



Trainer and Assessor Guide

to accompany
the customisable
e-learning resource

Chainsaw operation – Beginner to advanced

Developed by



2nd Edition (2021)

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Introduction

This Trainer and Assessor Guide provides suggestions for training providers on how to get the best results from the customisable interactive e-learning resource: *Chainsaw operation – Beginner to advanced* (2nd Edition - 2021).

The e-learning resource is designed for workers who are undertaking accredited training in chainsaw operation. The content material is based on the *Chainsaw Operation* booklets (published by Workspace Training) and presented on a Powerpoint platform, with voice-over narration, on-screen animations, interactive learning exercises and extensive use of graphics and photos.

This 2nd Edition of the resource has been updated in April 2021 to reflect the changes made to the FWP and AHC chainsaw competencies since the 1st Edition was released in 2016. The following topics have been significantly enhanced or added as new sections:

- pole saw operation and aerial pruning techniques
- visual assessment of tree defects and growth characteristics
- environmental care procedures.

The Powerpoint platform allows you to customise the content material if you wish – such as inserting your own graphics, modifying the voice-over and changing any other elements desired. Please note however, that the presentation contains many complex animations, as well as self-advancing slides and a wide range of other technical features, so a high level of Powerpoint expertise is required to successfully modify the files. We strongly recommend that you save the original presentation as a back-up file before commencing any modifications.

Competencies covered

The e-learning resource covers the background knowledge requirements for the following units of competency:

AHCMOM213: Operate and maintain chainsaws

AHPCPM205: Fell small trees

FWPCOT2259: Cut materials with a hand-held chainsaw

FWPCOT2254: Maintain chainsaws

FWPCOT2256: Trim and cut felled trees

FWPCOT3301: Trim trees using a pole saw

FWPCOT2253: Fell trees manually (basic)

FWPFGM3216: Fell trees manually (intermediate)

FWPFGM3217: Fell trees manually (advanced)

All of these competencies, with the exception of AHCMOM213, were endorsed in December 2020 as new (1st release) units and have superseded the previous versions on 'training.gov.au'.

Components in the resource package

The resource package contains the following electronic files saved to a USB stick:

- **e-learning presentation** – *Chainsaw operation – beginner to advanced*
- **sample assessment tools** – provided in a Word format to allow the content material to be customised or re-worked
- **mapping documents** – showing the mapping between the assessment tools and the competencies they cover
- **Trainer and Assessor Guide** – this document.

Please note that the sample assessment tools are provided as suggested content only for your own assessment tools. You are free to customise these documents or incorporate elements from them into your own versions. Although there are mapping documents provided, it is still the responsibility of every RTO to ensure that their assessment tools are fully compliant with the *Standards for RTOs* requirements, and are appropriate for the specific needs of their course participants.

Copying and distribution rights

Training providers who purchase the e-learning resource are permitted to make electronic copies for the immediate training needs of their organisation and for use with students enrolled in their own courses. Copies must not be resold to any party. The content material in the resource may be modified by the purchaser, however the source material must be appropriately acknowledged as being owned by Workspace Training.

Copyright and source material

Much of the material used in this e-learning resource is drawn from the original interactive CD project developed by Workspace Training for the Workplace English Language and Literacy (WELL) Program, funded by the Commonwealth Government. The original project was commenced in 2008 and was developed in two stages, concluding in 2010. Copyright in the original WELL version is owned by the Commonwealth Government under a Creative Commons 3.0 Licence.

Workspace Training was granted distribution rights to the WELL version by the Commonwealth Government. Since the abolition of the WELL Program in 2014 and the winding up of similar federal funding programs that supported the development of publicly-available training resources, we have continued to update and enhance the materials with the income received from the sale of the resource.

To maintain the spirit of the creative commons licence that applied to the original WELL resource, Workspace Training hosts a YouTube channel that provides free access to a video version of the presentation. This version is kept up-to-date with the latest Powerpoint presentations as they are developed. The only elements missing from the YouTube video version are the interactive learning exercises, which are not possible to recreate in a video format.

You can find the YouTube channel by going to the Workspace Training website and following the links, or by typing keywords into your search engine (such as 'youtube chainsaw workspace training').

Text and technical information

The text is narrated by David McElvenny. The technical information has been drawn from publications made available by Husqvarna and Stihl, as well as the experience and expertise of the following chainsaw experts:

Ben Sparks – Training Manager, Power Safety Training

Ray Stone – Principal, Chainsaw Accreditation and Safety Training

Goetz Graf – Director, Tree Management Australia.

Images

All line drawings in the interactive resource and accompanying assessment tools have come from the following sources:

- Husqvarna operator manuals and other publications, used with permission
- drawings by Kath Ware (Workspace Training), many of which are based on graphics provided by Husqvarna.

Most of the photos were taken by David McElvenny (Workspace Training). Other photos were supplied by members of the technical advisory committee for this project.

Disclaimer

Chainsaw use is an inherently dangerous activity. This e-learning resource is designed to provide background information for participants undertaking a face-to-face course in chainsaw operation, but it is not designed to be used as a substitute for direct face-to-face training.

While all care has been taken in the preparation of this resource, McElvenny Ware Pty Ltd (trading as Workspace Training) and all individuals involved in its development do not accept any liability for the information or advice provided in this training resource, the use of such information or advice, or any errors or omissions.

No liability is accepted for any damage or loss, including indirect and consequential loss, incurred by any person as a result of relying on the information or advice contained in this resource. The information is provided on the basis that all persons undertake full responsibility for assessing the relevance and accuracy of its content.

In all cases, chainsaw operators, trainers and other parties using this resource should follow the directions provided by the manufacturer of their equipment, and seek further advice from the manufacturer and/or their employer if they believe there are any discrepancies between the different sources of information.

Useful reference sources

There are many reference sources you can consult for more information on chainsaw operation and tree assessment. Below are some examples.

Workspace Training print publications

Chainsaw operation – Maintenance, Crosscutting and Pruning covers background knowledge material aligned to five competencies from the AHC and FWP Training Packages – current as of January 2021. It also includes pole saw operation, plus information on tree defect assessment and environmental care.

Chainsaw operation – Beginner to Advanced covers all material contained in *Chainsaw operation – Maintenance, Crosscutting and Pruning*, plus the skills involved in falling trees at basic, intermediate and advanced levels. It is aligned to nine competencies from the AHC and FWP Training Packages – current as of January 2021.

Tree Workers Manual provides background information for learners undertaking training in arboriculture or powerline tree trimming. The content material is aligned to nine competencies from the AHC and UET Training Packages – current as of January 2021.

For more information, or to place an order, please go to the Workspace Training website and follow the links, at: www.workspacetraining.com.au.

Reference books on tree defects and visual tree assessment techniques

Urban Tree Risk Management (2003) - downloadable from the web as a PDF document: <https://www.fs.usda.gov/nasfp/publications/urban-tree-risk-management-community-guide-program-design-and-implementation>

The Body Language of Trees – Encyclopedia of Visual Tree Assessment (2015), Mattheck C., Bethge K. and Weber K., Karlsruhe Institute of Technology

A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas (1994), Matheny N. and Clark J., International Society of Arboriculture, USA

Tree inspection for access and work - MIS306 (2018), Arboriculture Australia

YouTube clips

YouTube has countless videoclips on chainsaw operation, maintenance and tree falling techniques. Stihl and Husqvarna both have YouTube channels with many authoritative presentations. Just type 'Stihl chainsaw operation' or 'Husqvarna chainsaw operation' into your search engine and follow the links.

Training strategies

The e-learning resource is suitable for both flexible delivery and face-to-face training modes. Trainers conducting a group training session may use a data projector to screen the presentation, and treat the interactive exercises as discussion points.

Dealing with poor literacy and numeracy skills

There are many features built into the e-learning resource that are designed to support students with poor literacy skills. The sample assessment tools also contain various support features, including extensive use of graphics and minimal requirements for grammatically correct written answers.

None the less, it is true that most chainsaw operators need at least some level of literacy and numeracy ability to carry out their normal job functions back at work, such as reading work instructions, filling in job sheets, mixing 2-stroke fuel, and so on.

The level of literacy and numeracy ability you expect to see in your participants should be guided by the requirements of the units of competency. If it becomes clear that operators are struggling with these basic performance criteria, you should talk to them about the issues and possible causes. There are a variety of reasons why participants may have poor literacy and/or numeracy skills. These include:

- a lack of basic education, either from having left school early, or simply not being good at academic studies
- coming from a non-English speaking background, especially if their schooling was completed before they arrived in Australia
- having a learning difficulty, such as dyslexia.

Before you take steps to address the issue, you should establish what the likely causes are. In some cases, you may have to seek help from a professional literacy teacher. If it turns out that additional support is required, you can approach your local TAFE campus or community college to enquire about the support services available. Your RTO may also have contacts with specialist literacy teachers and access to special funding schemes.

In your own training delivery, you should always ensure that the literacy and numeracy demands of the course do not exceed the requirements of the job skill itself. In other words, if the primary function of a chainsaw operator is to use a chainsaw skilfully and safely, then the training course should lean heavily towards the hands-on development of those skills. This means that course notes, handouts and manuals should only be used as an adjunct to comprehensive practical training.

Developing a training and assessment strategy

The training and assessment strategy (TAS) you develop for each chainsaw course you deliver should reflect the profile of the learners and the environment that the training will take place in. Below are a few suggestions.

Suggested TAS for ‘Operate and maintain chainsaws’	
Course description	Basic skills in how to trim and crosscut felled trees and clear up fallen branches. Also covers basic chainsaw maintenance.
Learner profile	Parks and gardens employees, grounds-people, other outdoor workers, home handypersons.
Pre-requisites	None.
Duration	Two days.
Training location	Day 1 – classroom or group setting, covering safety, chainsaw principles and basic maintenance. May also include practical operation of the chainsaw. Day 2 – outdoor area, learning and practising chainsaw techniques.
Accreditation	<i>AHCMOM213 Operate and maintain chainsaws</i>
E-learning resource	Learners should view the first six sessions in <i>Module 1: Chainsaw and pole saw basics</i> before commencing the practical training. They should also work through the interactive exercises to help reinforce the concepts learned.
Assessment requirements	<p>Prior to assessment, learners should be taken through the details of the assessment tool for <i>AHCMOM213 Operate and maintain chainsaws</i> – in particular the practical demonstration requirements, which include the following demonstrations:</p> <ul style="list-style-type: none"> • cross-cut fallen timber that has compression and tension stresses • cutting with the bottom of the bar, top of the bar and bore cuts • carry out routine operator maintenance, including at least two of the following: adjusting tension, cleaning air filter, replacing spark plug, sharpening chain.

Suggested TAS for 'Fell small trees'	
Course description	Basic skills in the felling of small trees where the hazards have been assessed as low risk.
Learner profile	Parks and gardens employees, grounds-people, bush regenerators, other outdoor workers.
Pre-requisite	<i>AHCMOM213 Operate and maintain chainsaws</i>
Duration	Two days – ½ day of theory and 1 ½ days of hands-on tree falling and removal.
Training location	Day 1 – classroom or group setting, covering safety and basic techniques, follows by hands-on practice. Day 2 – Further practical instruction and practice in a bushland setting.
Accreditation	<i>AHCPCM205 Fell small trees</i>
E-learning resource	Before commencing the practical training, learners should view Sections 1 to 6 of <i>Module 1: Chainsaw and pole saw basics</i> , and the relevant sections from <i>Module 2: Tree falling and tree assessment</i> . They should also work through the interactive exercises to help reinforce the concepts learned.
Assessment	Prior to assessment, learners should be taken through the details of the assessment tool for <i>AHCPCM205 Fell small trees</i> – in particular the practical demonstration requirements, which includes the planning and felling of three small trees. Note that the sample assessment tool has been integrated with <i>AHCMOM213 Operate and maintain chainsaws</i> .

Suggested TAS for ‘Cut materials with a hand-held chainsaw’	
Course description	Basic skills in how to cross-cut timber or polymer materials (such as pipes) in a workplace or manufacturing plant.
Learner profile	People who work in controlled environments, such as in a timber yard or factory (not in a bushland environment).
Pre-requisites	None.
Duration	One day.
Training location	On-site at the learner’s own workplace, or at a well-equipped training facility complete with materials and equipment.
Accreditation	<i>FWPCOT2259 Cut materials with a hand-held chainsaw</i>
E-learning resource	Before commencing the practical training, learners should view Sections 1 to 5 of Module 1. They should also work through the interactive exercises to help reinforce the concepts learned.
Assessment	<p>Prior to assessment, learners should be taken through the details of the assessment tool for <i>FWPCOT2259 Cut materials with a hand-held chainsaw</i> – in particular the practical demonstration requirements, which include the following demonstrations:</p> <ul style="list-style-type: none"> • cross-cut 20 pieces of material to standardised lengths, maximising quality and recovery • carry out routine operator maintenance, including cleaning, chain tensioning and replacing or sharpening the chain.

Suggested TAS for ‘Trim and cut felled trees’ (including ‘Maintain chainsaws’)	
Course description	Basic skills in trimming and cutting of felled trees on-site, plus routine and periodic servicing of petrol or electric chainsaws.
Learner profile	Bush regenerators, parks and gardens workers, council employees, grounds-people, outdoor workers.
Pre-requisites	None.
Duration	Three days – one day of theory and two days of hands-on operation.
Training location	Day 1 – classroom or group setting, covering safety, chainsaw principles and maintenance. May also include practical operation of the chainsaw. Days 2 and 3 – forest or other bushland area, learning and practising chainsaw techniques and maintenance.
Accreditations	<i>FWPCOT2254 Maintain chainsaws</i> <i>FWPCOT2256 Trim and cut felled trees</i>
E-learning resource	Before commencing the practical training, learners should view Sections 1 to 6 in <i>Module 1</i> . They should also work through the interactive exercises to help reinforce the concepts learned.
Assessment	Prior to assessment, learners should be taken through the details of the integrated assessment tool for <i>FWPCOT2254 Maintain chainsaws</i> and <i>FWPCOT2256 Trim and cut felled trees</i> – in particular the practical demonstration requirements, which include the following demonstrations: <ul style="list-style-type: none"> • sharpen at least two chains • carry out routine and periodic maintenance according to the chainsaw manufacturer’s recommendations • trim and cut six felled trees • demonstrate at least three of the following types of cuts: bridging cuts, swinging cuts, side bind cuts, boring cuts, wedge cuts, ripping cuts, step cuts.

Suggested TAS for 'Pole saw operation'	
Course description	Basic skills in trimming tree branches with a pole saw – integrated with 'Maintain chainsaws' and 'Trim and cut felled trees'.
Learner profile	Bush regenerators, parks and gardens workers, council employees, grounds-people, outdoor workers.
Pre-requisites	There are no formal Training Package prerequisites, but learners should also be assessed (either previously or concurrently) as competent in the following units: <i>FWPCOT2254 Maintain chainsaws</i> <i>FWPCOT2256 Trim and cut felled trees.</i>
Duration	May be incorporated into a three day 'Trim and cut felled trees' course, possibly with an extension of half to one day.
Training location	Same as for 'Trim and cut felled trees'.
Accreditation	<i>FWPCOT3301 Trim trees using a pole saw</i>
E-learning resource	Learners should review all sections listed for the 'Trim and cut felled trees' course, and then view Section 7 of Module 1. They should also work through the interactive exercises to help reinforce the concepts learned.
Assessment	<p>Prior to assessment, learners should be taken through the details of the assessment tool for <i>FWPCOT3301 Trim trees using a pole saw</i> – in particular the practical demonstration requirements, which include the following demonstrations:</p> <ul style="list-style-type: none"> • trim branches on six trees • carry out routine operator maintenance according to the manufacturer's recommendations, including sharpening, replacing and tensioning the chain. <p>Note that the sample assessment tool provides for the integrated assessment of 'Maintain chainsaw', 'Trim and cut felled trees' and 'Trim trees using a pole saw'.</p>

Suggested TAS for 'Basic tree falling'	
Course description	<p>Basic skills in tree falling with a chainsaw, where the trees have the following characteristics:</p> <ul style="list-style-type: none"> • no excessive lean, and relatively easy to assess in terms of lean and weight distribution in the crown • no visible damage or defects • uniform in structure, and not prone to free splitting or adverse reactions • single stem or multi-stems that are not complex • small or medium diameter that can be safely felled using basic techniques • site characteristics that do not add complexity to the operation.
Learner profile	Tree workers, bush regenerators, council employees, volunteer emergency workers, national parks staff, other workers involved in tree falling.
Pre-requisites	<p>There are no formal Training Package prerequisites, but learners should have already been assessed as competent in the following units and gained appropriate experience in these skills:</p> <p><i>FWPCOT2254 Maintain chainsaws</i></p> <p><i>FWPCOT2256 Trim and cut felled trees.</i></p>
Duration	Three days – one day of theory and two days of hands-on tree falling.
Training location	<p>Day 1 – classroom or group setting, covering safety and tree falling theory. May also include practical introduction to cutting scarfs and back cuts.</p> <p>Days 2 and 3 – forest or other bushland area, learning and practising tree falling techniques at a basic level.</p>
Accreditation	<i>FWPCOT2253 Fell trees manually (basic)</i>
E-learning resource	<p>Before commencing the practical training, learners should revise the relevant sections in Module 1 and then view Sections 1 to 5 plus 7 and 8 of <i>Module 2: Tree falling and tree assessment</i>.</p> <p>They should also work through the interactive exercises in Module 2 to help reinforce the concepts learned.</p>
Assessment	<p>Prior to assessment, learners should be taken through the details of the assessment tool for <i>FWPCOT2253 Fell trees manually (basic)</i> – in particular the practical demonstration requirements, which include the following demonstrations:</p> <ul style="list-style-type: none"> • plan and fell four 'basic' level trees • cut the scarf at a 45° angle, to a depth of 1/4 of the tree's diameter, and a back cut 1/10 (of the diameter) above the scarf's bottom cut, leaving 1/10 (of the diameter) as hinge wood

	<ul style="list-style-type: none"> • carry out routine operator maintenance on the saw. <p>Note that the sample assessment tool provides for the integrated assessment of five FWP units, from ‘Maintain chainsaw’ up to ‘Advanced tree falling’. This should be customised to cover the specific units being delivered and assessed (or refreshed and re-assessed) in your own course.</p>
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Suggested TAS for ‘Intermediate tree falling’	
Course description	<p>Intermediate level skills in tree falling with a chainsaw, where the trees have the following characteristics:</p> <ul style="list-style-type: none"> • forward lean, backward lean or side lean that can readily be controlled by using wedges and/or larger hinge wood • limited visible damage or defects • multi-stemmed trees • dead trees with minimal visible defects that are not complex to fell • small or medium diameter that can be safely felled using intermediate techniques • site characteristics that may add complexity to the operation, such as the position of the operator or direction of fall.
Learner profile	Tree workers, bush regenerators, council employees, volunteer emergency workers, national parks staff, other workers involved in tree falling.
Pre-requisites	<p>There are no formal Training Package prerequisites, but learners should have already been assessed as competent in the following units:</p> <p><i>FWPCOT2254 Maintain chainsaws</i></p> <p><i>FWPCOT2256 Trim and cut felled trees</i></p> <p><i>FWPCOT2253 Fell trees manually (basic).</i></p>
Duration	May be incorporated into a ‘Basic tree falling’ course, possibly with an extension of one full day. Note that ‘Maintain chainsaws’ and ‘Trim and cut felled trees’ would need to have been completed in a separate course, and sufficient time allowed for the learner to gain appropriate experience in those skills before undertaking a tree falling course.
Training location	As for ‘Basic tree falling’.
Accreditation	<i>FWPFGM3216 Fell trees manually (intermediate)</i>
E-learning resource	Learners should review all sections listed for the ‘basic tree falling’ course, and then view Sections 6 and 7 of Module 2.
Assessment	Prior to assessment, learners should be taken through the details of the assessment tool for <i>FWPFGM3216 Fell trees manually (intermediate)</i> – in particular the practical demonstration requirements, which include the

	<p>following demonstrations:</p> <ul style="list-style-type: none"> • plan and fell six 'intermediate' level trees • demonstrate two of the following scarf techniques: standard, Humboldt, 90o and V scarf • demonstrate two different back cutting techniques on forward leaning, side leaning or back leaning trees • demonstrate the use of wedges (or other approved technique) to ensure that the tree falls in the direction of the scarf • cut the scarf depth between 1/4 and 1/3 of the tree's diameter, width 2/3 across the front of the tree, back cut 1/10 (diameter) above the scarf bottom cut, leaving 1/10 (diameter) as hinge wood • carry out routine operator maintenance on the saw. <p>Note that the sample assessment tool provides for the integrated assessment of five FWP units, from 'Maintain chainsaw' up to 'Advanced tree falling'. This should be customised to cover the specific units being delivered and assessed (or refreshed and re-assessed) in your own course.</p>
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Suggested TAS for 'Advanced tree falling'	
Course description	<p>Advanced level skills in tree falling with a chainsaw, where the trees have the following characteristics:</p> <ul style="list-style-type: none"> • any size, species and condition, as long as they are deemed safe to fell with a chainsaw • lean or weight distribution that add significant complexity to the operation, including heavy forward leaners • natural lean in a direction away from the desired direction of fall • visible lightning damage, burnt out trees, fire damaged butts • hung up trees • complex multi-stems, hollow butts, culls and stags • species prone to free splitting and adverse reactions during felling • terrain, slope and environment that may add significant complexity to the operation.
Learner profile	<p>Tree workers, bush regenerators, council employees, volunteer emergency workers, national parks staff, other workers involved in tree falling.</p>
Pre-requisites	<p>There are no formal Training Package prerequisites, but learners should have already been assessed as competent in the following units and gained appropriate experience in these skills:</p> <p><i>FWPCOT2254 Maintain chainsaws</i></p> <p><i>FWPCOT2256 Trim and cut felled trees</i></p> <p><i>FWPCOT2253 Fell trees manually (basic)</i></p>

	<i>FWPFGM3216 Fell trees manually (intermediate).</i>
Duration	Dependent on the availability of suitable trees and the background experience of the learner – possibly two to three days (on top of their previous training and assessment in the prerequisite units listed above).
Training location	Dependent on the availability of suitable trees and any regulations or restrictions that apply to their removal.
Accreditation	<i>FWPFGM3217 Fell trees manually (advanced)</i>
E-learning resource	Learners should view Section 7 of Module 2, plus any other sections required for their refresher training.
Assessment	<p>Prior to assessment, learners should be taken through the details of the assessment tool for <i>FWPFGM3216 Fell trees manually (intermediate)</i> – in particular the practical demonstration requirements, which include the following demonstrations:</p> <ul style="list-style-type: none"> • plan and fell six ‘advanced’ level trees • carry out routine operator maintenance on the saw. <p>Note that the sample assessment tool provides for the integrated assessment of five FWP units, from ‘Maintain chainsaw’ up to ‘Advanced tree falling’. This should be customised to cover the specific units being delivered and assessed (or refreshed and re-assessed) in your own course.</p>