FURTHER READING

Using petrol-driven chainsaws	FISA301
Basic chainsaw felling and manual takedown	FISA302
Chainsaw snedding	FISA303
Chainsaw cross-cutting and manual stacking	FISA304
Chainsaw clearance of windblow	FISA306
Chainsaw felling of large trees	FISA307
Emergency planning	FISA802
Electricity at work: Forestry	FISA804
First aid at work: Your questions answered	INDG214
Managing health and safety in forestry	INDG294
Don't lose your hearing	INDG363

These publications are available from the FISA and HSE websites.

Name:.....

Checklist verified by:.....

Date: .....

Further information

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Copies of this guide and all other FISA priced and free publications are available by mail order from the FISA office or through the FISA website www.ukfisa.com. From here you will also be able to access a wide range of additional forestry safety information including frequently updated safety alerts.

This guide sets out evidence of good practice for a specific forestry task. Deviation from the guide should only be considered after a full risk assessment has been undertaken by competent persons. Health and safety obligations MUST be met at all times.

THINK SAFE / STAY SAFE

This publication is based on guidance previously published by HSE in AFAG310 Use of winches in directional felling and takedown, which was withdrawn in 2013.

For more general information about health and safety, please visit the Health and Safety Executive website www.hse.gov.uk

FISA310 **Reprinted 03/13**

Use of winches in directional felling and takedown

FISA Safety Guide 310

INTRODUCTION

This leaflet covers the safe working practices to be followed when using either a tractor or hand winch as an aid to directional felling and takedown operations in forestry and tree work.

It does not apply to the use of tractors or winches for any form of timber extraction (see FISA leaflet 502 *Extraction by skidder*) nor for towing vehicles or other equipment.

You can use this leaflet, along with the manufacturer's handbook, as part of the risk assessment process to help identify the controls to put in place when using a tractor or hand winch.

You must also assess the effect of the site and the weather as well as following this guidance.

All operators must have had appropriate training in how to operate the machine and how to carry out the tasks required (see FISA leaflet 805 *Training and certification*).

For guidance on personal protective equipment (PPE), the machine, preparing to work, maintenance, fuelling and starting procedures see FISA leaflet 301 *Using petrol-driven chainsaws*. For guidance on work planning and preparing to fell see FISA leaflet 302 *Basic chainsaw felling and manual takedown*.

This leaflet must be read in conjunction with FISA leaflets 307 *Chainsaw felling of large trees*, 501 *Tractors in tree work* and 804 *Electricity at work: Forestry*.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

❑ **1** Use the following PPE:

- Safety helmet (complying with EN 397).
- Eye protection (mesh visor complying with EN 1731 or safety glasses to EN 166).
- Hearing protection (complying with EN 352), if working with or near a tractor.
- Suitable work gloves.
- Protective boots with good grip and ankle support (complying with EN 345-1).
- Non-snag outer clothing.
- High-visibility clothing when working on or near the public highway or when working with other machinery.

❑ **2** Each person should carry a personal first-aid kit including a large wound dressing (see HSE leaflet INDG214 *First aid at work: Your questions answered*).

❑ **3** Hand-cleaning material such as waterless skin cleanser or soap, water and paper towels should be readily available.

WINCHING EQUIPMENT

❑ **4** All equipment must be used in accordance with the manufacturer's instructions.

❑ **5** Ensure that all ropes/cables, strops, hooks and eyes etc are suitable for the purpose. If any lifting is required, ensure the lifting equipment has been examined in accordance with the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

❑ **6** Check that all components of the winch system and all other necessary aids are present before starting the winching operation.

❑ **7** Check that all components in the winch system are compatible, especially in respect of their safe working loads (SWL), and that any safety devices (eg shear pins) are fitted correctly.

❑ **8** Examine all equipment and do not use if it is damaged. Repair or replace it, and report defective equipment to management.

PREPARING TO WORK

❑ **9** Each job must be assessed individually. Factors to take into account should include:

- operator experience and relevant training;
- tree size, direction of lean and weight of crown;
- proximity to buildings, overhead lines, footpaths, people or highways;
- the presence or indication of decay;
- the presence of dead wood, broken tops and insecure branches, both in the trees to be felled and in adjacent crowns;
- the weather, particularly wind speed and direction.

❑ **10** Establish an appropriate exclusion zone.

❑ **11** All operators engaged in the winching operations must have had adequate technical and first-aid training.

❑ **12** Before starting work, agree a clear and comprehensive communication system. The chainsaw operator **must** be in control of the operation and give appropriate instructions to the winch operator. However, an emergency stop signal must be obeyed by all parties immediately. Any unclear signal should be regarded as a stop signal.

❑ **13** If conditions prevent the chainsaw operator's clear sight of the winch operator, then an alternative method, such as a radio, or the use of a third person to relay the message must be used.

ANCHOR POINT SELECTION

❑ **14** Select strong and suitable anchorage point(s) and ensure the winch operator is in a safe position with adequate space to work.

❑ **15** Tree stumps or anchors used to secure the winch must be of adequate strength and reinforced where necessary (see *Figure 1*).

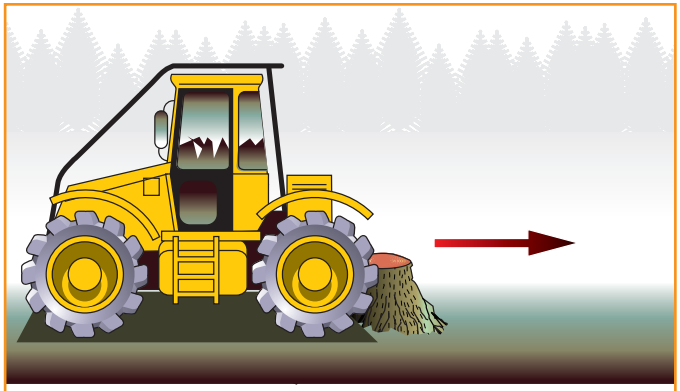


Figure 1: Stump used as anchor

❑ **16** Attachment to the load should always be with a strop to prevent damage to and weakening of the winch cable. Use a suitable means of attachment to prevent the strop slipping or being released under tension.

❑ **17** Anchorage devices, eg ground anchors, must be compatible with the winch system.

WINCH SET-UP

❑ **18** The winch cable should be free from obstruction and run straight to the winch or to an intermediate pulley.

❑ **19** Assess the structure of the tree to be winched and select a suitable position to attach a strop.

❑ **20** A diverted pull may be used in confined sites to allow the operator to work in a safe position. Avoid walking or working in the triangle created by the offset winch cable (see *Figure 2*).

❑ **21** Do not operate the winch from a position which is too close to the butt being winched, or below the butt on a steep slope. Offset the winch through a snatch block to ensure a safe working position.

❑ **22** Be aware that when a snatch block is used, the loading on the block and anchor point can be doubled. The more acute the angle created, the greater the increase in loading (see *Figure 2 angle X°*). The pulley block, strop and anchor point must therefore be up-rated accordingly.

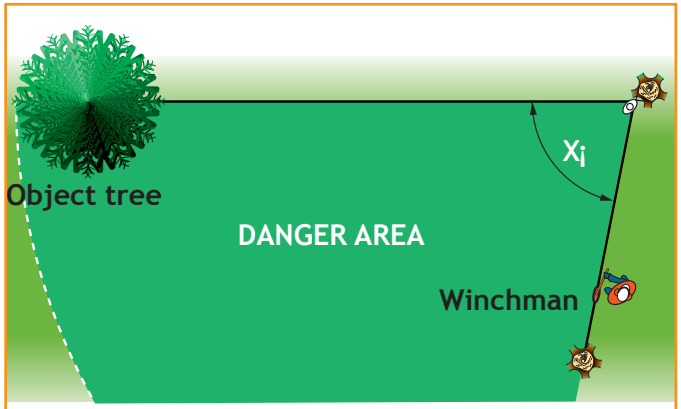


Figure 2: Offset winching and danger zone

DIRECTIONAL FELLING USING A WINCH

❑ **23** If the cable(s) run directly from the tree to the winch then the distance between the two must be at least twice the height of the tree.

❑ **24** Before any cutting begins, ensure the winch cable is correctly attached to a suitable strop placed around the trunk at a point high enough to give adequate leverage and retain control of the direction of fall of the tree (see *Figure 3*). If the condition of the tree allows, it is good practice to test the strain before felling.

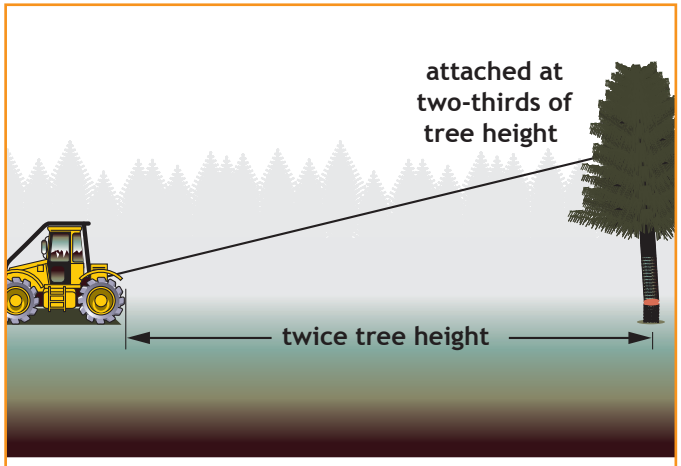


Figure 3: Attachment point for directional felling

TAKEDOWN OF HUNG-UP TREES

- ❑ **25** Be aware of possible obstructions between the butt and anchor point.
- ❑ **26** When winching downhill, where the tree may move towards the winch, it must always be offset from the danger area.
- ❑ **27** Ensure the winch cable is correctly attached to a suitable strop placed on the stem to achieve the safest and most efficient pull. If necessary, cut a small notch in the stem to prevent slipping. Do not put any part of your body under the hung-up tree.
- ❑ **28** When using a tractor, pull using the winch, never with the tractor.
- ❑ **29** Stop immediately if anyone comes within the exclusion zone.
- ❑ **30** Remain in the tractor cab or in a designated safe operating position until tension has been released from the winch cable.
- ❑ **31** If the winch system is not needed to restrain the tree, dismantle and remove it before starting to cut up or dispose of the stem or stump.
- ❑ **32** Never leave tensioned winch systems unattended.
- ❑ **33** Do not unhitch the cable until the tree is in a stable position on the ground.
- ❑ **34** Be prepared for the tree to move as the rope is pulled clear of the tree. Do not work on the tree while the cable is being wound in.
- ❑ **35** Leave the site in a safe condition with all debris stacked securely and adequate signing around stacks and/or backfill of excavations. Root plates must be left in a stable condition.

NOTES