

chainsaws

at

WORK





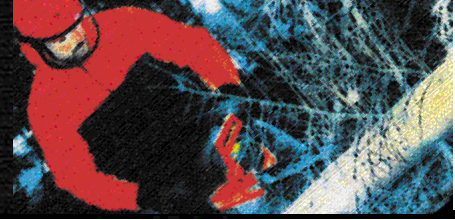
Introduction

This leaflet gives advice on using portable, hand-held, petrol-engine chainsaws at work. It is aimed at employers, the self-employed and those who control the use of work equipment and includes basic information on safe working practices which operators should follow.

It will help you comply with your duties under health and safety law, but is not intended as a substitute for proper instruction and training (including training of managers and supervisors to identify whether good practice is being followed).

When assessing risks from work with chainsaws, talking to your employees about how they do their work can be very valuable. Use trade union or other employee safety representatives to help you.

Employers should remember they may be responsible for the health and safety of someone who is self-employed for tax and National Insurance purposes but who works under their control and direction.



Fitness to operate a chainsaw

In general, safe use of a chainsaw calls for the operator to have a reasonable degree of both physical and mental fitness. People with disabilities need not necessarily be excluded from work with chainsaws, however, medical advice may restrict the tasks they can do and require increased levels of supervision. Although it is not a legal requirement, it is recommended that employers undertake pre-employment screening when selecting chainsaw operators. It is suggested that further medical advice should be sought if prospective operators have any condition affecting:

- mobility (eg arthritis, stroke etc);
- alertness (eg diabetes or alcohol/drug dependency);
- physical strength (eg heart conditions);
- vision (where it is unable to be corrected by glasses or contact lenses);
- manual dexterity/grip strength (eg vibration white finger);
- balance (eg vertigo or giddiness).

Operators should inform their employers when they are taking prescribed medication. Check with the operator's medical practitioner if the medication can affect a person's ability to operate a chainsaw safely.

Chainsaws and young people

Chainsaws should not be operated by anyone under minimum school leaving age (MSLA), which is on, or near the age of 16 years, depending on when the last day of the school

year falls. Employers of young people (ie above MSLA but under 18 years old) will need to ensure:

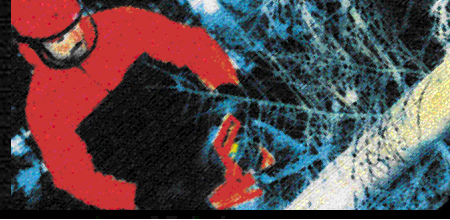
- they have the physical capacity to operate the chainsaw safely;
- particular account is taken of their inexperience, immaturity and lack of awareness of relevant risks;
- they are supervised by a person competent in the use of a chainsaw for the work being done by the trainee and who, where appropriate, holds the relevant competence certificate or award.

Health risks

Chainsaws expose operators to high levels of noise and hand-arm vibration which can lead to hearing loss and conditions such as vibration white finger. These risks can be controlled by good management practice including:

- purchasing policies for low-noise/low-vibration chainsaws (eg with anti-vibration mounts and heated handles);
- provision of suitable hearing protection;
- proper maintenance schedules for chainsaws and protective equipment;
- information and training of operators on the health risks associated with chainsaws and use of personal protective equipment (PPE) etc.

Encourage existing chainsaw operators to report any signs or symptoms which may affect their ability to use a chainsaw safely or may indicate adverse health effects from noise and/or vibration. Employers are required to carry out health surveillance of their employees where noise or hand-arm vibration exposure cannot be reduced to safe levels. See 'Further reading' for more information.



Training and competence

All chainsaw use

Chainsaws are potentially dangerous machines which can cause major injury if used by untrained people. Anyone who uses a chainsaw at work should have received adequate training and be competent in the use of a chainsaw for that type of work. The training should include:

- dangers arising from the chainsaw itself;
- dangers arising from the task for which the chainsaw is to be used; and
- the precautions to control these dangers, including relevant legal requirements.

Use of chainsaws in tree work

The Approved Code of Practice supporting regulation 9 of the Provision and Use of Work Equipment Regulations 1998 (PUWER 98) sets a minimum standard for competence of people using chainsaws in tree work.

'All workers who use a chainsaw should be competent to do so. Before using a chainsaw to carry out work on or in a tree, the operator should have received appropriate training **and obtained a relevant certificate of competence or national competence award**, unless they are undergoing such training and are adequately supervised. However, in the agricultural sector, this requirement only applies to first-time users of a chainsaw.'

This means everyone working with chainsaws on or in trees should hold such a certificate or award **unless**:

- it is being done as part of agricultural operations (eg hedging, clearing fallen branches, pruning trees to maintain clearance for machines); **and**
- the work is being done by the occupier or their employees; **and**
- they have used a chainsaw before 5 December 1998.

In any case, operators using chainsaws for any task in agriculture or any other industry must be competent under PUWER 98.

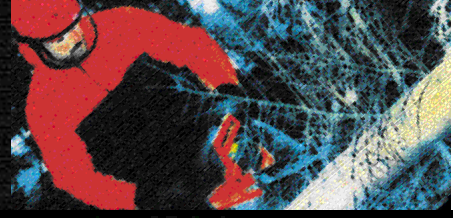
Training provision

Training is usually carried out by specialist instructors at organised training courses. Advice on suitable training courses (and competence assessment where appropriate) is available from your industry National Training Organisation and sources listed under 'Further advice'.

Where training is being consolidated through workplace-based experience, the trainee should be supervised by a person competent in the use of a chainsaw for the work being done by the trainee and who, where appropriate, holds the relevant competence certificate or award.

It is recommended that all chainsaw operators have regular refresher/update training to ensure they work to industry best practice and maintain their levels of competence. Suggested intervals for such training are:

- occasional users - every 2 to 3 years;
- full-time users - every 5 years.



Selecting a chainsaw

There are two basic designs of chainsaw - 'top-handled' and 'rear-handled'.

Rear-handled chainsaws

These have the rear handle projecting from the back of the saw. They are designed to always be gripped with both hands, with the right hand on the rear handle. Select chainsaws which will be suitable for the intended work. It may be necessary to have a range of saws with different guide bar lengths available. As a general rule, choose a chainsaw with the shortest guide bar suitable for the work. Training in the use of chainsaws will identify the type and size of saw most suited to a range of operations.

Top-handled chainsaws

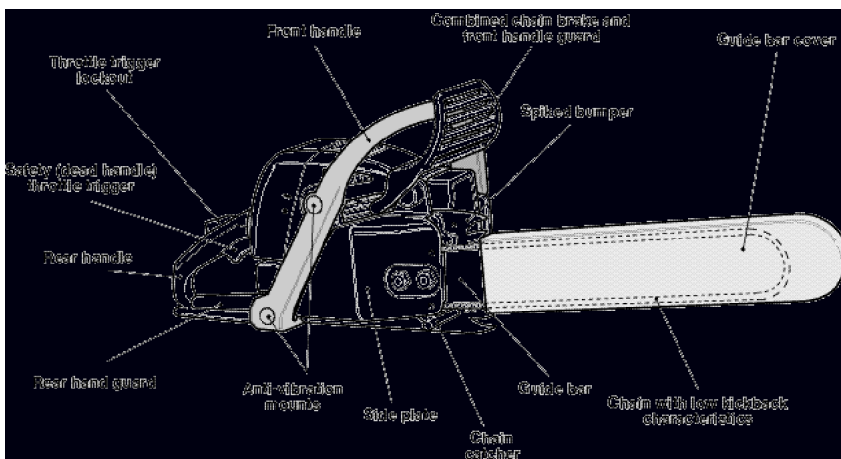
These saws have the rear handle over the top of the engine. **They are only suitable for use off the ground by trained competent arborists.** They are not designed for use on the ground or as a substitute for small, rear-handled chainsaws.

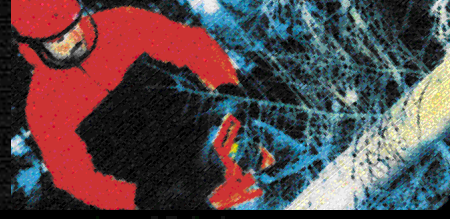
Maintaining a chainsaw

Proper maintenance is essential for safe use and protection against ill health from excessive noise and vibration. The saw must be maintained in its manufactured condition with all the safety devices in efficient working order and all guards in place. It should be regularly serviced by someone who is competent to do the job.

Operators need to be trained in the correct chain-sharpening techniques and chain and guide bar maintenance to keep the saw in safe working condition. Operators should report any damage or excessive wear from daily checks on the following:

- on-off switch;
- chain brake;
- chain catcher;
- silencer;
- guide bar, drive sprocket and chain links;
- side plate, front and rear hand guards;
- anti-vibration mounts;
- starting cord for correct tension.





Personal protective equipment

Suitable personal protective equipment (PPE) should always be worn - no matter how small the job. European standards for chainsaw PPE are published as part of EN 381 *Protective clothing for users of hand-held chainsaws*.



Protective clothing complying with this standard should provide a consistent level of resistance to chainsaw cut-through. Other clothing worn with the PPE should be close fitting and non-snagging.

Safety helmet - to EN 397 (Arborists working from a rope and harness may use a suitably adapted rock-climbing helmet.)

Hearing protection - to EN 352-1.

Eye protection - mesh visors to EN 1731 or safety glasses to EN 166.

Upper body protection* - chainsaw jackets to prEN 381-10.

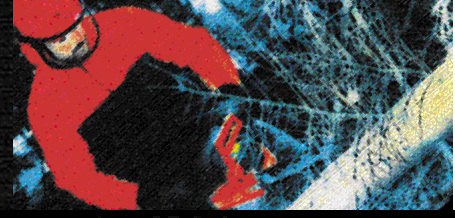
Gloves - to EN 381-7 (except for arborists working from ropes and harnesses).

Leg protection - to EN 381-5 (All-round protection is recommended for arborists working in trees and occasional users such as those working in agriculture.)

Chainsaw boots - to EN 345-2 and bearing a shield depicting a chainsaw to show compliance with EN 381-3. (For occasional users working in even ground where there is little risk of tripping or snagging on undergrowth or brash, protective gaiters conforming to EN 381-9 worn in combination with steel-toe-capped safety boots.)

* Chainsaw jackets can provide additional protection where operators are at increased risk (eg trainees, unavoidable use of a chainsaw above chest height). However, this needs to be weighed against increased heat stress generated by physical exertion (eg working from a rope and harness).

NB No protective equipment can ensure 100% protection against cutting by a hand-held chainsaw.



Lone working

Avoid working alone with a chainsaw. Where this is not possible, establish procedures to raise the alarm if something goes wrong. These may include:

- regular contact with others using either a radio or telephone;
- someone regularly visiting the worksite;
- carrying a whistle to raise the alarm;
- an automatic signalling device which sends a signal at a preset time unless prevented from doing so;
- checks to ensure operators return to base or home at an agreed time.

For more information on lone working see 'Further reading'.

First aid

Anyone working with chainsaws needs to understand how to control major bleeding and to deal with crush injuries, so it is recommended that operators hold an emergency first-aid certificate. In remote sites, people who have been injured may also be at risk of hypothermia. Make sure operators always carry a personal first-aid kit (incorporating a large wound dressing) with them and have reasonable access to a more comprehensive kit.

Working with chainsaws - general points

Fuelling and lubrication

Make sure petrol containers are in good condition and clearly labelled, with securely fitting caps. Use containers which are specially designed for chainsaw fuelling and lubrication. Fit an auto-filler spout to the outlet of a petrol container to reduce the risk of spillage from over-filling. Operators should:

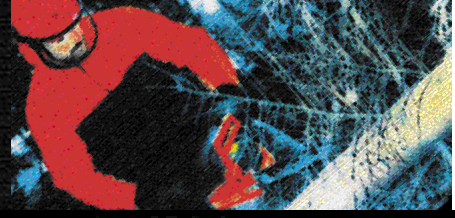
- avoid getting dirt in the fuel system (this may cause the chainsaw to be unreliable);
- securely replace all filler caps immediately after fuelling/oiling;
- wipe up any spilt petrol/oil;
- keep fuel containers well away from fires and other sources of ignition - including the saw itself - during starting and use (at least 4 m is recommended).

Do not allow operators to use discarded engine oil as a chain lubricant - it is a very poor lubricant and may cause cancer if it is in regular contact with an operator's skin.

Starting the chainsaw and pre-use checks

When preparing to use a chainsaw, operators should check:

- all nuts, screws etc are tight;
- the saw chain is correctly tensioned;
- the throttle cannot be squeezed unless the throttle lock-out is pressed; and
- they are wearing the correct PPE.



When starting the saw, operators should maintain a safe working distance from other people and ensure the saw chain is clear of obstructions.

When starting a chainsaw with a cold engine, operators should:

- place the saw on level ground;
- secure the saw firmly, eg put a foot on the rear-handle base plate and a hand on the front handle;
- set the controls as recommended by the manufacturer;
- pull the starter cord firmly.

Once the saw has started, operators should rev the throttle to warm up the engine and check:

- the saw chain stops moving when the engine revs return to idle;
- the chain brake is effective when applied at maximum revs or according to the manufacturer's specification;
- the engine continues to run when the saw is turned through 90° in any direction;
- the stop switch works correctly;
- lubrication to the guide bar and chain is working properly.

These checks should be repeated at regular intervals throughout the day.

When starting a chainsaw with a hot engine, operators may use the same method as above. Alternatively, they can grip the rear handle firmly between the knees and the front handle with their left hand, pulling the starter with their right hand.

Once the saw is running, operators should apply the chain brake before moving off with the saw. Some modern chainsaws will allow hot starting with the chain brake applied.

Kickback

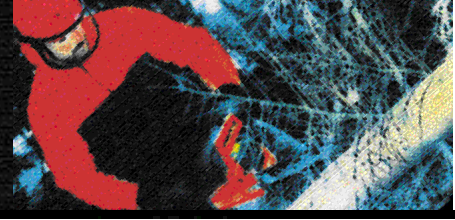
Kickback is the sudden uncontrolled upward and backward movement of the chain and guide bar towards the operator. This can occur when the saw chain at the nose of the guide bar hits an object. Kickback is responsible for a significant proportion of chainsaw accidents, many of which are to the face and parts of the upper body where it is difficult to provide protection. A properly maintained chain brake and use of low-kickback chains (safety chains) reduces the effect, but cannot entirely prevent it. Make sure operators use the saw in a way which avoids kickback by:

- not allowing the nose of the guide bar to accidentally come into contact with any obstruction, eg branches, logs, stumps;
- not over-reaching;
- keeping the saw below chest height;
- keeping the thumb of the left hand around the back of the front handle;
- using the appropriate chain speed for the material being cut.

Using the chainsaw

Whatever the job, check the worksite thoroughly to identify any potential hazards. This is particularly important when undertaking felling or demolition work. Wherever possible maintain a clear working area on the site. For any work with a chainsaw ensure:

- the risks from the work have been assessed and controlled;
- the operator is competent to do the job;
- the operator wears the appropriate PPE;
- the operator either stops the engine or applies the chain brake when not cutting with the saw.



Don't forget to include the risks from manual handling in your assessment. Incorrect handling of timber can lead to operators suffering serious back injuries. Training in good manual handling techniques and using handling aids/tools should reduce the risk of such injuries.

Working with chainsaws - tree felling

Before felling starts on the worksite:

- contact the owners of any overhead power lines within a distance equal to twice the height of any tree to be felled to discuss whether the lines need to be lowered or made dead;
- do not start work until agreement has been reached on the precautions to be taken;
- check whether there are underground services such as power cables or gas pipes which could be damaged when the tree strikes the ground;
- if there are roads or public rights of way within a distance equal to twice the height of the tree to be felled, ensure that road users and members of the public do not enter the danger zone. You may need to arrange warning notices, diversions or traffic control.

When felling a tree:

- check if it is affected by rot;
- assess what could affect the direction of fall, such as wind conditions and whether the tree is leaning, has uneven growth or branches which could foul other trees;

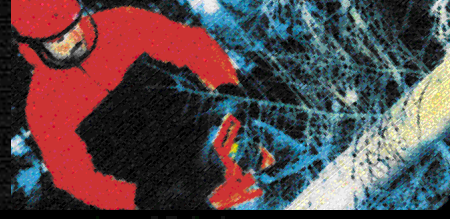
- be especially careful to check for broken crowns and branches which might fall during the operation;
- check both the tree to be felled and those nearby;
- operators may need to use aid tools such as alloy or plastic wedges, a breaking bar, a cant hook, a winch, or high-lift wedges and a sledgehammer;
- make sure operators have the right equipment available and the skills to use them correctly.

If a tree is likely to become hung-up on another during felling, operators will need to have the knowledge and the equipment to bring the hung-up tree down safely. Dealing with leaning trees or wind-blown trees also requires special skills.

Safe working practices for felling are given in the Forestry and Arboriculture Safety and Training Council (FASTCo) Safety Guides 300 series (see 'Further reading').

Working with chainsaws - off-ground work

Chainsaws should not be used off the ground unless the operator has been adequately trained in safe working techniques. Work off the ground involving the lifting and lowering of people or loads, including rope access work, will be subject to the requirements of the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) (see 'Further reading').



Work platforms

Always use a purpose-built platform which is properly secured to the lifting machine. Ensure that the platform is fitted with controls to enable raising and lowering. If this is not practicable, use a reliable system of communication with an alert operator. Lock off or 'scotch' controls that are not needed for the lifting operation (eg tilt controls). Ensure operators have received adequate training in the safe operation of the platform and use of a chainsaw from a work platform.

Work from ladders

Avoid using a chainsaw from a ladder. Chainsaws require both hands to be operated safely: work on a ladder requires one hand to hold the ladder so as to maintain a steady working position. Work from a ladder should only be done by an arborist trained in and equipped for tree climbing. When operating from a ladder, the climber must establish an independent anchor to the tree using a rope and harness.

Ropes and harnesses

Using a chainsaw from a rope and harness requires special skills. This should only be done by people who have obtained the relevant competence certificate or award for arboricultural work.

Further reading

HSE publications

Health surveillance at work HSG61
HSE Books 1999 ISBN 0 7176 1705 X

Health risks from hand-arm vibration: Advice for employers INDG175(rev1) HSE Books 1998

Introducing the Noise at Work Regulations
INDG75(rev) HSE Books 1989

Protect your hearing (pocket card)
INDG299 HSE Books 1999

Health surveillance in noisy industries: Advice for employers INDG193 HSE Books 1993

Farm and estate forestry operations AS15(rev)
HSE Books 1996

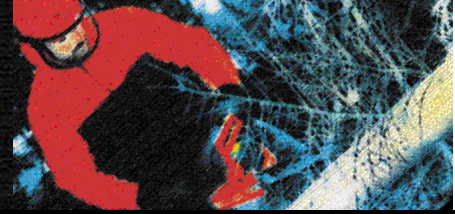
LOLER: How the Regulations apply to forestry
AIS29 HSE Books 1998

LOLER: How the Regulations apply to arboriculture AIS30 HSE Books 1998

Watch your back: Avoiding back strain in timber handling and chainsaw work
INDG145 HSE Books 1993

Basic advice on first aid at work
INDG347 HSE Books 2002

Working alone in safety INDG73(rev)
HSE Books 1998



FASTCo safety guides

The Forestry and Arboriculture Safety and Training Council (FASTCo) publish a comprehensive set of guides on safe working practices for forestry and arboricultural operations. Order forms and guides can be obtained from FASTCo Safety Guides, Forestry Commission Publications, PO Box 25, Wetherby, West Yorkshire LS23 7EW. Tel: 0870 121 4180 Fax: 0870 121 4181 e-mail: forestry@twoten.press.net or they can be downloaded from the FASTCo website at www.fastco.gb.com.

While every effort has been made to ensure the accuracy of the references listed in this publication, their future availability cannot be guaranteed.

Further advice

Training

Further advice on training can be obtained from a number of sources including colleges and the following organisations:

FASTCo, 231 Corstorphine Road, Edinburgh EH12 7AT. Tel: 0131 314 6247
Fax: 0131 316 4344;

Forestry Contracting Association Ltd, Dalfling, Blairdaff, Inverurie, Aberdeenshire AB51 5LA.
Tel: 01467 651368 Fax: 01467 651595;

Lantra, National Agricultural Centre, Kenilworth, Warwickshire CV8 2LG.
Tel: Lantra Connect 08457 078007
Fax: 02476 411655.

Competence assessment

Information on competence assessment in England and Wales can be obtained from:

Lantra, National Agricultural Centre, Kenilworth, Warwickshire CV8 2LG.
Tel: Lantra Connect 08457 078007
Fax: 02476 411655;

National Proficiency Tests Council, National Agricultural Centre, Kenilworth, Warwickshire CV8 2LG. Tel: 02476 696553
Fax: 02476 696128;

and in Scotland from:

Lantra (see above);

Scottish Skills Testing Service (SSTS), Ingliston, Edinburgh EH28 8NE. Tel: 0131 333 2040
Fax: 0131 333 2488;

Scottish Qualifications Authority (SQA), Hanover House, 24 Douglas Street, Glasgow G2 7NQ. Tel 0141 242 2214
Fax: 0141 242 2244.

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA
Tel: 01787 881165 Fax: 01787 313995
Website: www.hsebooks.co.uk (HSE priced publications are also available from book-shops.)

For information about health and safety ring HSE's InfoLine Tel: 08701 545500
Fax: 02920 859260 e-mail: hseinformationservices@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG. You can also visit HSE's website: www.hse.gov.uk

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 also available in priced packs of 15, ISBN 0 7176 1769 6, from HSE Books

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