Safety performance of the global E&P industry

2001

Report No. 6.59/330
July 2002

International Association of Oil & Gas Producers

Publications

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Safety performance of the global E&P industry – 2001

Report No: 6.59/330

July 2002

The safety statistics for 2001 were derived from data provided by the following companies:

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Petro-Canada
Petronas Carigali
Phillips
Premier
PTTEP
QGPC
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Repsol
Saudi Aramco
Shell
Statoil
TotalFinaElf
Triton
VEBA
VICO (subsidiary of BP but reported separately)
Yukos

Non-OGP Members

Ecopetrol
Wintershall

Table of contents

1 Summary 1

1.1 Fatalities 1
1.2 Lost time injuries 2
1.3 Total recordable incidents 2
1.4 Database 2

2 Overall results 3

2.1 Fatalities 3
2.2 Fatal accident rate 4
2.3 Fatal incident rate 5
2.4 Fatality causes 6
2.5 Fatality demography 7
2.6 Lost time injury frequency 8
2.7 Severity of lost workday cases 9
2.8 Total recordable incident rate 10
2.9 Incident ratios 11

3 Results by Region 13

3.1 Fatalities 13
3.2 Lost time injury frequency 13
3.3 FAR and LTIF 5-year rolling averages 14
3.4 Severity of lost workday cases 16
3.5 Total recordable incident rate 17
3.6 Individual country performance 17

4 Results by Function 19

4.1 Fatalities 19
4.2 Lost time injury frequency 20
4.3 Severity of lost workday cases 20
4.4 Total recordable incident rate 21
4.5 Exploration performance 22
4.6 Drilling performance 24
4.7 Production performance 26
4.8 Other performance 28

5 Results by Company 31

5.1 Overall company results 31
5.2 Company results by function 36

6 Significant incidents 37

7 Conclusions 38

Appendices 39

Appendix A Database dimensions 39
Appendix B Data tables 43
Appendix C Fatal incident reports 55
Appendix D Significant incident reports 65
Appendix E Restricted workday analyses 77
Appendix F Glossary of terms 85
Appendix G Contributing companies 87
Appendix H Countries represented 88

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Preface

The principal purposes of this report are to present the safety performance of the global E&P industry in 2001, and to compare the performance to that of previous years. The report allows OGP members and others to benchmark their performance against that of the global E&P industry.

The key indicators for analysis of safety performance are fatalities, lost time injuries and the totals of recordable incidents. The report presents global results against these indicators, which are then analysed by region, function and company. A code is used for the company results to preserve anonymity. The performance of both companies and contractors is reported.

Wherever practicable, results are presented graphically. The data underlying the charts are presented in Appendix B. The tables are organised according to the section in the report where the chart appears.

As part of the 2001 data collection excercise, organisations were requested to submit occupational injury and illness data. This report focuses on occupational injury data, a seperate report will deal with occupational illness data.

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1 Summary

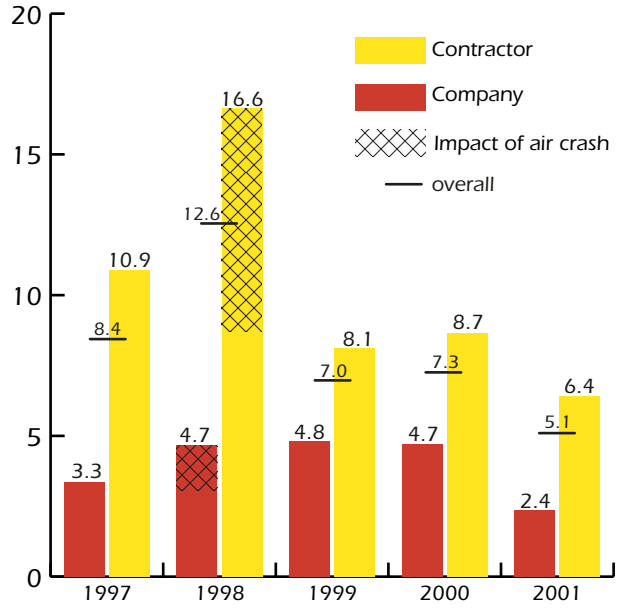
The report summarises the safety performance of the global E&P industry for 2001. It is based on the analysis of 1,977 million workhours of data, submitted by 41 companies from operations in 73 countries.

The primary indicators used to benchmark the safety performance of the industry, fatal accident rate, fatal incident rate, lost time injury frequency and total recordable injury rate have all shown considerable improvement compared to the previous year. In 2001, the majority of these indicators are reported at values which are the lowest on record.

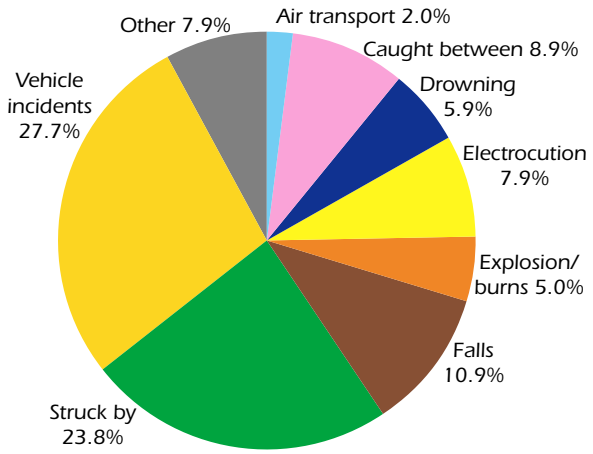
1.1 Fatalities

- 15 company and 86 contractor fatalities were reported in 2001. The total of 101 is 18 less than reported in 2000. In addition, 26 third party deaths were reported.
- The reduction in the number of fatalities is against the background of a 21% increase in the number of workhours reported.
- The overall fatal accident rate (FAR) is 5.11 company/contractor fatalities per 100 million workhours. This represents the lowest rate since records began.
- The company and contractor FAR are 2.37 and 6.40 respectively, onshore and offshore FAR are 5.28 and 4.49 respectively. All these values are the lowest recorded to date.
- In common with previous years, the two most significant causes of fatalities are in the categories of 'vehicle incidents' and 'struck by' incidents.

Fatal accident rate
per 100 million hours worked



Fatality causes



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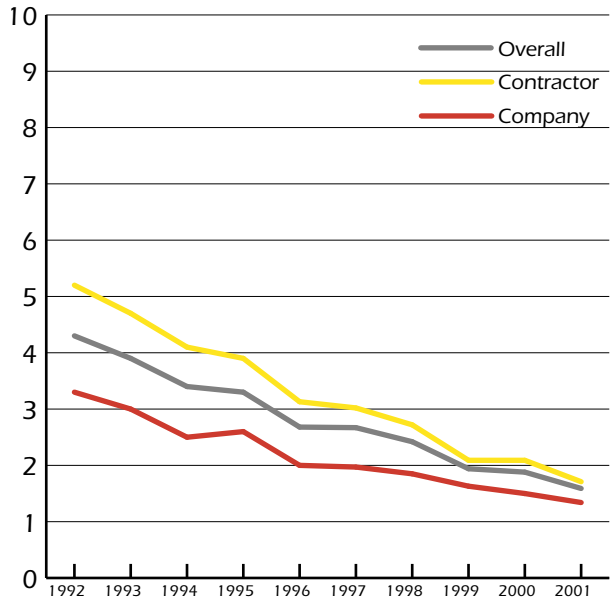
1.2 Lost time injuries

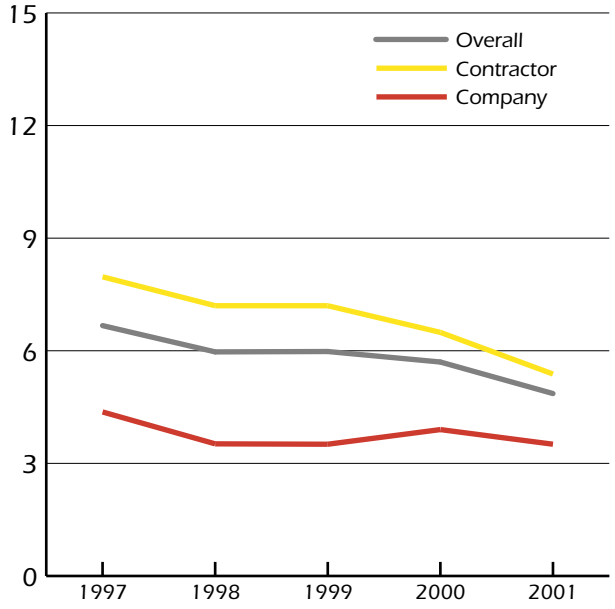
Lost time injury frequency
per million hours worked



- The overall Lost Time Injury Frequency (LTIF)reduced from 1.88 in 2000 to 1.59 in 2001. This continues a long term trend of improvement in the LTIF performance of the industry.
- Contractor performance at 1.71 lost time injuries per million hours worked represents a considerable improvement compared to previous years performance.
- The difference between company and contractor LTIF is the smallest on record with the contractor LTIF being 30% greater than the company value.
- Despite improvement in performance, there were still 3038 reported injuries resulting in at least one day off work. This equates to an average of 58 such injuries every week of the year.
- Approximately 340 person-years are estimated to have been lost by reporting companies and their contractors as a result of injuries.

1.3 Total recordable incidents

Total recordable incident rate - company & contractors
per million hours worked



- The rate for all recordable incidents (fatalities, lost workday cases, restricted workday cases and medical treatment cases) is 4.86 incidents per million hours worked. This is an improvement on the 2000 value of 5.70.

1.4 Database

- The database for 2001 embraces 1,977 million hours worked, a 21% increase on 2000 and the highest in the history of safety data reporting.
- 44% of the extra hours reported are associated with increased activity in the Asia/Australasia region.
- 41 companies contributed data. All but three reported statistics for their contractors.
- Operations in 73 countries are covered by the database.

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2 Overall results

In this section, the primary indicators used to measure the industry's safety performance are presented. These are the number and nature of fatalitites, lost time injury frequency (LTIF), fatal accident rate (FAR), fatal incident rate (FIR), and total recordable incident rate (TRIR).

2.1 Fatalities

- Company fatalities 15
- Contractor fatalities 86
- Third party fatalities 26
- Onshore fatalities 82
- Offshore fatalities 19

- Company workhours 32%
- Contractor workhours 68%
- Onshore workhours 79%
- Offshore workhours 21%

Company/Contractor Fatalities

- There were 101 company and contractor fatalities reported in 2001. This is 18 less than reported in 2000. This reduction is against the background of a 21% increase in the number of workhours reported.
- The 101 fatalities occurred in 96 separate incidents. In no incident did more than 2 company/contractor personnel die. There were 5 incidents in which there were 2 company/contractor fatalities.
- 23 fatalities occurred in both Africa and North America.
- The distribution of fatalities associated with onshore and offshore activities is closely aligned with the distribution of work hours reported for the two activities. However, a disproportionately large number of the fatalities are contractor personnel.

Third Party Fatalities

Not all companies collect and report information associated with third party fatalities, hence comparison with previous years needs to be carried out with care.

- 26 third party fatalities were reported in 2001, compared to 29 in 2000.
- Sadly, the worst incident reported was one in which 6 children were found drowned in the swimming pool of a company camp in Nigeria.

A listing of all fatal incidents appears in Appendix C.

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2.2 Fatal accident rate (FAR)

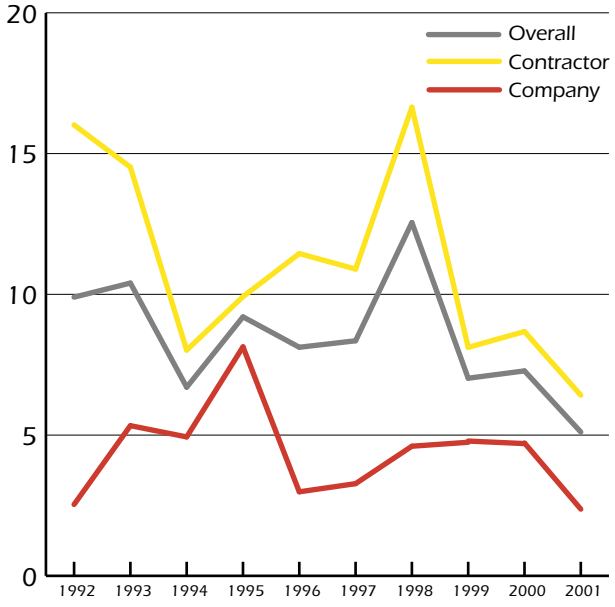
• Overall	5.11	(30% better)§
• Company	2.37	(50% better)
• Contractor	6.40	(26% better)
• Onshore	5.28	(34% better)
• Offshore	4.49	(4% better)

§ The per cent. in parentheses relates to the 2000 average

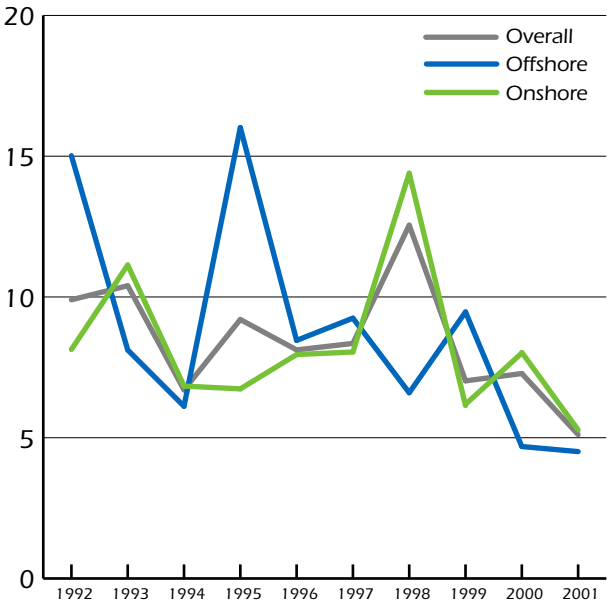
Fatal accident rate (FAR)

The number of company/contractor fatalities per 100,000,000 (100 million) hours worked.

Fatal accident rate - company & contractors
per 100 million hours worked



Fatal accident rate - onshore & offshore
per 100 million hours worked



- The overall fatal accident rate is 5.11 company/contractor fatalities per 100 million workhours. This represents a considerable improvement compared to the 2000 value of 7.28, and is the lowest value on record.
- The company and contractor FAR are 2.37 and 6.40 respectively. Both of which are the lowest values on record.
- The FAR onshore value of 5.28 is slightly worse than the offshore value of 4.49. However, both represent the lowest values on record.
- The FAR onshore and offshore displays a large variation over the 10 year period shown. Neither is consistently better.

On the basis of all the measures presented, the FAR has reduced compared to previous years. This is encouraging as it strengthens the possibility of a long term downward trend in this indicator. However, the uncertainty associated with it is such that it will take further years of data in order to demonstrate that the reduction is a real indication of improvement.

The 1998 peak shown in the charts to the left relates to an aircrash which claimed 65 company & contractor lives.

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2.3 Fatal incident rate (FIR)

Without third party incidents

- **Overall** 4.70 (20% better)§
- **Company** 1.90 (57% better)
- **Contractor** 6.03 (10% better)
- **Onshore** 4.83 (22% better)
- **Offshore** 4.25 (10% better)

§ The per cent. in parentheses relates to the 2000 average

With third party incidents

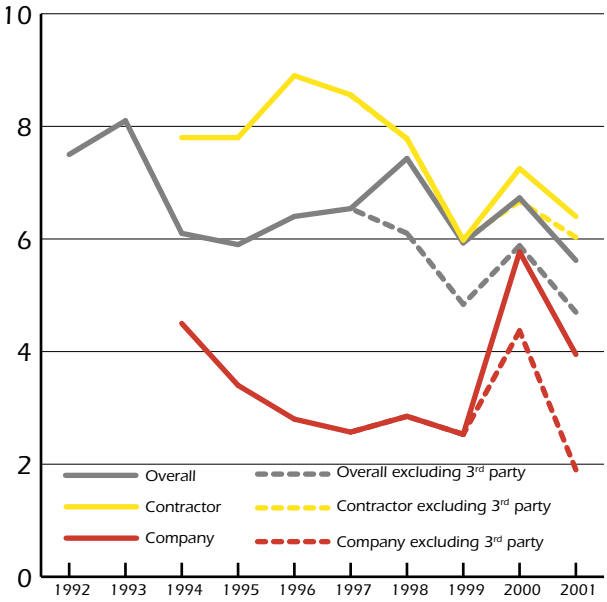
- **Overall** 5.62 (16% better)§
- **Company** 3.95 (32% better)
- **Contractor** 6.40 (12% better)
- **Onshore** 5.92 (18% better)
- **Offshore** 4.49 (9% better)

§ The per cent. in parentheses relates to the 2000 average

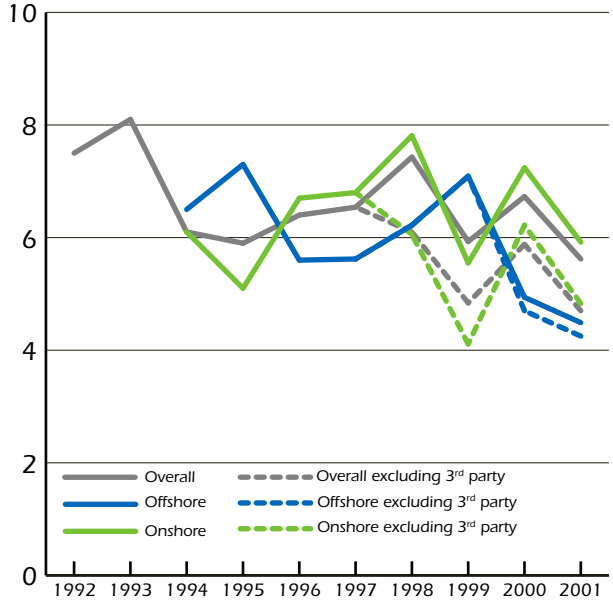
Fatal incidents are incidents resulting in one or more fatalities. The FIR is a measure of the frequency with which fatal incidents occur, in contrast to the FAR which measures the frequency of fatalities. Accordingly, for company and contractor fatalities only, FIR will be less than or equal to the FAR. Comparison of FAR and FIR gives an indication of the magnitude of the incidents in terms of lives lost.

- The overall fatal incident rate fell to 4.70, representing a 20% reduction compared to 2000, and the lowest value on record.
- Improvement is noted in both company and contractor FIR, and onshore/offshore FIR compared to 2000 value.
- The inclusion of third party incidents increases the FIR to 5.62. Whilst this represents a 16% improvement compared to 2000, it is a difficult indicator to use as not all companies report 3rd party incidents.

Fatal incident rate - company & contractors
per 100 million hours worked



Fatal incident rate - onshore & offshore
per 100 million hours worked



Fatal incident rate (FIR)

The number of fatal incidents per 100,000,000 (100 million) hours.

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2.4 Fatality causes

	Incidents	Fatalities (not 3rd party)	
Air transport	1	2	
Caught between	9	9	
Drowning	6	6	(3)
Electrical	7	8	
Explosion/burn	5	5	
Fall	11	11	
Struck by	23	24	(2)
Vehicle incident	26	28	(8)
Other	8	8	(2)
Total	**96**	**101**	

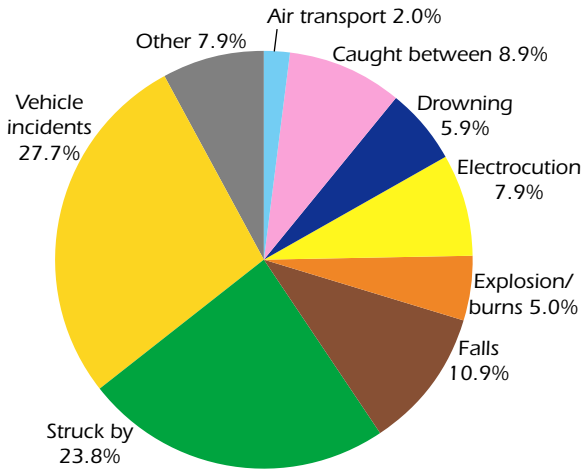
The figures in parentheses are the additional numbers of incidents that resulted in one or more third party fatality

The piecharts show the percentage of fatalities within each of the reporting categories for 2001 and for the 5 year period 1996-2000.

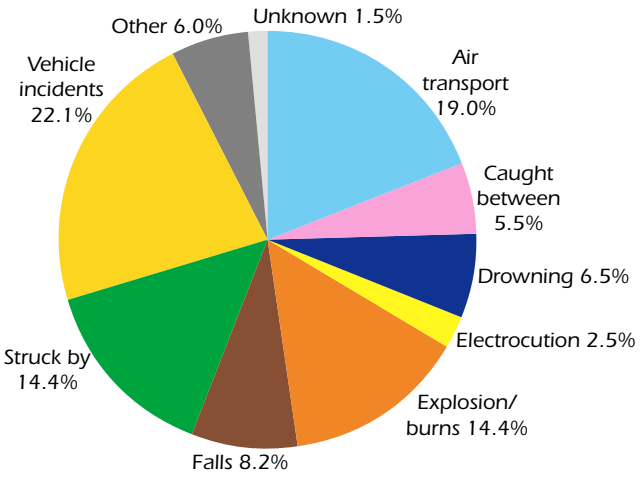
- In common with previous years, the largest proportion of the fatalities reported were the result of vehicle related incidents. Incidents in which individuals were struck by moving or falling objects were the second greatest contributor to the fatality statistics.

Fatality causes
% fatalities associated with each reporting category

2001



1996 - 2000



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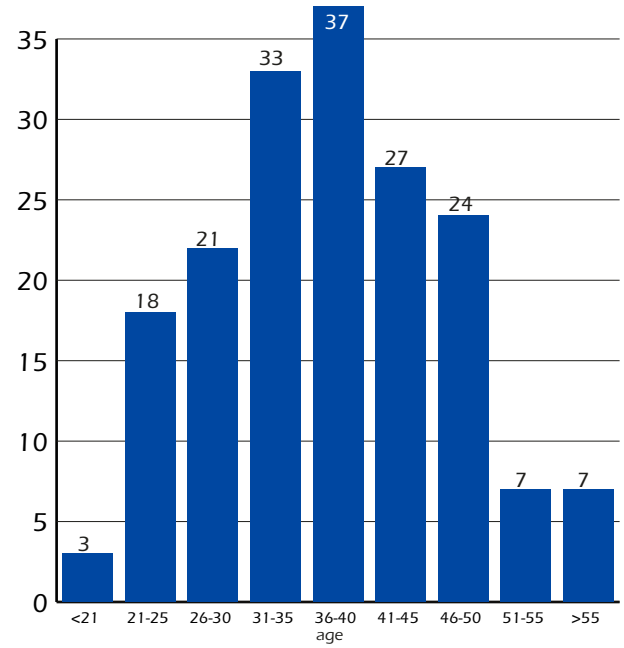
2.5 Fatality demography

The ages of victims were specified in 64 of the fatalities reported in 2001. The chart shows the age distribution of victims when these cases are added to the 59 instances in 2000 and 54 instances in 1999.

Without information on the age profile within the E&P workforce, it is difficult to draw any meaningful conclusions from these data.

All of the company and contractor fatalities reported were males.

Number of fatalities by age group for 1999-2001
Company and contractor



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2.6 Lost time injury frequency (LTIF)

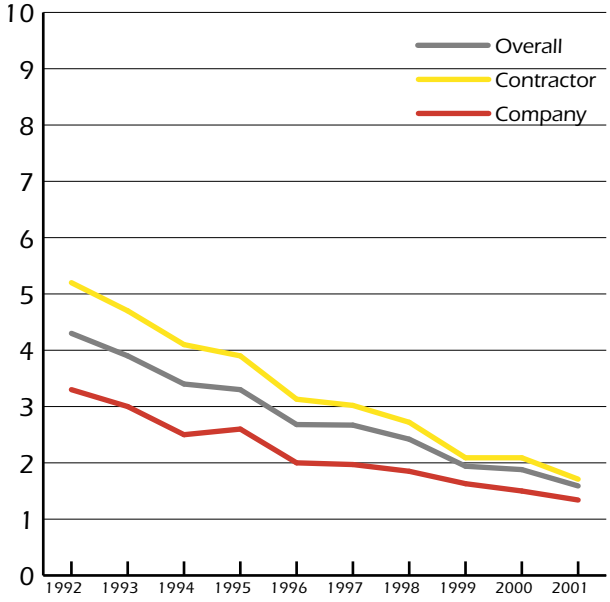
• Overall	1.59	(15% better)§
• Company	1.34	(11% better)
• Contractor	1.71	(18% better)
• Onshore	1.51	(15% better)
• Offshore	1.88	(18% better)

§ The per cent. in parentheses relates to the 2000 average

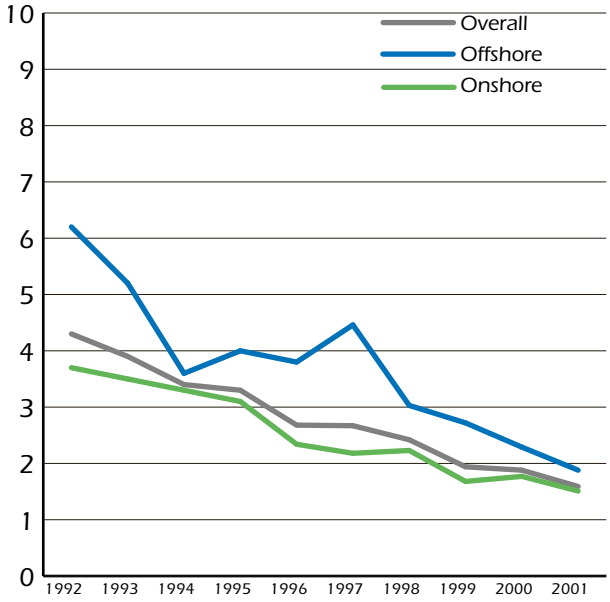
Lost time injury frequency (LTIF)

The number of lost time injuries (fatalities + lost workday cases) incidents per 1,000,000 hours worked.

Lost time injury frequency - company & contractors
per million hours worked



Lost time injury frequency - onshore & offshore
per million hours worked



- There were 3038 lost time incidents reported (excluding fatalities) resulting in at least one day off work. 2206 incidents were contractor related, 832 company related.
- The overall LTIF reduced from 1.88 in 2000 to 1.59 in 2001, an improvement of 15%. This continues a long term trend of improvement in the LTIF performance of the industry.
- Contractor performance at 1.71 lost time injuries per million hours worked represents a considerable (18%) improvement compared to the previous years performance (2.1).
- The individual LTIF associated with company and contractor activities and onshore and offshore work have all improved compared to previous years, with each now representing the lowest values on record.
- The difference between company and contractor LTIF is the smallest on record, the contractor value being 30% greater than the company value.

The above equates to an average of 58 incidents every week of the year. Approximately 340 person-years are estimated to have been lost by reporting companies and their contractors.†

† assuming 220 working days per year

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2.7 Severity of lost workday cases (LWDC)

Severity

Severity is defined as the average number of days lost (where reported) for each lost workday case.

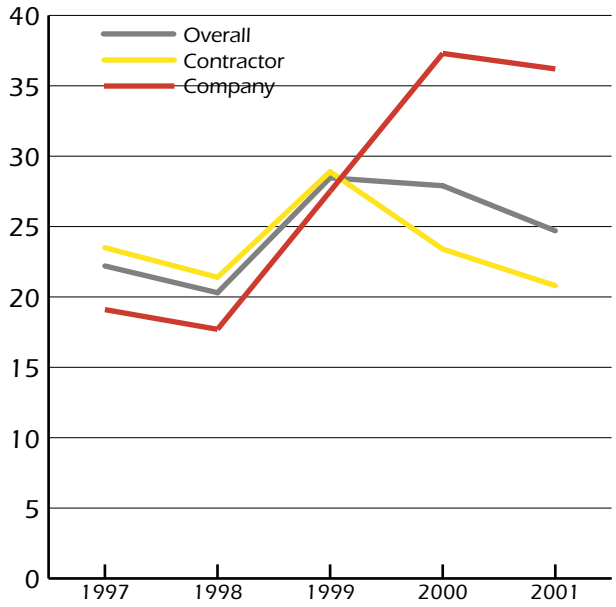
• Overall	24.7	(12% better)§
• Company	36.2	(3% better)
• Contractor	20.8	(11% better)
• Onshore	23.9	(14% better)
• Offshore	27.4	(no change)

§ The per cent. in parentheses relates to the 2000 average

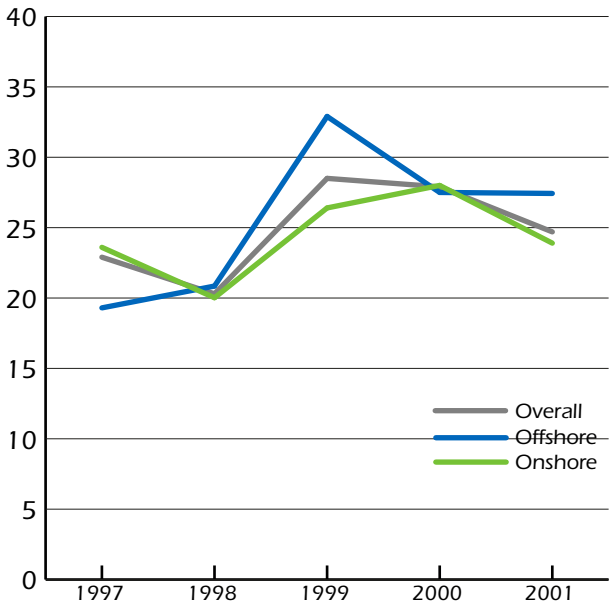
In 2001 only 69% of the reported hours qualify for inclusion in this analysis.

- The upstream industry reported 56130 days of work lost through injuries. This equates to around 255 man-years of activity. However it should be noted that the number of days lost were only reported for 75% of the lost workdays cases.
- The severity of injuries reported for both company and contractor personnel reduced compared to 2000 values.
- The number of days lost following an injury remains considerably higher for company personnel (36.2) than for contractor personnel (20.8).

Severity - company & contractors
average days lost per LWDC



Severity - onshore & offshore
average days lost per LWDC



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2.8 Total recordable incident rate (TRIR)

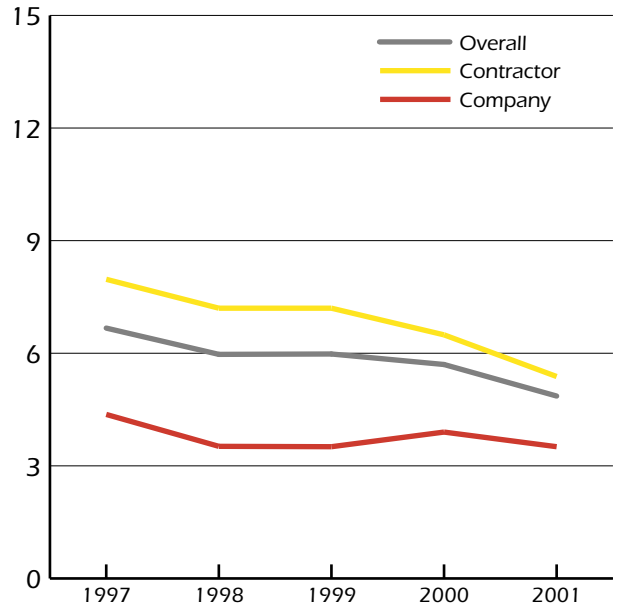
• Overall	4.86	(15% better)§
• Company	3.51	(9% better)
• Contractor	5.38	(17% better)
• Onshore	4.34	(7% better)
• Offshore	6.85	(23% better)

§ The per cent. in parentheses relates to the 2000 average

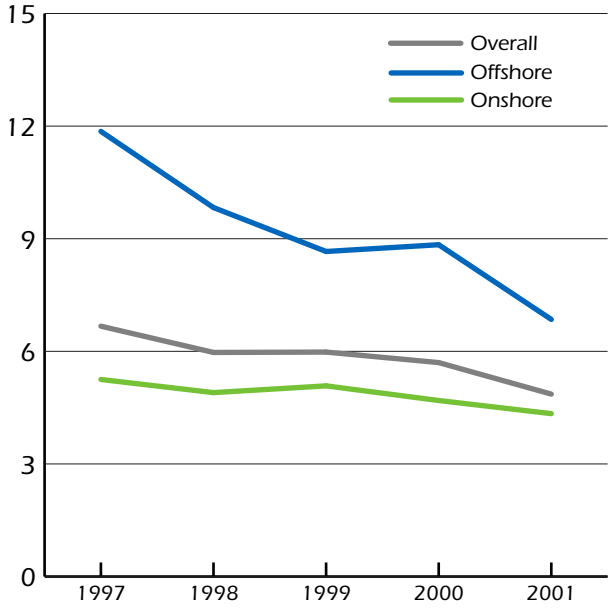
Total recordable incident rate (TRIR)

The number of recordable incidents (fatalities + lost workday cases + restricted workday cases + medical treatment cases) per 1,000,000 hours worked.

Total recordable incident rate - company & contractors
per million hours worked



Total recordable incident rate - onshore & offshore
per million hours worked



TRIR calculations are only made on returns that include information on medical treatment cases as well as other data. In 2001, only 79% of the reported hours qualified for inclusion in this analysis.

- In 2001 improvements are seen in all the measures of TRIR (*ie* contractor, company, onshore & offshore), with the overall value being 15% less than the 2000 value.
- The greatest reduction in TRIR is associated with offshore activity, where a 23% improvement is reported compared to the 2000 value. This is particularly encouraging given that the TRIR associated with offshore activities is likely to be a more reliable estimate than its onshore equivalent, due to better controlled access to medical treatment in an offshore environment. This may in part explain the continuing difference between the onshore and offshore TRIR, with the offshore value being consistently higher than the onshore value.

† *ie contractor, company, onshore & offshore*

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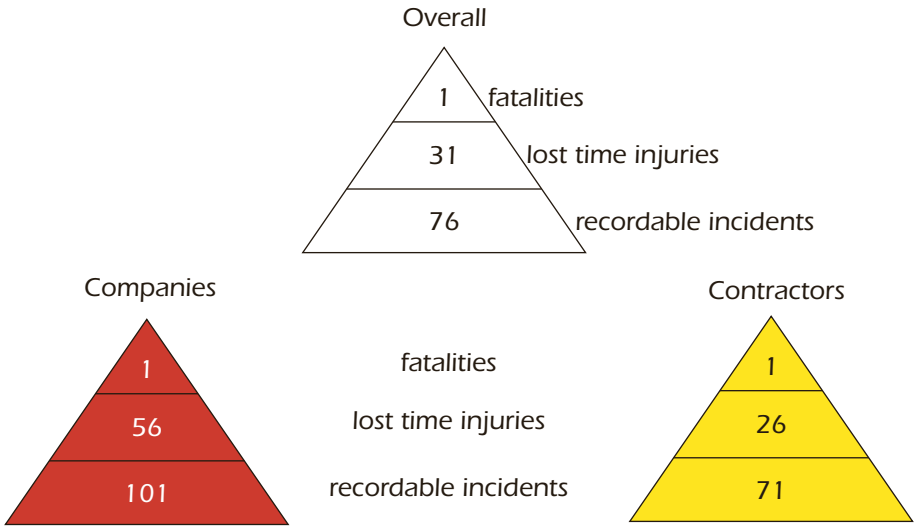
2.9 Total recordable incident rate (TRIR) – accident triangles

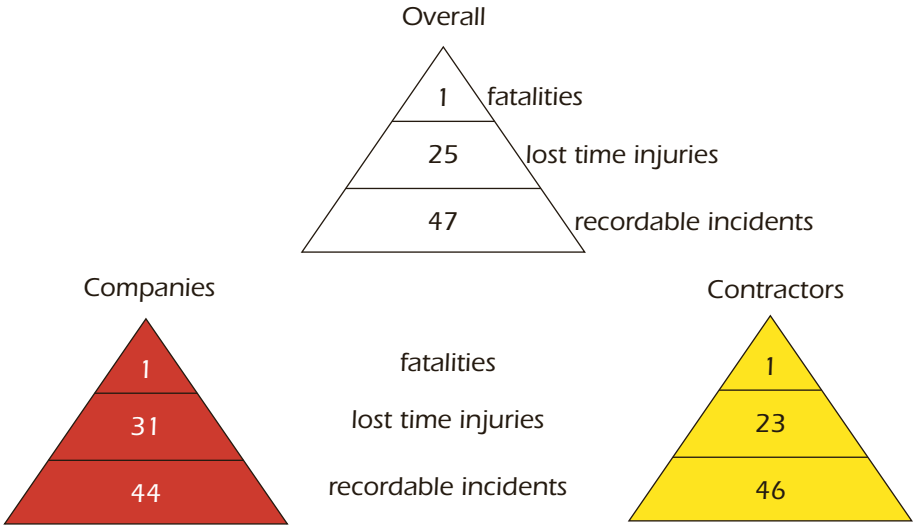
In this section the relative numbers of types of occupational injury are shown in the form of 'accident triangles'. The ratios have been corrected to account for the absence in some returns of medical treatment cases.

- Overall, the ratio of lost time injuries to fatalities is 31:1 and for total recordable incidents to lost time injuries about 2.5:1. Compared to 2000, there has been an increase in both of these ratios. In 2000 these ratios were 25:1 and 2:1 respectively.
- There have been a number of changes in the accident triangle associated with 2001 activity in comparison to 2000 activity. Without further analysis it is difficult to conclude that this relates to anything other than the natural variability within the parameters reported.

2001 accident triangles



2000 accident triangles



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3 Results by region

In this section the safety performance of regions and individual countries within the regions are presented.

A list of countries from which companies have reported information is provided in Appendix H, which also shows the division of countries into regions. The term Australasia refers to Australia, New Zealand and the islands in the SW Pacific.

3.1 Fatalities

	Fatal incidents	Fatalities
Africa	23	23
Asia/Australasia	13	13
Europe	5	6
FSU	8	9
Middle East	15	17
North America	22	23
South America	10	10

The table shows the number of fatal incidents and fatalities in each of the 7 regions into which the data are partitioned. It can be seen that the highest number of fatalities occurred in the African and North American regions, with both reporting 23 fatalities.

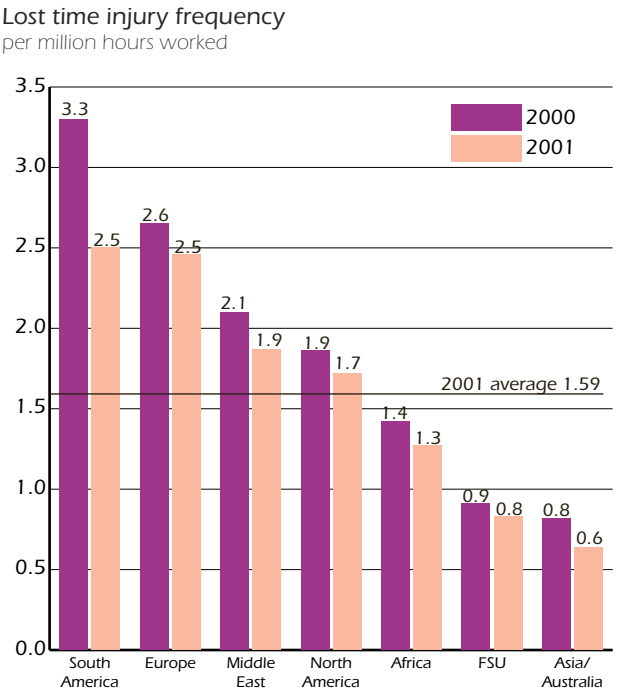
A further 15 fatal incidents were reported involving third parties only, 8 of which occurred in Africa. A total of 26 third party fatalities were reported, 19 in Africa.

Further analysis of the fatality statistics is presented in Section 3.3, where 5-year rolling averages of FAR are presented for each of the regions.

3.2 Lost time injury frequency

- **Overall** 1.59 (15% better)§
- **Africa** 1.27 (11% better)
- **Asia/Australasia** 0.63 (23% better)
- **Europe** 2.46 (7% better)
- **FSU** 0.83 (9% better)
- **Middle East** 1.87 (11% better)
- **North America** 1.72 (8% better)
- **South America** 2.50 (24% better)

§ The per cent. in parentheses relates to the 2000 average



The figure presents the LTIF for the seven regions for both 2001 and 2000. It can be seen that LTIF has improved in all regions compared to the 2000 values.

In common with the previous year, Asia/Australasia is seen to be the best performing region, and South America (jointly) the worse. However, the largest improvement from 2000 to 2001 is seen for operations in the South American region.

Three regions, Africa, FSU and Asia/Australasia are seen to perform better than the world average of 1.59.

Further analysis of the lost time incidents is presented in Section 3.3, where 5-year rolling averages of LTIF are presented for each of the regions.

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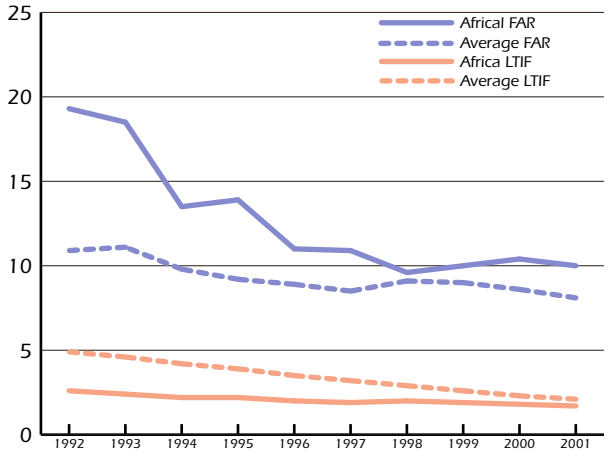
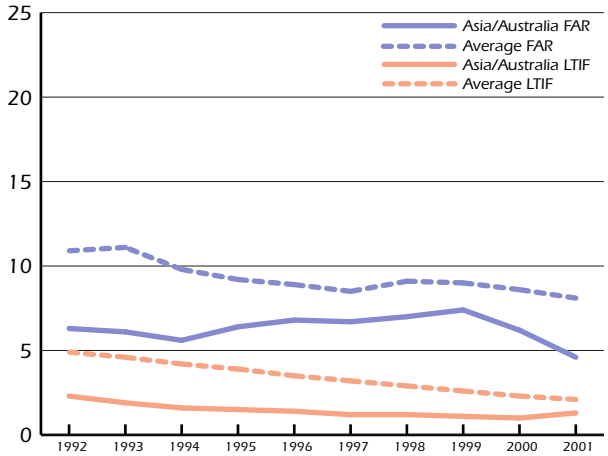
3.3 FAR and LTIF 5-year rolling averages

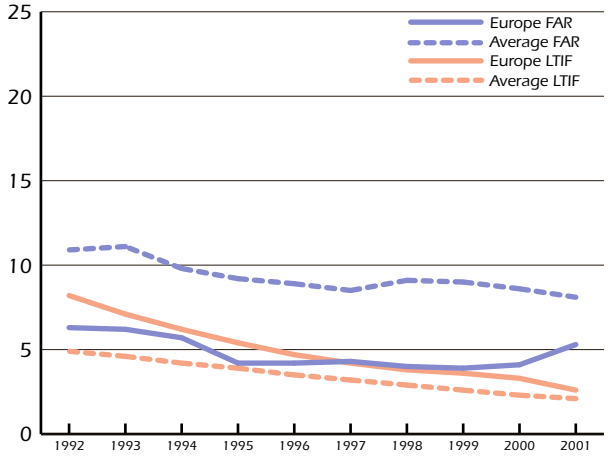
Africa FAR and LTIF 5-year rolling average
(FAR per 100 million hours worked, LTIF per million hours worked)



Asia/Australasia FAR and LTIF 5-year rolling average
(FAR per 100 million hours worked, LTIF per million hours worked)



Europe FAR and LTIF 5-year rolling average
(FAR per 100 million hours worked, LTIF per million hours worked)



In order to smooth out variability in the annual values of regional FAR and LTIF, 5-year rolling averages are computed which should provide a more reliable indicator of performance trends.

Each figure shows FAR and LTIF 5-year rolling averages for one of the seven regions, and includes the 'all regions' average curves.

For the first time sufficient data are available to allow the Former Soviet Union (FSU) to be reported separately. Previously, FSU data were included within European dataset.

FAR 5-year rolling average

The best performing region in 2001 is North America, with a 5-year rolling average value of FAR of 4.4, which is considerably lower than the all regions average of 8.1.

The worse performing region is South America, with an FAR of 13.6. This region has performed worse than any other region throughout the period shown.

The largest reduction in FAR during the 10 year period shown has occurred in the African region, where the 2001 value (10.0) is 52% of the 1992 value (19.3). However there has been little improvement in this region since 1996.

LTIF 5-year rolling average

Steady improvement in the LTIF in all regions is evident, with the 2001 values representing the lowest values on record for the majority of regions. The only region recording worse LTIF performance in 2001 than 2000 is Asia/Australasia. However this region and FSU together reported the best LTIF performance, both achieving a 5-year rolling average LTIF of 1.3.

The worse performing region is South America with an LTIF of 3.5. It has been the worse performing region since 1994.

The European region has realised the greatest improvement in LTIF, with the 2001 value (2.6) being less than 32% of the 1992 value (8.2).

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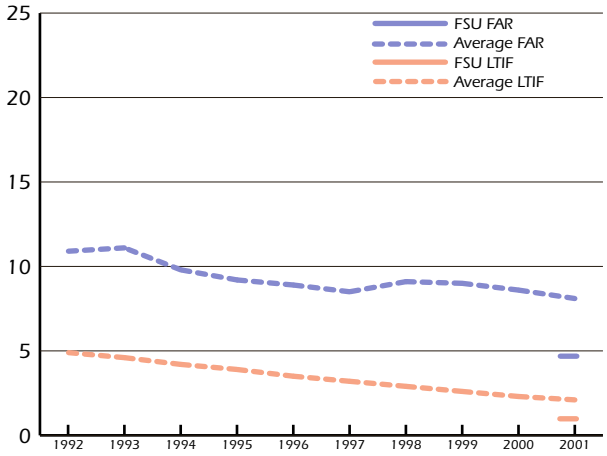
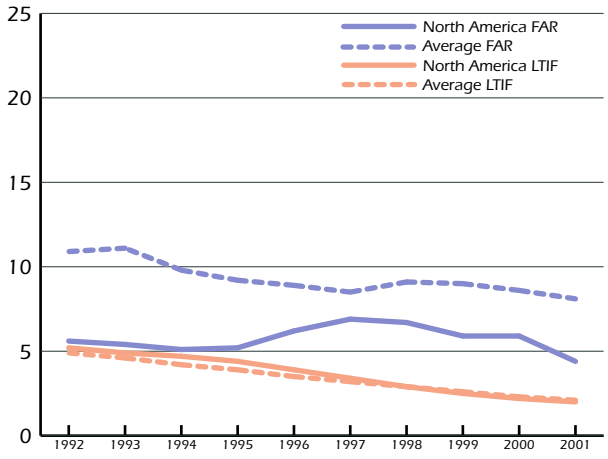
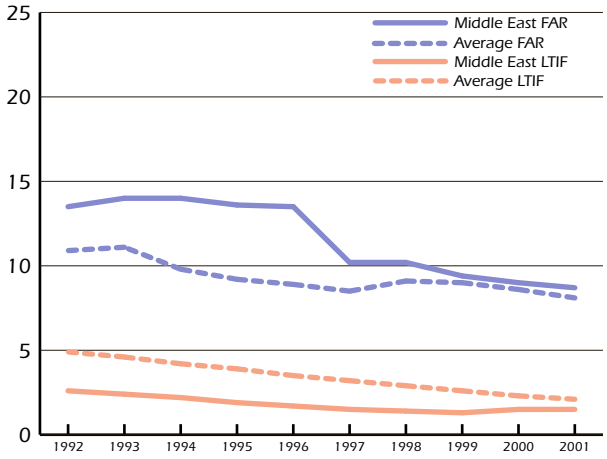
FSU FAR and LTIF 5-year rolling average
(FAR per 100 million hours worked, LTIF per millieon hours worked)



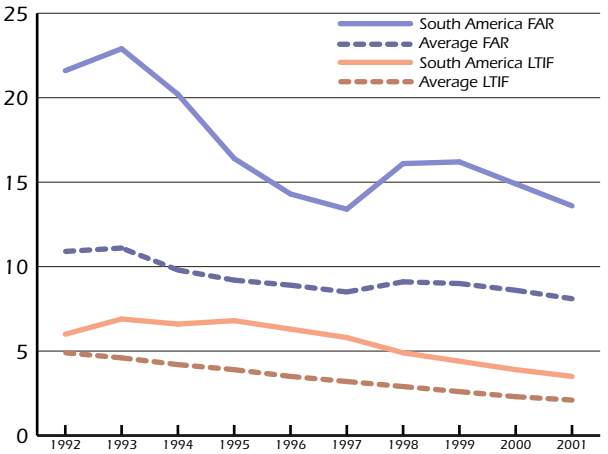
North America FAR and LTIF 5-year rolling average
(FAR per 100 million hours worked, LTIF per million hours worked)



Middle East FAR and LTIF 5-year rolling average
(FAR per 100 million hours worked, LTIF per million hours worked)



South America FAR and LTIF 5-year rolling average
(FAR per 100 million hours worked, LTIF per millieon hours worked)



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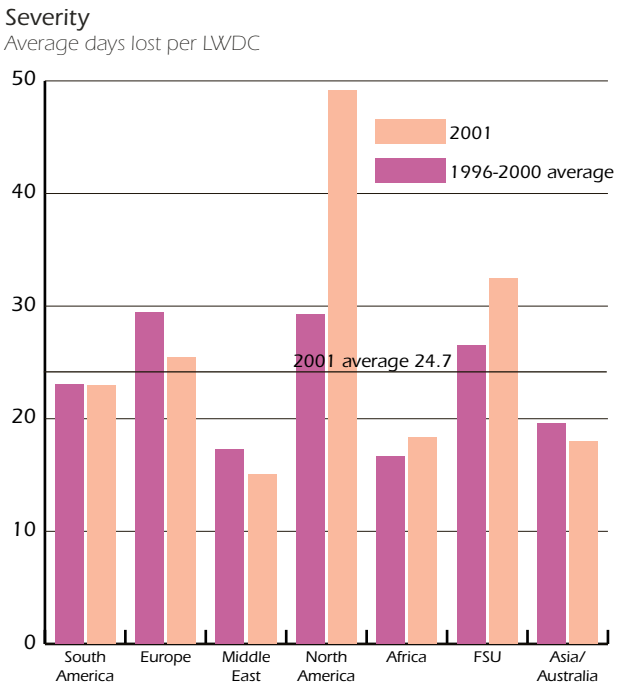
3.4 Severity of lost workday cases



• Overall	24.65	(4% worse)§
• Africa	18.35	(10% worse)
• Asia/Australasia	17.97	(8% better)
• Europe	25.41	(14% better)
• FSU	32.43	(22% worse)
• Middle East	15.01	(13% better)
• North America	49.17	(68% worse)
• South America	22.92	(1% better)

§ relative to the 1996-2000 results

The figure shows the average number of days lost per LWDC for each of the seven regions. Also shown is the average number of days lost for the proceeding 5 year period for each region. (For the FSU, due to data limitations, a 4 year averaging period has been used).

No clear trend is evident in the changes in severity between the 2001 values and the proceeding 5 year average values.

The severity of LWDC remains high in North America, with an average value of 49 days lost per LWDC. This is almost double the 2001 average for all regions (24.7) and over 3 times greater than the value for the Middle East (15.0).

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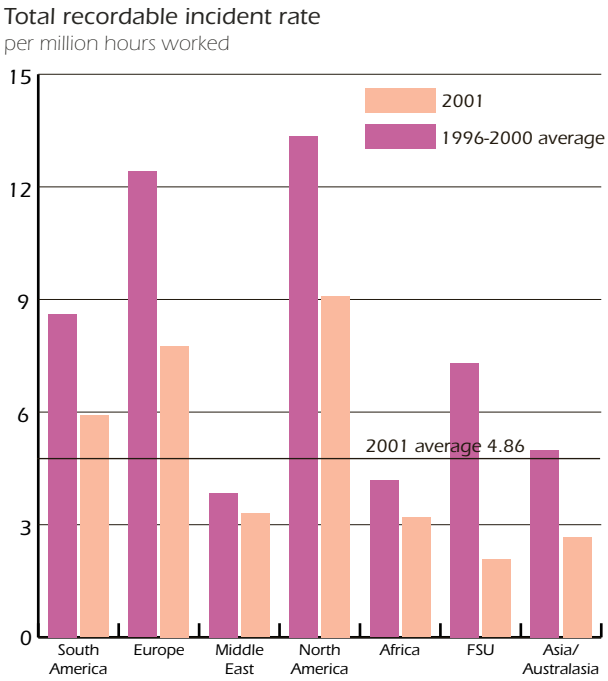
3.5 Total recordable incident rate (TRIR)

• Overall	4.86	(38% better)§
• Africa	3.19	(24% better)
• Asia/Australasia	2.67	(47% better)
• Europe	7.76	(38% better)
• FSU	2.07	(72% better)
• Middle East	3.30	(14% better)
• North America	9.10	(32% better)
• South America	5.91	(31% better)

§ relative to average 1996-2000 results (1997-2000 for FSU)

The figure shows the TRIR for the seven regions, compared to the average for the proceeding 5 year period for each of the regions. (For the FSU, due to data limitations, a four year averaging period has been used).

In all regions the 2001 TRIR has fallen compared to the previous 5 year average value. The largest reduction is associated with operations in the FSU where the 2001 value (2.07) is 28% of the FSU average value for the proceeding 4 year period.



3.6 Individual country performance

The safety performance of individual countries is presented in terms of the lost time injury frequency of companies jointly with contractors. To preserve the anonymity of companies, performance is only published for those countries for which at least two companies have reported statistics. Countries with less than 50,000 reported hours worked are excluded, since results for such small populations of hours would be unrepresentative.

Of the 73 countries from which data have been reported, 19 are excluded by these constraints.

The chart of relative performance for the remaining 54 countries compares the 2001 performance with that in 2000 and 1999.

Two countries, Albania and Morocco reported zero lost time incidents in 2001. However, both reported relatively few workhours (472,000 and 144,000 respectively).

All the countries in the Asia/Australasia region, other than India, perform at least as well as the global average. The majority of countries in the European region perform worse than the global average.

It is notable that Tunisia, Libya and the Congo, Papua New Guinea and Australia, Ireland, Turkmenistan, Iran and Argentina appear amongst the worst performers within their region in both the 2000 and 2001 datasets.

For comparison, also shown are the 5-year average FAR for each of the regions. There appears to be little if any correlation between these values and the regional average LTIF values.

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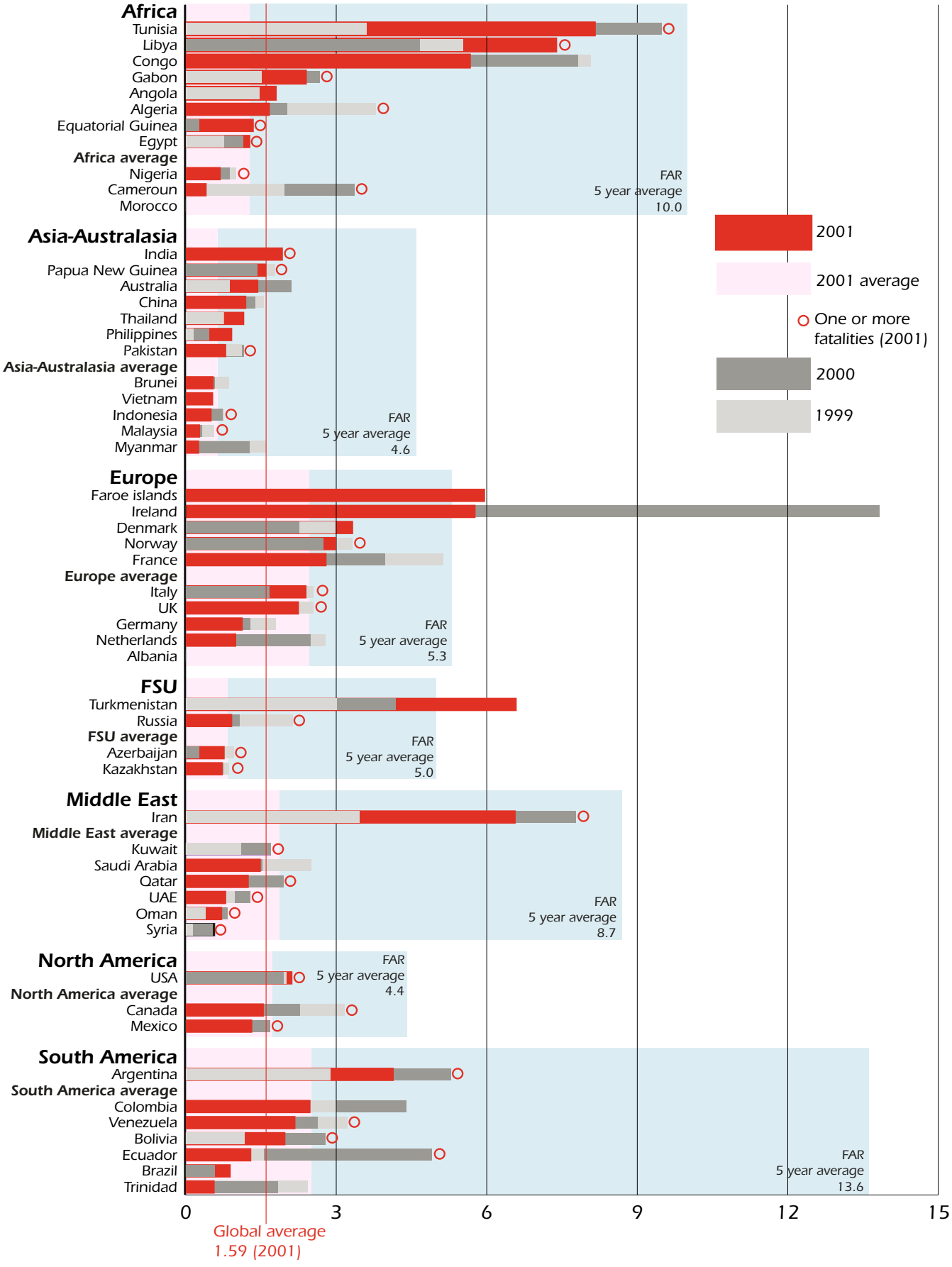
Lost time injury frequency - companies with contractors
per million hours worked



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4 Results by function

In this section the safety performance within different functions performed in the E&P industry is presented. Functions are defined as exploration, drilling, production, and 'other', the last being the category for activities other than in the first three. The overall results quoted take account also of data provided by contributing companies which were not allocated to one of these four, i.e. the 'unspecified' category.

4.1 Fatalities

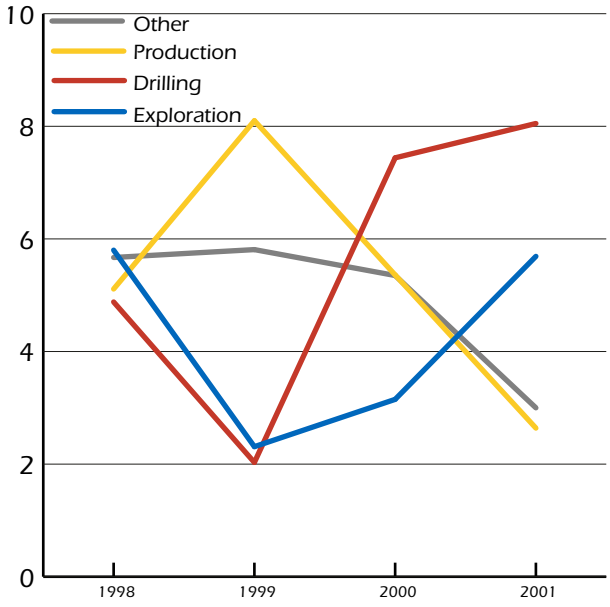
	2001		2000	
	Fatal incidents	Fatalities	Fatal incidents	Fatalities
Exploration	6	6	3	3
Drilling	24	25	20	20
Production	19	21	38	41
Other	22	23	25	27
Unspecified	25	26	10	28

The distributions of company and contractor fatal incidents and fatalities between the functions are shown in the table for both 2001 and 2000. A substantial decrease (49%) is noted in the number of fatalities reported in the 'production' function for 2001 compared to 2000. In the 'drilling' category, a 25% increase is reported.

In order to compare the rate at which fatalities occur for each of the different functions, ideally the number of fatalities should be normalised by the associated number of workhours. Unfortunately, many operations around the world have reported workhours as 'unspecified' even though they relate a particular fatality to a specific work function (*eg* an organisation may report a drilling related fatalities, however all their workhours are reported as 'unspecified'). In order to overcome this problem (and for this section only) all the hours reported as 'unspecified' have been reclassified into 'exploration', 'drilling', 'production' or 'other' in accordance with the distribution of reported hours within these categories. In addition, any fatality reported as 'unspecified' is excluded from the analysis.

The FAR associated with the different functions are compared in the above figure for the period 1998 to 2001. Considerable variability can be seen over this period, with no clear evidence that the performance of one function is better or worse than any other.

Fatal accident rate
per 100 million hours worked



Fatal accident rate

	Exploration	Drilling	Production	Other
1998	5.80	4.88	5.11	5.67
1999	2.31	2.03	8.10	5.81
2000	3.15	7.44	5.36	5.35
2001	5.69	8.05	2.64	3.00

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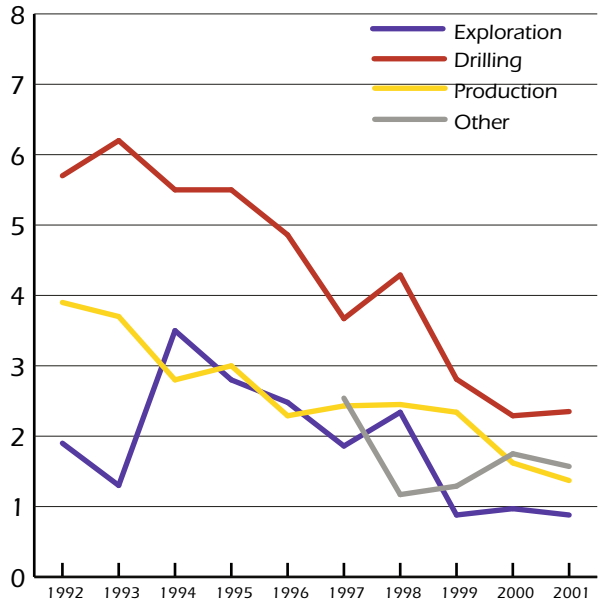
4.2 Lost time injury frequency (LTIF)

Lost time injury
per million hours worked



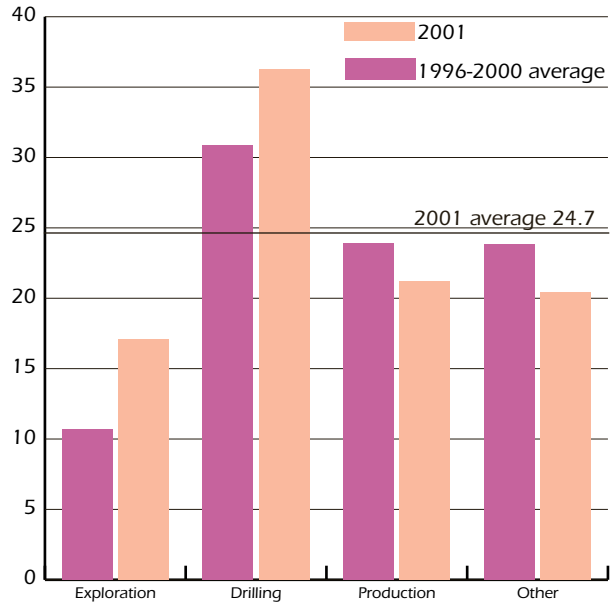
- **Overall** 1.59 (15% better)§
- **Exploration** 0.88 (9% better)
- **Drilling** 2.35 (3% worse)
- **Production** 1.37 (15% better)
- **Other** 1.57 (10% better)

§ relative to 2000

The figure shows the LTIF associated with each of the different functions. Compared to the 2000 values, improvement is seen in all areas other than 'drilling.' 'Drilling' has reported the highest LTIF throughout the period shown, but it has also realised the greatest reduction in LTIF since 1992, with the 2001 value (2.35) being 41% of the 1992 value (5.7).

4.3 Severity of lost workday cases

Severity
average lost days per LWDC



The figure shows the average number of days lost per LWDC. In common with previous years, the severity of drilling related injuries is, on average, greater than that associated with other functions.

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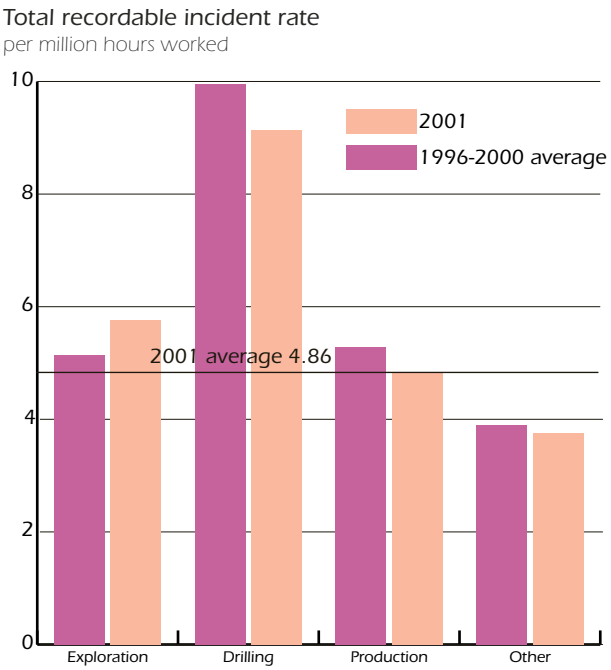
4.4 Total recordable incident rate (TRIR)

- **Overall** 4.86 (19% better)§
- **Exploration** 5.76 (12% worse)
- **Drilling** 9.14 (8% better)
- **Production** 4.83 (9% better)
- **Other** 3.76 (3% better)

§ relative to average for period 1996-2000

The figure shows the TRIR associated with each of the functions. Once again the highest reported TRIR was associated with drilling related activities.

Overall the TRIR has reduced by 19% compared to the average of the preceeding 5 year period.



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4.5 Exploration performance

4.5.1 Lost time injury frequency

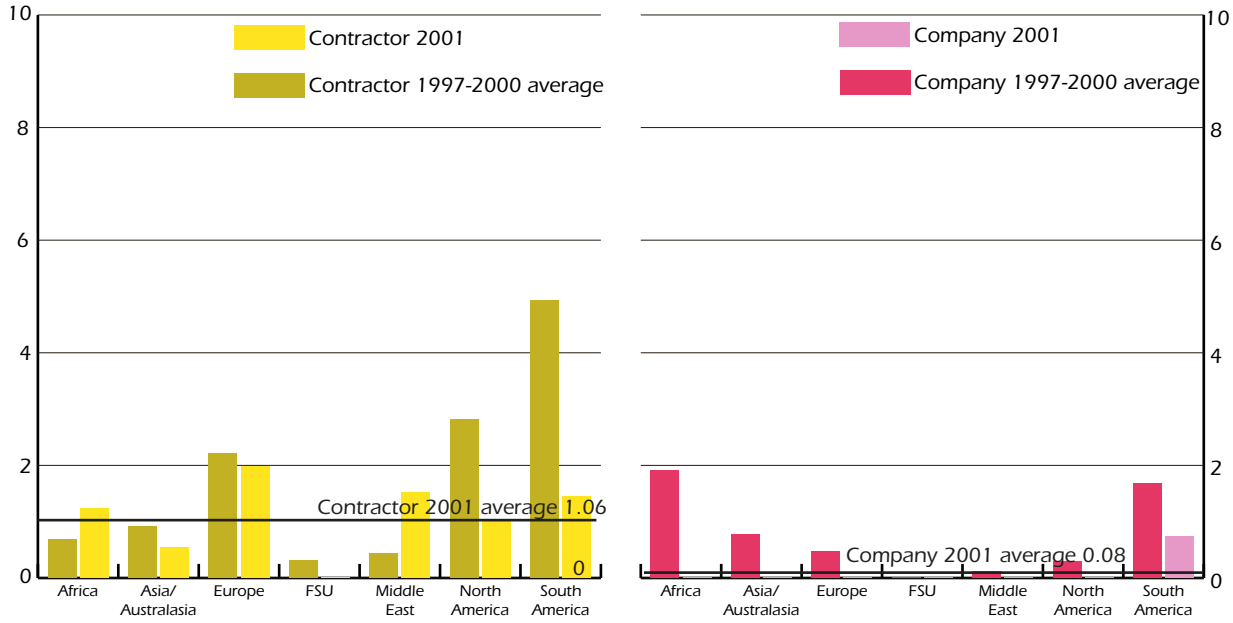
The figures show the LTIF performance of companies and contractors for exploration related activities, in different regions of the world. The 2001 performance is compared to performance in the period 1997 - 2000.

The 2001 average LTIF for companies engaged in exploration activities is extremely low (0.08) compared to the contractor value of 1.06. However, both values compare well with the global industry average LTIF of 1.59.

There has been a marked improvement in contractor LTIF performance associated with exploration activities in the North and South American regions.

NOTE: In many instances where the LTIF or TRIR is reported as 0.00, the number of workhours reported for the specific function and region are relatively low. A detailed breakdown of the hours by region and function is presented in Appendix B.

Lost time injury frequency - exploration
per million hours worked



Exploration

Geophysical, seismographic and geological operations, including their administrative and engineering aspects, construction, maintenance, materials supply, and transportation of personnel and equipment; excludes drilling.

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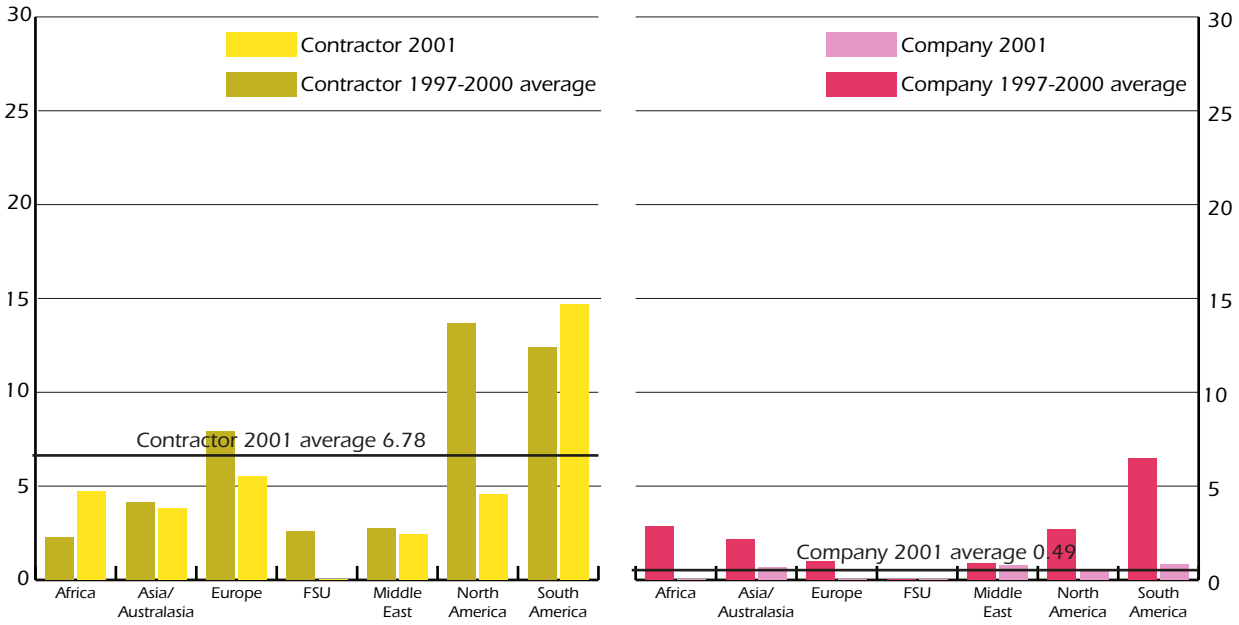
4.5.2 Total recordable incident rate

The figures show the TRIR performance of companies and contractors for exploration related activities, in different regions of the world. Notable improvements are seen in the TRIR performance of contractors in the North American region, and companies in the South American Region (compared to the average for the period 1997-2000).

Total recordable incident rate - exploration
per million hours worked

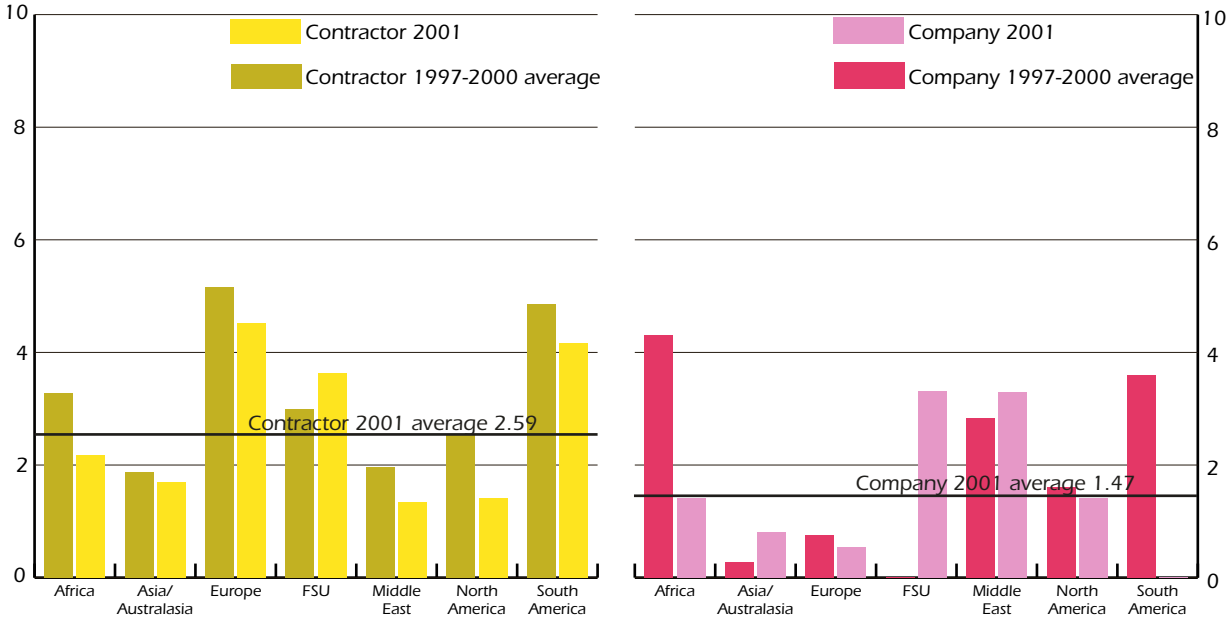


4.6 Drilling performance

4.6.1 Lost time injury frequency

The figures show the LTIF performance of companies and contractors for drilling related activities, in different regions of the world. Compared to the previous 4 year average, notable improvement in the LTIF is seen for company associated drilling activities in the African region.

Lost time injury frequency - drilling
per million hours worked



Drilling

All exploration, appraisal and production drilling and workover as well as their administrative, engineering, construction, materials supply and transportation aspects. It includes site preparation, rigging up and down and restoration of the drilling site upon work completion. Drilling includes ALL exploration, appraisal and production drilling.

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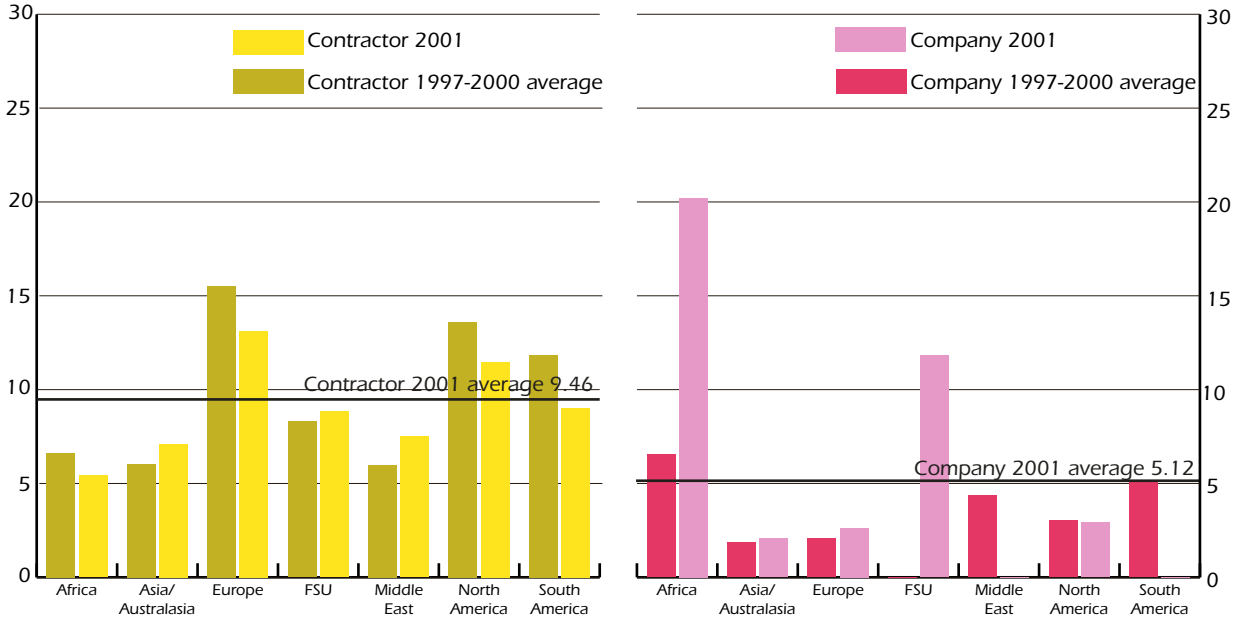
4.6.2 Total recordable incident rate

The figures show the TRIR performance of companies and contractors for drilling related activities, in different regions of the world.

The TRIR associated with company related drilling activities in Africa is exceptionally high in 2001, with a value of 20.20, compared to the all regions average of 5.12. This is surprising given that the company associated LTIF for this region and function showed considerable improvement in 2001, and is close to the industry average. However, the number of company workhours on which the analysis is based is relatively few (1.9 million).

Total recordable incident rate - drilling
per million hours worked



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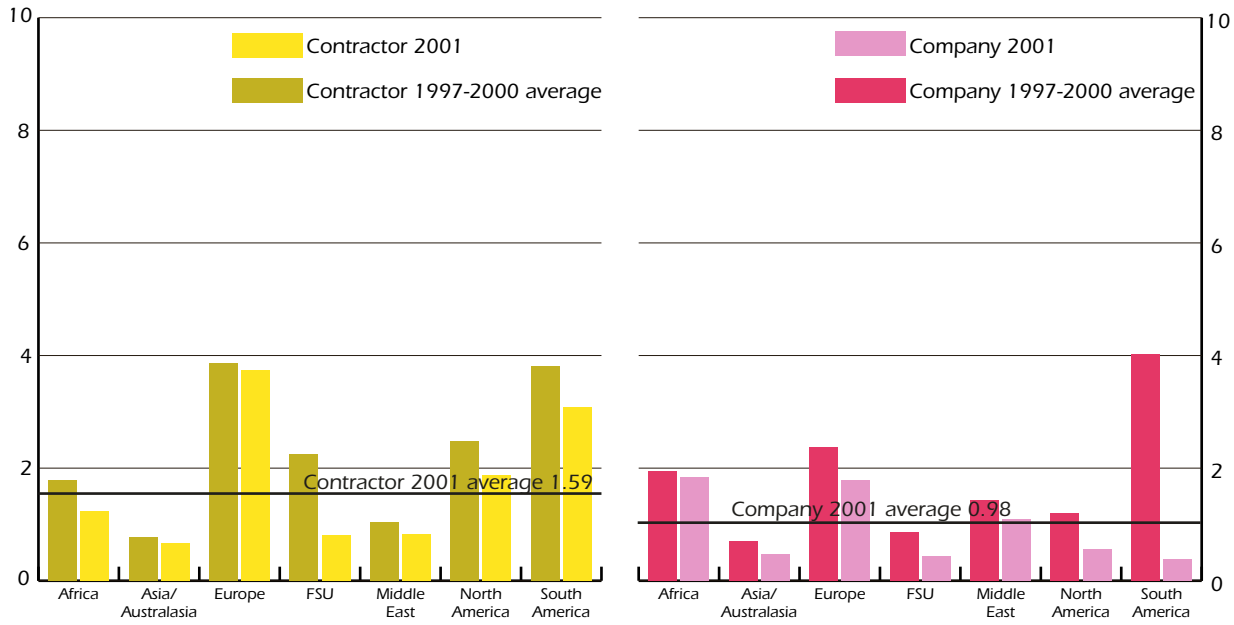
4.7 Production performance

4.7.1 Lost time injury frequency

The figures show the LTIF performance of companies and contractors for production related activities, in different regions of the world. The 2001 LTIF associated with companies working in the South American region represents a substantial improvement compared to the 1997-2000 period.

Lost time injury frequency - production
per million hours worked



Production

Petroleum and natural gas producing operations, including their administrative and engineering aspects, minor construction, repairs, maintenance and servicing, materials supply, and transportation of personnel and equipment. It covers all mainstream production operations including wireline. It does not cover production drilling and workover.

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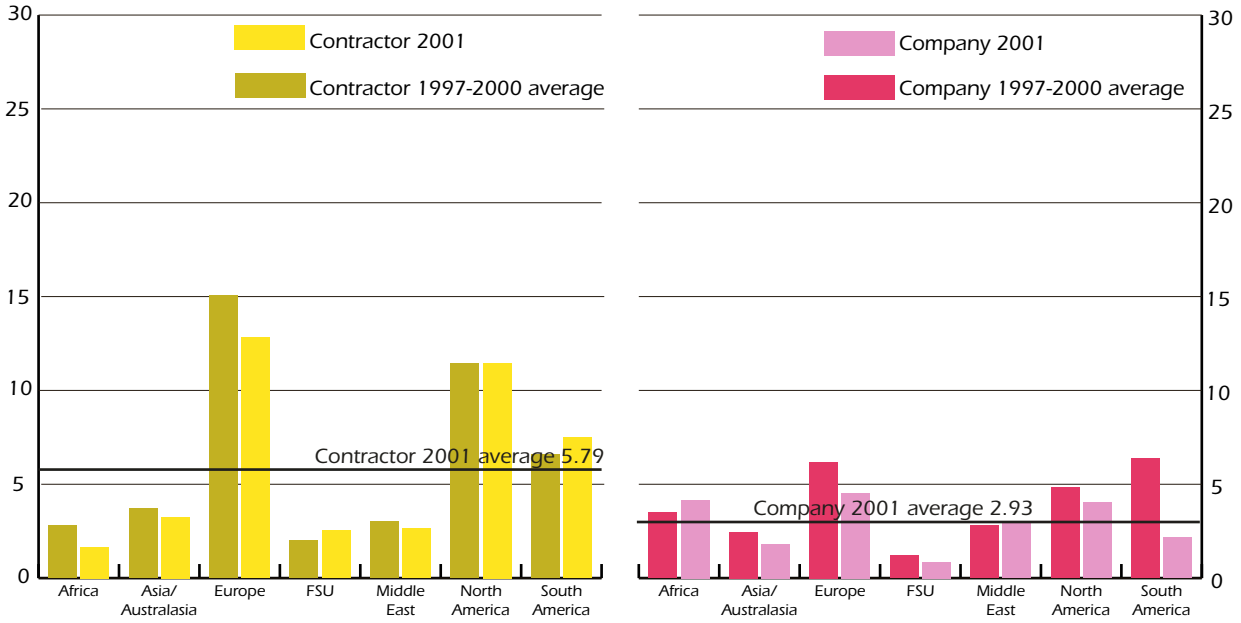
4.7.2 Total recordable incident rate

The figures show the TRIR performance of companies and contractors for production related activities, in different regions of the world.

Total recordable incident rate - production
per million hours worked



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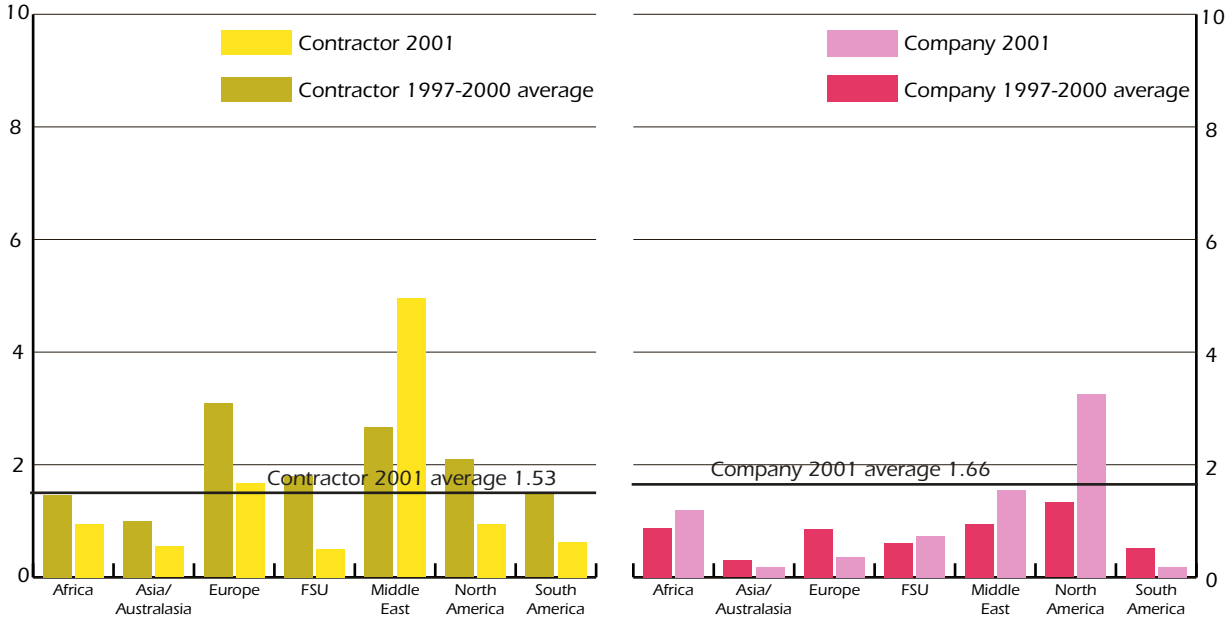
4.8 Other performance

4.8.1 Lost time injury frequency

The figures show the LTIF performance of companies and contractors for 'other' activities, for different regions of the world. Compared to the average of the previous 4 year period, the performance of contractor in the Middle East and of companies in North America have both deteriorated substantially.

Lost time injury frequency - other
per million hours worked



Other (as a category of work)

Major construction and fabrication activities and disassembly, removal and disposal (decommissioning) at the end of the life of a facility. Includes factory construction of process plant, offshore installation, hookup and commissioning, and removal of redundant facilities. Also includes personnel and incidents that cannot naturally be assigned to exploration, drilling or production.

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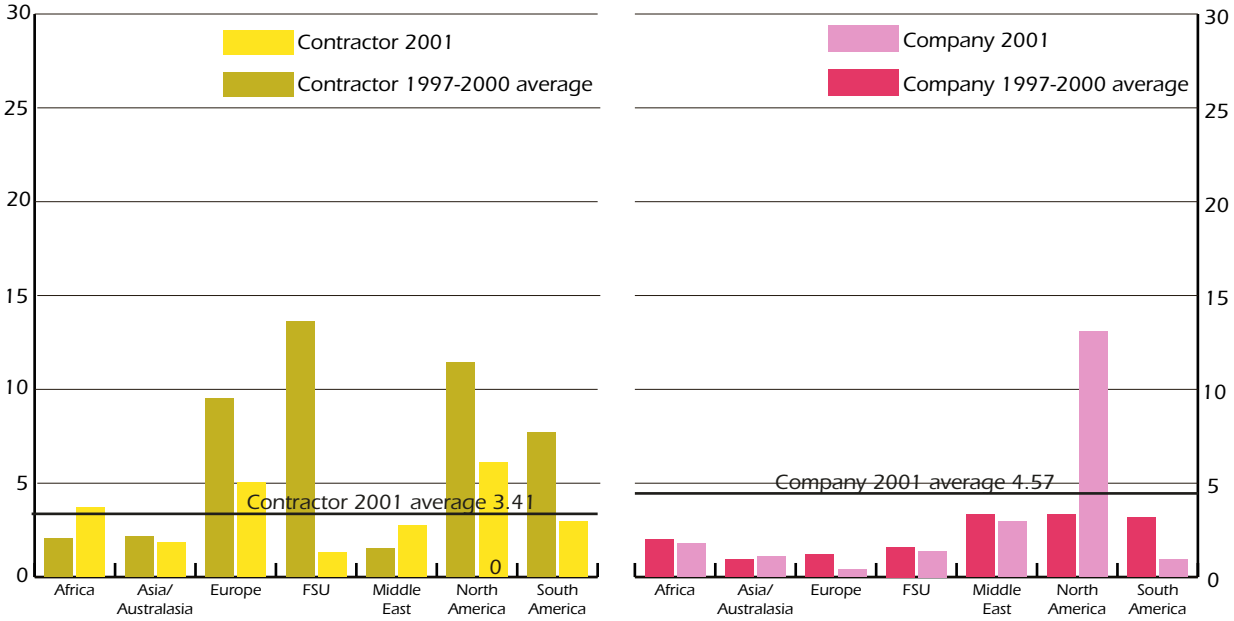
4.8.2 Total recordable incident rate

The figures show the TRIR performance of companies and contractors during the performance of 'other' activities, for different regions of the world. Compared to the previous four year averages, substantial improvements are seen in the performance of contractors in FSU, and a marked deterioration has been reported in the performance of companies in North America.

Total recordable incident rate - other
per million hours worked



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5 Results by company

This section compares the safety performance of individual companies with each other and with their performance in previous years. The comparison is made in terms of the LTIF, which is believed to be the most representative indicator for inter-company benchmarking.

Where non-operator companies have provided joint venture information, the information is excluded from the analysis to derive the company result.

5.1 Overall company results

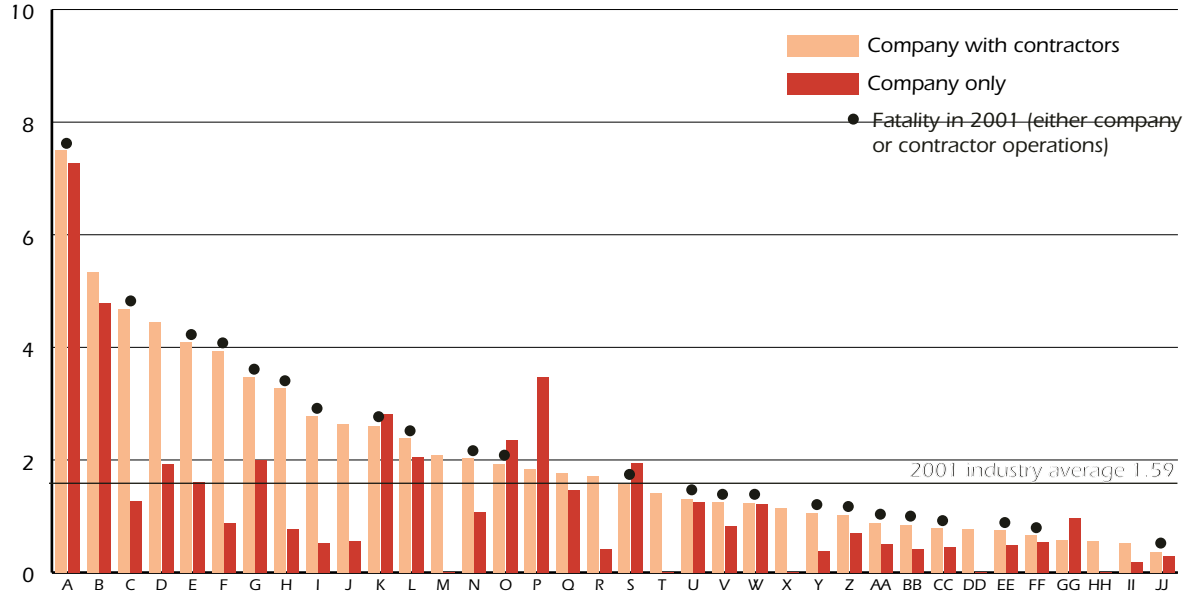
For reasons of anonymity each of the 40 companies which have contributed relevant data have been allocated a unique code letter (A to NN).

The figure shows in rank order the LTIF for companies together with their contractors. 36 companies (A to JJ) contributed company and contractor data, although not always for every country in which operations were conducted.

The LTIF for the company alone is plotted alongside the LTIF for company and contractors jointly. The incidence of a fatality in either company or contractor operations is also indicated. Details of results are tabulated in Appendix B.

- The best result is achieved by company JJ, with a LTIF of 0.37 for company with contractors, less than a quarter of the world average.
- 10 companies delivered a LTIF of less than 1.
- 18 companies performed better than the global average (1.59) and 18 companies performed worse.
- The worse performing company (A), has a LTIF of 7.5, almost 5 times the 2001 industry average.
- 23 of the 36 companies suffered one or more fatalities.
- In 5 instances, contractors outperformed companies.

Performance ranking of companies jointly with contractors - lost time injury frequency
per million hours worked



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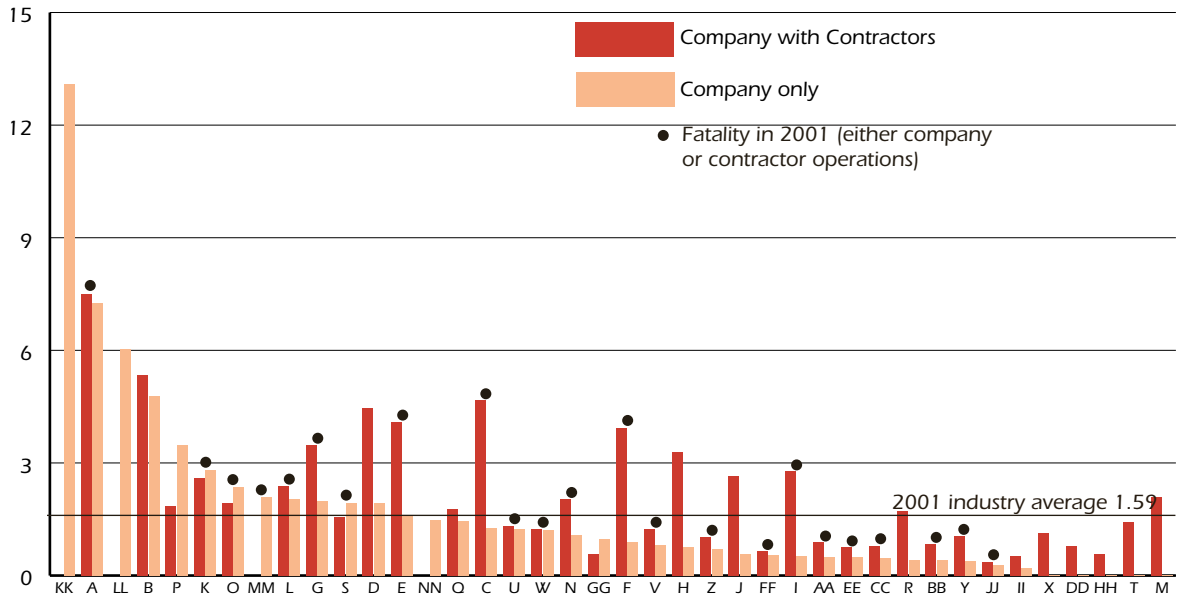
In the figure, the data are reorganised to show companies ranked according to LTIF performance for company personnel alone, omitting contractor input. Those companies that only submitted data for company activities (KK,LL, MM and NN) are now included.

- 5 companies (X,DD, HH, T and M) had no lost time incidents among company employees (LTIF zero). However, all these companies reported relatively few workhours, hence the results are unlikely to be a reliable indicator of their longer term performance.
- The worst performing company (KK) achieved a LTIF of 13.1, over 8 times greater than the 2001 industry average, and nearly twice that of the next poorest performance.
- 27 companies performed better than the 2001 industry average and 13 companies worse.

Performance ranking of companies alone - lost time injury frequency
per million hours worked



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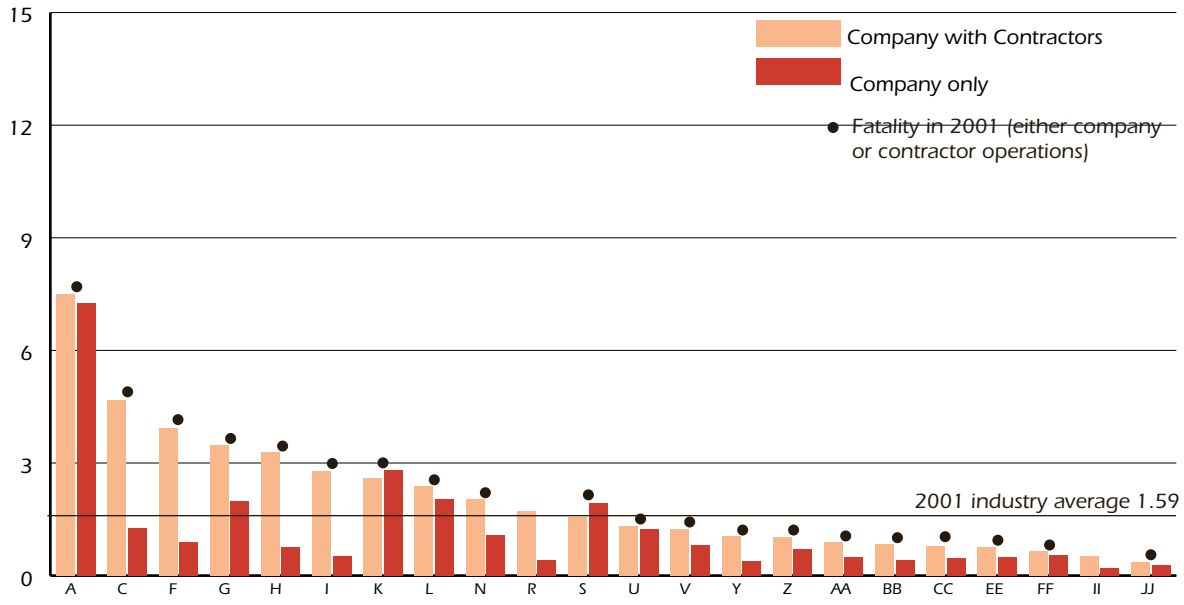
In the figure the LTIF is presented for those companies, which with their contractors, reported more than 10 million hours worked. 22 companies met this criteria. Companies are shown in rank order of the company-with-contractor LTIF performance.

- 12 of the 22 companies with their contractors performed better than the global average for companies with contractors.
- The best performing company is JJ and the worst is A.
- The range in 2001 was between 0.37 and 7.5 lost time injuries per million hours worked.
- 20 of the 22 companies suffered one or more fatalities.

Performance ranking of companies jointly with contractors, joint hours>10 million - lost time injury frequency
per million hours worked



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The table below shows the trends in company-with-contractor performance. The 36 companies reporting joint performance are listed together with the LTIF for 2001. For each company where data are available the chart shows whether performance in the reference year had improved or worsened relative to the previous year.

- Of the 36 companies reporting joint data in 2001, 32 reported joint data in 2000, 26 in 1999, 24 in 1998, 19 in 1997 and 20 in 1996.
- Only companies L and EE achieved improvements year by year over the period 1997-2001 and company C has improved year by year over the past 4 years.
- Company V has shown consistent improvement over the past 3 years.
- No company's performance deteriorated year by year over the period 1997-2001. However, one company's (D) performance deteriorated in each of the past 3 years.

Company code	Company & contractor LTIF 2001	LTIF performance relative to previous year				
		2001	2000	1999	1998	1997
A	7.50	worse	worse	better	worse	worse
B	5.33					
C	4.68	better	better	better	better	
D	4.45	worse	worse	worse	better	better
E	4.09	worse	worse	better		
F	3.94	better	worse	better	better	worse
G	3.48	worse	better	worse	better	better
H	3.28	worse	better	better	better	worse
I	2.78	better	worse	worse	better	worse
J	2.64	worse	better	better	worse	better
K	2.61	better			worse	
L	2.38	better	better	better	better	better
M	2.09	better	worse			
N	2.03	better	worse	better	worse	
O	1.92					
P	1.84	better	worse	worse		
Q	1.77	better				
R	1.71	worse	better	better	better	better
S	1.57	better				
T	1.42	better	better	worse	worse	
U	1.31	better				
V	1.25	better	better	better		
W	1.24	better	worse			
X	1.14	worse	better	better	better	
Y	1.05	better	worse	worse	better	worse
Z	1.03					
AA	0.88	better				
BB	0.84					
CC	0.79	better	worse	better	better	worse
DD	0.78	better	worse	same	better	
EE	0.75	better	better	better	better	better
FF	0.66	better	better	worse	better	better
GG	0.57	better	worse			
HH	0.56	better				
II	0.53	worse	better	better	worse	better
JJ	0.37	better	worse	better	worse	better

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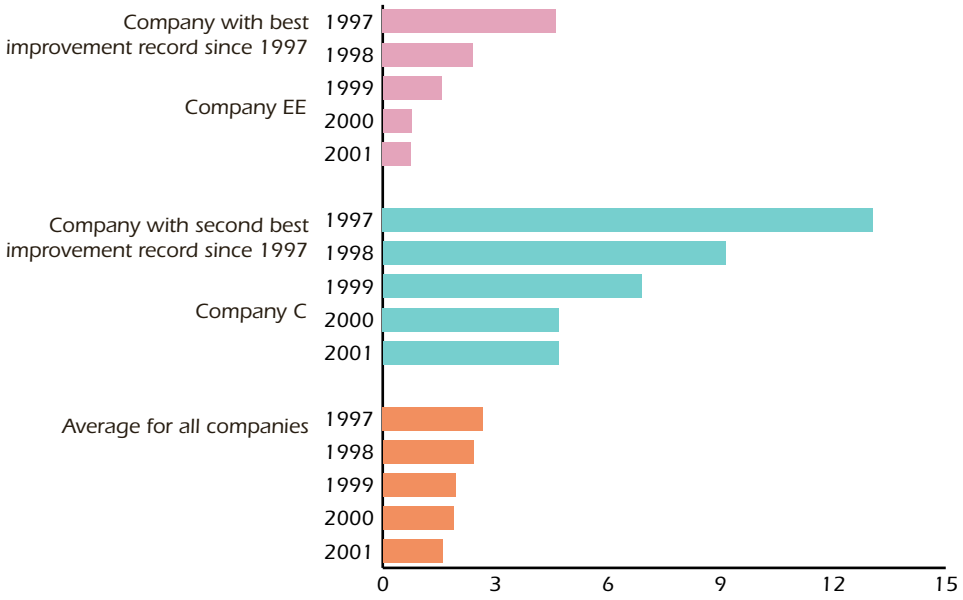
The chart shows the achievements of the two companies that showed the greatest year-by-year improvements from 1997 to 2001, companies C and EE. Also shown are the overall performances of all companies.

- Company EE achieved an 84% reduction in LTIF since 1997. From having an LTIF 73% above the average in 1997, in 2001 it performed at 47% of the overall average.
- Company C has achieved a reduction in its LTIF since 1997 of 64%. In 1997 its LTIF stood at nearly 5 times the average while today it has reduced to less than 3 times the average for 2001.

Exemplary improvements in LTIF
per million hours worked by companies with contractors



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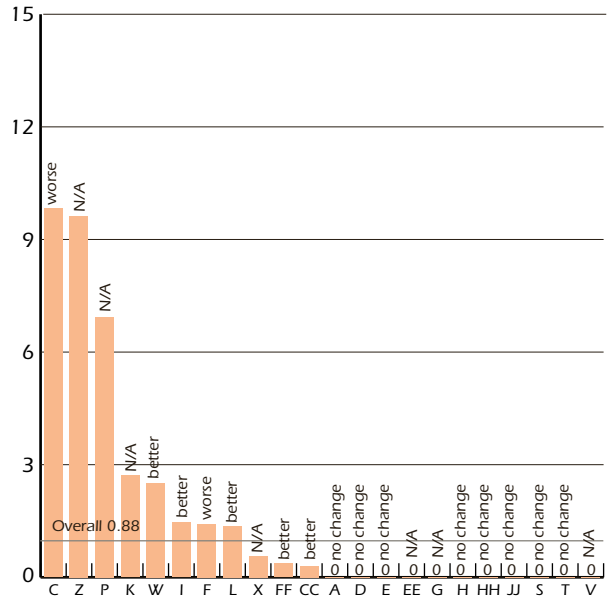
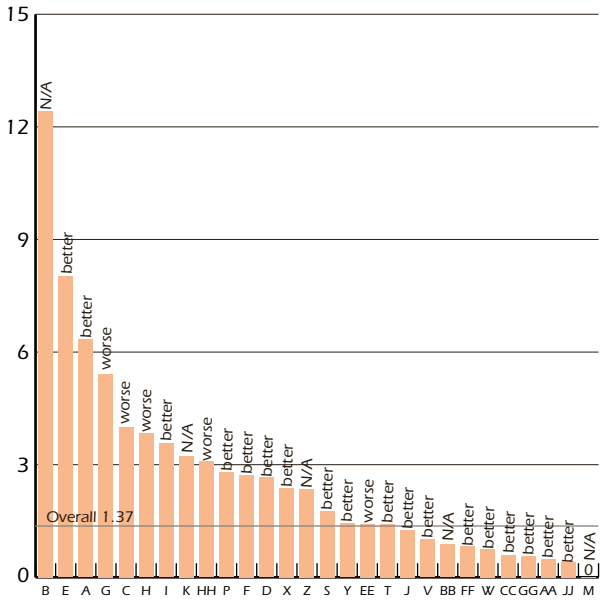
5.2 Company results by function

Results of companies together with their contractors have been analysed by function to allow more in-depth benchmarking between companies. Once again the LTIF indicator has been selected, and the ranked results are shown in the following charts. Only companies who provided data by function are included, and then only those companies who had more than 100,000 hours worked. Results against smaller numbers of hours would not have any statistical significance. The company code letters are the same as used elsewhere in this chapter. Each chart shows, for those companies that submitted data in both 2001 and 2000, whether the performance in 2001 was better or worse than in 2000.

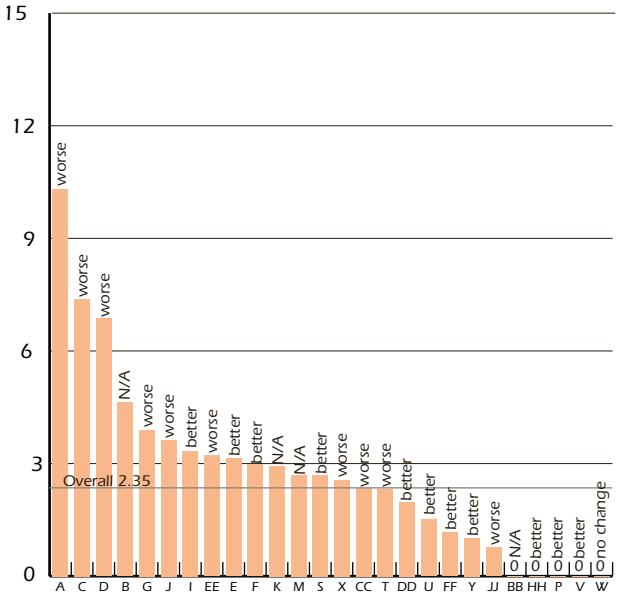
Lost time injury frequency - Exploration
per million hours worked by company with contractors



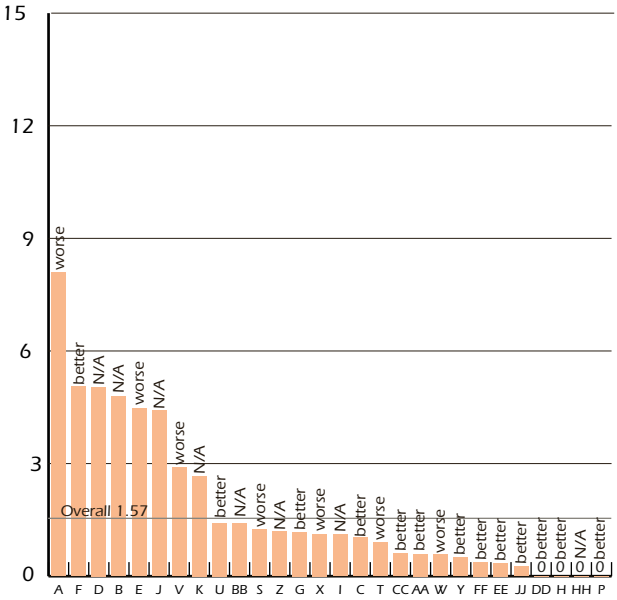
Lost time injury frequency - Production
per million hours worked by company with contractors



Lost time injury frequency - Drilling
per million hours worked by company with contractors



Lost time injury frequency - Other
per million hours worked by company with contractors



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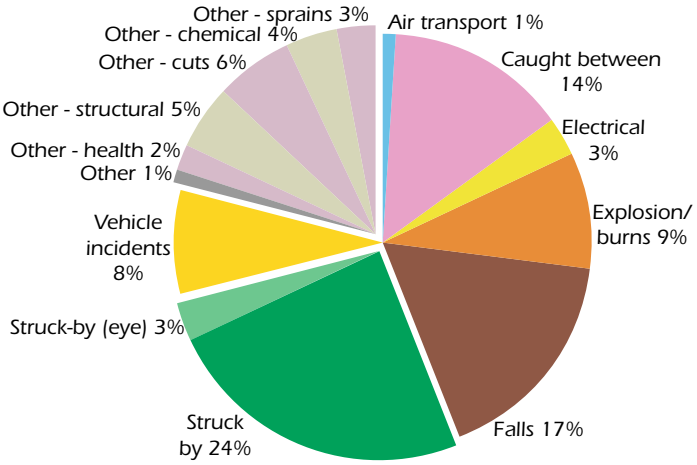
6 Significant incidents

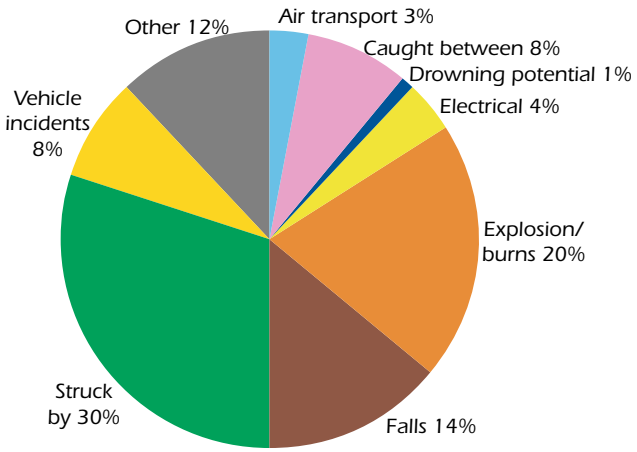
6.1 Significant incidents by category

Significant incidents by category

2001



1996 - 2000



Appendix D gives details of the significant incidents reported for 2001. Significant incidents are intended to be incidents which result in a lost time injury or have the potential to result in a fatality or serious injury.

The categories used for reporting significant incidents are identical to those used for reporting fatalities. This has caused companies some problems in choosing which category to use for particular incidents, and many have tended to make extensive use of the 'Other' category.

In order to provide a more meaningful analysis, a substantial modification of the significant incident data submitted by companies has been undertaken. Additional sub-categories have been added under the general categories of 'Other' and 'Struck by'.

The 'Other' sub-categories which have been added are:

- 'Cuts' - identifies incidents in which individuals sustained cuts, typically to a hand, as a result of coming into contact with a sharp object.
- 'Chemical' – identifies incidents in which individuals have come into contact with chemicals.
- 'Health' – identifies incidents of ill health.
- 'Sprains' – identifies incidents in which individuals have sprained themselves while engage in a work related activity.
- 'Structural' – identifies incidents in which a structural failure has occurred.

A 'Stuck by' sub-category 'eye' has been added to identify those incidents in which a foreign object resulted in eye damage.

Summary of 2001 Significant Incidents

24 of the 41 companies submitted significant incident reports in 2001. The total number of reports is 236. 1 company submitted over half of the reports. 2 companies submitted a further quarter. A large number of the reports relate to offshore activity. Care needs to be taken in drawing conclusions from the data as, for example, vehicle incident are likely to be under represented.

The pie-charts compare the significant incidents reported in 2001, with those reported in the preceeding 5-year period. Other than a considerable (11%) reduction in the 'Explosion/Burn' contribution to the 2001 distribution compared to the previous period, there has been little change in the percentage contribution from the other categories.

In future years, further consideration needs to be given to how significant incidents are reported and categorised so as to improve the industry's ability to learn from this potentially important source of data.

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7 Conclusions

The safety performance of the global E&P industry in 2001 has been presented. It is based on the analysis of 1,977 million workhours of data, submitted by 41 companies, from operations in 73 countries. This represents the largest database used in the analysis of the industry's safety performance.

Despite many years where little if any improvement has been measured in the fatal accident rate, the 2001 value is the lowest rate on record. Improvements have been reported in both company and contractor performance, and onshore and offshore related activities. Unfortunately, the uncertainty associated with this indicator is such that it will take further years of data to demonstrate that there is a real downward trend in this important indicator.

Other indicators (FIR, LTIF and TRIR) have all shown improvement compared to previous years, with many achieving their lowest values on record.

Vehicle related incidents, and individuals being struck by falling or moving objects accounts for in excess of 50% of the reported fatalities. Both are areas where further effort is required to identify improved risk management measures.

Further work is required to improve the quality and usefulness of the significant incident data collected as part of the annual data request. Improved definition of what constitutes a significant incident and an increase in the number of reporting categories, are likely to allow better knowledge to be gained from this potentially important dataset.

Despite the fact that there have been 101 fatalities, and 3038 lost time injuries, overall the safety performance of the global E&P industry has shown considerable improvement compared to previous years, achieving in many areas its best ever safety performance.

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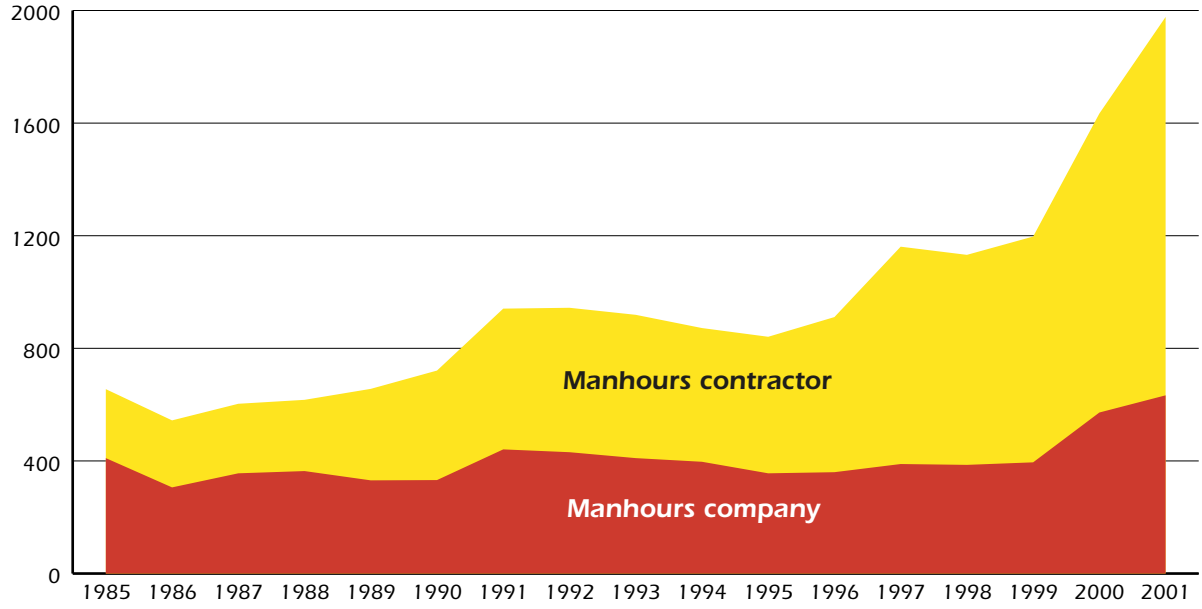
Appendix A
Database dimensions

Hours worked
millions

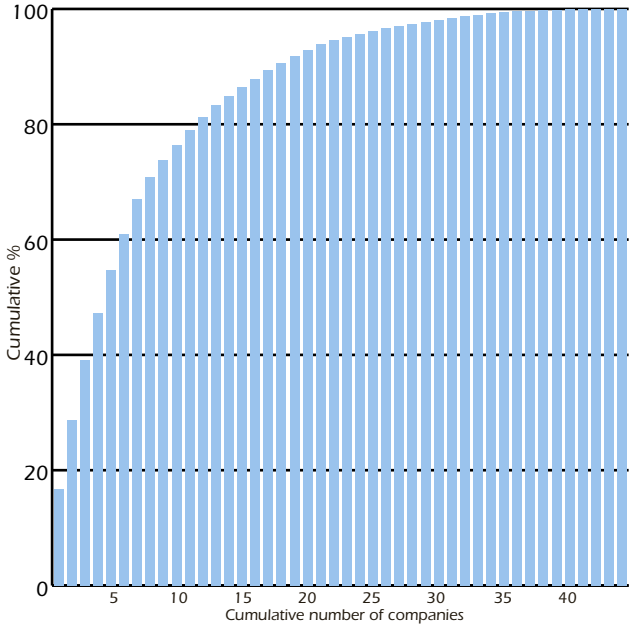


- The database for the year 2001 covers 1,976,646,000 hours worked in the exploration and production sector of the oil and gas industry. The database is 21% larger than it was in 2000.
- 44% of the extra hours reported are associated with increased activity in the Asia/Australasia region.
- 52% of the hours reported were associated with onshore contractor activities, 5% with offshore company activities.
- Seventy three countries are represented in the database, 2 more than in 2000. Countries are listed in appendix H.
- 41 companies contributed data. All but 4 contributed contractor statistics, though not in every case for each country of operation.
- Of the 41 companies, 36 had contributed data in 2000. Since these 36 accounted for 85% of the database in 2001, comparison of the year 2001 results with those of 2000 is legitimate and statistically meaningful. 33 of the companies submitting data had also provided data in 1999.
- 10 of the companies contributed 76% of the hours. 5 companies between them covered 56% of the hours, and the largest contributor accounted for nearly 17%.

Hours reported (000s)

	Onshore	Offshore
Company	530716 (27%)	102323 (5%)
Contractor	1022631 (52%)	320976 (16%)

Hours worked - by company
per cent.



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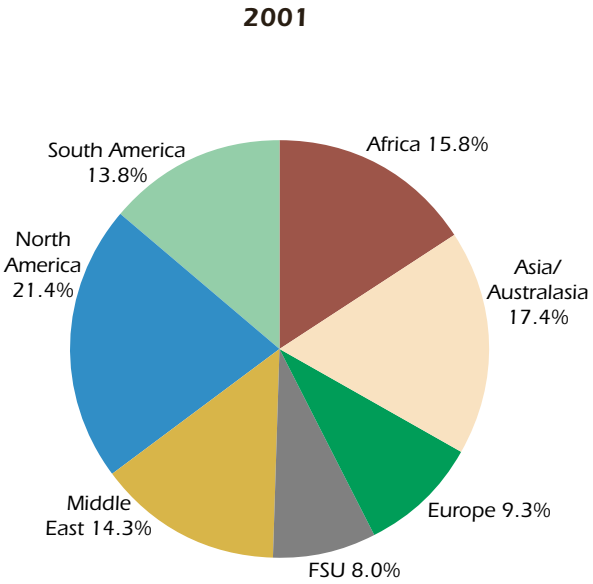
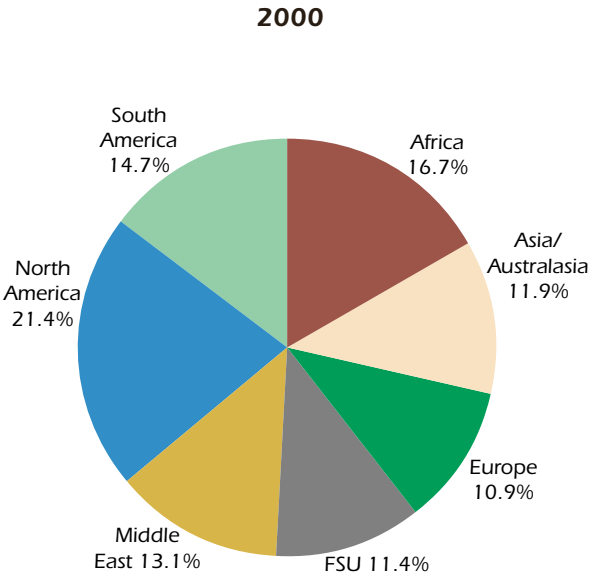
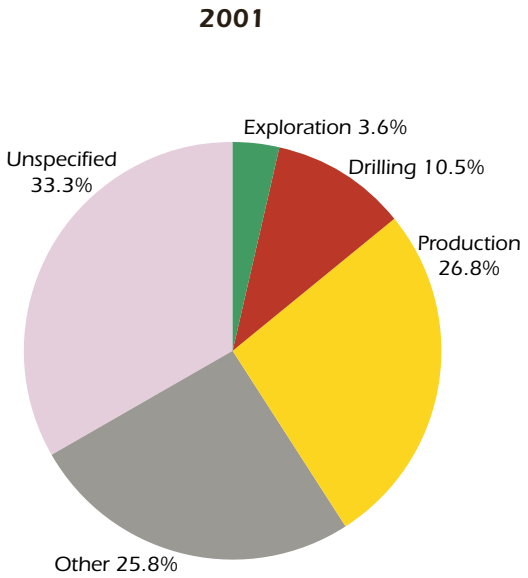
Hours worked - by region

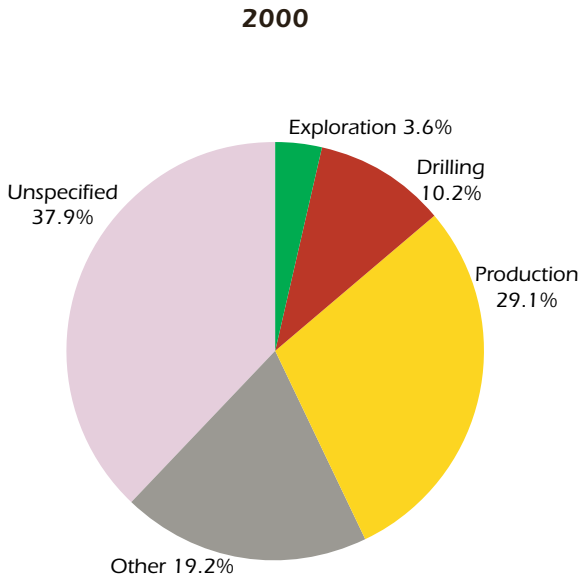




- Data reported covered more hours than reported in 2000 in every region except FSU.
- In 2001 North America contributed a larger share of the data than any other region (21%).
- The representation of the FSU decreased by 14% from 2000, making it the region with the smallest percentage of the 2001 database (8%).

Hours worked - by function





- Once again more hours fell in the 'unspecified' category than any other, although a smaller proportion than in 2000. 'Exploration', 'drilling' and 'production' hours have increased but the percentage of the total is similar to last year. The hours reported in the 'other' category increased by more than a third.

A summary of the key elements of the database is shown in the table at the end of this section.

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Proportion of database used in analysis

For calculations of FAR, FIR and LTIF:

- All hours in the database were used.

For calculations of TRIR:

- Submissions without information on medical treatment cases were filtered out, leaving a database of 1581 million hours, 80% of the total database.
- In 2000, the TRIR database was 1164 million hours, 71% of the total database.
- In FSU 99% of the database was used but only 49% in the Middle East.

For calculations of lost workday severity:

- Submissions without information on days off work were filtered out, leaving a database of 1365 million hours, 69% of the total database.
- In 2000, this database was 1122 million hours, also 69% of the total database.
- Only about half of the returns in Europe and North America have severity information, whereas 94% of the FSU database was useable.

For calculations of RWDC + LTI frequency:

- Submissions without information on restricted workdays were filtered out, leaving a database of 926 million hours, 46% of the total database.
- In 2000, this database was 764 million hours, 47% of the total database.
- Just 12% of the South American database contains RWDC information. Asia/Australasia provided 71%.

For calculations of restricted workday severity:

- Submissions without information on days assigned to restricted activities were filtered out, leaving a database of 660 million hours, 33 % of the total database.
- In 2000 this database was 531 million hours, also 33% of the total database.

More detailed information is shown in the table below.

Per cent. of useable data — regions

	TRIR analyses	Lost workday case severity analyses	RWDC+LTI frequency analyses
Africa	90%	70%	69%
Asia/Australia	93%	76%	71%
Europe	88%	51%	54%
FSU	99%	94%	24%
Middle East	49%	84%	43%
North America	61%	46%	41%
South America	97%	78%	12%

Per cent. of useable data — functions

	TRIR analyses	Lost workday case severity analyses	RWDC+LTI frequency analyses
Exploration	90%	61%	65%
Drilling	76%	61%	40%
Production	79%	67%	59%
Other	82%	64%	46%

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Summary of data

Region	Type	Hours worked (000's)	No. fatalities	No. LWDCs	No. RWDCs	No. MTCs	FAR	LTIF	TRIR
Africa	Company onshore	54265	1	81	6	89	1.84	1.51	3.51
	Company offshore	16391	0	9	1	7	0.00	0.55	0.96
	Contractor onshore	191303	18	172	49	338	9.41	0.99	2.99
	Contractor offshore	51142	4	113	18	107	7.82	2.29	4.57
	Sub Total	313101	23	375	74	541	7.35	1.27	3.19
Asia/	Company onshore	53643	0	16	4	34	0.00	0.30	1.05
Australasia	Company offshore	18171	0	10	14	19	0.00	0.55	2.49
	Contractor onshore	187744	10	84	79	255	5.33	0.50	2.35
	Contractor offshore	83956	3	95	47	201	3.57	1.17	4.60
	Sub Total	343514	13	205	144	509	3.78	0.63	2.67
Europe	Company onshore	55643	2	50	1	18	3.59	0.93	0.98
	Company offshore	19144	0	44	5	79	0.00	2.30	6.93
	Contractor onshore	27776	0	57	8	60	0.00	2.05	4.22
	Contractor offshore	80454	4	294	47	673	4.97	3.70	13.33
	Sub Total	183017	6	445	61	830	3.28	2.46	7.76
FSU	Company onshore	45317	0	22	0	28	0.00	0.49	1.11
	Company offshore	1417	0	0	0	2	0.00	0.00	1.41
	Contractor onshore	108345	7	97	2	154	6.46	0.96	2.38
	Contractor offshore	3278	2	3	2	11	61.01	1.53	5.49
	Sub Total	158357	9	122	4	195	5.68	0.83	2.07
Middle East	Company onshore	85236	4	85	28	33	4.69	1.04	2.21
	Company offshore	7832	0	3	0	13	0.00	0.38	2.88
	Contractor onshore	162481	13	401	73	116	8.00	2.55	3.37
	Contractor offshore	27588	0	24	3	78	0.00	0.87	4.66
	Sub Total	283137	17	513	104	240	6.00	1.87	3.30
North	Company onshore	173716	7	303	83	346	4.03	1.78	7.52
America	Company offshore	37966	0	57	6	38	0.00	1.50	3.89
	Contractor onshore	143267	10	232	129	919	6.98	1.69	10.98
	Contractor offshore	68149	6	114	37	276	8.8	1.76	8.85
	Sub Total	423098	23	706	255	1579	5.44	1.72	9.10
South	Company onshore	62896	1	152	1	89	1.59	2.43	4.04
America	Company offshore	1402	0	0	0	1	0.00	0.00	0.72
	Contractor onshore	201715	9	511	47	736	4.46	2.58	6.56
	Contractor offshore	6409	0	9	5	14	0.00	1.40	4.47
	Sub Total	272422	10	672	53	840	3.67	2.50	5.91
Total	**Company onshore**	**530716**	15	709	123	637	2.83	1.36	3.49
	Company offshore	**102323**	0	123	26	159	0.00	1.20	3.57
	Contractor onshore	**1022631**	67	1554	387	2578	6.55	1.59	4.69
	Contractor offshore	**320976**	**19**	**652**	**159**	**1360**	**5.92**	**2.09**	**7.76**
	Grand Total	**1976646**	**101**	**3038**	**695**	**4734**	**5.11**	**1.59**	**4.86**

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Appendix B
Data tables

1 Management summary

Fatal accident rate - company & contractor 5-year trend

Year	Company	Contractor
1997	3.34	10.88
1998	4.67	16.63
1999	4.81	8.10
2000	4.72	8.66
2001	2.37	6.40

Lost time injury frequency - company & contractor 5-year trend

Year	Company	Contractor
1997	1.97	3.02
1998	1.85	2.72
1999	1.63	2.09
2000	1.50	2.09
2001	1.34	1.71

2001 Fatalities by category

Category	Number	%
Air transport	2	2.0
Caught between	9	8.9
Drowning	6	5.9
Electrocution	8	7.9
Explosion/burns	5	5.0
Falls	11	10.9
Struck by	24	23.8
Vehicle incidents	28	27.7
Other	8	7.9

2 Overall results

Fatal accident rate - company & contractor

Year	Overall	Company	Contractor
1991	9.6	4.1	14.4
1992	9.9	2.6	16.0
1993	10.4	5.4	14.5
1994	6.7	5.0	8.0
1995	9.2	8.2	9.9
1996	8.12	3.05	11.43
1997	8.35	3.34	10.88
1998	12.55	4.67	16.63
1999	7.02	4.81	8.10
2000	7.28	4.72	8.66
2001	5.11	2.37	6.40
Hours 2001	1976646	633039	1343607

Fatal accident rate - onshore & offshore

Year	Overall	Onshore	Offshore
1991	9.6	8.3	13.5
1992	9.9	8.2	15.0
1993	10.4	11.2	8.1
1994	6.7	6.9	6.1
1995	9.2	6.8	16.0
1996	8.12	8.02	8.44
1997	8.35	8.11	9.23
1998	12.55	14.46	6.58
1999	7.02	6.21	9.45
2000	7.28	8.03	4.67
2001	5.11	5.28	4.49
Hours 2001	1976646	1553347	423299

Fatal incident rate - company & contractor

Year	Overall	Company	Contractor
1991	7.5		
1992	7.5		
1993	8.1		
1994	6.1	4.5	7.8
1995	5.9	3.4	7.8
1996	6.4	2.8	8.9
1997	6.54	2.57	8.55
1998	7.43 (6.10)	2.85 (2.85)	7.78 (7.78)
1999	5.93 (4.84)	2.53 (2.53)	5.98 (5.98)
2000	6.73 (5.88)	5.77 (4.37)	7.25 (6.67)
2001	5.62 (4.70)	3.95 (1.90)	6.40 (6.03)

figures in parenthesis do not include 3rd party incidents

Fatal incident rate - onshore & offshore

Year	Overall	Onshore	Offshore
1991	7.5		
1992	7.5		
1993	8.1		
1994	6.1	6.1	6.5
1995	5.9	5.1	7.3
1996	6.4	6.7	5.6
1997	6.54	6.80	5.62
1998	7.43 (6.10)	7.81 (6.06)	6.22 (6.22)
1999	5.93 (4.84)	5.55 (4.11)	7.09 (7.09)
2000	6.73 (5.88)	7.24 (6.22)	4.94 (4.70)
2001	5.62 (4.70)	5.92 (4.83)	4.49 (4.25)

figures in parenthesis do not include 3rd party incidents

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Fatalities by category - 2001 & 1996-00

Category	2001	1996-2000
Air transport	2	113
Caught between	9	33
Drowning	6	39
Electrocution	8	15
Explosion/burns	5	84
Falls	11	49
Struck by	24	86
Vehicle incidents	28	132
Other	8	36
Unknown	0	9

Fatalities by age group 1999-2001

Age group	Number
<21	3
21-25	18
26-30	21
31-35	33
36-40	37
41-45	27
46-50	24
51-55	7
>55	7

Lost time injury frequency - company & contractor

Year	Overall	Company	Contractor
1991	4.6	2.8	6.1
1992	4.3	3.3	5.2
1993	3.9	3.0	4.7
1994	3.4	2.5	4.1
1995	3.3	2.6	3.9
1996	2.68	2.00	3.13
1997	2.67	1.97	3.02
1998	2.42	1.85	2.72
1999	1.94	1.63	2.09
2000	1.88	1.50	2.09
2001	1.59	1.34	1.71

Lost time injury frequency - onshore & offshore

Year	Overall	Onshore	Offshore
1991	4.6	3.7	7.3
1992	4.3	3.7	6.2
1993	3.9	3.5	5.2
1994	3.4	3.3	3.6
1995	3.3	3.1	4.0
1996	2.68	2.34	3.80
1997	2.67	2.18	4.46
1998	2.42	2.23	3.03
1999	1.94	1.68	2.72
2000	1.88	1.77	2.29
2001	1.59	1.51	1.88

Lost workday case severity

Year	Company	Contractor	Overall	Onshore	Offshore
1995	18.8	20.8	20.1	17.5	26.2
1996	19.2	21.4	20.7	18.4	25.9
1997	19.1	23.5	22.2	23.6	19.3
1998	17.70	21.40	20.30	20.02	20.85
1999	27.52	28.90	28.46	26.40	32.94
2000	37.31	23.35	27.89	27.98	27.54
2001	36.16	20.84	24.65	23.94	27.43
Hours 2001	460987	903790	1364777	1131157	233620

Total recordable incident rate

Year	Company	Contractor	Overall	Onshore	Offshore
1995	6.6	10.8	9.1	7.5	13.8
1996	3.97	6.82	5.78	4.56	9.90
1997	4.37	7.97	6.67	5.25	11.86
1998	3.52	7.20	5.97	4.90	9.83
1999	3.51	7.18	5.98	5.08	8.66
2000	3.87	6.49	5.70	4.69	8.84
2001	3.51	5.38	4.86	4.34	6.85
Hours 2001	435487	1145119	1580606	1252461	328145

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3 Results by region

Lost time injury frequency

Region	2001	2000	Hours 2001
Africa	1.27	1.42	313101
Asia/Australia	0.64	0.82	343514
Europe	2.46	2.65	183017
FSU	0.83	0.91	158357
Middle East	1.87	2.10	283137
North America	1.72	1.86	423098
South America	2.50	3.30	272422
All regions	**1.59**	**1.88**	**1976646**

Fatal accident rate & lost time injury frequency - 5-year rolling averages

Year	Africa	Asia/ Australasia	Europe	FSU	Middle East	North America	South America	All regions
	Fatal accident rate							
1991	22.1	7.2	5.3		10.8	6.5	23.1	11.0
1992	19.3	6.3	6.3		13.5	5.6	21.6	10.9
1993	18.5	6.1	6.2		14.0	5.4	22.9	11.1
1994	13.5	5.6	5.7		14.0	5.1	20.2	9.8
1995	13.9	6.4	4.2		13.6	5.2	16.4	9.2
1996	11.0	6.8	4.2		13.5	6.2	14.3	8.9
1997	10.9	6.7	4.3		10.2	6.9	13.4	8.5
1998	9.6	7.0	4.0		10.2	6.7	16.1	9.1
1999	10.0	7.4	3.9		9.4	5.9	16.2	9.0
2000	10.4	6.2	4.1		9.0	5.9	14.9	8.6
2001	10.0	4.6	5.3	5.0	8.7	4.4	13.6	8.1
	Lost time injury frequency							
1991	2.7	2.7	8.9		2.7	5.4	5.8	5.2
1992	2.6	2.3	8.2		2.6	5.2	6.0	4.9
1993	2.4	1.9	7.1		2.4	4.9	6.9	4.6
1994	2.2	1.6	6.2		2.2	4.7	6.6	4.2
1995	2.2	1.5	5.4		1.9	4.4	6.8	3.9
1996	2.0	1.4	4.7		1.7	3.9	6.3	3.5
1997	1.9	1.2	4.2		1.5	3.4	5.8	3.2
1998	2.0	1.2	3.8		1.4	2.9	4.9	2.9
1999	1.9	1.1	3.6		1.3	2.5	4.4	2.6
2000	1.8	1.0	3.3		1.5	2.2	3.9	2.3
2001	1.7	1.3	2.6	1.3	1.5	2.0	3.5	2.1

Lost workday case severity

Year	Africa	Asia/ Australasia	Europe	FSU	Middle East	North America	South America	All regions
1996	16.4	14.9	32.6†	N/A	19.6	15.9	16.2	20.7
1997	14.3	19.1	23.8	10.7	21.2	33.4	23.0	22.2
1998	17.4	22.1	23.7	8.2	16.6	22.2	19.4	20.3
1999	16.8	18.2	46.7	35.9	12.7	20.9	35.9	28.5
2000	18.45	25.58	26.43	33.16	17.32	49.52	26.38	27.89
Ave 1996-2000	16.67	19.61	29.41	26.55	17.27	29.22	23.06	23.70
2001	18.35	17.97	25.41	32.43	15.01	49.17	22.92	24.65
Hours 2001	218054	259696	92813	149307	237416	193846	213645	1364777

† includes data for FSU

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Total recordable incident rate

Year	Africa	Asia/ Australasia	Europe	FSU	Middle East	North America	South America	All regions
1996	2.02	3.31	8.92†	N.A	2.50	11.55	5.60	5.78
1997	3.37	5.10	11.13	5.00	3.46	8.48	8.61	6.67
1998	3.54	4.41	9.29	9.65	1.95	9.01	6.53	5.97
1999	3.73	3.35	9.15	3.03	3.02	9.69	7.29	5.98
2000	2.48	3.11	10.57	2.43	3.61	9.73	6.53	5.70
Ave 1996-2000	4.18	4.99	12.41	7.30	3.85	13.36	8.62	7.89
2001	3.19	2.67	7.76	2.07	3.30	9.10	5.91	4.86
Hours 2001	282086	321145	160259	156245	138544	257451	264876	1580606

† Includes data for FSU

Lost time injury frequency by country

Country	LTIF	Hours
Africa		
Tunisia	8.14	1598
Libya	7.37	3526
Congo	5.65	6015
Gabon	2.38	9235
Angola	1.78	35966
Algeria	1.66	16891
Equatorial Guinea	1.34	5230
Egypt	1.27	49783
Africa average	**1.27**	**313101**
Nigeria	0.68	155495
Cameroon	0.40	14859
Morocco	0.00	144
Asia-Australasia		
India	1.92	5734
Papau New Guinea	1.59	4412
Australia	1.43	16055
China	1.19	11797
Thailand	1.15	13022
Philippines	0.91	9883
Pakistan	0.79	22680
Asia-Australasia average	**0.63**	**343514**
Brunei	0.54	20552
Vietnam	0.53	3804
Indonesia	0.50	183563
Malaysia	0.27	44791
Myanmar	0.25	3923
Europe		
Faroe Islands	5.95	168
Ireland	5.76	695
Denmark	3.32	9634
Norway	2.98	53092
France	2.79	5024
Europe average	**2.46**	**183017**
Italy	2.39	6701
UK	2.24	82151
Germany	1.12	1786
Netherlands	0.99	20207
Albania	0.00	472

Country	LTIF	Hours
FSU		
Turkmenistan	6.58	152
Russia	0.91	80965
FSU average	**0.83**	**158357**
Azerbaijan	0.76	7919
Kazakhstan	0.72	69321
Middle East		
Iran	6.56	41286
Middle East average	**1.87**	**283137**
Kuwait	1.70	27605
Saudi Arabia	1.48	30435
Qatar	1.24	60677
UAE	0.79	46890
Oman	0.71	59358
Syria	0.57	15860
North America		
USA	2.11	202653
North American average	**1.72**	**423098**
Canada	1.54	57648
Mexico	1.31	162797
South America		
Argentina	4.13	54494
South America average	**2.50**	**272422**
Colombia	2.47	31595
Venezuela	2.17	155855
Bolivia	1.97	10150
Ecuador	1.29	10838
Brazil	0.88	2280
Trinidad	0.56	7152

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4 Results by function

Lost time injury frequency

Year	Exploration	Drilling	Production	Other	Overall
1991	2.4	7.7	3.8	N.A	4.6
1992	1.9	5.7	3.9	N.A	4.3
1993	1.3	6.2	3.7	N.A	3.9
1994	3.5	5.5	2.8	N.A	3.4
1995	2.8	5.5	3.0	N.A	3.3
1996	2.48	4.86	2.29	N.A	2.68
1997	1.86	3.67	2.43	2.54	2.67
1998	2.34	4.29	2.45	1.17	2.42
1999	0.88	2.81	2.34	1.29	1.94
2000	0.97	2.29	1.62	1.75	1.88
2001	0.88	2.35	1.37	1.57	1.59
Hours 2001	70358	207049	529995	510880	1976646

Lost workday case severity

Year	Exploration	Drilling	Production	Other	All functions
1995	21.5	22.0	20.6	N.A	20.1
1996	8.1	26.0	22.7	N.A	20.7
1997	8.2	32.2	23.9	19.3	22.2
1998	15.8	25.8	19.6	20.1	20.3
1999	11.9	37.6	33.4	20.7	28.5
2000	13.1	44.2	19.4	28.8	27.9
Ave 1996-2000	10.7	30.9	23.9	23.8	18.3
2001	17.1	36.3	21.2	20.4	24.7
Hours 2001	42725	126697	357647	327028	1364777

Total recordable incident rate

Year	Exploration	Drilling	Production	Other	All functions
1995	11.50	11.40	7.00	N.A	9.10
1996	6.97	10.41	4.74	N.A	5.78
1997	4.16	7.80	5.67	5.92	6.67
1998	6.40	10.06	6.57	3.19	5.97
1999	4.40	11.99	5.42	4.76	5.98
2000	4.33	10.16	6.36	3.48	5.70
Ave 1996-2000	5.15	9.95	5.29	3.89	6.01
2001	5.76	9.14	4.83	3.76	4.86
Hours 2001	63360	156640	417164	418700	1580606

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Exploration - LTIF for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	0.00	1.91	1.24	0.69	1302	16104
Asia/Australasia	0.00	0.78	0.55	0.92	1608	18043
Europe	0.00	0.47	1.98	2.22	1355	1010
FSU	0.00	0.00	0.00	0.31	211	1015
Middle East	0.00	0.11	1.51	0.44	2665	3304
North America	0.00	0.30	1.01	2.82	4508	3944
South America	0.74	1.68	1.44	4.92	1354	13935
All regions	**0.08**	**0.81**	**1.06**	**1.84**	**13003**	**57335**

Exploration - TRIR for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	0.00	2.87	4.69	2.27	999	15132
Asia/Australasia	0.69	2.15	3.79	4.11	1456	17668
Europe	0.00	0.97	5.51	7.91	787	908
FSU	0.00	0.00	0.00	2.57	189	189
Middle East	0.79	0.90	2.44	2.74	1264	2052
North America	0.47	2.68	4.56	13.68	4301	3944
South America	0.80	6.45	14.68	12.38	1255	13216
All regions	**0.49**	**2.53**	**6.78**	**6.05**	**10251**	**53109**

Drilling - LTIF for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	1.41	4.31	2.18	3.27	2126	22896
Asia/Australasia	0.81	0.28	1.70	1.88	2472	21172
Europe	0.54	0.76	4.52	5.16	1849	29444
FSU	3.32	0.00	3.64	2.99	301	3849
Middle East	3.29	2.83	1.34	1.97	3957	20925
North America	1.41	1.61	1.41	2.53	33289	38382
South America	0.00	3.59	4.17	4.86	1452	24935
All regions	**1.47**	**1.99**	**2.59**	**3.50**	**45446**	**161603**

Drilling - TRIR for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	20.20	6.55	5.43	6.62	1931	18971
Asia/Australasia	2.07	1.86	7.10	6.04	2411	20147
Europe	2.63	2.07	13.14	15.51	1521	25720
FSU	11.81	0.00	8.83	8.31	254	3625
Middle East	0.00	4.36	7.51	5.99	1305	15721
North America	2.93	3.03	11.47	13.62	2732	36545
South America	0.00	5.16	9.02	11.86	1361	24396
All regions	**5.12**	**3.67**	**9.46**	**10.77**	**11515**	**145125**

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Production - LTIF for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	1.83	1.95	1.24	1.79	20769	84775
Asia/Australasia	0.47	0.70	0.67	0.77	23182	47766
Europe	1.78	2.37	3.74	3.86	26973	36943
FSU	0.43	0.87	0.80	2.25	30409	5022
Middle East	1.09	1.43	0.82	1.04	54916	81598
North America	0.56	1.19	1.88	2.47	28687	49053
South America	0.38	4.02	3.09	3.81	7823	32078
All regions	**0.98**	**2.04**	**1.59**	**2.33**	**192759**	**337236**

Production - TRIR for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	4.16	3.48	1.66	2.82	16600	73666
Asia/Australasia	1.82	2.46	3.26	3.71	18712	36536
Europe	4.53	6.19	12.84	15.07	23634	33632
FSU	0.86	1.20	2.53	2.00	30340	4745
Middle East	2.89	2.80	2.64	3.00	14185	49232
North America	4.03	4.81	11.46	11.44	28555	48849
South America	2.15	6.38	7.51	6.59	7454	31024
All regions	**2.93**	**4.57**	**5.79**	**6.74**	**139480**	**277684**

Other - LTIF for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	1.20	0.88	0.95	1.46	34096	96375
Asia/Australasia	0.18	0.30	0.55	1.00	16629	61768
Europe	0.36	0.86	1.67	3.09	27622	30572
FSU	0.74	0.61	0.50	1.80	8103	29902
Middle East	1.55	0.95	4.95	2.66	11634	57527
North America	3.26	1.33	0.95	2.09	57717	40091
South America	0.18	0.52	0.63	1.47	5448	33396
All regions	**1.66**	**0.86**	**1.53**	**1.80**	**161249**	**349631**

Other - TRIR for company & contractor by region

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	1.77	2.02	3.69	2.06	31708	88454
Asia/Australasia	1.10	0.95	1.86	2.17	16410	57126
Europe	0.42	1.19	5.03	9.51	21389	27435
FSU	1.39	1.60	1.32	13.63	7890	29482
Middle East	2.97	3.32	2.76	1.54	8747	20656
North America	13.07	3.33	6.12	11.45	34136	40030
South America	0.92	3.17	2.98	7.71	4348	30889
All regions	**4.57**	**2.11**	**3.41**	**4.57**	**124628**	**294072**

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5 Results by company

Lost time injury frequency

Company code	2001 Company & Contractor LTIF	2001 Company only LTIF	2000 Company & contractor LTIF	1999 Company & contractor LTIF	1998 Company & contractor LTIF	1997 Company & contractor LTIF
A	7.5	7.27	5.56	2.33	3.25	1.54
B	5.33	4.79			9.95	
C	4.68	1.27	4.69	6.89	9.13	13.06
D	4.45	1.93	4.32	4.09	2.53	3.19
E	4.09	1.61	3.83	2.23	26.83	
F	3.94	0.88	4.34	1.85	2.45	5.75
G	3.48	1.99	2.97	4.94	3.08	4.27
H	3.28	0.77	2.67	2.89	3.09	5.48
I	2.78	0.53	3.97	1.68	1.34	2.64
J	2.64	0.56	1.70	3.11	4.08	2.29
K	2.61	2.82	3.09		12.68	5.66
L	2.38	2.05	2.75	3.08	3.15	3.82
M	2.09	0	33.33	1.00		
N	2.03	1.08	2.93	1.96	5.35	3.10
O	1.92	2.36				
P	1.84	3.48	6.74	5.88	2.02	
Q	1.77	1.46	4.60			
R	1.71	0.42	1.12	1.40	2.06	2.49
Overall	**1.59**	**1.34**	**1.88**	**1.94**	**2.42**	**2.67**
S	1.57	1.94	1.86			
T	1.42	0	1.56	1.58	1.49	0
U	1.31	1.25	1.68			
V	1.25	0.82	2.07	2.24	2.26	
W	1.24	1.21	2.37	1.50		
X	1.14	0	0.93	1.05	7.72	7.88
Y	1.05	0.39	2.55	0.48	0.30	3.17
Z	1.03	0.71				
AA	0.88	0.50	1.08			
BB	0.84	0.41				
CC	0.79	0.46	0.83	0.76	0.98	1.09
DD	0.78	0	2.93	0	0	3.46
EE	0.75	0.48	0.77	1.57	2.40	4.62
FF	0.66	0.55	1.43	1.75	1.62	2.46
GG	0.57	0.97	1.75	0.45		
HH	0.56	0	2.68			
II	0.53	0.19	0.42	0.75	1.16	0.24
JJ	0.37	0.29	0.55	0.43	0.67	0.63
KK		13.10		3.20	4.25	
LL		6.04				
MM		2.10				
NN		1.48				

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Most improved companies - company with contractor LTIF

		Year	Company & contractor LTIF
Company with best improvement record since 1997	Company EE	1997	4.62
		1998	2.40
		1999	1.57
		2000	0.77
		2001	0.75
Company with second best improvement record since 1997	Company C	1997	13.06
		1998	9.13
		1999	6.89
		2000	4.69
		2001	4.68
Average for all companies		1997	2.67
		1998	2.42
		1999	1.94
		2000	1.88
		2001	1.59

Lost time injury frequency by function

Exploration		**Drilling**		**Production**		**Other**	
Company code	Company & contractor LTIF	Company code	Company & contractor LTIF	Company code	Company & contractor LTIF	Company code	Company & contractor LTIF
C	9.82	A	10.32	B	12.42	A	8.09
Z	9.62	C	7.38	E	8.01	F	5.06
P	6.94	D	6.86	A	6.33	D	5.04
K	2.71	B	4.62	G	5.42	B	4.79
W	2.51	G	3.89	C	4.00	E	4.47
I	1.46	J	3.63	H	3.83	J	4.42
F	1.42	I	3.34	I	3.56	V	2.90
L	1.36	EE	3.21	K	3.23	K	2.67
Overall	**0.88**	E	3.14	HH	3.08	**Overall**	**1.57**
X	0.56	F	2.97	P	2.79	U	1.42
FF	0.37	K	2.94	F	2.73	BB	1.41
CC	0.30	M	2.70	D	2.66	S	1.24
A	0	S	2.70	X	2.38	Z	1.19
D	0	X	2.56	Z	2.35	G	1.18
E	0	CC	2.35	S	1.77	X	1.12
EE	0	**Overall**	**2.35**	Y	1.43	I	1.11
G	0	T	2.32	EE	1.42	C	1.03
H	0	DD	1.98	T	1.42	T	0.89
HH	0	U	1.51	**Overall**	**1.37**	CC	0.61
JJ	0	FF	1.16	J	1.26	AA	0.59
S	0	Y	1.02	V	1.01	W	0.58
T	0	JJ	0.76	BB	0.87	Y	0.50
V	0	BB	0	FF	0.82	FF	0.38
		HH	0	W	0.76	EE	0.35
		P	0	CC	0.60	JJ	0.26
		V	0	GG	0.57	DD	0
		W	0	AA	0.49	H	0
				JJ	0.40	HH	0
				M	0	P	0

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6 Significant incidents

Significant incidents by category - 2001 & 1996-2000

Category	2001	1996-2000
Air transport	2	16
Caught between	33	49
Drowning potential	1	5
Electrical	6	25
Explosion/burns	21	120
Falls	39	84
Struck by	59	174
Struck-by-eye	8	
Vehicle incidents	19	46
Other	2	73
Other – health	4	
Other – structural	12	
Other – cuts	13	
Other – chemical	9	
Other – sprains	7	
Total	**235**	**592**

Appendix A Database dimensions

Total exposure hours - 1985-2001

	Hours worked ('000s)		
Year	Overall	Company	Contractor
1985	656	410	245
1986	544	306	238
1987	602	356	247
1988	616	364	253
1989	656	331	325
1990	721	332	389
1991	941	441	500
1992	944	431	513
1993	919	410	509
1994	872	397	475
1995	841	356	485
1996	912	360	551
1997	1161	389	772
1998	1131	386	746
1999	1197	395	802
2000	1634	572	1062
2001	1977	633	1344

Exposure hours by region

	2001	2000
Africa	313101	272563
Asia/Australasia	343514	193776
Europe	183017	178719
FSU	158357	186016
Middle East	283137	213900
North America	423098	348979
South America	272422	239902
All regions	**1976646**	**1633855**

Exposure hours by function

	2001	2000
Exploration	70358	59091
Drilling	207049	166824
Production	529995	475189
Other	510880	313416
Unspecified	658364	619335
All functions	**1976646**	**1633855**

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Appendix E Restricted workday analyses

Combined RWDC & LTI frequency - overall

	2001	2000	1999	1998	1997	Hours 2001
Company	2.03	1.54	2.07	1.91	1.47	263928
Contractor	2.00	2.73	2.89	3.47	2.92	661648
Overall	2.01	2.37	2.63	2.92	2.46	925576
Onshore	1.80	1.87	2.20	2.53	2.10	727468
Offshore	2.76	3.77	3.97	4.19	3.84	198108

Severity of restricted workday cases

	2001	1997-2000	Hours 2001
Company	13.38	16.24	169914
Contractor	8.94	9.79	490175
Overall	9.60	11.40	660089
Onshore	8.56	10.39	539338
Offshore	12.63	13.29	120751

Combined RWDC & LTI frequency by region

Year	Africa	Asia/ Australasia	Europe	FSU	Middle East	North America	South America	All regions
1995	1.4	2.2	5.5	N/A	1.9	6.5	11.7	3.7
1996	0.91	1.81	4.39	N/A	1.52	6.37	5.05	2.90
1997	2.12	1.32	4.18	2.47	1.95	3.66	4.30	2.46
1998	2.44	3.83	1.89	3.47	2.03	4.12	4.22	2.92
1999	1.16	1.56	4.59	0.94	2.67	3.86	4.55	2.63
2000	0.91	1.50	4.81	0.99	1.94	3.99	2.90	2.37
Ave 1996-2000	1.72	1.59	4.16	2.37	2.09	4.40	4.37	2.71
2001	0.95	1.17	2.95	0.89	1.92	3.77	4.65	2.01
Hours 2001	216850	243916	98271	38084.00	122725	171954	33776	925576

Combined RWDC & LTI frequency by function

Year	Exploration	Drilling	Production	Other	Overall
1995	3.3	6.4	3.1	N.A	3.7
1996	1.75	6.36	2.34	N.A	2.90
1997	1.73	3.65	1.92	2.66	2.46
1998	2.93	6.54	3.07	1.70	2.92
1999	1.22	4.56	2.55	2.53	2.63
2000	1.59	3.96	2.47	1.38	2.37
Ave 1996-2000	1.95	4.93	2.39	2.00	2.63
2001	1.11	4.28	1.96	1.95	2.01
Hours 2001	45828	83631	312720	237394	925576

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Combined RWDC & LTI frequency - exploration

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	0.00	5.24	0.44	1.00	753	13563
Asia/Australasia	0.00	1.42	1.83	1.54	1121	13635
Europe	0.00	0.83	3.63	4.75	783	551
FSU	0.00	0.00	0.00	2.10	181	144
Middle East	0.00	0.91	1.02	1.49	1566	1952
North America	0.00	0.59	2.63	4.22	4301	3426
South America	0.00	0.00	1.94	9.16	242	3610
All regions	**0.00**	**1.30**	**1.38**	**2.31**	**8947**	**36881**

Combined RWDC & LTI frequency - drilling

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	1.02	11.25	2.79	4.23	977	12559
Asia/Australasia	1.93	2.18	3.03	3.32	1037	10544
Europe	2.02	15.19	4.87	8.00	991	17667
FSU	0.00	3.11	7.46	2.56	61	536
Middle East	6.32	13.33	5.61	4.51	3006	10509
North America	1.46	8.44	4.83	5.94	2054	20911
South America	0.00	0.80	5.36	5.27	169	2610
All regions	**3.25**	**9.67**	**4.39**	**5.34**	**8295**	**75336**

Combined RWDC & LTI frequency - production

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	1.65	1.37	0.39	0.97	10925	69055
Asia/Australasia	1.20	0.98	1.29	1.16	13325	24878
Europe	1.96	1.52	5.14	5.53	17382	22390
FSU	0.00	2.60	0.00	0.31	431	517
Middle East	1.62	1.34	1.33	1.62	33916	45177
North America	1.62	1.78	4.21	5.10	22772	38699
South America	0.96	3.79	5.62	5.68	4171	9082
All regions	**1.59**	**1.43**	**2.14**	**2.48**	**102922**	**209798**

Combined RWDC & LTI frequency - other

Region	Company 2001	Company 1997-2000	Contractor 2001	Contractor 1997-2000	Company manhours 2001	Contractor manhours 2001
Africa	0.30	0.47	1.14	1.62	16650	66554
Asia/Australasia	0.77	0.61	1.27	1.38	10345	36896
Europe	0.18	0.59	2.10	5.06	16494	18581
FSU	0.83	2.91	0.00	25.52	1201	1041
Middle East	1.06	0.52	2.08	0.94	2817	11066
North America	8.00	1.11	1.72	5.56	25633	21454
South America	0.00	2.21	1.89	3.60	710	7952
All regions	**3.05**	**0.72**	**1.45**	**2.43**	**73850**	**163544**

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Appendix C
Fatal incident reports by region

Africa

Onshore

Algeria, Other, 25/01/2001 | **Number of deaths: 1** | **Type of incident: Drowning**
Age: 23 | Employer: Contractor | Occupation: Manual Labourer

The employee was assigned the task of filling an underground tank (sump) with a water hose. The tank was one of four in an oily water recovery system. The employee's supervisor left him with the task whilst he checked another job. After approx. one hour the supervisor returned but could not find the employee. The employee was found under oily water in one of the other tanks. There were no witnesses. It is assumed the employee climbed through a hatch into the other tank and was overcome by gas vapours.

Algeria, Other, 05/11/2001 | **Number of deaths: 1** | **Type of incident: Electrical**
Age: 26 | Employer: Contractor | Occupation: Manual Labourer

During a facility turn-around the employee was assigned, with a crew, to clean ceramic insulators on a 60KV transformer and associated pylons. Cleaning was to take place on de-energised portions only. The employee completed the initial assignment and evidently decided to clean additional insulators. Whilst unsupervised, the employee climbed one of the pylons with insulators that had not been de-energised. When the employee made contact with the insulator he was electrocuted and fell 20ft. to the ground.

Algeria, Other, 09/07/2001 | **Number of deaths: 1** | **Type of incident: Vehicle incident**
Age: 44 | Employer: Contractor | Occupation: Other

Road traffic accident approx 30km from Ohanet site, involving a catering vehicle returning from a trip to collect provisions. The driver lost control and vehicle overturned resulting in fatal injuries to driver, lacerations, bruising to third party occupant and minor bruising to front seat passenger.

Cameroon, 19/12/2001 | **Number of deaths: 2** | **Type of incident: Struck by**
Age: Unknown | Employer: Third party

Two children were crushed by a dozer clearing an access road to a pipeline right-of-way.

Cameroon, Drilling, 15/12/2001 | **Number of deaths: 1** | **Type of incident: Struck by**
Age: Unknown | Employer: Contractor | Occupation: Unknown

During double jointing operations, a welder was struck in the head by a joint of pipe that had been released to roll from one welding station to the next down the pipe rack.

Equatorial Guinea, Production, 14/02/2001 | **Number of deaths: 2** | **Type of incident: Vehicle incident**
Age: 53 | Employer: Company | Occupation: Transportation Operator
Age: Unknown | Employer: Third party

A company minivan containing a driver and one passenger was being driven towards the town when a construction dump truck entered from a side road, impacting the driver's side door of the van.

Gabon, 07/07/2001 | **Number of deaths: 1** | **Type of incident: Vehicle incident**
Age: Unknown | Employer: Contractor | Occupation: Crew members

A truck carrying a mud tank rolled over into a ditch. One of the two crewmen died.

Libya, 06/01/2001 | **Number of deaths: 1** | **Type of incident: Vehicle incident**
Age: Unknown | Employer: Contractor | Occupation: Unknown

An employee lost control of his car and ran off the road. He was killed by the car overturning.

Nigeria, 06/05/2001 | **Number of deaths: 1** | **Type of incident: Caught between**
Age: Unknown | Employer: Contractor | Occupation: Crew members

During the mooring operation, a crewmember was caught between the ship's forward capstan and one of the headlines. He died on the way to the hospital

Nigeria, 05/05/2001 | **Number of deaths: 6** | **Type of incident: Drowning**
Age: Unknown | Employer: Third party

Six children were found drowned in the swimming pool of a company estate.

Nigeria, 23/05/2001 | **Number of deaths: 1** | **Type of incident: Other**
Age: Unknown | Employer: Third party

A policeman and a contract driver were returning from late night dropping off staff when they were attacked by unknown gun men. The policeman died in hospital.

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Nigeria, 18/07/2001 **Number of deaths: 1** **Type of incident: Other**

Age: Unknown Employer: Third party

A passenger in a company vehicle was struck and killed by a bullet fired by a passer-by.

Nigeria, 24/06/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: Unknown Employer: Third party

A company vehicle hit and killed a pedestrian while trying to avoid a head on collision with another vehicle.

Nigeria, 20/11/2001 **Number of deaths: 2** **Type of incident: Vehicle incident**

Age: Unknown Employer: Third party

A company staff bus owned and operated by a contractor struck and killed a motorcyclist and his passenger.

Nigeria, 19/12/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: Unknown Employer: Contractor Occupation: Unknown

Collision between a bus and a truck. The bus driver died the following day.

Nigeria, Drilling, 02/11/2001 **Number of deaths: 1** **Type of incident: Struck by**

Age: 41 Employer: Contractor Occupation: Drilling/Well Servicing Operator

A derrickman died during a rigmove lifting operation when the trip tank/degasser equipment fell on top of him from a height of ca. 3 ft.

Nigeria, Production, 28/05/2001 **Number of deaths: 2** **Type of incident: Vehicle incident**

Age: 31 Employer: Contractor Occupation: Other

Age: Unknown Employer: Third Party

Two persons were killed and nine were injured in a car/motorcycle accident involving 1 company vehicle and 2 third party vehicles.

Nigeria, Unspecified, 01/01/2001 **Number of deaths: 1** **Type of incident: Fall**

Age: Unknown Employer: Contractor Occupation: Unknown

The accident occurred at the Solid Waste Control Plant situated beside a drilling rig. The victim was cleaning one of the two HI-G dryers. After completing one, he tried to cross over to the other HI-G unit but slipped and his left leg entered the screw conveyor that was in operation. Before the machine could be turned off, the victim's body (leg up to the waist) was already trapped in an open screw conveyor. When the victim was removed from the unit, he was given medical attention but he later died.

Nigeria, Unspecified, 01/01/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: Unknown Employer: Contractor Occupation: Unknown

The steering wheel of the vehicle the victim was driving became locked in motion and the vehicle skidded off the road and somersaulted. The victim was rushed to the General Hospital, and later transferred to the clinic for further attention. The victim died later the same day.

Sudan, Other, 05/06/2001 **Number of deaths: 1** **Type of incident: Struck by**

Age: 40 Employer: Contractor Occupation: Heavy Equipment Operator

The deceased, a Compactor operator, was crushed to death when the compactor he was sleeping under after completing night duty was driven away by the next shift crew foreman.

Sudan, Other, 01/07/2001 **Number of deaths: 1** **Type of incident: Struck by**

Age: 42 Employer: Contractor Occupation: Heavy Equipment Operator

The deceased, a packer operator, died when the packer he was loading onto a truck slid on a wet clay ramp and landed on him, crushing his neck.

Sudan, Other, 10/07/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: 38 Employer: Contractor Occupation: Transportation Operator

While travelling at excessive speed a pick up truck left the road and rolled. Both passengers were ejected from the vehicle. The driver was crushed by the vehicle resulting in his death. This accident happened during the day on a dry straight road.

Sudan, Other, 13/07/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: 40 Employer: Contractor Occupation: Process/Equipment Operator

The deceased, a passenger of the vehicle, died when the vehicle rolled over during the day on a dry, straight road.

Sudan, Production, 21/01/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: 38 Employer: Contractor Occupation: Foreman, Supervisor

The vehicle the victim was driving rolled over.

Tunisia, 27/04/2001 **Number of deaths: 2** **Type of incident: Vehicle incident**

Age: Unknown Employer: Third party

2 members of the public in a private vehicle collided with a condensate tanker carrying 250 bbls of oil.

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Tunisia, Other, 01/01/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: Unknown Employer: Contractor Occupation: Unknown
While checking the unloading of a lorry the victim was struck by a lorry's unbolted board. His death was caused by concussion.

Offshore

Egypt, Drilling, 18/06/2001 **Number of deaths: 1** **Type of incident: Fall**
Age: Unknown Employer: Contractor Occupation: Engineer, Scientist, Technician
During crane maintenance, an air hoist was temporarily mounted by 4 welds. When the welds failed, the hoist pulled forward & the airhose forced the barge engineer to fall 18 ft to the main deck, striking his head. No work permits, air hoist not properly installed, management sytem not utilised.

Equatorial Guinea, Drilling, 30/03/2001 **Number of deaths: 1** **Type of incident: Fall**
Age: Unknown Employer: Contractor Occupation: Maintenance, Craftsman
A contractor was fatally injured when he fell while erecting scaffolding. The injured party had fall protection on and was fatally injured as he hit the support frame on his short fall.

Nigeria, 29/07/2001 **Number of deaths: 1** **Type of incident: Drowning**
Age: Unknown Employer: Third party
A seismic party dinghy collided with a third party canoe causing the occupants of the canoe, mother and two children, to fall overboard. The mother and son were rescued but the girl drowned.

Nigeria, Other, 10/07/2001 **Number of deaths: 1** **Type of incident: Drowning**
Age: Unknown Employer: Contractor Occupation: Other
The victim slipped off a boat and fell into the river.

Nigeria, Other, 16/05/2001 **Number of deaths: 1** **Type of incident: Other**
Age: Unknown Employer: Contractor Occupation: Manual Labourer
The victim was attacked by an army of bees while clearing brush on a creek bank.

Asia/Australasia

Onshore

Indonesia, 02/09/2001 **Number of deaths: 1** **Type of incident: Fall**
Age: Unknown Employer: Contractor Occupation: Unknown
A contractor fell from the back of a truck. The injuries at the back of his head were too severe and he died at the hospital.

Indonesia, Drilling, 10/03/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 23 Employer: Contractor Occupation: Drilling/Well Servicing Operator
Hit by 36 inch pipe wrench when fishing out standing valve. The wrench reversed from too much torque and hit the back of victims head.

Indonesia, Other, 29/04/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: 32 Employer: Contractor Occupation: Other
The victim was thrown through the windshield and run over by his own truck.

Indonesia, Other, 01/06/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: 28 Employer: Contractor Occupation: Other
The vehicle struck a 14 inch pipe support.

Indonesia, Other, 11/12/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: 30 Employer: Contractor Occupation: Other
Collision with a logging truck.

Indonesia, Production, 20/12/2001 **Number of deaths: 1** **Type of incident: Other**
Age: 40 Employer: Contractor Occupation: Manual Labourer
A convoy of vehicles transporting personnel was fired upon by unidentified persons, resulting in the death of a contract employee.

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Myanmar, Unspecified, 02/06/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: 26 Employer: Third party

A local motorcyclist travelling on the wrong side of the road around a blind bend hit a company vehicle on a pipeline inspection road.

Pakistan, Exploration, 01/01/2001 **Number of deaths: 1** **Type of incident: Other**

Age: Unknown Employer: Contractor Occupation: Other

During a seismic survey in a remote, arid, mountainous location in Pakistan, a locally employed (sub-contracted) Policeman working with the seismic survey team left the party to return to the waiting transport. He was found by local villagers in a semi-conscious state hours later and died sometime after this. Heat stroke and dehydration are the probable causes of death.

Pakistan, Exploration, 13/05/2001 **Number of deaths: 1** **Type of incident: Other**

Age: 57 Employer: Contractor Occupation: Transportation Operator

A general driver for a seismic crew in a remote exploration area suffered a fatal heart attack. Adequate medical attention was not available in time.

Pakistan, Exploration, 17/05/2001 **Number of deaths: 1** **Type of incident: Other**

Age: 47 Employer: Contractor Occupation: Transportation Operator

Seismic crew returning to base camp were attacked by unknown parties. The leading vehicle was attacked by rocket and rifle fire causing multiple fatal injuries to the driver.

Papua New Guinea, Exploration, 09/10/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: Unknown Employer: Contractor Occupation: Other

Truck Rollover.

Offshore

India, Production, 26/03/2001 **Number of deaths: 1** **Type of incident: Caught between**

Age: 30 Employer: Contractor Occupation: Transportation Operator

The fatality occurred on a production support vessel moored alongside a platform. While casting off the victim, a seaman, was crushed between the mooring rope under tension and the vessel crash rail.

Indonesia, Drilling, 11/08/2001 **Number of deaths: 1** **Type of incident: Struck by**

Age: 43 Employer: Contractor Occupation: Other

During a rig dismantling operation the victim (the assistant toolpusher) got snared by tag line when the load was lifted. He was swung and hit against a beam.

Malaysia, Drilling, 19/04/2001 **Number of deaths: 1** **Type of incident: Caught between**

Age: 41 Employer: Contractor Occupation: Drilling/Well Servicing Operator

A stabbing board on the rig folded upwards trapping the victim.

Europe

Onshore

Italy, Unspecified, 08/10/2001 **Number of deaths: 2** **Type of incident: Air transport**

Age: Unknown Employer: Company Occupation: Unknown

Air crash at Linate airport.

Netherlands, 26/10/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: Unknown Employer: Third party

A railway employee was killed in a collision between a contractor tank trailer loaded with water condensate and a goods train of the national railway company. The truck driver was also injured.

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Offshore

Norway, Production, 31/05/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 32 Employer: Contractor Occupation: Other
An anchor handling vessel was winding up an anchor for a drilling rig. As there was no bobbin winder for the main wire, a guide line with shackle was fit onto it. They were about to fit another tugger wire with hook, since one tugger wire did not give enough pulling force. The first tugger wire was still under tension. When the victim was about to fit the second wire, the shackle on the main wire slid down and hit the victim in the face with force.

UK, Drilling, 24/02/2001 **Number of deaths: 1** **Type of incident: Fall**
Age: Unknown Employer: Contractor Occupation: Manual Labourer
A contractor was working with two other personnel uncovering a hatch on the platform weather deck prior to drilling operations when he fell a distance of 50 feet through the hatch into the well bay of the platform.

UK, Drilling, 08/11/2001 **Number of deaths: 1** **Type of incident: Fall**
Age: 34 Employer: Contractor Occupation: Drilling/Well Servicing Operator
The elevator cage fell 120 feet to bottom of a shaft.

UK, Drilling, 03/07/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 31 Employer: Contractor Occupation: Drilling/Well Servicing Operator
A contractor employee suffered fatal injuries after being struck by the drill rig top drive during routine operations. Travelling blocks were operating out of sequence and the assistant driller, once notified of the hazard, could not secure the brake in time.

FSU

Onshore

Kazakhstan, 11/09/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: Unknown Employer: Third party
A cyclist travelling in the wrong direction, in the evening, was hit by a staff bus.

Kazakhstan, 06/12/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: Unknown Employer: Third party
A man on horseback died in a collision with a staff minibus when his horse bolted into its path.

Kazakhstan, Drilling, 15/11/2001 **Number of deaths: 1** **Type of incident: Caught between**
Age: 48 Employer: Contractor Occupation: Manual Labourer
Victim was fatally injured after being crushed between equipment while dismantling a rig.

Kazakhstan, Other, 27/10/2001 **Number of deaths: 1** **Type of incident: Other**
Age: 25 Employer: Contractor Occupation: Manual Labourer
Victim was digging a trench when the side collapsed and buried him to neck level.

Russia, Other, 12/12/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: 32 Employer: Contractor Occupation: Transportation Operator
No details available

Russia, Production, 26/05/2001 **Number of deaths: 1** **Type of incident: Caught between**
Age: 48 Employer: Contractor Occupation: Transportation Operator
No details available

Russia, Production, 30/05/2001 **Number of deaths: 2** **Type of incident: Electrical**
Age: 47 Employer: Contractor Occupation: Maintenance, Craftsman
Age: Unknown Employer: Third party
No details available

Russia, Production, 03/02/2001 **Number of deaths: 1** **Type of incident: Explosion/burn**
Age: 43 Employer: Contractor Occupation: Transportation Operator
No details available

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Russia, Production, 06/11/2001 | **Number of deaths: 1** | **Type of incident: Fall**
Age: Unknown | Employer: Contractor | Occupation: Process/Equipment Operator

No details available

Offshore

Azerbaijan, Drilling, 23/02/2001 | **Number of deaths: 2** | **Type of incident: Struck by**
Age: 36 | Employer: Contractor | Occupation: Manual Labourer
Age: 44 | Employer: Contractor | Occupation: Manual Labourer

When the driller lowered the travelling block, an unusually tall cement stand got caught in it, causing the cement stand to whip across the drillfloor, striking 2 contractors. The block should not have been moved until positive confirmation had been received that the travel path was clear. Changes to repetitive tasks need pre task assessment.

Middle East

Onshore

Iran, 05/03/2001 | **Number of deaths: 1** | **Type of incident: Fall**
Age: Unknown | Employer: Contractor | Occupation: Unknown

A scaffolding supervisor walked on unsecured grating and fell from 5 meters high while preparing the next working location.

Iran, 14/10/2001 | **Number of deaths: 1** | **Type of incident: Fall**
Age: Unknown | Employer: Contractor | Occupation: Unknown

A contractor was pulling a cable at 16 meters high. He lost his balance and fell down. He had not been wearing a safety harness. He died during his transportation to the hospital.

Kuwait, Drilling, 26/10/2001 | **Number of deaths: 1** | **Type of incident: Fall**
Age: 46 | Employer: Contractor | Occupation: Drilling/Well Servicing Operator

The deceased had been standing on the top of a beam with the safety line attached to the substructure. The beam was being suspended by a crane to remove the out rigger from the sub base. When the last pin was removed the beam moved out and the part of the beam that was inside the substructure came free and dropped down vertically. This caused the floorman to fall from 5 metres because his safety belt lanyard was attached to the substructure. This might have pulled and swung his head against the substructure, causing severe brain injury.

Kuwait, Drilling, 08/04/2001 | **Number of deaths: 1** | **Type of incident: Vehicle incident**
Age: 48 | Employer: Contractor | Occupation: Foreman, Supervisor

The jeep which the deceased was driving turned over when he was manoeuvering to avoid hitting a pedestrian in the road.

Kuwait, Other, 05/11/2001 | **Number of deaths: 2** | **Type of incident: Vehicle incident**
Age: Unknown | Employer: Contractor | Occupation: Manual Labourer
Age: Unknown | Employer: Contractor | Occupation: Manual Labourer

Vehicle Incident: Collision.

Kuwait, Production, 06/02/2001 | **Number of deaths: 1** | **Type of incident: Fall**
Age: 42 | Employer: Contractor | Occupation: Maintenance, Craftsman

While the deceased was trying to move he detached his safety belt lanyard and accidentally hit an overhead pipe support which he had not seen. He slipped and fell from a beam 3.5 metres high on to a concrete pavement.

Kuwait, Production, 07/01/2001 | **Number of deaths: 1** | **Type of incident: Vehicle incident**
Age: 31 | Employer: Company | Occupation: Engineer, Scientist, Technician

While travelling to attend duty at 0650 hrs, the vehicle the employee was travelling was hit by two other vehicles.

Oman, 10/10/2001 | **Number of deaths: 1** | **Type of incident: Vehicle incident**
Age: Unknown | Employer: Third party

A 4WD vehicle was involved in a head on collision with a 3rd party pick-up light vehicle after attempting to overtake on a bend. The driver of the 3rd party vehicle pick-up died on impact.

Oman, Drilling, 16/02/2001 | **Number of deaths: 1** | **Type of incident: Struck by**
Age: 42 | Employer: Contractor | Occupation: Engineer, Scientist, Technician

A crew leader was standing on the back of a canter truck when a pipe spool slipped and hit him, knocking him off the truck. He landed on his head and the pipe hit him again. A sharp object caused a deep wound behind his left ear, which led to extensive bleeding. Victim was taken to a clinic where attempts at resuscitation failed and he was declared dead.

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Oman, Production, 14/03/2001 **Number of deaths: 2** **Type of incident: Vehicle incident**

Age: 35 Employer: Contractor Occupation: Engineer, Scientist, Technician
Age: 37 Employer: Contractor Occupation: Transportation Operator

A contractor double cabin pick-up carrying 4 people turned left from a graded road onto the main blacktop road and was struck from the left side by the leading truck of a convoy. One person from the contrator pick-up died at the scene of the accident and another passenger died on arrival at the company clinic. Two others were seriously injured.

Oman, Production, 20/10/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: 32 Employer: Company Occupation: Unknown

Company staff died in a fatal road traffic accident when travelling from his home to attend a training course. He had purchased the motorcycle the day before and left early morning in full darkness. He lost control of the bike, swerved off the road and hit a large concrete block. He was propelled off and landed 34 m behind the block. He died on the spot. Police estimate his speed at 100 km/hr, but considering the distances, his speed could have been considerably higher.

Oman, Production, 20/11/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: 36 Employer: Contractor Occupation: Engineer, Scientist, Technician

The contractor lost control of a 4WD vehicle resulting in a rollover. The victim sustained fatal head injuries and a passenger suffered injuries to his foot. The passenger was the assigned driver to the vehicle but he had taken a break due to tiredness.

Qatar, Production, 26/02/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: 47 Employer: Company Occupation: Process/Equipment Operator

At approximately 0550 a Power Station Operator was driving home after completing his night shift. His vehicle was involved in a collision with a vehicle driven by another company employee coming from the opposite direction. Both vehicles left the road and rolled over. As a result of the incident the power station operator was fatally injured and the other employee sustained injuries sufficient to incur lost time.

Qatar, Unspecified, 27/06/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: Unknown Employer: Contractor Occupation: Transportation Operator

A bus and a water truck collided in the newly prepared support services area. Both vehicles were owned and driven by sub-contractors. One vehicle was taking a shortcut when the collision occurred. Both drivers' vision was impaired by porta-cabin huts. The driver of the water truck died from the injuries he received. An action plan was developed to survey the site and recommend ways to improve vehicular access and road signage.

Syria, Unspecified, 29/07/2001 **Number of deaths: 1** **Type of incident: Explosion/burn**

Age: 34 Employer: Company Occupation: Engineer, Scientist, Technician

A cloud of oil and gas was released when a mechanic removed the nuts of a valve cover plate in a well head cellar. He was thrown back by the release and hit his head against a concrete wall and died from his injuries.

UAE, Production, 13/05/2001 **Number of deaths: 1** **Type of incident: Struck by**

Age: 44 Employer: Contractor Occupation: Manual Labourer

Work was being conducted to replace a well cellar at a water injection well. As a contractor was operating a front-end loader adjacent to the well cellar a contract labourer was seen trying to cross behind the path of the operating equipment. Immediately thereafter the victim was observed lying on the ground behind the front -end loader while it was moving forward.

North America

Onshore

Canada, Drilling, 28/11/2001 **Number of deaths: 1** **Type of incident: Caught between**

Age: Unknown Employer: Contractor Occupation: Heavy Equipment Operator

The derrick was lowered from the crown stand and the Rig Manager directed the victim to ensure the Fall Arrest Post was rigged out. The Truckpush directed the crane operator, ginpole truck operator and winch truck driver to align the derrick and winch truck. The winch truck's back up beeper was not working. The Truckpush directed the truck with radio and hand signals into positioning mode. The victim and Coworker entered under the derrick to unpin the The Fall Arrest Post and cable. The Fall Arrest Post and Cable must be removed prior to pinning derrick to truck's fifth wheel. The victim and his Coworker did not wait for or establish confirmation of operation with the Truckpush. The victim put his head between the Fall Arrest Post and the Winch Truck to locate and remove pin and cable. The Truck push directed the Winch Truck backwards. The victim was fatally injured when his head was caught between the Fall Arrest Post and the Winch Truck.

Canada, Drilling, 25/06/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**

Age: Unknown Employer: Contractor Occupation: Other

A pedestrian contract employee was run over by the front driver's side of another contractor truck which was backing up to position towed equipment.

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Canada, Exploration, 17/03/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 23 Employer: Contractor Occupation: Manual Labourer

A two man crew were drilling a shot hole using a stem drill mounted on a track vehicle. The assisant was injured by the rotary drill and was taken to the hospital where he died later that day.

Canada, Unspecified, 08/11/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: 45 Employer: Company Occupation: Process/Equipment Operator

The employee lost control of the vehicle on a bend and collided head on with a logging truck. The employee died instantly, no other injuries were reported.

Mexico, Other, 19/09/2001 **Number of deaths: 1** **Type of incident: Drowning**
Age: Unknown Employer: Company Occupation: Foreman, Supervisor

The worker lost his life when making an unauthorised dive.

Mexico, Other, 19/02/2001 **Number of deaths: 1** **Type of incident: Explosion/burn**
Age: Unknown Employer: Company Occupation: Other

While classifying material in a garbage yard, a day labourer found a flare and set fire to it. It went off in his face.

Mexico, Other, 03/10/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: Unknown Employer: Company Occupation: Heavy Equipment Operator

The operator was crushed beneath the crane he was working with when it turned over.

Mexico, Unspecified, 20/10/2001 **Number of deaths: 1** **Type of incident: Drowning**
Age: Unknown Employer: Contractor Occupation: Manual Labourer

While performing topography work, the general worker was attacked by African bees. He threw himself into a swamp from where he was later recovered.

Mexico, Unspecified, 03/10/2001 **Number of deaths: 1** **Type of incident: Electrical**
Age: Unknown Employer: Contractor Occupation: Manual Labourer

While the victim was pruning a tree, 3 metres above ground, a branch touched a high voltage line which caused an electrical discharge.

Mexico, Unspecified, 18/07/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: Unknown Employer: Contractor Occupation: Heavy Equipment Operator

A telescopic crane turned over, killing the operator.

USA, Drilling, 25/05/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 29 Employer: Contractor Occupation: Drilling/Well Servicing Operator

Rig operation was fishing stuck pipe. After evaluating conditions, rig crew began to attach tongs to pipe string in order to move slips. (Slips consisted of special design with attached hydraulic level system for raising off drill floor.) Floor hand pushed tongs into drill string, apparently releasing torque from previous manoeuver. This caused pipe string and slips to rotate (spin) rapidly, knocking the floor hand to the ground by striking his legs on the first circle, then having the slip handles strike the crown of his head as a second spin was completed. The floor hand's hardhat had been knocked from his head when he fell to the floor and his head was unprotected when it was struck hard by the slips on the second rotation (spin). Floor hand received severe head injury from the blow to his head.

USA, Drilling, 13/12/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 21 Employer: Contractor Occupation: Other

While a service drilling employee was placing a vent pipe in a basket below the separator, the pipe slid in the basket and the bottom of it swung up crushing the contractor's head.

USA, Other, 01/01/2001 **Number of deaths: 1** **Type of incident: Other**
Age: Unknown Employer: Company Occupation: Other

No details available.

USA, Production, 01/10/2001 **Number of deaths: 2** **Type of incident: Electrical**
Age: 40 Employer: Company Occupation: Foreman, Supervisor
Age: 40 Employer: Company Occupation: Engineer, Scientist, Technician

Production field office employees were installing a new flag pole at their office in the aftermath of the September 11 terrorist attacks. They were using the base of a previously existing pole and had a local welder make up a new pole from used tubulars. With the new, freshly painted pole in a horizontal position, the pole was attached to the existing hinge plate on the old base. A crew of four employees then began to "walk" the pole into its upright (vertical) position. The tip of the new pole contacted an unobserved overhead power line, knocking down the two employees who were in direct contact with the pole at the time it struck the power line.

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USA, Production, 09/11/2001 **Number of deaths: 1** **Type of incident: Vehicle incident**
Age: 30 Employer: Contractor Occupation: Process/Equipment Operator
Contractor employee was fataly injured when the truck he was driving overturned as he attemped to steer the vehicle back onto the road after drifting onto the hard shoulder.

USA, Unspecified, 12/10/2001 **Number of deaths: 1** **Type of incident: Electrical**
Age: Unknown Employer: Contractor Occupation: Engineer, Scientist, Technician
A contract service company employee was fatally injured while working on or near electrical equipment at a gas plant.

Offshore

Mexico, Unspecified, 20/10/2001 **Number of deaths: 1** **Type of incident: Drowning**
Age: Unknown Employer: Contractor Occupation: Manual Labourer
While performing a paint job 119 feet beneath the water, the diver had problems with the mixture of breathing gases, which caused his death.

Mexico, Unspecified, 20/03/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: Unknown Employer: Contractor Occupation: Unknown
While moving pipes on an oil rig with a 20 ton crane, the crane turned over, crushing the operator beneath it.

USA, Drilling, 09/03/2001 **Number of deaths: 1** **Type of incident: Caught between**
Age: 23 Employer: Contractor Occupation: Manual Labourer
A contractor employee working on a deepwater rig died from crush injuries sustained when the gantry crane accidently struck a riser conveyor trapping the employee between the conveyor and a windwall. The rig was under tow between drilling locations at the time of the accident.

USA, Drilling, 18/05/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 39 Employer: Contractor Occupation: Foreman, Supervisor
While offloading I-beams from a supply vessel to a platform, one of the beams landed on the rigging team leader.

USA, Drilling, 25/06/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 31 Employer: Contractor Occupation: Other
An employee was helping to remove a pump from the raw water tower. The pump separated. As the remaining motor/pump assembly fell through the tower, a power cable was pulled over the handrail of the deep well tower work platform. The end of the power cable allegedly struck the employee.

USA, Other, 31/05/2001 **Number of deaths: 1** **Type of incident: Caught between**
Age: 19 Employer: Contractor Occupation: Manual Labourer
The victim died from crush injuries sustained when he was trapped in a hydraulic water-tight door.

South America

Onshore

Argentina, 07/03/2001 **Number of deaths: 1** **Type of incident: Explosion/burn**
Age: Unknown Employer: Contractor Occupation: Unknown
An operator was severely burned by the ignition of condensate in a tank during a routine operation. He died few days later in the hospital.

Argentina, Drilling, 19/02/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 49 Employer: Contractor Occupation: Heavy Equipment Operator
The rig collapsed during a pulling operation resulting in one fatality and three injuries. Main cause: failure in the locking system. The locking system was defective.

Argentina, Drilling, 09/10/2001 **Number of deaths: 1** **Type of incident: Struck by**
Age: 31 Employer: Contractor Occupation: Transportation Operator
The workover rig substructure became unstable whilst being loaded onto the back of a lorry and struck the contractor on the head.

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Bolivia, Exploration, 10/09/2001 **Number of deaths: 1** **Type of incident: Explosion/burn**

Age: 22 Employer: Contractor Occupation: Other

An explosive charge detonated while it was being handled. After investigations, the probable cause was identified as a combination of static electricity and a faulty detonator.

Ecuador, Other, 29/09/2001 **Number of deaths: 1** **Type of incident: Other**

Age: 37 Employer: Contractor Occupation: Other

Victim sustained head injuries in river boat collision due to: excess of speed; failure to keep a safe distance; presence of a seismic line on the water.

Venezuela, 13/02/2001 **Number of deaths: 1** **Type of incident: Drowning**

Age: Unknown Employer: Third Party

A marine person fell into the lake without a life vest.

Venezuela, 30/03/2001 **Number of deaths: 1** **Type of incident: Struck by**

Age: Unknown Employer: Third Party

A person was hit by a heavy piece of metal from a production apparatus. He had been at an oil well area without a permit.

Venezuela, Unspecified, 19/07/2001 **Number of deaths: 1** **Type of incident: Caught between**

Age: 38 Employer: Contractor Occupation: Manual Labourer

The worker was caught between a crane boom which fell during lifting operations of an oil pipe on a barge.

Venezuela, Unspecified, 01/10/2001 **Number of deaths: 1** **Type of incident: Drowning**

Age: 36 Employer: Contractor Occupation: Other

The captain of a boat fell into the lake without a life vest.

Venezuela, Unspecified, 08/05/2001 **Number of deaths: 1** **Type of incident: Electrical**

Age: 38 Employer: Company Occupation: Engineer, Scientist, Technician

An electrician was struck by a high voltage electric current while working at a HTSS.

Venezuela, Unspecified, 15/08/2001 **Number of deaths: 1** **Type of incident: Electrical**

Age: 32 Employer: Contractor Occupation: Engineer, Scientist, Technician

A worker was struck by a low voltage electric current while walking down the stairs of a mobile home.

Venezuela, Unspecified, 23/04/2001 **Number of deaths: 1** **Type of incident: Struck by**

Age: 41 Employer: Contractor Occupation: Manual Labourer

A worker was hit by a drilling pipe when it was being lifted and moved by a winch.

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Appendix D
Significant incident reports by region

Africa

Onshore

Algeria, Drilling, 01/01/2001, Caught between
Amputation of right thumb following lifting accident whilst establishing construction camp for drilling sites.

Algeria, Drilling, 01/05/2001, Caught between
A contractor's headscarf became tangled in the starter pulley of the compactor. He fell, hit head and became unconscious. The scarf tightened on the pulley and began to strangle the casualty.

Algeria, Drilling, 17/05/2001, Caught between
Mechanic's finger-tip was caught between the engine V-belt and alternator pulley wheel when another turned the ignition.

Algeria, Other,23/04/2001, Caught between
A contractor caught his elbow in a cement mixer causing a deep lateral wound to the right elbow area. He was sent to hospital for treatment and returned to work three weeks later.

Angola, Other, Fall
A contractor tore ligaments after slipping on the stairs entering a restuarant.

Angola, Unspecified, 10/03/2001, Other-Health
Stomach illness (bleeding ulcer) in expat drilling contractor in Angola resulting in medical evacuate to Johannesburg.

Angola, Unspecified, 17/03/2001, Other-Health
Long term contractor contracted malaria. He returned to work after a weekend of R&R.

Egypt, Unspecified, Vehicle incident
A contractor minibus was hit by another minubus travelling in the opposite direction. The crash resulted in two injuries.

Nigeria, Production, Explosion/burn
The well was spraying oil from the flange between the well head and the tubing head spool. Bolts and 2 casing valves were found to be missing.

Nigeria, Production, 25/06/2001, Explosion/burn
A leak in a pipeline resulted in a major oil spill. Containment and repair were hindered by community disturbance and the situation was worsened by the outbreak of a fire, source unknown.

Sudan, Drilling, 24/10/2001, Caught between
The victim injured his left leg when it was pinned between the casings while he was unloading the casing from the truck. He received 2 days off work.

Sudan, Drilling, 26/03/2001, Struck by
A victim was involved in the crane lifting operation of the mud pump from a truck. Due to miss communication between the crane operator and the signal man, the pump was loaded onto the victim's right foot and broke his toe. He was transferred to hospital and was given 21 days off from his normal duty.

Sudan, Drilling, 25/04/2001, Struck by
The victim was involved in the crane lifting operation of damaged casing (10-3/4") from pipe rack to the ground. When the load was 1.5m off the ground, one of the slings slid out of the auxiliary hook safety pin and dropped onto the victim's left leg and crushed it. The victim was transferred to hospital where his leg was amputated.

Sudan, Other, 08/10/2001, Explosion/burn
The victim, the Captain of a boat, received 2nd degree burns on his lower abdomen, legs, thighs, arms and hands. His clothes had been set alight when a fire broke out in the water closet he was working in (clearing blockage).

Sudan, Other, 05/11/2001, Explosion/burn
The victim , an engineer, injured his face when the hot steam from the car radiator burst out when he was opening the bonnet.

Sudan, Other, 16/01/2001, Struck by
An excavator operator was carrying out excavation works when the pit wall collapsed and filled in the excavator bucket. A sudden hit to the bucket had caused back pain to the operator. He was given medical leave for two days.

Sudan, Other, 07/07/2001, Struck by
The victim suffered injury when the jack he was working with hit his stomach.

Sudan, Other, Vehicle incident
The victims, 2 persons, were injured when the vehicle they were travelling in skidded and collided with a truck.

Sudan, Other, 03/07/2001, Vehicle incident
The injured person broke his arm and backbones when the vehicle he was driving rolled over. He had been testing radio reception and looking at the watt meter.

Sudan, Other, 13/07/2001, Vehicle incident
The driver lost control of his pick-up and rolled over. The vehicle came to rest on driver's side. The driver was injured and was treated.

Sudan, Other, 24/09/2001, Vehicle incident
Three workers received injury to their upper leg, abdomen, shoulder and skull when a vehicle drove into a light pole they were working on and struck them.

Sudan, Other, 11/11/2001, Vehicle incident
The victim, a driver, injured himself in an accident when his vehicle rolled over. The injury kept him away from work for 12 days.

Sudan, Other, 22/11/2001, Vehicle incident
The victim was involved in a road accident and injured his left eye.

Sudan, Other, 08/12/2001, Vehicle incident
The victim, a scraper, broke his arm when a scraper he was driving hit a big pit.

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Sudan, Other, 12/12/2001, Vehicle incident
Description of road accident was unavailable. The victim was given 10 days off work.

Sudan, Production, 05/11/2001, Caught between
The victim, an electrician, was descending a ladder when he caught his foot between the rungs and injured his left arm. He had been repairing a defective light bulb. He was given two days off work.

Sudan, Production, 01/12/2001, Caught between
The victim, a labourer, had his fingers amputated when his hand was caught between the roller and the trailer while offloading a spool of electrical cable. He was given a month off work.

Sudan, Production, 12/12/2001, Explosion/burn
The victim received burns on his right arm when he was attempting to change the circuit breaker. The two lines of electrical cable he was holding contacted each other and caused the big spark. He was given leave for 7 days.

Sudan, Production, 06/12/2001, Struck by
The victim, a carpenter, received a cut on his left arm when some metal sheets he was loading onto a truck slipped. He was given leave for two days.

Sudan, Production, 08/12/2001, Struck by
The victim, a tire fitter, injured himself on the jaw when the ring blew off the rim of a tire he was repairing. He was given two weeks rest.

Tunisia, Production, Explosion/burn
A forklift collided with an overhead condensate pipe causing the pipe to deflect by 1m. No hydrocarbons were released.

Offshore

Congo, Production, 01/08/2001, Explosion/burn
A fire broke out in a compressor due to oil overheating. It took one hour to extinguish the fire which damaged two compressors and adjacent cable ways. Nobody was injured.

Egypt, Drilling, 17/03/2001, Other-Structural
The legs of a jack-up drilling rig broke free of the seabed on jacking down. Minor damage was caused to the adjacent fixed platform.

Gabon, Drilling, Other-Health
Asset driller was using a pry bar to slide Drilquip split bushing for casing from the deck of the BOP carrier. As he was sliding the bushing with the pry bar he felt a sharp pain in his lower back. A specialist examination revealed a pre-existing injury. Sent to rest for 4 weeks.

Nigeria, Other, 15/01/2001, Other-Structural
Supply vessel was positioned with its starboard stern corner towards the rig's forward, starboard column. In this position the supply vessel was allowed to drift away from the rig some 50-100m before being powered back towards the rig (within 10-20m). The captain did not notice the very close proximity of the vessel to the rig. The starboard stern of the vessel hit the forward, starboard column of the rig. The hole created by the impact was 7m wide and 3m high, just above the water line, and also penetrated the chain locker inside the column.

Asia/Australasia

Onshore

Malaysia, Other, 13/07/2001, Fall
At a fabrication yard, a painter fell from scaffolding while he was doing a touch-up painting. He suffered a broken leg. Taking a short cut and inadequate inspection were the basic causes of the incident.

Malaysia, Production, Fall
The injured party was erecting scaffolding. While descending from one level to another, he lost his grip on the scaffold bracing and fell onto the concrete floor 14 feet below. He sustained a fractured left knee cap and lacerations to the hips.

Pakistan, Drilling, 25/07/2001, Vehicle incident
Company vehicle travelling between sites hit pedestrian who stepped out between parked vehicles. Fractured leg and hospitalisation resulted.

Pakistan, Exploration, 10/10/2001, Other-Health
Failure of contractor to implement heat management procedures in remote desert area resulted in several reports of heat stress in members of the seismic crew.

Pakistan, Other, 19/02/2001, Explosion/burn
A contractor burned his hand with steam from water being used to cool a recently welded pipe. He received first aid for first degree burns.

Pakistan, Other, 28/03/2001, Other
A security guard was bitten on the hand by a Scorpion. He was treated with pain killers and kept under observation to ensure no allergic reaction had occured. Not life threatening.

Pakistan, Other, 25/02/2001, Struck by
A metal sheet (4kgs) fell on a contractor when it slipped from a hook while being lifted during roofing installation. The fitter suffered a minor abrasion to his back.

Pakistan, Other, 23/03/2001, Struck by
Operator suffered hand laceration from a cooling fan as the plant unit was started up. He required five stitches.

Pakistan, Production, Struck by
A mechanical fitter cut his arm with a grinder while working on the flow line. His injury required 6 external stitches.

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Offshore

Australia, Production, 10/10/2001, Caught between

The operator caught his ring finger of left hand between pipe and handrail. The laceration was cleaned and dressed and the contractor was transported to nearest medical facility.

Australia, Production, 25/11/2001, Caught between

The person's finger was injured when it became trapped between moving pipework being installed and the fixed pipe. The injured person was medevaced on an unscheduled flight for surgery and a pin was placed into his finger.

Australia, Production, 07/12/2001, Caught between

ROV Technician's finger was caught between the roof of the personel basket and the bottom of the support beam resulting in a top joint amputation and right hand of middle finger and crush injury to fourth finger.

India, Production, 18/03/2001, Struck by

While transferring from barge to supply vessel, was struck on the head by a falling rope/chain when it became snagged when the boat pulled away.

Indonesia, Production, 06/07/2001, Explosion/burn

Blow Out during snubbing operations. The well was secured after one hour. No fire, no injury.

Indonesia, Production, 27/10/2001, Other-Structural

During transfer by crane of steel plates from a supply vessel to the platform, 3 plates fell into the sea. Poor rigging was considered to be the main cause.

Malaysia, Drilling, Caught between

A pipe fitter injured his left hand and finger when he accidentally grasped the rotating drill bit of a pneumatic drill while attempting to prevent the drill from falling.

Malaysia, Other, 06/11/2001, Fall

During hook-up and commissioning, an instrument technician fell from well head control panel and suffered a fractured right elbow. Inadequate communication and supervision and lack of training were the basic causes of the incident.

Malaysia, Production, 28/06/2001, Caught between

A Rigger was transferring a scaffolding board for storage in the metal basket. While he was about to put the board into the basket, he lost his balance and fell, resulting in the board which he was handling hitting his right middle finger. He sustained bone fracture to his middle finger.

Malaysia, Production, 20/06/2001, Fall

Restricted Workday Case: A Materialsman was climbing to the top of the container when the ladder he was using slipped and he fell onto the deck. He sustained injury on his right hand and his lower arm's soft tissue was damaged. Inadequate work procedure on ladder usage was found as the basic cause.

Malaysia, Production, 28/07/2001, Fall

An employee was making his routine round and was checking on an overhead valve. While standing on the skid and looking at the valve, he lost his balance and fell sideways on to the deck, injuring his right knee.

Malaysia, Production, 06/11/2001, Other-Structural

A standby vessel was tied to the platform's jacket leg due to unavailability of LCT buoy when there was a sudden weather change which initially resulted in vessel navigation mask was touching the platform's staircase. The boat Captain decided to move away from the platform and, in the process of moving off the platform, a few of the boat's handrails parted after they came in contact with the platform's SSB/VHF radio antenna.The platform's staircase grating parted and the jacket legs were scratched. Lack of knowledge was found to be the basic cause of the incident.

Thailand, Production, 02/05/2001, Explosion/burn

LP flare flame extinguished unexpectedly (twice).

Thailand, Production, 09/03/2001, Other-Structural

A construction support barge was drifting towards the wellhead platform.

Thailand, Production, 04/05/2001, Other-Structural

A contractor's supply vessel ran out of fuel while working near the production platform. The vessel dropped anchor to prevent further drifting but the anchor failed to hold grip on seabed.

Vietnam, Drilling, 19/09/2001, Fall

On a drilling rig,a Roustabout fell from a height of 26 inches when the pipe support laid on the cantilever deck parted when he stepped on it. His left foot was dislocated and fractured. Inadequate purchasing and engineering were the cause of the incident.

Vietnam, Drilling, 26/01/2001, Struck by

A Roustabout was struck by a 9 5/8 casing and his lower right leg was broken. Lack of supervision and coordination were the basic causes of the incident.

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Europe

Onshore

Faroe Islands, Drilling, Struck by

The injured party was struck when the diverter handling tool was in collision with the Riser

Netherlands, Other, Vehicle incident

A personnel bus (contractor) returning from the work location went off the road and collided with bushes and trees. This impact resulted in three injured persons (two LWC's) and damage to the vehicle. A full investigation has been carried out. The driver failed the alcohol test.

Netherlands, Other, 09/11/2001, Vehicle incident

A truck loaded with gravel took a bend, the truck missed the road and ended up on its side. The driver sustained bruising to his left shoulder, knee and forehead and small wounds to his hand. Investigation revealed several areas for action to prevent recurrence. These have been included in journey management and work instructions.

Norway, Unspecified, Struck by

A visitor was inattentive and hit her head.

Offshore

Denmark, Production, Fall

Contractor fell down a staircase and sprained his knee. He was carrying a bucket of tools with both hands and so was not holding the handrail.

Norway, Drilling, 01/07/2001, Fall

A roughneck was going to grease the top drive and the travelling block. He gave a signal to the winch operator to hoist him up to the travelling block and the top drive by means of a belt. The working height at the top drive is about 3-5 meters above the drillfloor. After completing the greasing operation, the person at the top drive pushed himself outside the top drive. Then the connection between the wire of the manrider-winch and the belt loosened and the person consequently fell down onto the drilling floor, appx. 5 meters below.

Norway, Drilling, 12/11/2001, Struck by

In order to get access to the x-mas tree crane the fox-hole was lifted approx 6-7 meters. For the lifting operation a green webbing band sling connected to an air tugger was used. When the fox-hole was lifted approx 6-7 meters the webbing band sling broke, and the fox hole fell down on to it's foundation. The person who operated the air tugger was hit by the edge of the fox hole on the back of his head. He got a cut above his right knee and broke his right hand littlefinger. The person was later evacuated by helicopter to shore. The weight of the fox-hole is 5000lbs.

Norway, Unspecified, 09/01/2001, Caught between

Crushed his hand in a pneumatic door.

Norway, Unspecified, 24/02/2001, Caught between

The injured man's hand was crushed.

Norway, Unspecified, 19/03/2001, Caught between

They were working near by the door where the trolley stands. Another person open the door and he was crushed between door and trolley.

Norway, Unspecified, 04/04/2001, Caught between

Hand crushed in dog collar.

Norway, Unspecified, 01/06/2001, Caught between

Right hand crushed while working with loading of mud.

Norway, Unspecified, 01/06/2001, Caught between

Left finger crushed.

Norway, Unspecified, 01/07/2001, Caught between

Crushed his knee between cable gate and pipe.

Norway, Unspecified, 24/07/2001, Caught between

Fracture in chest after his right arm was crushed.

Norway, Unspecified, 02/08/2001, Caught between

Due to a shut down of the main power the waterproof doors closed. One person tried to open this door manually. When he was passing through he dropped the handle and the door began to close and crushed the person in his chest. He was sent onshore and returned to work after medical treatment.

Norway, Unspecified, 05/08/2001, Caught between

When working with boom wire he crushed his left foot between bracket and fastening to wire. The safety shoes were damaged - the shoe cracked.

Norway, Unspecified, 20/09/2001, Caught between

The right finger was crushed in the door to the mud room.

Norway, Unspecified, 06/10/2001, Caught between

One rib was injured when he was leaning on the hand rail.

Norway, Unspecified, 11/10/2001, Caught between

He crushed his finger between a pipe and a box.

Norway, Unspecified, 13/10/2001, Caught between

The finger was crushed when he was working with air equipment.

Norway, Unspecified, 30/10/2001, Caught between

He twisted his knee when he was working with a heating element. The work area was narrow.

Norway, Unspecified, 30/12/2001, Caught between

He crushed his finger in a valve.

Norway, Unspecified, 28/01/2001, Electrical

The electrician took power through his body, from hand to hand. His little finger was burned.

Norway, Unspecified, 07/04/2001, Electrical

One person was electrocuted while he was working with a coupling bar. He used a measuring device. The measuring device indicated 0 deflection - it should have indicated 24 volts.

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Norway, Unspecified, 11/01/2001, Explosion/burn
During welding, welding embers fell down and burnt through all clothes.

Norway, Unspecified, 16/04/2001, Explosion/burn
Burned when he got a cup of coffee down his neck.

Norway, Unspecified, 03/01/2001, Fall
He was carrying a cement plug when he lost his balance. He strained a muscle.

Norway, Unspecified, 03/01/2001, Fall
The deck was slippery and he fell down.

Norway, Unspecified, 05/01/2001, Fall
He hurt his right ankle when he was going down from choke manifold.

Norway, Unspecified, 14/01/2001, Fall
The woman hurt her knee when she was entering the lifeboat.

Norway, Unspecified, 27/01/2001, Fall
When they were working with preventive maintenance on a safety valve the mechanic fell from the pig lock and down onto the main deck. The distance was 3 m.

Norway, Unspecified, 08/02/2001, Fall
While working with the basket from the pipe deck to the skid deck the basket began to rotate. The rigger did not stop the rotation with the guide rope. The rigger had to drop the guide rope and then he fell down the ladder.

Norway, Unspecified, 11/02/2001, Fall
Injured his left knee when the hand gear came loose and fell onto his left knee.

Norway, Unspecified, 17/02/2001, Fall
He fell down the stairway and hit his elbow and his back.

Norway, Unspecified, 25/02/2001, Fall
Injured his knee after a fall.

Norway, Unspecified, 19/04/2001, Fall
During a ballast tank inspection he slipped and fell down.

Norway, Unspecified, 14/05/2001, Fall
The floor was slippery and he fell.

Norway, Unspecified, 25/06/2001, Fall
Fell down the ladder and hurt his left knee.

Norway, Unspecified, 10/08/2001, Fall
Chest injury after a fall.

Norway, Unspecified, 11/08/2001, Fall
Stumbled due to missing skirting board.

Norway, Unspecified, 17/08/2001, Fall
Hurt his knee when he was working with equipment to riser.

Norway, Unspecified, 04/09/2001, Fall
He stumbled over a ROV trapdoor.

Norway, Unspecified, 17/09/2001, Fall
While working with a Coiled Tubing Cable Injector Head, one of the deck personel was injured. The crane operator misunderstood the deck operator and he performed a lift when the deck operator was standing on the equipment. The strap dropped and all the equipment and the deck operator fell down on deck. The deck operator suffered chest injuries.

Norway, Unspecified, 03/10/2001, Fall
The injured man fell down from a pipe - his knee was twisted.

Norway, Unspecified, 24/10/2001, Fall
She fell down the stairwell from 3rd to the 2nd floor.

Norway, Unspecified, 21/11/2001, Fall
When he was going into the helicopter he stumbled and broken some of his fingers.

Norway, Unspecified, 02/12/2001, Fall
He slipped and used his hand to hold him steady. 1 hour later he had pain in his left shoulder.

Norway, Unspecified, 08/12/2001, Fall
He twisted his ankle when he fell down from a scaffolding.

Norway, Unspecified, 20/12/2001, Fall
He went a side-step and injured his ankle.

Norway, Unspecified, 20/12/2001, Fall
The flag stumbled in a skid. His hand was fractured.

Norway, Unspecified, 21/12/2001, Fall
The injured man fell down the stairs and his knee was twisted.

Norway, Unspecified, 10/01/2001, Other-Chemical
He got chemical dust in his eye when working with a mixing unit.

Norway, Unspecified, 15/02/2001, Other-Chemical
Base oil in eye.

Norway, Unspecified, 20/06/2001, Other-Chemical
Chemicals in eye.

Norway, Unspecified, 30/06/2001, Other-Chemical
Chemicals (CaCl2/ CaBr2) in eye.

Norway, Unspecified, 08/08/2001, Other-Chemical
Chemicals in the injured person's eye (H_2S cleaner).

Norway, Unspecified, 14/08/2001, Other-Chemical
Chemical in the eye while working with high-pressure washer.

Norway, Unspecified, 27/09/2001, Other-Chemical
When carrying out chemical cleaning the operator got fluid in his face and on his body. The injury was not serious. He suffered some blistering on the chest.

Norway, Unspecified, 15/12/2001, Other-Chemical
He got base oil on his foot. He used boiler suit but the oil went through and he got a rash.

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Norway, Unspecified, 23/12/2001, Other-Chemical
He got Calcium Carbonate in his eye.

Norway, Unspecified, 07/02/2001, Other-Cuts
Cut injury to the right thumb.

Norway, Unspecified, 08/02/2001, Other-Cuts
Cut his right hand when he was using cutting pliers .

Norway, Unspecified, 03/04/2001, Other-Cuts
Cut his finger when he was working with cables.

Norway, Unspecified, 15/04/2001, Other-Cuts
Cut in finger when he was working with guide rope.

Norway, Unspecified, 16/04/2001, Other-Cuts
The injured person cut her finger when she was working in the kitchen.

Norway, Unspecified, 26/05/2001, Other-Cuts
Cut on finger while working in the kitchen.

Norway, Unspecified, 06/07/2001, Other-Cuts
Cut in the hand.

Norway, Unspecified, 15/08/2001, Other-Cuts
Cut finger.

Norway, Unspecified, 01/10/2001, Other-Cuts
Cut finger when cleaning protective equipment.

Norway, Unspecified, 28/11/2001, Other-Cuts
He cut his hand when using a knife.

Norway, Unspecified, 12/12/2001, Other-Cuts
He cut his hand on a plate. He had to have stitches.

Norway, Unspecified, 12/12/2001, Other-Cuts
He cut his hand when bringing soap from the cabinet.

Norway, Unspecified, 19/02/2001, Other-Strains
During working with logging equipment the operator had to lift the MDT equipment. During lifting he get a sudden pain in this back.

Norway, Unspecified, 27/06/2001, Other-Strains
During work with diverter running tool he stretched a muscle.

Norway, Unspecified, 09/08/2001, Other-Strains
A crick in the back after working with spreader.

Norway, Unspecified, 20/08/2001, Other-Strains
He released the open-end spanner and he got a stretch in the neck.

Norway, Unspecified, 28/11/2001, Other-Strains
After lifting an oil can he suffered back pain.

Norway, Unspecified, Struck by
Chain fell down from container roof and hit his hand.

Norway, Unspecified, 07/01/2001, Struck by
A roughneck was standing on the scaffolding when his head was injured. During work the cable was free and the chain hit him in his face.

Norway, Unspecified, 19/01/2001, Struck by
A 10L can fell down from a shelf and hit his hand, crushing his left ring finger.

Norway, Unspecified, 26/01/2001, Struck by
He was working with 2 7/8" drilling pipe when he was struck in the mouth. A piece of his tooth fell out.

Norway, Unspecified, 06/02/2001, Struck by
Struck in the mouth and a small piece of his tooth fell out.

Norway, Unspecified, 07/02/2001, Struck by
Hurt his hand when he was working with washing the pump room.

Norway, Unspecified, 18/02/2001, Struck by
Hit by an angle iron and a piece of his tooth fell out.

Norway, Unspecified, 18/03/2001, Struck by
Moving tubing 41 1/2.

Norway, Unspecified, 22/03/2001, Struck by
Test weight (4 ton) was transfered over doorstep. The test weight began to move and the wheel from the trolly ran over his foot.

Norway, Unspecified, 28/03/2001, Struck by
He hit his knee against a structure when he was working with a pump.

Norway, Unspecified, 01/04/2001, Struck by
A plank hit him in the face and one of the teeth was damaged.

Norway, Unspecified, 30/04/2001, Struck by
He used a high-pressure washer with water to remove paint/ rust. The jet hit the operator on his right knee.

Norway, Unspecified, 01/05/2001, Struck by
He get neck pain after being hit by scaffolding.

Norway, Unspecified, 01/05/2001, Struck by
Hit in the mouth, 2 teeth was broken.

Norway, Unspecified, 04/05/2001, Struck by
He suffered neck pain after a being hit by scaffolding

Norway, Unspecified, 17/05/2001, Struck by
Hurt his hand when he used the open-end spanner.

Norway, Unspecified, 20/05/2001, Struck by
Chemicals in eye.

Norway, Unspecified, 20/06/2001, Struck by
High pressure washing was in progress due to paint program. There was a hole in the hose and the operator lost control. (Pressure 200 bar). The helmet, visor and earmuffs blew away and the operator was hosed around his wrist.

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Norway, Unspecified, 08/07/2001, Struck by
The man's glasses were misted up. He removed his glasses and then got a foreign object in his eye.

Norway, Unspecified, 09/07/2001, Struck by
The hook to the drilling deck winch hung up during installation of a clamping plate for a torque wrench on the top drive. When the hook was undone the clamping plate came up with great speed and hit the roughneck in the face.

Norway, Unspecified, 13/07/2001, Struck by
He hit his head on a flexible hose. He suffered symptoms of neck injury.

Norway, Unspecified, 18/07/2001, Struck by
Chemicals in the eye.

Norway, Unspecified, 30/07/2001, Struck by
Fracture in right rib.

Norway, Unspecified, 02/08/2001, Struck by
During transportation of some boxes one of the MOB boat crew injured his knee.

Norway, Unspecified, 28/08/2001, Struck by
He was going into the container and then he hit his knee on the door.

Norway, Unspecified, 03/09/2001, Struck by
While working with cargo from flare boom he was hit on the knee.

Norway, Unspecified, 09/09/2001, Struck by
When working with a fresh air hose - he hit his elbow on scaffolding.

Norway, Unspecified, 18/09/2001, Struck by
Hit his left toe under runway to gantry crane.

Norway, Unspecified, 25/09/2001, Struck by
During working with the gate on the helideck a tool hit a man in his face. His nose was cut. In other circumstances he could have been seriously injured.

Norway, Unspecified, 23/10/2001, Struck by
He cut his hand when he was working with an angle grinder.

Norway, Unspecified, 24/10/2001, Struck by
A dustbin fell down and hit his face. 2 teeth were damaged.

Norway, Unspecified, 26/10/2001, Struck by
He got something in his eye when he was working with welding and sanding.

Norway, Unspecified, 31/10/2001, Struck by
He crushed his hand when the door closed because of strong wind.

Norway, Unspecified, 02/11/2001, Struck by
He got a brush in his face and one of his teeth fell out.

Norway, Unspecified, 08/11/2001, Struck by
He crushed his hand in a door - the door slammed due to strong winds.

Norway, Unspecified, 08/11/2001, Struck by
The scaffolding tipped over and the scaffolding fell over a person. He had pain in his chest and the symptoms indicated that he also suffered a concussion. He was sent to the hospital by helicopter. The hospital did not find any damage. He was staying at the hospital over night.

Norway, Unspecified, 11/11/2001, Struck by
A man's left elbow was injured when he was working with export oil pump.

Norway, Unspecified, 08/12/2001, Struck by
The injured person broke a tooth when he hit a winch.

Norway, Unspecified, 31/12/2001, Struck by
He was struck in his mouth and one of his teeth was broken.

Norway, Unspecified, 15/02/2001, Struck by-Eye
During a safety meeting he got something in this eye.

Norway, Unspecified, 24/02/2001, Struck by-Eye
Got something in his eye during work with kitchen equipment.

Norway, Unspecified, 03/04/2001, Struck by-Eye
Foreign body in his eye.

Norway, Unspecified, 09/06/2001, Struck by-Eye
During welding he get a foreign body in his eye. Use all necessary protective equipment.

Norway, Unspecified, 28/08/2001, Struck by-Eye
Foreign body in the eye. He used safety equipment

Norway, Unspecified, 05/10/2001, Struck by-Eye
He got something in his eye when he was working with insulating material.

Norway, Unspecified, 13/10/2001, Struck by-Eye
He got something in his eye when he was working with band sander.

UK, Drilling, 02/07/2001, Caught between
The IP was involved in offloading a boat. A 45ft basket was taken off the boat. The basket was to be landed by the catwalk. The basket was spotted into position in the space available. While the basket was about to be fully landed out, the injured person positioned himself between some drill pipe and the edge of the catwalk. In this position, neither the crane op nor the 2nd roustabout could see him. As the basket was fully landed out, the weight pushed the pipes several inches towards the injured person. His foot was trapped between the outer joint of pipe and the wooden dunnage. The injured person fell back into the pipedeck, and his foot came out of his boot. The IP received medical attention at the rig hospital and was subsequently medivac'd to hospital where it was confirmed he had sustained broken bones to his lower left leg.

UK, Other, 01/03/2001, Other-Cuts
Abrasion to left arm.

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UK, Other, 07/05/2001, Other-Structural

Alwyn area. During lifting operations, a process vessel fell into the sea. It was recovered without significant damage a few days after.

UK, Production, 09/10/2001, Air transport

S61 crew change helicopter tail wheel impacted the helideck perimeter netting on landing due to inability to meet the sudden power requirement. The helicopter undercarriage came to rest on the edge of the helideck. The helideck was damaged but no damage occured to the helicopter and there were no injuries to the passengers or crew. The investigation could find no clear reason for the sudden power requirement, this was put down to local weather/turbulence. It was recommended that training of pilots who are not ex-military should emphasise the ability, if need be, to overtorque within reason, to prevent an accident.

UK, Production, 03/09/2001, Caught between

A mechanical technician trapped his finger in a pump variable speed drive and suffered a double fracture to his finger.

UK, Production, 31/10/2001, Caught between

Seaman sustained a mild crush injury to his hand when it became caught in a bight of rope during a tanker mooring operation.

UK, Production, 17/12/2001, Caught between

Diver had attached one 25te shackle to one of the 55te shackles on the casing and was attempting to attach the second 25te shackle to the same 55te shackle.

UK, Production, 15/05/2001, Explosion/burn

During the restart of a well an instrument tube connection into the Top annulus blew-out at approximately 190 barg. Gas was released into the wellbay resulting in automated shutdown and blowdown. The controlroom initiated deluge to mitigate the potential for explosion. The failed instrument connection appears to have been caused by incorrect make-up. The gas that escaped was from the Top annulus and was present as the result of leakage past the annular safety system packer. This was in itself a variation from the original design intent of the production wells which were intended to have un-pressurised Top annuli with no hydrocarbon inventory. If this incident had happened on a well with no annular safety system, up 0.6 mmscf of gas would have been released.

UK, Production, 02/11/2001, Other-Strains

A worker sprained ligaments in his wrist. When back onshore he went to the Hospital and was signed off for two weeks.

UK, Production, Struck by

During removal of hub from oil flowline for machining of the flange face, the blind hub flew off under pressure and hit individual on shoulder. He was knocked backwards onto the deck approx 1 metre below.

UK, Production, 15/06/2001, Struck by

While picking up a coil of cut off wireline to dispose of in the skip, the loose end of coil sprung and punctured through the glove and penetrated the left hand causing a first aid injury.

UK, Production, 09/07/2001, Struck by

During a tank gauging, the IP lost control of the tape. Instinctively he grabbed for the handle, which hit knuckle of his right hand and his little finger. The IP's finger was found to be fractured.

FSU

Onshore

Kazakhstan, Other, 06/11/2001, Electrical

A contract employee was electrocuted upon contact with a 6kV line while preparing to tie in power offtake, after ascending the wrong pylon.

Kazakhstan, Other, Explosion/burn

A truck collided with an overhead gas line supplying a village and ruptured it. There were no injuries and the leak was controlled.

Kazakhstan, Other, 15/02/2001, Explosion/burn

A fire broke out on board a truck transferring cargo. There were no injuries but the cargo was lost.

Russia, Production, 21/12/2001, Caught between

The vehicle operator was apparently behind the truck when it moved. The operator's arm was broken when it was caught between the truck and a pumping jack.

Russia, Production, 30/05/2001, Electrical

During painting work the company employee lost his balance and touched the metal construction under voltage.

Russia, Production, 27/08/2001, Fall

The operator fell 2m onto a concrete floor while unloading.

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Middle East

Onshore

Kuwait, Drilling, 23/06/2001, Drowning

The incident occurred while a crew was installing a spade at MOV top flange on a 48" spurline. A second crew had been working simultaneously at another MOV on the same line 1.5 km away, replacing a 48" spacer with a spade. The second maintenance crew opened the flange and this acted as a vacuum/syphon, causing crude oil to gush out of the loosened flange where the first crew was working, flooding and overflowing the pit.

Kuwait, Drilling, 10/04/2001, Explosion/burn

When drilling, a very high pressure layer was encountered. During the well control situation the casing failed and a leak occurred from the cellar. This well was abandoned safely.

Kuwait, Production, 02/02/2001, Explosion/burn

When manoeuvering a crane, a 6" recycle valve on a gas pipeline of CRU c-101 & c-102 Compressor stage 2 and 3 was accidentally disconnected and caused a gasleak.

Oman, Other, Explosion/burn

The well built up excessive wellhead pressure. Surface equipment failed to contain the pressure due to the use of inappropriate completion brine, inappropriate well control equipment system and inappropriate well control practices. A blow-out resulted which was brought under control after 4 weeks.

Qatar, Other, 15/02/2001, Other-Structural

As part of a construction activity on a live plant area, a pre-flush column was being lifted to be located on its foundation. As the column was being lifted into the vertical position (approximately 1 metre from the ground) the crane's rear hoist brake began to slip causing the column to drop. There was only minor damage to the column and no damage to the online process equipment. In slightly different circumstances the incident could have had the potential to cause a major toxic gas release.

Qatar, Production, Explosion/burn

A cooling water failure to the depropanizer column overhead condenser initiated a rapid rise in column pressure. In response to the pressure rise a panel mounted, hand controlled, depressuring valve was opened fully to vent the pressure to the flare system. Upon opening the depressuring valve, high vibration in the column overhead pipework occurred. This vibration resulted in the fracturing of a 3/4' nipple on a vent line to fail. This resulted in an uncontrolled release of propane vapour to the atmosphere. No fire or explosion occurred. The potential for such was very high.

Qatar, Production, Vehicle incident

Company vehicle collided with a 3rd party vehicle on the highway causing a fatal injury to the driver of the 3rd party vehicle. The company driver escaped grievous injury.

Syria, Drilling, 15/03/2001, Vehicle incident

Road accident with car overturning. The driver suffered multiple traumas. 290 Lost Days.

Offshore

UAE, Other, 30/06/2001, Air transport

A helicopter started to lift-off an offshore platform deck while two persons were nearby (not boarded yet). The helicopter reached a height of 1.5 meters before re-landing to pick them up.

UAE, Other, 10/08/2001, Other-Structural

Whilst jacking up a barge's legs to move off location, one of the legs ruptured the barge's ballast tank. The accident was attributed to mechanical and instrumentation failure of the leg operating devices. This resulted in a breach to the ballast tank and impact damage to the lower guides in the subject leg housing.

UAE, Other, 19/10/2001, Other-Structural

A service boat was leaving an off-shore oil field after normal routine work, and whilst en-route to an island, the Officer of the Watch engaged Auto-Pilot. By the time he realized that the Vessel was in close proximity to a Wellhead Platform, it was too late to avoid the collision. Both Captain & Chief Mate were on the bridge at the time. The Officer of the Watch tried to reverse the engine mode (crash manoeuver) but it was too late and the vessel hit the wellheadplatform, causing considerable structural damage.

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North America

Onshore

Canada, Production, Explosion/burn

A furnace failure resulted in a flash fire. An operator on an access ladder was caught in the fire and sustained first and second degree burns to 16% of his body.

USA, Drilling, 20/05/2001, Electrical

While rigging down the drilling rig, an employee received electrical burns to his face and arm due to contact with high voltage power supply.

USA, Drilling, 17/10/2001, Fall

A contract employee sustained multiple injuries when the stabbing board he was standing on dropped to the rig floor.

USA, Drilling, 20/04/2001, Struck by

Three contractors were injured when the snub line broke and they were struck by the tongs.

USA, Other, Electrical

A trackhoe operator was focusing on a gate to his left, did not see overhead powerline warning signs on right hand side. The assigned spotter was not in the vicinity when the trackhoe began moving. The boom of the trackhoe came into contact with the overhead powerlines, breaking a 7200 volt line. The operator backed away, secured the area and notified the power company.

USA, Other, 05/04/2001, Struck by

A third party was hospitalized for surgery on a fractured leg received when a drum of chemical fell on his ankle/leg while being loaded from the pick-up.

USA, Production, Vehicle incident

The boom of a trackhoe, being transported on the back of a lowboy, came into contact with a railway bridge overpass causing significant damage to one of four bridge span I-beams.

USA, Unspecified, 13/06/2001, Vehicle incident

A Swing gate across a cattle guard was left partially closed. A pipe from the gate struck the front of the pickup and entered cab, impailing the driver then exiting out through the back of the cab.

Offshore

Mexico, Drilling, 07/10/2001, Explosion/burn

While drilling at a depth of 1091 metres and preparing the drilling fluids on the metallic dams, at 1900 a short circuit occurred. A fire broke out on the suction dam, reaching the fluid pumps, electrical control centre and drilling floor. Though no one was hurt, the following equipment was affected: Fluid metallic dam, control equipment, electric control center, fluid pumps 1&2.

USA, Drilling, Other-Structural

Usually, on the drillship, drill pipe is laid-down, stored and tripped from out of the HPR. Once the stand is moved from a vertical to horizontal position, the HPR latches each stand in 3 locations to move the stand downward into the storage position. At the time of the incident only 2 of the 3 engaged. Whilst the operator tried to correct, the 2 mechanisms released, allowing one end of the pipe to pivot and fall. The stand skidded out of the HPR and finally rested within 5 feet of where 2 people were working.

USA, Production, Fall

Contractor was standing on a ladder making the top bunk. He was leaning over the guard rail to reach across the bunk to tuck in the opposite side of the bed. The guard rail broke causing the contractor to fall off the ladder onto the floor resulting in three days restricted work duty.

USA, Production, Fall

A deck hand was injured while back loading the 36" casing. He slipped and his foot was caught under the joint casing when it was set down. He was sent to shore for x-rays. His foot was cut and bruised but not broken.

USA, Production, 14/08/2001, Other-Strains

While pulling a drill line into the drawworks to attach it to the deadman, the contractor sprained his back.

USA, Production, 16/08/2001, Struck by

A piece of windwall bumper guard piping hit the floorman on the hardhat causing laceration to head.

USA, Production, 15/09/2001, Struck by-Eye

Contractor got a piece of metal in eye from unknown source.

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South America

Onshore

Argentina, Drilling, Vehicle incident

While executing soil movement with a caterpillar, the machine became tilted towards the side risking a roll over. The operator decided to jump to the ground and suffered an ankle injury as a result.

Colombia, Drilling, 16/08/2001, Vehicle incident

A backdigger transported across a mountainous area on a truck to an exploration well turned over and hit a slope when the truck stopped on a steep bend of the road. To start it again, the backdigger operator used the arm of the machine to push the truck up the hill. During this action, the backdigger fell off the truck platform and hit the slope of the road causing severe injuries to the backdigger operator. He was taken to the infirmary and then to a city hospital.

Colombia, Drilling, 24/10/2001, Vehicle incident

During a rig down and mobilisation operation, a tank car transporting diesel oil had mechanical problems, went off the road and turned over. The injured driver was rescued by personnel of the ambulance and taken to a Social Security clinic for medical attention.

Colombia, Exploration, 16/12/2001, Fall

A seismic crew worker was walking across a field that was not very steep although it was slippery because of the rain. He lost his balance and rolled down for approximately 12 meters hitting several parts of his body. He suffered leg and back injuries and was taken to a local hospital for medical attention. The accident resulted in 30 days Lost Time.

Venezuela, Production, 23/01/2001, Other

While performing a confined space entry on a separator for cleaning ops, the primary air supply used by the worker was cut off. Need to specify equipment requirements and not rely on contractor to decide. Ensure personnel in confined space have proper air supply with back up system and a dedicated person is available to monitor the air supply.

Offshore

Brazil, Drilling, 26/09/2001, Other-Structural

While offloading a 50ft joint of buoyancy marine riser from a supply boat, the upper and lower segments fell to the heli/main deck. The securing straps to the riser body failed. It is believed that these had been damaged prior to the journey. Observations about the condition of the cargo at the supply base had not been passed on to the rig. There were no injuries.

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Appendix E
Restricted workday analyses

Not all companies include in their safety data the category Restricted workday cases (RWDCs). RWDCs are injuries and occupational incidents which are severe enough to prevent a person from performing normal duties, but not so severe that lighter duties cannot be performed.

For the analyses in this appendix, data are only used where there is a clear indication that incidents resulting in restricted work are collected. Many companies do not collect these data. Accordingly, the database of hours worked is reduced to 926 million, just 46% of all hours.

Please note that the averaging period used in this section alters in response to limitations in the data partition in earlier years.

E.1 Overall RWDC+LTI frequency

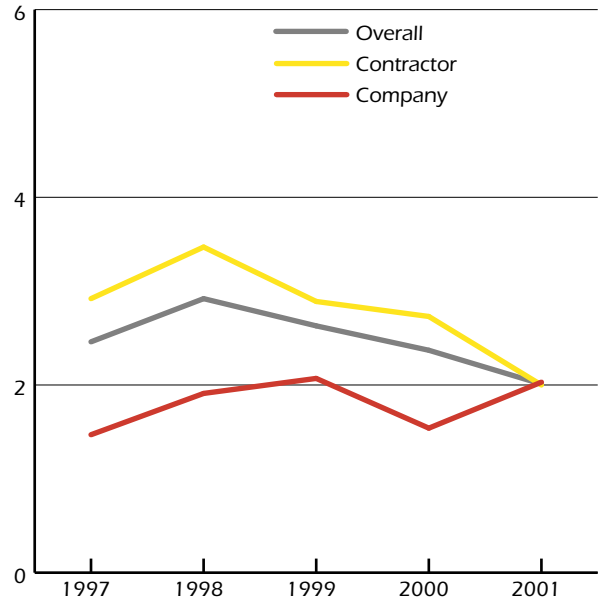
• Overall	2.01	(15% better)§
• Company	2.03	(32% worse)
• Contractor	2.00	(27% better)
• Onshore	1.80	(4% better)
• Offshore	2.76	(27% better)

§ relative to 2000 average

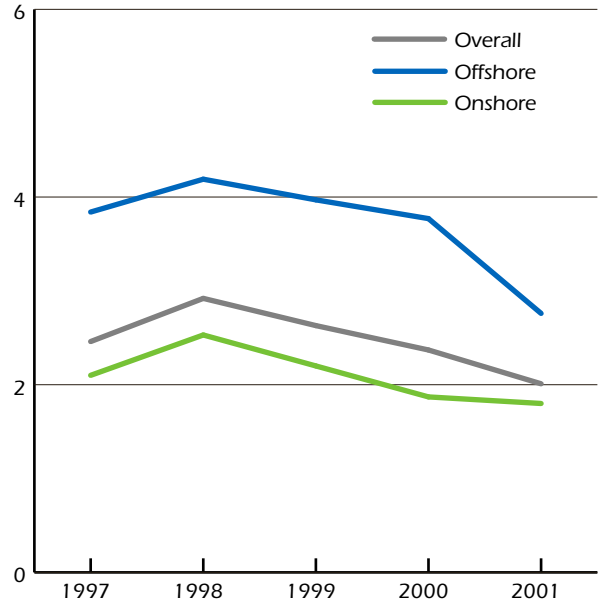
The figures show the frequency of RWDC and LTI for companies and contractors, and onshore and offshore activities.

- The overall frequency improved from 2.37 in 2000 to 2.01 in 2001.
- Both the contractor and offshore figures show a marked improvement compared 2000. The contractor rate reduced from 2.73 in 2000 to 2.00 in 2001, and the offshore rate from 3.77 in 2000 to 2.76 in 2001.
- Last year's improvement in the result for Company only operations has been lost, the frequency reverting to 2.03.
- The frequency of RWDCs and more serious injuries remains higher in the offshore environment.

RWDC+LTI frequency - company & contractor
per million hours worked



RWDC+LTI frequency - onshore & offshore
per million hours worked



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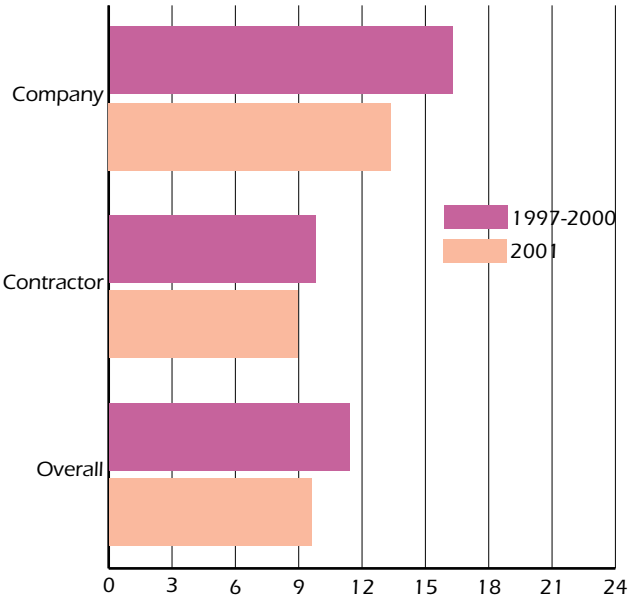
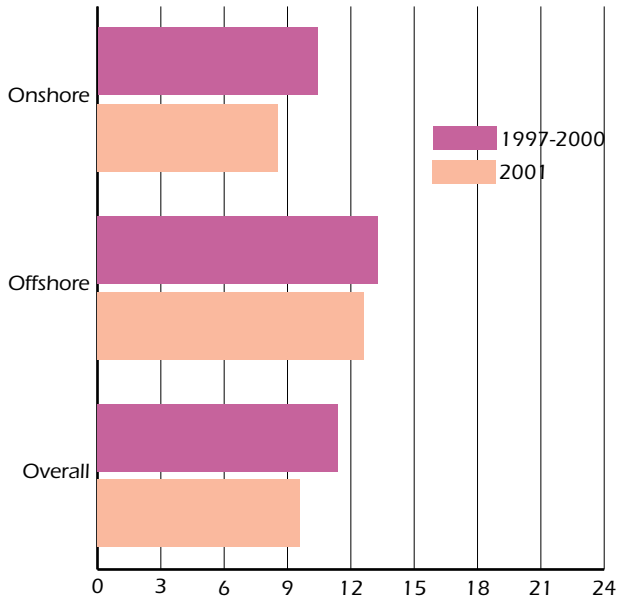
E.2 Severity

Severity of restriced workday cases - company & contractor
average days of restricted work per RWDC



Severity of restriced workday cases - onshore & offshore
average days of restricted work per RWDC



- **Overall** **9.6 days** (16% fewer)§
- **Company** **13.38 days** (18% fewer)
- **Contractor** **8.94 days** (9% fewer)
- **Onshore** **8.56 days** (18% fewer)
- **Offshore** **12.63 days** (5% fewer)

§ relative to 1997-2000 average

Many companies do not have the RWDC category of incident, and even fewer collect data on days of restricted work. The database is 660 million hours worked, just 33% of the total database.

- A total of 3896 days were lost as a result of restricted workday cases, in the sense that normal duties could not be preformed. This compares with 56130 days lost as a result of lost time injuries (on a database 3 times as large).
- The average number of days lost to restricted work per case decreased, most noticeably among company staff and onshore.
- The average number of days lost per RWDC is 50% greater for company personnel than for contractor personnel.
- 48% more days are lost per RWDC in the offshore environment than the onshore environment.

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E.3 RWDC + LTI frequency by region

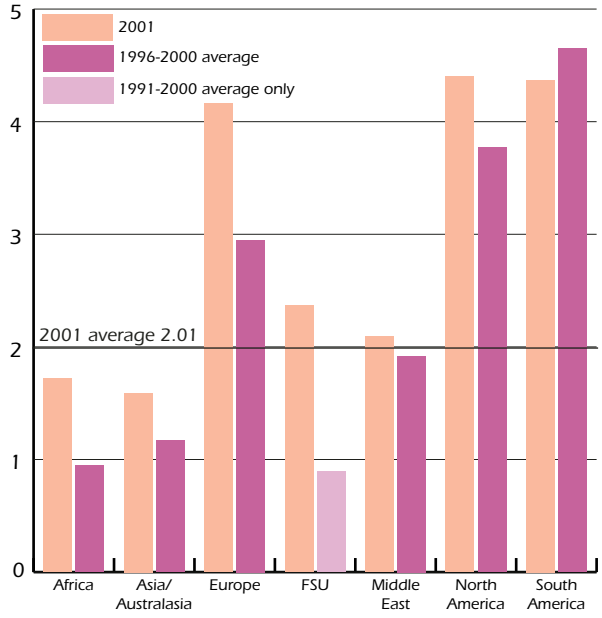
- **Overall** 2.01 (26% better)§
- **Africa** 0.95 (45% better)
- **Asia/Australasia** 1.17 (26% better)
- **Europe** 2.95 (29% better)
- **FSU** 0.89 (62% better)
- **Middle East** 1.92 (8% better)
- **North America** 3.77 (14% better)
- **South America** 4.65 (6% worse)

§ relative to 1996-2000 average

The figure shows the frequency of RWDC and LTI for the different regions, in comparison to the regional average for the period 1996 to 2000.

- Improvement in performance is seen for all regions, with the greatest change being associated with operations in the FSU region, where the 2001 value (0.89) is 37% of the regional average for the proceeding 5 year period (2.71).

RWDC+LTI frequency - regions
per million hours worked



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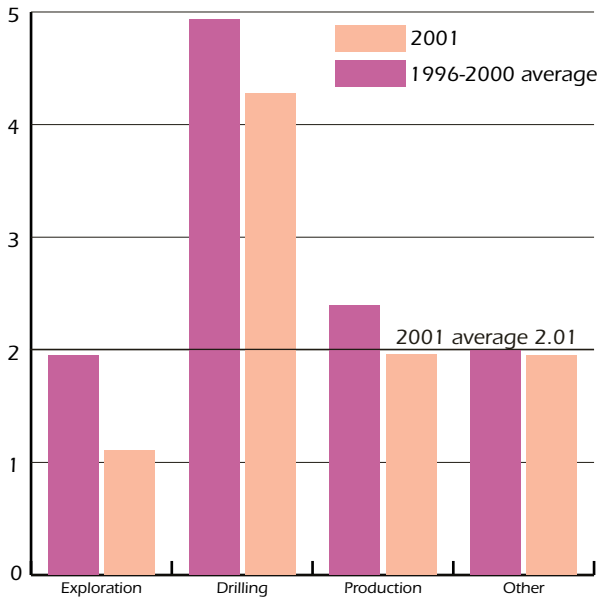
E.4 RWDC + LTI frequency by function

• **Overall**	**2.01**	(24% better)§
• **Exploration**	**1.11**	(43% better)
• **Drilling**	**4.28**	(13% better)
• **Production**	**1.96**	(18% better)
• **Other**	**1.95**	(3% better)

§ relative to the average for 1996-2000

RWDC+LTI frequency - functions
per million hours worked



The figure show the frequency of RWDC and LTI associated with the different functions.

- There has been an improvement in the RWDC+LTI frequency associated with all the functions reported, the largest improvement in the 'exploration' function.
- The performance in the 'drilling' function is in excess of twice the industry average for 2001.

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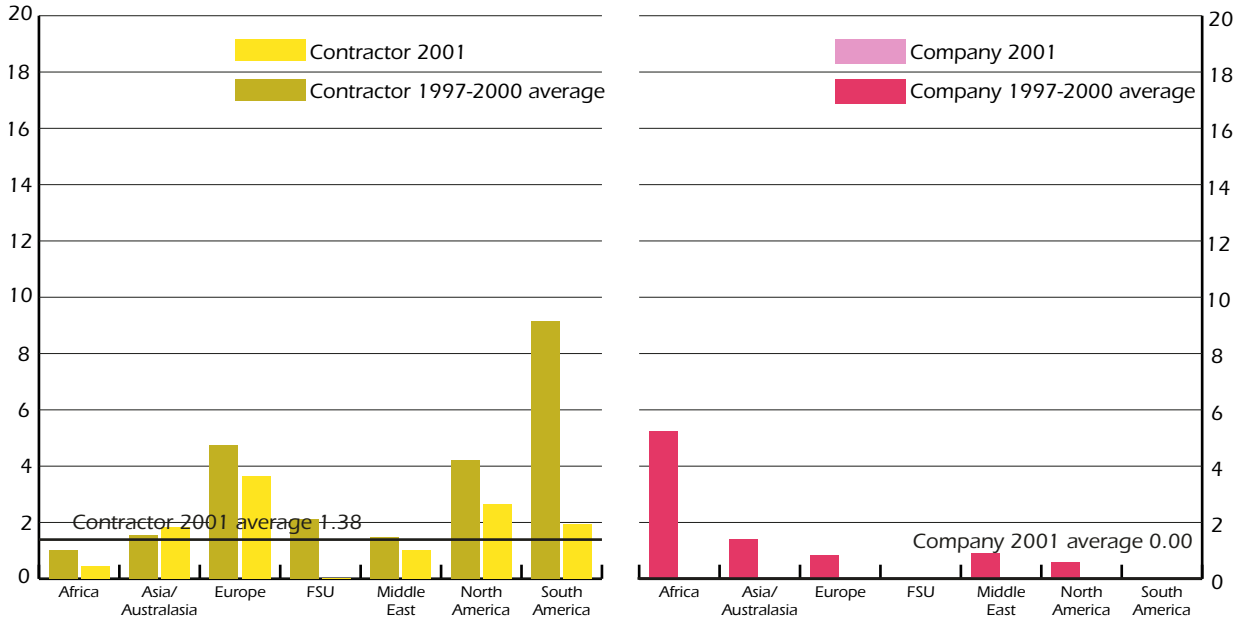
E.4.1 Exploration

Exploration RWDC+LTI frequency by region
per million hours worked



- The contractor only average of 1.38 for 2001 is 60% of the 1997-2000 average (2.31) for all regions.
- All countries show an improvement on the result for the preceding 4 years except Asia/Australasia. Contractors in South America returned a frequency less than 22% of the value for the preceding 4 years.
- Africa, FSU and the Middle East results are better than the average for all regions in 2001.
- The company only average reduced to 0.00 for exploration; however, the hours worked in these functional groups are too small to draw any useful conclusions.

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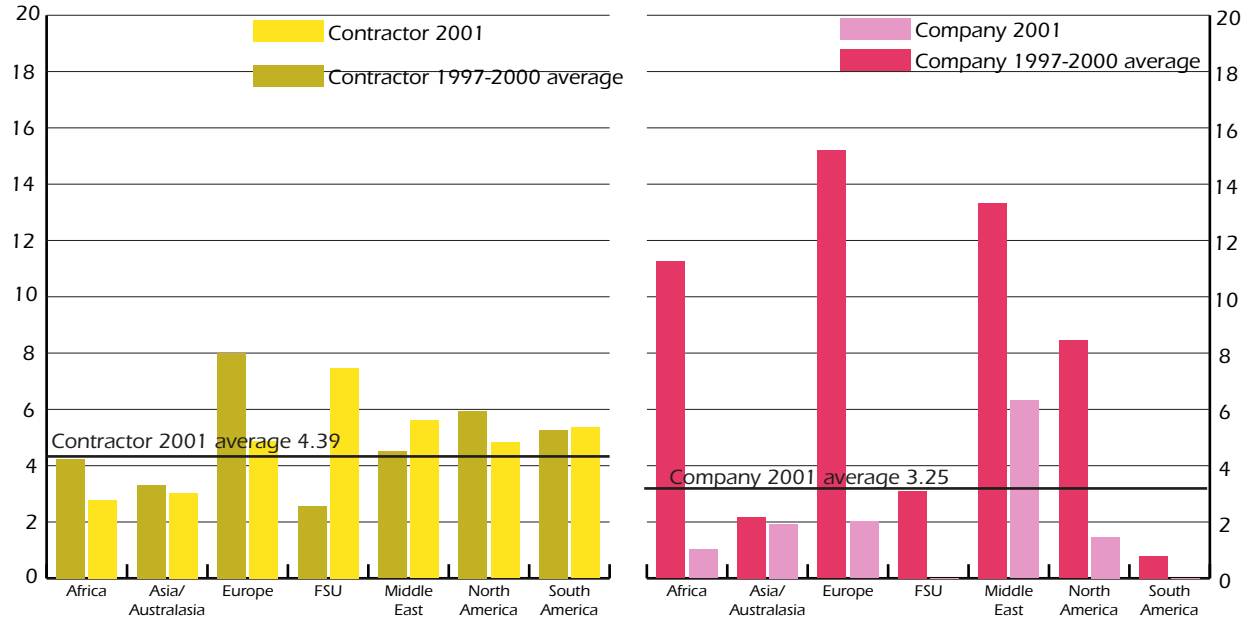
E.4.2 Drilling

Drilling RWDC+LTI frequency by region
per million hours worked



- Drilling contractors again improved their overall performance from an average of 5.34 for the period 1997-2000 to 4.39 in 2001.
- Substantial improvement was seen in the performance of companies in all regions, albeit against a background of relatively few hours being reported.

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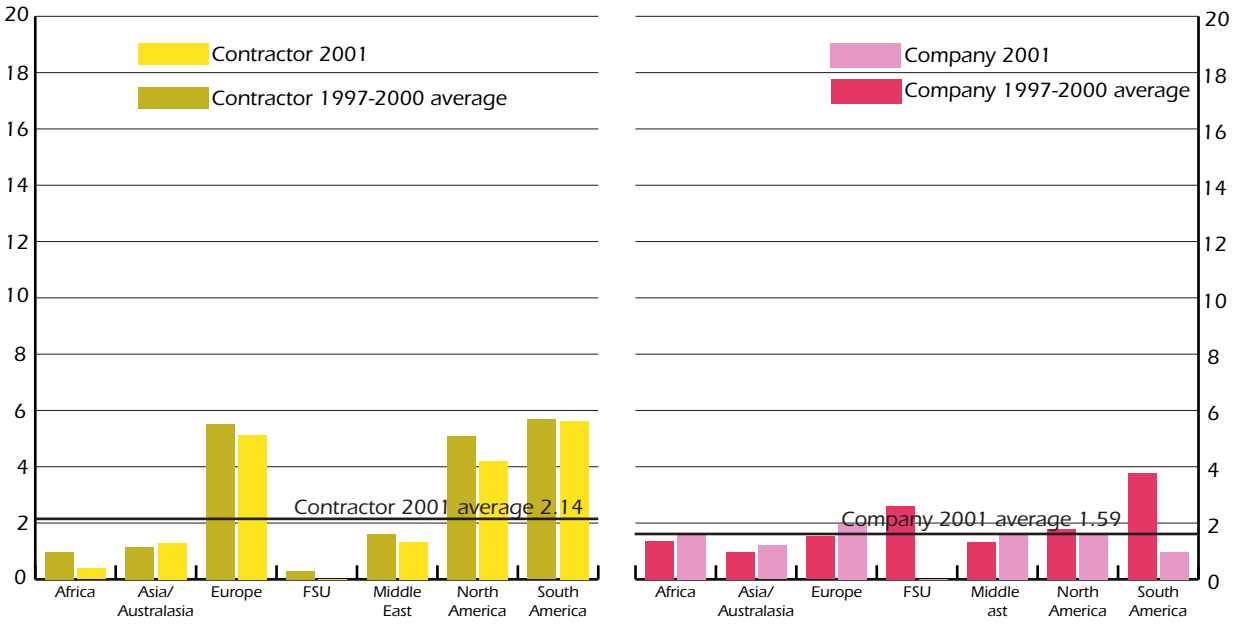
E.4.3 Production

Production RWDC+LTI frequency by region
per million hours worked



- Other than a marked improvement in the performance of companies in the South American region, little change is seen in the RWDC + LTI frequency associated with production.

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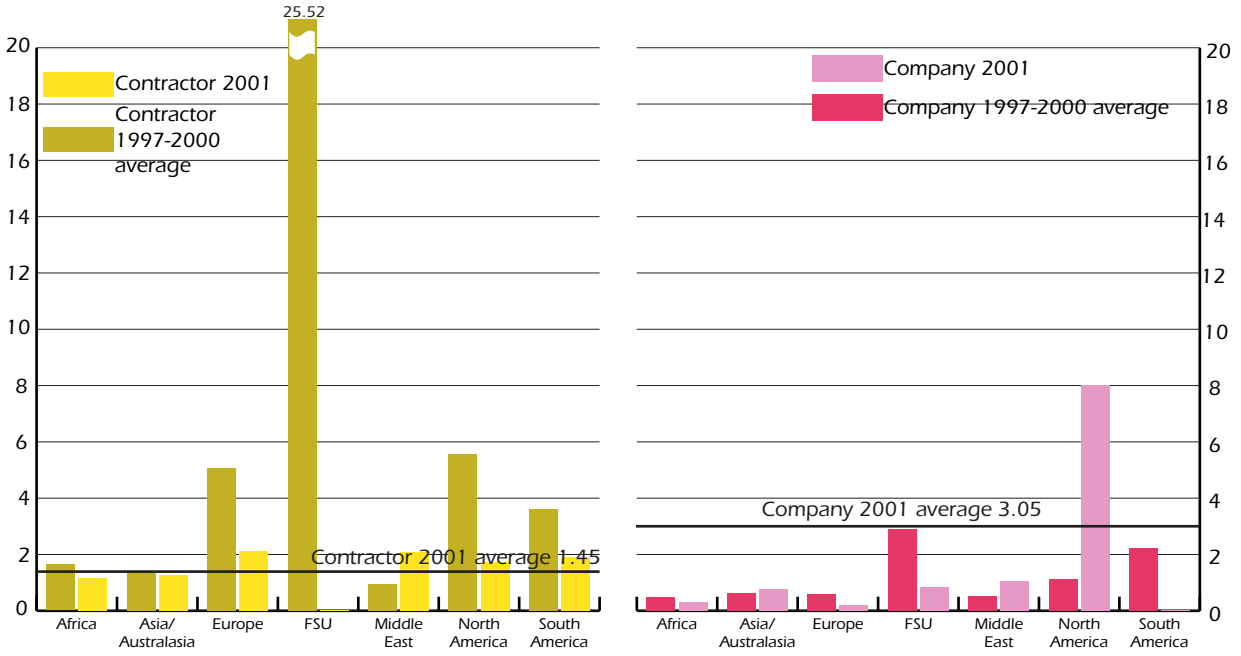
E.4.4 Other

Other RWDC+LTI frequency by region
per million hours worked



- A substantial deterioration in performance is noted for company operations in the North American region, with the 2001 value being over 7 times greater than the average value for the proceeding 5 year period, and over twice the world average.

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Appendix F
Glossary of terms

Accident severity
The average number of lost days per lost workday case.

Caught between
Injury where injured person is crushed or similarly injured between machinery moving parts or other objects, caught between rolling tubulars or objects being moved, crushed between a ship and a dock, or like incidents.

Company employee
Any person employed by and on the payroll of the reporting Company, including corporate and management personnel specifically involved in exploration and production. Persons employed under short-service contracts are included as Company employees provided they are paid directly by the Company.

Contractor
A 'Contractor' is defined as an individual or organisation performing work for the reporting company, following verbal or written agreement. 'Sub-contractor' is synonymous with 'Contractor'.

Contractor employee
Any person employed by a Contractor or Contractor's Sub-Contractor(s) who is directly involved in execution of prescribed work under a contract with the reporting Company.

Drilling
All exploration, appraisal and production drilling and workover as well as their administrative, engineering, construction, materials supply and transportation aspects. It includes site preparation, rigging up and down and restoration of the drilling site upon work completion. Drilling includes ALL exploration, appraisal and production drilling.

Exploration
Geophysical, seismographic and geological operations, including their administrative and engineering aspects, construction, maintenance, materials supply, and transportation of personnel and equipment; excludes drilling.

Explosion or burn
Incident caused by burns, toxic gases, asphyxiation or other effects of fires and explosions. 'Explosion' means a rapid combustion, not an overpressure.

Fall
Incident caused by falling off, over or onto something.

Fatal accident rate (FAR)
The number of company/contractor fatalities per 100,000,000 (100 million) hours worked.

Fatal incident rate (FIR)
The number of fatal incidents per 100,000,000 (100 million) hours. Incidents involving a third party fatality are included (since 1998), provided they directly result from company or contractor operations.

First aid case
Cases that are not sufficiently serious to be reported as medical treatment or more serious cases but nevertheless require minor first aid treatment, eg. dressing on a minor cut, removal of a splinter from a finger. First aid cases are not recordable incidents.

Hours worked
The actual 'hours worked' are recorded in the case of onshore operations. For offshore workers, the 'hours worked' are calculated on a 12 hours workday. Consequently average hours worked per year will vary from 1600 to 2300 hours/person (averaging 2000) depending upon the shift on/off ratio. Vacations and leaves are excluded.

Hours worked in year (000's)
Hours are rounded to the nearest thousand.

Lost time injury (LTI)
A fatality or lost workday case. The number of LTIs is the sum of fatalities and lost workday cases.

Lost time injury frequency (LTIF)
The number of lost time injuries (fatalities + lost workday cases) incidents per 1,000,000 hours worked.

Lost workday case (LWDC)
Any work related injury other than a fatal injury which results in a person being unfit for work on any day after the day of occurrence of the occupational injury. "Any day" includes rest days, weekend days, leave days, public holidays or days after ceasing employment.

Medical cause of death
This is the cause of death given on the death certificate. Where two types of causes are provided, such as "pulmonary oedema" caused by "inhalation of hot gases from a fire", both are recorded.

Medical treatment case (MTC)
Cases that are not severe enough to be reported as fatalities or lost work day cases or restricted work day cases but are more severe than requiring simple first aid treatment.

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Number of days unfit for work

The sum total of calendar days (consecutive or otherwise) after the days of the occupational injuries on which the employees involved were unfit for work and did not work.

Number of employees

Average number of full-time and part-time employees, calculated on a full-time basis, during the reporting year.

Number of fatalities

The total number of Company's employees and or Contractor's employees who died as a result of an incident. 'Delayed' deaths that occur after the incident are included if the deaths were a direct result of the incident. For example, if a fire killed one person outright, and a second died three weeks later from lung damage caused by the fire, both are reported.

Occupational injury

Any injury such as a cut, fracture, sprain, amputation, etc., which results from a work accident or from a single instantaneous exposure in the work environment. Conditions resulting from animal bites, such as insect or snake bites, and from one-time exposure to chemicals are considered to be injuries.

Offshore work

All activities and operations that take place at sea, including major inland seas (eg. Caspian Sea) and other inland seas directly connecting with oceans. Includes transportation of people and equipment from shore to the offshore location either by vessel or helicopter.

Onshore work

All activities and operations that take place within a landmass, including those in swamps, rivers and lakes. Activities in bays, in major inland seas, or in other inland seas directly connected to oceans are counted as offshore.

Other (as a category of work)

Major construction and fabrication activities and disassembly, removal and disposal (decommissioning) at the end of the life of a facility. Includes factory construction of process plant, offshore installation, hook-up and commissioning, and removal of redundant facilities. Also includes personnel and incidents that cannot naturally be assigned to exploration, drilling or production.

Production

Petroleum and natural gas producing operations, including their administrative and engineering aspects, minor construction, repairs, maintenance and servicing, materials supply, and transportation of personnel and equipment. It covers all mainstream production operations including wireline. It does not cover production drilling and workover.

Restricted workday case (RWDC)

Any work-related injury other than a fatality or lost work day case which results in a person being unfit for full performance of the regular job on any day after the occupational injury. Work performed might be:

- an assignment to a temporary job;
- part-time work at the regular job;
- continuation full-time in the regular job but not performing all the usual duties of the job.

Where no meaningful restricted work is being performed, the incident is recorded as a lost workday case (LWDC).

Struck by

Incidents where injury results from being hit by moving equipment and machinery, or by flying or falling objects.

Total recordable incident rate (TRIR)

The number of recordable incidents (fatalities + lost workday cases + restricted workday cases + medical treatment cases) per 1,000,000 hours worked.

Vehicle incident

Incidents involving motorised vehicles designed for transporting people and goods over land, e.g. cars, buses, trucks. Pedestrians struck by a vehicle are classified as vehicle incidents. Fatal incidents from a mobile crane would only be vehicle incidents if the crane were being moved between locations.

Work-related injury

See occupational injury.

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Appendix G
Contributing companies

The table below shows the size of the database in thousands of hours worked for each contributing company and whether reported data includes information on contractor statistics, breakdown by function, medical treatment cases, restricted workday cases, and days lost following lost workday and restricted workday cases. All company submissions include data on numbers of fatalities and lost workday cases.

Company	10^3 Hours	Contractor data	Data by function	MTCs	RWDCs	LWDC days	RWDC days
ADNOC	39400	yes	yes	partly	partly	yes	no
Amerada Hess	23326	yes	yes	partly	partly	mostly	partly
Anardako	7607	no	no	yes	no	yes	no
BG	46386	yes	mostly	mostly	partly	mostly	partly
BHP	11381	yes	mostly	yes	yes	yes	no
BP	204790	yes	yes	yes	no	no	no
Cairn Energy	5716	yes	no	yes	no	yes	no
ChevronTexaco	236431	yes	mostly	mostly	mostly	mostly	mostly
Conoco	31660	yes	no	yes	no	no	no
DONG	2062	yes	yes	no	no	no	no
Ecopetrol	5038	no	no	yes	yes	yes	yes
ENI	53589	yes	mostly	yes	no	mostly	no
Enterprise	3569	yes	yes	no	no	mostly	no
ExxonMobil	145296	yes	yes	yes	yes	no	no
GNP	6108	yes	mostly	yes	partly	yes	partly
HOCOL	6994	yes	yes	yes	yes	yes	yes
Kuwait Oil Company	25548	yes	yes	yes	no	yes	no
Mærsk	6811	yes	mostly	yes	no	yes	no
Marathon	12497	yes	mostly	yes	yes	partly	partly
Norsk Hydro	9612	yes	no	yes	no	no	no
OMV	2317	no	mostly	no	no	no	no
OXY	21680	yes	mostly	partly	no	partly	no
PDVSA	126413	yes	mostly	yes	no	yes	no
PEMEX	162792	yes	mostly	no	no	partly	no
Petro-Canada	9661	yes	mostly	yes	yes	yes	yes
Petronas Carigali	18706	yes	no	yes	yes	yes	mostly
Phillips	29108	yes	mostly	yes	yes	yes	yes
Premier	7245	yes	yes	yes	yes	yes	yes
PTTEP	4225	yes	yes	yes	no	yes	no
QGPC	48945	yes	mostly	no	no	partly	no
Rasgas	3531	yes	yes	yes	yes	yes	yes
Repsol	57658	yes	mostly	yes	no	yes	no
Saudi Aramco	30421	no	yes	no	yes	yes	yes
Shell	331000	yes	mostly	yes	yes	yes	yes
Statoil	29022	yes	yes	yes	yes	no	no
TotalFinaElf	117856	yes	yes	no	no	partly	no
Triton	1437	yes	yes	yes	yes	yes	yes
VEBA	1281	yes	yes	yes	yes	yes	yes
VICO	13073	yes	yes	yes	no	no	no
Wintershall (non-member)	1086	yes	yes	yes	yes	yes	yes
Yukos	75368	yes	mostly	yes	no	yes	no

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Appendix H
Countries represented

The tabulation shows the breakdown of reported hours worked in regions and countries. Also shown are the numbers of companies reporting data in each country. The table does not necessarily show all hours worked in the upstream petroleum sector in each country.

Country	No. reporting companies	Hours (000)
Africa		
Algeria	6	16891
Angola	8	35966
Cameroon	3	14859
Chad	1	7807
Congo	3	6015
Congo (Dem. Rep. of)	1	358
Egypt	4	49783
Equatorial Guinea	2	5230
Gabon	5	9235
Libya	3	3526
Morocco	2	144
Namibia	1	86
Nigeria	7	155495
Sudan	1	6108
Tunisia	2	1598
Asia/Australasia		
Australia	7	16055
Bangladesh	1	1850
Borneo	1	16
Brunei	2	20552
Cambodia	1	6
China	7	11797
India	2	5734
Indonesia	12	183563
Malaysia	5	44791
Myanmar	2	3923
New Zealand	1	1393
Pakistan	6	22680
Papua New Guinea	2	4412
Philippines	2	9883
Singapore	1	33
Thailand	5	13022
Vietnam	5	3804
Europe		
Albania	3	472
Austria	1	1858
Croatia	1	146
Denmark	4	9634
Faroe Islands	2	168
France	2	5024
Georgia	1	15
Germany	2	1786
Greece	1	104
Ireland	3	695
Italy	4	6701
Netherlands	8	20207
Norway	10	53092
Spain	1	964
UK	18	82151
FSU		
Azerbaijan	4	7919
Kazakhstan	5	69321
Russia	9	80965
Turkmenistan	2	152
Middle East		
Iran	5	41286
Israel	1	62
Kuwait	5	27605
Oman	2	59358
Qatar	6	60677
Saudi Arabia	2	30435
Syria	3	15860
UAE	4	46890
Yemen	1	964
North America		
Canada	8	57648
Mexico	3	162797
USA	14	202653
South America		
Argentina	5	54494
Bolivia	4	10150
Brazil	8	2280
Colombia	6	31595
Cuba	1	50
Ecuador	3	10838
Falkland Islands	1	2
Peru	1	6
Trinidad	4	7152
Venezuela	11	155855

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What is OGP?

The International Association of Oil & Gas Producers encompasses the world's leading private and state-owned oil & gas companies, their national and regional associations, and major upstream contractors and suppliers.

Vision

- To work on behalf of all the world's upstream companies to promote responsible and profitable operations.

Mission

- To represent the interests of the upstream industry to international regulatory and legislative bodies.
- To achieve continuous improvement in safety, health and environmental performance and in the engineering and operation of upstream ventures.
- To promote awareness of Corporate Social Responsibility issues within the industry and among stakeholders.

Objectives

- To improve understanding of the upstream oil and gas industry, its achievements and challenges and its views on pertinent issues.
- To encourage international regulators and other parties to take account of the industry's views in developing proposals that are effective and workable.
- To become a more visible, accessible and effective source of information about the global industry, both externally and within member organisations.
- To develop and disseminate best practices in safety, health and environmental performance and the engineering and operation of upstream ventures.
- To improve the collection, analysis and dissemination of safety, health and environmental performance data.
- To provide a forum for sharing experience and debating emerging issues.
- To enhance the industry's ability to influence by increasing the size and diversity of the membership.
- To liaise with other industry associations to ensure consistent and effective approaches to common issues.

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