

# FATAL INJURIES

in farming, forestry and horticulture

2002-2003



HEALTH AND SAFETY EXECUTIVE

FIELD OPERATIONS DIRECTORATE

**FATAL INJURIES**  
**IN FARMING, FORESTRY AND HORTICULTURE**

**2002/2003**

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## INTRODUCTION

**Part 1** of this report is a summary of the fatal injuries occurring in the agricultural sector (comprising of agriculture, horticulture, forestry and associated industries) in Great Britain during the year April 2002 to March 2003 which were investigated by Inspectors from the Field Operations Directorate of the Health and Safety Executive (HSE). **Data in part 1 of this report is provisional.**

**Part 2** summarises the reportable fatal injuries in the agricultural sector for the ten year period 1992/1993 to 2001/2002. It indicates points of interest and trends in fatal accidents involving employees, the self employed and members of the public during this period.

**Part 3** is a summary of the non-fatal injuries in the agricultural sector for the ten year period 1992/1993 to 2001/2002. This part includes an analysis of points of interest in the non-fatal injuries in the agricultural sector reported during 2001/2002 under the Reporting of Injuries, Diseases and Dangerous Occurrence Regulations (RIDDOR) 1995.

**Part 4** includes a number of case studies that covers some of the key causes of fatal and major accidents in the agriculture sector. Each case study gives details of an accident or incident, highlighting the causes and the action HSE took following the investigation as well as the lessons to be learnt from the accident.

These case studies have been included to help show how things can so easily go wrong and to give advice on how they can be avoided. For detailed advice on legal requirements and practical ways to reduce health and safety risks, HSE produces a wide range of leaflets and videos for the agricultural sector.

**Part 5** shows the total estimated number of accidents occurring within the agricultural sector during 2002/2003, and their costs.

**Further advice:** Most leaflets are available free from HSE Books or can be accessed through the Internet.

HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA  
Tel 01787 881165 Fax 01787 313995 website: [www.hsebooks.co.uk](http://www.hsebooks.co.uk)

HSE agriculture home page:  
[www.hse.gov.uk/agriculture](http://www.hse.gov.uk/agriculture)

HSE Videos can be purchased from HSE books.

For general enquiries about health and safety in the agricultural sector, call the HSE Infoline:

08701 545500



# **FATAL AND NON-FATAL INJURIES**

## **IN FARMING, FORESTRY, HORTICULTURE AND ASSOCIATED INDUSTRIES IN GREAT BRITAIN**

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**PART ONE**

**FATAL INJURIES  
IN FARMING, FORESTRY AND HORTICULTURE**

**1 April 2002 to 31 March 2003**



**FATAL INJURIES  
IN FARMING, FORESTRY, HORTICULTURE  
AND ASSOCIATED INDUSTRIES  
APRIL 2002 - MARCH 2003**

**1. GENERAL**

1.1 Total reported fatal injuries: 38, including one child under 16 years of age.

1.2 The total excludes reported deaths which are caused by diseases and those which are not formally 'reportable' under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995.

**TABLE 1.1 :Six year comparison**

|                      | <b>1997/98</b> | <b>1998/99</b> | <b>1999/2000</b> | <b>2000/01</b> | <b>2001/02</b> | <b>2002/03*</b> |
|----------------------|----------------|----------------|------------------|----------------|----------------|-----------------|
| Employed             | 20             | 16             | 13               | 13             | 20             | 15              |
| Self Employed        | 20             | 30             | 23               | 33             | 19             | 20              |
| Non-employed         | 11             | 9              | 8                | 7              | 2              | 3               |
| Total Adults         | 46             | 52             | 40               | 49             | 39             | 37              |
| Total Children (<16) | 5              | 3              | 4                | 4              | 2              | 1               |
| Total (SIC92, A & B) | 51             | 55             | 44               | 53             | 41             | 38              |

\* = provisional data

**TABLE 1.2 : Fatalities by country 2002/2003**

|                 | Employed | Self Employed | Non-employed | Total |
|-----------------|----------|---------------|--------------|-------|
| <b>England</b>  | 11       | 10            | 2            | 23    |
| <b>Scotland</b> | 3        | 8             | 0            | 11    |
| <b>Wales</b>    | 1        | 2             | 1            | 4     |
| <b>Total</b>    | 15       | 20            | 3            | 38    |

## **2. TRENDS AND MAIN POINTS**

2.1 The number of deaths in the industry last year is the lowest since the introduction of RIDDOR in 1986/87. The figure is 3 lower than last year and 11 lower than the average over the previous five years. Overall in recent years there has been a discernible downward trend in the number of fatal accidents in the industry.

2.2 The total of 35 deaths among workers (employees and the self employed) is 4 lower than in 2001/02 and 6 lower than the average figure over the previous five years.

2.3 Of these 35 workers, (17) were experienced workers aged 50 years or over. Six were above the normal retirement age of sixty-five, all of who were self employed.

2.4 Fifteen employees were killed during the year which 5 less than in 2001/02. Last year's total of 20 employee fatalities was the highest recorded over the preceding five-year period.

2.5 Twenty self employed people died last year; one more than in 2001/02 and 5 lower than the average for the previous five years.

2.6 Three members of the public died; one more than in 2001/02, which was the lowest number since the introduction of RIDDOR in 1986/87. However it is 4 lower than the average for the previous five years.

2.7 Of the 39 people killed, one was a child under the age of 16 years; a twelve year old family member. The is the lowest figure for child deaths recorded since 1994/95 and is 3 less than the average for the previous five years.

**TABLE 1.3: Fatal injuries by main activity in the agriculture sector, 2002/2003**

| <b>Main activity</b>               | <b>Number</b> |
|------------------------------------|---------------|
| Arable farming                     | 4             |
| Cattle (dairy & beef) farming      | 1             |
| Pig farming                        | 1             |
| Mixed farming                      | 21            |
| Agricultural contractors           | 4             |
| Forestry (and related activities)  | 3             |
| Other (inc hunting/gamekeeping)    | 2             |
| Horticulture/Sheep Farming/Fishing | 2             |
| <b>Total</b>                       | <b>38</b>     |

2.9 Once again transport related activities caused the majority of fatal accidents - accounting for 12 deaths, almost a third of the total. In 5 cases people were struck by a moving vehicle (the majority of them being lift trucks). A further 7 cases involved overturning vehicles, including one where the driver lost control. Three of these accidents involved tractors, 4 involved lift trucks and a further 2 ATV's. The remaining 3 cases involved a loadall, a lorry and a trailer.

2.10 In 2002/03 there was no single second highest category of a causation of fatal accident. Contact with machinery and struck by a moving, falling or flying object each accounted for 5 deaths.

2.11 Three of the struck by falling, flying or moving object cases involved falling branches/trees during arboriculture. The fourth death involved a lagoon gate in high winds and the fifth occurred when a gun was accidentally discharged.

2.12 Contact with moving machinery caused the single child death when he became entangled on an unguarded PTO shaft. A further two deaths occurred when the victims became entangled on a rope being wound onto a tractor driven winding machine. The last two machinery related fatalities resulted from attempt to clear a blockage whilst the machine was still operating and the uncovenanted descent of an unsupported hydraulic boom during maintenance work.

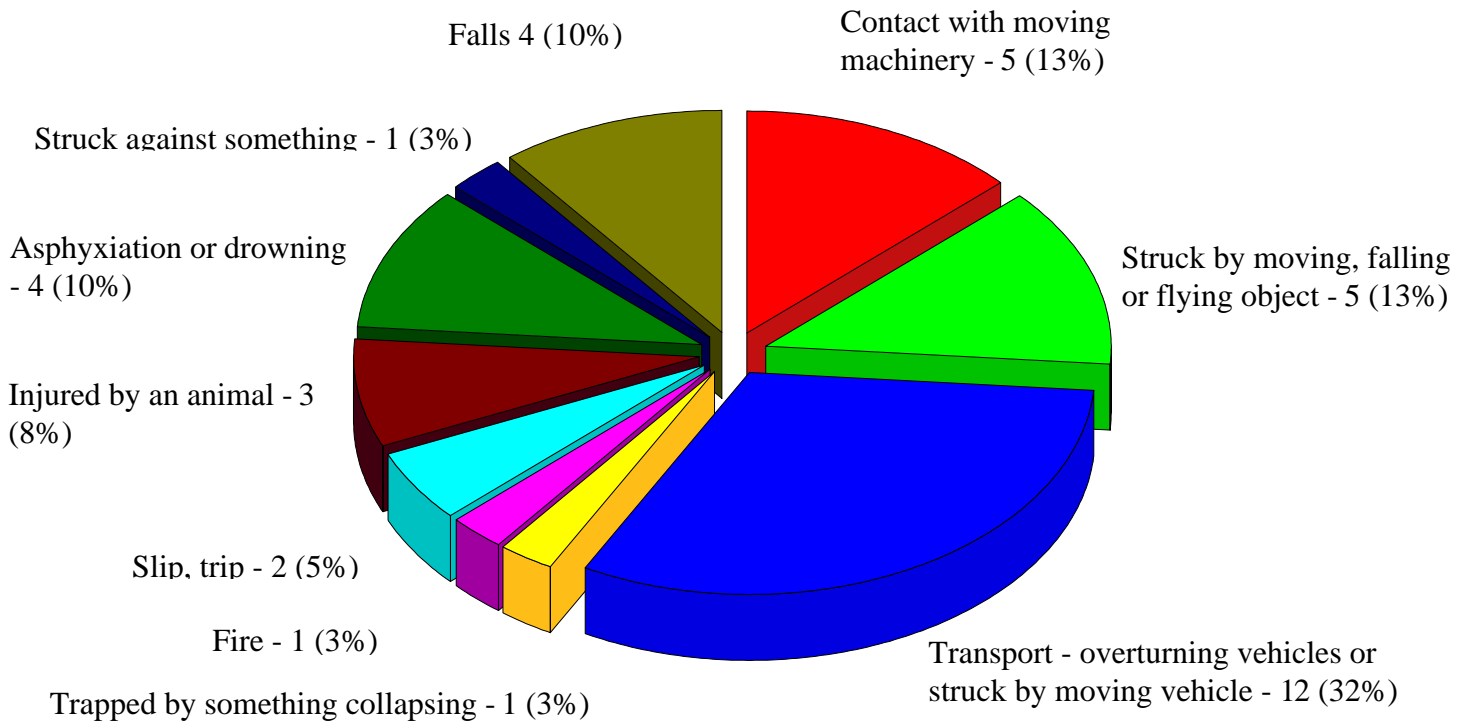
2.13 There was a further reduction in the number of fatal accidents resulting from falls from heights 4 as against 5 in 2001/02. This represents a downward trend in this category when compared with the 10 year average; 10% as against an average of 18%. Two of the cases involved falls from unsecured ladders - one during maintenance work on a building and the other during tree work. Two deaths resulted from falls from trailers - one whilst the trailer was being pulled by a tractor, the other whilst levelling out grain prior to sheeting.

2.14 Asphyxiation / drowning caused 4 deaths; an increase of 3 over the previous year. Two people were overcome by toxic gases in a single incident in an underground slurry store. A further 2 people drowned after falling into water; one found in a river and the other when a vessel overturned.

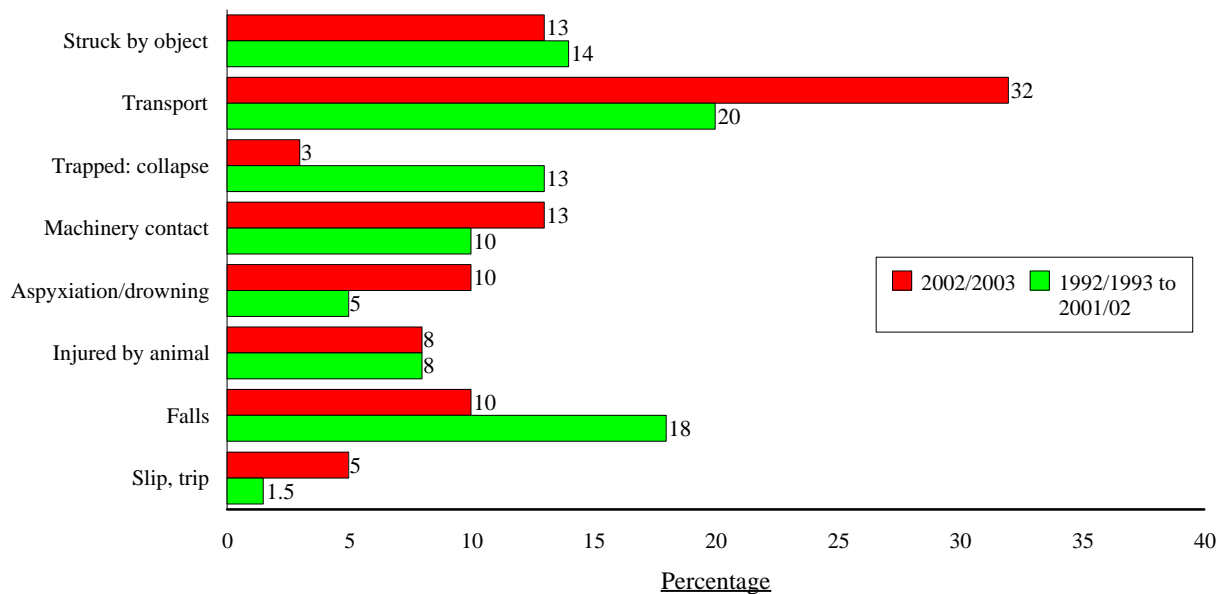
2.15 Three people were killed by animals, one less than in 2001/02. Two were killed by cattle, one of which was a bull. One case involved a new born calf, the other resulting from checking/moving cattle in a field. The third fatality involved a horse.

2.16 One person died when he became trapped whilst he was still working at the top of a tree, which had caught fire. A second died as a result of pulmonary embolism after slipping on a concrete floor, the third as a result of a trip or stumble, the fourth when a metal rod had impacted through an eye socket causing fatal brain injuries and the fifth when a mower overturned.

**FIGURE 1.1 : Fatal injuries by cause, 2002/2003**



**FIGURE 1.2 : Fatal injuries by cause - percentages in 2002/2003 vs 10 years average (1992/1993 to 2001/2002)**



**TABLE 1.4: Type of fatal injuries, 2002/03***(Figures in brackets represent the number of children under 16 years)*

|   |       |   |               |
|---|-------|---|---------------|
| <u>Contact with moving machinery</u>                                |       | <u>Falls</u>  |               |
| - PTO shaft   | 1 (1) | - From trailer                                      | 2             |
| - Loader arm grab   | 1     | - From ladder                                       | 2             |
| - Potato Harvester  | 1     |   |               |
| - Winding machine   | 2     | <u>Asphyxiation/drowning</u>                        |               |
|   |       | - Slurry  | 2             |
| <u>Struck by moving, falling or flying object</u>                   |       | - Water   | 2             |
| - Tree  | 3     |   |               |
| - Gate  | 1     | <u>Slip, trip or fall on same level</u>             |               |
| - From weapons  | 1     | - Concrete floor                                    | 1             |
|   |       | - Trip/stumble on barn floor                        | 1             |
| <u>Transport - overturning vehicles or struck by moving vehicle</u> |       | <u>Exposure to fire</u>                             |               |
| - Tractor   | 3     | - In tree   | 1             |
| - Loadall   | 1     | <u>Injury by an animal</u>                          |               |
| - Trailer, plant or equipment associated with vehicle               | 1     | - Bulls   | 1             |
| - All Terrain Vehicles (ATV's)                                      | 2     | - Other cattle                                      | 1             |
| - Fork lift trucks (FLT's)  | 4     | - Horse   | 1             |
| - Lorry   | 1     | <u>Struck against something fixed or stationary</u> |               |
|   |       | - Metal rod   | 1             |
| <u>Trapped by something collapsing or overturning</u>               |       |   |               |
| - Grass cutter  | 1     |   |               |
|   |       | <b>TOTAL</b>  | <b>38 (1)</b> |

**TABLE 1.5: Number of fatal injuries - by HSE Division, 2002/03***(Figures in brackets represent the number of children under 16 year)*

| <b>HSE Division</b>                      | <b>Counties and Unitary Authorities (UAs)</b>  | <b>Number</b>        |
|--|--|----------------------|
| <b><u>Wales &amp; South West</u></b>     |  | <b><u>8 (1)</u></b>  |
| Wales                                    | All Wales UAs  | 4 (1)                |
| South West                               | Avon, Cornwall, Devon, Dorset, Gloucestershire, Somerset, Wiltshire *  | 4                    |
| <b><u>East and South East</u></b>        |  | <b><u>10</u></b>     |
| South                                    | Former county of Berkshire, Hampshire, Isle of Wight. *  | 2                    |
| East Anglia                              | Essex, Norfolk, Suffolk  | 5                    |
| Home Counties                            | Bedfordshire, Former county of Buckinghamshire, Cambridgeshire, Hertfordshire. *   | 1                    |
| South East                               | East Sussex, Kent, Oxfordshire, Surrey, West Sussex. *   | 2                    |
| <b><u>London</u></b>                     |  |                      |
| London                                   | All London Boroughs  |                      |
| <b><u>Midlands</u></b>                   |  | <b><u>2</u></b>      |
| East Midlands                            | Leicestershire, Northamptonshire, Warwickshire *   | 1                    |
| West Midlands                            | West Midlands  |                      |
| North Midlands                           | Derbyshire, Lincolnshire, Nottinghamshire *  |                      |
| Marches                                  | Herefordshire, Shropshire, Staffordshire, Worcestershire *   | 1                    |
| <b><u>Yorkshire &amp; North East</u></b> |  | <b><u>5</u></b>      |
| South Yorks & Humberside                 | N and NE Lincolnshire, South Yorkshire, Yorkshire (E Riding) *   | 1                    |
| West & North Yorkshire                   | North Yorkshire, West Yorkshire *  | 2                    |
| North East                               | Durham, Northumberland, Tyne & Wear *  | 2                    |
| <b><u>North West</u></b>                 |  | <b><u>2</u></b>      |
| Manchester                               | Greater Manchester   |                      |
| Merseyside                               | Cheshire, Merseyside   |                      |
| North West                               | Cumbria, Lancashire  | 2                    |
| <b><u>Scotland</u></b>                   |  | <b><u>11</u></b>     |
| Scotland East                            | Aberdeen, Aberdeenshire, Angus, Clackmannanshire, Dundee, Edinburgh, Falkirk, Fife, Highland, E & W Lothian, Midlothian, Moray, Orkney, Perthshire & Kinross, Scottish Borders, Shetland, Stirling | 8                    |
| Scotland West                            | Argyll & Bute, E, N & S Ayrshire, N & S Lanarkshire, All other UAs in the former Strathclyde Region, Dumfries & Galloway, Western Isles  | 3                    |
| * = and associated UAs                   |  |                      |
| <b>TOTAL</b>                             |  | <b><u>38 (1)</u></b> |

## SUMMARY OF FATAL ACCIDENTS BY HSE DIVISION

1 APRIL 2002 - 31 MARCH 2003

### WALES & SOUTH WEST DIVISION

#### Wales

##### **67 years – self employed farmer**

He was crushed between the mast of a forklift truck and a fertilizer spreader whilst emptying bags of fertilizer from the raised forks of the FLT into a hopper. He was leaning over the rear of the hopper to cut the bags. As the contents of the bag emptied, the FLT moved forward crushing him between the mast and the rear edge of the hopper.

##### **30 years – self employed contractor**

He was found trapped between the end of a loader and its boom. It appears that he had raised the loader grab to gain access to the cab of the machine. He then stood under the unsupported grab to carry out repair work in the cab. He either accidentally operated the foot hydraulic control causing the boom to descend or it sustained an uncovenanted, unpowered descent. The machine was provided with cab operated boom supports but these were not fitted.

##### **12 years – child**

He suffered multiple fatal injuries when he became entangled on an unguarded PTO shaft connecting a tractor to a roller mill. It appears that he approached or was in the vicinity of roller milling machine whilst the machine was being operated and became entangled on the power input connection stub on the PTO drive shaft.

##### **51 years – employee**

He was killed when his head was crushed against the side of a trailer whilst feeding sheep from the back of trailer, towed by a tractor. The tractor drove over the unprotected edge of a gravel pit in the field and as the trailer landed it crushed his head.

#### South West

##### **65 years – employee**

He was found unconscious on grass verge at bottom of field beside an ATV and trailer. He had either attempted to reverse to reposition the ATV, but inadvertently engaged a forward gear or he had left the bike in gear and on accelerating moved rapidly forward. The ATV mounted the bank and overturned, causing head and internal injuries. No formal training had been provided, nor was he wearing a safety helmet.

### **64 years – employee**

He was killed when a tractor overturned down a slope. The tractor, parked on a farm track, suddenly began to move down track on its own accord. The deceased attempted to climb into the tractor to bring it to rest. It is believed that in attempting to do so he grabbed hold of the steering wheel causing it to veer off the track onto a steep grass field. He was thrown from the cab as the tractor started to overturn and was found unconscious. His head may have hit the ground or alternatively he was struck by one or more parts of the tractor.

### **60 years – self employed farmer**

He was crushed between two lorries. A bulk tipper lorry was parked on a sloping yard at pig unit after difficulties had been experienced unloading it. An ERF bulk tipper was brought in to replace. Whilst he was standing alongside the ERF, the lorry ran backwards crushing him between the two vehicles.

### **76 years – self employed farmer**

He was hit on the head by a slurry gate in high winds. He opened a sheeted slurry lagoon gate at the side of a farm building. As he did so the wind caught it and slammed it shut, causing the gate to jump and twist out of the bottom hinge. He tried to lift the gate back onto the hinge and as he did this, the gate twisted again knocking him to the concrete floor.

## **EAST AND SOUTH EAST DIVISION**

### **South**

#### **21 years – employee and 27 years – self employed contractor**

Two men died when they became entangled on a rope being wound onto a tractor driven, hydraulic operated fleece winding machine. The machine was being used to wind long lengths of rope. It seems that they were either both attempting to feed rope onto the winder at the same time or that one was assisting the other by pulling/untangling rope from the piles at the end of the polytunnels. They became entangled between the rope and the rotating shaft and sustained fatal injuries.

### **East Anglia**

#### **48 years – employee**

He was crushed against a mobile cleaning machine by a forklift truck. He had finished processing wheat seeds when his colleague got onto the forklift to move the last bag. When it started, it moved forward trapping him against the machine.

#### **45 years – self employed farmer**

He drowned when his vehicle overturned into a dyke. He was using a loadall to level a farm track next to a dyke when he either accidentally reversed over the edge, or the edge of the dyke gave way. The vehicle overturned into the dyke trapping him beneath the water.

#### **45 years – self employed farmer**

He received head injuries when he fell onto a metal rod. He was found lying on a concrete yard between 2 pig houses. An adjacent metal gate had recently broken from its hinges and a blunt metal rod had been placed through the lock of a nearby shed door, to keep the door closed. It seems that he jumped over the gate, which broke and pitched him onto the metal rod. The rod impacted through his right eye socket causing fatal brain injuries.

#### **46 years – employee**

He died when a telehandler reversed over him whilst he was working in farm yard outside a barn. He was kneeling on the ground removing timber expansion strips from newly laid concrete adjacent to barn doors. The telehandler was reversing to enter the barn door. Despite attempts made by two eyewitnesses to alert the driver he reversed over him. The vehicles wing mirrors were in good condition. Visibility was good, but the view on the nearside was possibly obstructed by the cab door, CCTV was subsequently fitted.

#### **31 years – self employed**

He was hit on the head and became trapped underneath a large branch whilst felling a tree. Before carrying out the first cut, he attached his lifeline to another bough, which was later found to be rotten. As the bough that was cut fell, it brought down the rotten bough to which he was attached. His lifeline came down and he was trapped and killed. It appears the boughs had grown into each other and were inextricably linked.

### **Home Counties**

#### **20 years – employee**

She was crushed when a forklift truck overturned onto its side. She was standing to the side of an FLT that was being driven by an untrained, unauthorised student. It appears that during an act of horseplay, involving spinning the FLT and cornering sharply, the vehicle fell onto its side crushing her between the vehicle and the floor.

## **South East**

### **60 years - member of the public**

He died after falling from the rear of the trailer whilst helping to load and move hay bales. He had loaded a number of bales onto trailer and was standing on the trailer as the farmer began to drive forward. He fell from the rear as the tractor moved forward from a stationary position. Farmer may have sharply declutched causing a sudden, sharp, unexpected movement. He was taken to hospital and subsequently released but returned a few days later where he died from conditions resulting from the accident.

### **44 years - employee**

He was killed when the mower he was driving on an incline, overturned and fell on top of him.

## **MIDLANDS DIVISION**

### **East Midlands**

### **66 years - member of the public**

He was found in a barn at the base of a ladder with head injuries. He would occasionally visit farm to help out with odd jobs. He was seen entering barn and later found with head injuries, a broken wrist and knee injuries consistent with a trip or stumble at ground level. Natural causes not completely ruled out.

### **Marches**

### **63 years – self employed farmer**

He was found unconscious at the base of a wooden ladder. It was thought he had been using the ladder to gain access to a blocked pipe on the roof of a cattle shed. There was no evidence to suggest that the ladder had been tied to the building or secured against movement in some other way. The surface on which the ladder had been standing was a combination of mud and concrete. The ladder was in poor condition and was neither properly footed nor otherwise secured to prevent accidental movement.

## **YORKSHIRE & NORTH EAST DIVISION**

### **South Yorkshire & Humberside**

### **58 years - employee**

He was found trapped between two trees. Trees were being felled as part of a thinning operation in a small wood. Two felled trees were still hung up on standing trees. It appears that the last tree felled had hung up across another hung up tree and then fallen directly onto the deceased as he made his way through the wood. There was no obvious reason as to why he had walked directly into the danger zone.

## **West & North Yorkshire**

### **19 years - employee**

He was kicked in the head by one of four horses over wintered in a paddock. He entered the paddock to fasten the retaining strap on a horse blanket, which had come loose on one of the horses. As he attempted to fasten the strap, he was accidentally kicked on the side of his head by a second horse galloping past.

### **55 years – self employed farmer**

He was found with severe head and chest injuries in a field and was believed to have been crushed by his bull. Three days before the fatal accident he had been attacked by the bull while trying to move cattle to an adjacent field. He received hospital treatment for his injuries and was on medication. On the day of the accident he left the farm to check on the cattle but was later found in the field with trample injuries. It appears he was either attacked again or that he had fainted as a result of his earlier injuries and been trampled by the cattle.

## **North East**

### **24 years - employee**

He was killed when the ATV he was driving struck a tree. Employed as a gamekeeper he was driving the quad bike along a forest track on a return journey after feeding birds in the forest. As he drove off the road he appeared to have lost control and driven head-on into a tree. Head protection had been provided but was not being worn.

### **28 years – self employed**

He was killed when he became trapped up a tree that had caught fire. He was dismantling two trees in a domestic garden and had started a fire at the base of one of the trees to burn the branches. It appears that a tree branch that he had sawn off had dropped into the fire, causing hot embers to fly up into the air and ignite some of the lower branches. The two trees caught fire before he could get down. His body was found on the ground.

## **NORTH WEST DIVISION**

### **North West**

### **56 years – self employed farmer**

He died as a result of slipping and fracturing his tibia on a concrete floor. The farmer got out of vehicle to open a gate, when he slipped and fractured a tibia. The five bar gate was on a well made and relatively clean concrete yard. He died four days later in hospital from a pulmonary embolism.

### **57 years - employee**

He was found in a river. He had been sent with a farm dog to bring in cattle across a ford for milking. He never returned and was later found drowned lying in the river, downstream of the ford. There is no evidence as to how he entered the river.

## **SCOTLAND**

### **Scotland East**

### **29 years - employee**

He was trapped in the rollers of a potato harvester whilst he trying to clear a blockage. He climbed onto the harvester without stopping the machine or tractor and attempted to unblock the rollers using a metal bar and is believed to have fallen or been drawn into machine. His right arm, shoulder and part of his chest became trapped in the haulm rollers of the harvester causing fatal injuries.

### **29 years – self employed**

He died from a single gunshot wound to his chest. He was checking a fox trap in a steep sided gully when the gun accidentally discharged. It appears he either slipped while carrying the gun or that it discharged when being laid down or picked up off the ground.

### **42 years – self employed**

He was killed when he was struck by a falling tree on a steep hillside. It appears that he had felled a tree that became hung up and then attempted to take down the tree in the direction it was hung. The tree worked itself loose knocking him over and down the slope as it fell.

### **68 years – self employed farmer**

He was killed when he became impaled on the forks of a front-end loader. He was using a tractor with a front-end loader attachment to transport metal roofing sheets from a trailer to a silage pit he was constructing. He stopped the tractor on a slight slope, near to the silage pit and applied the handbrake. As he was standing in front of the tractor it rolled forward and the forks pierced his groin, impaling him against the silage face.

### **68 years – self employed farmer**

He suffered fatal head injuries after falling from a trailer onto a concrete floor whilst leveling grain prior to sheeting. The height of the trailer body was approximately 2.2 metres at the point at which he had been standing immediately prior to the accident. It could not be established why or how he fell.

### **77 years – self employed farmer**

He was found lying in a field with multiple injuries after a cow attacked him. He had entered the field to feed a calf, which was not suckling. The calf's mother attacked him as he attempted to administer colostrum to her newly born calf. He received rib and spinal injuries in the attack and became tetraplegic. He subsequently died in hospital from pneumonia.

### **67 years – self employed farmer**

He was crushed when the tractor he was using to compact a rubbish tip overturned. The tip area was at the bottom of a bank and was on soft, unconsolidated ground. It appears he was running tractor backwards and forwards across the top of the bank/tip area. At some point the tractor moved off the level section and onto the slope moving sideways across the slope. The lower wheels sank into the mud, causing the tractor to topple over, landing upside down. The driver was trapped below the tractor and was unable to get out. Tractor was fitted with a loader but not with a roll bar or cab.

### **35 years - employee**

He drowned when his boat overturned. The boat carrying a tonne of fish and a feed cannon and was traveling around a headland between cage groups when it overturned, throwing him into the water. His life jacket did not inflate and by the time help arrived he had disappeared beneath the water.

## **Scotland West**

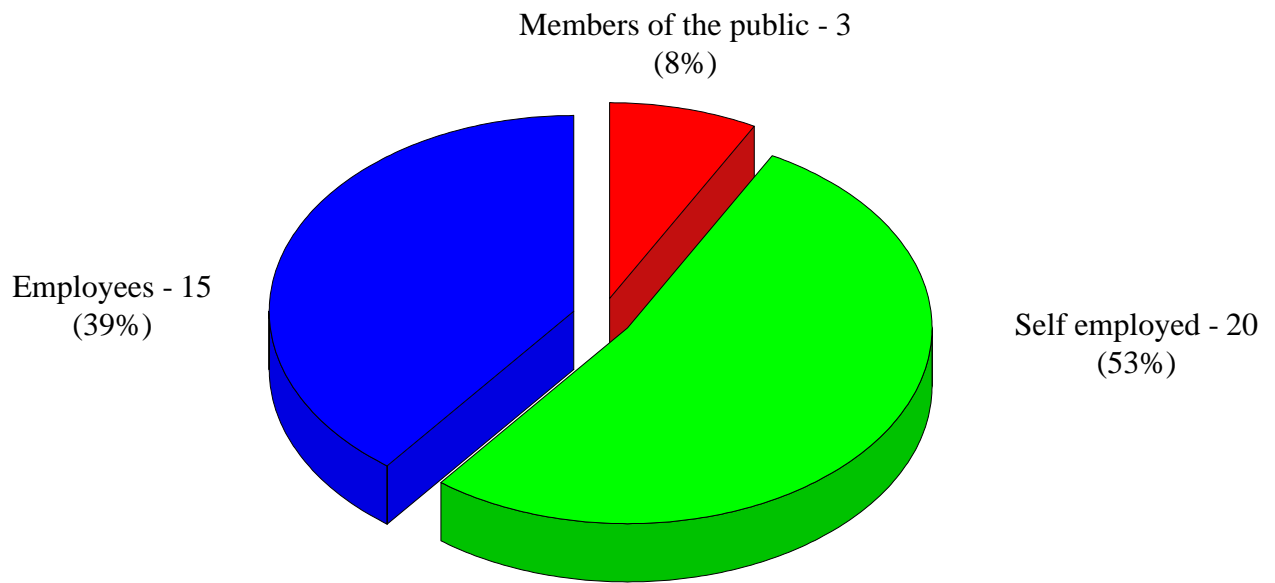
### **22 years – employee and 62 years – self employed farmer**

Two men were killed when they entered an underground slurry store to rescue a heifer. The liquid manure storage system was located under a slatted concrete floor beneath the cattle shed. There was a mixture of slurry and silage effluent in the store. No assessment had been made of the risk of asphyxiation or of being overcome by toxic gases and no personal or respiratory protective equipment was used. Pending the outcome of the inquest, it is not known whether the men drowned, were asphyxiated or were overcome by toxic gases.

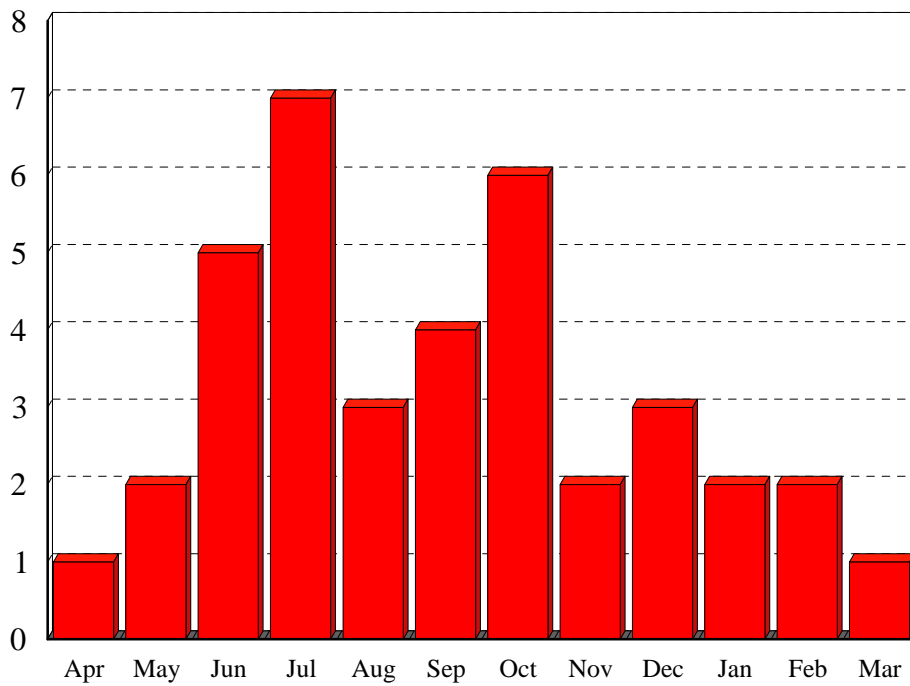
### **56 years – self employed arborist**

He died when he fell from a ladder leaning against a tree. He had placed the ladder against another tree approximately 2.5 metres from the tree to be felled. It appears he was attempting to attach a rope to the dead tree's branch in order to control the direction it would fall after it had been cut. Ladders were still in place against the tree after the accident it is unclear how he fell.

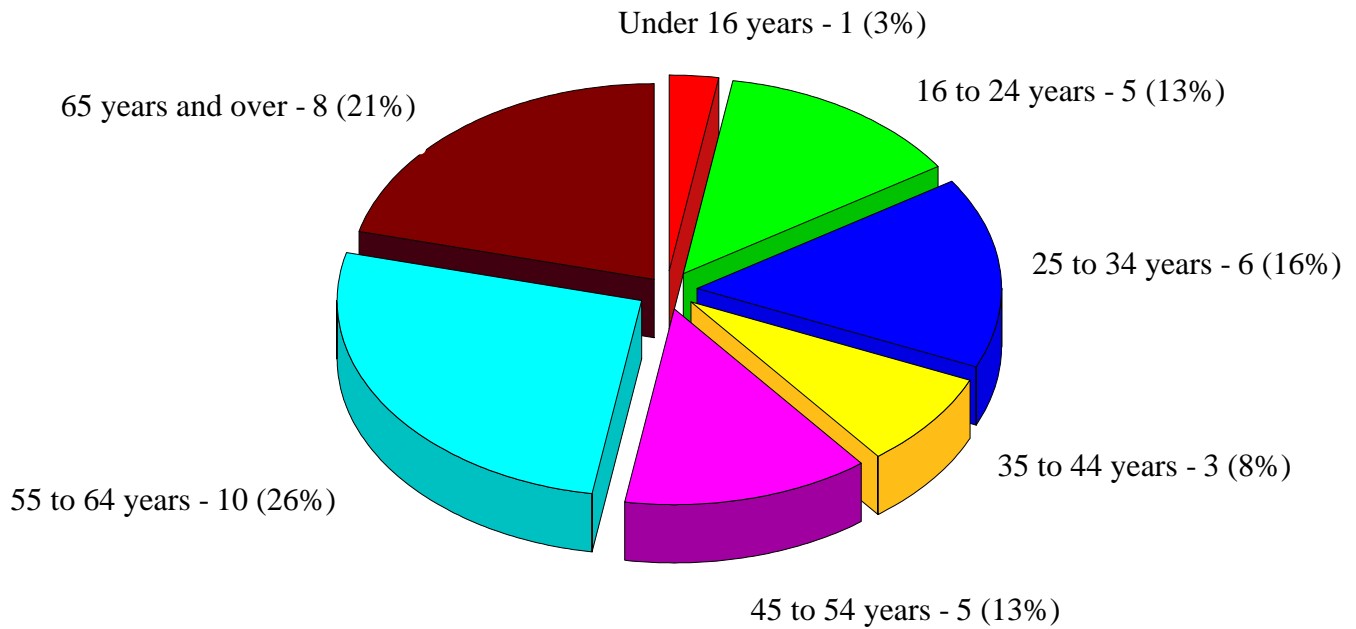
**FIGURE 1.3 : Fatal injuries by employment status, 2002/2003**



**FIGURE 1.4 : Fatal injuries by month of the year - April 2002 to March 2003**

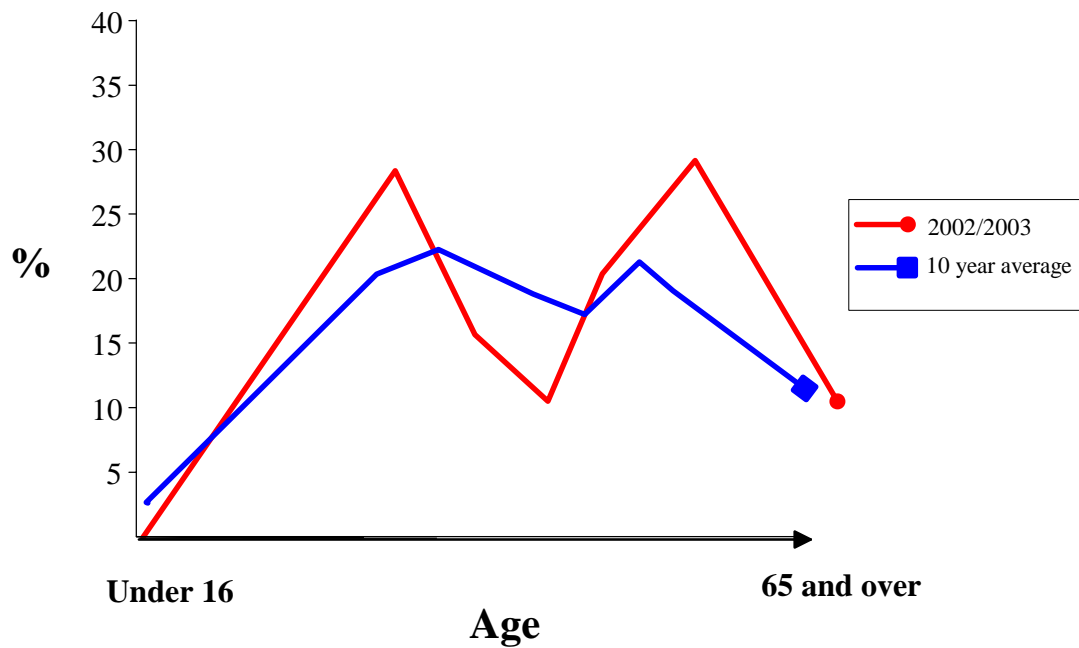


**FIGURE 1.5 : Fatal injuries by age, 2002/2003**

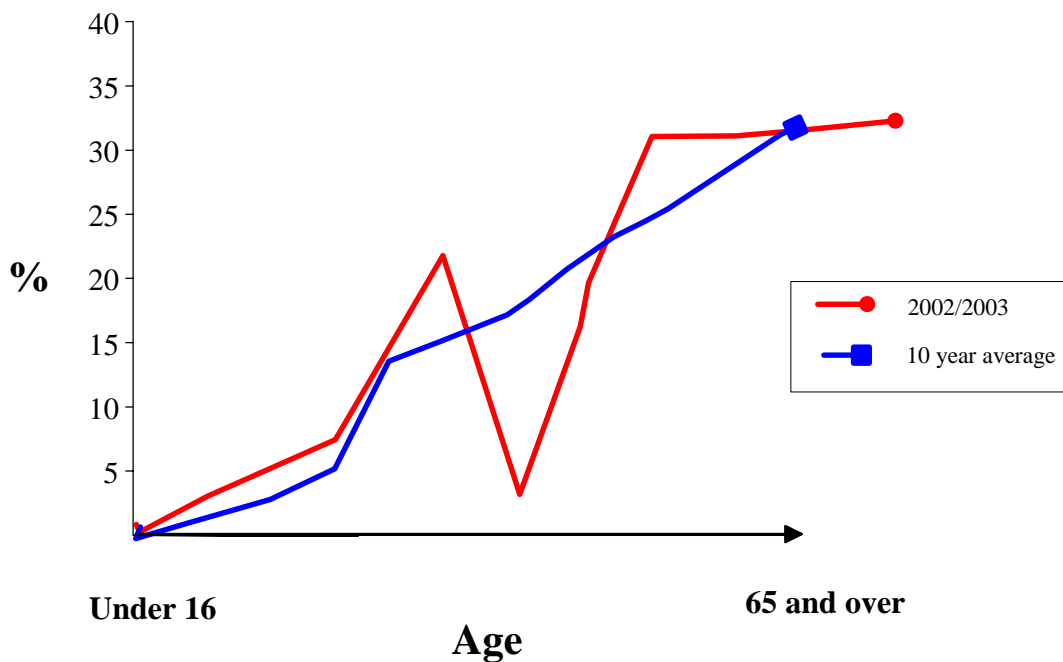


|             |    |
|-------------|----|
| Under 16    | 1  |
| 16 to 24    | 5  |
| 25 to 34    | 6  |
| 35 to 44    | 3  |
| 45 to 54    | 5  |
| 55 to 64    | 10 |
| 65 and over | 8  |

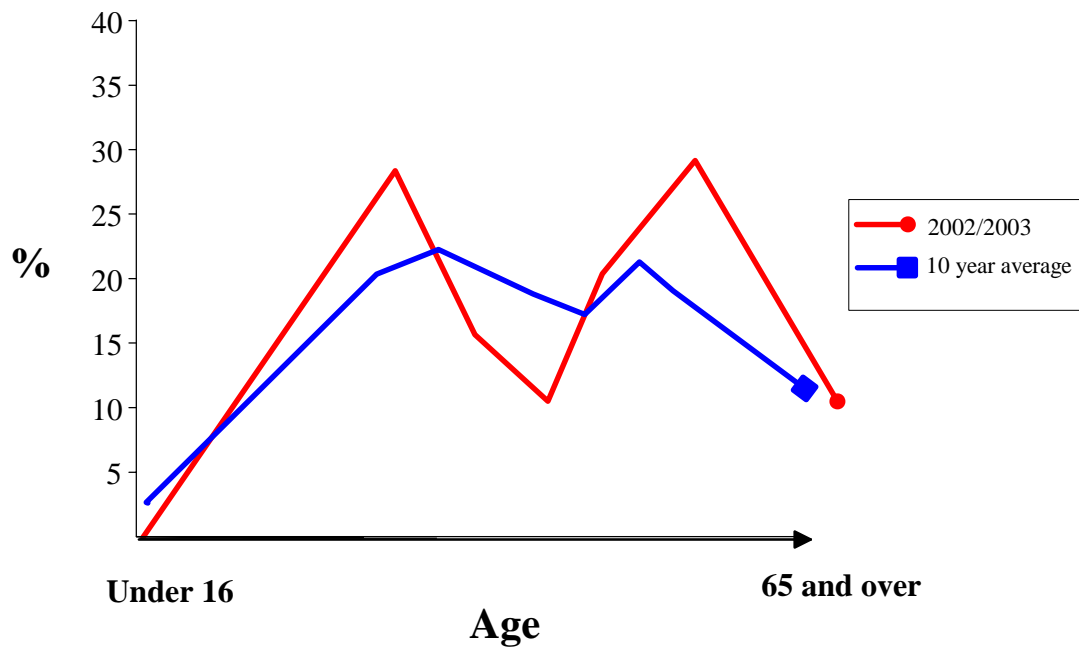
**FIGURE 1.6 : Age of Deceased. Percentage of the total for employees - 2002/2003 against 10 year average (1992/1993 to 2001/2002)**



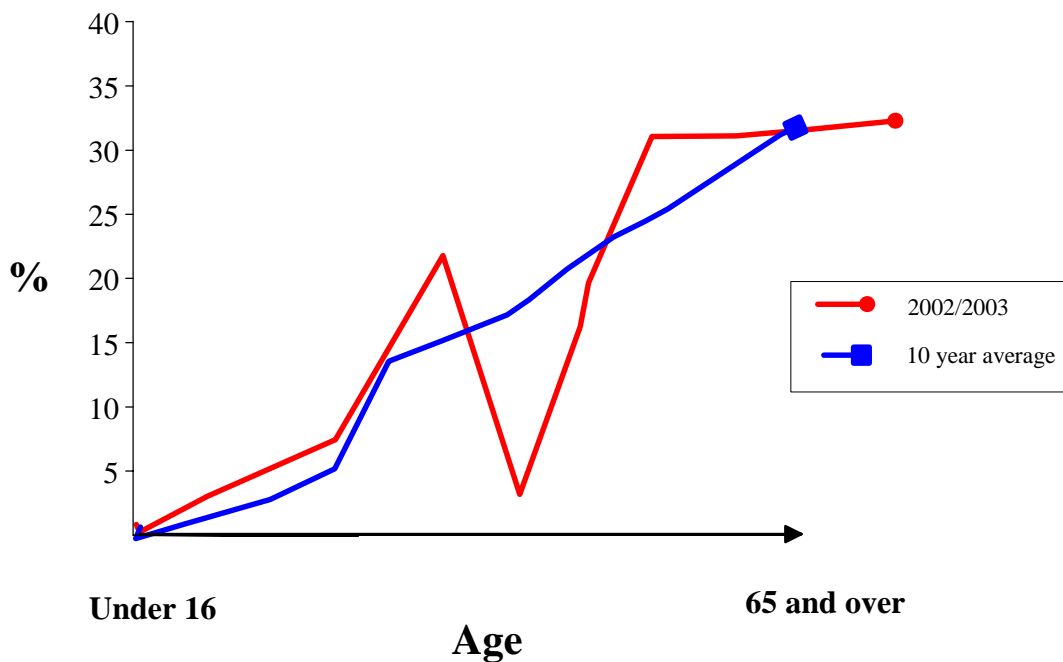
**FIGURE 1.7 : Age of Deceased. Percentage of the total for self employed - 2002/2003 against 10 year average (1992/1993 to 2001/2002)**



**FIGURE 1.6 : Age of Deceased. Percentage of the total for employees - 2002/2003 against 10 year average (1992/1993 to 2001/2002)**



**FIGURE 1.7 : Age of Deceased. Percentage of the total for self employed - 2002/2003 against 10 year average (1992/1993 to 2001/2002)**



**PART TWO**

**FATAL INJURIES  
IN THE AGRICULTURAL SECTOR  
1992/1993 TO 2001/2002**



## **FATAL INJURIES IN THE AGRICULTURAL SECTOR**

### **1992/1993 TO 2001/2002**

Four hundred and ninety-seven fatal accidents within the agricultural industry (including the forestry sector) have been reported to the Health and Safety Executive over the past ten years. Of these, 173 were to employees, 253 were to self employed people and 71 were to members of the public, injured as a result of someone else's work activity.

Forty-two children (under 16 years of age) were killed over the ten-year period – 4 of them were classed as employees (included in tables 2.1 to 2.9) and 38 as members of the public (included in table 2.10). This means that;

- ◆ On average almost one person a week was killed in the agricultural sector through work activities over the past ten years; and
- ◆ Over half (59%) of the reported fatalities to members of the public were children.

This section of the report provides a detailed analysis of these fatalities and examines trends over the ten-year period. However, changes in the industrial classification used as the source of data from 1995/96 mean that data for this and later years are not directly comparable with that for 1994/95 and earlier. Similarly, some definitions in RIDDOR changed from April 1996 and subsequent years' data may not be directly comparable. Further details are given in the Appendix to this part.

#### **Fatal injuries to employees and self employed people**

The 20 fatalities to employees in 2001/02 was the highest figure recorded over the past four years. A total of 173 employees have been killed over the past ten years – an average of 17 deaths per year.

The employee fatal injury incidence rate of 7.9 per 100,000 employees is the highest since 1992/93 higher than the average rate of 6.2 per 100,00 over the ten-year period.

Conversely, the 19 fatal injuries to the self employed in 2001/02 was the lowest figure recorded since 1992/93. It is also 14 (42%) lower than the previous year's figure and 8 lower than the average over the ten-year period.

The 2001/02 self employed fatal injury incidence rate of 11.0 per 100,000 workers is eight lower than last year's rate of 19.0 per 100,000. However when compared against the employees rate per 100,000 workers, the rate has been consistently higher over the last decade. This indicates that proportionally more self employed people than employees have been killed within the agricultural industry.

The combined total of 39 workers killed in agriculture during 2001/02 was 7 lower than in the previous year. Over the ten-year period, 426 workers were killed; of which 173 (40%) were employees and 253 (60%), were self employed.

Combining the fatal injury statistics for employees and self employed gives a fatal accident incidence rate of 9.2 per 100,000 for 2001/02 against the average incidence rate of 8.6 for the ten-year period.

### **Kind of accident**

The two main causes of fatal injuries to workers in the agricultural sector over the past ten years were:

- ◆ Transport - being struck by a moving vehicle (20% of all fatalities) and
- ◆ Falls from a height (18% of all fatalities)

Other common causes were:

- struck by moving or falling objects (14%);
- trapped by something collapsing or overturning (13%);
- contact with machinery or the material being machined (10%);
- injury by an animal (8%);
- contact with electricity or an electrical discharge (7%)

### **Specific accidents**

- ◆ Struck by a moving tractor was the most common cause of fatal injuries to workers (including the self-employed) within agriculture. There were 40 deaths. Twenty-eight of these were to the self employed and 12 involved employees. The second largest cause of death occurred when vehicles overturned or fell from support. There were 38 deaths; 29 involved self employed workers and 9 employees. Transport related accidents resulted in 122 deaths over the period. Struck by moving vehicles and vehicles overturning, accounted for over a quarter of these fatalities (29%). Transport continues to be the single largest cause of accidents within agriculture.
- ◆ Falls from heights was the second largest category, accounting for 75 deaths (18%). Falls through fragile roofs or materials was the most common cause of death from falls, accounting for 14 deaths (19%).
- ◆ Thirty-five deaths were caused by animals, 21 of which were caused by bulls or cattle.
- ◆ Amongst employees, the most common cause of death was contact with overhead power lines; - accounting for 13 deaths (7%). A further 12 deaths resulted from employees being struck by a tractor. Other common causes included vehicles overturning or falling from supports (5%); falls through fragile roofs and accidents involving bulls or cattle (4%).
- ◆ Among the self employed, the most common cause of death was transport; being crushed by an overturning vehicle (11%) or being struck by a moving tractor also 11%. Bulls or other cattle were the third most common cause of death (6%).

A more detailed analysis of the cause of accident is given in Table 2.3.

## **Occupation**

Farm workers/labourers accounted for 42% of the employee fatalities and farm managers/farmer accounted for 52% of the self employed total.

- ◆ Proportional to the numbers employed in the industry, the greatest number of fatalities to a specific occupation category were to arborists/forestry workers who accounted for 33 deaths (8%), 24 of which were self-employed.
- ◆ Tractor drivers were the second largest specific occupation category accounting for 27 deaths (6%); - 20 of whom were employees. Other drivers accounted for a further 8 deaths.
- ◆ Sixteen crop sprayers (employees and self employed) died.

Table 2.5 provides a more detailed breakdown of the occupation categories.

## **Process environment**

- ◆ Fatalities within the agricultural sector resulted from a wide range of work activities.

Table 2.6 shows details of the work in progress at the time of the fatal accident.

- ◆ Maintenance work to land, machinery, buildings, trees / woodland etc caused the most fatalities - 95 deaths (22%).
- ◆ The housing and handling of livestock and the service / keep of bulls accounted for 63 fatalities (15%).
- ◆ Processing of crops for storage and storage of crops accounted for 40 fatalities (9%).
- ◆ Harvesting of crops, cultivating and hay making accounted for 31 fatalities (7%).
- ◆ Forestry felling and timber extraction accounted for 28 fatalities (6%) in addition to the 20 deaths included above in the tree and woodland maintenance category.

## **Age**

Table 2.7a shows the total number of fatal injuries over the past ten years by age. Table 2.7b shows the combined total for workers (both self employed and employed) over the ten-year period.

- ◆ The number of deaths to workers aged 65 years and over continues to remain high while deaths to those aged 25 or below remains low in comparison. Of the 39 workers killed in 2001/02, 16 (41%) were over 55 years of age compared with 12 (30%) who were under 35 years of age – this continues to suggest that the older more experienced farm worker is at greater risk than his younger counterpart.

- ◆ Seventy-four self employed people over 65 years of age died - representing 29% of the total of all fatal accidents to the self employed. Almost half of the self employed deaths (49%) were to the self employed aged 55 years and over.
- ◆ For employees, those aged between 45 to 54 years, 55 to 64 years and 25 to 34 years have the largest proportion of fatal accidents, with an average of 32 deaths for these age categories over the past decade.

### **Month, day and time**

- ◆ The highest number of deaths to the self employed and employed occurred during August, September and October - 62, 50 and 44 respectively.
- ◆ Large numbers during the summer and early autumn months, reflect the level of seasonal work activity in arable associated with harvesting and autumn cultivation. The 22 fatalities in December stand out from the otherwise lower frequency in the winter months. The lowest number of fatal accidents over the ten years occurred in February (18).

In contrast to the traditional pattern in other industries, which shows a gradual decrease in injuries to employees through the working week, there is no discernible pattern in the distribution of fatal accidents in the agricultural. Table 2.8 gives the data.

- ◆ Fatalities to employees are distributed fairly evenly throughout the working week; but ~21% occurred at weekends.
- ◆ Of the self employed, 62 were killed at weekends over the last ten years - 24% of the self employed total.

Table 2.9 shows the time of day when the fatal accidents occurred. As would be expected the often isolated nature of work in the industry means that the exact time of accident cannot be determined in approximately one in ten of the fatalities. The number of deaths increases during the morning, reduces over lunchtime and steadily rises again during the afternoon of a typical working day.

- ◆ A third of deaths (where a time is known) occurred between 10am and noon or between 3pm and 4pm.
- ◆ 17% of the fatalities to the self employed (where a time is known) occurred after 6pm.

Tables 2.8 and 2.9 provide a more detailed breakdown of the month, day and time categories.

### **Fatal injuries to members of the public, 1992/93 to 2001/02**

Over the ten-year period, 71 members of the public, including 38 children under 16 years of age have died as a result of work activity in the agricultural sector.

- ◆ Over half of the fatalities to members of the public were children.
- ◆ Being struck by a moving vehicle was the main cause of death to children accounting for 15 deaths (40% of the child fatalities). Other major causes include asphyxiation or drowning (9 deaths 24%), contact with moving machinery, struck by moving, flying or falling object and contact with electricity or an electrical discharge - 3 deaths (8%).
- ◆ The largest cause of death for adult members of the public was injury by an animal (10 deaths). These accounted for ~30% of the 33 deaths to adult members of the public and mainly involved bulls or other cattle in fields. Other causes of death to adults include being struck by moving or falling object (8 deaths), asphyxiation or drowning (4 deaths) being struck by moving vehicle (4 deaths) and being trapped by something collapsing or overturning (3 deaths)
- ◆ Of the 38 child deaths, those aged between 1 and 5 were most at risk. Twenty-one children (55%) fell into this age group. Nine children were aged between 6 and 10 and the remaining 8 children were aged between 11 and 15.
- ◆ Ten fatalities (14%) involved people aged 65 years or over.
- ◆ The majority of accidents to members of public occurred over the weekend (21) - 30% of the total. The most common days for fatal accidents to the public were Monday to Wednesday - almost half of the 71 deaths occurred during these three days. These are also the most common days of the week in which child deaths occurred with 20 of the 38 deaths (53%).
- ◆ July, August and September were the most common months for child fatalities, again reflecting the work in progress at this time of year, increased access to farms during the summer and school/nursery closures. Of the 38 deaths, 19 (50%) occurred during these three months.
- ◆ Of the 33 deaths to adult members of the public the most common month was July – 7 deaths (21%) followed by June 6 deaths (18%).

Table 2.10 provides a more detailed breakdown of fatalities to members of the public.

### **Appendix**

The fatal injury statistics quoted in this part are based on reports made to the Health and Safety Executive under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). The agricultural sector was defined as Standard Industrial Classification 1980 Division 0 including horticulture, forestry and fish farming. However, figures from 1995/96 are based on Standard Industrial Classification 1992 Sections A and B which also includes hunting. As a result, figures from 1995/96 are not directly comparable with those for previous years.

**TABLE 2.1: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/2002**

|  |       | <b>92/93</b> | <b>93/94</b> | <b>94/95</b> | <b>95/96</b> | <b>96/97</b> | <b>97/98</b> | <b>98/99</b> | <b>99/2000</b> | <b>2000/01</b> | <b>2001/02</b> |
|--|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|
| <b>Employees</b>                       | No.   | 21           | 16           | 14           | 20           | 20           | 20           | 16           | 13             | 13             | 20             |
|  | Rate* | 7.1          | 5.3          | 4.8          | 7.8          | 7.6          | 6.7          | 5.4          | 4.5            | 4.7            | 7.9            |
| <b>Self employed</b>                   | No.   | 19           | 22           | 32           | 20           | 35           | 20           | 30           | 23             | 33             | 19             |
|  | Rate* | 7.9          | 9.9          | 12.9         | 8.3          | 14.3         | 8.7          | 15.0         | 13.0           | 19.0           | 11.0           |
| <b>Employees and<br/>Self employed</b> | Rate* | 7.5          | 7.3          | 8.5          | 8.0          | 10.8         | 7.5          | 9.3          | 7.7            | 10.2           | 9.2            |

\* Rate per 100,000 workers

**TABLE 2.2: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>KIND OF ACCIDENT</b>                              | <b>Employees</b> | <b>Self employed</b> | <b>Total Numbers</b> | <b>Percentage</b> |
|--|------------------|----------------------|----------------------|-------------------|
| Transport - Struck by moving vehicle                 | 36               | 48                   | 84                   | 20%               |
| Fall from a height                                   | 30               | 45                   | 75                   | 18%               |
| Struck by moving, including flying or falling object | 23               | 37                   | 60                   | 14%               |
| Trapped by something collapsing or overturning       | 12               | 42                   | 54                   | 13%               |
| Contact with machinery or material being machined    | 16               | 28                   | 44                   | 10%               |
| Injury by an animal                                  | 14               | 21                   | 35                   | 8%                |
| Contact with electricity or an electrical discharge  | 22               | 9                    | 31                   | 7%                |
| Asphyxiation or drowning                             | 10               | 13                   | 23                   | 5%                |
| Slip, trip or fall on same level                     | 3                | 3                    | 6                    | 1.5%              |
| Exposure to or contact with harmful or hot substance | 2                | 4                    | 6                    | 1.5%              |
| Other  | 5                | 3                    | 8                    | 2%                |
| <b>TOTAL</b>   | <b>173</b>       | <b>253</b>           | <b>426</b>           |                   |

**TABLE 2.3: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>DETAILED KIND OF ACCIDENT</b>              | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|---|------------------|----------------------|--------------|
| <u>Contact with machinery</u>                 | <u>16</u>        | <u>28</u>            | <u>44</u>    |
| - Combine harvesters                          | 0                | 5                    | 5            |
| - Potato harvesters                           | 2                | 3                    | 5            |
| - Pickup balers                               | 0                | 3                    | 3            |
| - Other self propelled agricultural machinery | 0                | 2                    | 2            |
| - Other attached powered machinery            | 2                | 7                    | 9            |
| - Other attached unpowered machinery          | 1                | 0                    | 1            |
| - Revolving shafting                          | 1                | 3                    | 4            |
| - Other                                       | 10               | 5                    | 15           |

**TABLE 2.3 continued**

|   | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|---|------------------|----------------------|--------------|
| <u>Struck by moving, falling or flying object</u>     | <u>23</u>        | <u>37</u>            | <u>60</u>    |
| - Material being lifted                               | 3                | 0                    | 3            |
| - From shelf, table or racking                        | 4                | 4                    | 8            |
| - From weapons  | 5                | 1                    | 6            |
| - From part of a building                             | 0                | 2                    | 2            |
| - Other   | 11               | 30                   | 41           |
| <u>Struck by moving vehicle</u>                       | <u>36</u>        | <u>48</u>            | <u>84</u>    |
| - Tractor   | 12               | 28                   | 40           |
| - Trailer, plant or equipment associated with vehicle | 4                | 3                    | 7            |
| - Fork lift truck                                     | 4                | 2                    | 6            |
| - Rough terrain lift truck                            | 4                | 0                    | 4            |
| - Private vehicle                                     | 1                | 0                    | 1            |
| - Goods vehicles                                      | 0                | 3                    | 3            |
| - From transport of any kind                          | 2                | 4                    | 6            |
| - Other   | 9                | 8                    | 17           |
| <u>Fall from a height</u>                             | <u>30</u>        | <u>45</u>            | <u>75</u>    |
| - Moveable ladder                                     | 1                | 5                    | 6            |
| - Fragile roof  | 7                | 7                    | 14           |
| - From vehicle  | 1                | 2                    | 3            |
| - From stacked material                               | 4                | 6                    | 10           |
| - From any manlift equipment                          | 2                | 1                    | 3            |
| - Other   | 15               | 24                   | 39           |
| <u>Trapped by something collapsing or overturning</u> | <u>12</u>        | <u>42</u>            | <u>54</u>    |
| - Vehicles overturning / falling from supports        | 9                | 29                   | 38           |
| - Stacked material                                    | 1                | 1                    | 2            |
| - Plant including lifting machinery and equipment     | 0                | 5                    | 5            |
| - Buildings, structures or part of                    | 1                | 0                    | 1            |
| - Other   | 1                | 7                    | 8            |
| <u>Asphyxiation/drowning</u>                          | <u>10</u>        | <u>13</u>            | <u>23</u>    |
| - Water   | 5                | 3                    | 8            |
| - Grain   | 1                | 1                    | 2            |
| - Oxygen deficiency                                   | 0                | 3                    | 3            |
| - Other   | 4                | 6                    | 10           |
| <u>Contact with electricity</u>                       | <u>22</u>        | <u>9</u>             | <u>31</u>    |
| - Handtools   | 2                | 0                    | 2            |
| - Overhead power lines                                | 13               | 4                    | 17           |
| - Industrial plant                                    | 2                | 1                    | 3            |
| - Domestic type equipment                             | 0                | 1                    | 1            |
| - Other   | 5                | 3                    | 8            |

**TABLE 2.3 continued**

|   | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|---|------------------|----------------------|--------------|
| <u>Injury from an animal</u>                                | <u>14</u>        | <u>21</u>            | <u>35</u>    |
| - Bulls and other cattle                                    | 7                | 14                   | 21           |
| - Horses  | 4                | 1                    | 5            |
| - Other   | 3                | 6                    | 9            |
| <u>Exposure to or contact with harmful or hot substance</u> | <u>2</u>         | <u>4</u>             | <u>6</u>     |
| - Leaking or spilled substance                              | 1                | 1                    | 2            |
| - Entry into confined space                                 | 0                | 1                    | 1            |
| - Other   | 1                | 2                    | 3            |
| <u>Slip, trip or fall on same level</u>                     | <u>3</u>         | <u>3</u>             | <u>6</u>     |
| <u>Other kinds of accident</u>                              | <u>5</u>         | <u>3</u>             | <u>8</u>     |
| <b>TOTAL</b>  | <b>173</b>       | <b>253</b>           | <b>426</b>   |

**TABLE 2.4: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>SITE OF INJURY</b>                                     | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|---|------------------|----------------------|--------------|
| Head injuries   | 34               | 63                   | 97           |
| Neck  | 9                | 8                    | 17           |
| Back  | 2                | 4                    | 6            |
| Trunk   | 24               | 59                   | 83           |
| Several torso   | 5                | 17                   | 22           |
| Upper limb  | 0                | 2                    | 2            |
| Lower limb  | 8                | 4                    | 12           |
| Several of above  | 33               | 40                   | 73           |
| General locations (inc drowning, asphyxn & electrocution) | 44               | 44                   | 88           |
| Other / unspecified locations                             | 14               | 12                   | 26           |
| <b>TOTAL</b>  | <b>173</b>       | <b>253</b>           | <b>426</b>   |
| <b>NATURE OF INJURY</b>                                   | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
| Fractures   | 30               | 37                   | 67           |
| Concussion and internal injuries                          | 17               | 40                   | 57           |
| Crushings and contusions                                  | 20               | 38                   | 58           |
| Asphyxiation, poisoning and gassing                       | 13               | 18                   | 31           |
| Injury caused by electricity                              | 20               | 8                    | 28           |
| Multiple injury types                                     | 28               | 59                   | 87           |
| Other known   | 25               | 31                   | 56           |
| Unknown   | 20               | 22                   | 42           |
| <b>TOTAL</b>  | <b>173</b>       | <b>253</b>           | <b>426</b>   |

**TABLE 2.5: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>OCCUPATION</b>                  | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|------------------------------------|------------------|----------------------|--------------|
| Tractor driver                     | 20               | 7                    | 27           |
| Other driver                       | 5                | 3                    | 8            |
| Forestry worker / Arborist         | 9                | 24                   | 33           |
| Stockman                           | 3                | 2                    | 5            |
| Crop sprayer                       | 9                | 7                    | 16           |
| Horticultural worker               | 0                | 2                    | 2            |
| Agricultural contractor            | 1                | 8                    | 9            |
| Farm worker / Labourer             | 72               | 36                   | 108          |
| Farmer / Farm Manager / Managerial | 7                | 131                  | 138          |
| Other                              | 47               | 33                   | 80           |
| <b>TOTAL</b>                       | <b>173</b>       | <b>253</b>           | <b>426</b>   |

**TABLE 2.6: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>PROCESS ENVIRONMENT</b>                    | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|---|------------------|----------------------|--------------|
| Animal husbandry (housing)                    | 12               | 15                   | 27           |
| Bulls - service / keep                        | 4                | 7                    | 11           |
| Animal husbandry (handling)                   | 10               | 15                   | 25           |
| Harvesting (cereals)                          | 4                | 10                   | 14           |
| Harvesting (roots)                            | 7                | 2                    | 9            |
| Harvesting (forage)                           | 0                | 5                    | 5            |
| Harvesting (other)                            | 3                | 0                    | 3            |
| Maintenance (machinery)                       | 11               | 17                   | 28           |
| Maintenance (buildings)                       | 8                | 12                   | 20           |
| Maintenance (land)                            | 5                | 10                   | 15           |
| Maintenance (trees and woodland)              | 6                | 14                   | 20           |
| Maintenance (other)                           | 5                | 7                    | 12           |
| Cultivating inc. ploughing, harrowing         | 3                | 1                    | 4            |
| Haymaking                                     | 2                | 10                   | 12           |
| Storing crops                                 | 10               | 19                   | 29           |
| Crop processing for storage                   | 5                | 6                    | 11           |
| Storing (water/slurry/manure)                 | 0                | 1                    | 1            |
| Spraying & spreading (water/slurry/manure)    | 5                | 6                    | 11           |
| Spraying & spreading (chemicals/fertilizers)  | 6                | 2                    | 8            |
| Tree felling (forestry & arboriculture)       | 7                | 18                   | 25           |
| Tree extracting (forestry & arboriculture)    | 1                | 2                    | 3            |
| Transfer (on site) inc. movement of materials | 6                | 10                   | 16           |
| Traveling/delivering (off-site)               | 7                | 4                    | 11           |
| Loading/unloading                             | 8                | 8                    | 16           |
| Other   | 38               | 52                   | 90           |
| <b>TOTAL</b>                                  | <b>173</b>       | <b>253</b>           | <b>426</b>   |

**TABLE 2.7a: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>AGE</b>    | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|---------------|------------------|----------------------|--------------|
| Under 16      | 4                | 0                    | 4            |
| 16-19         | 12               | 0                    | 12           |
| 20-24         | 18               | 6                    | 24           |
| 25-34         | 35               | 33                   | 68           |
| 35-44         | 26               | 38                   | 64           |
| 45-54         | 31               | 48                   | 79           |
| 55-64         | 29               | 51                   | 80           |
| 65 and over   | 18               | 74                   | 92           |
| Age not known | 0                | 3                    | 3            |
| <b>TOTAL</b>  | <b>173</b>       | <b>253</b>           | <b>426</b>   |

**TABLE 2.7b: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

|               | <b>Total Workers (Employed &amp; Self Employed) by year</b> |              |              |              |              |              |              |              |              |              |              |
|---------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|               | <b>92/93</b>  | <b>93/94</b> | <b>94/95</b> | <b>95/96</b> | <b>96/97</b> | <b>97/98</b> | <b>98/99</b> | <b>99/00</b> | <b>00/01</b> | <b>01/02</b> | <b>Total</b> |
| Under 16      | 0   | 1            | 0            | 0            | 1            | 1            | 0            | 0            | 0            | 1            | 4            |
| 16-19         | 0   | 3            | 1            | 2            | 0            | 2            | 1            | 1            | 0            | 2            | 12           |
| 20-24         | 4   | 3            | 3            | 3            | 3            | 2            | 2            | 0            | 2            | 2            | 24           |
| 25-34         | 12  | 6            | 10           | 10           | 6            | 6            | 6            | 1            | 4            | 7            | 68           |
| 35-44         | 6   | 2            | 2            | 4            | 11           | 10           | 6            | 5            | 12           | 6            | 64           |
| 45-54         | 6   | 6            | 11           | 6            | 13           | 5            | 11           | 6            | 10           | 5            | 79           |
| 55-64         | 7   | 8            | 7            | 8            | 8            | 5            | 11           | 12           | 8            | 6            | 80           |
| 65 and over   | 5   | 8            | 11           | 7            | 12           | 9            | 9            | 11           | 10           | 10           | 92           |
| Age not known | 0   | 1            | 1            | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 3            |
| <b>TOTAL</b>  | <b>40</b>   | <b>38</b>    | <b>46</b>    | <b>40</b>    | <b>55</b>    | <b>40</b>    | <b>46</b>    | <b>36</b>    | <b>46</b>    | <b>39</b>    | <b>426</b>   |

**TABLE 2.8: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>DAY OF THE WEEK</b> | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|------------------------|------------------|----------------------|--------------|
| Monday                 | 22               | 38                   | 60           |
| Tuesday                | 31               | 34                   | 65           |
| Wednesday              | 37               | 42                   | 79           |
| Thursday               | 30               | 35                   | 65           |
| Friday                 | 23               | 42                   | 65           |
| Saturday               | 19               | 29                   | 48           |
| Sunday                 | 11               | 33                   | 44           |
| <b>TOTAL</b>           | <b>173</b>       | <b>253</b>           | <b>426</b>   |

| <b>MONTH</b> | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|--------------|------------------|----------------------|--------------|
| April        | 16               | 9                    | 25           |
| May          | 13               | 18                   | 31           |
| June         | 15               | 20                   | 35           |
| July         | 16               | 24                   | 40           |
| August       | 25               | 37                   | 62           |
| September    | 20               | 30                   | 50           |
| October      | 15               | 29                   | 44           |
| November     | 13               | 25                   | 38           |
| December     | 14               | 8                    | 22           |
| January      | 11               | 18                   | 29           |
| February     | 5                | 13                   | 18           |
| March        | 10               | 22                   | 32           |
| <b>TOTAL</b> | <b>173</b>       | <b>253</b>           | <b>426</b>   |

**TABLE 2.9: Fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

| <b>TIME OF DAY</b>        | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|---------------------------|------------------|----------------------|--------------|
| Before 08:00              | 7                | 9                    | 16           |
| 08:00 - 08:59             | 6                | 6                    | 12           |
| 09:00 - 09:59             | 14               | 11                   | 25           |
| 10:00 - 10:59             | 21               | 18                   | 39           |
| 11:00 - 11:59             | 23               | 23                   | 46           |
| 12:00 - 12:59             | 7                | 19                   | 26           |
| 13:00 - 13:59             | 13               | 15                   | 28           |
| 14:00 - 14:59             | 14               | 19                   | 33           |
| 15:00 - 15:59             | 15               | 27                   | 42           |
| 16:00 - 16:59             | 12               | 22                   | 34           |
| 17:00 - 17:59             | 10               | 23                   | 33           |
| After 18:00               | 17               | 43                   | 60           |
| Time not known            | 14               | 18                   | 32           |
| Total where time is known | 159              | 235                  | 394          |
| <b>TOTAL</b>              | <b>173</b>       | <b>253</b>           | <b>426</b>   |

**TABLE 2.10: Summary of fatal injuries to members of the public in agriculture, 1992/93 to 2001/02**

| <b>YEAR OF ACCIDENT</b> | <b>Members of the public</b> | <b>... of which were children</b> |
|-------------------------|------------------------------|-----------------------------------|
| 1992/93                 | 12                           | 8                                 |
| 1993/94                 | 3                            | 2                                 |
| 1994/95                 | 5                            | 2                                 |
| 1995/96                 | 5                            | 3                                 |
| 1996/97                 | 9                            | 7                                 |
| 1997/98                 | 11                           | 4                                 |
| 1998/99                 | 9                            | 3                                 |
| 1999/2000               | 8                            | 4                                 |
| 2000/2001               | 7                            | 4                                 |
| 2001/2002               | 2                            | 1                                 |
| <b>TOTAL</b>            | <b>71</b>                    | <b>38</b>                         |

| <b>KIND OF ACCIDENT</b>                             | <b>Members of the public</b> | <b>... of which were children</b> |
|---|------------------------------|-----------------------------------|
| Struck by moving vehicle                            | 19                           | 15                                |
| Trapped by something collapsing or overturning      | 5                            | 2                                 |
| Fall from a height                                  | 2                            | 1                                 |
| Contact with machinery or material being ma-        | 3                            | 3                                 |
| Struck by moving, flying or falling object          | 11                           | 3                                 |
| Contact with electricity or an electrical discharge | 5                            | 3                                 |
| Asphyxiation or drowning                            | 13                           | 9                                 |
| Injury by an animal                                 | 10                           | 0                                 |
| Fire  | 2                            | 2                                 |
| Other   | 1                            | 0                                 |
| <b>TOTAL</b>  | <b>71</b>                    | <b>38</b>                         |

| <b>SITE OF INJURY</b>                                | <b>Members of the public</b> | <b>... of which were children</b> |
|--|------------------------------|-----------------------------------|
| Head injuries  | 15                           | 12                                |
| Neck   | 2                            | 1                                 |
| Trunk  | 6                            | 1                                 |
| Upper limb   | 1                            | 1                                 |
| Lower limb   | 3                            | 0                                 |
| Several torso  | 4                            | 0                                 |
| Several locations                                    | 11                           | 5                                 |
| General locations (inc drown,asphyx & electrocution) | 20                           | 11                                |
| Other/unspecified locations                          | 9                            | 7                                 |
| <b>TOTAL</b>   | <b>71</b>                    | <b>38</b>                         |

**TABLE 2.10 continued**

| <b>NATURE OF ACCIDENT</b>           | <b>Members of the public</b> | <b>... of which were children</b> |
|-------------------------------------|------------------------------|-----------------------------------|
| Fractures                           | 9                            | 4                                 |
| Concussion and internal injuries    | 6                            | 2                                 |
| Crushings & contusions              | 7                            | 3                                 |
| Asphyxiation, poisoning and gassing | 11                           | 8                                 |
| Injury caused by electricity        | 5                            | 3                                 |
| Multiple injury types               | 14                           | 6                                 |
| Other known                         | 12                           | 7                                 |
| Unknown                             | 7                            | 5                                 |
| <b>TOTAL</b>                        | <b>71</b>                    | <b>38</b>                         |

| <b>PROCESS ENVIRONMENT<sup>1</sup></b> | <b>Members of the public</b> | <b>... of which were children</b> |
|--|------------------------------|-----------------------------------|
| Storing crops                          | 4                            | 3                                 |
| Animal husbandry (housing)             | 3                            | 1                                 |
| Animal husbandry (handling)            | 3                            | 1                                 |
| Storing (water/slurry/manure)          | 3                            | 0                                 |
| Harvesting                             | 4                            | 4                                 |
| Traveling/delivering (off site)        | 5                            | 0                                 |
| Maintenance (machinery)                | 2                            | 0                                 |
| Felling                                | 1                            | 0                                 |
| Holiday/leisure                        | 3                            | 0                                 |
| Transfer on site - inc. materials      | 12                           | 11                                |
| Other                                  | 31                           | 18                                |
| <b>TOTAL</b>                           | <b>71</b>                    | <b>38</b>                         |

**TABLE 2.10 continued****AGE OF INJURED PERSON<sub>i</sub>**

|           | <b>Members of the public</b> |
|-----------|------------------------------|
| 1 - 5     | 21                           |
| 6 - 10    | 9                            |
| 11 - 15   | 8                            |
| 16 - 19   | 5                            |
| 20 - 64   | 18                           |
| Over 65   | 10                           |
| Not known | 0                            |

**TOTAL** **71**

**DAY OF THE WEEK**

|           | <b>Members of the public</b> | <b>... of which were children</b> |
|-----------|------------------------------|-----------------------------------|
| Monday    | 10                           | 6                                 |
| Tuesday   | 12                           | 6                                 |
| Wednesday | 12                           | 8                                 |
| Thursday  | 7                            | 4                                 |
| Friday    | 9                            | 4                                 |
| Saturday  | 11                           | 6                                 |
| Sunday    | 10                           | 4                                 |

**TOTAL** **71** **38**

**MONTH**

|           | <b>Members of the public</b> | <b>... of which were children</b> |
|-----------|------------------------------|-----------------------------------|
| April     | 5                            | 3                                 |
| May       | 4                            | 3                                 |
| June      | 8                            | 2                                 |
| July      | 14                           | 7                                 |
| August    | 8                            | 6                                 |
| September | 10                           | 6                                 |
| October   | 3                            | 2                                 |
| November  | 3                            | 1                                 |
| December  | 3                            | 2                                 |
| January   | 5                            | 3                                 |
| February  | 3                            | 1                                 |
| March     | 5                            | 2                                 |

**TOTAL** **71** **38**

## **PART THREE**

### **NON-FATAL INJURIES IN THE AGRICULTURAL SECTOR 1992/1993 TO 2001/02**



## NON-FATAL INJURIES IN THE AGRICULTURAL SECTOR

1992/1993 TO 2001/02

**The figures for the number of non-fatal injuries in the agricultural sector notified to enforcing authorities under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) should be treated with caution.**

The results of the 1999/2000 household based Labour Force Survey (LFS) suggest that only approximately 28% of reportable non-fatal injuries to workers (self employed and employed combined) within the agriculture sector were reported to HSE. However, the LFS also states that less than 4% of non-fatal injuries to self employed people were reported to HSE.

Table 3.1 shows that the number of reports of non-fatal injuries to employees in 2001/02 increased by 8% to 2097 from last year's figures.

The accident incidence rate at 832.2 (per 100,000 employees) also increased compared to the previous year.

At 131, the number of reported injuries to self employed people is the highest over a five-year period.

The reported injury rate for the self employed of 75.8 (per 100,000 workers) is 35% higher than last years figure (49.4).

Table 3.2 shows the main causes of the reported non-fatal injuries in 2001/02.

- ◆ Once again the biggest single cause of reported injuries was handling, lifting or carrying. This category accounted for 25% of the total number of accidents reported.
- ◆ The second largest cause of accidents was slips, trips or falls - accounting for 19% with falls from height a further contributing a further 11%.
- ◆ 339 people (15%) were injured by moving (including flying or falling) objects and 164 (7%) by contact with machinery.
- ◆ A further 5% were struck against something fixed or stationary and 4.5% of injuries were caused by animals.

Table 3.3 details the activity in progress at the time of the accident. Of the specified categories:

- ◆ Maintenance activities involving maintenance of machinery, buildings, land, trees/woodland etc. accounted for 13% of all injuries.

- ◆ Livestock operations - the housing and handling of animals, and the servicing of bulls accounted for 7% of all injuries.
- ◆ 'Loading and unloading' and 'handling' together accounted for ~30% of the reported injuries. The general categories of agricultural operations and labouring accounted for 11%.

Table 3.4 shows that the number of reported major injuries to members of the public in the agricultural sector. In 2001/02 there were 130, which is the lowest since the changes in the RIDDOR in 1996/97 (see the Appendix to this part).

- ◆ The number of children suffering a major injury in 2001/02 was 33 - the lowest recorded since the changes to RIDDOR.
- ◆ Falls from a height was the most common cause of reported injuries to the public (22%). It also accounted for nearly a quarter of all accidents to children.

Other common causes of accident to members of the public were;

- ◆ Slips and trips or falls on same level - 27 accidents (21%)
- ◆ Handling, lifting or carrying - 16 accidents (12%),
- ◆ Struck by moving, flying or falling object - 14 accidents (11%).
- ◆ Injuries caused by animals - 11 accidents (8%).

## **Appendix**

The figures are based on reports made under RIDDOR to the Health and Safety Executive and include a small number made to local authorities. Reportable non-fatal injuries are major injuries (chiefly amputations, fractures and other injuries causing hospitalisation for more than 24 hours) and other injuries ie injuries which result in incapacity for work for more than three days. From 1996/97, the revised qualifying criteria for major injuries includes minor fractures, amputations and dislocations. Injuries arising from acts of violence at work are also now reportable.

The requirements for reporting injuries to members of the public also changed with the implementation of RIDDOR 1995; with effect from April 1996. Subsequently only those injuries involving the public which result in death or the person being taken from the site of the accident to a hospital are reportable under RIDDOR.

The agricultural sector was defined as Standard Industrial Classification 1980 Division 0 including horticulture, forestry and fish farming. However, figures for 1995/96 and later are based on Standard Industrial Classification 1992 Sections A and B which also includes hunting. As a result the figures from 1995/96 are not directly comparable with those for previous years.

**TABLE 3.1: Non-fatal injuries to employees and self employed people in agriculture, 1992/93 to 2001/02**

|                                    |       | <u>RIDDOR 85</u> |              |              |              | <u>RIDDOR 95 **</u> |              |              |                |                |                |
|------------------------------------|-------|------------------|--------------|--------------|--------------|---------------------|--------------|--------------|----------------|----------------|----------------|
|                                    |       | <b>92/93</b>     | <b>93/94</b> | <b>94/95</b> | <b>95/96</b> | <b>96/97</b>        | <b>97/98</b> | <b>98/99</b> | <b>99/2000</b> | <b>2000/01</b> | <b>2001/02</b> |
| <b>Employees</b>                   | No.   | 1844             | 1760         | 1721         | 1677         | 2135                | 1929         | 1939         | 2034           | 1927           | 2097           |
|                                    | Rate* | 719.5            | 700.6        | 702.4        | 652          | 808.8               | 657.5        | 624.2        | 700.0          | 692.8          | 832.2          |
| <b>Self employed</b>               | No.   | 236              | 222          | 194          | 162          | 157                 | 122          | 113          | 115            | 86             | 131            |
|                                    | Rate* | 85.9             | 91.4         | 68.8         | 67.5         | 64.2                | 53.2         | 55.9         | 65.0           | 49.4           | 75.8           |
| <b>Employees and Self employed</b> | No.   | 2080             | 1982         | 1915         | 1839         | 2292                | 2051         | 2052         | 2149           | 2013           | 2228           |
|                                    | Rate* | 391.6            | 401.1        | 363.5        | 369.9        | 450.8               | 395.9        | 392.8        | 459.8          | 445.1          | 524.4          |

**TABLE 3.2: Non-fatal injuries to employees and self employed people in agriculture, 2001/02**

| <b>KIND OF ACCIDENT</b>                               | <b>Employees</b> | <b>Self employed</b> | <b>Total Numbers</b> |
|---|------------------|----------------------|----------------------|
| Handling, lifting or carrying                         | 557              | 11                   | 568                  |
| Slip, trip or fall on same level                      | 413              | 8                    | 421                  |
| Struck by moving, including flying or falling, object | 305              | 34                   | 339                  |
| Fall from a height                                    | 225              | 24                   | 249                  |
| Contact with machinery or material being machined     | 149              | 15                   | 164                  |
| Injury by an animal                                   | 98               | 6                    | 104                  |
| Strike against something fixed or stationary          | 112              | 6                    | 118                  |
| Struck by moving vehicle                              | 48               | 7                    | 55                   |
| Exposure to or contact with harmful or hot substance  | 50               | 4                    | 54                   |
| Trapped by something collapsing or overturning        | 9                | 5                    | 14                   |
| Fire  | 7                | 2                    | 9                    |
| Contact with electricity or an electrical discharge   | 6                | 2                    | 8                    |
| Other   | 118              | 7                    | 125                  |
| <b>TOTAL</b>  | <b>2097</b>      | <b>131</b>           | <b>2228</b>          |

**TABLE 3.3: Non-fatal injuries to employees and self employed people in agriculture, 2001/02**

| <b>PROCESS ENVIRONMENT</b>   | <b>Employees</b> | <b>Self employed</b> | <b>Total</b> |
|--|------------------|----------------------|--------------|
| Livestock operations - animal housing/ handling, feeding & all other animal related operations                               | 147              | 15                   | 162          |
| Agriculture operations – all operations involving agriculture eg cultivation, harvesting, crop spraying, all crop processing | 101              | 15                   | 116          |
| Other production processes associated with agriculture   | 80               | 1                    | 81           |
| Maintenance (machinery)  | 131              | 6                    | 137          |
| Maintenance (buildings)  | 8                | 5                    | 13           |
| Maintenance (land)   | 115              | 4                    | 119          |
| Maintenance (other)  | 13               | 1                    | 14           |
| Cleaning internal parts of building – floors, stairs including cleaning up spills  | 29               | 1                    | 30           |
| Arboriculture - tree surgery, care of trees  | 52               | 13                   | 65           |
| Forestry – management and harvesting of trees  | 24               | 9                    | 33           |
| Storing  | 28               | 0                    | 28           |
| Packing  | 16               | 0                    | 16           |
| Walking / running on or outside premises including entering and leaving buildings  | 250              | 6                    | 256          |
| Traveling in vehicle including driving on public highway   | 55               | 0                    | 55           |
| Climbing/descending up/from equipment eg vehicles stairs, machines   | 147              | 11                   | 158          |
| Riding / racing  | 16               | 0                    | 16           |
| Loading/unloading  | 78               | 4                    | 82           |
| General handling   | 572              | 24                   | 596          |
| General labouring  | 123              | 12                   | 135          |
| Other  | 112              | 4                    | 116          |
| <b>TOTAL</b>   | <b>2097</b>      | <b>131</b>           | <b>2228</b>  |

**TABLE 3.4: Major injuries to members of the public in agriculture, 1992/93 to 2001/02**

| <b>YEAR OF ACCIDENT</b>   | <b>Members of the public</b> | <b>... of which were children</b> |
|---|------------------------------|-----------------------------------|
| 1992/93   | 48                           | 15                                |
| 1993/94   | 74                           | 35                                |
| 1994/95   | 64                           | 26                                |
| 1995/96   | 59                           | 19                                |
| RIDDOR 95 applies after 1995/96, see Appendix to Part 3                           |                              |                                   |
| 1996/97   | 192                          | 51                                |
| 1997/98   | 176                          | 52                                |
| 1998/99   | 192                          | 47                                |
| 1999/2000   | 185                          | 58                                |
| 2000/2001   | 141                          | 59                                |
| 2001/02   | 130                          | 33                                |
| <b>TOTAL</b>  | <b>1261</b>                  | <b>395</b>                        |
| <b>KIND OF ACCIDENT (2001/02)</b>   | <b>Members of the public</b> | <b>... of which were children</b> |
| Struck by moving vehicle  | 6                            | 2                                 |
| Trapped by something collapsing or overturning                                    | 1                            | 1                                 |
| Fall from a height  | 29                           | 7                                 |
| Contact with machinery or material being machined                                 | 9                            | 2                                 |
| Struck by moving, including flying or falling, object                             | 14                           | 5                                 |
| Strike against something fixed or stationary                                      | 4                            | 2                                 |
| Asphyxiation or drowning  | 0                            | 0                                 |
| Injury by an animal   | 11                           | 0                                 |
| Slip, trip or fall on same level  | 27                           | 5                                 |
| Exposure to or contact with harmful or hot substance                              | 2                            | 1                                 |
| Handling, lifting or carrying   | 16                           | 3                                 |
| Fire  | 0                            | 0                                 |
| Other   | 11                           | 5                                 |
| <b>TOTAL</b>  | <b>130</b>                   | <b>33</b>                         |
| <b>PROCESS ENVIRONMENT (2000/01)</b>  | <b>Members of the public</b> | <b>... of which were children</b> |
| Riding/racing   | 13                           | 1                                 |
| Walking / running on or outside premises including entering and leaving buildings | 23                           | 3                                 |
| General handling  | 12                           | 3                                 |
| Sporting activities   | 12                           | 12                                |
| Climbing/descending up/from equipment eg vehicles stairs, machines                | 7                            | 2                                 |
| Other   | 63                           | 12                                |
| <b>TOTAL</b>  | <b>130</b>                   | <b>33</b>                         |

## **PART FOUR**

### **CASE STUDIES**



## **INTRODUCTION**

The case studies in this section are all real incidents with sometimes fatal consequences for the people involved. This years case studies concentrate on a wide range of different scenarios - including child safety, machinery and guarding, transport, overhead power lines and falls. These categories of accident accounted for a large proportion of all the deaths in agriculture last year.

HSE has developed a strategy to improve health and safety in agriculture which is linked to the 'Revitalising Health and Safety' strategy which the Government and HSC/E are committed to achieving. Agriculture has been identified as a key priority area and specific targets have been set to reduce the number of fatal and major accidents due to transport activities and falls from heights in agriculture.

To achieve these targets HSE campaigns will include inspection, publicity and enforcement covering a range of issues:- For transport these will be tractor and vehicle maintenance, training and segregating pedestrians and vehicles; For falls from heights inspectors will be checking that workers have considered the hazards and assessed the risk when working at height, and that staff are adequately trained and competent to carry out work on roofs.

It is important that we all learn from accidents so that employers, employees, farmers and their families can avoid the loss of a loved one and the pain and financial costs of an accident. The case studies in this section include the fines and costs awarded where there was a prosecution. The real cost of the accidents is much higher than this; the pain and suffering, the time off work, damaged equipment, replacement staff costs, lost produce, increased insurance premiums and offenders own legal costs far exceed this figure. Taking precautions to avoid it happening to you makes legal, moral and financial sense.

## **CHILD SAFETY**

Agriculture has one of the highest fatal accident rates of any industry in the UK. It is also the only high-risk industry that has to deal with the constant presence of children. Farms are homes as well as workplaces. Visitors to the countryside, many of them children, are often present on farm whilst work activities are being carried out.

The following Case Studies reflect not only the dangers on farm but also the dangers to children from the use of common farm machinery and equipment and common farming activities.

### **CASE STUDY 1: Young people working without adequate training or supervision**

*A 14 year old boy suffered serious head injuries when he was struck by the forks of a materials handler that was being driven by the farmer's 15 year old son. The farmer had allowed the boys to work unsupervised. They were connecting a trailer to a tractor in an unsafe manner when it seems the draw bar fell from the fork and the forks struck the child on the head. The youth had driven the handler since he was 13 having received no training other than what his father had provided. The active partner in the business was prosecuted under the Health & Safety at Work Act 1974*

*s3 (1) for failing to provide adequate instructions / training and supervision to a young person which had resulted in an unsafe system of work being carried. The partner was fined £1,000.*

Transport, being trapped by something collapsing, overturning vehicles and machinery are amongst the most common cause of accidents to children on farms. Some of the accidents have been fatal. Children are more vulnerable to injury than adults. Adequate instruction and training, appropriate to the physical and emotional maturity of the person being trained should be provided for all pieces of equipment used on the farm - this is particularly important for young people and inexperienced operators.

### **CONTACT WITH MACHINERY**

Over the past year, five people have been killed after they came into contact with unguarded machinery or had attempted to clear blockages or work on machinery that was still operating.

#### **CASE STUDY 2: Machinery - guarding, training / instructions**

*A 13 year old boy became entangled on an unguarded PTO shaft. He was one of two young people milling grain and shovelling it into bags. The farmer's son was looking for some string to tie the bags and as he approached the machine he somehow became entangled and wrapped around the PTO shaft. The other boy realised what had happened and leant into the tractor to disengage the PTO. The child's left hand was amputated and he subsequently lost his left lower leg (below the knee). He also received trunk and head injuries.*

*The farmer was prosecuted under under Section 3(2) of the Health & Safety at Work Act 1974 for failing to ensure the health and safety of the two boys. He pleaded guilty. The Magistrates awarded a conditional discharged but no costs; the Chair of the Bench emphasised that the penalty did not reflect the severity of crime but rather took account of the family's very restricted means.*

Unguarded or inadequately guarded PTO shafts are a source of numerous serious accidents to children (and adults) on farms. All PTO shafts must be fully guarded to prevent any contact with the rotating parts. Young persons helping on the farm must be given adequate instruction and training and be properly supervised at all times.

Under the Provision and Use of Work Equipment Regulations 1998 (PUWER) equipment for use should be adequately guarded BEFORE being used. A simple system for checking over equipment before use would have identified the missing guard allowing the problem to be rectified.

### **TRANSPORT**

Transport and transport related accidents are the largest single cause of fatal injuries in the agricultural sector. The most common scenarios involve moving vehicles and

being trapped or crushed when vehicles overturn. Many of these accidents are caused by a lack of operator training and poor visibility. The following examples show how easily deaths and serious injuries can occur, but just as importantly, how some straightforward steps could have prevented them from occurring.

### **CASE STUDY 3: transport**

*A tractor without cab doors, being driven by a 13 year old boy, overturned. The boy partially fell from the cab as the tractor overturned and his legs were trapped between the ground and the tractor cab frame. The tractor overturned as the boy reversed after getting bogged down in a wet spot on the field. A rear wheel mounted the drawbar of the trailed roller. He attempted to hold the steering wheel as it overturned but he lost grip, the cab doors had been removed and there were no means to protect drivers from ejection in the event of an overturn.*

*The farmer was prosecuted under under Section 3(2) of the Health & Safety at Work Act 1974 for failing to ensure the safety of his son in that he was operating a tractor without any protection from ejection in the event of an overturn and that no alternative provisions for protection had been made such as a seat belt. He pleaded guilty, was fined £1,000 and ordered to pay £1,000 towards the costs of bringing the prosecution.*

### **CASE STUDY 4: transport**

*A farmer was prosecuted under the Health & Safety at Work Act when an inspector witnessed a ten year-old child start, operate and drive a telescopic materials handler. The farmer had left the vehicle unattended with the key in the ignition and the cab unlocked. The farmer pleaded guilty, was fined £3,000 and ordered to pay £1,480 towards the costs of bringing the prosecution.*

All operators of materials handlers need to be trained as the driving characteristics of a loader differ greatly from other farm vehicles. This is particularly important for new entrants and young persons. Cabs should be locked and ignition keys should be removed to prevent unauthorised persons driving the vehicles.

### **CASE STUDY 5: transport**

*A 15 year old casual worker received serious head injuries after falling from the rear of a vehicle which was being used for lamping to control foxes at midnight. He was sitting / kneeling on a bale of straw used as a seat operating a lamp. It is likely that he had been working since 5:30am that morning and may have fallen asleep. On a normal evening's lamping they would have continued until 2am. There was no assessment of the risk to young persons and neither had the parents of the youth been informed of the risks to which he was exposed. No protective cage was fitted to the vehicle. His head injuries required surgery.*

*The company was prosecuted under Section 2(1) of the Health & Safety at Work etc. for having inadequate health and safety arrangements and the Director directly responsible for health and safety was prosecuted under S37 of the Act. Magistrates fined the Co £5,000 plus costs of £1,141. The Director was fined £2,000 and was required to pay a further £450 as a contribution towards the costs of bringing the prosecution.*

If you wish to carry passengers on vehicles then provisions must be made to allow them to be carried safely. Guard rails and secure seatings help to reduce the risks of persons falling from vehicles in motion.

### **CASE STUDY 6: transport**

*A farm worker was trapped between a straw chopper and a tractor and injured his legs. He was disconnecting the tractor from a straw chopper when the tractor rolled backwards trapping him between the tractor and the chopper. The rear jack on the chopper was broken and as a result the worker was storing the chopper against a waste bedding pile. The hand brake on the tractor was broken allowing the tractor to roll backwards. He was trapped for about 2½ hours by his right thigh and had to be released by the fire brigade.*

*The farming company was prosecuted under regulation 5(1) of the Provisions and Use of Work Equipment Regulations 1998 for failing to maintain the hand brake and failing to maintain the supporting jack on the straw chopper. The company pleaded guilty and was fined £5,500 together with £1,108 towards the prosecution's costs.*

Regular planned maintenance of all equipment saves time and helps to reduce the chances of accidents happening.

### **CASE STUDY 7: transport**

*An employee was run over by a rough terrain forklift truck whilst he was handling plants and helping to unload stillages. It appears that he had to unload stillages of plants in different places; the driver of the FLT drove to a new location without checking that the road was clear and ran over the employee. He received extensive internal injuries including damage to his spleen which was removed by surgery.*

*The company did not have any system of work for the control of vehicle movement on site nor did they have a system for protecting members from risks associated with transport.*

*The company including its Director were prosecuted under:*

- (1) *Section 2(1) & 3(1) of the Health & Safety at Work etc Act for not having a safe system for unloading and protecting members from the risks from transport*

- (2) *Regulation 11(1) under the workplace (health safety and welfare regulations) 1992 for not having a system in place for the organisation of traffic routes*
- (3) *The director was prosecuted under section 37 (1) of the health & safety at work etc Act 1974 for failing to provide a system.*

*The case against the Co and its Director was heard in the Crown Court. The Co was fined £10,000 plus costs of £8,853 and its Director £5,000.*

Vehicle routes and movements need to be planned to separate them from pedestrians. Ideally areas where vehicles are maneuvering should be made pedestrian free.

### **OVERHEAD POWER LINES (OHPL's)**

Incidents involving OHPLs often involve contractors and others who are not familiar with the locations of OHPLs at the premises where they are working

#### **CASE STUDY 8: electrocution/transport**

*Two gangmasters and a contractor were prosecuted under the Health and safety at Work etc Act 1974 following a fatal accident to a student on a seasonal workers scheme. He was working in a trailer when the tractor contacted an overhead power line. He was electrocuted when he tried to jump clear. There was no adequate supervision, monitoring or control by any of the parties involved. The parties were fined a total fine £12,000 plus prosecution costs of £3,936.*

Find out the maximum height or reach of your machine. If they are liable to come close to, or in contact with, OHPLs ensure that operators are informed of the risks, the locations of OHPLs wherever the machine is to be used, and the precautions to be taken. Further guidance is contained in agriculture information sheet no 8 (revised) "working safely near overhead power lines".

### **FALLS FROM A HEIGHT**

The second largest cause of fatal accidents over the past ten years has been falls from heights. Many of these involve maintenance of, or alterations to, buildings.

#### **CASE STUDY 9: alterations to buildings**

*A farm worker received head, shoulder and back injuries when he fell 3 metres from a platform gantry in a grainstore during dismantling. He fell from the catwalk when a support bracket was cut, and a weld failed. He fell to the floor and one of the platform boards landed on top of him.*

*There was inadequate assessment of risk and failure to ensure protection from a fall despite reasonable practicable precautions available.*

*The farmer was prosecuted under the management of health & safety at work regulations 1992 S3(1) for inadequate assessment of risk - he had failed to identify control measures and to inform employees of risk and the construction health and safety regulations s6 (1) for failing to ensure protection from a fall despite reasonable practical precautions available. He was fined £5,000 plus prosecution costs of £558.*

Alterations to buildings often involve working at height, and may involve a risk of structural collapse. A risk assessment should be carried out, and except in the most straightforward circumstances, a written method statement should be prepared. This should help to ensure that all involved understand exactly what they have to do.

Further guidance is contained in HSE booklet INDG369 “Why fall for it? – preventing falls in agriculture”

### **CASE STUDY 10: working on fragile roofs / working from loaders and lift trucks**

*A farm worker fractured his lumbar vertebra and badly bruised his ribs after falling through a fragile roof whilst cleaning the gutters. He had cleared an edge gutter by riding in a grain bucket whilst the farmer drove the tractor along next to the gutter. He then moved onto cleaning a valley gutter. The asbestos cement sheeting on the adjacent roof was fragile. The farmer had examined the work area from a ladder and told the worker to ‘just walk on the bolts and you won’t go through’. The farmer then left the worker on his own to clear the gutter and carry the waste to the grain bucket, which was left, raised at end of the valley. At some point he slipped and fell through the roof to the concrete floor 3.3m below. No training was given.*

*A partner in the farming business was prosecuted under the Health & Safety at Work Act 1974 s2 (1) for failing to implement a safe system of work and was fined £4000 plus costs of £808.*

Protection against falls is required wherever anyone works on or near fragile materials. Suitable protection will normally include a combination of coverings, guard rails, safety nets, and safety harnesses. Simply walking the line of the purlins should NEVER be allowed.

*Further guidance is contained in HSE booklet INDG284 “working on roofs” and Agriculture Information Sheet No 32 “preventing falls through fragile roofs in agriculture”.*

For many tasks carried out at height, the use of a suitable, purpose built work platform attached to a suitable fork lift or materials handler will provide greater protection against falls than the use of a ladder. People should never be lifted on alternatives such as grain buckets, potato boxes, or pallets.

**PART FIVE**

**COSTS OF ACCIDENTS**

**1 April 2002 to 31 March 2003**



# **ESTIMATED TOTAL OF ACCIDENTS OCCURRING WITHIN THE AGRICULTURAL SECTOR AND CONSEQUENT COSTS**

**2002/2003**

## **Introduction**

The following tables show the total estimated numbers of accidents occurring within the agricultural sector during 2002/2003, and their costs. The broad agricultural sector includes all businesses involved in agriculture, forestry, hunting and fishing, although the non-farming businesses only account for a small proportion of this sector. The costs for the individual regions rely on extrapolating small samples and are subject to greater uncertainty than the overall total.

The data given in the tables has been adjusted to compensate for the under-reporting that occurs in agriculture as a whole. This means that while fatality figures are those reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995, - because HSE is likely to be aware of all such incidents - the figures for other accidents reported under the RIDDOR have been adjusted to take account of under-reporting.

To estimate the level of under-reporting by employers, HSE places questions each year in Labour Force Survey (LFS), asking respondents if they have suffered a workplace injury in the past year. The under-reporting levels used for accidents to employees in agriculture were 69% for England, 83% for Scotland and 91% for Wales. For the self-employed an under-reporting rate of 98% was assumed, which was based on the under-reporting rate for the self-employed in all industries of greater than 95%.

Where there were no over 3-day accidents to the self-employed reported in a particular region an estimate was made based on the number of major injuries. The number of minor injuries was extrapolated from the number of reportable injuries, again using estimates from the Labour Force Survey.

The calculated figures given in Table 1 were used as the basis for the costs in Tables 2 and 3. The costs in Tables 2 and 3 were approximated using a version of the method used in the publication. 'The costs to Britain of workplace accidents and work-related ill health in 1995/96' known as "Davies-Teasdale".

**TABLE 1: Accidents to farmers and farm workers in agriculture 2002/03, corrected for under-reporting**

| <b>Region</b>          | <b>Fatal</b> | <b>Major (est)</b> | <b>Over 3 day (est)</b> | <b>Minor (est)</b> | <b>Total</b> |
|------------------------|--------------|--------------------|-------------------------|--------------------|--------------|
| Wales                  | 3            | 660                | 1520                    | 3710               | 5890         |
| South West             | 4            | 290                | 620                     | 1550               | 2460         |
| East                   | 7            | 490                | 980                     | 2520               | 4000         |
| South East             | 2            | 650                | 1390                    | 3460               | 5500         |
| London                 | 0            | 90                 | 220                     | 520                | 830          |
| Midlands               | 1            | 880                | 1870                    | 4680               | 7440         |
| Yorkshire & North East | 5            | 490                | 1290                    | 3040               | 4830         |
| North West             | 2            | 250                | 550                     | 1360               | 2170         |
| Scotland               | 12           | 690                | 1540                    | 3800               | 6030         |
| <b>Total</b>           | <b>36</b>    | <b>5050</b>        | <b>1260</b>             | <b>27800</b>       | <b>44150</b> |

Table 1 shows the occurrence of accidents within the agricultural sector, taking account of the degree of under-reporting. It should be noted that the 2002/03 reported accident figures are provisional, and have not been validated. It shows that when the figures are adjusted to account for those accidents that qualify under RIDDOR but are not reported, and include the incidents that are too minor to be reportable under RIDDOR, the number of injury accidents occurring in agriculture is estimated at around 44,000.

In addition to these injury accidents estimated above, there will be numerous accidents that do not cause injury but result in damage to property, produce, equipment or machinery.

**TABLE 2: Estimated costs to society (£ million) of accidents in agriculture 2002/03**

| <b>Region</b>          | <b>Lost output<sup>1</sup></b> | <b>Damage<sup>2</sup></b> | <b>Other<sup>3</sup></b> | <b>Total</b> |
|------------------------|--------------------------------|---------------------------|--------------------------|--------------|
| Wales                  | 4.6                            | 2.3                       | 1.8                      | 8.7          |
| South West             | 1.9                            | 10.2                      | 0.8                      | 12.9         |
| East                   | 3.3                            | 11.4                      | 1.3                      | 15.9         |
| South East             | 4.7                            | 13.6                      | 1.7                      | 20.1         |
| London                 | 0.8                            | 1.5                       | 0.3                      | 2.5          |
| Midlands               | 5.9                            | 12.9                      | 2.3                      | 21.1         |
| Yorkshire & North East | 3.8                            | 7.5                       | 1.4                      | 12.7         |
| North West             | 1.7                            | 3.9                       | 0.7                      | 6.3          |
| Scotland               | 4.7                            | 9.2                       | 1.9                      | 15.8         |
| <b>Total</b>           | <b>35.7</b>                    | <b>72.5</b>               | <b>13.7</b>              | <b>122.0</b> |

Table 2 shows the estimated cost to society caused by the accidents within the agricultural sector. The total cost to society of accidents occurring within agriculture for the period 2002/2003 was estimated at around £122 million. This excludes allowances for pain, grief and suffering. The total costs for Midlands and the South East are high compared to the other regions.

<sup>1</sup>'Lost output' is defined as the cost to society of working days lost (lost output) being equal to the cost of employing the absent worker (wages + non-wage labour costs). These figures were estimated by applying the average cost in each region of a day's absence, to an estimate of the total number of working days lost from injuries in that region.

<sup>2</sup>'Damage' is used to identify the cost of damage from workplace accidents. It was estimated using insurance data, and based on total insurable amount of £25,000 per farm, covering tools, mobile and fixed equipment at current value and taking average premiums excluding theft and trespassing but including fire.

<sup>3</sup>'Other' includes within this category administration and recruitment costs to employers, administration costs to government departments and insurance companies, and medical costs incurred by the NHS. These were approximated using unit costs calculated from Davies-Teasdale and applying them to the number of accidents.

**TABLE 3: Estimated costs to farms and farm workers (£ million) of farm accidents in 2002/03**

| <b>Region</b>          | <b>Farmers</b> | <b>Farm-workers</b> | <b>Total</b> |
|------------------------|----------------|---------------------|--------------|
| Wales                  | 6.4            | 0.2                 | 6.6          |
| South West             | 11.3           | 0.8                 | 12.1         |
| East                   | 13.6           | 0.8                 | 14.4         |
| South East             | 17.0           | 1.1                 | 18.1         |
| London                 | 2.1            | 0.2                 | 2.3          |
| Midlands               | 17.6           | 1.0                 | 18.6         |
| Yorkshire & North East | 10.3           | 0.8                 | 11.1         |
| North West             | 5.2            | 0.3                 | 5.5          |
| Scotland               | 13.0           | 0.7                 | 13.7         |
| <b>Total</b>           | <b>100.6</b>   | <b>6.0</b>          | <b>106.6</b> |

Table 3 represents the estimated costs to farmers and farm workers; these groups bear a proportion of the costs to society estimated in Table 2. The costs falling on ‘Farmers’ relate to the costs to farm businesses and also to self-employed farmers (a small proportion of this cost will fall on non-farming agricultural businesses). ‘Farm workers’ are defined as employees in agriculture, not including the self-employed.

The overall cost to ‘farmers’ of accidents is estimated at around £100 million for the period 2002/2003.

Farmers in the South East (£17 million) and the Midlands (17.6 million) bear the highest proportion of costs. The costs of accidents in Scotland are also high.





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