

IRATA Safety Bulletin Description	Contributing factors	Control measures
<p>SB 1: Non-IRATA incident. Technician fell approximately 30 metres after connecting to ropes whilst on a balcony halfway down a highrise building. The technician transferred to the ropes without realising that the ropes above were snagged and that there was over 20 metres slack rope in the system.</p>	<p>No visual line of site to anchor. Poor communication. Lack of thorough pre-use check</p>	<p>Whenever a technician is to gain access to a rope and is unable to see the path of the ropes to the anchor, then a process <u>must</u> be in place for other team members check to ensure that there is no slack in the rope and that the ropes are correctly anchored, and appropriate rope protection measures are in place.</p>
<p>SB 2: Relates to WAHSA advisory note clarifying requirements for inspection of EN795 flexible line systems, and a definition of 'competent person'.</p>	<p>Not applicable, not related to an incident.</p>	<p>All equipment must be subject to a pre-use check by the user, and double checked using the buddy check system. In addition, a thorough examination must be carried out by a competent person no less than every 6 months, and the examiner must be provided with adequate resource including user instructions, company procedures, and similar items for comparison.</p>
<p>SB 3: Worker injured whilst grit blasting after being unbalanced due to reactive force of equipment</p>	<p>1. Worker positioned such that he was easily unbalanced by reactive force of the grit blasting tool. 2. The PPE was damaged/modified. 3. The work permit refernced procedures from two separate companies.</p>	<p>1. Worker to ensure a balanced position, accounting for any potential lateral or rotational movement before using any tools or equipment. Ensure that all powered equipment has a dead man function. 2. Always carry out pre use checks on PPE and only use equipment that remains fit for purpose. 3. Pre work briefings must clarify the roles, responsibilities and methods of work applicable to the task in hand.</p>
<p>SB 4: An accident occurred during a window cleaning job, where ropes required moving from one drop to the next as soon as it was finished with. A technician had descended a set of ropes, which landed on a flat roof. At this point rather than gathering his ropes and feeding them off the flat roof down to ground level, he opted to disconnect from them and re-attach to an adjacent set (which he had not been cleared to use), which reached ground level. He fell 3.5metres to the ground sustaining wrist injury, because the ropes were detached from their anchors and being held by the supervisor during the process of re-rigging to the next anchor set.</p>	<p>No visual line of site to anchor. Poor communication. Lack of thorough pre-use check</p>	<p>Whenever a technician is to gain access to a rope and is unable to see the path of the ropes to the anchor, then a process <u>must</u> be in place for other team members check to ensure that there is no slack in the rope and that the ropes are correctly anchored, and appropriate rope protection measures are in place. See SB1.</p>

SB 5: Worker injured whilst grit blasting after dead man function failed. Worker not wearing appropriate PPE.	Failure of dead man function and incorrect PPE.	1. Worker to ensure a balanced position, accounting for any potential lateral or rotational movement before using any tools or equipment. Ensure that all powered equipment has a dead man function. 2. Always carry out pre use checks on PPE and only use equipment that remains fit for purpose. See SB 3.
SB 6: An LTI occurred when a technician was walking around whilst wearing the harness and caught his leg in a loop of his cowstail.	Poor personal equipment management.	Ensure that all equipment is correctly stowed on the harness, reducing any snag or trip hazard ALARP.
SB 7: Advisory notice relating to measures to prevent possibility of dropping back-up device	Certain equipment designs can lead to the equipment becoming a potential dropped object when installing and removing.	Equipment should be approved for use only after it has been subject to a risk assessment and hazard identification, and appropriate control measures put in place e.g. a method of use determined that eliminates the <u>potential dropped object hazard</u> .
SB 8: Advisory notice relating to correct tying of barrel knot	Lack of training. Inadequate supervision.	All equipment is to be subject to a pre-use check by the user and a 'buddy'. New or inexperienced workers are subject to a closer level of direct supervision.
SB 9: Rock stabilisation, worker injured by falling rock.	Loose object/material above the worker; dislodged by the workers ropes.	Wherever potential dropped object hazards exist then the following control measures should be applied where practicable: 1. Always sweep the area for PDOs. 2. Work from the top down, clearing the area before descending. 3. Ensure the area below the worksite is protected e.g. an exclusion zone. 4. Utilise re-anchors or deviations to prevent rope contact with a PDO.

<p>SB 10: Two sets of anchor lines were rigged by a Level 3 rope access technician from the roof of a building and then thrown down to the lower of two balconies. From the lower balcony, the two technicians pulled the ropes coming down from the roof, to remove any slack. From this lower balcony the Level 2 and Level 3 technicians would start their descents. The Level 2 technician maintains he was suspended for a short time whilst getting ready to descend, before he suddenly dropped 12-15 metres with minor impacts en route, coming to a stop on his descender, just 2metres from the bottom.</p>	<p>No visual line of site to anchor. Poor communication. Lack of thorough pre-use check</p>	<p>Whenever a technician is to gain access to a rope and is unable to see the path of the ropes to the anchor, then a process <u>must</u> be in place for other team members check to ensure that there is no slack in the rope and that the ropes are correctly anchored, and appropriate rope protection measures are in place. See SB1, SB4.</p>
<p>SB 11: Anchor lines were rigged 3m back from the edge, where they went over a metal rainwater gutter in a rope protector. The injured person had descended 3m and was painting a window when the working line failed. The shunt back-up device locked onto the safety line, but as he was working close above a glass roof, his fall was not arrested before his foot had made a heavy contact with the wired glass roof. He sustained a sprained ankle and broke several panes of glass. It was found that the working line and rope protector had been cut through by a very sharp edge on a section of the metal guttering, probably exacerbated by sideways movement of the rope to reach the windows being painted. The estimated length of fall i.e. combined stretch of the safety line and device lanyard (cow's tail), slippage of the shunt and slack in the system was 2m.</p>	<p>1. Inadequate rope protection measures. 2. Poor selection of techniques - i.e. moving laterally on single set of ropes whilst ropes in contact with an edge.</p>	<p>1. Ensure that rope protection measures are adequate - e.g. canvas rope protectors should not be used, instead avoid the edge if possible, or if not possible then use rope protection measures with a proven level of performance e.g. edge rollers, or armoured rope protectors e.g. Altitech Armadillo. 2. When lateral movement is required then consider use of re-anchor, deviation or rope to rope transfer.</p>
<p>SB 12: During an IRATA training course, two Level 1s were practising a snatch rescue using a single set of ropes with a Petzl Stop descender and a Petzl Shunt as a back-up device. As the rescuer lowered on the casualty's Stop to bring the casualty's weight on to the rescuer's Stop, the working line suddenly came out of the Stop with a loud noise, leaving both Level 1s suspended from the rescuer's Shunt.</p>	<p>Petzl Stop descender incorrectly attached to rope</p>	<p>Equipment to be inspected by a competent person prior to use.</p>

<p>SB 13: A member working on an oil platform issued a non conformity / improvement opportunity report, after it was noticed that sparks had come from a galvanised wire anchor sling. Since the possibility of causing a spark is obviously to be avoided in any potentially explosive atmosphere the work was stopped. In a safe area, the sparking was replicated by rubbing the wires on a piece of rusty steel.</p>	<p>Metal to metal contact.</p>	<p>1. Insulate metal slings to minimise metal to metal contact e.g. with PVC sheath. 2. Consider use of synthetic slings, though be aware that these are more affected by chemicals, heat and abrasive surfaces.</p>
<p>SB 14: NOPSA Bulletin 38 relates to the fall of a worker suspended on a man riding winch.</p>	<p>The carabiner was thought to have failed because it was used with the gate in the unlocked position. The system did not have a back-up.</p>	<p>– Equipment to be inspected by a competent person prior to use.</p>
<p>SB 15: IMCA Safety Flash 06/10. A member has reported an incident in which a rope access technician (RAT) suffered third-degree burns whilst engaged in hot work. The injured person was engaged in rope accessed structural cutting activity using an oxy-acetylene torch on a 20 inch pump caisson. During the operation sparks and molten material were blown in the direction of the injured party, and a small piece of molten material was caught in the tongue and ankle protector of his left safety shoe, causing serious burns to the left foot.</p>	<p>Poor planning lead to failure to use the correct personal protective equipment (PPE). Spat protectors were not readily available, partly due to inadequate organisation. These offer flame retardant protection to part of the under leg, ankle and shoe.</p>	<p>Ensure that tasks are properly risk assessed. Consider worker positioning to minimise the risk of contact with hot material. Ensure that PPE is fit for purpose.</p>
<p>SB 16: A technician had to be retrieved by a colleague after abseiling on ropes that did not have knots in the bottom, ending up with the technician on only one rope.</p>	<p>Knots not tied in the bottom of the ropes and/or ropes not reaching a safer area. In addition, whilst the company procedure required knots in the bottom of the ropes, the client's ISSOW did not identify this as a hazard.</p>	<p>Pre use checks to ensure that stopper knots are in ropes.</p>

<p>SB 17: An IRATA Level 2 with four years experience, descended 2m to carry out work. On completing this work, he unlocked his Petzl I'D descender and the working line came out of the descender. He then towed the Petzl Shunt back-up resulting in a 7 metre uncontrolled descent.</p>	<p>1. Human factors - loss of concentration. 2. Selection of equipment did not consider foreseeable misuse.</p>	<p>1. Workers to remain vigilant whenever operating rope access equipment. 2. Equipment should be approved for use only after it has been subject to a risk assessment and hazard identification, and appropriate control measures put in place.</p>
<p>SB18: Both ropes were rigged for a 6m descent on 16in dia. (400mm) insulated pipes, about 12in -18in (3-400mm) away from an exposed section of pipe at a temperature of 900-1000°F /480-540°C. The ropes moved sideways onto the non-insulated section of pipe and within seconds of starting the descent the ropes melted and the technician fell about 3m, landing on his feet. The melting point of the ropes is about 500°F /260°C.</p>	<p>Inadequate rope protection measures – the ropes should have been rigged to prevent the possibility of contact with the uninsulated pipe.</p>	<p>Ensure the ropes run directly, avoiding any sharp edges or hot surfaces, and if not are suitable rope protectors fitted to prevent damage. See also SB 2.</p>
<p>SB 19: Two sets of working and safety lines were rigged at ground level to go up and over a six storey building, using four plastic coated steel strops, each with a single loop around a 500mm dia. poplar tree. One technician lowered himself over the top on the other side of the building, followed shortly afterwards by a second on the second set of ropes. As the extra weight transferred back to the steel strops they slipped up the tree. This resulted in one technician dropping 2–3 metres and landing on his back on the balcony wall below leading to an LTI.</p>	<p>Incorrect rigging</p>	<p>Ensure there are two separate anchors and both ropes are connected to both anchors. Ensure the rigging secured to prevent any potential slippage.</p>

<p>SB 20: Working lines were rigged through a 600mm dia. access hole into a boiler. To illuminate the worksite, a 110 volt halogen lamp was positioned in the opening, but clear of all ropes. The surrounding area was taped off, but un-manned. A few hours later a team of rope access technicians working inside the boiler noticed a rope fall from above, followed shortly afterwards by the second rope. An investigation found that a carpet and rope protector were smouldering and burnt and had melted through both ropes. It appeared that the light had either fallen over, or been knocked over, ending up face down onto the ropes.</p>	<p>Rope placed too close to a heat source.</p>	<p>Ensure the ropes run directly, avoiding any sharp edges or hot surfaces, and if not are suitable rope protectors fitted to prevent damage. See also SB 2 and SB 18.</p>
<p>SB 21: Discusses a range of incidents during training of rescues</p>	<p>Common causes include the performance of equipment when subjected to a 2 person load, and the higher potential for operator misuse due to relative unfamiliarity with rescue techniques.</p>	<p>Equipment should be approved for use only after it has been subject to a risk assessment and hazard identification, and appropriate control measures put in place.</p>
<p>SB 22: Relates to catastrophic failure of both working and safety rope rigged over an edge leading to a fatality</p>	<p>Rope protection measures employed not adequate.</p>	<p>Ensure the ropes run directly, avoiding any sharp edges or hot surfaces, and if not are suitable rope protectors fitted to prevent damage. See also SB 2, SB18 and SB 20.</p>
<p>SB 23: Focusses on need for thorough pre-use equipment inspections, and illustrates 4 incidents of faulty equipment: 1. Harness buckle incorrectly assesmbed by manufacturer. 2. harness quick release buckle damaged. 3. Twistlock karabiner closing but not locking. 4. Harness fabric wearing at central D ring.</p>	<p>Human factors - inadequate checking of equipment.</p>	<p>Ensure thorough pre-use checks before each use.</p>
<p>SB 24: Details two uncontrolled descents that resulted in injury. Both involved the use of a stop and shunt combination.</p>	<p>Long descents; inexperienced users; wet ropes. Poor equipment selection and method of use.</p>	<p>Inexperienced users to be issued with fail to safe back-up (e.g. RED, Rocker, ASAP) and a fail to safe descender e.g. Petzl ID for descending. Consider additional friction for long descents and wet ropes. Consider tensioning back-up rope to limit rope stretch on long descents. Use of back-ups that can be manually 'towed' to be considered only after risk assessment.</p>

SB 25: Rope failure due ropes being caught on a load being lifted by the crane.	Concurrent activities not carried out in accordance with the permit. - Ropes below the workers not managed)	Ensure simop activities are clearly identified, and control measures communicated to all work parties. Ropes to be managed to prevent potential snagging - e.g. ropes in rope bags.
SB 26: Ropes came into contact with hot pipework.	Hot pipework not identified by the team or the area authority.	Ensure the ropes run directly, avoiding any sharp edges or hot surfaces, and if not are suitable rope protectors fitted to prevent damage. See also SB 2, SB18, SB 20 and SB22.
SB 27: Not yet released by IRATA		
SB 28: Details several dropped object incidents	Unsecured equipment. Equipment disconnected and then dropped whilst attempting to reconnect.	Plan work to minimise loose materials. Ensure control measures are in place to prevent harm to 3rd parties in event of a dropped object e.g. exclusion zone.
Queensland Government bulletin: incident 1: A worker had run his ropes over the top of a glass balustrade. The balustrade shattered and the working rope was severed, leading to a long fall onto the back up which was partially damaged	Insufficient rope protection - incorrect use of back-up	Ensure the ropes run directly, avoiding any sharp edges or hot surfaces, and if not are suitable rope protectors fitted to prevent damage. See also SB 2, SB18, SB 20, SB 22 and SB 26.
Queensland Government bulletin: incident 2: A worker who was descending stood on a balcony ledge and moved horizontally whilst still connected to the suspension system. The worker then fell and was exposed to a 15 metre pendulum swing.	Transferring from work positioning (weight suspended on rope access system) to fall arrest (weight suspended on ledge). - moving laterally along the ledge introduces a potential swing	Ensure that any any deviations from vertical are limited to a maximum of 15 degrees and 2.0 metres. - whenever there is a total or partial transfer of weight from the rope system to the structure, then the operative must be aware of potential rope stretch and swings that would expose the worker to a drop/swing in the event of a slip or fall from the structure
SB 29: A pre use inspection of the rope access system found that a rope had been deliberately cut.	Unauthorised access to anchor area. Human behaviours...	This SB re-inforces the value of thorough pre-use checks. Additional precautions can include the implementation of physical controls e.g. locked doors, senties.
SB 30: An operator received an electric shock from electrified anti-bird measures installed on a building.	Lack of site specific knowledge. Lack of warning signs	Always review the work plan with the client/asset manager, and directly question those with local control/knowledge of the existence of potential hazards e.g. sources of heat/power etc..
SB 31: Describes a series of incidents that have occurred due to the relevant procedure not being followed.	Human factors	Never commence work without a job specific risk assessment and method statement. Each day on site, hold a pre-work meeting and complete the daily checklist. Record any amendments to the RAMS as required.

SB32: Describes a series of incidents that have lead to muscle strains.	Poor manual handling techniques; lack of fitness; incorrect tool use.	Ensure that wokers are fit for the intended task. Use correct manual handling techniques. Always use tools correctly.
SB 33 Describes a situation where anchor lines were rigged by a Level 3 rope access technician from the roof of a building and then accessed at a lower level by technicians. A technician fell and was injured when he connected to, and attempted to use ropes that were not yet secured to the anchorage.	No visual line of site to anchor. Poor communication. Lack of thorough pre-use check	Whenever a technician is to gain access to a rope and is unable to see the path of the ropes to the anchor, then a process <u>must</u> be in place for other team members check to ensure that there is no slack in the rope and that the ropes are correctly anchored, and appropriate rope protection measures are in place. See SB1, SB4 and SB10
SB 34: Desccribes an event where a training candidate was injured during IRATA training.	Human behaviour - inadequate concentration. Inadequate supervision by the trainer (s).	During training it is essential that all trainees are continually under close supervision.
SB 35: Describes two incidents of dropped objects: 1. A karabiner was dropped. 2. A battery drill fell when the attachment point snapped.	Human factors: 1. insufficient attention paid to correct stowage of equipment. 2. Inadequate pre use checks	1. Workers to remain vigilant when handling equipment. 2. Always conduct thorough pre use checks of equipment and connections. See also SB 28.
SB 36: Relates to several incidents that resulted due to the trade activities being undertaken.	Lack of appropriate task risk assesment and planning.	Remember that the risk assessment and job planning needs to consider the actual task itself and not just the rope access. Consider the need for personnel to be competent in using the tools and equipment required to the work
SB 37: Details a high potential near miss where an elevator was operated near where a rope access team were working.	1. Human factor - breakdown in adherence to agreed procedure. 2. Equipment not physically isolated.	1. Ensure that all personnel confirm understanding of the safety critical proocedures during the pre-work briefing. 2. Where powered systems present a hazard to workers, they should be pphysically isolated where possible.
SB 38: Details an event where a lanyard became caught in rotating equipment leading to a hand injury.	Lack of appropriate task risk assesment and planning.	Remember that the risk assessment and job planning needs to consider the actual task itself and not just the rope access. Consider the need for personnel to be competent in using the tools and equipment required to the work. See SB 36.

<p>SB 39: Details an event where a technician fell through open grating</p>	<p>Human behaviour - the (experienced) technician did not have any points of contact to protect against the potential fall hazard.</p>	<p>1. Planning to identify control measures required for all hazards. 2. Supervisors to re-inforce requirement to follow SSOW arrangements e.g. always have a connection when near an exposed edge. 3. All technicians to exercise appropriate professional approach, and ensure that they do not take short-cuts that expose them to hazards.</p>
<p>SB 40: Details a series of dropped object incidents including the dropping of tools and rope access equipment either due to dropping whilst handling, or due to the failure of connections.</p>	<p>Handling of unsecured tools and equipment: 1. hand ascender 2. crow bar Failure of tools/connectors: 3. Window cleaning wiper 4. Connector to multi meter failed leading to multi meter falling</p>	<p>1. Ensure tools and equipment are selected that are designed to be secured to a lanyard, and that connection points are robust. 2. Ensure that wherever possible tools and materials are not loose handled e.g. hand ascenders can always be connected to a lanyard. 3. Where tools and equipment must be loose handled, then suitable control measures to protect from dropped objects must be in place e.g. exclusion zones, catch netting etc..</p>
<p>SB 41: Details an incident where a rope access tech was injured when blown by high winds against the building. Subsequent to the injury the technician had to be rescued through a window.</p>	<p>1. Inadequate attention to changing weather conditions. 2. Poor rescue planning.</p>	<p>Weather presents a range of potential hazards, some of which are high risk due to the high likelihood and potentially significance consequences e.g. lightning, hypothermia, hyperthermia. Therefore supervisors should always be vigilant to the following: 1. Monitor worker exposure to extremes weather e.g. heat, cold (including wind chill), rain, lightning 2. Monitor weather for high winds that present a potential for the technician to be blown in an uncontrolled manner, and suspend works during high winds</p>
<p>SB 42: Details a range of dropped object case studies: two case studies related to dropped objects occurring due to loose materials on site. three incidents occurred due parts of tools, or equipment being removed from the site breaking resulting parts falling.</p>	<p>1. Potential dropped objects on-site not identified prior to work commencing. 2. Selection and use of tools not fit for purpose.</p>	<p>1. Always ensure that the area above and below the worksite is surveyed in order to identify potential dropped objects, and where PDOs are identified that they are investigated and where appropriate removed. 2. Always ensure tools are secured by a lanyard, and that any components are also secured</p>

<p>SB 47: Details two workers partially buried when compacted material on a bunker/silo wall collapsed whilst they were below it.</p>	<p>Poor planning. A thorough hazard identification would have identified the potential of material collapse.</p>	<p>Always ensure that where loose material is present this is removed from the top down. Where loose material is spread across a wide area such as a cliff, or is on adjacent walls such as in a silo, then the work should be organised so that a limited area is cleared in a vertical direction e.g 1.0m down, and then the adjacent area is cleared. This may mean moving several times horizontally across several drops rather than working from top to bottom in a single drop.</p>
<p>SB 48: A near miss occurred when ropes were rigged from a telehandler. The Level 3 heard the telehandler alarm when the vehicle was started and was able to alert the driver and banksman sufficiently quickly that the vehicle was stopped before any accident occurred.</p>	<p>The Level 3 had rigged to the telehandler without changing the method statement, and without communicating with the telehandler crew.</p>	<p>Wherever there is potential for anchors to be interfered with, then it is important to secure the area. In this instance, that would require approval from the telehandler crew that this could be used, and that arrangements were in place to isolate the equipment so that it could not be moved</p>
<p>SB 49: Details a number of potential hazards associated with the use of powered ascenders, including incorrectly installing the rope to the device; device wear leading to rope damage; potential for the user to be struck by the device; loose clothing and hair being drawn into the device; snagging of the load; fuel hazards.</p>	<p>In some circumstances, powered equipment can provide significant benefits, including to reduce worker fatigue, move loads more easily and provide for rapid evacuation. However, powered equipment also presents hazards that do not otherwise exist with traditional access equipment, such as a potential increase in loads, and the hazards of powered moving machinery in close proximity with suspended workers hands and face.</p>	<p>Any company planning to use powered ascenders must ensure that risk assessments are conducted to identify all hazards, and to ensure that control measures are in place. Controls may include:</p> <ul style="list-style-type: none"> - additional training - regular inspections of equipment - identifying potentialsituations specific to the worksite where a load may become snagged - selection of PPE combatible with the device e.g. no loose clothing or gloves