

company about the use and positioning of barriers. The absolute minimum driving distance from the barriers to the overhead power line is 6 m. The electricity company may advise distances greater than 6 m depending on the voltage of the line.

## Felling and processing

- 31 Do not operate a harvesting unit if wind conditions are such that control over felling direction could be lost.
- 32 Operate the machine using the techniques and within the limits specified by the manufacturer's handbook, which should be available.
- 33 Where appropriate, ensure the parking brake is on, and it is released before moving.
- 34 Where possible when working on sloping ground, position the machine straight up and down the slope.
- 35 Do not operate the chainsaw towards the machine cab.
- 36 Do not point the chainsaw towards any person within 200 m, or any greater distance necessary to maintain their safety.
- 37 Under normal operating conditions, stop work as soon as any person or machine enters the risk zone specified for your machine, or comes closer than two tree lengths plus the length of any boom, whichever is the greater.
- 38 Do not fell or process trees likely to overload the machine.
- 39 Leave processed timber in a safe and stable position with safe access for extraction machinery.

## Working near overhead power lines

- 40 Do not fell trees that are **within two tree lengths** of an energised overhead power line without consulting the electricity company and agreeing a safe working procedure (see AFAG leaflet 804 *Electricity at work*) which incorporates the following precautions:
  - Do not fell any trees if any part of the machine or the tree can come **within one tree length + the vicinity zone** (down to a minimum distance of 15 m) of an energised overhead power line. The vicinity zone will vary between 1 and 5 m depending on the line voltages.
  - Only fell trees parallel to or away from energised lines.
  - Ensure you use only trained and competent operators with a Forestry Machine Operator Certificate of Competence and electrical awareness training from the electricity company.
  - Assess the weather conditions and ensure the wind direction does not affect control of the felling direction.
  - Agree and instigate a suitable emergency procedure with the electricity company in case of accidental contact or damage to the power lines.
  - Clearly mark the limit of normal working (**two tree lengths**) and the limit of work with the power lines energised (**one tree length + the vicinity zone**). Marked trees, high-visibility tape or another suitable marking method should be used as well as organised felling and extraction routes (see Figure 1).

## Further reading

<i>Tractor units in tree work</i>	AFAG501
<i>Mechanical roadside processing</i>	AFAG605
<i>Emergency planning</i>	AFAG802
<i>Electricity at work: Forestry and arboriculture</i>	AFAG804
<i>Training and certification</i>	AFAG805
<i>Managing public safety on harvesting sites</i>	0 7176 2671 7
<i>Management of electricity at work: Forestry and arboriculture</i>	0 9017 5800 1
<i>First aid at work: Your questions answered</i>	INDG214
<i>Managing health and safety in forestry</i>	INDG294
<i>Chainsaws at work</i>	INDG317

These publications are available from HSE Books - see 'Further information'.

## Notes

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Checklist verified by: .....

Date: .....

## Further information

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**This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

This leaflet is available in priced packs of 15 from HSE Books, ISBN 0 7176 2654 7. Single free copies are also available from HSE Books.

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# Mechanical harvesting



## Introduction

This leaflet covers the use of an excavator conversion or purpose-built harvester for felling and processing trees in forestry and other tree work.

It does not cover a combination of machines working within each other's risk zones (see AFAG leaflet 605 *Mechanical roadside processing*).

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 mechanically harvesting trees.

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 AFAG leaflet 805 *Training and certification*).

This guide **must** be read in conjunction with AFAG leaflet 501 *Tractor units in tree work*.

## The machine

- 1 Any risk zone specified by the manufacturer must be clearly and prominently marked on the machine.
- 2 Harvesting machines which apply stump treatment must have appropriate warning signs fixed to the storage tank.
- 3 Adequate field lighting must be fitted if working in poor light.

## Harvester head maintenance and repair

- 4 Ensure the head is maintained according to the manufacturer's handbook, which should be available.
- 5 Keep a maintenance record.
- 6 Only trained and authorised personnel should carry out repair and maintenance procedures.
- 7 Before maintenance or cleaning (eg removal of brash or cleaning of photoelectric cells), park all operational parts of the machine so they are accessible and switch off the engine. Never work under any suspended, unpropped piece of equipment.
- 8 Ensure all hydraulic pressure in the systems to be maintained or repaired is released before work starts. Where this it is not possible, ease residual pressure by careful slackening of joints.
- 9 Do not use your hand to check for hydraulic fuel leaks - use a piece of paper or cardboard. Hydraulic fluid under pressure can penetrate the skin. If such contamination occurs seek medical attention at once.
- 10 If working on a tracked excavator, engage the superstructure slew lock, if fitted.
- 11 Stand at a safe distance from the head during evaluation of the fault.

- 12 Isolate as many as possible of the other functions not under investigation.
- 13 **Avoid working on the head with the engine running. The only task that requires the engine to be running should be hydraulic pressure setting and testing - this requires specialist training and must be undertaken with great care.**
- 14 If carrying out hydraulic pressure testing, remove the saw bar and chain.
- 15 Guard exposed cutting edges, ie the knife and saw.
- 16 During repair and/or fault diagnosis, use any restraints or scotches supplied with the machine according to the manufacturer's instructions.

## To minimise saw chain breakage

- 17 Remove and inspect the cutting equipment at least daily for excessive wear damage. Check particularly for cracked chain parts. Renew the chain as necessary.
- 18 Ensure all parts of the cutting equipment are properly aligned.
- 19 Maintain the saw chain, including depth regulators, to the manufacturer's recommendations.
- 20 Ensure the chain lubrication is effective.

## Parking the harvesting head

- 21 Ensure the head is parked in a stable position.
- 22 Ensure the chainsaw is in a guarded position and the knives are closed.

## Emergency procedures

- 23 Ensure a designated and responsible person knows the daily work programme and agree with them a suitable emergency contact procedure. Where reasonably practicable use a mobile phone or radio and a pre-arranged call-in system.
- 24 Ensure the operators can provide the emergency services with enough detail for them to be found if there is an accident, eg the grid reference, the distance from the main road, the type of access (suitable for car/four-wheel drive/emergency service vehicles). In urban areas street names are essential. Know the location details before they are needed in an emergency. (Also see AFAG leaflet 802 *Emergency planning*.)

## Driving

- 25 Plan the work so that brash and tops from processed trees assist travel over the worksite.
- 26 Ensure the harvesting head and boom are parked in the correct transport position before driving off.
- 27 Where side slopes are unavoidable, extend the harvester boom to the uphill side to maintain stability. Ensure the boom does not come into contact with any obstruction.
- 28 Avoid driving across felled trees and other timber.
- 29 On and in the near vicinity of worksites, only cross under energised overhead power lines at the designated crossing point(s) that are marked with goalposts.
- 30 Safe driving distances from energised overhead power lines should be clearly identified by barriers. In many cases, marked trees will form a suitable barrier, as long as there is no opening which would allow vehicular access. Consult the electricity

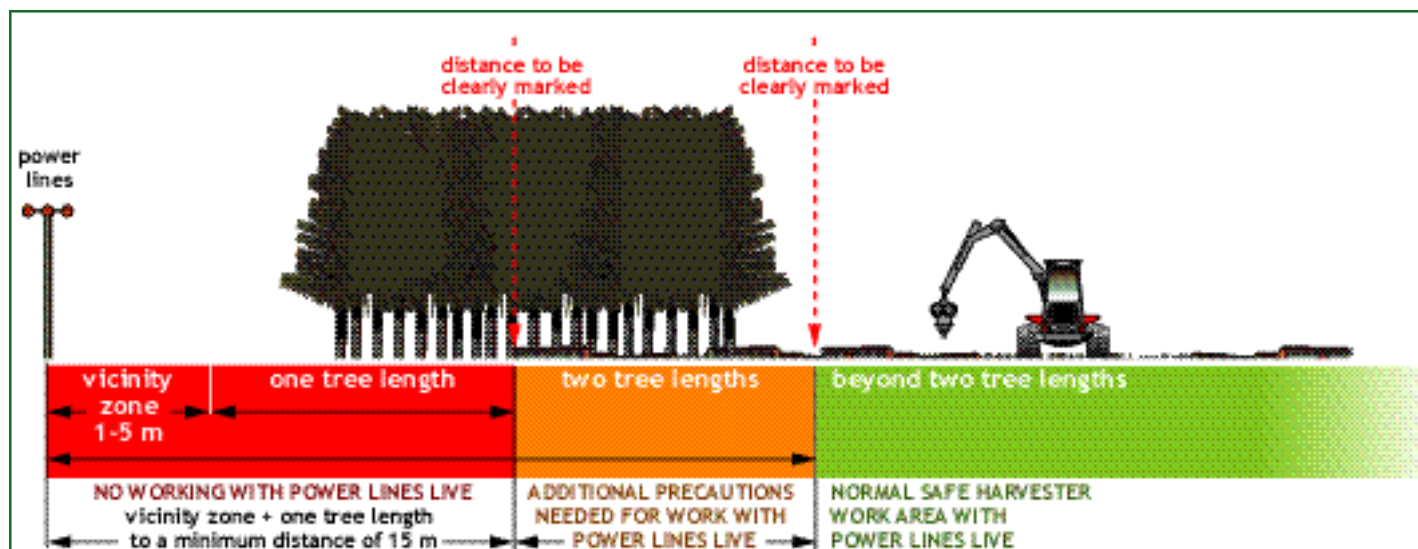


Figure 1 Mechanical harvesting near overhead power lines