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SAFETY AND HEALTH TOPIC SHEET NO. 11: DROPPED OBJECTS

A safety and health 'topic sheet' aimed at raising awareness of hazards in the rope access industry. The series may be of use as a toolbox talk.

1 INTRODUCTION

1.1 The IRATA Work & Safety Analysis 2016 identifies 32 cases of 'falling or dropped objects'. The report notes that 24 were items dropped by rope access technicians (6 of which were rope access equipment, e.g. ropes, slings, karabiners, etc.). The remainder of falling objects were mainly rock, masonry and assorted materials. One object, dropped by a third party, struck and injured a technician on rope. Only four of the falling or dropped objects resulted in actual injury, all 'minor' with one exception. This was one of the two 'major' injuries; facial fractures caused by falling rock penetrating protective netting.

1.2 'Falling or dropped objects' is one of three consistently significant areas of concern for rope access technicians. The following advice outlines the risk management measures that should be considered when planning jobs.

2 HIERARCHY OF CONTROLS

2.1 The risk presented by dropped objects can be managed by adopting an hierarchical approach (see **Figure 1**), with the level of protection reducing as the lower levels are reached.

High	Level of protection	Elimination
		Engineering controls
		Administrative controls
Low		Personal protective equipment

Figure 1 - Hierarchy of controls

4.3 This hierarchy is similar to the framework set out by the 'hierarchy of fall protection': avoid; prevent; mitigate (i.e. minimise the distance and consequences of a falling or dropped object).

4.4 Some measures are 'collective' (and 'passive'), e.g. safety nets. Others are 'personal' (and 'active'), e.g. tool lanyards. It is important to select suitable equipment, taking account of the mass of the object being retained and the situation in which it is to be used.

4.5 There are two types of falling or dropped object:

(a) **Static** An object that may drop from its previous static position under its own mass, e.g. a light fitting that drops due to its fasteners coming loose over time.

(b) **Dynamic** An object that drops from its previous static position due to the force applied by a person, wind, equipment, machinery or moving object, e.g. an object being knocked off a platform and dropping to a level below.

3 ELIMINATION

3.1 Where possible, the elimination of a hazard - or avoidance - must always be the preferred option.

3.2 Undertake 'pre-job' checks or surveys to look for potential problems, e.g. bolts left on ledges, loose or unstable masonry, projections or tangle threats, etc.

3.3 This is particularly important after a period of bad weather, on new sites, after third party operations in the same vicinity, etc.

3.4 Ensure that pockets are empty and inspect carefully any tools prior to starting work, e.g. loose hammer heads, poor security fixings for lanyards, etc. Consider special precautions when using 'high energy' hand tools.

3.5 Do try and carry too many items.

4 ENGINEERING CONTROLS

4.1 If the hazard cannot be eliminated, engineering controls are the preferred approach to risk reduction. This involves the use of equipment to reduce the potential for dropped objects (or, preferably, prevent them from being dropped), or to reduce the risk if an object does fall.

4.2 Examples include:

- temporary covers being placed around and/or over openings;
- work clothing has pockets these should be capable of being securely closed; preferably, don't put loose items in pockets;
- tools being transported in securely closed containers, e.g. when being lifted between levels;
- lightweight hand tools, communication equipment, etc. being tethered to the technician;
- replacing a hand held torch with a helmet mounted head torch;
- heavier tools and components being separately tethered;
- using safety netting to catch tools or equipment that cannot be tethered, e.g. bolts;
- providing 'hard' barriers, toe boards, etc. to form an exclusion zone, where it is not possible to prevent dropped objects.

5 ADMINISTRATIVE CONTROLS

5.1 Administrative controls, to be used in conjunction with the other controls in the hierarchy, involve providing:

- information and warnings to technicians about hazards that are present;
- procedures and instruction on how to carry out the work safely;
- supervision to ensure that any procedures are being followed;
- management processes to determine any 'lessons learnt'.

5.2 Examples of administrative controls are:

- hazard awareness, e.g. at induction;
- warning signs, to highlight any hazards to the workers;

- planning activities to avoid situations where work is being carried out at multiple levels simultaneously;
- lookouts to prevent people entering an area below where technicians are working;
- high levels of workplace housekeeping, i.e. keeping works areas clear of loose material or objects;
- operating systems to check that all tools and components have been removed from, or secured in, the work area prior to completion of the task;
- processes for reporting, investigating and learning from hazardous observations and incidents involving falling objects (and developing a culture in which reporting is encouraged).

6 PERSONAL PROTECTIVE EQUIPMENT

6.1 This is the last method of protecting an employee.

6.2 Industrial safety helmets provide limited protection only, due to the high level of kinetic energy that falling and dropped objects possess. A helmet protects the head only, so other areas of the body are unprotected from dropped objects and serious injuries can easily be suffered, e.g. face.

7 ACTION

7.1 Review your management system for falling object and risk management procedure(s).

8 REFERENCES

9.1 Further information can be found in:

(a) IRATA International code of practice for industrial rope access (Third edition, September 2016)[1]:
- Part 1, Clause 1.4.2.6
- Part 2, Clauses 2.11.8.1 and 2.11.8.2
- Annex M, Use of tools and other work equipment

(b) IRATA Work and Safety Analysis 2016 (Edition 3.1, October 2015)[2]

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

9 RECORD FORM

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

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1 www.irata.org/default.php?cmd=215&doc_id=4336
2 www.irata.org/pdf%20downloads/WASA%202016.pdf

IRATA SAFETY AND HEALTH TOPIC SHEET – RECORD FORM					
Site:					
Date:					
Topic(s) for discussion:			Topic Sheet No. 11: Dropped objects		
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:					