



Chain Saws Safe Working Practices

INTRODUCTION

Portable hand held chain saws are widely accepted as being dangerous machines which need to be handled with the utmost care.

GENERAL

People new to chain saw use or not having sufficient training and operating experience to safely carry out chain saw operations should not be permitted to carry out chain saw operations unless undergoing supervised training until a Certificate of Competence has been gained.

After training, operators should be able to carry out their work in a safe manner and know their limitations. If tasks are significantly different to those included in the original training, additional training may be necessary if a risk assessment prescribes the need.

SELECTION OF CHAIN SAW OPERATORS

Operators should be mature and physically capable of handling a chain saw. They should be sufficiently agile to avoid or escape from dangerous situations. They should also be mentally alert, have sufficient aptitude for chain saw use and be able to use a chain saw right handed.

The outdoor environment is also relevant to the health of workers, particularly where terrain is rough and weather conditions adverse. Workers should be immunised against tetanus and be aware of other possible infections, such as Weil's disease (a form of leptospirosis contracted from rats) and the tick-borne Lyme disease.

Certain medical conditions are likely to bar operation of a chain saw. Before using one, the health of the individual operator should be assessed and if one of the conditions listed below is present, specialist occupational health expertise should be sought: the Employment Medical Advisory Service of the Health and Safety Executive can provide the names of specialists who give this advice.

Conditions which may impair fitness to use a chain saw

Heart disease.

Vibration White Finger (Raynaud's disease, 'dead hand').

Chronic lung disease, e.g. bronchitis causing excessive breathlessness.

Back and limb conditions restricting movement or impairing function, especially lifting.

Epilepsy and other conditions associated with faints or fits.

Balance disorders such as vertigo.

Poor eyesight.

Deafness.

Chronic mental illness.
Some conditions requiring the regular use of medication.

TRAINING

Introduction

Chain saws are potentially very dangerous machines which are likely to cause major injury in untrained hands. Anyone using a chain saw at work should have received adequate training in safe use. Further guidance on training and standards of competence is found in HSE Guidance Note GS 48. A range of recognised training courses are available which deal with different types of chain saw work. Make sure that your own training covers all the types of work you are likely to carry out.

Except while undergoing supervised training, people who are either new to, or not competent in chain saw use, should not operate chain saws while at work until they have been satisfactorily trained in the safe use and maintenance of chain saws, and obtained a Certificate of Competence specific to the relevant tasks.

Supervision of trainees at training courses

Where instruction is given at a recognised course, a competent instructor should provide it.

Supervision of trainees being trained at work

Where suitable training is provided at work, trainees should be supervised on a 1:1 basis by a person of at least 18 years of age who is also a competent chain saw operator. When the trainee is using the chain saw the training operator should be close enough to give adequate instruction and guidance. When the trainee is able to use a saw safely, the training operator can supervise the operations from a safe distance.

Training and supervision should continue on a 1:1 basis until the trainee is able to carry out tasks safely and effectively. When assessed to have reached this level of proficiency by the training operator then the ratio of training operators to trainees may be extended to 1:2. The training operator should always survey the working area to ensure there is adequate working space and that suitable escape routes exist. Once the trainee has reached a satisfactory level of competence the training operator may carry out additional work activities in the same vicinity.

Chain Saw Users

Chain saw users must meet the standards outlined above and hold a current Chain Saw Certificate of Competence in accordance with the guidance contained in HSE Guidance Notes GS 48.

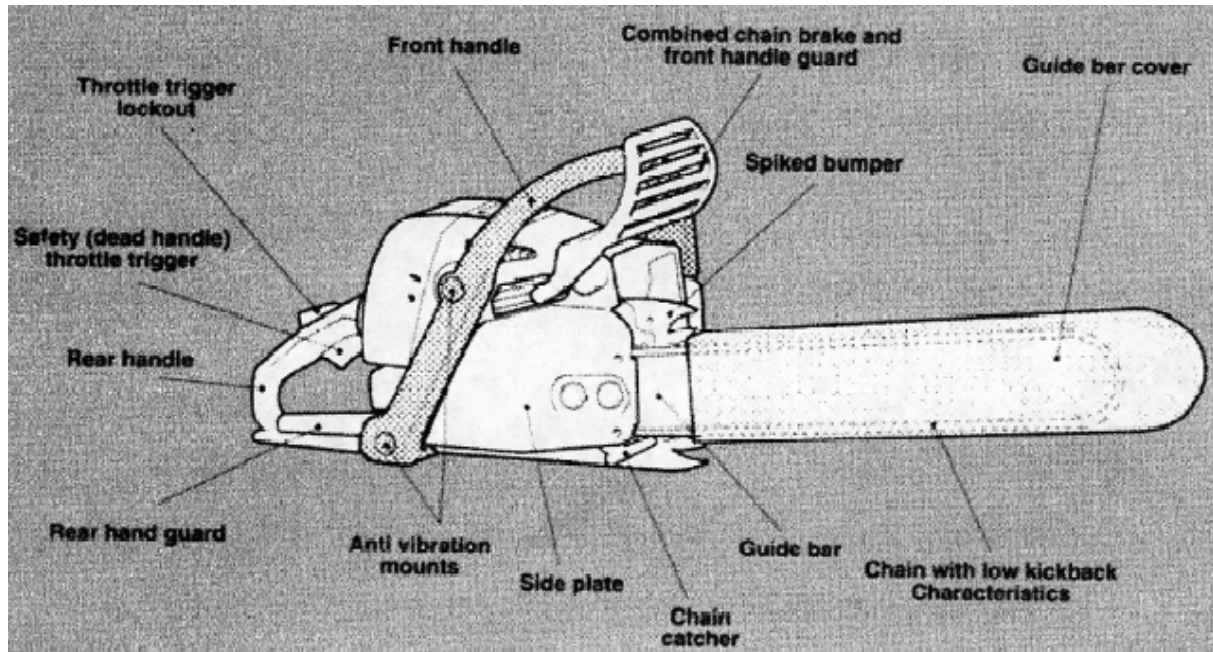
MAINTENANCE

Proper maintenance is essential for safe use. Make sure someone who is competent to do the job regularly and thoroughly examines the saw.

You should check the following items on a daily basis for damage or excessive wear:

- chain catcher
- silencer

- guide bar, drive sprocket and chain links
- side plate, front and rear hand guards
- anti-vibration mounts.



Pre-Use Checks

Before you use a chain saw make sure that the chain is properly tensioned and sharpened to the manufacturer's specifications. Incorrect filing of the cutters or depth gauges can make it difficult to control the saw safely. Also check that:

- the stop switch works
- all nuts, screws etc. are tight
- the chain brake functions correctly
- it isn't possible to squeeze the throttle trigger unless the throttle trigger lock out is pressed.

Fuelling and Lubrication

Make sure that petrol containers are in good condition, clearly labelled and have securely fitting caps. Plastic containers must be designed and approved for use with petrol.

Avoid getting dirt in the fuel system since this may cause the chain saw to be unreliable.

Replace all fuel caps securely immediately after fuelling and wipe away any spilt petrol. Keep fuel containers well away from fires and other sources of ignition - including the saw itself - during starting and use. Four metres is the minimum distance recommended.

Don't use discarded engine oil as a chain lubricant - it is a very poor lubricant and can cause cancer if it is in regular contact with the skin.

Protective Clothing

Suitable protective clothing should be worn – no matter how small the job.

safety helmet Conforming to BS 5240
(replace in accordance with manufacturer's instructions - normally every 2-3 years)

hearing protection

eye protection

clothing

To be close fitting (protection incorporating loosely woven long nylon fibres or similar protective material is recommended for the shoulders, neck, arms and upper chest area).

gloves

With protective pad on the back of the left hand.

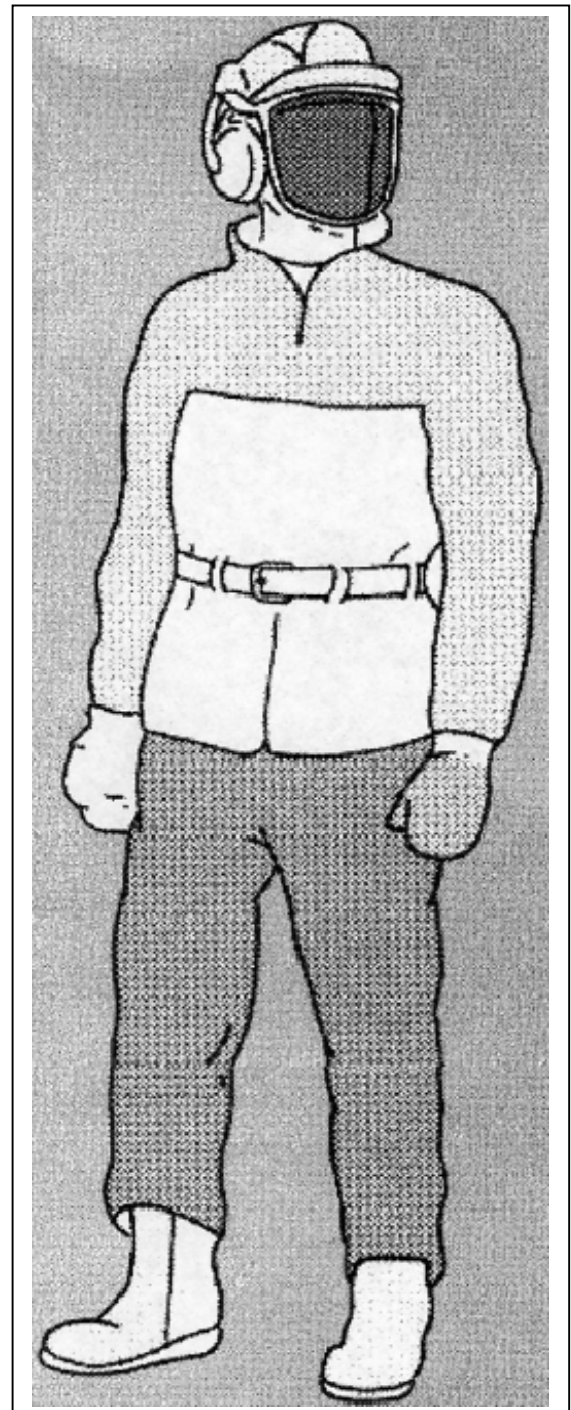
leg protection*

Incorporating loosely woven long nylon fibres or similar protective material (all round protection is recommended for tree surgeons and occasional users).

chain saw boots*

incorporating protection for the toes, top of foot and front of lower leg (alternatively protective gaiters worn in combination with steel toe capped safety boots are acceptable for occasional users working on even ground where there is little risk of tripping or snagging on undergrowth or brush).

*European standards for chain saw leg protection are expected to be published as part of British Standards BS EN 381 in 1995. Protective clothing complying with this standard should provide a consistent level of resistance to chain saw cut through.



SIZING UP THE JOB

Before you start work check out the site thoroughly to identify any areas of difficulty. Make sure you are competent to do the job. If a tree is likely to become hung up on another during felling, you need to have the knowledge and equipment to bring it down safely. Dealing with leaning or wind blown trees requires special skills.

If you are felling a tree it is particularly important to know if the tree is affected by rot. You also need to assess factors which could affect the direction of fall, such as wind conditions and whether the tree is leaning, has uneven growth or branches which foul other trees. Be especially careful to check for broken crowns and for branches which might fall during the operation. Check both the tree to be felled and those nearby.

You may need to use aid tools such as a soft nosed wedge, breaking bar, cant hook, winch, high lift wedges and hammer. Work out what you need before you begin.

If there are overhead power lines within two tree lengths of any tree to be felled you will need to contact the owners (usually an electricity company) well beforehand to discuss whether the lines need to be diverted or made dead. Don't start work until agreement has been reached on the precautions to be taken.

Check also 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 two tree lengths of the tree to be felled then you will need to 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.

STARTING THE CHAIN SAW

From cold: place the saw on level ground. Put your foot on the rear handle base plate and your hand on the front handle. Pull the starter cord firmly.

From hot: use the same method as above. Alternatively, grip the rear handle between your knees and the front handle with your left hand. Pull the starter with your right hand.

Every time you start the saw check that the chain stops when you release the throttle.

KICKBACK

Kickback is a sudden uncontrolled upward movement of the guide bar which happens when the guide bar nose hits an object. It is responsible for a significant proportion of chain saw accidents. Many of these are to the face and parts of the upper body where it is difficult to provide protection. A properly maintained chain brake reduces the effect, but it won't prevent it - so it is essential that you use the saw in a way that avoids kickback injury:

- Don't allow the guide bar nose to touch any obstruction, e.g. branches, logs, stumps
- Don't over-reach
- Keep the saw below chest height
- Keep the thumb of your left hand around the back of the front handle
- Always cut at full power.

USING THE CHAIN SAW

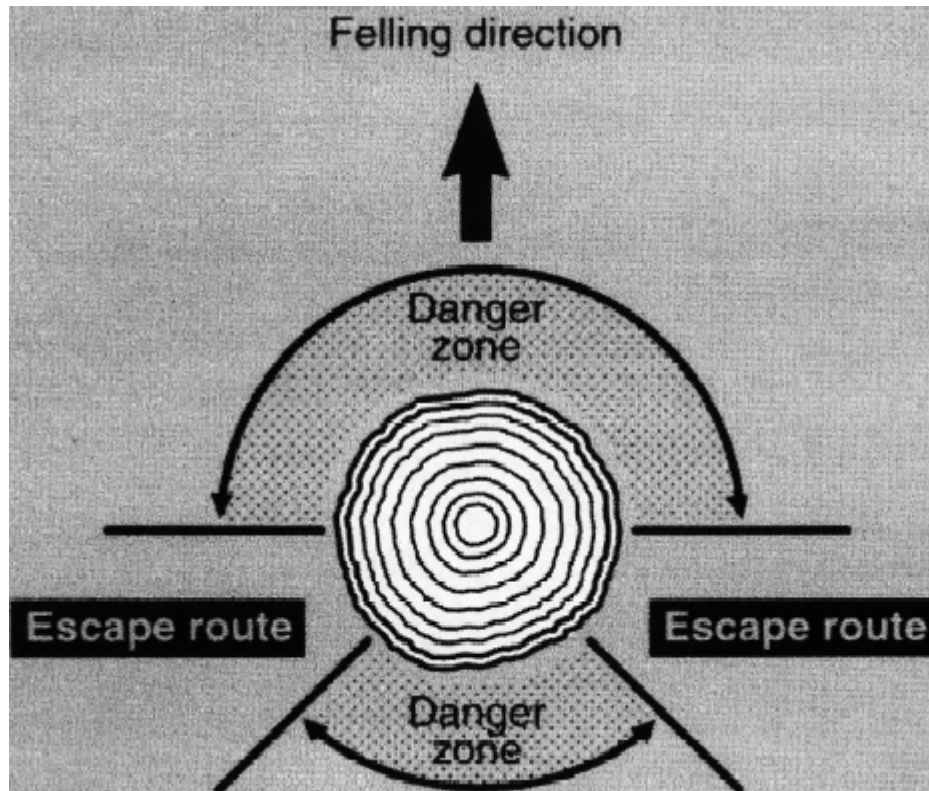
You need good judgement and quick reactions to use a chain saw. That means being alert, with your senses not dulled by fatigue, alcohol or drugs.

Chain saws are designed to be used right-handed and it is potentially very dangerous to use them left-handed. Always hold the saw firmly with your left hand on the front handle and

right on the rear. Make sure you have a good footing and if you are going to walk with the engine running always apply the chain brake first.

Felling

Before felling a tree decide on its direction of fall and select a suitable escape route as shown below (remember that the area directly behind the tree is a danger zone because the tree may bounce or slide back when it hits the ground). Keep your escape route clear.



Think about what equipment you need to prevent tree sitting back on the saw or to help it fall in the required direction. Make sure that the equipment is there when you need it. It will be too late to fetch it once you've got a problem.

Always check to make sure no other person is within a distance equal to twice the height of the tree being felled. Start by making a sink on the same side of the tree as the felling direction. Make the main felling cut on the opposite side of the tree stem. This needs to be positioned at, or slightly above, the lower sink cut to give a strong hinge for directional control. When the tree begins to fall, step back and to one side into your escape route.

Branch removal (snedding)

Keep the saw close to your body with its weight suspended on the tree or your right thigh. Watch out for movement when cutting branches under tension or compression. Before moving any cut branches put the saw in a safe position with the chain brake on or engine stopped. Never stand close to the lower side of the tree unless it is secured to prevent it rolling or sliding downhill.

Cross cutting

Make sure no-one comes closer than five metres or within twice the length of the longest piece of produce.

CHAIN SAWWORK IN TREES**Ladders**

Make sure the ladder is secured in position and you are independently secured to the tree so that both your hands are free to control the chain saw.

Ropes and harnesses

Using a chain saw from a rope and harness requires specialised skills. Do not attempt this type of work unless you have received specific instruction in safe techniques.

Top handle chain saws

These saws have the rear handle positioned over the top of the engine. They are intended only for use by trained tree surgeons working up in trees. Only use top handled chain saws if you have received instruction in their safe use and always use them two-handed if conditions permit.

HEARING PROTECTION

Chain saws produce very high levels of noise which is likely to cause permanent damage to your hearing unless you wear ear muffs or some other form of hearing protection. Ask your chain saw suppliers for advice. They should ensure you are provided with information which will help you choose hearing protection that is efficient against chain saw noise.

FIRST AID

Anyone working with chain saws needs to understand how to control major bleeding and how to deal with crush injuries. In remote sites people who have been injured may also be at risk of hypothermia. Always carry a personal first aid kit with you and make sure you have reasonable access to a more comprehensive kit.

WHEN YOU TRANSPORT THE SAW

- (i) Switch off the ignition even if you are only moving a few paces.
- (ii) Always hold the saw by the handle - never by the blade.

AFTER USE

- (i) **Check the cutting components.** Remove, clean, check, sharpen, lubricate the chain. Remove, clean and check the guide-bar. Clean out the groove and lubricate the roller nose, if fitted. Check the sprocket for signs of wear.
- (ii) **Protect the cutting components.** Pad the exposed chain against damage and to prevent it causing accidents. Proper chain covers can be purchased for this purpose and these provide the best form of protection.
- (iii) **Carry out a general check.** Clean the air filter. Make sure that the chain-oil feed is clear. Remove all dirt from the saw. Check all nuts and bolts for tightness.

USEFUL HINTS WHICH WILL ADD TO THE LIFE OF YOUR CHAIN

- (a) Soak the chain in an oil bath before use.
- (b) Ensure that the chain is properly fitted and under the recommended tension.
- (c) Run the chain slowly for five minutes giving it plenty of oil.
- (d) Switch off the engine and re-adjust the chain tension when chain and guide-bar are cold.

- (e) Re-check the tension until the chain is fully run in.
- (f) Keep the chain well lubricated when in use.
- (g) Keep your chain sharp. Always use a new file on a new chain.

REMEMBER

The modern chain saw is a safe, powerful and reliable tool but only when properly handled. Only YOU - the user can ensure efficient, economic and accident-free usage.

FURTHER ADVICE

If you need further advice on any health and safety matter your local agricultural inspector of the Health and Safety Executive will be able to help you. The nearest office will be in the telephone directory.

Information on where to obtain chain saw training is also available from the following organisations:

- ATB Landbase, 7 Raven Main, Ludlow, Shropshire SY8 1BW (tel. 01584 877047)
- Forestry and Arboriculture Safety and Training Council (FASTCo), 231
- Corstophine Road, Edinburgh EH12 7AT (tel. 0131 334 8083).