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SAFETY BULLETIN NO. 46: FALL FROM HEIGHT – MAJOR INJURY

A safety bulletin aimed at raising awareness of hazards in the rope access industry. The text may be of use as part of a toolbox talk.

DISCLAIMER:

*This safety bulletin - including, where given, any conclusions - is not as a result of any investigation undertaken by IRATA. It is based on information provided by a **non-member** company. IRATA does not attribute any blame; nor provide opinion on any root causes. Neither is any opinion expressed or implied on liability or culpability. The following summary is provided to assist others in applying any 'lessons learnt'. Rope access is defined in the IRATA ICOP, Part 1, 1.3, Definitions. In essence, it is a two-rope system (working line and safety line). For the purposes of this summary, any reference to 'on-rope' or 'off-rope' should be construed accordingly.*

1 INTRODUCTION

1.1 This safety bulletin summarises the findings of a fall from height accident which occurred during work to clean the external windows at an office building. The fall resulted in significantinjuries.

2 BACKGROUND INFORMATION

2.1 Date of incident: June 2016.

2.2 Injured person: IRATA-qualified Level 1 rope access technician.

3 WHAT WENT WRONG

3.1 A rope access technician was about to start a descent to clean the external windows at an office building. The technician was qualified to IRATA Level 1, working for a non-member company, and had been to the site many times. He had over 30 months experience of working on ropes and was looking to move up to become a Level 2 in the near future.

3.2 The technician's colleagues and supervisors all regarded him as being competent on the ropes and had no concerns about his abilities.

3.3 The equipment and ropes being used were almost brand new.

3.4 The job had a risk assessment and method statement in place and Level 3 supervisors were on site and involved in the work. The building manager had also agreed with the contractor which anchor points were to be used.

3.5 Unfortunately, after having already completed several drops during the morning something went wrong as he began his descent and the rope access technician subsequently fell two storeys.

3.6 The injured technician suffered significant injuries to both of his legs, requiring several operations. He has since made a good recovery.

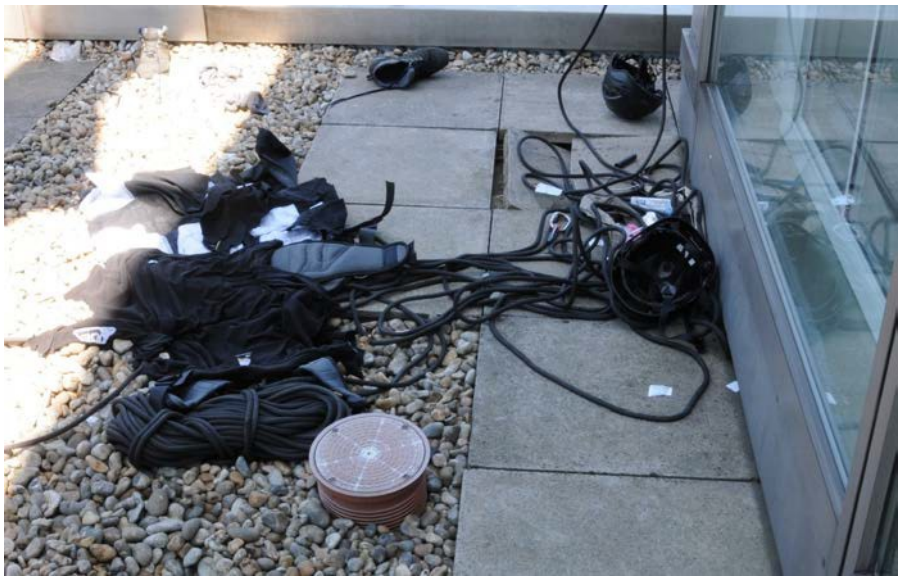

Photo 1:
Broken slab where injured person landed during fall

4 WHY IT WENT WRONG

4.1 The subsequent investigation by the employer, and local enforcing authority, failed to determine an exact cause for the fall. However, several underlying issues were identified.

4.2 On the face of it, the task was a safe one. The equipment was in good condition, the technician met best practice training and qualifications for his work, supervision was in place and all parties involved had agreed that the risk assessment and method statement were suitable and sufficient.

4.3 In the opinion of the local enforcing authority, the likeliest contributory factor to the accident was equipment selection and, in particular, the choice of descender and back-up device. The likelihood that both items of equipment failed and/or were misused simultaneously is considered very low. Nonetheless, an accident occurred.

4.4 Importantly, the equipment used by the injured technician had been replaced only a few months prior to the accident. Neither the descender nor back-up devices being used at the time of the accident were those on which he had been trained and had experience in.

5 EQUIPMENT SELECTION

5.1 To help achieve a safe rope access system, proper equipment selection is essential.

5.2 For descenders, the IRATA International code of practice for industrial rope access (ICOP), Clause 2.7.5.2, states:

"When selecting a descending device, it is essential that the probability of foreseeable misuse and the consequences of such misuse are assessed. When such an assessment has been made, a residual risk of misuse may exist, which should be addressed by identifying and applying specific control measures, such as the selection of alternative equipment, extra training, modification of work practices, increased supervision or a combination of these."

5.3 Furthermore, Clause 2.7.5.4 recommends a number of selection criteria, including:

"a) be selected such that the anticipated loading is appropriate for the mass of the rope access technician, including any equipment worn, i.e. in accordance with the manufacturer's maximum and minimum rated loads;

f) automatically stop the descent if the rope access technician loses control, i.e. lock automatically in the hands-free mode (noting that it is common and acceptable for some minor creep of the descending device along the anchor line to occur);

g) preferably fail to safe in all modes of operation, e.g. stop the descent automatically when gripped too tightly in panic (panic locking)".

5.4 For back-up devices, the ICOP (Clause 2.7.7.5), states:

"When selecting a back-up device, it is essential that the probability of foreseeable misuse and the consequences of such misuse are assessed. When such an assessment has been made, a residual risk of misuse may exist, which should be addressed by identifying and applying specific control measures, such as the selection of alternative equipment, extra training, modification of work practices, increased supervision or a combination of these".

5.5 Furthermore, Clause 2.7.7.7 recommends a number of selection criteria, including:

"a) that the anticipated loading is appropriate for the mass of the rope access technician including any equipment worn, i.e. in accordance with the manufacturer's maximum rated load;

b) the suitability with regard to arresting the mass of the user, including any equipment worn or carried;

j) minimal manipulation required by the rope access technician;

k) preferably fail to safe in all modes of operation, e.g. prevent or arrest a fall even when gripped in panic".

6 DISCUSSION

6.1 The descender did not have a fail to safe mode. The device is primarily designed for experienced rope access technicians.

NOTE: Some descenders have a feature that means that rope cannot be threaded incorrectly.

6.2 The back-up device was of a type that required towing and can be considered susceptible to failure if grabbed.

6.3 The injured technician was trained to IRATA Level 1, but had no formal training in the devices being used. The consequences of changing equipment had not been considered.

6.4 On the assumption that either item of equipment had been inadvertently rigged incorrectly, this was not identified through 'buddy checking' (see ICOP, Clause 2.11.7.4). These are an important opportunity for mistakes or equipment faults to be identified and rectified prior to any work commencing.

7 REMEDIAL ACTIONS

7.1 A number of changes were made to working practices:

7.2 **Equipment section:**

A 'foreseeable misuse risk assessment' was introduced. This looks at all the equipment in use and examines the consequences of it failing, or being misused, both in isolation and in conjunction with other items. The review reinforced the importance of selecting equipment that fails to safe and/or which requires minimal user intervention.

7.3 **Back-up device:**

It was concluded that a back-up device should be just that; a back-up device. Where other functions are required they should be provided as additional items of equipment, rather than attempting to solve the problem with one item only.

7.4 **Risk assessments:**

These were improved include clear details of the anchor points to be used on each façade. Additionally, photographs and descriptions of each drop were included (by the supervisor) as well as a note of any access issues.

7.5 **Training:**

The Level 3 rope access technicians have undertaken safety training for managers and 'signed off' as Level 3 rope access safety supervisors.

7.6 **Monitoring:**

Small cameras were introduced as a means of enabling the company to monitor (remotely, from a place of safety, and retrospectively) work undertaken by technicians in 'hard to access' areas remotely.

NOTE: The technicians were consulted on their introduction and have been supportive. It also enables them to prove that they are working safely and demonstrate the same to building and facilities managers. Such means should allow them to show that buddy checks have been taking place at the frequency the company desires.

7.7 **Lessons learnt:**

The company directors are taking the 'lessons learnt' into other aspects of their business and are actively seeking IRATA membership (with the auditing, etc. that this entails).

8 FURTHER INFORMATION

8.1 Further information can be found in:

(a) IRATA International code of practice for industrial rope access (Third edition)[1]:

- Part 2, 2.7.5, Descending devices
- Part 2, 2.7.7, Back-up device
- Part 2, 2.11.7, Pre-work checking

(b) IRATA International Training, Assessment and Certification Scheme (TACS) for personnel engaged in industrial rope access methods (V004, 24/12/2019)[2]:

- 6.3.1, Selection of equipment

1 https://irata.org/downloads/2055
2 https://irata.org/downloads/2059

8.2 For a list of current (and past) 'safety communications' by IRATA, see www.irata.org

9 RECORD FORM

9.1 An example *Safety Bulletin: Record Form* is given below. Members may have their own procedure(s) for recording briefings to technicians and others.

IRATA SAFETY BULLETIN – RECORD FORM			
Site:			
Date:			
Topic(s) for discussion:		Safety Bulletin No. 46: Fall from height – major injury	
Reason for talk:			
Start time:		**Finish time:**	
Attended by *Please sign to verify understanding of briefing*			
Print name:		**Signature:**	
Continue overleaf (where necessary)			
Matters raised by employees:		**Action taken as a result:**	
Continue overleaf (where necessary)			
Briefing leader *I confirm I have delivered this briefing and have questioned those attending on the topic discussed.*			
Print name:		**Signature:**	**Date:**
Comments:			