

ACCIDENT STATISTICS FOR SHIPBUILDING AND SHIP-REPAIR

SUMMARY

This paper presents data on the kind of accidents reported to HSE from the shipbuilding and ship-repair industries for the years 2000/2001, 2001/2002 and 2002/2003 (provisional).

STATISTICS

1. HSE accident statistics for the shipbuilding and ship-repair industries for the years 2000/2001, 2001/2002 and 2002/2003 (provisional) are now available. They are set out in the attached Appendix 1. It is not possible to differentiate between shipbuilding and ship-repair.
2. The statistics have been broken down by kind of accident and are set out in the table in Appendix 1. (See also Appendix 3, which displays the main kinds of accidents for 2002/03 (P) in a bar graph.)
3. From April 2001, there has been a change in the categories of accident kind. These changes affect the statistics for 2001/2002 and 2002/03 but allow for potentially more information to be gained from the data as many of the accident kind categories previously used have been subdivided. To allow for an understanding of the accident kind categories, the 2 sets of definitions are set out in Appendix 2.
4. The most recent all reported injury rates per 100,000 employed for shipyards and comparable ones for manufacturing are:

Year	Industry	Injury rate	Ratio
1996/97	Shipbuilding and ship-repair	1459.8	1.21
	Manufacturing	1210.5	
1997/98	Shipbuilding and ship-repair	2193.2	1.76
	Manufacturing	1243.5	
1998/99	Shipbuilding and ship-repair	2368.9	2.02
	Manufacturing	1172.9	
1999/2000	Shipbuilding and ship-repair	2603.8	2.15
	Manufacturing	1213.0	
2000/2001	Shipbuilding and ship-repair	2330.6	1.98
	Manufacturing	1194.1	
2001/2002	Shipbuilding and ship-repair	1945.1	1.68
	Manufacturing	1158.8	

DISCUSSION

5. It is disappointing to note that the total number of accidents in shipyards in 2002/03 exceed those in 2000/01 and see a reversal of a genuine downward trend as illustrated by a further fall in the accident incidence rate for 2001/02.

This had shown an improvement for 3 years running. It is also the lowest since 1996/97 and also the best relative to all manufacturing since the same year.

6. The increase in accident numbers for 2002/03 is largely of 3 day accidents but major injury accidents have, at best only stabilised. This is to be contrasted with a continued fall in accidents in manufacturing as a whole – a reduction of 13.5% for 2002/03 compared to 2000/01.

7. For 2002/03, there are just 2 dominant causes of accidents in shipyards

- handling at 31% and
- slips and trips at 28%.

Both have seen an increase compared to the previous year and in both cases the increase is largely of 3 day injuries.

8. Looking more closely at handling injuries, as in 2001/02, there are 3 main identifiable causes that collectively account for 71% (63% in 2001/02) of these injuries –

- Injured through cuts from sharp/coarse material or equipment or from trapped fingers (23%; 19% in 2001/02)
- Sprains/strains from body movement whether or not a load is involved (20%; 26% in 2001/02)
- Lifting or putting down loads (28%; 19% in 2001/02)

Handling injuries are heavily dominated by 3 day injuries.

9. By contrast, almost 20% of slip and trip accidents cause major injuries and this is also the main cause of major injuries in shipyards. The main identifiable cause of both major (27%; 30% in 2001/02) and 3 day (20%; 30% in 2001/02) slip and trip accidents is due to tripping over an obstruction.

10. There has also been a disappointing increase in accidents at machinery although again this is almost all due to 3 day injuries.

11. Good news is that the reduction in injuries due to falls has been sustained, though as previously noted, the main cause is due to low falls - 56% of all falls and 65% of major injuries.

CONCLUSIONS

12. It appears that the progress made in reduction of accidents in shipyards in the 3 earlier years has been reversed.

13. 59% of all reported injuries in 2002/03 are due to handling and slips and trips.

14. Concentration on prevention of these 2 most reported kinds of accident should enable the industry to make its contribution to the Government's targets in Revitalising Health and Safety.

ACTION

14. Members are invited to:

- discuss these statistics at the 49th meeting and to
- consider action that can be taken to reduce accidents.

APPENDIX 1

SHIPBUILDING/REPAIR - KIND OF ACCIDENT BY REPORT TYPE

KIND	FATAL			MAJOR			3 DAY			TOTAL		
	00/01	01/02	02/03 (P)	00/01	01/02	02/03 (P)	00/01	01/02	02/03 (P)	00/01	01/02	02/03 (P)
Machinery	0	0	0	3	3	4	13	13	22	16	16	26
Hit by object	0	0	0	32	17	19	99	75	61	131	92	80
Fall structure	-	0	0	-	1	3	-	3	6	-	4	9
Fall equipment	-	0	0	-	2	2	-	5	8	-	7	10
Ejected	-	0	0	-	1	1	-	2	2	-	3	3
Pressure	-	0	0	-	0	1	-	1	3	-	1	4
From explosion	-	0	0	-	1	1	-	0	0	-	1	1
Hand tool	-	0	0	-	1	1	-	11	7	-	12	8
Person	-	0	0	-	0	0	-	1	0	-	1	0
Other	-	0	0	-	11	10	-	52	35	-	63	45
Hit by vehicle	0	0	0	0	3	0	7	2	1	7	5	1
Forward	-	0	0	-	2	0	-	1	1	-	3	1
Reverse	-	0	0	-	1	0	-	1	0	-	2	0
Overturn	-	0	0	-	0	0	-	0	0	-	0	0
Runaway	-	0	0	-	0	0	-	0	0	-	0	0
Other	-	0	0	-	0	0	-	0	0	-	0	0
Hit something fixed	0	0	0	8	4	5	28	27	35	36	31	40

Structure	-	0	0	-	3	5	-	21	28	-	24	33
Vehicle	-	0	0	-	0	0	-	0	0	-	0	0
Step on	-	0	0	-	0	0	-	1	1	-	1	1
Other	-	0	0	-	1	0	-	5	6	-	6	6
Handling	0	0	0	9	11	12	120	153	172	129	164	184
Sharp	-	0	0	-	7	4	-	24	38	-	31	42
Body movement	-	0	0	-	0	1	-	42	35	-	42	36
Person	-	0	0	-	0	0	-	0	0	-	0	0
Person, equipment	-	0	0	-	0	0	-	0	0	-	0	0
Lifting, putting down	-	0	0	-	0	1	-	31	51	-	31	52
Pushing, pulling	-	0	0	-	0	1	-	9	12	-	9	13
Carrying	-	0	0	-	0	1	-	8	6	-	8	7
Other	-	0	0	-	4	4	-	39	30	-	43	34
Slip, trip	0	0	0	27	33	33	108	105	135	135	138	168
Wet	-	0	0	-	4	4	-	10	19	-	14	23
Dry	-	0	0	-	1	2	-	5	6	-	6	8
Obstruction	-	0	0	-	10	9	-	32	27	-	42	36
Uneven	-	0	0	-	3	4	-	9	15	-	12	19
Other	-	0	0	-	15	14	-	49	68	-	64	82
Fall	0	0	0	27	22	17	62	24	26	89	46	43
High	0	0	0	10	8	4	10	1	1	20	9	5
Low	0	0	0	14	12	11	45	12	13	59	24	24
Other	0	0	0	3	2	2	7	11	12	10	13	14
Collapse	0	0	0	1	0	0	1	1	1	2	1	1

Drown, asphyxiation	0	0	2	2	0	0	1	0	0	3	0	2
Water	-	0	0	-	0	0	-	0	0	-	0	0
Other liquid	-	0	0	-	0	0	-	0	0	-	0	0
Engulf	-	0	0	-	0	0	-	0	0	-	0	0
Confined	-	0	2	-	0	0	-	0	0	-	0	2
Choke	-	0	0	-	0	0	-	0	0	-	0	0
Other	-	0	0	-	0	0	-	0	0	-	0	0
Exposure	0	0	0	1	1	3	16	8	9	17	9	12
Handling	-	0	0	-	1	0	-	1	4	-	2	4
Failure	-	0	0	-	0	2	-	0	0	-	0	2
Normal	-	0	0	-	0	0	-	1	0	-	1	0
Hot, cold	-	0	0	-	0	0	-	3	3	-	3	3
Infectious	-	0	0	-	0	0	-	0	0	-	0	0
Ambient temp	-	0	0	-	0	0	-	0	0	-	0	0
Other	-	0	0	-	0	1	-	3	2	-	3	3
Fire	0	0	0	0	1	0	3	1	2	3	2	2
Explosion	0	0	0	0	0	0	0	2	1	0	2	1
Electricity	0	0	0	0	1	1	2	1	3	2	2	4
Other	0	0	0	3	1	5	6	22	25	9	23	30
TOTAL	0	0	2	113	97	99	466	434	493	579	531	594

APPENDIX 2

ACCIDENT KIND CODING CATEGORIES

Table 1 codes from April 2001

CATEGORY	DESCRIPTION
No information	No information
1. Contact with machinery or material being machined (hit by material ejected in 2 – hit by)	
1.1 Machinery	Contact with machinery or material being machined
2. Hit by moving, flying or falling object (hit by object being handled in 5 – handling)	
2.1 Fall - structure	Hit by object free falling from structure
2.2 Fall - equipment	Hit by object free falling from lifting m/c, vehicle or other equipment
2.3 Ejected	Hit by object ejected whilst using machinery or hand tools
2.4 Pressure	Hit by material under pressure during normal operation of machine or other equipment
2.5 From explosion	Hit by objects or material following an explosion or implosion of pressurised equipment
2.6 Hand tool	Hit by hand tools in use
2.7 Person	Accidentally hit by another person
2.8 Other	
2.9 Unknown	
3. Hit by moving vehicle	
3.1 Forward	Hit by vehicle moving forward
3.2 Reverse	Hit by reversing vehicle
3.3 Overturn	Overturning vehicle
3.4 Runaway	Hit by run away vehicle – not driven
3.5 Unknown	Hit moving vehicle in unknown way
4. Hit something fixed or stationary	
4.1 Structure	Walk into or strike against structure
4.2 Vehicle	Hit against part of vehicle whilst traveling in it
4.3 Step on	Step onto small items on ground
4.3 Other	
4.4 Unknown	
5. Injured whilst handling, lifting or carrying	
5.1 Sharp	Injured through cuts from sharp/coarse material or equipment or from trapped fingers – not from weight of materials being handled
5.2 Body movement	Sprains/strains from body movement whether or not a load is involved
5.3 Handling person	Manually handling or supporting a person
5.4 Handling person with equipment	Manually handling or supporting a person using people handling equipment

5.5 Lifting/putting down	Lifting or putting down loads
5.6 Pushing/pulling	Pushing or pulling loads
5.7 Carrying	Carrying loads
5.8 Other	
5.9 Unknown	
6. Slipped, tripped or fell on same level	
6.1 Wet surface	Slipped on wet surface or other substance
6.2 Dry surface	Slipped on dry surface or dry products/item on the surface
6.3. Obstruction	Tripped over obstruction
6.4 Uneven	Tripped over uneven floor surface
6.5 Other	
6.6 Unknown	
7. Fell from height	
7.1 High fall	Fall from over 2 metres
7.2 Low fall	Fall from up to and including 2 metres
7.3 Unspecified	Fall from unspecified distance
8. Trapped by something collapsing or overturning	
8.1 Collapse	Trapped by something collapsing or overturning
9. Drowned or asphyxiated (asphyxiation from harmful substances count in 10)	
9.1 Drown water	Drowning or near drowning in water
9.2 Drown other	Drowning or near drowning in other liquids
9.3 Asphyxiation - engulfed	Asphyxiation or near asphyxiation due to engulfment by material
9.4 Asphyxiation - confined	Asphyxiation or near asphyxiation due to lack of oxygen in confined area or absorption of oxygen
9.5 Asphyxiation - choking	Asphyxiation or near asphyxiation due to choking
9.6 Other	
9.7 Unknown	
10. Exposed to or in contact with a harmful substance	
10.1 Handling	Exposed to or in contact with a harmful substance during handling, dispensing, filling, mixing etc
10.2 Failure	Exposed to or in contact with a harmful substance due to failure, leak or burst from equipment/machine or other unplanned release
10.3 Normal	Exposed to or in contact with a harmful substance during normal operation of equipment/machine
10.4 Hot/cold	Exposed to or in contact with hot/cold objects, liquids, materials
10.5 Infectious substance	Exposed to or in contact with infectious substances, pathogens or biological material including blood and body fluids
10.6 ambient temperature	Exposed to high/low ambient temperature in atmosphere
10.7 Other	

10.8 Unknown	
11. Exposed to fire	
11.1 Fire	Exposed to fire or fumes from uncontrolled fire
12. Exposed to an explosion	
12.1 Explosion	Exposed to an explosion from igniting materials
13. Contact with electricity or electrical discharge	
13.1 Electricity	Contact with electricity or electrical discharge
14. Injured by an animal	
14.1 Animal	Injured by an animal
15. Physically assaulted by a person	
15.1 Assault	Physically assaulted by a person
16. Another kind of accident	
16.1 Other	Another kind of accident not listed above

Table 2 codes until March 2001

CATEGORY	DESCRIPTION
1. Machinery	Contact with machinery or material being machined
2. Struck by	Struck by moving, including flying objects – includes involving powered hand tools
3. Transport	Struck by moving vehicle
4. Strike/step on	Struck against something fixed or stationary; stepping on something
5. Handling/sprains	Handling, lifting or carrying – sprains and strains
6. Trip	Slip, trip or fall on same level
7. High fall	Fall over 2 metres
8. Low fall	Fall up to and including 2 metres
9. Fall	Fall height unknown
10. Exposure/hot substance	Exposure to or contact with hot substance or object
11. Fire	Exposure to fire
12. Explosion	Exposure to an explosion
13. Volt	Contact with electricity or electrical discharge
14. Animal	Any injury by an animal
15. Other	
16. Assault	Physical assault or violence as a result of deliberate criminal act
17. Not known	

APPENDIX 3 Shipbuilding and shiprepair - total accidents by kind 2002/03 (P)

