

Safety Statistics for IMCA Members

Report for the Period 1 January-31 December 2008

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1 Introduction

IMCA has for the past twelve years produced an annual report of safety statistics (covering fatalities and injuries) supplied by members. This information note reports the annual statistics for 2008. Safety statistics are a useful insight into the performance of a company in the areas of health, safety and environment. The purpose of these statistics is to record the safety performance of IMCA contractor members each year and to enable IMCA members to benchmark their performance. Statistics were sent in by 129 companies and organisations, representing 140 contractor members, 53% of all IMCA contractor members – a record for the fourth year running. Thirty-six companies and organisations took part for the first time. The continued increase in reporting from member companies is a good thing and is to be encouraged. IMCA would like to thank all those who took part in this important annual benchmarking exercise.

This will be the sixth year that IMCA has collected leading indicators of health, safety and environmental performance, and the fourth year that IMCA has calculated a total recordable injury rate (TRIR) from data supplied by members. This was requested by members to enable further benchmarking and to move away from reliance on lost time injuries (LTIs) as a primary arbiter of safety.

2 Executive Summary

Overall lost time injury frequency rate (overall LTIFR)	0.72
Overall number of lost time injuries	433
Overall total recordable injury rate (TRIR)	2.50
Overall fatal accident rate (FAR)	1.14
Range of overall LTIFR (second highest-second lowest)	15.6 - 0.10
Range of overall TRIR (second highest-second lowest)	68.5 - 0.47
Offshore lost time injury frequency rate (offshore LTIFR)	0.74
Offshore fatal accident rate (FAR)	1.08
Offshore total recordable injury rate (TRIR)	2.53
Onshore lost time injury frequency rate (onshore LTIFR)	0.64
Onshore total recordable injury rate (TRIR)	2.40

Table 1 – Summary of IMCA safety statistics for 2008

The 2008 dataset is drawn from 129 IMCA contractor members, based upon 612 million man-hours of work overall (465 million man-hours offshore). This is a significant increase on the 2007 figures, particularly in the man-hours worked. The number of contributors has increased by 29%, rising from 100 in 2007 to 129 in 2008.

The overall man-hours in the IMCA dataset has nearly doubled between 2007 and 2008, and offshore working hours recorded likewise increased by 84% from 252 million man-hours in 2007 to 465 million man-hours in 2008. Onshore data was provided by 107 of 129 companies (83%).

The recent year-on-year increase in the number of contributors and the man-hours worked is commensurate with the growth in IMCA membership over the same period. The safety statistics recorded here by IMCA members are consistent with those of the other main industry trade associations, the International Association of Oil & Gas Producers (OGP), the International Association of Drilling Contractors (IADC) and the International Association of Geophysical Contractors (IAGC). Further details of the results published by these organisations can be found in Section 8.

It should be noted that although IMCA encourages all contractor members to take part in this safety statistics exercise, doing so is not mandatory, and statistics are submitted on a voluntary basis on the understanding of complete anonymity. Members should also note that the data recorded here, though broadly representative of marine contractors, is the combined safety statistics only of the 129 contractor members who actually took part. It should be recalled that these statistics necessarily will not capture all the incidents, including fatalities, which may have taken place within the marine contracting industry during 2008. IMCA continues to share information from incidents and fatalities in our sector, even those not reported in these statistics, through our normal communications such as safety flashes.

As in previous years, data is separated into separate offshore and onshore activity to improve consistency in the data collected. The offshore statistics cover offshore work only, whereas the inclusion of onshore work covers such areas as fabrication yards and office work.

The statistics over the past twelve years have been as follows:

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Million hours worked per year	47.6	52.9	52.8	65.6	54.5	197.31	200.40	145.35	159.5	220.5	309.6	612.4
Overall number of LTIs	236	257	196	227	162	244	198	164	189	226	339	433
Overall LTIFR	4.96	4.86	3.72	3.46	2.97	1.24	0.99	1.13	1.18	1.02	1.09	0.72
Overall number of fatalities	3	2	4	5	4	3	5	3	6	6	6	7
Overall fatal accident rate	6.30	3.80	7.60	7.60	7.30	1.52	2.49	2.06	3.13	2.72	1.94	1.14
Overall no. of recordable injuries								645	864	914	1356	1531
Overall TRIR								5.42	4.14	4.38	2.50	
Million hours offshore						62.14	66.39	72.83	101.8	185.5	251.9	464.8
Offshore no. of LTIs (offshore)							133	120	172	196	315	341
Offshore LTIFR				4.25	3.77	2.96	2	1.65	1.69	1.06	1.25	0.74
Offshore number of fatalities							4	2	5	6	6	6
Offshore fatal accident rate				10.12	10.14	4.83	6.03	2.75	3.93	3.23	2.38	1.08
Offshore TRIR								8.87	7.29	4.35	4.68	2.53
Million hours worked onshore						135.16	134.01	72.18	57.7	35.0	57.7	147.6
Onshore LTIFR				1.05	0.86	0.44	0.49	0.61	0.29	0.86	0.42	0.64
Onshore TRIR									2.10	3.05	3.05	2.40
Onshore fatal accident rate						0	0.75	1.39	1.73	0.00	0.00	1.35
No. of participating companies	23	32	28	31	32	32	31	36	51	74	100	129

Table 2 – Summary of IMCA safety statistics 1997-2008

2.1 Definitions

Number of fatalities – the total number of employees and others who died as a result of an accident

Fatal accident rate (FAR) – number of fatalities per 100,000,000 hours worked

Number of lost time injuries (LTIs) – comprises all accidental injuries (including fatalities and lost work day cases but excluding restricted work day cases). Further detail can be found in Appendix I

Lost time injury frequency rate (LTIFR) – analysed separately as offshore, onshore and overall statistics

$$\frac{\text{lost time injuries} \times 1,000,000}{\text{hours worked}}$$

Total recordable injury rate (TRIR) – the number of injuries and/or illnesses per 100 full-time workers and is calculated as:

$$\frac{\text{total number of recordable injuries} \times 1,000,000}{\text{total hours worked}}$$

The definition of injuries used is that of the US Occupational Safety and Health Administration (OSHA) and is shown in full at Appendix I. Note: IMCA uses one million rather than 200,000 man-hours as a basis for the calculation.

3 Contributors by Geographical Region

IMCA's regional sections enable members to collaborate at a regional level, sharing best practice, networking and co-ordinating discussions with client and regulatory bodies. IMCA members join one of four geographical regions (with the Americas being split into two regional sections from June 2009), based roughly around time-zones, depending on where their primary areas of operations are based. ICO members are international contractor members. These are eight highest level international companies who are members of IMCA and who conduct work in all regions of the world.

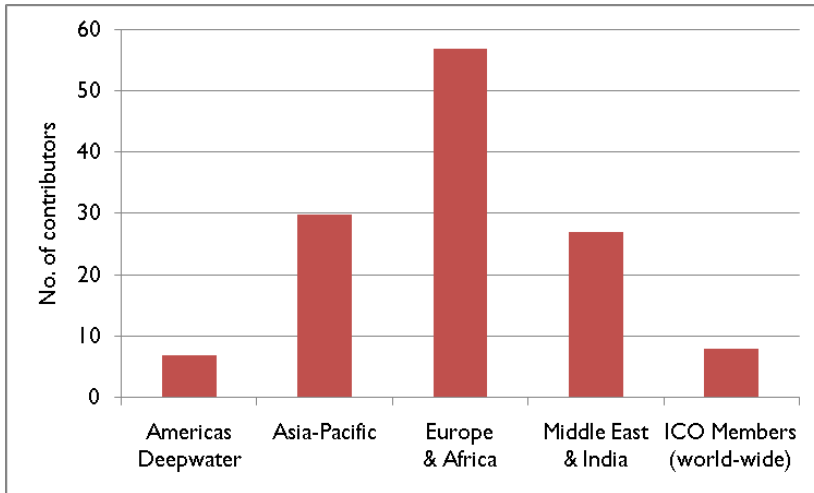


Figure 1 – Contributors by IMCA geographical region

IMCA Region	Contributors
Americas	7
Asia-Pacific	30
Europe & Africa	57
Middle East & India	27
ICO (world-wide)	8

Table 3 – Contributors by region

		FAR	LTIFR	TRIR
Offshore	Americas	6.08	1.18	3.74
	AP	0.00	0.65	2.23
	EA	1.31	1.01	3.29
	MEI	1.78	0.87	2.14
	ICO	0.00	0.40	1.82
Onshore	Americas	0.00	1.24	4.38
	AP	5.20	0.21	1.40
	EA	0.00	0.80	2.43
	MEI	0.00	2.19	8.31
	ICO	2.02	0.24	1.44
Overall	Americas	4.44	1.20	3.91
	AP	1.29	0.54	2.02
	EA	0.94	0.95	3.05
	MEI	1.59	1.02	2.81
	ICO	0.47	0.36	1.73

Table 4 – Lagging safety indicators by IMCA region

Key: Please refer to the appendices for further definition of these rates and acronyms

FAR	fatal accident rate	RAL	reporting activity level
LTIFR	lost time injury frequency rate	MVR	management visit ratio
TRIR	total recordable injury rate	LLR	lessons learnt ratio
SOFR	safety observation frequency		

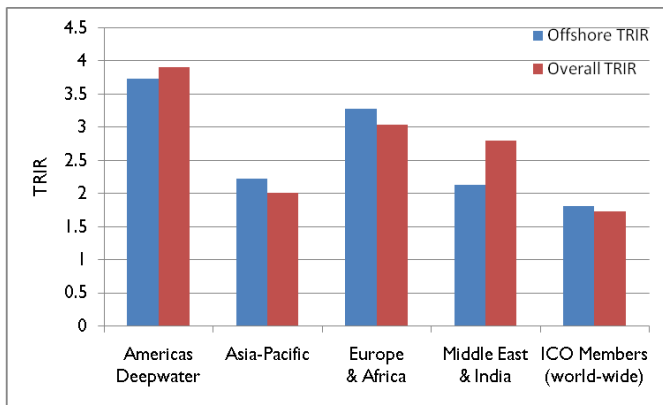


Figure 2 – Overall and offshore TRIR by region

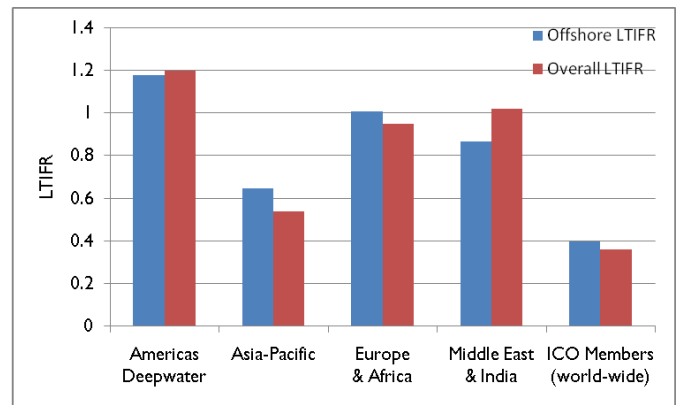


Figure 3 – Overall and offshore LTIFR by region

4 Contributors by IMCA Technical Division

IMCA members join one or more of the four technical divisions – Diving, Marine, Offshore Survey and Remote Systems & ROV – depending on the work they are conducting. ICO members belong to all four technical divisions as they tend to conduct work in all four technical disciplines.

It is possible to see that Marine and Diving Division IMCA members are most likely to take part in the safety statistics exercise but it is not possible, owing to the fact that members can join in one or more of the four technical divisions, to draw any conclusions about the safety performance of members in different divisions.

Although 129 companies and organisations took part in this year’s exercise, because of multiple membership where a parent company may report for a daughter or sister organisation, this represented 140 marine contractors.

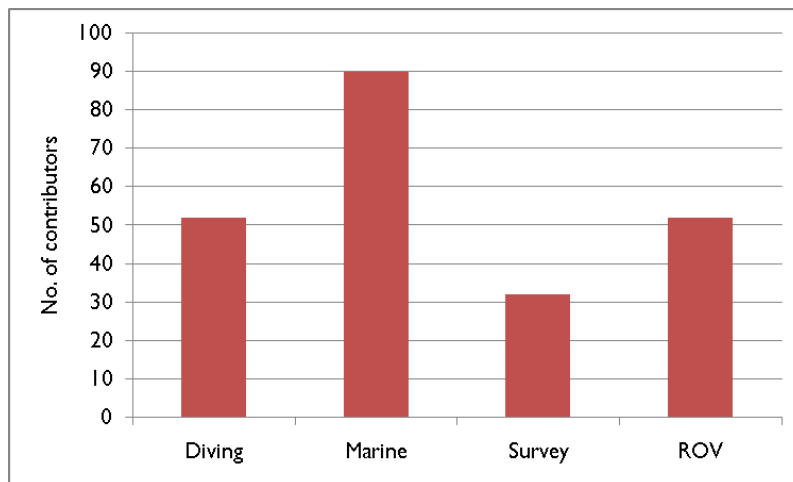


Figure 4 – Contributors by IMCA technical division

5 Individual Company LTIFR and TRIR Statistics

The following tables show the important statistical rates for each of the 129 companies with an identifying number and a letter indicating the band into which they fall. In order for members to identify how their company compares to others of like size, four bands are used for contributing contracting companies, categorised by their annual amount of overall working hours.

Once again members’ attention is drawn to the fact that in 2006 there was an adjustment of the positioning of the bands, as there was a noticeable increase in data coming from very large (more than five million man-hours overall) companies. A letter has accompanied this report addressed to each contributing member which lets each recipient know only its own identifying number.

Band	Hours Worked
A	<500,000
B	500,000-1,000,000
C	1,000,000-5,000,000
D	>5,000,000

Table 5 – Hours worked bands

Co	Band	Offshore LTIFR	Onshore LTIFR	Overall LTIFR	Offshore TRIR	Onshore TRIR	Overall TRIR
	IMCA	0.74	0.64	0.72	2.53	2.40	2.50
1	C	0.00	0.00	0.00	5.71	0.00	5.57
2	A	0.00	0.00	0.00	153.19	0.00	81.45
3	D	2.20	0.00	2.10	2.87	0.00	2.75
4	A	0.00	0.00	0.00	0.00	0.00	0.00
5	B	0.00	0.00	0.00	4.26	0.00	3.91
6	C	0.86	0.00	0.73	3.46	0.00	2.92
7	C	2.08	0.00	1.44	3.63	0.00	2.53
8	A	0.00	0.00	0.00	0.00	0.00	0.00
9	D	0.49	0.00	0.40	1.77	0.80	1.58
10	C	0.00	0.00	0.00	0.79	0.00	0.69
11	A	0.00	0.00	0.00	0.00	0.00	0.00
12	D	0.26	0.00	0.26	0.48	0.00	0.48
13	D	0.29	0.00	0.28	0.80	0.00	0.76
14	A	0.00	0.00	0.00	0.00	0.00	0.00
15	C	0.65	0.00	0.53	1.30	0.00	1.06
16	D	0.90	0.00	0.90	3.71	0.00	3.71
17	C	0.00	0.00	0.00	0.76	0.00	0.73
18	A	0.00	0.00	0.00	0.00	0.00	0.00
19	B	0.00	0.00	0.00	1.27	0.00	1.15
20	C	1.51	4.49	1.81	5.52	4.49	5.42
21	B	3.28	0.00	2.98	6.57	16.22	7.46
22	C	1.06	6.85	1.48	8.48	6.85	8.37
23	A	0.00	0.00	0.00	0.00	0.00	0.00
24	C	0.74	6.29	1.32	2.21	6.29	2.64
25	C	0.00	0.00	0.00	4.44	5.35	4.57
26	D	0.15	2.56	0.55	0.80	9.14	2.19
27	C	1.35	0.00	0.81	8.12	1.99	5.65
28	D	1.61	0.00	1.61	5.28	0.00	5.28
29	A	8.26	0.00	5.91	24.79	41.47	29.55
30	A	0.00	0.00	0.00	21.48	16.43	20.23
31	C	2.36	1.72	2.20	3.55	29.27	10.12
32	B	0.00	0.00	0.00	3.16	21.38	5.51
33	C	2.49	0.00	2.00	7.47	0.00	5.99
34	A	5.75	24.92	7.73	11.49	24.92	12.88
35	C	0.00	0.00	0.00	0.00	0.00	0.00
36	A	0.00	0.00	0.00	0.00	0.00	0.00
37	C	1.25	6.86	3.23	3.74	6.86	4.84
38	D	2.49	1.09	1.93	8.52	4.62	6.98
39	D	2.37	0.00	2.37	6.65	0.00	6.65
40	B	0.00	0.00	0.00	9.05	2.28	6.05
41	A	6.45	7.20	6.80	19.35	21.59	20.41
42	A	0.00	0.00	0.00	26.95	0.00	18.85
43	C	0.88	0.00	0.67	6.17	0.00	4.68
44	C	0.69	1.81	1.00	2.08	1.81	2.01
45	A	0.00	0.00	0.00	8.04	0.00	8.04
46	A	2.80	0.00	2.75	8.41	0.00	8.25
47	C	2.80	0.00	2.80	11.43	0.00	11.43
48	C	0.00	0.00	0.00	3.91	3.21	3.80
49	A	0.00	0.00	0.00	0.00	0.00	0.00
50	C	0.00	0.00	0.00	5.10	0.00	3.47
51	C	3.26	0.00	3.26	4.34	0.00	4.34
52	D	4.03	0.53	2.27	12.08	0.53	6.26
53	B	8.09	16.53	12.73	8.09	19.84	14.55
54	C	1.05	0.00	1.05	1.89	0.00	1.89
55	A	96.68	0.00	34.26	193.36	0.00	68.52
56	D	0.21	1.07	0.53	1.91	1.78	1.86
57	D	0.88	0.00	0.88	4.23	0.00	4.23
58	A	0.00	0.00	0.00	0.00	0.00	0.00
59	D	0.32	0.00	0.32	1.20	0.00	1.20
60	D	0.11	0.00	0.11	0.69	27.27	1.08
61	C	0.00	0.00	0.00	1.22	0.00	1.00
62	D	0.45	0.00	0.45	2.15	8.75	2.23
63	B	1.53	0.00	1.37	12.20	13.87	12.37
64	A	5.50	0.00	4.04	10.99	0.00	8.08
65	C	6.10	0.00	6.10	8.77	0.00	8.77
66	B	0.00	7.78	1.76	0.00	7.78	1.76
67	A	0.00	0.00	0.00	0.00	0.00	0.00
68	C	0.67	0.00	0.67	3.36	0.00	3.36
69	A	6.76	0.00	6.76	13.51	0.00	13.51
70	B	0.00	0.00	0.00	4.79	0.00	4.41
71	C	0.00	0.00	0.00	0.80	0.00	0.75
72	B	1.25	0.00	1.13	5.02	0.00	4.53
73	A	0.00	0.00	0.00	0.00	0.00	0.00
74	A	0.00	0.00	0.00	0.00	0.00	0.00
75	C	0.00	0.00	0.00	3.58	0.00	3.47

Co	Band	Offshore LTIFR	Onshore LTIFR	Overall LTIFR	Offshore TRIR	Onshore TRIR	Overall TRIR
	IMCA	0.74	0.64	0.72	2.53	2.40	2.50
76	A	0.00	0.00	0.00	0.00	0.00	0.00
77	D	1.27	1.05	1.12	3.07	3.53	3.37
78	C	0.00	0.00	0.00	0.00	0.00	0.00
79	C	0.00	1.17	0.71	7.05	4.70	5.64
80	D	0.24	0.60	0.57	3.42	2.05	2.17
81	D	0.76	1.39	1.15	3.05	4.82	4.15
82	A	0.00	0.00	0.00	0.00	0.00	0.00
83	A	0.00	0.00	0.00	0.00	0.00	0.00
84	A	0.00	0.00	0.00	0.00	0.00	0.00
85	B	3.07	0.00	2.87	4.61	0.00	4.31
86	A	9.94	0.00	4.99	69.56	20.06	44.93
87	D	1.14	0.59	0.96	4.00	1.17	3.08
88	D	0.10	0.00	0.10	0.41	0.00	0.41
89	C	1.06	0.00	0.92	2.65	0.00	2.30
90	A	0.00	0.00	0.00	0.00	0.00	0.00
91	A	0.00	0.00	0.00	0.00	0.00	0.00
92	A	8.37	0.00	8.37	8.37	0.00	8.37
93	A	11.11	0.00	9.39	18.52	0.00	15.65
94	A	17.72	0.00	15.62	43.02	0.00	37.94
95	C	0.70	0.00	0.70	4.91	0.00	4.91
96	C	0.38	0.48	0.42	4.88	0.48	2.95
97	C	2.87	0.00	2.87	7.64	0.00	7.64
98	C	2.48	0.00	0.88	8.25	2.29	4.42
99	D	2.35	0.00	2.35	7.37	0.00	7.37
100	D	0.10	0.14	0.10	0.56	1.42	0.72
101	A	0.00	0.00	0.00	0.00	0.00	0.00
102	C	0.00	0.00	0.00	0.00	0.00	0.00
103	C	0.00	0.00	0.00	4.20	0.00	2.90
104	C	1.30	0.00	1.04	2.61	0.00	2.08
105	D	1.70	0.19	0.85	8.25	0.76	4.05
106	C	0.00	0.00	0.00	0.00	0.00	0.00
107	A	0.00	16.50	6.60	0.00	16.50	6.60
108	A	0.00	0.00	0.00	0.00	0.00	0.00
109	D	0.00	0.11	0.10	1.07	0.91	0.92
110	B	0.00	0.00	0.00	7.73	0.00	6.25
111	C	0.59	0.00	0.59	2.37	0.00	2.37
112	C	1.57	0.00	1.55	8.35	0.00	8.24
113	A	0.00	0.00	0.00	0.00	0.00	0.00
114	D	0.00	0.00	0.00	0.00	0.00	0.00
115	C	2.61	0.00	2.61	2.61	0.00	2.61
116	C	1.81	0.00	1.75	3.61	0.00	3.50
117	C	0.00	0.00	0.00	1.00	0.00	1.00
118	A	0.00	0.00	0.00	0.00	0.00	0.00
119	A	0.00	0.00	0.00	0.00	0.00	0.00
120	A	0.00	0.00	0.00	0.00	168.15	26.75
121	C	0.46	0.00	0.46	1.38	0.00	1.38
122	A	0.00	0.00	0.00	0.00	0.00	0.00
123	C	5.81	0.00	5.60	10.18	0.00	9.81
124	C	0.61	0.00	0.61	0.92	0.00	0.92
125	A	0.00	0.00	0.00	0.00	0.00	0.00
126	A	0.00	0.00	0.00	0.00	0.00	0.00
127	A	0.00	0.00	0.00	0.00	0.00	0.00
128	C	2.39	0.00	2.27	4.78	0.00	4.54
129	B	3.38	0.00	2.85	15.22	0.00	12.84

Table 6 – Individual company LTIFR and TRIR statistics

6 Hours Worked Banding

In order for members to identify how their company compares to others of like size, contributing contracting companies have been divided into four bands, according to their annual number of overall working hours.

A 'pareto' or '80:20' analysis of the contributed man-hours tells us that 25 of the 129 companies taking part in the exercise – roughly a fifth – contribute 80% of the man-hours. Eight of the largest contributors worked half of all the contributed man-hours.

Fifteen contributors (nine last year) worked more than ten million man-hours each.

Band	Banding Hours Worked	Companies in Band					
		2003	2004	2005	2006	2007	2008
A	<500,000	11	15	17	27	33	44
B	500,000-1,000,000	4	3	9	13	18	13
C	1,000,000-5,000,000	9	11	16	21	30	47
D	>5,000,000	7	7	9	13	19	25

Table 7 – Number of companies in each band

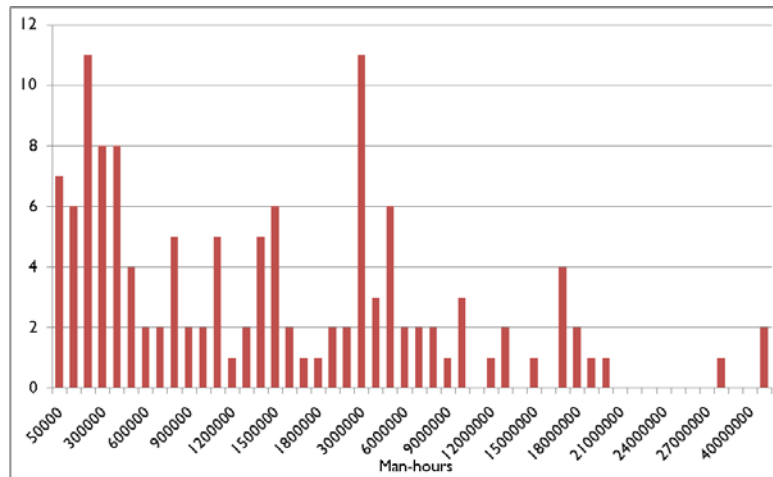


Figure 5 – Number of companies against size (overall man-hours)

6.1 Indicators and Statistics by Company Bands

	Band	FAR	LTI	LTIFR	TRI	TRIR	Medical Treatment	RWC	First Aid	Near Miss
Offshore	A	0.00	25	3.87	70	10.84	34	11	72	87
	B	0.00	10	1.23	50	6.14	31	9	59	136
	C	1.4	111	1.28	350	4.00	168	70	936	880
	D	1.10	195	0.55	706	1.95	348	159	1924	2366
Onshore	A	0.00	4	1.70	16	6.81	8	4	22	17
	B	0.00	6	3.52	12	7.05	6	0	6	5
	C	0.00	10	0.68	37	2.50	25	2	71	21
	D	1.55	72	0.57	289	2.24	125	90	787	424
Overall	A	0.00	29	3.29	86	9.76	42	15	94	104
	B	0.00	16	1.62	62	6.29	37	9	65	141
	C	0.98	121	1.19	387	3.78	193	72	1007	901
	D	1.22	267	0.56	995	2.02	473	249	2711	2790

Table 8 – Lagging indicators and statistics by company band 2008

Note: Actual numbers of fatal accidents have been omitted to assist with preserving anonymity.

Band	Safety		Management			Safety	
	Obs	SOFR	Visits	MVR	RAL	Bulletins	LLR
A	17106	388.74	601	607.33	6.83	998	11.34
B	5471	111.07	491	271.02	4.98	1104	11.21
C	72477	142.44	2291	202.43	2.25	1250	1.23
D	567683	231.04	15925	125.89	3.24	2055	0.42

Table 9 – Leading indicators and statistics by company band 2008

Key: Please refer to the appendices for further definition of these rates and acronyms

FAR	fatal accident rate	RWC	restricted workday cases
TRI	total recordable injuries	TRIR	total recordable injury frequency rate
LTI	lost time injury	LTIFR	lost time injury frequency rate
SOFR	safety observation frequency	RAL	reporting activity level
MVR	management visit ratio	Med trt	medical treatment cases
LLR	lessons learnt ratio		

6.2 LTIFR in Company Bands

Table 10 shows the overall LTIFR of companies within the defined bands of number of hours worked, and for the last four years, TRIR. Figure 6 shows a significant increase in LTIFR amongst the smaller companies that does sound a warning note; this may reflect the difficulty in allocating financial, material and human resources for health and safety purposes amongst smaller organisations.

	Band	2001	2002	2003	2004	2005	2006	2007	2008
LTIFR	A	8.91	5.14	3.88	3.87	2.85	2.64	2.21	3.29
	B	3.13	5.15	0.96	2.71	3.07	2.02	1.34	1.62
	C	4.37	1.75	0.92	1.65	1.59	1.37	1.44	1.19
	D	2.15	1.10	0.87	1.53	0.83	0.74	0.94	0.56
TRIR	A					11.0	10.16	11.74	9.76
	B					11.3	8.29	7.86	6.29
	C					6.02	5.08	6.07	3.79
	D					4.57	3.19	3.42	2.02

Table 10 – Overall LTIFR and TRIR by company band

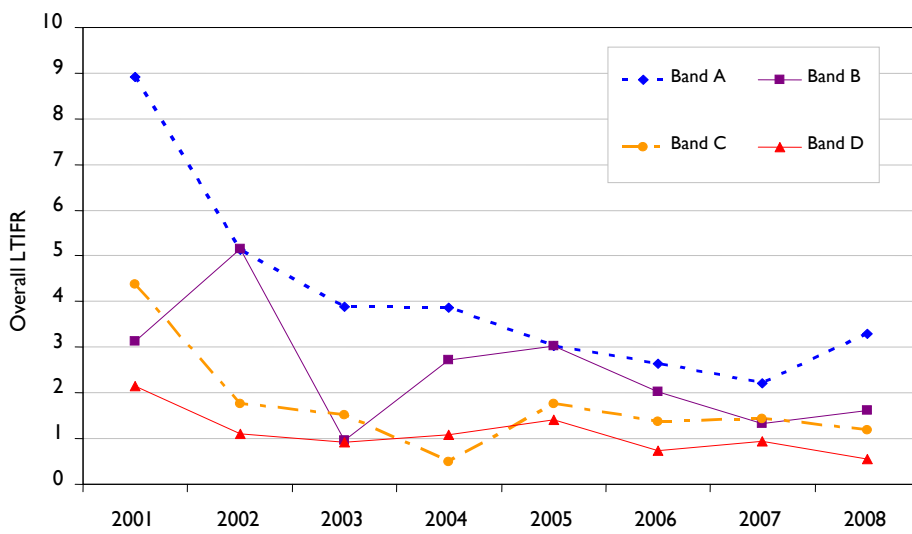


Figure 6 – Overall LTIFR for company bands

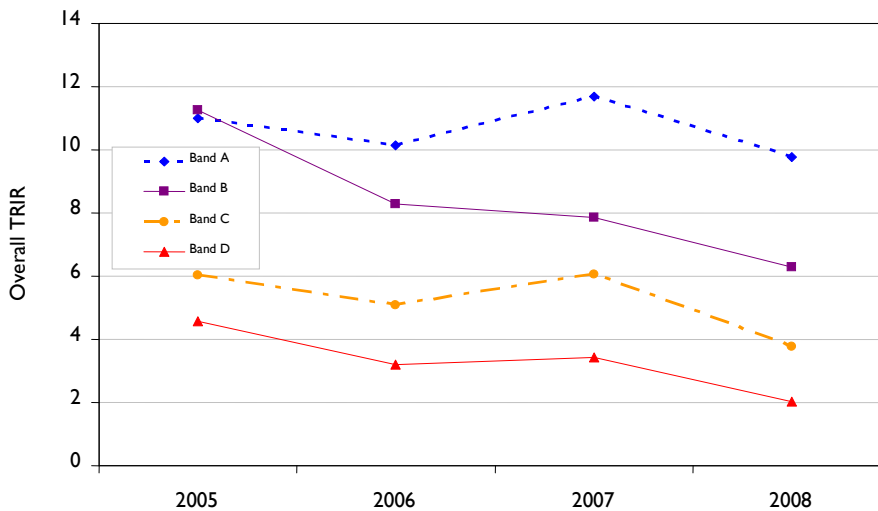


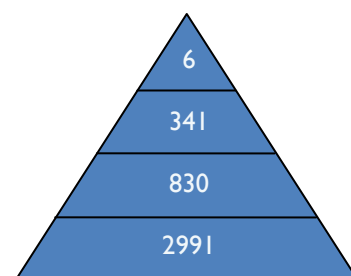
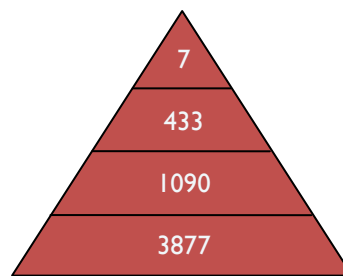
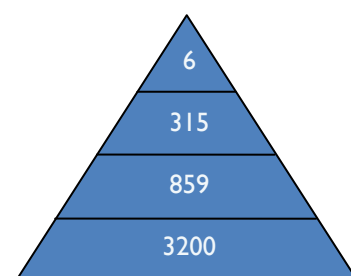
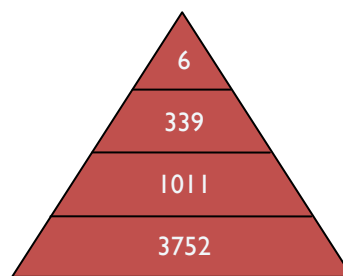
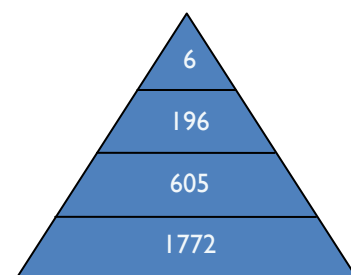
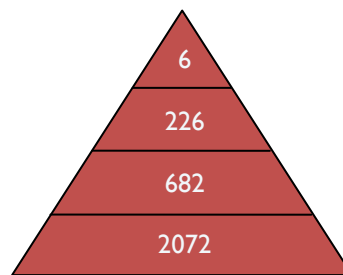
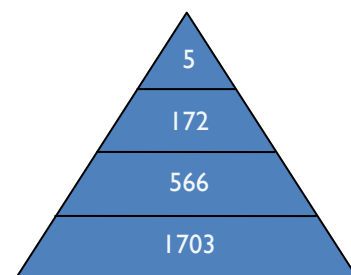
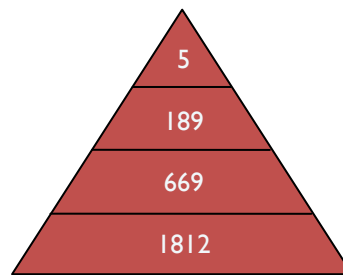
Figure 7 – Overall TRIR for company bands

7 Comment and Analysis

7.1 Accident Triangles

Accident triangles can be used to demonstrate the relationship between fatalities and minor accidents.

Year	Overall				Offshore			
	First Aid	RWC/ Med Trt	Lost Time Injuries	Fatalities	First Aid	RWC/ Med Trt	Lost Time Injuries	Fatalities
2008	3877	1090	433	7	2991	830	341	6
2007	3752	1011	339	6	3200	859	315	6
2006	2072	682	226	6	1772	605	196	6
2005	1812	669	189	5	1703	566	172	5
2004			164	3	1938	523	120	2
2003			198	5	3776	466	133	4



7.2 Direct Causes of Lost Time Injuries

The SEL committee decided in 2006 that information should be collected on the direct causes of lost time injuries. The intent of this was to look more deeply into these injuries with the hope that members' safety efforts could be directed more closely to the most serious and frequent direct causes of lost time injuries. Six categories of direct causes of LTIs were employed for the 2007 safety statistics. These were: *Struck by; Slips, trips and falls; Vehicles; Hazardous substances; Caught between; Dropped objects.*

It became clear during the 2007 campaign that further categories were necessary to record the large number of LTIs that did not fall into the above six categories. New categories were prepared and are tabulated below as follows:

LTI category	No. of LTIs					Total
	Americas	AP	EA	MEI	ICO	
A Falls from height	4	3	1	23	8	39
B Falls on the same level (including slips & trips)	8	12	13	44	13	90
C Struck against	1	8	2	14	5	30
D Struck by moving/falling objects	14	16	8	52	29	119
E Exposure to mechanical vibration	0	1	0	1	0	2
F Exposure to sound	0	0	0	0	0	0
G Muscle stress and repetitive movement	13	5	7	14	6	45
H Contact with electricity	1	0	1	0	2	4
I Contact/exposure to heat/cold	0	4	1	3	2	10
J Contact/exposure with hazardous substances	1	5	1	1	3	11
K Entrapment	10	4	4	11	9	40
L Asphyxiation	0	1	2	1	0	4
M Other	0	4	1	34	0	39
TOTAL	52	63	41	200	77	433

Table 11 – Causes of LTIs by IMCA geographical region

There were 433 lost time injuries recorded by IMCA members in 2008. 'Struck by moving or falling objects' formed 119 or 27% of recorded LTIs for IMCA members, followed by 'Falls on the same level' at 21% of recorded LTIs and 'Muscle stress and repetitive strain' at 10% of recorded LTIs. 'Falls from height' caused 9% and 'Entrapment' formed 8% of recorded LTIs.

In spite of efforts to fully categorise as many lost time injuries as possible, 9% of LTIs remain without a category and are reported as 'Other'. Reducing this figure so that all lost time injuries can be categorised with a direct or immediate cause will be a target for the future.

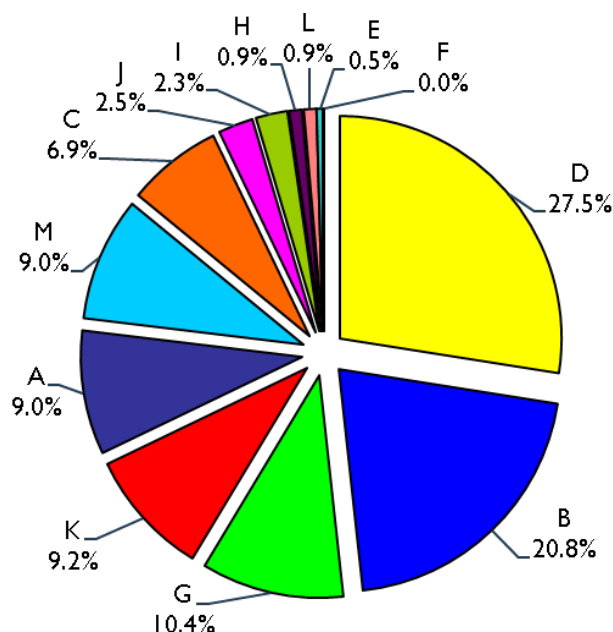


Figure 8 – Direct causes of lost time injuries

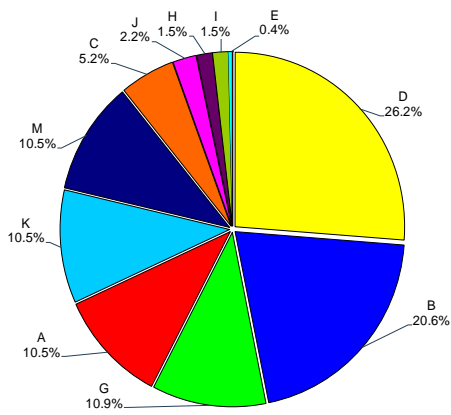


Figure 9 – Causes of LTIs in the Americas Deepwater region

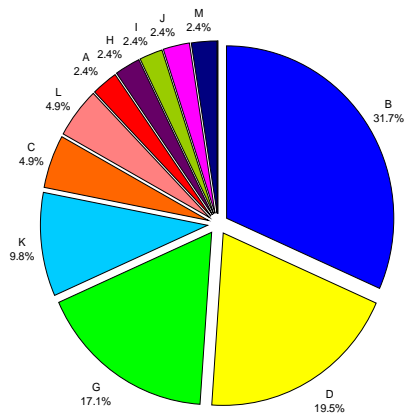


Figure 10 – Causes of LTIs in the Asia Pacific region

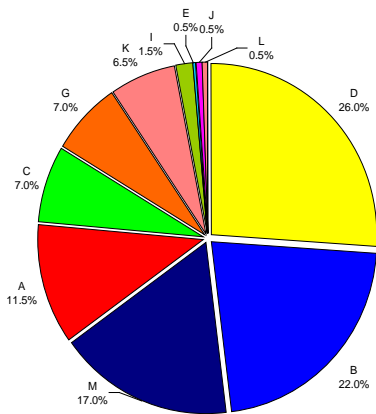


Figure 11 – Causes of LTIs in the Europe & Africa region

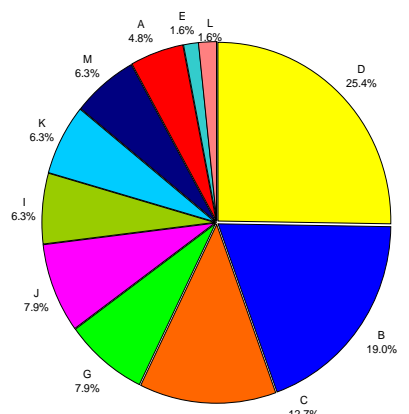


Figure 12 – Causes of LTIs in the Middle East & India region

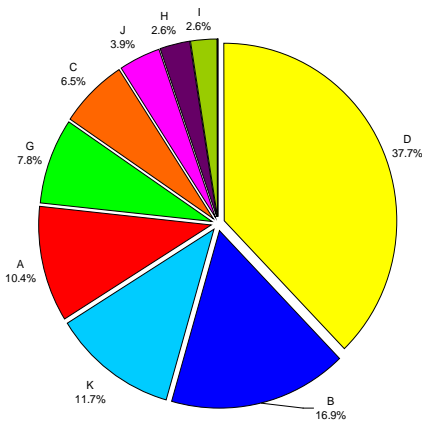


Figure 13 – Causes of LTIs amongst ICO members

Key:

- A Falls from height
- B Falls on the same level (including slips & trips)
- C Struck against
- D Struck by moving/falling objects
- E Exposure to mechanical vibration
- F Exposure to sound
- G Muscle stress and repetitive movement
- H Contact with electricity
- I Contact/exposure to heat/cold
- J Contact/exposure with hazardous substances (including biological agents)
- K Entrapment
- L Asphyxiation
- M Other

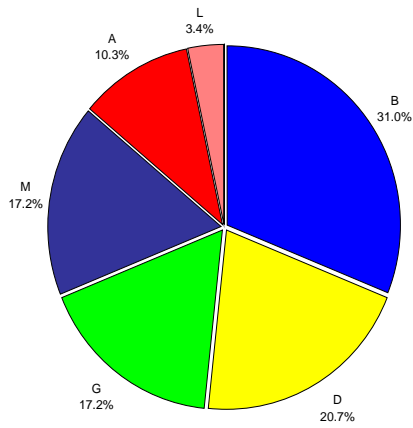


Figure 14 – Causes of LTIs in A-band members

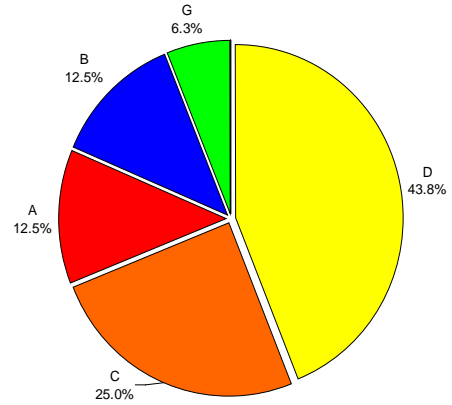


Figure 15 – Causes of LTIs in B-band members

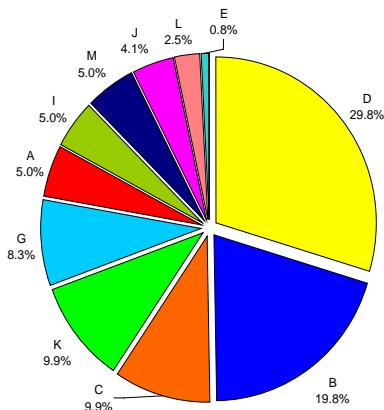


Figure 16 – Causes of LTIs in C-band members

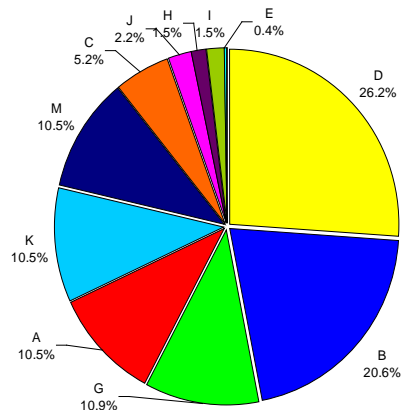


Figure 17 – Causes of LTIs in D-band members

Key:

- A Falls from height
- B Falls on the same level (including slips & trips)
- C Struck against
- D Struck by moving/falling objects
- E Exposure to mechanical vibration
- F Exposure to sound
- G Muscle stress and repetitive movement
- H Contact with electricity
- I Contact/exposure to heat/cold
- J Contact/exposure with hazardous substances (including biological agents)
- K Entrapment
- L Asphyxiation
- M Other

7.3 Lost Time Injury Frequency Rates (LTIFR)

The offshore LTIFR for 2008 has fallen significantly from 1.25 in 2007 to 0.74. The overall LTIFR has also shown an improvement from 1.09 in 2007 to 0.72 in 2008. This step-change is of interest as it ends the 'flat-line' trend of recent years and may herald a return to marked year-on-year improvement of LTIFR.

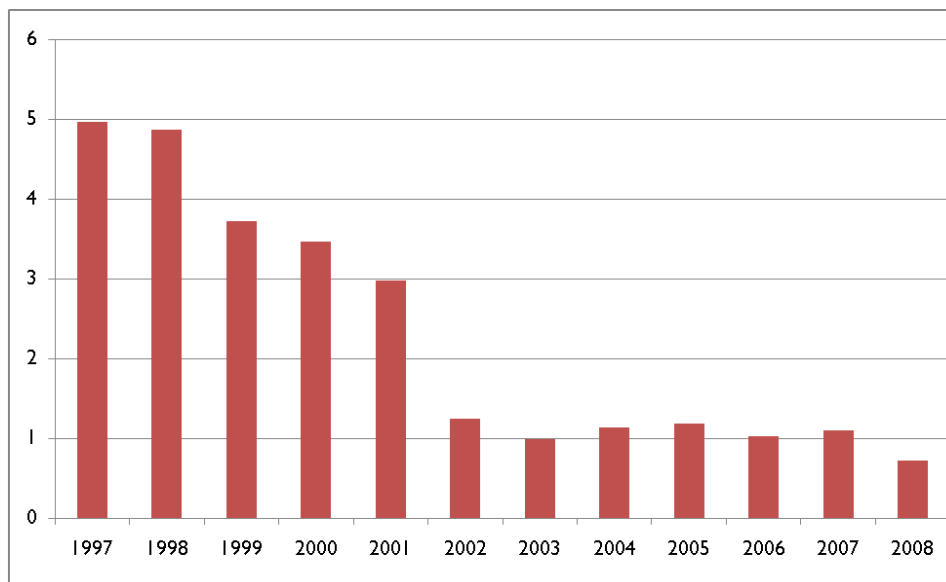


Figure 18 – Overall LTIFR

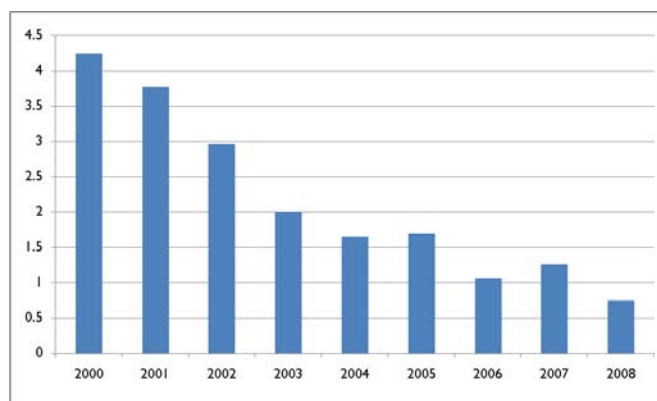


Figure 19 – Offshore LTIFR

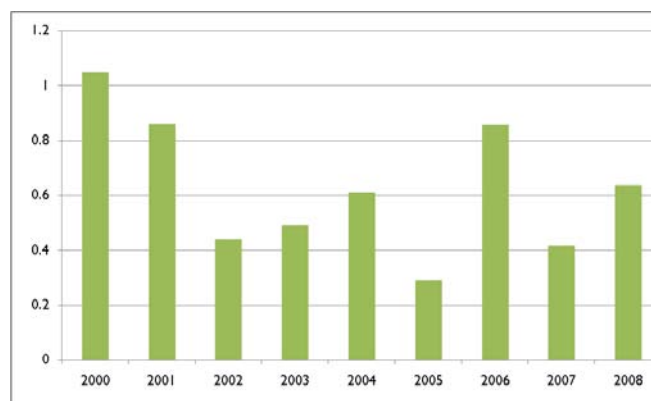


Figure 20 – Onshore LTIFR

7.4 Total Recordable Injury Rates (TRIR)

Total recordable injuries are tracked as a more reliable pointer to a truer picture of safety in the industry. This year, the offshore TRIR was 2.53, a significant decrease or improvement of 46% on last year's figure of 4.68. The onshore TRIR was 2.40, a decrease or improvement of 21% on the 2007 figure of 3.05, and the overall TRIR was 2.50, a decrease or improvement of 43% on the 2007 figure of 4.38. We would hope to see this excellent trend continuing over the coming years as members work to reduce these further.

Year	Overall TRIR	Offshore TRIR	Onshore TRIR
2004		8.87	
2005	5.42	7.29	2.10
2006	4.14	4.35	3.06
2007	4.38	4.68	3.05
2008	2.50	2.53	2.40

Table 12 – Total recordable injury rates

- ◆ There were 581 offshore medical treatment cases reported in 2008. This is a decrease in reporting compared to 2007, when there were 607 offshore medical treatment cases reported;

- ◆ There were 249 offshore restricted work injury reports reported in 2008, compared to 252 offshore restricted work injury reports reported in 2007;
- ◆ Members reported that there were 2,991 offshore first aid cases in 2008 compared with 3200 in 2007 and 3,469 offshore near miss reports in 2008, compared with in 8,248 in 2007;
- ◆ There were 3,877 first aid cases overall and 3,936 near miss reports overall during 2008, compared to 3,752 first aid cases overall and 8,534 near miss reports overall during 2007;
- ◆ Changes in reporting levels may account for some or all of the significant falls in first aid cases and near miss reports seen over the last year. IMCA encourages its members to report all accidents and all near misses, however small.

7.5 Fatal Accident Rate (FAR)

It should be noted when considering the fatal accident rate and the safety statistics as a whole that around half of all IMCA contractor members did not take part in the safety statistics exercise. There has been considerable discussion of the importance of fully capturing all workplace fatalities, to work towards the goal of eliminating them completely. IMCA intends to work closely with its members and other trade associations to ensure that all marine contracting industry workplace fatalities are properly recorded.

IMCA members reported six offshore fatalities during 2008. Our focus remains on lessons learnt and information sharing, to ensure that these incidents never recur. To this end, IMCA is publishing brief and anonymous information regarding the fatalities that have been recorded.

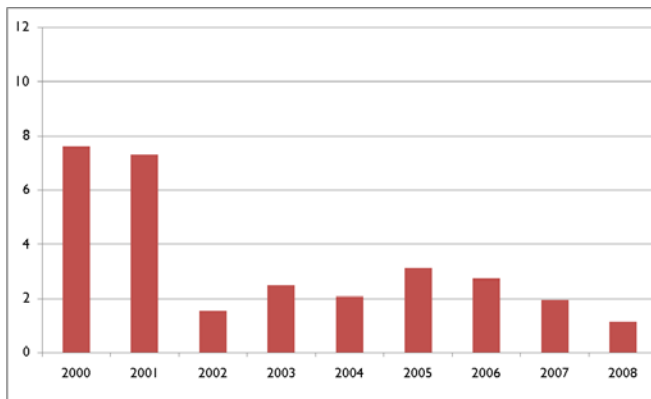


Figure 21 – Overall FAR 2000-2008

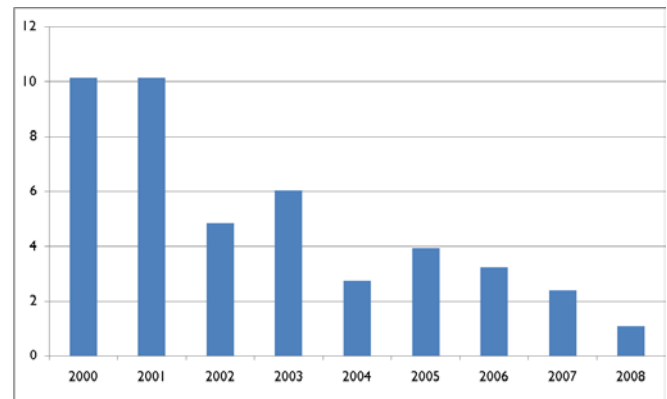


Figure 22 – Offshore FAR 2000-2008

7.5.1 Fatal Accident Information

The SEL Committee has suggested that basic information is collected about each fatality. This was accomplished for this year's statistics with the following results:

- ◆ Following a fault in a winch system following a vessel blackout, the winch moved inappropriately and an employee was trapped between the tether management system (TMS) and the docking head, resulting in his death;
- ◆ An employee struck a stationary object and was killed;
- ◆ An employee was trapped between the door and the frame of a watertight door when it was closing during a fire alarm and died from the resulting crush injuries;
- ◆ Vessel captain was shot and killed by pirates;
- ◆ An employee was caught between two pieces of pipe at spool base and died from crush injuries;
- ◆ Whilst removing the flange from a compensator, a person was struck on the head and died from resulting injuries;
- ◆ An employee was caught by a jet of high pressure water from flange opening, causing a fatal fall over the deck handrail to the ground.

8 Comparison with Other Published Figures

8.1 International Association of Drilling Contractors (IADC) – 2007

IADC represents offshore and onshore drilling contractors. In 2007 IADC members reported 23 fatalities of which 4 were offshore, 1,159 lost time injuries of which 246 were offshore, 4,572 'recordable' injuries of which 973 were offshore. Based on offshore hours of approximately 173 million man-hours and on a base figure of one million man-hours rather than 200,000, this equates to an overall LTIFR of 1.42 and a TRIR of 5.62.

Further detailed information on the IADC's statistics can be downloaded from www.iadc.org/asp/2007%20Annual%20Report/ASPPProgramReportIndex.htm

Figures for 2008 will be published by IADC in late June of 2009.

8.2 International Association of Oil & Gas Producers (OGP) – 2008

In 2008 OGP members recorded 19 company and 84 contractor fatalities – a fatal accident rate of 3.1. The LTIFR recorded by OGP members was 0.7 and the TRIR was 2.1. This information is based on 3,307 million man-hours of work.

	2002	2003	2004	2005	2006	2007	2008
IMCA	1.24	0.99	1.13	1.18	1.02	1.09	0.71
OGP	1.09	1.16	1.09	0.97	0.99	0.66	0.70
IADC	3.27	3.16	3.07	2.91	2.72	1.42	

Table 13 – Comparison of trade association LTIFR

9 Leading Performance Indicators

9.1 Overall

This is the sixth year for which IMCA has collected leading performance indicator data. This year nearly all (126 of 129, 98%) of the participating contractors provided information which could be used to calculate full or partial leading indicator data.

The table below shows the year-on-year growth in uptake of the leading performance indicators over the past six years.

	Participating companies	Companies providing some (full or partial) leading performance indicator data	Companies providing full leading performance indicator data
2003	31	25 (80%)	11 (35%)
2004	36	32 (88%)	18 (50%)
2005	51	44 (86%)	39 (76%)
2006	74	72 (97%)	60 (81%)
2007	100	95 (95%)	75 (75%)
2008	129	126 (98%)	123 (95%)

Table 14 – Companies providing leading performance indicator statistics

For the third year the reporting activity level (RAL), management visits ratio (MVR) and lessons learnt ratio (LLR) have been calculated using a simpler formula. For comparative purposes with the 2003 and 2004 results, the indicators calculated from the old formulae have been included. The table below shows how the leading performance indicators have performed over the last four years.

	RAL			LLR		MVR	
	SOFR	Old	New	Old	New	Old	New
2003	160.95	397.95	117.49	2.72	0.55	0.0254	3.40
2004	160.44	344.96	199.10	3.96	0.66	0.0352	4.26
2005	190.19	280.11	350.70	9.14	1.14	0.0195	3.66
2006	161.60	249.93	258.80	8.32	0.86	0.008	1.75
2007	153.03	307.17	336.55	10.34	1.13	0.006	2.05
2008	216.63	203.84	144.59	12.46	0.88	0.007	3.16

Table 15 – Leading performance indicators 2003-2008

	SOFR	RAL	MVR	LLR
Americas	1632.39	247.76	5.24	0.51
AP	87.41	109.64	2.07	0.87
EA	81.10	190.79	1.00	0.73
MEI	156.29	106.10	1.62	2.50
ICO	117.81	100.91	5.70	0.65

Table 16 – Leading safety indicators (overall) by region 2008

9.2 Safety Observation Frequency Rate (SOFR)

96% (123 of 129) companies provided data on safety observations. Safety observations are defined as reports identifying at-risk behaviour, unsafe conditions or similar, e.g. STOP cards. Note that this is not the same as actual injury reporting. There is very wide variation in reporting levels and in the safety observation frequency rate thus calculated, which varies over five orders of magnitude, from 0.03 to 4,804. This suggests that there may be different interpretations of the definition of ‘safety observation’. This can be seen to be particularly true of companies in the Americas Deepwater Section.

It is a rate that should rise – whilst working to create an accident-free and injury-free workplace, there will always be room for improvement and subsequent reporting of that improvement. It is this positive and proactive reporting that needs to be encouraged.

Co.	Safety Obs	SOFR	Co.	Safety Obs	SOFR	Co.	Safety Obs	SOFR
1	2	0.37	44	600	60.21	87	24473	940.70
2	6	48.87	45	83	66.77	88	101	1.03
3	6462	208.85	46			89	39	3.58
4	1015	891.42	47	828	42.08	90	9	11.18
5	1124	293.32	48	1039	98.82	91	2111	1005.73
6	2457	358.22	49	1	26.97	92		
7	1479	106.71	50	634	92.35	93	8	5.01
8	21	60.76	51			94	7627	3404.39
9	4601	72.74	52	131	3.49	95	981	137.55
10	3727	512.73	53	4	1.46	96	2111	89.03
11	0	0.00	54	1178	49.50	97	1167	55.74
12	885	6.50	55	10	34.26	98	2875	169.48
13	52399	727.87	56	4971	132.00	99	286776	4804.33
14	52	267.49	57	24572	866.16	100	47309	61.54
15	446	47.40	58	15	45.58	101		
16	13470	269.93	59	9554	152.62	102	333	57.69
17			60	529	5.99	103	1385	267.84
18			61	178	35.54	104	4108	170.60
19	1061	244.49	62	6268	139.78	105	14626	155.74
20	25502	2303.65	63	412	113.22	106	9	0.38
21	527	157.17	64			107	46	30.38
22	285	28.05	65	165	12.58	108	24	158.73
23	16	10.30	66	800	282.16	109	1913	39.22
24	143	18.86	67	5	6.83	110	32	8.00
25	2824	430.57	68	2602	116.55	111	11	1.30
26	4365	53.09	69	86	58.11	112	70	7.21
27	991	159.86	70	216	47.66	113		
28			71	3175	239.53	114	3	0.04
29	300	354.54	72	26	5.89	115	350	45.66
30	66	53.42	73	55	28.43	116	238	27.73
31	850	74.79	74	3	5.57	117	850	169.76
32	1174	323.38	75	61	8.46	118		
33	277	55.30	76	1809	982.14	119		
34	2	1.03	77	24204	302.24	120	5	5.35
35	526	78.19	78			121	2700	248.68
36	31	26.26	79	2068	291.60	122	65	65.67
37	936	151.06	80	6069	27.47	123	948	132.81
38	7576	162.64	81	24956	287.52	124	218	13.36
39	1470	46.54	82	109	159.53	125	2897	3518.9
40	4	0.81	83	16	33.60	126	17	315.4
41	24	16.33	84	24	29.72	127	236	639.8
42	297	186.60	85	49	14.08	128	18	2.7
43	1093	146.18	86	15	14.98	129	42	12.00
						IMCA	662737	216.63

Table 17 – Safety observation frequency rate (SOFR) 2008

9.3 Reporting Activity Level (RAL)

RAL, designed as an indicator of how good a company's 'reporting culture' is, is calculated as a rate. The number of hours over which it is normalised remains one million. The full definitions can be found in Appendix 2.

Reporting activity level (RAL) = $((5 \times \text{FNMR}) + (20 \times \text{MTR}) + (100 \times \text{RWIR}))$ per million man-hours

For completeness and members' reference the old numbers are still calculated and included.

Old reporting activity level (RAL) = $\frac{(5 \times \text{FNMR}) + (20 \times \text{MTR}) + (100 \times \text{RWIR})}{(1 + \text{number of lost time injuries})}$

Co.	Med trt	RWC	First Aid	Near Miss	New RAL	Old RAL	Co.	Med trt	RWC	First Aid	Near Miss	New RAL	Old RAL	
1	3	3	0	1	338.76	365.00	66	0	0	0	4	35.27	10.00	
2	1	1	5	1	6108.49	150.00	67	0	0	1	2	102.41	15.00	
3	3	1	44	2	63.02	30.00	68	9	3	58	185	379.63	423.75	
4	0	0	0	1	21.96	5.00	69	2	0	4	4	270.28	26.67	
5	3	0	0	11	150.05	115.00	70	4	0	15	43	408.23	370.00	
6	3	0	7	26	164.02	112.50	71	1	1	10	39	137.68	365.00	
7	2	1	28	47	185.79	103.00	72	2	1	1	4	187.01	82.50	
8	0	0	0	2	144.68	10.00	73	0	0	0	1	12.92	5.00	
9	7	8	114	6	121.73	256.67	74	0	0	1	3	185.53	20.00	
10	0	1	3	8	106.62	155.00	75	5	0	9	0	100.59	145.00	
11							76	0	0	7	1	108.58	40.00	
12	4	2	22	553	115.88	394.38	77	32	4	166	0	116.75	98.42	
13	7	0	48	133	72.58	261.25	78							
14	0	0	0	0	0.00	0.00	79	7	0	45	3	267.91	190.00	
15	1	0	10	1	39.86	37.50	80	28	43	198	75	140.89	239.42	
16	21	7	0	55	139.77	155.00	81	34	18	59	535	313.95	259.52	
17	0	1	22	20	225.09	310.00	82	0	0	1	0	36.59	5.00	
18	0	0	0	0	0.00	0.00	83	0	0	2	4	314.96	30.00	
19	1	0	1	3	46.09	40.00	84							
20	6	2	4	6	167.11	74.00	85	1	0	1	8	93.41	21.67	
21	2	1	7	9	328.06	73.33	86	8	0	6	7	1123.14	112.50	
22	14	0	13	32	248.49	126.25	87	9	2	133	17	217.18	226.00	
23							88	6	0	32	0	14.31	93.33	
24	2	0	10	6	79.12	40.00	89	3	0	1	3	36.75	26.67	
25	5	1	15	2	217.27	285.00	90							
26	20	7	13	9	73.59	121.00	91	0	0	2	2	47.64	20.00	
27	2	4	33	0	487.97	302.50	92	0	0	1	5	62.78	6.00	
28	19	40	132	0	313.06	186.67	93	2	0	1	5	219.16	17.50	
29	3	1	0	0	945.45	80.00	94	9	1	26	0	915.04	51.25	
30	5	0	8	1	586.76	145.00	95	4	2	14	44	399.61	285.00	
31	16	2	1	0	230.97	87.50	96	8	4	23	0	142.34	225.00	
32	4	0	0	0	110.18	80.00	97	9	11	63	0	380.89	122.69	
33	1	3	6	0	349.36	116.67	98	6	6	54	16	315.37	267.50	
34	0	2	2	7	631.18	61.25	99	60	0	475	164	368.14	156.96	
35	0	0	1	3	14.86	20.00	100	68	27	436	195	46.92	424.41	
36	0	0	3	5	169.41	40.00	101	0	0	0	1	345.02	5.00	
37	1	1	8	5	149.29	37.00	102	0	0	1	2	12.99	15.00	
38	30	17	151	20	338.65	166.05	103	2	1	22	3	256.24	265.00	
39	10	17	57	0	345.87	136.56	104	3	2	12	5	71.64	57.50	
40	3	3	6	1	398.59	395.00	105	44	16	162	122	207.64	229.41	
41	2	2	5	26	1343.65	131.67	106	0	0	12	26	39.80	190.00	
42	2	4	0	6	1476.43	470.00	107	0	0	6	2	132.08	13.33	
43	4	2	20	14	300.91	225.00	108							
44	1	1	11	3	95.33	63.33	109	6	2	36	18	60.48	590.00	
45	2	0	0	5	261.43	65.00	110	2	3	4	49	756.41	605.00	
46	2	0	0	0	109.97	20.00	111	3	0	5	7	70.98	60.00	
47	34	0	264	141	687.35	225.42	112	4	9	42	66	782.90	380.00	
48	3	5	23	2	325.75	685.00	113							
49	0	0	0	0	0.00	0.00	114	0	0	2	2	1.22	20.00	
50	7	0	52	25	382.38	525.00	115	0	0	29	10	127.20	39.00	
51	2	0	7	72	236.04	62.14	116	3	0	5	6	66.99	28.75	
52	18	12	53	35	266.53	111.11	117	1	0	5	0	44.94	45.00	
53	1	0	6	1	100.06	6.88	118	0	0	2	1	31.68	15.00	
54	3	1	5	0	38.87	37.00	119							
55	0	2	0	2	3597.43	70.00	120	3	2	3	0	1471.00	275.00	
56	8	2	64	102	158.00	238.00	121	2	0	2	15	57.57	62.50	
57	14	5	100	0	225.60	213.33	122	0	0	3	5	202.07	40.00	
58							123	4	2	19	9	294.21	46.67	
59	11	0	114	16	69.49	174.00	124	0	1	3	3	39.84	43.33	
60	6	11	44	58	97.89	576.67	125							
61	0	1	3	1	119.81	120.00	126	0	0	2	0	927.64	10.00	
62	8	8	56	673	513.48	921.00	127	0	0	3	5	542.18	40.00	
63	8	0	9	6	322.89	117.50	128	2	1	14	1	162.73	53.75	
64	1	0	0	0	80.78	10.00	129	6	1	15	2	435.22	101.67	
65	7	0	13	43	160.07	24.71								
								IMCA	745	345	3877	3936	144.59	203.84

Table 18 – Reporting activity level (RAL) 2008

9.4 Management Visit Ratio (MVR)

88 of 100 or 88% of contributing companies provided data on management visits. In 2006 86% (64 of 74) of contributing companies provided data and in 2005 76% (39 of 51) of companies provided data.

Management visit ratio (MVR) = number of managerial visits per 100,000 man-hours

Formerly this has been calculated using this formula:

$$\text{Old MVR} = \text{number of managerial visits per 100,000 man-hours per } (1 + \text{number of lost time injuries})$$

$$= \text{MV} \times 100,000 / ((1 + \text{LTI}) \times \text{man-hours})$$

As with the reporting activity level (RAL), a new formula has been employed without the LTI clause.

Co.	Management Visits	New MVR	Old MVR	Co.	Management Visits	New MVR	Old MVR	Co.	Management Visits	New MVR	Old MVR
1	52	4.83	4.83	44	210	10.54	3.51	87	367	7.05	1.41
2	51	207.69	207.69	45	6	2.41	2.41	88	88	0.45	0.15
3	79	1.28	0.10	46	14	3.85	1.92	89	31	1.42	0.47
4	32	14.05	14.05	47		0.00	0.00	90	14	8.69	8.69
5	48	6.26	6.26	48	28	1.33	1.33	91	23	5.48	5.48
6	89	6.49	3.24	49	3	40.45	40.45	92	10	2.09	0.42
7	30	1.08	0.22	50	6	0.44	0.44	93	16	5.01	1.25
8	12	17.36	17.36	51	68	3.69	0.53	94	3	0.67	0.08
9	232	1.83	0.31	52	102	1.36	0.08	95		0.00	0.00
10	409	28.13	28.13	53	30	5.46	0.68	96	7	0.15	0.05
11	12	9.56	9.56	54	34	0.71	0.14	97	50	1.19	0.09
12	42	0.15	0.02	55	5	8.57	2.86	98	26	0.77	0.19
13	576	4.00	1.00	56	281	3.73	0.75	99	1521	12.74	0.46
14	0	0.00	0.00	57	16	0.28	0.05	100	10852	7.06	0.42
15	5	0.27	0.13	58	12	18.23	18.23	101	0	0.00	0.00
16	153	1.53	0.17	59	41	0.33	0.07	102	12	1.04	1.04
17	50	3.63	3.63	60	320	1.81	0.60	103	17	1.64	1.64
18	0	0.00	0.00	61	15	1.50	1.50	104	25	0.52	0.09
19	8	0.92	0.92	62	30	0.33	0.07	105	482	2.57	0.15
20	65	2.94	0.59	63	16	2.20	1.10	106	18	0.38	0.38
21	203	30.27	10.09	64		0.00	0.00	107	13	4.29	1.43
22	8	0.39	0.10	65	100	3.81	0.22	108	10	33.07	33.07
23	4	1.29	1.29	66	71	12.52	6.26	109	11	0.11	0.11
24	25	1.65	0.55	67	15	10.24	10.24	110	1	0.13	0.13
25	84	6.40	6.40	68	98	2.19	0.55	111	51	3.02	1.51
26	160	0.97	0.10	69	5	1.69	0.56	112	29	1.49	0.37
27	15	1.21	0.60	70	51	5.63	5.63	113	3	4.87	4.87
28		0.00	0.00	71	12	0.45	0.45	114	12	0.07	0.07
29	1	0.59	0.30	72	8	0.91	0.45	115	50	3.26	0.65
30	24	9.71	9.71	73	5	1.29	1.29	116	8	0.47	0.12
31	26	1.14	0.19	74	14	12.99	12.99	117	25	2.50	2.50
32	2	0.28	0.28	75	16	1.11	1.11	118	3	0.63	0.63
33	94	9.38	3.13	76	12	3.26	3.26	119	5	4.48	4.48
34	2	0.52	0.13	77	249	1.55	0.08	120	8	4.28	4.28
35	14	1.04	1.04	78	0	0.00	0.00	121	303	13.95	6.98
36		0.00	0.00	79	8	0.56	0.28	122	5	2.53	2.53
37	5	0.40	0.08	80	51	0.12	0.00	123	20	1.40	0.16
38	247	2.65	0.14	81	13	0.07	0.00	124	32	0.98	0.33
39		0.00	0.00	82	3	2.20	2.20	125	13	7.90	7.90
40	4	0.40	0.40	83	4	4.20	4.20	126	43	398.89	398.89
41	106	36.06	12.02	84	20	12.39	12.39	127	6	8.13	8.13
42	10	3.14	3.14	85	17	2.44	0.81	128	4	0.30	0.08
43	17	1.14	0.57	86	54	26.96	13.48	129	32	4.57	1.52
								IMCA	19308	3.16	0.007

Table 19 – Management visit ratio (MVR) data 2008

9.5 Lessons Learnt Ratio (LLR)

Lessons learnt ratio (LLR) = number of bulletins issued per 100,000 man-hours

For completeness, the old LLR = $\frac{\text{number of bulletins issued}}{(1 + \text{Number of LTIs})}$

Co.	Safety Bulletins	New LLR	Old LLR	Co.	Safety Bulletins	New LLR	Old LLR	Co.	Safety Bulletins	New LLR	Old LLR
1				44	2	0.10	0.67	87	51	0.98	10.20
2	20	81.45	20.00	45	12	4.83	12.00	88	31	0.16	10.33
3	82	1.33	6.31	46	2	0.55	1.00	89	22	1.01	7.33
4	3	1.32	3.00	47		0.00	0.00	90	3	1.86	3.00
5	45	5.87	45.00	48	41	1.95	41.00	91	38	9.05	38.00
6	17	1.24	8.50	49				92	18	3.77	3.60
7	10	0.36	2.00	50				93			
8	12	17.36	12.00	51	130	7.05	18.57	94	1	0.22	0.13
9	20	0.16	3.33	52	65	0.87	3.61	95			
10	52	3.58	52.00	53	1	0.18	0.13	96	150	3.16	50.00
11	12	9.56	12.00	54	28	0.59	5.60	97	17	0.41	1.31
12	24	0.09	3.00	55				98	14	0.41	3.50
13	67	0.47	16.75	56	16	0.21	3.20	99	27	0.23	0.96
14				57	26	0.46	4.33	100	1106	0.72	65.06
15	1	0.05	0.50	58	20	30.39	20.00	101			
16				59	174	1.39	34.80	102			
17	30	2.18	30.00	60	38	0.22	12.67	103	149	14.41	149.00
18				61	33	3.29	33.00	104	17	0.35	2.83
19	7	0.81	7.00	62	125	1.39	25.00	105	31	0.17	1.82
20	22	0.99	4.40	63	13	1.79	6.50	106	6	0.13	6.00
21	27	4.03	9.00	64				107	4	1.32	1.33
22	25	1.23	6.25	65	42	1.60	2.47	108			
23	12	3.86	12.00	66	960	169.30	480.00	109	118	1.21	118.00
24	10	0.66	3.33	67	3	2.05	3.00	110	2	0.25	2.00
25	50	3.81	50.00	68	35	0.78	8.75	111	17	1.01	8.50
26				69				112	12	0.62	3.00
27	6	0.48	3.00	70	12	1.32	12.00	113	52	84.44	52.00
28				71	11	0.41	11.00	114	5	0.03	5.00
29	25	14.77	12.50	72	5	0.57	2.50	115	15	0.98	3.00
30	25	10.12	25.00	73	35	9.05	35.00	116	5	0.29	1.25
31	30	1.32	5.00	74	4	3.71	4.00	117	10	1.00	10.00
32				75	11	0.76	11.00	118			
33	49	4.89	16.33	76	6	1.63	6.00	119			
34	7	1.80	1.75	77				120	5	2.67	5.00
35	27	2.01	27.00	78	25	0.90	25.00	121	12	0.55	6.00
36	27	11.43	27.00	79	16	1.13	8.00	122	12	6.06	12.00
37	12	0.97	2.40	80	1	0.00	0.04	123	73	5.11	8.11
38				81	48	0.28	2.29	124	2	0.06	0.67
39				82	22	16.10	22.00	125	27	16.40	27.00
40	3	0.30	3.00	83	2	2.10	2.00	126	10	92.76	10.00
41	64	21.77	21.33	84	20	12.39	20.00	127	0	0.00	0.00
42	21	6.60	21.00	85	3	0.43	1.00	128	6	0.45	1.50
43	8	0.53	4.00	86	474	236.61	237.00	129	26	3.71	8.67
								IMCA	5407	0.88	12.46

Table 20 – Lessons learnt ratio (LLR) data 2008

Definitions – Lagging Safety Statistics

In order to compile meaningful statistics, it is important that standard, consistent, well defined terms are used. For the purposes of compiling the IMCA statistics the following definitions are used:

Hours worked	for offshore operations – the ‘actual hours worked’, based on a 12-hour day for onshore operations – the actual hours worked, including overtime hours
Number of fatalities	the total number of employees and others who died as a result of an accident
Fatal accident rate (FAR)	number of fatalities per 100,000,000 hours worked
Number of lost time injuries (LTIs)	<p>comprises all accidental injuries (including fatalities and lost work day cases but excluding restricted work day cases) where:</p> <ul style="list-style-type: none"> ◆ A lost work day case is any work-related accidental injury other than a fatal injury which results in a person being unfit for work on the next shift/day; and ◆ A restricted workday case is any work-related injury other than a fatality or lost work day case which results in a person being unfit for full performance of a regular job on the shift/day after the injury. Work might be: <ul style="list-style-type: none"> – an assignment to a temporary job; – working in the regular job but not performing all the usual duties of the job. <p>Note: Where no meaningful restricted work is being performed, the incident should be recorded as a lost work day case.</p>
Lost time injury frequency rate (LTIFR)	<p>analysed separately as offshore, onshore and overall statistics</p> $\frac{\text{Lost time injuries} \times 1,000,000}{\text{hours worked}}$
Total recordable injury rate (TRIR)	<p>the number of injuries and/or illnesses per 100 full-time workers and is calculated as:</p> $= \frac{\text{total number of recordable injury} \times 1,000,000}{\text{total hours worked}}$
The US Occupational Safety & Health Administration (OSHA) definition of ‘total recordable injuries’	<p><i>Work-related injuries and illnesses</i> – events or exposures in the work environment that caused or contributed to the condition or significantly aggravated a pre-existing condition.</p> <p><i>Recordable cases</i> – include work-related injuries and illnesses that result in:</p> <ul style="list-style-type: none"> ◆ Death ◆ Loss of consciousness ◆ Days away from work ◆ Restricted work activity or job transfer ◆ Medical treatment (beyond first aid) ◆ Significant work related injuries or illnesses that are diagnosed by a physician or other licensed health care professional. These include any work related case involving cancer, chronic irreversible disease, a fracture or cracked bone, or a punctured eardrum ◆ Additional criteria that can result in a recordable case include: <ul style="list-style-type: none"> – Any needlestick injury or cut from a sharp object that is contaminated with another person's blood or other potentially infectious material – Any case requiring an employee to be medically removed under the requirements of an OSHA health standard – Tuberculosis infection as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional after exposure to a known case of active tuberculosis <p><i>Days away from work, days of restricted work activity or job transfer</i> are cases that involve days away from work, or days of restricted work activity or job transfer, or both</p> <ul style="list-style-type: none"> ◆ Cases involving days away from work are cases requiring at least one day away from work with or without days of job transfer or restriction ◆ Job transfer or restriction cases occur when, as a result of a work-related injury or illness, an employer or health care professional keeps, or recommends keeping an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been scheduled to work before the injury or illness occurred. <p><i>Total recordable injury rate (TRIR)</i> – the number of injuries and/or illnesses per 100 full-time workers, calculated as (N/EH) x 200,000 where:</p> <p>N = total number of recordable injuries and/or illnesses EH = total hours worked by all employees during the calendar year 200,000 = base for 100 full-time equivalent workers (working 40 hours a week, 50 weeks a year)</p> <p>Note: The primary difference between the IMCA TRIR and that of OSHA is that IMCA follows the practice of referencing recordable injuries against one million man-hours rather than 200,000 man-hours</p>

Definitions – Leading Safety Statistics

Members of the SEL Committee have suggested a review of the definition of these leading performance indicators. This work progressed during 2005, leading to an initial conclusion that lagging indicators such as LTIFR should not be used in the formulae for calculating leading performance indicators.

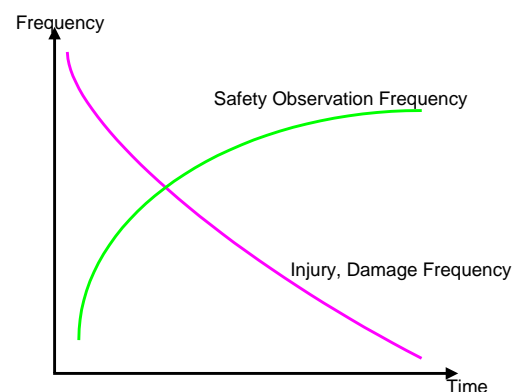
Therefore, for the reporting activity level (RAL), management visits ratio (MVR) and lessons learnt ratio (LLR), the results have been calculated using a simpler definition. For completeness the old definitions are included here as well.

Safety Observations Frequency Rating (SOFR)

If we are to eliminate injuries, damage or near miss incidents, we need to focus on at-risk acts and unsafe conditions, which have not yet caused loss or harm but have the potential to. Thus we need a systematic approach to observing, correcting and recording such at-risk behaviour or unsafe situations.

This is generally called safety observation (or hazard observation). The expected result is that by increasing safety observation, there would be a reduction in injuries, damage or near misses – the undesired events (see the accompanying graph).

The measure used by IMCA is based on the number of safety observation records made over the course of 12 months. The measure is directly related to operational work man-hours and as such the measure should be based on frequency. The definitions for the determination of operational work man-hours are defined in information note IMCA SEL 38/02.



Since proactive worksites are expected to generate a high level of reporting (perhaps several hundred in a year), the frequency basis shall be:

$$\begin{aligned} \text{SOFR} &= \text{Number of safety observations per 200,000 man-hours} \\ &= \frac{\text{Number of safety observations} \times 200,000}{\text{Total man-hours}} \end{aligned}$$

Definitions

SOFR	Safety observation frequency rating
Safety observation	Report identifying at-risk behaviour, or an unsafe condition to prevent loss or harm e.g. STOP card
Observational work man-hours	for onshore operations – ‘actual’ hours worked, including overtime hours for offshore operations – the hours worked, based on a 12-hour exposure day

Injury Events Reporting Level

In a mature safety culture, where all injuries, damage or near misses (undesired events) get reported, regardless of their severity, it would be expected that there would be a much greater number of non-serious events for every serious event.

Ultimately we do not want any form of undesired event and those companies with low numbers of actual injuries, damage events or near miss incidents should not be penalised because they have a low number of reports per man-hours worked. In addition we need to consider the case where all events are not reported. The balance in straight numbers of events shown in the diagram below is not a fair comparison.

It may cause a degree of controversy that a leading indicator measure should be based on a series of lagging indicators but in order to demonstrate that a mature culture exists, we need to assure ourselves that every undesired event is being reported. We cannot equate one company which reports everything and has suffered a certain number of injuries with another company where few injuries are reported to achieve the same number.

Thus to show an active worksite, the basis of the reporting level could be a ratio of less serious events to serious events. This can be converted to a number, which expresses the activity level from sums of 'weighted' products representing injury severity and is defined as shown below:

$$RAL = \frac{(5 \times FNMR) + (20 \times MTR) + (100 \times RWIR)}{(1 + \text{number of lost time injuries})}$$

This year the reporting activity level (RAL) has been redefined as a rate without the denominator clause using lost time injuries. The 'old' RAL was influenced heavily by the number of lost time injuries recorded by a company, to the extent that evidence of a good 'reporting culture', which the RAL sets out to capture, could be obscured if a company reported lost time injuries.

Research showed that this effect could be minimised or eliminated altogether by changing the denominator in the original formula to (10 + Number of lost time injuries). However, use of lost time injuries at all in the calculation of this indicator was considered inappropriate and this has been ceased.

The number of hours over which the 'new' RAL is referenced remains one million. The definition of FNMR, MTR and RWIR remain unchanged.

$$NEW\ RAL = ((5 \times FNMR) + (20 \times MTR) + (100 \times RWIR)) \text{ per million man-hours}$$

Definitions

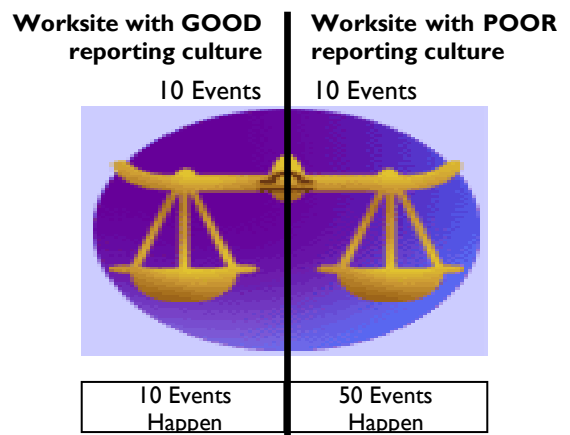
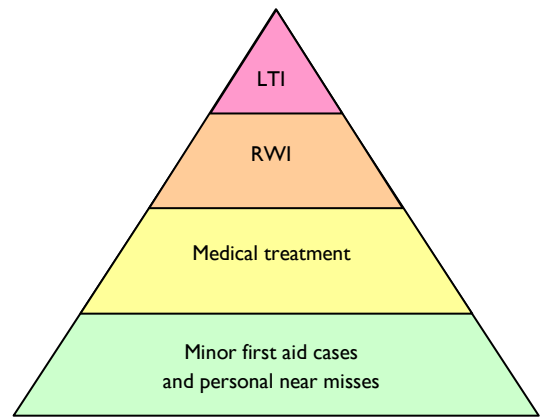
RAL	Reporting activity level
FNMR	Number of first aid injuries and personal near-miss reports
MTR	Number of medical treatment reports
RWIR	Number of restricted work injury reports
First aid injury	A one time treatment for the purpose of dealing with minor scratches, cuts, burns, splinters etc which do not ordinarily require medical care
Medical treatment injury	Is work related injury, which requires attention from a medical practitioner (not necessarily a doctor) but does not result in either a lost time injury or a restricted work injury
Restricted work injury	Is a work related injury, which causes the injured person to be assigned to another job on a temporary basis or to work at his normal job less than full time or not necessarily undertaking all of the normal duties
Lost time injury (LTI)	A work related injury which causes the injured person to be absent from work for at least one normal shift* after the event because he is unfit to perform any duties

* This should take into account travel time in attending the doctor to assess the injury

Line Management Visits Rating (MVR)

Line managers have overall accountability for the safety of people and the protection of equipment on their worksites. They are responsible for ensuring a safe system of work but are equally responsible for listening to people's concerns with regard to safety and to then act on them. It is also accepted that managerial leadership in demonstrating their interest and involvement in issues is a key factor in improving general behavioural aspects.

Thus a measure of a proactive safety culture is seen to be adequate qualitative visits by relevant managers to their operational worksites. The measure should not only be related to the operational man-hours expended on the site but should also link to management focus on serious undesired events. After all, sites where serious events happen, should expect a higher number of visits to correct such situations.



Thus the measure proposed is:

$$\begin{aligned} \text{MVR} &= \text{Number of managerial visits per 100,000 man-hours per (1 + number of lost time injuries)} \\ &= \frac{\text{MV} \times 100,000}{(1 + \text{LTI}) \times \text{man-hours}} \end{aligned}$$

As with the reporting activity level (RAL), a new formula has been employed without the LTI clause:

$$\text{New MVR} = \text{Number of managerial visits per 100,000 man-hours}$$

Criteria

- ◆ The manager has commercial or production responsibility for the company (e.g. Managing Director);
- ◆ The manager has responsibility for health, safety and environmental processes or other key process within the company;
- ◆ The manager is directly responsible for the operational or service support activities of the particular offshore barge or ship (e.g. Operations Manager);
- ◆ The manager is directly responsible for the conduct of the project (e.g. Project Manager).

Definitions

MVR	Managerial visit rating
MV	Managerial visits may be counted if the managers meet the criteria provided below. The visits should be made offshore during operational activities and be of at least 24 hours' duration. (Management visits during port visits are seen as routine.) The visit must include a safety briefing or presentation to the majority of the offshore people. It may also involve the manager making a safety performance check of the site with the people who manage or supervise the activities

Lessons Learnt Rating (LLR)

As a result of reporting undesired events, accident investigations, findings from managerial visits and inspection/audits, actions will be identified to improve safety performance. Sites where safety is given high priority or focus will be keen to see such events closed within a reasonable timescale and to pass on the lesson to others.

The lessons learnt from a series of similar events or from a more serious injury or near miss is usually notified to other worksites via a safety bulletin or safety flash. A simple measure of activity is therefore the number of bulletins issued. To be included in the IMCA leading safety performance indicator, the bulletin must have been issued to IMCA. IMCA safety flashes covering more than one subject count as a single bulletin. The lessons learnt rating is defined as:

$$\text{LLR} = \frac{\text{Number of bulletins issued}}{(1 + \text{number of LTIs})}$$

As with the reporting activity level (RAL) and the management visit rating (MVR), a new formula has been employed without the LTI clause:

$$\text{New LLR} = \text{Number of bulletins issued per 100,000 man-hours}$$

Definitions

LLR	Lessons learnt rating
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