



Annual report on incidents reported by IRATA companies for 2005

This report reviews the incident returns submitted by members of IRATA for 2005 particularly commenting on the incidents occurring while working on ropes, reviewing the overall activities of members and considering in detail the nature of the incidents. Recommendations are also given for further improving control over specific areas of rope access work.

Rope Access Incidents.

However since first produced the main purpose of this report is to show the effectiveness of the IRATA 'system' for training, auditing and developing methods of work that both improve working efficiency and worker safety while working on ropes. In the attached tables, table 1 shows, in the shaded columns, that the incident rates for reportable, none reportable and overall during 2005 are all down. These incident rates do vary year on year, and the 2005 results are not the lowest that have been achieved. In particular the incidence rates for reportable incidents (RIDDOR incidents) is very variable while those for other types of incidents show a much steadier trend. The incident rate for reportable incidents is important, as it is the only way the IRATA figures can be properly compared with that of other associations and with the national trends. Therefore in the table below, the total running summaries for hours on ropes, incident numbers and incident rates, while working on ropes over the past 7 years is given. This table evens out the figures for the reportable incidents and as can be seen in the shaded columns, these incident rates also show a steady reduction year on year.

Running summary of the changes to the incident rates during work on ropes showing.

Year	Running total of hours on ropes for years up to ones stated	Number of reportable incidents (RIDDOR)	Number of other incidents (NRA and DO)	IR for reportable incidents	IR for other incidents	IR for all incidents
1999	5,819,657	25	241	0.43	4.14	4.57
2000	6,706,863	28	268	0.42	4.00	4.41
2001	7,705,873	32	308	0.42	4.00	4.31
2002	8,931,803	32	330	0.36	3.69	4.05
2003	10,566,285	32	340	0.30	3.22	3.22
2004	12,024,133	33	370	0.27	3.08	3.35
2005	14,335,396	36	389	0.25	2.71	2.97

This table is the best evidence for showing the effectiveness of the IRATA 'system' and in my opinion should be a source of satisfaction for all members of the association. In particular for those who have worked to revise and set the associations standards together with those who have used these to assess and audit individuals and companies.

As a comparison the frequency rate for reportable incidents calculated by the NASC from their members' returns, is 0.95, which can be directly related to the IRATA figure of 0.25. These figures, although drawn from a broad base, do imply that it is almost 4 times safer using rope access than scaffolding. However behind these figures there is a lot of variability in

the competence levels of those on scaffolds and it would be unwise to make strong claims apart from pointing out this difference.

Further if the combined IRATA figures for working both off and on ropes are added together and then divided by 2000, then approximately this suggests that for 2005 some 2000 man years have been worked overall. As during 2005 3 major reportable accidents have been recorded, then this gives a rate of 150 incidents per 100,000 man-years. HSE estimate that the national figure for all industries is around 250, suggesting that it is significantly safer to be an IRATA rope access worker than the average for all industries.

Again by looking at the results given below for the number of reportable accidents between 1999 and 2005, it can be seen that around 40% of these incidents occur while working on ropes and that the more severe accidents are off the ropes. This further reinforces the view that although the hazards off the ropes might be more variable, there appears to be less control in these areas.

	Fatal	Major	Over 3 day absence from work	Totals
Working on ropes	Nil	4	8	12
Working off ropes	1	5	11	17
Totals	1	9	19	29

However these results must not be an excuse for 'resting on the laurels' as I explain later, there is still improvements that can be made both in the reporting and in the results achieved that will be for the commercial and safety benefits of all concerned.

A Profile of IRATA'S Work-load.

The returns also give a picture of the association. Table 2a. shows that some 59% of the hours worked was spent on ropes and 41% was spent off ropes. In the table below these figures are expanded to show the different categories of working areas and particularly work done off shore and onshore.

	Hours worked on ropes	Hours worked at height	Hours worked at ground level or other secure place.	Hours spent on other type of work
On shore.	20.6%	3.8%	7.1%	1.6%
Off shore	38.5%	7.3%	15.9%	5.2%

Table 2a. also shows the proportion of work done by companies in relation to the total share of the work. The 8 largest companies carried out over 50% of the work. This table gives the incidents and incident rates for the various groups of companies and for work on ropes or off ropes. The total incident rate for working on ropes is 0.95 and that for working off ropes is 1.67 suggesting that operatives are almost twice as likely to suffer an incident off ropes than on them.

Table 2b. gives the hours worked on ropes during the four quarters of the year which appears somewhat erratic. However the summary for the incident rate over the past four years when this information has been gathered is shown in the table below reveals a more even picture. It also reinforces the not surprising view that there is a greater likelihood of an incident during the winter months by approximately 50%.

Table showing the hours worked on ropes per quarter with the number of incidents in brackets and the total incident rates for the 4 years.

Year	First quarter	Second quarter	Third quarter	Forth quarter
2005	444,368 (5)	632,044 (4)	576,918 (7)	657,736 (6)
2004	311, 913 (8)	376,191 (9)	445, 615 (7)	323,228 (7)
2003	130,344(3)	293,960 (1)	362,828 (3)	185,632 (3)
2002	314,962 (7)	193,117 (3)	202,477 (4)	182,883 (4)
TOTAL	1,201,587 (23)	1,495,312 (17)	1,587,838 (21)	1,349,479 (20)
Total I.R.	1.91	1.14	1.32	1.48

Finally table 5 shows the hours worked by IRATA companies registered overseas. This shows that approximately 25% of all hours worked, and incidents experienced by the association, were carried out by these companies. However as this is the first year that these details have been recorded they can only give a general idea of what is happening. It will probably take a further four or five years to get a more definitive picture and one that would indicate real trends.

More detailed information on the various incidents.

Tables 3a to 3d give more detailed information about the nature of the incidents recorded. Table 3a also gives the recorded hours lost due to incidents but this is almost certainly a major underestimate as only 12 of the 49 incidents recorded time lost and even one major reportable incident has no time lost reported.

Tables 3a to 3d give a rather random picture of the nature of the incidents however so the following tables have been produced to show the trends over the past seven years while working on ropes. These tables again even out the apparently random scatter of the results. The tables a to d below relate to tables 3a to 3d.

Table a. Summary of causes of incidents over the past 7 years.

Year	Equipment failure	Supervision failure	Operator failure	Other
1999	Nil	8	8	2
2000	4	2	18	4
2001	4	7	30	1
2002	4	9	6	2
2003	2	Nil	5	1
2004	Nil	Nil	24	7
2005	Nil	8	13	1
Totals	14	34	104	18

In table a. above, the major cause of the incidents is shaded and is operator failure. It should be remembered that the categorising of these incidents is based on the few notes on the accident report and could be quite subjective. However I consider that it does show a clear trend, one that should be recognised when carrying out training and assessing. It should also be considered that any operator failure is also to some degree a failure on the part of management and/or supervision and this point should also be born in mind during assessing and auditing.

Similarly in table b. below, summarises how incidents have occurred over the past seven years showing that the main reasons are through falling objects or from being caught by tools or materials. One of the chief amongst these being grit in the eye. Neither of these reasons appear to be particularly difficult to avoid and it could be that emphasis on dealing with such hazards could be incorporated within the training courses.

Table b. Summary of how incidents have occurred over the past 7 years.

Year	Slip or fall	Falling object	Collapse or overturn	Caught, struck by tool or materials	Electric shock	Gassing or asphyxiation	Burn or explosion	Equipment failure	Other
1999	3	2	Nil	9	Nil	Nil	1	1	3
2000	1	2	Nil	14	Nil	Nil	Nil	1	10
2001	1	11	1	14	Nil	1	Nil	Nil	16
2002	1	11	Nil	3	Nil	Nil	Nil	1	5
2003	1	1	Nil	3	Nil	1	Nil	1	1
2004	Nil	4	3	8	1	Nil	8	Nil	7
2005	1	7	1	8	Nil	Nil	Nil	Nil	2
Total	8	38	5	59	1	2	9	5	44

The summary of parts of the body injured given in table c. below, shows that the eyes or hands and fingers are the most vulnerable parts of the body. Once again it seems that it would not be too difficult to initiate means of avoiding or reducing such injuries through the use of more suitable gloves and goggles.

Table c. Summary of parts of body injured over the past 7 years.

Year	Head /face	Eyes	Neck/ shoulder	Back	Arm	Hand/ fingers	Chest	Stomach	Leg	Foot/ ankle	Other
1999	2	6	Nil	2	1	2	Nil	Nil	1	Nil	Nil
2000	Nil	8	Nil	1	2	5	Nil	Nil	5	2	1
2001	1	3	2	5	3	11	Nil	Nil	1	1	1
2002	1	4	1	Nil	1	1	Nil	Nil	1	Nil	2
2003	2	1	Nil	Nil	1	1	1	Nil	Nil	Nil	0
2004	1	5	1	Nil	Nil	8	Nil	Nil	4	3	Nil
2005	4	1	1	Nil	Nil	2	1	Nil	2	1	1
Totals	11	28	5	8	8	30	2	Nil	14	7	6

Table d below gives the grade of the workers involved in the incidents. In terms of the number of such incidents it is hardly surprising that those in a lower grade should suffer more incidents, emphasising the importance that suitably competent persons carefully supervise workers in these lower grades. However this may not be a true picture and the incident rate of injuries etc. for the various grades could show a different pattern. However it is not possible to obtain a reliable idea of the number of hours worked by the various grades from the returns.

Table d. Summary of the grade of operative involved in incidents over the past 7 years.

Year	Level 3	Level 2	Level 1	Other including trainees
1999	4	5	8	Nil
2000	5	9	8	3
2001	8	8	14	3
2002	2	6	7	1
2003	2	3	3	2
2004	8	7	12	4
2005	5	2	9	1
Totals	34	40	61	14

Table 4 gives a brief survey of the potential for more serious outcomes to an incident than that experienced. Class A incidents are those which I have judged as having that possibility. Once again my judgement has been based on the limited information provided and is quite subjective. However the table does suggest that approximately 14% of all incidents had the potential of a far more serious outcome. As such it gives some idea of the overall risk being run by IRATA members.

There are 3 incidents in particular that each appears to indicate serious miss management.

The first concerns an operative climbed up a slope using a rope hanging down it only to find when part way up that it was not anchored and he/she fell suffering major injuries. This incident made me wonder about the level and competence on the site where a rope could be left in such a manner. I have given this event a class B rating as the accident appeared to have been as serious as it could be.

The second incident concerns a trainee who failed to control his ropes properly and fell suffering a none reportable accident. The question in my mind is how could a trainee be allowed to get into a position where such an event could occur. I gave this event a class A rating.

The third incident concerned an operative using a blast gun while on the ropes and blasted his leg causing major injuries and a six-month absence from work. I again question how such an accident could have occurred if the operative was competent and the job had been correctly assessed. I also gave this event a class A rating.

I emphasise that the information that I have about each incident is virtually contained in the above statements and there could be other facts that could indicate that they were not such a serious failing. However such incidents could be, if they are as they seem, serious breaches in the IRATA 'system' and are a discredit to the association.

Comments.

I consider that it is important to realise that there could, and probably is, a strong link between control over health and safety hazards, and effectiveness and competence. A potential client looking at the associations incident returns should be able to believe that they are accurate and that they show that members of the association can be relied upon to carry out work without causing them too many problems or involving them in potential legal cases. As such ensuring that the returns are both full and accurate is very important as is IRATA's reactions to problems or deviations exposed by this report.

Overall while the results are quite good I estimate that there has been some under reporting. The chief areas for this are none reportable accidents and dangerous occurrences, time lost as a result of incidents, and time spent while not working from ropes. I would hazard a guess that the time lost from all incidents is possible 3 to 4 times as much as that given, some 3000 to 4000 hours approximately 0.1% of the total hours worked.

I have no effective means of assessing this level of under reporting apart from comparing the different company returns. However some, or even most of any differences noted between companies could be because of different work requirements and I have no means of assessing this. Therefore any such assessment would be largely guesswork.

Conclusions.

The incident rates continue to show a steady reduction over the years and can only have come from the fact that the IRATA procedures are very effective, and are being continually amended and upgraded in the light of technical developments. The results are also likely to have been achieved through the effectiveness of the assessors and auditors in insisting that the standards and recommendations of the association are followed. It is therefore vitally important that the association continues to ensure that its assessors and auditors are of the highest calibre and that they fully implement the IRATA 'system'. It is also in the assessors

and auditors best interest that they should each ensure that fellow assessors and auditors act to the highest standards.

Within IRATA, the significant hazards associated with working at height attached to ropes are well controlled. This is to the extent that an argument, using the requirements of the Health and Safety at Work etc Act, could be made that IRATA complies with the requirements of the Act more effectively than many other working methods.

Rope access operatives are often working in situations where it could be difficult for their supervisors to clearly see what they are doing. In effect operatives are therefore partially or largely working on their own and this is possibly the main reason why the person causing the incident or allowing it to happen, is the operatives' themselves. It is clear important therefore that novices are only expected to work in situations where the supervision can be as effective as possible, remembering that if something can go wrong, then a partially trained and experienced person is the most likely to let it happen.

Recommendations.

I recommend that increased stress is placed during training, on the control of tools and materials while work is being undertaken. I further recommend that a 'library' of incidents should be developed to assist trainers and assessors tailor their presentations so as to comprehensively deal with these matters.

I recommend that a survey should be undertaken of various means of hand and eye protection, comparing this with those incidents when eye and hand injuries have occurred, then providing a users guide to the most suitable equipment.

I recommend that trainers and assessors should carefully examine the results of this report and emphasise suitable means of avoiding the more common reasons for incidents and injuries.

I strongly recommend that IRATA should decide and implement a policy towards members who have failed to manage the work situation to the standards expected. I suggest that it might be informative to discover how many rope access sites are being run or managed by persons who are not competent rope access workers and do not understand the IRATA 'system'.

I also strongly recommend that companies should be reminded of the importance of making the returns as accurate as possible and that this is in their own commercial interest.

M.James July 2006.

Accident and incident returns by IRATA companies for the year 2005.

Tables of results.

Table 1. Brief summary of accidents over the sixteen years 1989 - 2005 based on hours worked on ropes.

	No of companies.	Hours on ropes	Dangerous occurrences (D.O's)	None reportable accidents (NRA) on ropes	RIDDOR accidents on ropes	IR for all noneRIDDOR incidents working on ropes	IR for RIDDOR accidents.	Total IR all accidents and D.O.s working on ropes
1989	9	267,504	4	8	0	4.49		4.5
1990	12	327,645	4	7	0	3.36		3.3
1991	16	457,928	5	17	0	4.80		4.8
1992	22	537,920	3?	13	1	2.97	0.19	3.16
1993	23	327,000		21	0	6.42		6.42
1994	32	348,749	1	11	0	3.44		3.44
1995	32	484,285	8	16	0	5.00		4.95
1996	26	559,035	5	18	2	4.11	0.36	4.47
1997	31	699,688	13	11	9	3.43	1.29	4.72
1998	37	1,006,538	14	23	10	3.68	0.99	4.67
1999	33	803,365	10	29	3	4.85	0.37	5.23
2000	34	887,206	6	21	3	3.04	0.34	3.38
2001	49	999,010	15	25	4	4.00	0.4	4.40
2002	49	1,225,930	10	12	-	1.79		1.79
2003	56	1,634,482	1	9	Nil	0.61		0.61
2004	67	1,457,848	8	22	1	2.06	0.07	2.17
2005	81	2,311,265	9	10	3	0.82	0.13	0.96
Totals		14,335,396	116	273	36	2.71	0.25	2.97

Note: The number of companies submitting returns for each year given above will not be the same as the number of companies members of the association for the relevant years.

Note: RIDDOR accidents are those that are required to be reported under the Reporting of Incidents, Diseases and Dangerous Occurrences Regulations (part of the U.K. Safety legislation) and are generally those accidents that at least result in a minimum of 3 days absence from work or are specified dangerous occurrences.

Table 2.a. Summary of the hours worked and incidents suffered during 2005 according to the size of the company.

	Hours worked on ropes	Other hours worked on rope access sites	All incidents						Total incidents on ropes	Total incidents off ropes	Total incidents o/a	Total IR for all causes when working on ropes.
			Incidents on ropes			Incidents off ropes						
			NRA & other	DO	Reportable accidents	NRA & other	DO	Reportable accidents				
Very large companies (8)	1,375,126	617,638	1	1	Nil	4	Nil	Nil	2	4	6	0.15
Large companies (28)	792,815	830,904	5	7	2	11	2	2	14	15	29	1.77
Small companies (35)	138,752	123,445	3	1	1	5	2	1	5	8	13	3.60
Very small companies (10)	4,570	43,404	Nil	1	Nil	Nil	Nil	Nil	1	Nil	1	21.88
Total all companies	2,311,263	1,615,391	9	10	3	18	4	3	22	27	49	0.95

Note: Very large companies assumed to do more than 100,000 hours a year on ropes, large companies more than 10,000 hours a year, small companies more than 1,000 hours and very small companies less than 1000 hours.

Table 2.b. Incident rates for all incidents on ropes according to the time of year.

	1st quarter	2 nd quarter	3 rd quarter	4 th quarter
Hours worked on ropes	444,368	632,044	576,918	657,736
Incidents suffered on ropes	5	4	7	6
IR per 100,000 hours worked	1.13	0.63	1.21	0.91

TABLE 3. a. Details of the number of incidents in 2004 and a main responsibility for these.

	Equipment failure	Supervision failure	Operator failure	Other	Reportable accidents			Non Reportable accidents	D.O.'s	Other	Hours lost
					Fatal	Major	Over 3 day's absence				
Incidents on ropes	Nil	6	13	Nil	Nil	2	1	8	8	Nil	1247
Incident off ropes	Nil	2	22	1	Nil	1	2	18	4	1	33
Incidents to trainees	Nil	2	1	1	Nil	Nil	Nil	2	1	1	Nil
Total incidents	Nil	10	36	2	Nil	3	3	28	13	2	1280

Table 3.b Details of how the incidents occurred for the year 2005.

	Fall or slip	Falling object	Collapse or overturn	Caught or struck by tool or materials	Electric shock	Gassing/Asphyxiation	Burn or explosion	Equipment failure	Other including none reportable strains or health	Total
Incidents on ropes	1	7	1	8	Nil	Nil	Nil	Nil	2	19
Incident off ropes	4	2	3	13	Nil	Nil	1	Nil	3	26
Incidents to trainees	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	3	4
Total incidents	6	9	4	21	Nil	Nil	1	Nil	8	49
% on ropes	4%	14%	2%	16%	Nil	Nil	Nil	Nil	8%	47%
% off ropes	8%	4%	6%	26%	Nil	Nil	2%	2%	8%	53%
% of all incidents	12%	18%	8%	43%	Nil	Nil	2%	Nil	16%	100%

TABLE 3.c. Details of the parts of the body injured for the year 2005.

	Head/ Face	Eyes	Neck/ shoulder	Back	Arm	Hands/ fingers	Chest	Stomach	Leg	Foot/ Ankle/ toes	Other.	Total
Incidents on ropes	4	1	1	Nil	Nil	2	1	Nil	2	1	Nil	12
Incidents off ropes	1	3	Nil	1	1	7	Nil	Nil	5	4	Nil	22
Incidents to trainees	Nil	Nil	Nil	1	1	Nil	Nil	Nil	Nil	Nil	Nil	2
Total incidents	5	4	1	2	2	9	1	Nil	7	5	Nil	36

Table 3.d. Qualifications of those involved in the accident for the year 2005.

	Accidents				Dangerous occurrences		Other	
	None reportable		Reportable		On rope.	Off rope.	On rope.	Off rope.
	On rope.	Off rope.	On rope.	Off rope.				
Other.	1	1	Nil	Nil	Nil	Nil	Nil	Nil
Level 1.	6	10	1	Nil	2	2	Nil	Nil
Level 2.	Nil	1	1	1	1	Nil	Nil	1
Level 3.	4	5	1	1	Nil	1	Nil	Nil
Total	11	17	3	2	3	3	Nil	1

Note; in 9 cases the grade not given.

Table 4. Summary of class A and class B incidents for the year 2005.

		On rope	Off rope	Totals
Class A	Very large companies	1 (D.O.)	Nil	1
	Large companies	3 (2 d.o.'S + 1 RIDDOR)	1 (D.O.)	5
	Small companies	1 (NRA)	Nil	1
	Very small companies	1 (NRA)	Nil	Nil
Class B	Very large companies	1	4	5
	Large companies	11	14	25
	Small companies	4	8	12
	Very small companies	Nil	Nil	Nil
Totals	Very large companies	2	4	6
	Large companies	14	15	29
	Small companies	5	8	13
	Very small companies	1	Nil	1

Table 5. Summary of activities of companies registered outside the UK for the year 2005.

Note; these figures are also included in the overall figures shown in tables 1 to 4 above.

Location	Hours worked		Detail of incidents
	On ropes	Off ropes	
Europe and Balkans	26,337	5,106	Nil
Canada	139,870	74,400	1 NRA off rope
South Africa	13,886	4,774	1 NRA on rope
Gulf area	172,690	267,241	1 NRA off rope, 1 RIDDOR off rope
Singapore and Malaysia	104,943	20,066	2 NRA on rope, 4 D.O. on rope, 1 RIDDOR off rope, 1 NRA off rope
Australia and Western Australia	53,752	19,247	1 D.O. off rope
South America	25,638	25,638	Nil
Total	537,116	416,472	13 incidents of various types.