

## Safe OP – Working Machinery on Slopes

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ACoP – see p. 44 – 45 (6.1.7 and 6.2.1 – 6.2.3) and p. 46 (6.4.1 – 6.4.7)

### General Safety Rules and Guidance:

- Those involved in planning, managing and undertaking machine based operations shall review the listed ACoP references in line with the nature and degree of the slopes in the operational area.
- A ‘specific hazard management plan’ also known as a **steep slope management plan** shall be produced where/when slopes exceed:
  - 18° (30%) for rubber tyre machines.
  - 22° (40%) for tracked machines.
- Machine operators operating under a steep slope management plan shall be competent operators qualified under the:
  - NZQA unit standard 6934 – for rubber tyre machines.
  - NZQA unit standard 6935 and/or 6936 – for tracked machines.
- Machine operators shall move up and down and not across slopes.
- The break-out shall be behind and not at an angle with the machine.
- Stems shall not be hauled or winched across a side slope – if caught on an obstacle the extra tension may destabilise the machine.
- On a formed track, stay as close to the hill-side or batter as possible.

### Steep Slope Management Plan:

- Accurately assess the work area and document (including on a map):
  - Slope areas, within the work area that are > 18° (30%).  
**NB:** Consider holes, rifts and washes that may increase the degree of the slope albeit over small sections of terrain.
  - Machine types i.e. where machines (by type) may be utilised.
  - Tether points i.e. the points where winch assisted/tethered machines shall be anchored.
  - Extraordinary work area hazards and controls.
  - Restricted areas i.e. machine ‘no-go areas’ such as bluffs or areas that exceed machinery thresholds and capability.
  - Maximum slopes for contour tracking (26° / 49%) and where the contour track(s) shall be placed.
  - Alternative arrangements e.g. when the maximum working slope and/or machine type requires an adjustment to accommodate changes in the weather or ground conditions.

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- **Prior to implementation**, a steep slope management plan shall be:
  - Approved (signed) by the relevant PF Olsen manager.
  - Communicated to all relevant machine operators and approved (signed) by them.
- **During implementation**, a steep slope management plan shall be:
  - Reviewed (daily) using the [Steep Slope Hazard Assessment Tool](#) and the [Hazard Identification and Assessment Form](#).
 

**NB:** This shall be the responsibility of the machinery owner (contractor principal) and all relevant machine operators.
- **Once each month**, the steep slope management plan shall be:
  - Reviewed by the relevant PF Olsen manager to ensure compliance with all documented procedures.
 

**NB:** Results shall be recorded in the manager’s ‘record of supervision’ or the ‘monthly safety inspection’ form.

**Formed Tracks – Design, Construction and Operating Practices:**

- Track construction shall be limited to either a bulldozer or an excavator equipped with a bucket.
 

**Exception:** A grapple equipped excavator, having a Grade 3 COPS may be used to form **short extensions** to tracks with Company approval.
- Track(s) shall be designed and constructed to ensure:
  - Environmental best management practice including site restoration and/or water runoff controls.
  - A maximum of two constructed tracks per hill-face.
 

**NB:** Consider cable extraction for slopes > 120 meters.
  - An inward slope (camber) toward the hill or batter.
  - Machinery can operate on solid ground i.e. not on slash or fill.
  - Sufficient width e.g. allowing a machine to slew unobstructed.
  - One-tree length between contour tracks for shovel logging; and two-tree lengths when extracting by skidder or tractor.
- Machines shall be operated to access or egress a formed track at the designated point of entry at the bottom of the formed track.
- When extracting stems from over an edge the extraction machine must be stable and firmly braced on the formed track e.g. a skidder shall have its wheels braced against a pre-formed earth bank.
- Extraction machines shall not work directly below any shovel logging operation.