



ProGuide Series



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**SAMPLE
PAGES**

LINE OPERATIONS

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LINE OPERATIONS

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AVOID » PREVENT » MINIMISE » MITIGATE

1. AVOID work at height where possible

Use long-reach tools, ROVs, etc.

Encourage casualty self-evacuation where practicable

2. Use work equipment to PREVENT falls

Work from safe enclosed platforms (e.g. ALP/TL, scaffold)

Remain at least 2m back from unprotected edges, or;

Deploy PFPE in work restraint mode

3. Use work equipment to MINIMISE falls

Deploy PFPE in work positioning or rope access mode

Use crawl boards, grid mesh etc. over fragile surfaces

4. Use work equipment to MITIGATE injuries

Deploy PFPE in fall arrest mode

Deploy fall arrest netting/airbags



Always operate within your level of training and competence - if in doubt, seek expert advice and request additional resources.



RADIO FREQUENCY HAZARDS

Transmitting RF antennas are often encountered, typically cellular base stations or microwave links on rooftops. Extreme care is needed.



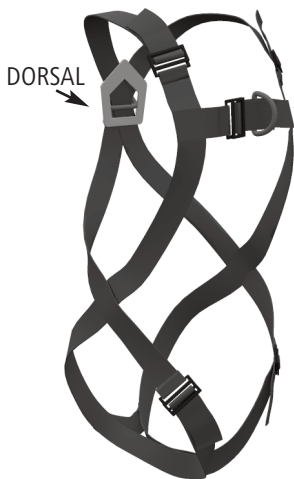
- ⚠ Identify and observe all operator warning signs
- ⚠ Emergency access to hazard zones - remain at least 2m from the beam of any unidentified or active antenna
- ⚠ Microwave dishes emit a parallel beam - they are safe to approach from all other directions
- ⚠ Cellular 'sector' antennas emit a horizontal pie-slice beam - they are safe from below and immediately behind
- ⚠ Dipole (vertical stick) antennas emit in all directions
- ⚠ **Never cut RF cables or touch exposed circuitry**

Symptoms of RF exposure include

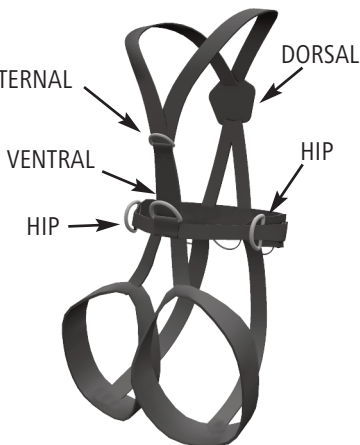
- *mental confusion and mood changes*
- *loss of balance and coordination*
- *sudden loss of consciousness*
- ⚠ pain/heat is only a symptom at very high power levels
- ⚠ There is no sensation of sound, smell or taste
- ⚠ RF fields can affect electronics, including pacemakers and sensing equipment (radios, gas/DIME equipment, etc.)



BASIC FALL ARREST



TECHNICAL



	Fall Arrest	Restraint	Polestrap	Suspension
Sternal	✓	✓	⚠	⚠
Dorsal	✓	✓	⚠	⚠
Ventral	☠	✓	⚠	✓
Lateral (Hip)	☠	✓	✓	⚠

⚠ = Emergency use only (not permitted for normal duties)

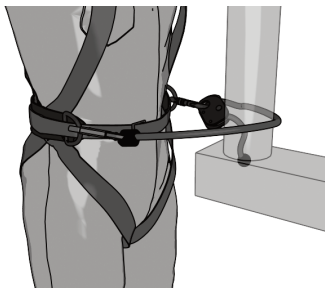
☠ = Danger of death

⚠ = Not permitted or possible



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POLESTRAPS



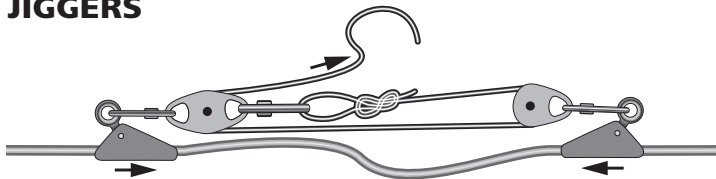
Adjustable rope or webbing device for hands-free working, connected between lateral (hip) D-rings on a harness belt.

- ✓ Work-positioning device - *must have a backup system*
- ⚠ Avoid suspension from lateral D-rings – *lean, don't sit*
- ⚠ Take care not to clip incorrectly (e.g. into tools, etc.)
- ⚠ Avoid wrapping around sharp or hot objects
- ✓ Should comply with EN358 (& EN795 if used as an anchor)
- ✓ Can be used end-to-end as a restraint device, variable length cowstail or stretcher bridle leg if required
- ⚠ **Never** use in a way where the polestrap would arrest a fall

For chainsaw/cutting tasks, steel-cored polestraps are available.



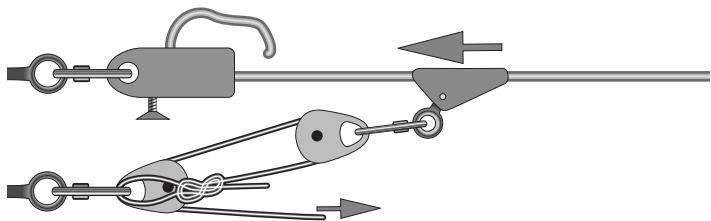
JIGGERS



Self-contained pulley system to apply tension or assist hauling. Uses *opposing* rope clamps to connect to main lines. Can be pre-assembled from accessory cord. A ratchet pulley allows the jigger to retain tension but is not usually required. Often used to form slack so a descender etc. can be attached to a rope.

Example: friction-free hauling

The jigger draws in the rope, allowing it to pass easily through the descender, which holds the tension as the jigger is reset.



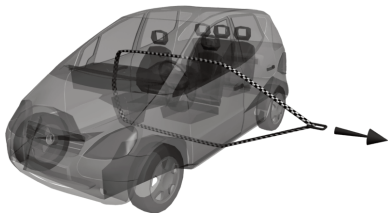
Line Operations

- ✓ **Only anchor to vehicles as a last resort**
- ✓ Only anchor to structural elements (axles, chassis beams)
- ⚠ Never attach to towing eyes or sling underneath a tyre
- ⚠ Never attach to mounted equipment (ladders, etc.)
- ✓ Protect rope/slides from grease and oil where possible

Immobilise vehicle as much as possible

- ✓ apply handbrake
- ✓ chock wheels
- ✓ remove keys
- ✓ cover steering wheel

Cars: loop a rope or strop under body & through side windows. Apply the load sideways & ensure edge of glass is not being crushed.



If vehicle is keyless, appoint a safety officer to remain with it at all times



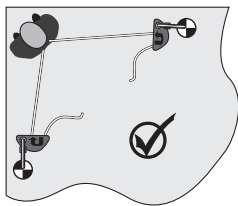
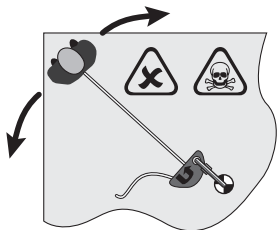
Ensure the vehicle won't have to be moved!



NEVER ATTACH TO A MOVING VEHICLE

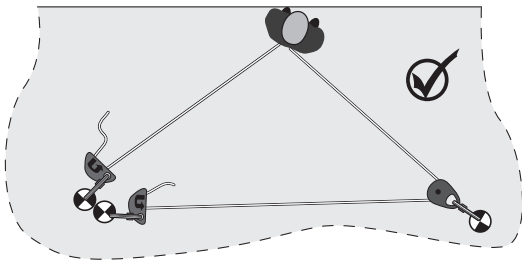
Line Operations

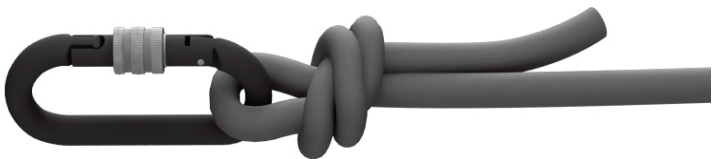
RESTRAINT AT CORNERS AND EDGES



To work in restraint at a corner, or to approach an edge at an angle other than 90° , **two ropes are required**. Varying the length of each rope controls the allowed zone of movement.

Restraint ropes can be deviated via pulleys etc. to bring both anchored control points within reach of a single person.



BARREL KNOT

Approx strength 75% of rope. Used to form slippery loop at the end of a line – will contract to grip very firmly. Difficult to release after heavy loading. Adding a third turn has minimal benefit and makes release almost impossible.

- ✓ More compact than “Figure” style knots.
- ✓ Stronger in dynamic loads - ideal for cowstails



Tied identically to one half of a double fisherman's bend, but starting with a bight of rope.



Always tighten the loop. This is not a rope adjuster!

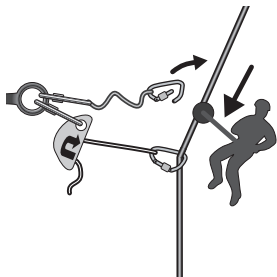


Do not load the final 'tail'



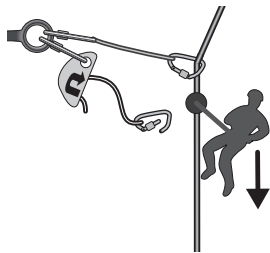
PASSING DEVIATIONS

Passing deviations of up to 20° alone is trivial, if you use a cowstail (or arm strength) to de-tension the deviation karabiner while you unclip it and replace it beyond your gear.



With rescue loads in descent, this can be physically difficult. Prepare in advance by fitting two deviations in parallel, one slightly shorter than the other and with the shorter link releaseable (e.g. using a descender or slip knot to lock it off).

On arrival, the long link is attached above the abseiler, and the short link released, *moving the deviation past the abseiler*. If the deviation links are long, the release device should be fitted at the rope end so it remains within reach.



Ascents with rescue loads is unlikely, but use the same system.

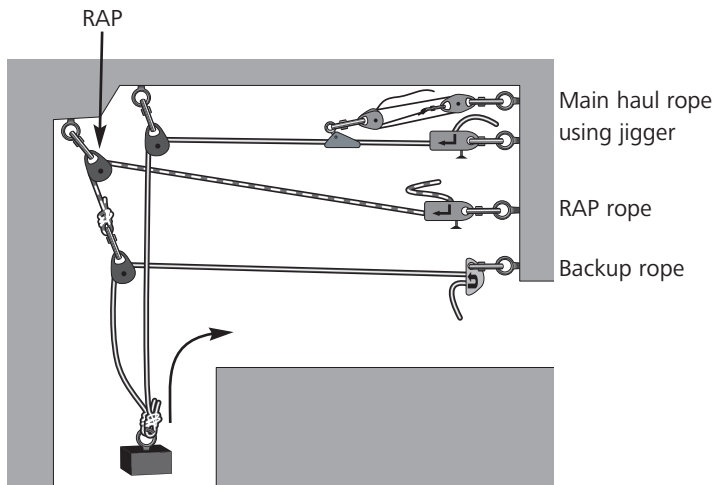
In emergencies, simply cut the deviation link.



RELEASABLE ANCHOR POINTS

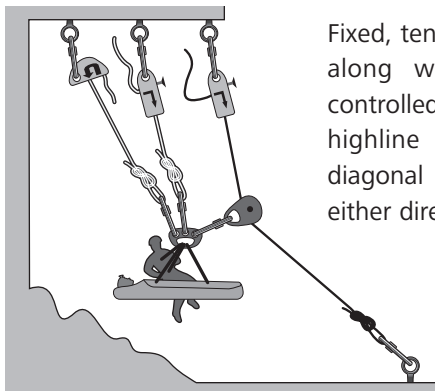
Often a rope passes through a deviation during the hauling phase, but this interferes with transition on arrival. This can be addressed by a releasable anchor point (RAP).

The backup rope below uses a RAP to ensure functionality during the haul. On arrival the RAP is released, giving the backup line a direct pull on the load to transition it to safety.



Line Operations

CABLEWAYS



Fixed, tensioned rope (ideally two) along which a pulley travels, controlled from above. Similar to a highline (next page) but for diagonal use. Load can move in either direction.

- ✓ (Almost) any angle is possible
- ✓ Both control *and* backup ropes are required - the cableway itself does not provide any fall protection function
- ✓ Use two cableway ropes for systems $>30^\circ$ off vertical
 - ✓ One highline pulley on both, or a single pulley on each
- ✓ Tension can be applied from either end
- ✓ Apply minimum tension required (will be higher at top end)
- ⚠ Load will follow a curved path, more so at the bottom
- ✓ Plan for release/rescue should pulleys become jammed