was 0.17 days per worker. This was not statistically significantly different to the average across all industries. (WDLIND, but see also INJIND2_3YR).

Occupations

The risk of injury also varies significantly with occupation.

Results from the Labour Force Survey showed:

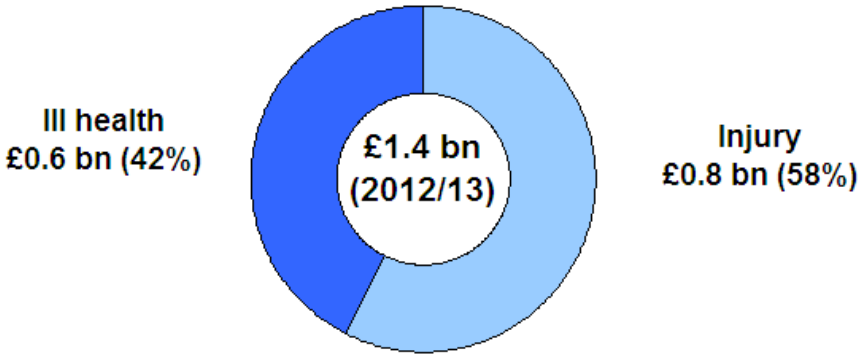
- process, plant and machine operatives had an estimated rate of over-seven-day absence injury of 1 090 per 100 000 workers or about 1% of the workforce per year. (INJOCC4_3YR – averaged 2011/12 to 2013/14). The average rate across all occupations was 500 and the injury rate for process, plant and machine operatives is statistically significantly higher;
- process, plant and machine operatives lost half a working day (0.53) per year due to self-reported workplace injury. The average lost time per worker across all occupations was 0.18 working days (INJOCC2_3YR – averaged 2010/11 to 2013/14).

Estimated costs to Britain

Workplace injury and work-related ill health impose costs on employers (e.g. sick pay), on individuals (e.g. the human costs of pain, grief and suffering), and on the Government (e.g. health care expenditure).

Latest GB estimates show that injuries and new cases of ill health resulting largely from current working conditions[8] in workers in manufacturing cost society an estimated **£1.4 billion,** in 2012/13 (expressed in 2012 prices).

Figure 8 Cost to Britain of workplace injury and work-related ill health in the manufacturing industry 2012/13 (in 2012 prices)



[8] Further work continues to estimate the cost of work-related conditions, such as cancer, caused by historic conditions.

[9] See www.hse.gov.uk/statistics/enforcement.htm

Enforcement[9]

HSE and local authorities are responsible for enforcing health and safety legislation. Each has a range of tools at their disposal in seeking to secure compliance with the law and ensure a proportionate response to offences. For more serious offences, inspectors may serve improvement notices and prohibition notices and they may prosecute (or in Scotland, report to the Procurator Fiscal with a view to prosecution).

In 2013/14p the number of cases heard was 8% lower than the average for the previous 3 years. Nearly 95% of cases resulted in a conviction.

Figure 9 Prosecutions in manufacturing[10]

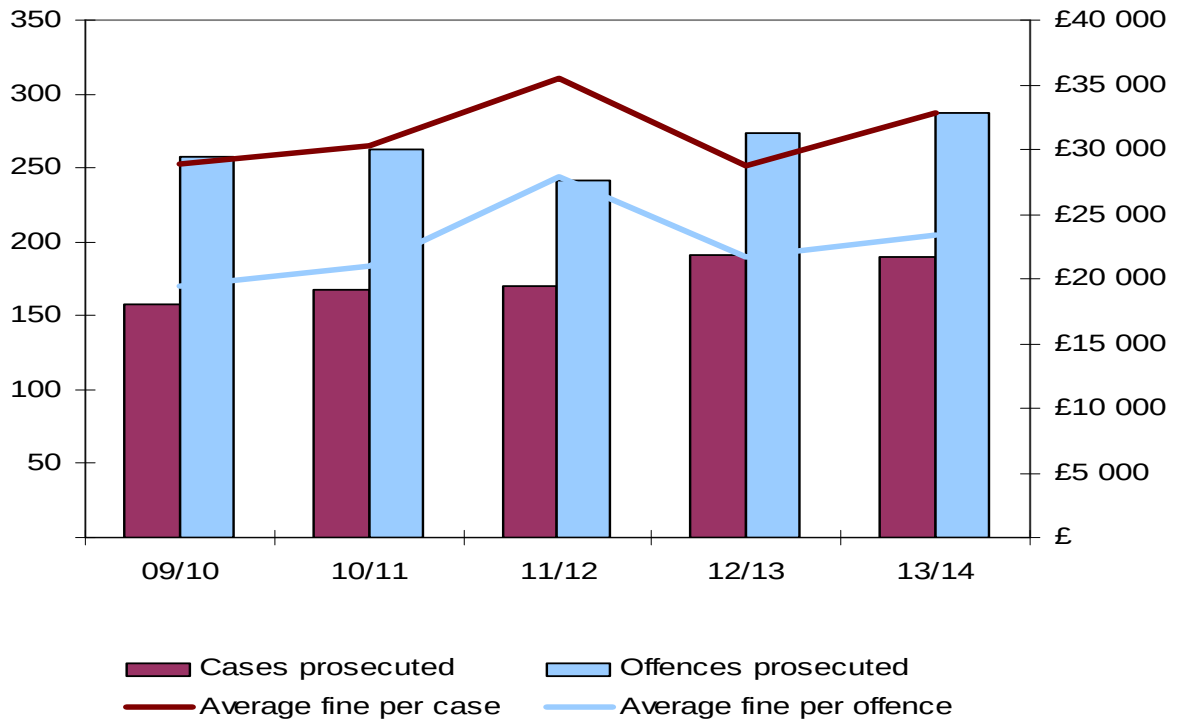
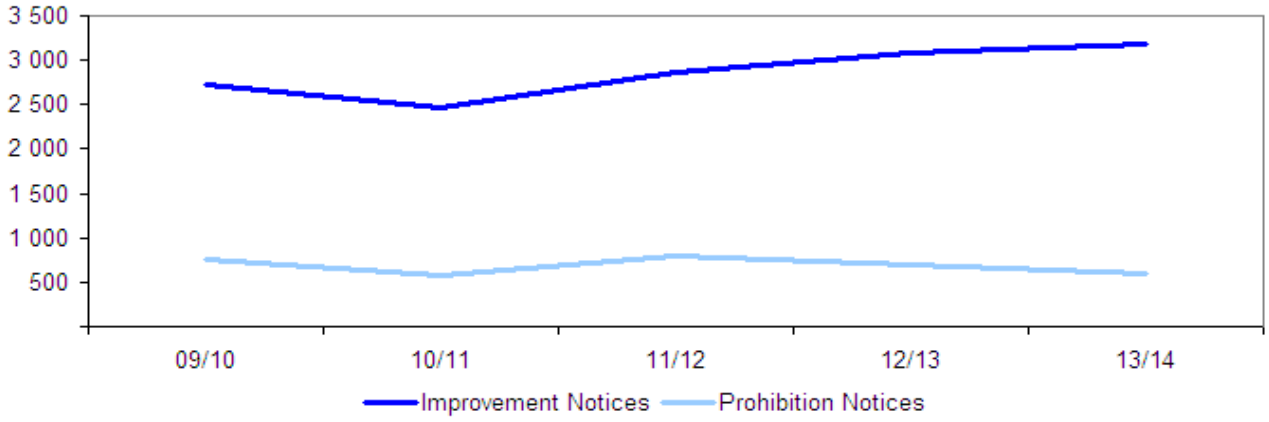


Figure 10 Enforcement notices in manufacturing



[9] See www.hse.gov.uk/statistics/enforcement.htm

[10] Case refers to a prosecution against a single defendant. The defendant may be an individual person or a company. There may be one or more breaches of health and safety legislation (offences) in each case.

Links to data sources and tables

Tables	Web Address (URL)
RIDIND	www.hse.gov.uk/statistics/ltables/ridind.xls
INJIND1_3YR	www.hse.gov.uk/statistics/lfs/injind1_3yr.xls
INJIND2_3YR	www.hse.gov.uk/statistics/lfs/injind2_3yr.xls
INJOCC2_3YR	www.hse.gov.uk/statistics/lfs/injocc2_3yr.xls
INJOCC3_3YR	www.hse.gov.uk/statistics/lfs/injocc3_3yr.xls
INJIND3_3YR	www.hse.gov.uk/statistics/injid3_3yr.xls
INJIND4_3YR	www.hse.gov.uk/statistics/injind4_3yr.xls
MSDIND2_3YR	www.hse.gov.uk/statistics/lfs/msdind2_3yr.xls
MSDIND4_3YR	www.hse.gov.uk/statistics/lfs/msdind4_3yr.xls
STRIND4_3YR	www.hse.gov.uk/statistics/lfs/strind4_3yr.xls
WRIOCC6_3YR	www.hse.gov.uk/statistics/lfs/wriocc6_3yr.xls
WRIIND2_3YR	www.hse.gov.uk/statistics/lfs/wriind2_3yr.xls
WRIIND4_3YR	www.hse.gov.uk/statistics/lfs/wriind4_3yr.xls
WRIIND6_3YR	www.hse.gov.uk/statistics/lfs/wriind6_3yr.xls
WDLIND	www.hse.gov.uk/statistics/lfs/wdlind.xls
THORGP04	www.hse.gov.uk/statistics/tables/thorgp04.xls
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THORGP06	www.hse.gov.uk/statistics/tables/thorgp06.xls
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THORR01	www.hse.gov.uk/statistics/tables/thorr01.xls
THORR04	www.hse.gov.uk/statistics/tables/thorr04.xls
Other tables	www.hse.gov.uk/statistics/tables/index.htm

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Additional data tables can be found at www.hse.gov.uk/statistics/tables/

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