

Safety Statistics for IMCA Members Report for the Period 1 January-31 December 2007

Contents

1	Introduction	1
2	Executive Summary	1
3	Contributors by Geographic Region	3
4	Individual Company LTIFR and TRIR Statistics	5
5	Hours Worked Banding	7
6	Comment and Analysis	9
7	Comparison with Other Published Figures	13
8	Leading Performance Indicators	14
	Appendix 1: Definitions – Lagging Safety Statistics	19
	Appendix 2: Definitions – Leading Safety Statistics	20

1 Introduction

IMCA has for the past eleven years produced an annual report of safety statistics (covering fatalities and injuries) supplied by members. This information note reports the annual statistics for 2007. 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. Around 48% of all IMCA contractor members, 100 companies and organisations, took part in the exercise this year – a record for the third year running. 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 fifth year that IMCA has collected leading indicators of health, safety and environmental performance and the third year that IMCA has calculated a total recordable incident 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

The 2007 dataset is drawn from 100 IMCA contractor members, based upon 309.6 million man-hours of work overall (252 million man-hours offshore). This is a significant increase on the 2006 figures, particularly in the man-hours worked and the number of contributors. The number of contributors has increased by 35%, rising from 74 in 2006 to 100 in 2007. The increase in overall man-hours between 2006 and 2007 was 40% and offshore working hours recorded likewise increased by 40% from 185 million man-hours in 2006 to 252 million man-hours in 2007. Onshore data was provided by 84 of 100 companies (84%).

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 7.

It should be noted that though 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 100 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 2007. IMCA continues to share learnings from incidents and fatalities in our sector, even those not reported in these statistics, through our normal communications.

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.

Overall lost time injury frequency rate (overall LTIFR)	1.09
Overall number of lost time injuries	339
Overall total recordable injury rate (TRIR)	4.38
Overall fatal accident rate (FAR)	1.94
Range of overall LTIFR (second highest-second lowest)	17.3-0.22
Range of overall TRIR (second highest-second lowest)	37.2-0.68
Offshore lost time injury frequency rate (offshore LTIFR)	1.25
Offshore fatal accident rate (FAR)	2.38
Offshore total recordable injury rate (TRIR)	4.68
Onshore lost time injury frequency rate (onshore LTIFR)	0.42
Onshore total recordable injury rate (TRIR)	3.05

Table 1 – Summary of IMCA safety statistics for 2007

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
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
Overall number of LTIs	236	257	196	227	162	244	198	164	189	226	339
Overall LTIFR	4.96	4.86	3.72	3.46	2.97	1.24	0.99	1.13	1.18	1.02	1.09
Overall number of fatalities	3	2	4	5	4	3	5	3	6	6	6
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
Overall no. of recordable injuries								645	864	914	1356
Overall TRIR									5.42	4.14	4.38
Million hours offshore						62.14	66.39	72.83	101.8	185.5	251.9
Offshore no. of LTIs (offshore)							133	120	172	196	315
Offshore LTIFR				4.25	3.77	2.96	2	1.65	1.69	1.06	1.25
Offshore number of fatalities							4	2	5	6	6
Offshore fatal accident rate				10.12	10.14	4.83	6.03	2.75	3.93	3.23	2.38
Offshore TRIR								8.87	7.29	4.35	4.68
Million hours worked onshore						135.16	134.01	72.18	57.7	35.0	57.7
Onshore LTIFR				1.05	0.86	0.44	0.49	0.61	0.29	0.86	0.42
Onshore TRIR									2.10	3.05	3.05
Onshore fatal accident rate						0	0.75	1.39	1.73	0.00	0.00
No. of participating companies	23	32	28	31	32	32	31	36	51	74	100

Table 2 – Summary of IMCA safety statistics 1997-2007

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 can be found in full at Appendix I. It should be noted that IMCA uses one million rather than 200,000 man-hours as a basis for the calculation.

3 Contributors by Geographic 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 geographic regions, 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.

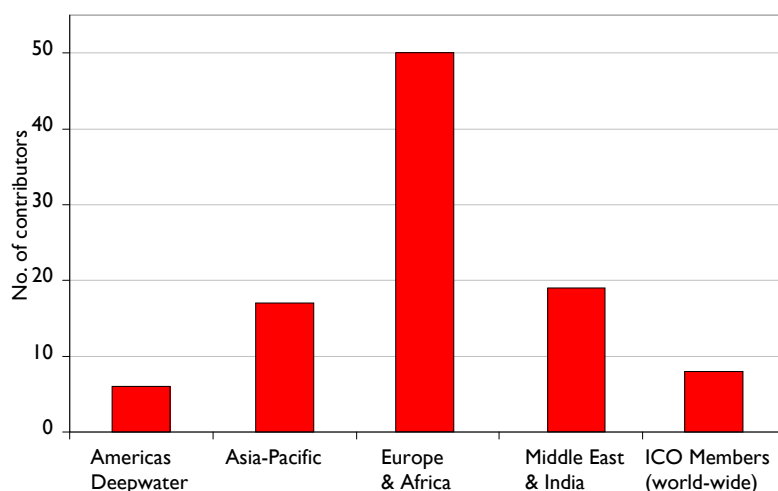


Figure 1 – Contributors by region

IMCA Region	Contributors
Americas	6
EA	50
MEI	19
AP	17
ICO (world-wide)	8

Table 3 – Contributors by region

		FAR	LTIFR	TRIR
Offshore	Americas	5.19	2.13	6.49
	AP	0.00	0.52	3.16
	EA	3.20	1.47	5.07
	MEI	0.00	0.49	2.01
	ICO	1.90	1.18	5.07
Onshore	Americas	0.00	0.82	4.08
	AP	0.00	0.17	2.81
	EA	0.00	0.44	3.26
	MEI	0.00	1.05	2.63
	ICO	0.00	0.43	2.97
Overall	Americas	4.60	1.98	6.22
	AP	0.00	0.44	3.08
	EA	2.84	1.36	4.87
	MEI	0.00	0.54	2.06
	ICO	1.28	0.93	4.38

Table 4 – Lagging safety indicators by region

	SOFR	RAL	MVR	LLR
Americas	641.64	654.74	7.76	0.99
AP	68.93	208.85	1.55	1.02
EA	61.24	411.17	1.37	1.66
MEI	365.12	163.60	3.68	1.66
ICO	191.06	261.20	1.70	0.31

Table 5 – Leading safety indicators by 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 frequency rate	LLR	lessons learnt ratio
SOFR	safety observation frequency		

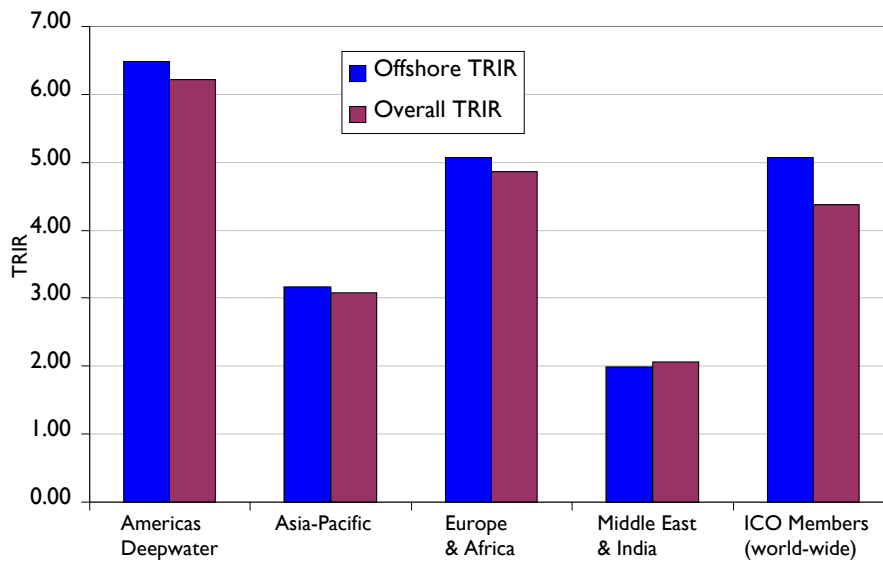


Figure 2 – Overall and offshore TRIR by region

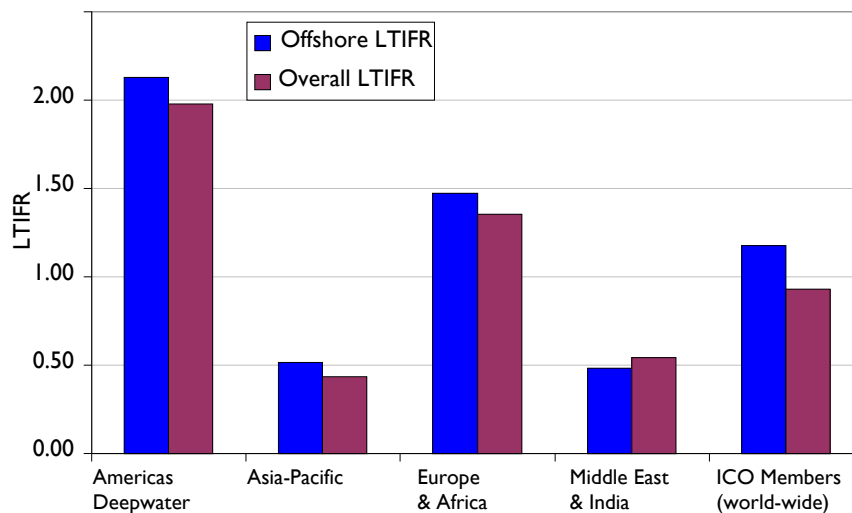


Figure 3 – Overall and offshore LTIFR by region

4 Individual Company LTIFR and TRIR Statistics

The following tables show the important statistical rates for each of the 100 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.

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

Table 6 – Hours worked bands

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.

Co	Band	Offshore LTIFR	Onshore LTIFR	Overall LTIFR	Offshore TRIR	Onshore TRIR	Overall TRIR	Co	Band	Offshore LTIFR	Onshore LTIFR	Overall LTIFR	Offshore TRIR	Onshore TRIR	Overall TRIR
1	A	17.44	27.89	21.46	87.21	55.79	75.12	51	B	0.00	0.00	0.00	0.00	5.76	2.60
2	A	0.00	0.00	0.00	0.00	0.00	0.00	52	B	1.57	0.00	1.48	4.70	0.00	4.44
3	C	0.00	0.00	0.00	6.14	0.00	5.21	53	A	0.00	0.00	0.00	5.57	6.34	5.93
4	C	1.00	0.00	0.69	5.01	1.13	3.82	54	A	0.00	0.00	0.00	0.00	0.00	0.00
5	C	1.14		1.14	4.34		4.34	55	D	2.83	0.00	2.60	6.12	0.00	5.61
6	C	0.23		0.23	1.37		1.37	56	A	0.00	0.00	0.00	13.32	16.40	14.49
7	B	0.00	0.00	0.00	12.46	0.00	11.30	57	B	2.10	0.00	1.56	6.30	0.00	4.69
8	C	0.00	0.00	0.00	0.00	0.00	0.00	58	C	3.81	0.00	2.54	10.49	0.00	6.97
9	A	0.00	0.00	0.00	0.00	0.00	0.00	59	C	2.80	0.00	2.76	8.39	0.00	8.28
10	C	4.01	0.00	2.88	6.01	0.00	4.33	60	A	22.56	0.00	16.57	45.11	0.00	33.15
11	C	0.00	0.00	0.00	2.37	0.00	2.17	61	C	3.31	0.00	3.21	5.62	0.00	5.45
12	D	1.83	0.16	1.08	5.36	1.93	3.82	62	D	0.79	0.00	0.75	2.89	1.50	2.82
13	C	0.00	0.00	0.00	26.30	13.55	23.75	63	D	1.28		1.28	6.19		6.19
14	C	0.00	0.00	0.00	6.64	0.00	6.48	64	C	0.00	7.97	0.43	0.45	7.97	0.86
15	D	0.15	0.00	0.15	0.44	0.00	0.44	65	D	3.21	0.00	2.84	9.24	2.97	8.53
16	D	0.34	0.00	0.29	3.39	0.00	2.88	66	C	0.92	0.00	0.83	2.14	2.89	2.21
17	A	0.00	0.00	0.00	12.99	0.00	8.72	67	D	1.08	0.00	0.85	5.08	0.00	4.00
18	B	0.00	0.00	0.00	3.68	0.00	3.14	68	C	5.11		5.11	35.76		35.76
19	D	0.88	0.40	0.58	4.78	1.35	2.67	69	A	0.00	0.00	0.00	0.00	0.00	0.00
20	C	1.72	3.40	1.85	7.17	10.21	7.41	70	B	1.26	0.00	1.11	2.52	0.00	2.22
21	B	2.19	0.00	1.49	10.95	0.00	7.44	71	B	3.46	0.00	2.85	6.92	0.00	5.69
22	A	0.00	0.00	0.00	8.82	0.00	5.63	72	A	0.00	0.00	0.00	0.00	0.00	0.00
23	A	0.00	0.00	0.00	8.26	0.00	7.52	73	A	14.73	6.26	10.15	58.93	18.78	37.22
24	A	19.27	0.00	17.31	28.90	0.00	25.96	74	A	0.00	0.00	0.00	0.00	31.24	6.27
25	B	3.37		3.37	16.87		16.87	75	C	0.00	0.00	0.00	0.99	0.00	0.76
26	C	7.00		7.00	9.11		9.11	76	B	0.00	0.00	0.00	5.60	309.07	28.46
27	C	0.00	0.00	0.00	1.25	0.00	1.08	77	A	0.00	0.00	0.00	0.00	0.00	0.00
28	A	3.73	0.00	2.72	26.10	0.00	19.02	78	C	0.00		0.00	2.25		2.25
29	C	1.28	1.23	1.26	7.70	4.94	6.29	79	C	3.58	0.00	3.46	17.19	0.00	16.60
30	C	2.44	0.00	2.25	6.72	0.00	6.20	80	B	2.12	0.00	1.17	4.24	2.59	3.50
31	D	0.55	0.00	0.54	0.68	0.00	0.68	81	A	0.00	0.00	0.00	0.00	0.00	0.00
32	A	0.00	0.00	0.00	10.82	0.00	8.17	82	D	2.40	0.00	2.11	6.96	0.87	6.22
33	B	0.00	0.00	0.00	1.14	8.57	2.01	83	B	0.00	0.00	0.00	0.00	0.00	0.00
34	B	3.17	0.00	2.24	6.34	3.85	5.61	84	A	0.00	0.00	0.00	0.00	0.00	0.00
35	A	0.00	0.00	0.00	0.00	0.00	0.00	85	A	0.00		0.00	0.00		0.00
36	A	3.89	0.00	3.11	15.57	0.00	12.43	86	B	0.00	0.00	0.00	0.00	0.00	0.00
37	D	0.00	0.00	0.00	0.00	0.00	0.00	87	C	2.61	0.00	2.59	6.66	0.00	6.62
38	D	3.04	1.67	2.47	16.43	18.42	17.27	88	A	0.00	98.68	2.71	2.79	98.68	5.42
39	C	1.14	6.63	1.94	18.20	6.63	16.51	89	C	0.00	0.00	0.00	15.08	58.46	22.26
40	A	0.00	0.00	0.00	0.00	0.00	0.00	90	A	7.36		7.36	27.00		27.00
41	A	0.00		0.00	17.98		17.98	91	D	0.90		0.90	3.01		3.01
42	C	0.00	2.02	0.79	2.59	2.02	2.37	92	C	0.67	14.02	1.08	1.79	42.07	3.04
43	D	0.35	0.39	0.38	2.13	1.95	2.01	93	A	0.00	0.00	0.00	23.62	255.75	37.08
44	D	2.59		2.59	5.44		5.44	94	A	0.00		0.00	0.00		0.00
45	D	0.46		0.46	2.20		2.20	95	D	0.00	0.00	0.00	0.00	1.69	1.55
46	B	1.44		1.44	30.15		30.15	96	C	0.41	0.00	0.40	0.82	0.00	0.79
47	B	1.45	7.80	2.44	4.35	15.60	6.11	97	A	0.00	0.00	0.00	0.00	0.00	0.00
48	B	6.82	0.00	5.17	13.64	5.36	11.64	98	C	4.42		4.42	14.24		14.24
49	A	0.00	0.00	0.00	0.00	0.00	0.00	99	D	1.31	0.43	0.93	3.61	0.43	2.23
50	A	0.00	0.00	0.00	6.50	0.00	6.37	100	A	0.00	0.00	0.00	0.00	0.00	0.00
		IMCA	1.25	0.42	1.09	4.68	3.05	4.38							

Table 7 – Individual company LTIFR and TRIR statistics 2007

5 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 20 of the 100 companies taking part in the exercise – a fifth – contribute 73% of the man-hours. Ten of the largest contributors worked half of all the contributed man-hours.
- ◆ Nine contributors (seven last year) worked more than ten million man-hours each.

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

Table 8 – Number of companies in each band

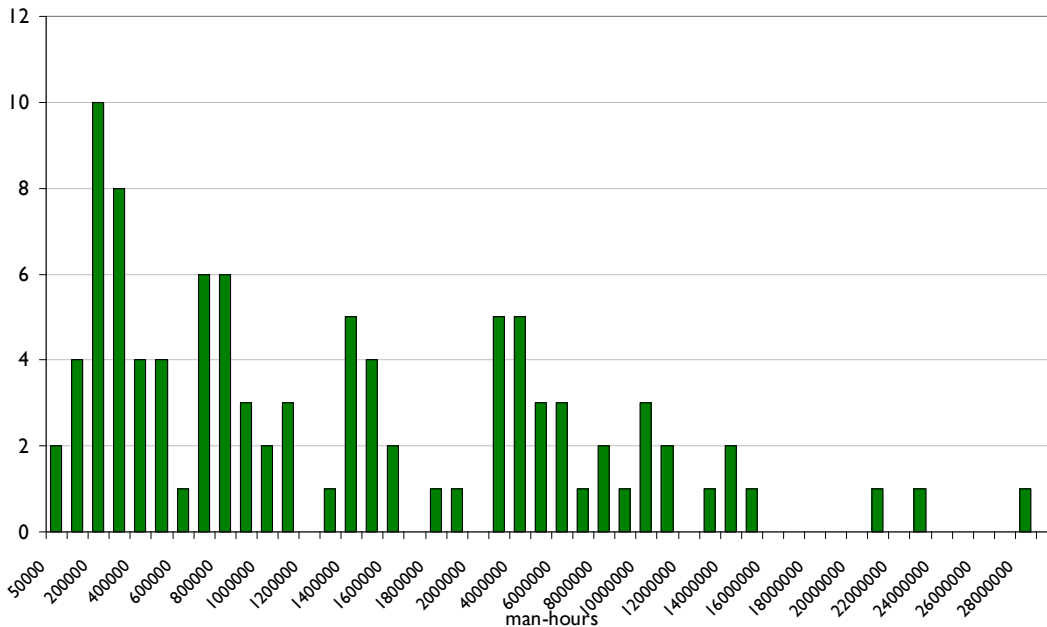


Figure 4 – Number of companies against size (overall man-hours)

5.1 Indicators and Statistics by Company Bands

	Band	FAR	LTI	LTIFR	TRI	TRIR	Medical			
							treatment	RWC	First Aid	Near Miss
Offshore	A	0.00	13	2.22	70	11.95	35	22	114	160
	B	0.00	17	1.57	80	7.38	46	17	225	1338
	C	1.65	89	1.47	373	6.16	208	75	881	3745
	D	2.86	196	1.12	657	3.76	318	138	1980	3005
Onshore	A	0.00	3	2.12	15	10.60	9	3	17	70
	B	0.00	1	0.38	26	9.86	24	1	24	64
	C	0.00	7	1.13	32	5.18	16	9	50	53
	D	0.00	13	0.27	103	2.17	74	16	461	99
Overall	A	0.00	16	2.20	85	11.69	44	25	131	230
	B	0.00	18	1.34	106	7.86	70	18	249	1402
	C	1.50	96	1.44	405	6.07	224	84	931	3798
	D	2.25	209	0.94	760	3.42	392	154	2441	3104

Table 9 – Lagging indicators and statistics by company band 2007

Band	Safety Obs	SOFR	Management Visits	MVR	RAL	Safety Bulletins	LLR
A	6738	186.28	424	5.86	837.69	1962	27.54
B	9798	145.37	633	4.70	849.80	302	2.24
C	90034	270.32	2054	3.08	547.35	524	0.79
D	130179	119.79	3227	1.48	234.49	687	0.32

Table 10 – Leading indicators and statistics by company band 2007

5.2 LTIFR in Company Bands

Figure 5 shows the overall LTIFR of companies within the defined bands of number of hours worked. Figure 6 shows the overall TRIR over the past three years for companies within the defined bands.

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

Table 11 – Overall LTIFR and TRIR by company band

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
LTJ	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		

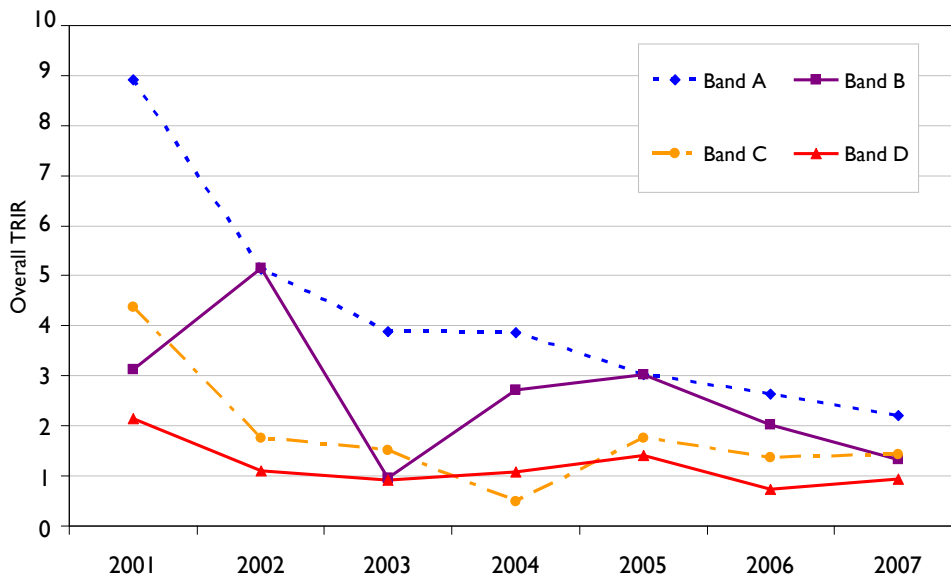


Figure 5 – Overall LTIFR for company bands

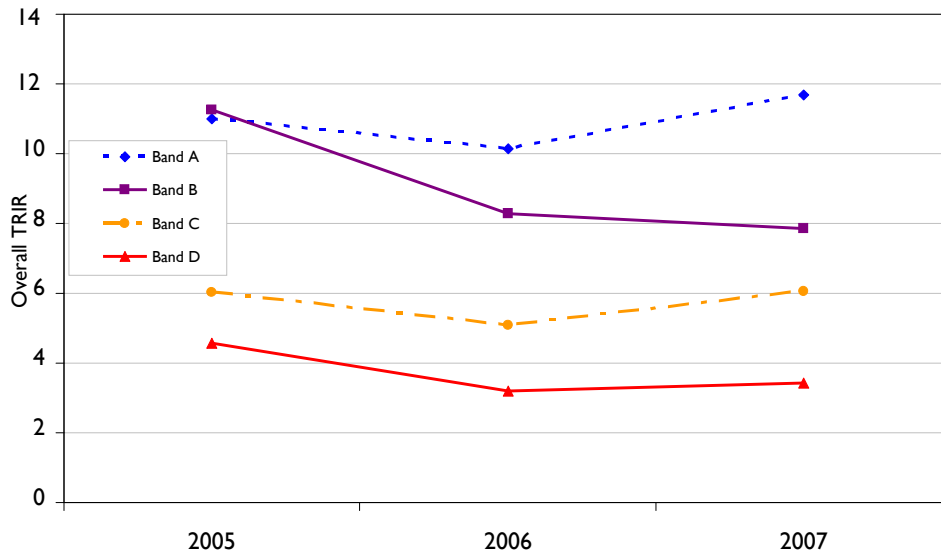


Figure 6 – Overall TRIR for company bands

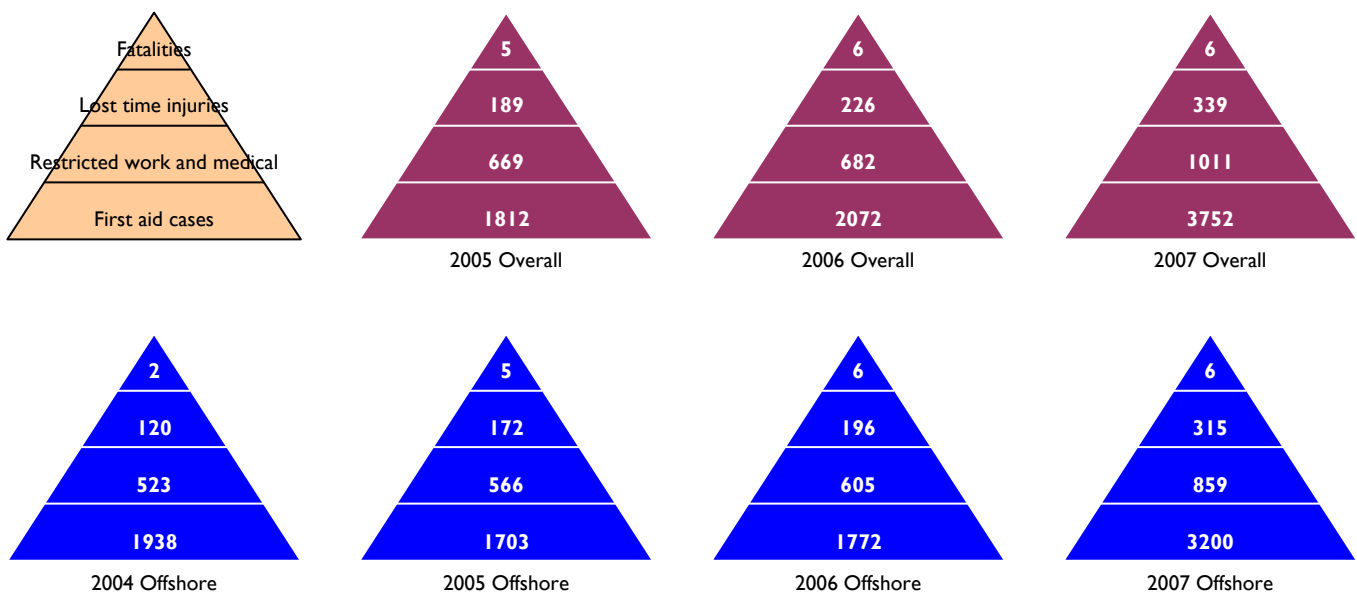
6 Comment and Analysis

6.1 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
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

Table 12 – Accident triangle data



6.2 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 causes of injuries.

It was decided to employ the six categories for direct causes of LTIs. These were:

A – Struck by	D – Hazardous substances
B – Slips, trips and falls	E – Caught between
C – Vehicles	F – Dropped objects

There were 339 LTIs recorded by IMCA members this year. 'Slips trips and falls' form 30% of recorded LTIs for IMCA members, followed by 'Struck by' at 22% of recorded LTIs. 'Other' at 20% of recorded LTIs and 'caught between' follow closely behind. A review of direct causes is indicated, as a significant number of the LTIs do not fall into one of the categories provided.

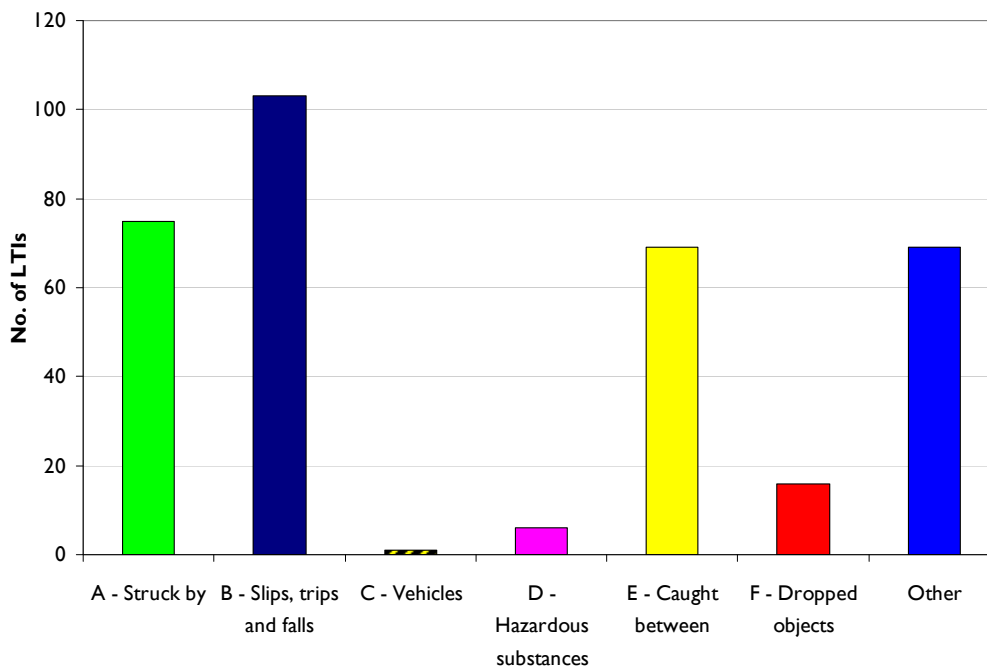


Figure 7 – Direct causes of lost time injuries

Further information is provided breaking down the direct causes of LTIs into different regions. This information is tabulated and displayed below in Table 13, Figure 8 and Figure 9.

	A: Struck By	B: Slips, Trips and Falls	C: Vehicles	D: Hazardous Substances	E: Caught Between	F: Dropped Objects	Other	Total
Americas	11	7	0	1	15	2	7	43
AP	8	8	0	0	5	0	1	22
EA	42	64	1	3	27	8	46	191
MEI	1	3	0	2	1	2	1	10
ICO	13	21	0	0	21	4	14	73
Total	75	104	1	6	69	16	69	339

Table 13 – Causes of LTIs by IMCA geographic region

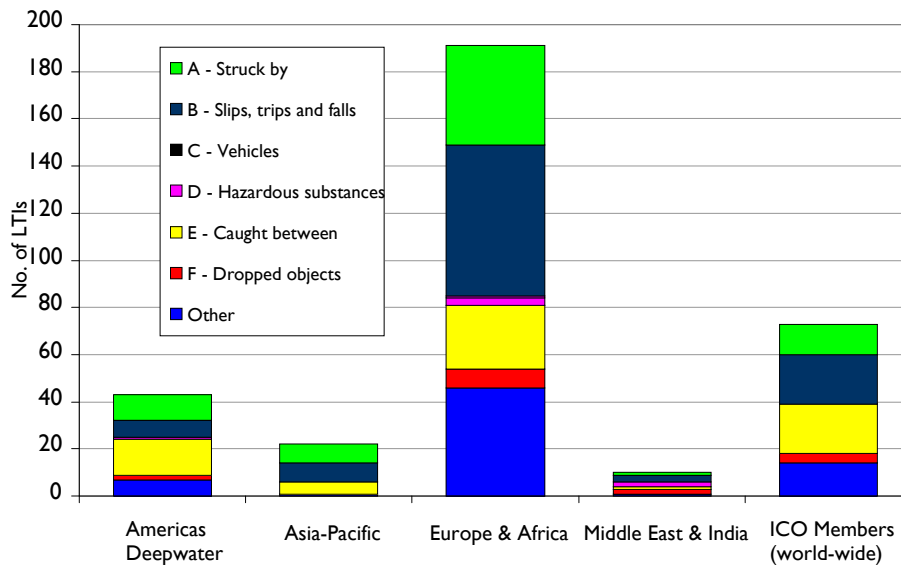


Figure 8 – Causes of LTIs by IMCA geographic region

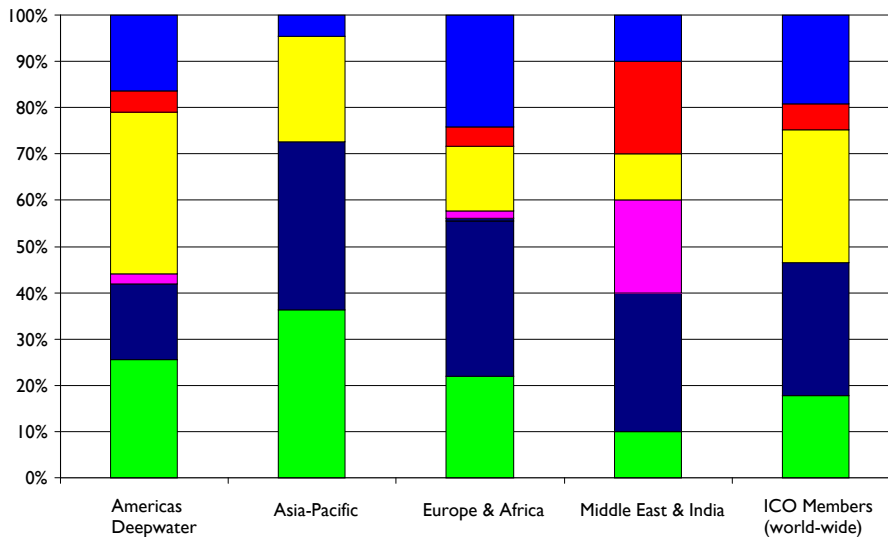


Figure 9 – Causes of LTIs by IMCA geographic region on a percentage basis

6.3 Lost Time Injury Frequency Rates (LTIFR)

The offshore LTIFR for 2007 has risen from 1.06 in 2006 to 1.25. The overall LTIFR has risen slightly from 1.02 in 2006 to 1.09 in 2007. This continues the general 'flat-line' trend, though the slight increases are a clear warning sign. There has been some expectation and discussion during 2007 that the skills shortage would have an effect on the 'bottom line' in safety terms – this may be seen here. These rates should be seen in light of the continued significant year on year increase in the number of LTIs reported (from 189 in 2005 to 226 last year, to 339 this year), a further large increase in the number of contributors and the continued rise in the reported offshore and overall hours worked. It will be seen that the onshore LTIFR has fallen again to 0.42 this year following last year's sharp rise to 0.86 from 0.29 in 2005.

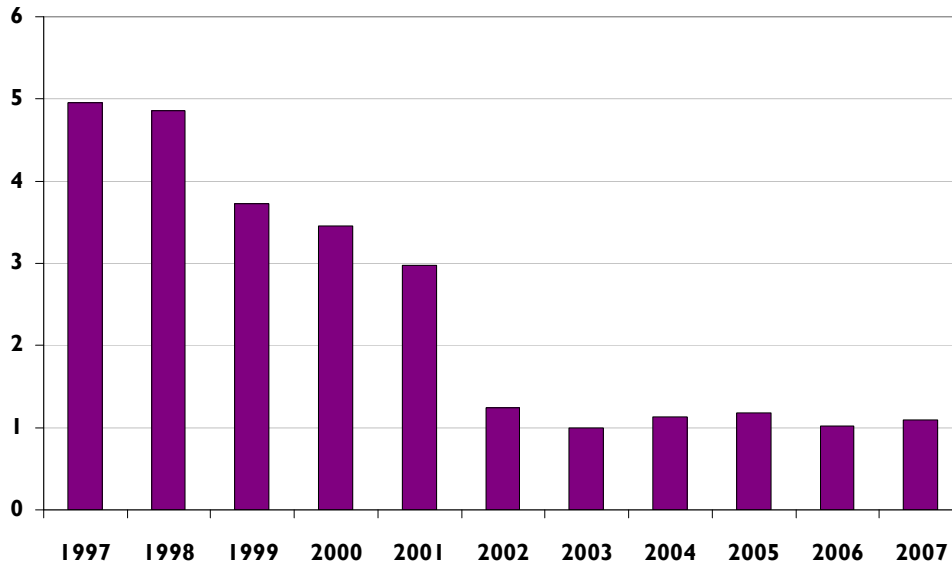


Figure 10 – Overall LTIFR

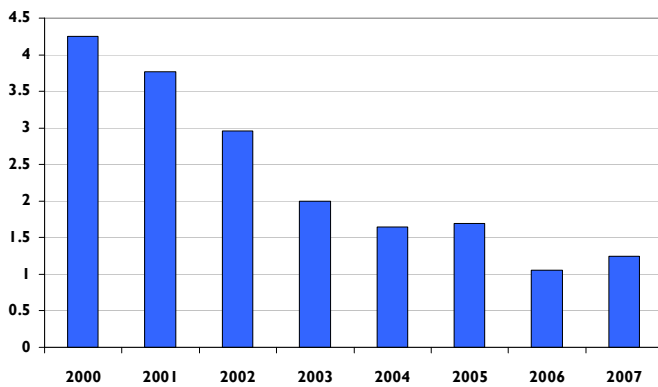


Figure 11 – Offshore LTIFR

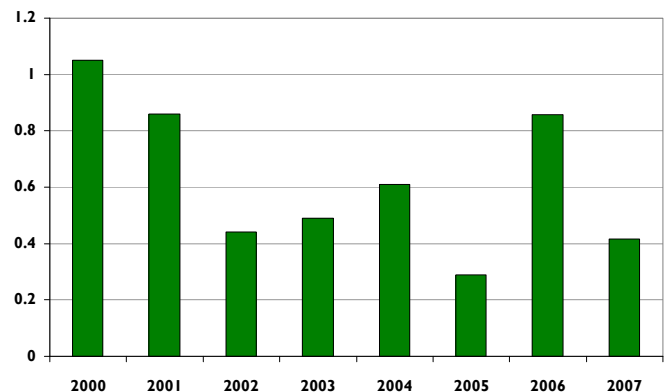


Figure 12 – Onshore LTIFR

6.4 Total Recordable Injury Rates (TRIR)

Members may recall that during 2005 we started to track total recordable injuries as a more reliable pointer to a truer picture of safety in the industry.

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

Table 14 – Total recordable injury rates (TRIR)

This year, the offshore TRIR was 4.68, an 8% increase on last year's figure of 4.35. The onshore TRIR was 3.05, much the same as the 2005 figure of 3.06, and the overall TRIR was 4.38 which is a 6% increase over last year's figure of 4.14. We may see over the coming years a similar 'flat-line' trend developing in the total recordable injury rates as members work to reduce these further.

- ◆ There were 607 offshore medical treatment cases reported in 2007. This is an increase in numbers from 2006 when there were 434 offshore medical treatment cases reported. This was a fall in numbers from 2005, in which 436 such reports were made offshore;
- ◆ There were 252 offshore restricted work injury reports reported in 2007, compared to 171 offshore restricted work injury reports reported in 2006;

- ◆ Members reported that there were 3200 offshore first aid cases and 8248 offshore near miss reports in 2007; this is a large increase in reporting against the previous year when there were 1772 offshore first aid cases and 3065 offshore near miss reports;
- ◆ There were 3752 first aid cases overall and 8534 near miss reports overall during 2007, compared to 2072 first aid cases overall and 3307 near miss reports overall during 2006;
- ◆ All the above increases should be seen in light of the increased reporting and increased number of contributors. IMCA encourages its members to report all accidents and all near misses, however small. The increase in reporting of near misses is particularly good and is to be encouraged.

6.5 Fatal Accident Rate (FAR)

It should be noted when considering the fatal accident rate and the safety statistics as a whole that slightly more than half of all IMCA contractor members did not take part in the safety statistics exercise. Since the IMCA safety seminar in Abu Dhabi there has been some 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 reported during 2007. 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.

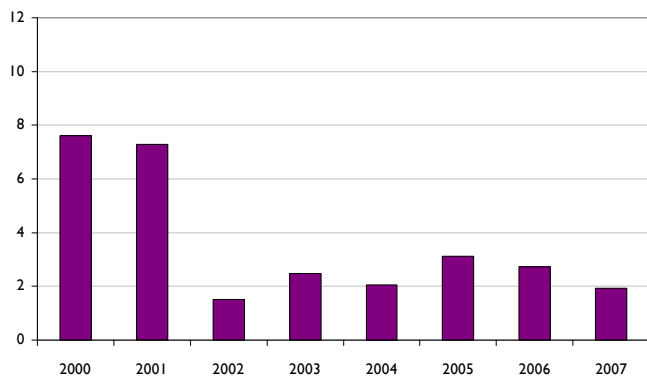


Figure 13 – Overall FAR

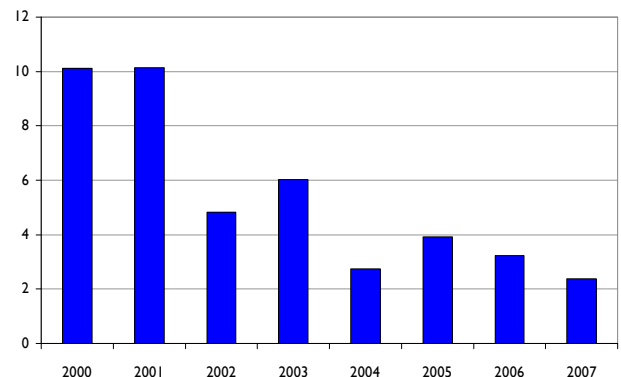


Figure 14 – Offshore FAR

6.5.1 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:

- ◆ During thick fog, a tug was capsized by the vessel it was towing, resulting in three fatalities;
- ◆ Multiple trauma caused by an underwater explosion resulted in the death of a diver;
- ◆ A man was lost overboard and drowned as a result of a sudden take-up in tension within a hydraulic hose.

7 Comparison with Other Published Figures

7.1 International Association of Drilling Contractors (IADC) – 2006

IADC represents offshore and onshore drilling contractors. In 2006 IADC members reported 29 fatalities of which 8 were offshore, 1139 lost time injuries of which 251 were offshore, and 4547 'recordable' injuries of which 939 were offshore. Based on offshore man-hours of 165,335,712 hours and on a base figure of one million man-hours rather than 200000, this equates to an overall LTIFR of 1.52, and a TRIR of 5.68.

Figures for 2007 will be published by the IADC in late June of 2008.

	2002	2003	2004	2005	2006
IMCA	1.24	0.99	1.13	1.18	1.02
OGP	1.09	1.16	1.09	0.97	0.99
IADC	3.27	3.16	3.07	2.91	2.72

Table 15 – Comparison of trade association LTIFR

7.2 International Association of Oil & Gas Producers (OGP) – 2007

In 2007 OGP members recorded 11 company and 76 contractor fatalities – a fatal accident rate of 3.0. The LTIFR recorded by OGP members was 0.66 and the TRIR, 2.68. This information is based on 2913 million man-hours of work.

8 Leading Performance Indicators

8.1 Overall

This is the fifth year for which IMCA has collected leading performance indicator data. This year nearly all (95 of 100, 95%) of the participating contractors provided information which could be used to calculate full or partial leading indicator data. Of the 100 companies providing some data, 25 provided a full dataset.

The table below shows the year-on-year growth in uptake of the leading performance indicators over the past five 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%)

Table 16 – Companies providing leading 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 past four years.

	SOFR	RAL		LLR		MVR	
		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

Table 17 – Leading performance indicators 2003-2007

8.2 Safety Observation Frequency Rate (SOFR)

Eighty-six per cent (86 of 100) companies provided data on safety observations. In 2006 94% (70 of 74) companies contributed. 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. The wide variation in reporting levels and in the safety observation frequency rate calculated suggests that there may be different interpretations of the definition of 'safety observation'. 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	5	17.0	35	4	4.7	69	3	4.9
2	7	7.6	36			70	1047	232.0
3	2240	333.4	37	1438	20.6	71	231	65.7
4	2415	167.8	38	1108	39.0	72	31	80.4
5	2341	106.9	39	591	134.4	73	10	6.8
6	942	43.1	40	3	6.0	74		
7	273	77.1	41	3	2.7	75	1464	221.3
8	68	13.0	42	364	57.5	76	1975	510.9
9	127	104.5	43	1359	34.2	77	230	442.9
10	788	113.7	44			78		
11	26220	2274.6	45	5603	102.9	79	609	84.3
12	7339	105.9	46	308	88.4	80	152	35.4
13	486	65.9	47	839	205.1	81		
14	77	11.1	48	402	104.0	82		
15	1732	12.6	49	556	4488.9	83	1468	453.4
16	22250	641.7	50	13	5.5	84	6	15.5
17	475	414.0	51	460	119.8	85		
18	701	220.3	52	156	46.2	86	5	1.4
19	16757	162.8	53	2848	1688.9	87	9055	521.1
20	64	3.4	54	24	22.8	88	128	69.4
21	183	54.4	55			89	620	120.0
22	241	271.4	56	268	110.9	90		
23	376	282.8	57	212	66.3	91	10387	208.4
24	0	0.0	58	1162	147.4	92	14554	631.5
25	230	77.6	59		0.0	93	528	391.6
26			60	74	81.8	94	600	255.1
27	145	15.7	61	1953	125.3	95	1461	30.1
28	112	60.9	62	4587	76.0	96	152	12.0
29	182	22.9	63			97	49	52.9
30	243	27.4	64	16	1.4	98		
31	10	0.3	65	54668	1829.6	99	1480	55.0
32	17	13.9	66	21292	1176.1	100		
33	1107	222.4	67					
34	49	11.0	68	1991	290.6			
						IMCA	236749	153.03

Table 18 – Safety observation frequency rate (SOFR) 2007

8.3 Reporting Activity Level (RAL)

The reporting activity level, designed as an indicator of how good a company's 'reporting culture' is, is calculated as a straightforward rate. The number of hours over which it is normalised remains one million. The definition of FNMR, MTR and RWIR can be found in Appendix 2.

Reporting activity level (RAL) = ((5 × FNMR) + (20 × MTR) + (100 × RWIR)) per million man-hours

All but three companies contributed data enabling us to calculate a reporting activity level. In 2006, all but two of the contributors provided data. For completeness and members' reference the old numbers are still calculated and included.

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

Comp.	Med trt	RWC	First Aid	Near Miss	New RAL	Old RAL	Comp.	Med trt	RWC	First Aid	Near Miss	New RAL	Old RAL
1	5	0	2	3	2124.55	41.67	51	2	0	10	9	175.78	135.00
2	0	0	7	21	762.82	140.00	52	2	0	7	0	111.09	37.50
3	5	2	6	10	282.83	380.00	53	2	0	4	4	237.21	80.00
4	5	4	30	72	350.90	336.67	54	0	0	2	48	1187.08	250.00
5	12	2	57	229	427.07	311.67	55	25	15	50	0	157.86	59.21
6	4	1	1	115	173.94	380.00	56	6	1	20	9	755.40	365.00
7	3	5	7	17	960.60	680.00	57	2	0	4	0	93.82	30.00
8	0	0	3	44	224.94	235.00	58	1	6	40	87	795.76	251.00
9	0	0	4	2	123.44	30.00	59	8	0	0	5	127.58	37.00
10	2	0	35	34	277.65	77.00	60	3	0	1	1	386.75	17.50
11	4	1	4	12	112.78	260.00	61	2	5	60	108	442.59	125.45
12	25	13	138	235	264.45	229.06	62	10	15	120	395	354.00	427.50
13	32	3	34	0	753.12	1110.00	63	43	7	0	112	208.36	151.43
14	7	2	12	11	327.85	455.00	64	1	0	4	1	19.28	22.50
15	8	0	50	0	14.92	82.00	65	23	10	246	264	671.02	222.78
16	13	5	74	121	250.20	578.33	66	4	1	99	104	330.04	298.75
17	1	1	4	7	762.56	175.00	67	46	24	264	484	317.12	353.00
18	2	0	108	3	935.12	595.00	68	26	16	19	1991	8881.94	1521.25
19	29	14	138	132	161.72	256.15	69						
20	16	5	34	64	346.60	163.75	70	1	0	11	1059	5949.98	2685.00
21	1	3	13	25	758.69	255.00	71	2	0	5	35	341.41	80.00
22	1	0	2	7	365.94	65.00	72	0	0	1	1	129.63	10.00
23	0	2	36	10	1617.23	430.00	73	8	0	1	11	744.46	55.00
24	0	1	0	0	865.26	33.33	74	1	0	4	18	814.58	130.00
25	8	0	14	39	717.11	141.67	75	1	0	0	12	60.46	80.00
26	3	0	13	61	301.17	39.09	76	22	0	3	27	763.13	590.00
27	2	0	0	3	29.69	55.00	77	0	0	0	0	0.00	0.00
28	2	4	1	12	1372.00	252.50	78	0	7	0	64	286.68	1020.00
29	8	0	14	23	217.16	115.00	79	13	6	18	0	657.19	158.33
30	7	0	16	9	149.36	53.00	80	2	0	11	88	623.83	267.50
31	1	0	3	1	5.44	8.00	81	0	0	0	12	924.21	60.00
32	1	1	3	8	714.87	175.00	82	39	0	584	552	680.68	307.62
33	1	1	23	19	331.49	330.00	83	0	0	2	2	30.89	20.00
34	3	0	3	33	269.34	80.00	84	0	0	0	4	259.13	20.00
35	0	0	1	1	59.31	10.00	85						
36	3	0	6	24	652.65	105.00	86	0	0	4	2	41.11	30.00
37	0	0	1	6	2.50	35.00	87	12	2	24	62	250.36	87.00
38	84	0	370	0	621.99	235.33	88	1	0	5	5	189.87	35.00
39	15	0	26	43	733.60	322.50	89	11	12	25	33	1654.77	1710.00
40	0	0	2	0	99.57	10.00	90	4	4	14	4	1399.32	142.50
41	2	2	3	2	1190.90	265.00	91	9	12	1	6	141.93	141.50
42	2	0	5	16	114.45	72.50	92	6	3	293	128	547.77	420.83
43	8	5	33	55	138.51	275.00	93	2	8	2	8	3300.21	890.00
44	0	23	87	690	764.24	281.14	94	0	0	0	1	10.63	5.00
45	16	3	134	34	134.02	243.33	95	10	5	99	17	132.07	1280.00
46	13	7	7	25	1607.89	560.00	96	1	0	5	9	35.66	45.00
47	2	1	6	15	299.51	81.67	97	0	0	4	0	107.92	20.00
48	4	1	11	4	329.73	51.00	98	14	6	54	448	1664.52	339.00
49	0	0	0	2	403.68	10.00	99	3	3	49	0	112.45	100.83
50	2	1	2	5	371.37	175.00	100						
							IMCA	730	281	3752	8534	336.55	307.17

Table 19 – Reporting activity level (RAL) 2007

8.4 Management Visit Ratio (MVR)

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

Eighty-eight per cent (88 of 100) 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. Formerly this has been calculated using this formula:

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

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

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

Company	Management Visits	New MVR	Old MVR	Company	Management Visits	New MVR	Old MVR
1	10	17.00	5.67	51	5	0.65	0.65
2	45	24.52	24.52	52	66	4.89	9.78
3	184	13.69	13.69	53	25	7.41	7.41
4	13	0.45	0.15	54	7	3.32	3.32
5	96	2.19	0.37	55			
6	272	6.23	3.11	56	15	3.10	3.10
7	86	12.15	12.15	57	3	0.23	0.47
8	57	5.46	5.46	58	50	0.63	3.17
9	3	1.23	1.23	59	12	0.17	0.83
10	14	1.01	0.20	60	18	2.49	9.94
11	50	2.17	2.17	61	57	0.17	1.83
12	262	1.89	0.12	62	176	0.15	1.46
13	62	4.21	4.21	63			
14	6	0.43	0.43	64	6	0.13	0.26
15	257	0.94	0.19	65	1097	1.02	18.36
16	24	0.35	0.12	66	232	1.60	6.41
17	12	5.23	5.23	67			
18	10	1.57	1.57	68	79	0.72	5.77
19	633	3.07	0.24	69	6	4.93	4.93
20	8	0.21	0.03	70			
21	99	14.73	7.36	71	4	0.19	0.57
22				72	7	9.07	9.07
23	9	3.38	3.38	73	56	4.74	18.95
24	3	2.60	0.87	74			
25	19	3.21	1.07	75	14	1.06	1.06
26	57	3.99	0.36	76	80	10.35	10.35
27	23	1.24	1.24	77	19	18.29	18.29
28	12	3.26	1.63	78			
29	4	0.25	0.08	79	190	2.19	13.14
30	10	0.56	0.11	80	4	0.23	0.47
31	12	0.16	0.03	81	12	18.48	18.48
32				82	395	0.20	4.16
33	130	13.06	13.06	83	57	8.80	8.80
34	15	1.68	0.56	84	3	3.89	3.89
35	2	1.19	1.19	85	36	248.34	248.34
36				86	6	0.82	0.82
37	2	0.01	0.01	87	39	0.11	1.12
38				88	35	4.75	9.49
39	7	0.80	0.40	89	171	16.55	16.55
40	8	7.97	7.97	90	6	0.37	1.47
41	30	13.48	13.48	91	77	0.08	0.77
42	200	15.79	7.89	92	97	0.35	2.10
43	145	1.83	0.46	93	12	4.45	4.45
44	72	0.89	0.04	94	13	2.76	2.76
45	57	0.52	0.09	95	15	0.15	0.15
46				96	20	0.40	0.79
47	45	1.83	5.50	97	10	5.40	5.40
48	4	0.10	0.52	98	24	0.12	1.18
49	7	28.26	28.26	99	3	0.01	0.06
50	3	0.64	0.64	100			
				IMCA	6338	2.05	0.006

Table 20 – Management visit ratio (MVR) data 2007

8.5 Lessons Learnt Ratio (LLR)

Lessons Learnt Ratio (LLR) = Number of bulletins issued per 100,000 man-hours

85 of 100 or 85% of contributing companies provided data on safety bulletins. In 2006 81% (60 of 74) of contributing companies provided data. In 2005, 58% (29 of 50) of companies provided data.

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

Company	Safety bulletins	New LLR	Old LLR	Company	Safety bulletins	New LLR	Old LLR
1	25	42.49	8.33	51	11	1.43	11.00
2	45	24.52	45.00	52	13	1.93	6.50
3	18	1.34	18.00	53	35	10.38	35.00
4	4	0.14	1.33	54		0.00	0.00
5	12	0.27	2.00	55		0.00	0.00
6	10	0.23	5.00	56	15	3.10	15.00
7	43	6.07	43.00	57	41	6.41	20.50
8	4	0.38	4.00	58	11	0.70	2.20
9	68	27.98	68.00	59	31	2.14	6.20
10	7	0.50	1.40	60	6	3.31	1.50
11	22	0.95	22.00	61	34	1.09	3.09
12	6	0.04	0.38	62	32	0.26	3.20
13	30	2.04	30.00	63		0.00	0.00
14	1	0.07	1.00	64	8	0.34	4.00
15	129	0.47	25.80	65	54	0.90	3.00
16	22	0.32	7.33	66	62	1.71	15.50
17	61	26.58	61.00	67		0.00	0.00
18		0.00	0.00	68	19	1.39	2.38
19	24	0.12	1.85	69	3	2.46	3.00
20		0.00	0.00	70	8	0.89	4.00
21	57	8.48	28.50	71	15	2.13	5.00
22	8	4.50	8.00	72	7	9.07	7.00
23	61	22.94	61.00	73	1487	503.18	371.75
24		0.00	0.00	74	11	6.89	11.00
25	29	4.89	9.67	75	26	1.97	26.00
26	3	0.21	0.27	76	28	3.62	28.00
27	12	0.65	12.00	77	29	27.92	29.00
28	2	0.54	1.00	78		0.00	0.00
29	2	0.13	0.67	79	25	1.73	4.17
30	3	0.17	0.60	80	4	0.47	2.00
31	1	0.01	0.20	81		0.00	0.00
32		0.00	0.00	82	83	0.87	3.95
33	2	0.20	2.00	83		0.00	0.00
34	12	1.35	4.00	84	6	7.77	6.00
35	4	2.37	4.00	85	2	13.80	2.00
36		0.00	0.00	86	2	0.27	2.00
37	5	0.04	5.00	87	52	1.50	5.20
38		0.00	0.00	88	5	1.36	2.50
39	15	1.71	7.50	89	48	4.64	48.00
40	1	1.00	1.00	90	2	0.49	0.50
41	10	4.49	10.00	91	10	0.10	1.00
42	7	0.55	3.50	92	25	0.54	4.17
43	0	0.00	0.00	93	24	8.90	24.00
44	10	0.12	0.45	94	12	2.55	12.00
45	211	1.94	35.17	95		0.00	0.00
46		0.00	0.00	96	25	0.99	12.50
47	16	1.96	5.33	97	10	5.40	10.00
48	21	2.72	4.20	98	8	0.39	0.80
49	23	92.85	23.00	99	100	1.86	16.67
50	0	0.00	0.00	100	30	14.28	30
				IMCA	3475	1.13	10.34

Table 21 – Lessons learnt ratio (LLR) data 2007

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 incident rate (TRIR)	<p>the number of injuries and/or illnesses per 100 full-time workers and is calculated as:</p> $= \frac{\text{total number of recordable incidents} \times 1,000,000}{\text{total hours worked}}$
<p>The US Occupational Safety & Health Administration (OSHA) definition of ‘total recordable injuries’</p> <p><i>from the American Bureau of Labor Statistics</i> www.bls.gov/iif/oshdef.htm</p>	<p><u>Work-related injuries and illnesses</u> – events or exposures in the work environment that caused or contributed to the condition or significantly aggravated a pre-existing condition.</p> <p><u>Recordable cases</u> – 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><u>Days away from work, days of restricted work activity or job transfer</u> 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><u>Total recordable injury rate (TRIR)</u> – the number of injuries and/or illnesses per 100 full-time workers, calculated as $(N/EH) \times 200,000$ 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.

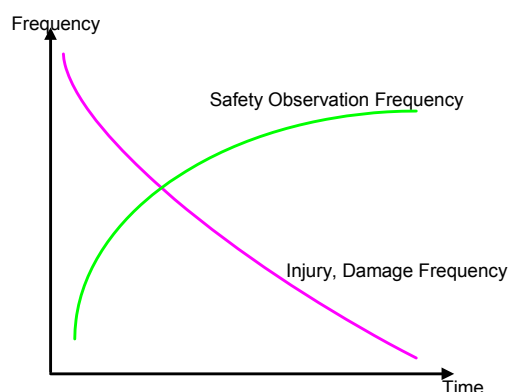
Therefore, for the reporting activity level (RAL), management visits ratio (MVR) and lessons learnt ratio (LLR), the results have been calculated using a simpler definition. For completeness the old definitions are included here as well.

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.

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

Definitions

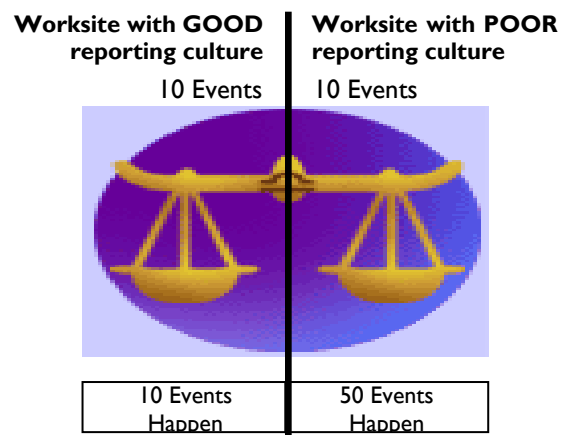
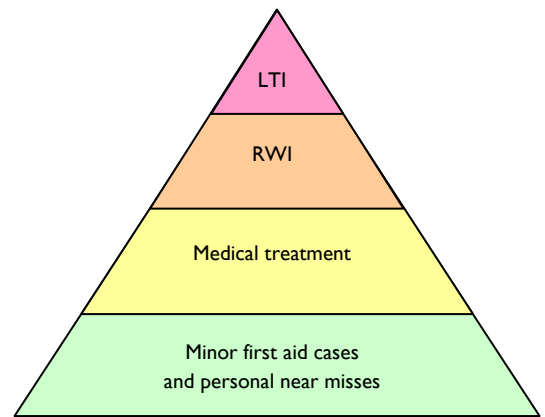
RAL	Reporting activity level
FNMR	Number of first aid injuries and personal near-miss reports
MTR	Number of medical treatment reports
RWIR	Number of restricted work injury reports
First aid injury	A one time treatment for the purpose of dealing with minor scratches, cuts, burns, splinters etc which do 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:

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

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

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

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:

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

Definitions

LLR	Lessons learnt rating
-----	-----------------------