

-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
24 Douglas Street
GLASGOW G2 7NQ**

NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number-	1153011	-Session-	1991-92
-Superclass-	SG		

-Title-	FELLING AND PROCESSING TREES USING A CHAINSAW
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-DESCRIPTION-

Purpose	This module is designed to enable the candidate to develop his/her skills in maintaining and using a chainsaw to harvest small and medium sized trees and in taking down hung-up trees including the use of aid tools.
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Preferred Entry Level	No formal entry requirements.
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Outcomes	The candidate should: <ol style="list-style-type: none">1. check and start a chainsaw prior to beginning work;2. maintain and replace external components of a chainsaw;3. fell, de-limb and present produce for subsequent operations;4. take down hung-up trees using a chainsaw and aid tools.
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Assessment Procedures	Acceptable performance in this module will be satisfactory achievement of all the Performance Criteria specified for each Outcome.
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The following abbreviations are used below:

PC Performance Criteria
IA Instrument of Assessment

Note: The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

OUTCOMES 1-4 IA Assignments

All assessments must be carried out by an assessor who is registered with the Scottish Testing Service (SSTS)/National Proficiency Tests Council (NPTC).

OUTCOME 1 CHECK AND START A CHAINSAW PRIOR TO BEGINNING WORK

- PCs
- (a) The wearing of protective clothing and equipment is in accordance with the appropriate section of FSC 10.
 - (b) The pre-start check of the chainsaw is in accordance with the appropriate section of FSC 10.
 - (c) The fuelling of the chainsaw is in accordance with the appropriate section of FSC 10.
 - (d) The starting procedures for the chainsaw, from cold and hot, are in accordance with the appropriate section of FSC 10.
 - (e) The testing of the chain brake at full revs is in accordance with the following procedure:
 - (i) full throttle is applied;
 - (ii) chain brake is activated by rolling the left wrist;
 - (iii) chain stops as soon as the brake is applied;
 - (iv) throttle is released after the brake is activated;
 - (v) any failure of the chain brake is reported to the appropriate authority.
 - (f) The statement of the underpinning knowledge required to check and start a chainsaw prior to beginning work is correct.

IA Assignment

The candidate will be set an assignment to test the application of knowledge and skills required to check and start a chainsaw prior to beginning work.

The assignment will consist of two parts:

1. The candidate will be set a practical exercise for PCs (a) - (e) and will be required to check and start a chainsaw prior to beginning work, to the standards specified in the Performance Criteria.

The assessment should be carried out with the aid of an observation checklist and in accordance with the safety guidelines laid down in FSC10 and associated checklist.

2. The candidate will be set 4 restricted response questions for PC (f).

The questions should be based on those identified in NPTC (1990) Assessment Schedule 1A relating to elements 10.01.

Satisfactory achievement of the Outcome will be based on all the Performance Criteria being met. This will be demonstrated by the candidate:

1. correctly checking and starting chainsaw
2. producing 3 correct responses

OUTCOME 2

MAINTAIN AND REPLACE EXTERNAL COMPONENTS OF A CHAINSAW

PCs

- (a) The wearing of protective clothing and equipment is in accordance with the appropriate section of FSC 10.
- (b) The selection of tools, equipment and materials is appropriate to the job to be undertaken.
- (c) The checking of the guide bar and chain, upon removal, is correct in relation to:
 - (i) damage/wear to teeth and drive chassis;
 - (ii) damage/wear to guide bar;
 - (iii) straightness of guide bar.
- (d) The sharpening of the chain is in accordance with the manufacturer's recommended procedures.
- (e) The maintenance of the guide bar is in accordance with the manufacturer's recommended procedures.
- (f) The refitting of the guide bar and chain, including the tensioning of the chain is correct in terms of procedures followed.
- (g) The statement of the underpinning knowledge required to maintain and replace external components of a chainsaw is correct.

IA Assignment

The candidate will be set an assignment to test the application of knowledge and skills required to maintain and replace external components of a chainsaw.

The assignment will consist of two parts:

1. The candidate will be set a practical exercise for PCs (a) to (f) and will require the candidate to maintain and replace external components of a chainsaw to the standards specified in the Performance Criteria.

The assessment may be carried out with the aid of an observation checklist and the appropriate manufacturer's manual.

2. The candidate will be set 10 restricted response questions for Performance Criterion (g).

The questions should be based on those identified in NPTC (1990) Assessment Schedule 1A relating to element 10.02.

Satisfactory achievement of the Outcome will be based on all the Performance Criteria being met. This will be demonstrated by the candidate:

1. meeting Performance Criteria (a) to (f)
2. producing a minimum of 8 correct responses for Performance Criterion (g).

OUTCOME 3**FELL, DE-LIMB AND PRESENT PRODUCE FOR SUBSEQUENT OPERATIONS**

PCs

- (a) The selection of tools, equipment and materials are appropriate to the job to be undertaken, serviceable and comply with stipulated safety regulations.
- (b) The wearing of protective clothing and equipment is correct and in accordance with FSC 10.
- (c) The starting of the chainsaw is in accordance with the appropriate section of FSC 10.
- (d) The brashing of the tree is in accordance with the appropriate section of FSC 11.
- (e) The preparation of site for felling is in accordance with the appropriate section of FSC 11.
- (f) The felling of trees is carried out in accordance with the following specifications:
 - (i) the correct technique is used for the size of tree;

- (ii) with safety and accuracy and in the direction dictated by the work system and prevailing site conditions;
 - (iii) the appropriate section of FSC 11.
- (g) The treating of stumps is carried out using the correct technique, equipment and chemical for the species being treated.
 - (h) The de-limbing of the trees is correct in terms of technique and in accordance with the appropriate section of FSC 12.
 - (i) The cross-cutting of trees is accurate and in accordance with the appropriate section of FSC 13 and specified tolerances.
 - (j) The stacking of prepared timber is in accordance with the appropriate section of FSC 13 and given instructions.
 - (k) The statement of the underpinning knowledge required to fell, de-limb and present timber for subsequent operations is correct.

IA Assignment

The candidate will be set an assignment to test the application of skills and knowledge required to fell, de-limb and present timber for subsequent operations.

The assignment will consist of two parts:

1. The candidate will be set a practical exercise for PCs (a) to (k) and will require the candidate to complete the following, to the standards specified in the Performance Criteria:
 - (i) fell one tree (conifer or broad leaved), using the appropriate technique, for each of the following butt diameters:
 - (a) not exceeding the effective length of the guide bar;
 - (b) not exceeding 1.5 times the effective length of the guide bar.
 - (ii) de-limb, cross-cut and present produce for subsequent operations on one occasion to specifications determined by the tutor/trainer.

The assessment should be carried out with the aid of an observation checklist and in accordance with FSC Guidelines 10, 11, 12 and 13 and associated checklists.

2. The candidate will be set 8 restricted response questions for Performance Criterion (k).

The questions should be based on those identified in NPTC (1990) Assessment Schedule 1A relating to elements 13.01 and 13.03.

Satisfactory achievement of the Outcome will be based on all the Performance Criteria being met. This will be demonstrated by the candidate:

1. (i) correctly felling a tree for the type of butt diameter stated above;
- (ii) correctly delimiting, cross-cutting and presenting produce for subsequent operations on one occasion.
2. producing 6 correct responses.

OUTCOME 4 TAKE DOWN HUNG-UP TREES USING A CHAINSAW AND AID TOOLS

PCs

- (a) The selection of tools, equipment and materials are serviceable, appropriate to the job to be undertaken and comply with stipulated safety regulations.
- (b) The wearing of protective clothing and equipment is correct and in accordance with FSC 10 and related checklist.
- (c) The takedown of hung-up trees is carried out safely, in accordance with FSC 14 and related checklist and using the appropriate technique and aid tools for the size of tree and prevailing site conditions.
- (d) The statement of the underpinning knowledge required to take down hung-up trees using a chainsaw and aid tools is correct.

IA Assignment

The candidate will be set an assignment to test the application of knowledge and skills required to take down hung-up trees using a chainsaw and aid tools.

The assignment will consist of two parts:

1. The candidate will be set a practical exercise for Performance Criteria (a) to (c) which will require the candidate to complete the following to the standards specified in the Performance Criteria:
 - (i) take down a hung-up tree using hand tools;
 - (ii) take down a hung-up tree using a hand operated winch.

The assessment should be carried out with the aid of an observation checklist and in accordance with FSC Guidelines 10 and 14 and associated checklists.

2. The candidate will be set 4 restricted response questions for Performance Criterion (d).

The questions should be based on those identified in NPTC (1990) Assessment Schedule IA relating to elements 14.01 and 14.02.

Satisfactory achievement of the Outcome will be based on all the Performance Criteria being met. This will be demonstrated by the candidate:

1. correctly taking down a hung-up tree by each method stated above.
2. producing 3 correct responses.

**The following sections of the descriptor are offered as guidance.
They are not mandatory.**

CONTENT/CONTEXT

Safety regulations and safe working practices and procedures should be observed at all times.

Corresponding to Outcomes 1-4:

1. The statutory instruments relating to chainsaws. The safety factors as in Forestry Safety Council guides Nos. 10 to 15, FSC(N) Noise; FSC(34) First Aid; HSE guidance note GS 48 (Training and Standards of Competence for Users of Chainsaws.) AS(20) Agricultural safety leaflet.

The chainsaw complies with FSC 10 and AS 20. The chainsaw is checked for fuel and if required refuelled complying with the appropriate section of FSC 10.

Pre-start checks are carried out in accordance with the relevant section of FSC 10.

All protective clothing and equipment should be worn as stipulated in FSC 10.

The saw should be started using the techniques described in FSC 10. The chain brake should be tested at this time.

2. Daily, weekly, monthly maintenance operations to the engine unit, casings, guide bar and chain should be carried out in accordance with the manufacturers' recommendations. Defects should be reported to the appropriate authority.

The importance of maintaining aid tools should be stressed.

3. Felling using a chainsaw will be carried out in compliance with FSC 11 (Felling by Chainsaw). Snedding will be carried out in compliance with FSC 14 (Chainsaw Snedding). Presentation of produce where stacking is required will be carried out according to FSC 13 (Cross-cutting and Manual Stacking). Felling for a processor (limber/bucker) will be carried out as per the relevant section of FSC 11. The aid tools for the size of tree being felled must be available, eg. two highlift wedges plus a sledge hammer should be on site when trees of one and a half to two guide bar lengths are being felled.
4. Take down of hung-up trees will be carried out as recommended in FSC 14. All aid tools will be in a serviceable condition. Hand winches, wire ropes and straps should be in a good condition with safety devices that are secure and functional.

SUGGESTED LEARNING AND TEACHING APPROACHES

A practical module with the time being divided between the workshop and work site.

Audio-Visual material should be used, this should include such things as: Charlie and George - Forestry Commission film; Working Technique Chainsaw Snedding; Take Down of Hung-Up Trees; Felling, Introduction to Chainsaw.

If available, felling rigs should be used to practise felling cuts prior to going out into the wood.

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