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SAFETY AND HEALTH TOPIC SHEET NO. 1: INSPECTION OF EQUIPMENT

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 Inspection of work equipment plays a vital role in protecting the safety of the technicians who use it.

1.2 It is important in ensuring the continued safety of those using life supporting equipment. Correct and thorough inspection also ensures that organisations are compliant and not left open to litigation.

1.3 There should never be any doubt about the continued serviceability of an item of equipment. If necessary, the matter should be referred to a competent person or the equipment should be quarantined or disposed of.

Case Study 1

Defects can go undetected. Be aware that damage can build up slowly and may not be readily perceptible.

- **Incorrect threading by manufacturer of a buckle**
  Check all buckles are threaded as described in manufacturer's instructions, even before first use.
- **Damaged or contaminated quick release buckle mechanisms**
  Clean and lubricate buckle mechanisms as described in manufacturer's instructions.
- **Twistlock karabiner not closing fully**
  Function check all gate mechanisms to ensure locking systems engage correctly.
- **Excessive wear on harness webbing behind D-ring**
  Pay attention to areas of high wear.

IRATA Safety Bulletin 23: Safety Alert - Pre-use Checking of Equipment. 29 June 2012

2 WHAT CAN GO WRONG …

2.1 Equipment can fail. Without training in inspection, and inspection and maintenance procedures, items of equipment can have faults that remain undetected for pro-longed periods of time. This may result in an increased risk of injury or harm to technicians, plant and/or equipment.

2.2 Despite inspection and maintenance procedures, technicians should remain vigilant through pre-use checks (often referred to as “buddy checks”) and conduct pre-use function tests for all load-bearing equipment before using it. In addition, ongoing monitoring is required to detect damage that may have occurred during use.

2.3 Equipment should be used within its scope of intended use, as outlined by the manufacturer. Otherwise, damage may result.

2.4 Equipment that has not been inspected by a competent person can result in injury or harm.

Case Study 2

A karabiner failed because it was used with the gate in the unlocked position. The most likely cause of the karabiner being unlocked was dirt inside the gate mechanism, preventing it from closing fully. The karabiner was not rigorously checked for security when it was operated. The planned maintenance system had not identified the karabiner on the manriding harness as an inspection item.

IRATA Safety Bulletin 14: Manriding Incident – Connector Failure. 26 October 2010

3 WHY THINGS CAN GO WRONG…

3.1 Things can go wrong when procedures are not in place, are incomplete or are not followed. The opportunity is missed to identify actual or potential defects. Complacency can also result in defects being overlooked.

Case Study 3

During rescue training a descender, threaded correctly, was not correctly closed. This resulted in both the rescuer and the casualty being suspended on the rescuer’s back-up device. The spring catch on the side plate had not been closed correctly.

It is important to undertake a pre-use check of equipment (visual, tactile and functional).

IRATA Safety Bulletin 12: Descender Near-miss – Failed to Check Catch on Side Plate. 23 December 2009

4 WHAT YOU CAN DO…

4.1 Equipment inspections generally fall into three categories:
- pre-use check;
- detailed ('thorough') inspection; and
- interim inspection.

4.2 The manufacturer of equipment is required to supply product information. This information should be read and understood by the user, before using the equipment. Changes are made to specifications, so this also applies to replacement equipment.

4.3 Knowledge of the strengths and weaknesses of equipment can help to avoid misuse. Technical brochures, the manufacturer's website, catalogues, etc. often provide further detail.

In Europe, personal fall protection systems must be supplied with manufacturer's instructions, which include instructions for periodic examination, that comply with EN 365. This requires that the instructions for periodic examination shall include:

"Where deemed necessary by the manufacturer, e.g. due to the complexity or innovation of the equipment, or where safety critical knowledge is needed in the dismantling, reassembly or assessment of the equipment (e.g. a retractable fall arrester), an instruction specifying that periodic examinations shall only be conducted by a person or organization authorized by the manufacturer".

IRATA Safety Bulletin 2: Safety Alert – Periodic Examination of Fall Protection Systems for Work at Height. 28 August 2008

5 HOW YOU CAN DO IT …

5.1 **Pre-use check -** These must be carried out by rope access technicians on their own equipment before first use each day. It is advisable to monitor the condition of equipment through the duration of the task, to ensure no damage or intervention has prevented equipment or systems from functioning correctly.

5.2 **Detailed ('thorough') inspections** - These are formal inspections and they must be carried out:
- before first use;
- upon receiving an item from a third party;
- every 6 months (or at intervals specified in an inspection scheme drawn up by a competent person).

5.3 **Interim inspections -** These should be carried out where a risk assessment has identified the potential for high wear and tear or other dangers in the period between detailed inspections, e.g. following an incident, use in a hazardous environment, potential overload, etc.

5.4 It is essential that the person carrying out a detailed or interim inspection has the authority to dispose of equipment and is sufficiently competent, independent and impartial to allow objective decisions to be made. This person may exist within your rope access company, or could be a specialist supplier, manufacturer or a specialist repair organisation. Your company should detail its arrangements for nominating the competent person(s) in its management system.

5.5 Any item showing signs of defect or alteration - without the approval of the manufacturer - should be withdrawn from service immediately and quarantined (pending an inspection).

6 ACTION

6.1 Review your management system's procedures for the inspection of equipment.

7 REFERENCES

7.1 'IRATA International Code of Practice for Industrial Rope Access' (ICOP) [TC-102][1]:

- Part 2, 2.7, Selection of Equipment
- Part 2, 2.10, Inspection, Care and Maintenance of Equipment:
  - 2.10.1.4.1, Pre-use Check
  - 2.10.1.4.2, Detailed Inspection
  - 2.10.1.4.3, Interim inspection

IRATA 'Training, Assessment and Certification Scheme' (TACS) [TC-101] for personnel engaged in industrial rope access methods (v006, 20/05/2021)[2].

- 6.3, Equipment
- 6.3.3, Pre-use Checking of equipment
- 6.3.4, Detailed and Interim Inspections

7.2 For a list of current and historic safety communications published by IRATA, see www.irata.org.

8 COMPETENCY REQUIREMENTS

8.1 A competent person is a person who, through a combination of training, knowledge and experience, has acquired the knowledge and skills enabling that person to correctly perform a specified task.

8.2 The IRATA rope access qualifications are not sufficient, in isolation, to provide all of the necessary skills to undertake detailed inspections of equipment to the requirements of the manufacturers' specifications, in accordance with the regional requirements, and the specific applications for use.

It is therefore, essential that additional training is undertaken to supplement the IRATA rope access qualification. The training should be specific to the equipment, to the manufacturers' specification and specific for the intended use. Competency requirements should be identified by the employer, and training and inspection records should be kept to demonstrate compliance at audit.

9 RECORD FORM

9.1 An example of an 'IRATA Safety and Health Topic Sheet: Record Form' is appended.

9.2 Members may have their own procedure(s) for recording briefings to technicians and others.

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

10 FURTHER READING

10.1 'IRATA International Code of Practice for Industrial Rope Access (ICOP) [TC-102][3], Part 3, Annex H, Equipment inspection checklist 3.

10.2 BS EN 365:2004, Personal Protective Equipment Against Falls from a Height. General requirements for instructions for use, maintenance, periodic examination, repair, marking and packaging.

3 https://irata.org/downloads/2055

IRATA SAFETY AND HEALTH TOPIC SHEET – RECORD FORM			
Site			
Date			
Topic(s) for discussion		Topic Sheet No. 1: Inspection of Equipment	
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			