

► Professional Tree Felling Competency Assessment Tool



FEBRUARY 2018

Surname:	First names:	Date of birth:
NZQA number:	Employer:	Location:
Assessor name:	Date of 1 st assessment:	Follow-up assessment dates:

INSTRUCTIONS

This document is designed as a training tool. The candidate can either fill the answers out themselves or another person can ask them the questions and write the answers in the spaces provided.

If the answers have already been filled out, check them against the appropriate reference material and tick the correct answers. If the answer given is incorrect or unclear, ask follow-up questions to make sure there hasn't been a misunderstanding. If the answer is still not right, put a cross in the box.

When the practical observations are made (including the stump inspection), if the technique is incorrect or unsafe, put a cross in the box. If the practice shown is putting the faller at risk, stop the process and call in the foreman or contractor to address the issues.

A FISC-appointed assessor must conduct this assessment for it to be recorded in the Safetree database and recognised as an endorsement of current competency.

Note: A tree faller must hold a level 4 Tree Felling qualification to be eligible to be assessed for this certification.

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TREE FALLER'S DETAILS

Name of tree faller:			Date of birth:	
Assessment date:			Time:	
Formal training received <i>(Tick units held)</i> The faller must hold either unit 17765 or unit 28561 to be formally assessed for certification. Unit status to be recorded as either: A (achieved); N (not achieved); or T (under training)	Units held	Unit title (abridged)		Status (ANT)
	17769	DKO general requirements for forest operation		
	6916	DKO the approved code of practice		
	6917	Demonstrate basic chainsaw operation		
	43	Maintain a chainsaw		
	23411	Demonstrate basic chainsaw operation in a commercial forest		
	6924	Process trees on a landing		
	17763	DKO tree felling		
	17766	Fell trees safely using a chainsaw		
	17765	Fell trees in a commercial forest harvesting operation		
	28560	Fell trees in a commercial forest harvesting operation		
	28561	Plan and fell trees using advanced techniques in a harvesting operation		
	1255	Fell trees using machine assistance		
	24569	Fell trees using machine pushing assistance		
	24570	Fell trees using back pulling machine assistance		
	19765	Assess and deal with individual wind-throw trees in a forest		
	1270	Salvage wind-throw trees		
	17756	Assess and manage individual hazardous trees		
24580	DKO the role and responsibilities of the tree felling observer			
22994	DKO factors that affect the performance of forestry workers			
Years of experience:			Qualifications held:	
Crew name:			Forest owner:	
Location:			Assessor name:	

ASSESSMENT CONDITIONS

Operation	Species	Terrain	Undergrowth
<input type="checkbox"/> Cable <input type="checkbox"/> Ground based <input type="checkbox"/> Production thin <input type="checkbox"/> Road line	<input type="checkbox"/> D Fir <input type="checkbox"/> P Radiata <input type="checkbox"/> Euc <input type="checkbox"/> Other	<input type="checkbox"/> Steep <input type="checkbox"/> Moderate <input type="checkbox"/> Flat	<input type="checkbox"/> Heavy <input type="checkbox"/> Moderate <input type="checkbox"/> Light
Forest type	Average diameter	Weather	Age of trees
<input type="checkbox"/> Pruned thinned <input type="checkbox"/> Pruned unthinned <input type="checkbox"/> Unpruned thinned <input type="checkbox"/> Unpruned unthinned	<input type="checkbox"/> 20-30 cm <input type="checkbox"/> 30-40 cm <input type="checkbox"/> 40-50 cm <input type="checkbox"/> 50 cm +	<input type="checkbox"/> Windy <input type="checkbox"/> Wet <input type="checkbox"/> Fine <input type="checkbox"/> Calm	<input type="checkbox"/> 20-24yrs <input type="checkbox"/> 24-28yrs <input type="checkbox"/> 28-32yrs <input type="checkbox"/> 32+ yrs

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1) CODE OF PRACTICE

This section tests the knowledge the tree faller has about Section 11 in the *Approved Code of Practice for Safety and Health in Forest Operations*. Ask the tree faller the questions and score the answers according to their accuracy and content. Some rules will be covered in later sections so they are not all included here – for example, tree driving has its own section later in the assessment.

Note: For all sections put a ✓ or ✗ in the column to the right depending on whether the answers are correct or incorrect.
Add up the ticks and enter the total number in the 'score' column.

Questions	Specific details	Tree faller's responses	Score
What are the general rules relating to communication? <i>(2 points, 2 answers required)</i>	Communication and monitoring. <i>(2 answers required)</i>		
What are the rules regarding felling aids and their use? <i>(4 points)</i>	When falling trees greater than 20 cm/200mm in diameter at the stump, what should the faller carry? <i>(3 possible answers, at least 2 required)</i>		
	What particular wedging hazard should be avoided if using a steel hammer? <i>(1 answer required)</i>		
What are the rules regarding safety zones and the two tree length rule? <i>(13 points, 11 answers required)</i>	According to the Code of Practice, what must be at least two tree lengths away from any tree being felled? <i>(All 4 answers required)</i>		
	When can machines go within the two tree length restriction? <i>(All 2 answers required)</i>		
	Under what circumstances can a person be closer than two tree lengths from a tree being felled? <i>(5 possible answers, at least 3 required)</i>		
	Who else can use a chainsaw in the two tree length zone? <i>(1 answer required)</i>		
	What precautions need to be taken if felling trees within two tree lengths of any road, railway or public access way? <i>(1 answer required)</i>		

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1) CODE OF PRACTICE CONTINUED...

Questions	Specific Details	Tree faller's responses	Score
What should be done with the following difficult felling situations?	A hung-up tree and... A cut-up tree. <i>(2 answers required)</i>		
What are the rules for machine assisted tree felling? <i>(13 points available, 11 required to pass)</i>	What are the general requirements for machine-assisted tree felling? <i>(4 answers required)</i>		
	What are the requirements when using a ground-based machine to push trees over? <i>(2 possible answers)</i>		
	What are the requirements if using a ground-based machine to back pull trees over? <i>(4 possible answers)</i>		
	What are the requirements when using a cable yarder to back pull trees over? <i>(3 possible answers)</i>		
TOTAL SCORE FOR CODE OF PRACTICE:			

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2) THE FIVE-STEP FELLING PROCESS

Explain the five-step felling process.

Questions	Tree faller's responses	Score
Site assessment. <i>(2 points, 2 answers required)</i>		
Individual tree assessment. <i>(5 points, 4 answers required)</i>		
Preparation of the work area and escape route. <i>(3 points, 3 answers required)</i>		
Using safe felling techniques. <i>(3 points, 2 answers required)</i>		
Retreat and observe. <i>(3 points, 2 answers required)</i>		
TOTAL SCORE FOR THE FIVE-STEP FELLING PROCESS:		

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3) THE SEVEN KEY CAUSES OF HARM

Identify the seven key causes of harm relating to tree felling and explain how a faller should minimise the chances of them occurring.

Key cause of harm	Tree faller's responses	Score
Faller working too close to other people or plant. <i>(4 points, 2 answers required)</i>		
Incorrect or poor felling technique. <i>(3 points, 1 answer required)</i>		
Broken limbs or tops lodged in the tree. <i>(5 points, 2 answers required)</i>		
Hung-up trees left standing, or using incorrect techniques to fell them. <i>(6 points, 2 answers required)</i>		
Unplanned backward stem movement (rebounding) or butt swing (sideways). <i>(5 points, 2 answers required)</i>		
Dead trees. <i>(4 points, 2 answers required)</i>		
Being struck from behind by an object or tree. <i>(5 points, 2 answers required)</i>		
TOTAL SCORE FOR THE SEVEN KEY CAUSES OF HARM:		

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4) HEALTH HAZARDS

Identify health hazards related to tree falling.

Questions	Tree faller's responses	Score
<p>Explain at least eight health hazards you are exposed to as a tree faller. (15 points, at least 8 required)</p>		

TOTAL SCORE FOR HEALTH HAZARDS:

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5) BASIC FELLING CUTS

Questions	Tree faller's responses	Score
What is the recommended depth of a conventional scarf? <i>(1 point, 1 answer required)</i>		
What is the recommended scarf depth if felling a spar? (1 point available)		
What is the recommended top cut angle of the scarf? (1 point, 1 answer required)		
What is the purpose of the scarf? <i>(2 points, 1 answer required)</i>		
What are the recognised alternative scarf cuts and when would they be used? <i>(Up to 6 points available)</i>		
Explain the required dimensions of wing cuts? <i>(3 points, 2 answers required)</i>		
What is the purpose of putting in wing cuts? <i>(1 point, 1 answer required)</i>		
How high above the bottom cut of the scarf should the back cut be put in? <i>(1 point, 1 answer required)</i>		
What is the purpose of the back cut? <i>(1 point, 1 answer required)</i>		
What are the requirements of a conventional back cut? <i>(2 points, 2 answers required)</i>		
What is the recommended thickness of the hingewood? (1 point, 1 answer required)		
What is the purpose of the hingewood? <i>(2 points, 2 answers required)</i>		

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5) BASIC FELLING CUTS CONTINUED...

Describe a quarter cut back cut and explain where it would be used. <i>(3 points available)</i>		
Describe a split level back cut and explain where it would be used. <i>(3 points available)</i>		
Describe a bore and release back cut and explain where it would be used. <i>(4 points available)</i>		
Describe bore cutting the scarf and explain where it would be used. <i>(2 points available)</i>		
TOTAL SCORE FOR BASIC FELLING CUTS:		

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6) WEDGING TECHNIQUES

Questions	Tree faller's responses	Score
Explain when wedges should be used? <i>(5 possible points, 3 answers required)</i>		
Why are wedges used? <i>(Up to 4 points, 3 answers required)</i>		
Explain the correct timing to insert wedges? <i>(2 points, 1 answer required)</i>		
Which way up should the wedge be inserted? <i>(1 point, 1 answer required)</i>		
Why are wedges inserted this way? <i>(1 point, 1 answer required)</i>		
Explain the purpose of double wedging? <i>(1 points available)</i>		
Explain the technique of double wedging? <i>(3 points available)</i>		
How can lift be increased with double wedging? <i>(4 points available)</i>		
Explain the technique of stacking wedges? <i>(4 points available)</i>		
TOTAL FOR WEDGING TECHNIQUES:		

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7) TREE DRIVING

Questions	Tree faller's responses	Score
Under what circumstances is tree driving considered acceptable practice? <i>(2 points, 2 answers required)</i>		
Give examples of situations when tree driving can be used? <i>(5 points, 3 answers required)</i>		
What are the most important tree driving rules? <i>(7 points, 7 answers required)</i>		
What are the requirements of an observer? <i>(2 points available)</i>		
Explain the role of an observer? <i>(4 points, 3 answers required)</i>		
TOTAL SCORE FOR TREE DRIVING:		

8) ENVIRONMENTAL

Questions	Tree faller's responses	Score
Name the environmental constraints that could be faced when tree falling? <i>(6 points, 3 answers required)</i>		
TOTAL SCORE FOR ENVIRONMENTAL:		

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9) PLANNING

Questions	Tree faller's responses	Score
What would show that tree felling has been properly planned? (2 points, 2 answers required)		
What are the key components of the tree felling plan? (10 possible points, 5 answers required)		
How do we know the plan is effective? (2 points available)		
What tree felling safety precautions should be discussed and decided at the daily tailgate/toolbox meetings? (5 points, 3 answers required)		
What is the procedure for stopping work in adverse weather conditions? (1 point available)		
Explain how to open up a felling face when first starting in a setting? (2 points available)		
What are the hazards associated with opening up a felling face? (3 points available)		
TOTAL SCORE FOR PLANNING:		

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10) TRAFFIC CONTROL

Questions	Tree faller's responses	Score
When is traffic control needed during tree felling? <i>(3 points, 2 answers required)</i>		
What is the process used to determine road control measures? <i>(2 points available)</i>		
What signage is required when falling next to a road or track that can be accessed by a vehicle? <i>(5 points, 4 answers required)</i>		
TOTAL SCORE FOR TRAFFIC CONTROL:		

11) COMMUNICATION

Questions	Tree faller's responses	Score
What are the specific requirements for check-in procedures? <i>(3 points, 3 answers required)</i>		
How could a faller identify where the current felling location is? <i>(3 points, 2 answers required)</i>		
Under what circumstances should a faller call up more often? <i>(3 points, 2 answers required)</i>		
What are the sequential steps a faller should follow if an accident happens on the felling face? <i>(6 points, 6 answers required)</i>		
TOTAL SCORE FOR COMMUNICATION:		

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PRACTICAL ASSESSMENT

12) PRE-START CHECK – PPE

Mandatory protective equipment: Use ✓ or ✗	Required?	Meets standard?	Used/worn	Score
Safety helmet – within expiry date?	Required			
Ear muffs – grade 4 hygiene kit good?	Required			
Hi vis top/vest – has AS/NZS number?	Required			
Leg protection – no cuts in protective layers?	Required			
Safety footwear – meets company rules?	Required			
Eye protection – visor or safety glasses?	Required			
First aid kit – two large sterile wound dressings #15.	Required			
Carries radio – with designated call-up channel?	Required			
TOTAL SCORE FOR MANDATORY PROTECTIVE EQUIPMENT: Enter NC (non-compliant) in box if any PPE is not 100% ➔				

13) PRE-START CHECK – DOCUMENTATION

Documentation: Use ✓ or ✗	Required?	Available?	Understood?	Score
Harvesting plan – signed by the principal?	Required			
Tree felling plan – for the current setting?	Required			
Tailgate/toolbox minutes – signed by faller?	Required			
Evidence of ongoing competence? <small>(Note 1)</small>	Required	Note the type of evidence provided and the date of collection. <i>(Up to 5 points possible)</i>		
TOTAL SCORE FOR DOCUMENTATION: Enter NC in box if any documentation is missing ➔				

Note: A tree faller must produce **at least one** of the following methods to show ongoing competence:

- Evidence of regular supervision, diary notes or internal reports.
- Audits carried out by a principal or forest owner.
- Self audits or Safe Behavior Observations done by fellow crew members.
- Top Spot assessments completed on them.
- Log book entries showing when checks have been done and any outcomes.
- Evidence of recent assessment for tree felling units of an equal or higher level, e.g. machine assist.

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14) PRE-START CHECK – FELLING EQUIPMENT

Felling equipment: Use ✓ or ✗	Required?	Meets standard?	Used	Score
Suitable hammer and four wedges?	Required			
Belt to carry equipment?	Required			
Approved fuel containers?	Required			
Adequate means of hydration? ^(Note 1)	Required			
Fire extinguisher – charged if required? ^(Note 2)	Optional			
TOTAL SCORE WITHOUT EXTINGUISHER:				
TOTAL SCORE WITH EXTINGUISHER:				

Note 1: If weather conditions are cool, it is acceptable for fallers to leave their means of hydration with their lunch bags, but they must have some form of hydration available to them on site.

Note 2: If an extinguisher is required, it must be fully charged and meet company requirements. The minimum required score for this section will be 10. If an extinguisher is not required, the minimum required score will be 8.

15) PRE-START CHECK – CHAINSAW

Chainsaw: Use ✓ or ✗ to record results	Required?	Meets standard?	Used	Score
On/off switch?	Required			
Safety mitt?	Required			
Chain brake?	Required			
Throttle lock out?	Required			
Rear hand guard?	Required			
Muffler with spark arrestor?	Required			
Chain catcher peg?	Required			
Effective anti-vibration mounts?	Required			
All components secure and intact?	Required			
Chain stationary at idle?	Required			
Chain maintained – correctly fitted and sharpened?	Required			
Handles on all files/sharpening tools?	Required			
Is the chainsaw bar long enough and in good condition? ^(Note 3) (1 point)				
Is the chainsaw size appropriate for the trees being felled? ^(Note 3) (1 point)				
TOTAL SCORE FOR CHAINSAW (1 point for each tick):				

Note 3: Bar length and saw size can be issues of personal preference or cost, so unless the saw size or bar length is putting the user at risk, the faller should not be penalised for having something different to what is considered normal for the trees being felled.

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16) STUMP CHECK

The purpose of the stump check is to identify habits that might injure the faller or result in unnecessary value loss.

Instructions

- Walk over 10 stumps with the faller and assess each according to the criteria in the table.
- Each time a stump doesn't meet the standard, ask the faller to explain why.
- Use ✓ or ✗ to record results. If more than two crosses in any line, enter NC (this time for not competent) at the bottom.

Stump details/number	1	2	3	4	5	6	7	8	9	10	Score
Date felled, if known (DD/MM) /											
Stump height meets criteria?											
Correct scarf size, $\frac{1}{4}$ to $\frac{1}{3}$ of diameter?											
No over-cuts in scarf?											
Correct hinge shape, no scallops?											
Correct hinge width, > 10% of diameter?											
Felling cuts on same plane?											
Correct wing cut dimensions, if used?											
Correct back cut height, > 10% of diameter?											
TOTAL SCORE FOR STUMP CHECK (1 point for each tick):											
IF THERE ARE MORE THAN 2 CROSSES IN ANY LINE, ENTER NC IN THIS BOX ➔											

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17) INDIVIDUAL TREE ASSESSMENT

The faller identifies the next five trees they will fell. Number these trees, and before felling begins, ask the faller to assess them and answer the questions below. If access is restricted, this exercise can be done one tree at a time. Use ✓ or ✗ to record results.

Enter the code letters for their answer to the light-grey shaded top line of each question, then add ✓ or ✗ to the second line if their assessment was correct. Note that some trees may have more than one entry per line, e.g. a tree may have more than one hazard. The reference point for all questions is standing behind the tree, looking towards the direction it's going to fall. If the faller did not follow the original plan, ask why not as it may have been appropriate to change. Add up the ticks to determine the score for each element.

Questions on individual tree assessment: Enter codes	1	2	3	4	5	Score
What are the tree characteristics? (N = normal, S = spar, M = malformed, DL = double leader, D = dead)						
Was the assessment correct?						
Estimate of tree diameter (cms). <i>(For assessor use only)</i>						
What are the risks associated with this tree? (OH = overhead, TC = tree characteristics, FP = in the fall path, AT = around the tree, ER = in the escape route, RF = restricting the fall, N = no risks obvious)						
Was the assessment correct?						
How will these risks be managed? (E or M)						
Was the assessment correct?						
What is the predominant lean and side lean? (NL = no lean, FL = forward lean, HFL = heavy forward lean, BL = back lean, HBL = heavy back lean, SL = side lean, HSL = heavy side lean, L = left, R = right)						
Was the assessment correct?						
What is the intended direction of fall? (F = flat, D = downhill, A = across slope, U = uphill, OS = open spaces, ST = into standing trees)						
Was the assessment correct?						
Where will the escape route be? L or R (left or right)						
Was the assessment correct?						
What felling aids are required? (N = none, W = wedges, MA = machine assistance, D = drive, O = observer)						
Was the assessment correct?						
Back cut to be used? (C = conventional, Q = quarter cut, B = bore and release, S = split level)						
Was the assessment correct?						
On which side of the tree will the back cut be finished? L or R						
Was the assessment correct?						
TOTAL SCORE FOR INDIVIDUAL TREE ASSESSMENT (1 point for each tick):						

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18) SAFE WORK PRACTICES

Instructions:

- The faller will continue falling (a minimum of 10 trees) and their performance on each tree should be assessed using the criteria below. Use a ✓ or ✗ to indicate whether industry standards have been met.
- If the ground is clear and there is no need to cut an escape route, note whether the faller checks where their route will be.
- The faller's use of felling aids should be pre-planned, not a remedy to fix an incorrect tree assessment. If the faller decides felling aids aren't needed (and the tree falls to plan), they are demonstrating the correct use of felling aids.

Any out-of-the-ordinary tree characteristics? (Use codes below)											
S = spar, W = windthrow, D = dead, DR1 = 1 tree drive, DR2 = 2 tree drive, DR = driver											
Tree number		1	2	3	4	5	6	7	8	9	10 Score
Estimate tree diameter. (For assessor use only)											
Preparation	Checks for hazards before starting.										
	Clears around tree before starting the cuts.										
	Clears escape route.										
Felling	Felling cuts meet industry standards.										
	Correct use of felling aids demonstrated.										
	Re-checks for overhead hazards.										
	Watches top of tree for movement.										
Retreat & moving to next tree	Uses escape route (ER).										
	Estimates ER distance (m).										
	Watches for hazards in vicinity of falling tree.										
	Stays in safe position until things stop moving.										
	Safely moves to next tree.										
	Uses correct chainsaw techniques.										
	Fells to plan.										
	TOTAL FOR SAFE WORK PRACTICES (1 point for each tick):										
IF THERE ARE MORE THAN TWO CROSSES IN ANY OF THE GREY LINES, ENTER NC IN THE BOX ➔											

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19) SUMMARY PAGE

Instructions for scoring the outcomes

Tally up the scores in each section and compare them with the **maximum possible** score. The **difference** between a **tree faller's score** and the **maximum possible** score will show where they need to brush up on their knowledge of the rules, the condition of their equipment or their practical skills.

If the tree faller's percentage is **below the minimum required percentage in any category**, the faller has **not met** the standards and needs further training in that particular category. If the faller's **overall score** is **below 85%**, the result is **not competent (NC)**. Use this information positively to bring the faller up to the required level.

Note: A faller may have achieved the minimum percentage required but still not pass because they have not provided a required answer to a question, or they have had **more than the allowable number of crosses in any one of the practical skills assessments**, (see accompanying notes in each section).

Knowledge questions	Tree faller's score	Maximum score possible	Tree faller's percentage	Minimum % required
1) Code of practice		34		70%
2) Five-step felling process		16		75%
3) Seven key causes of harm		32		65%
4) Health hazards		15		50%
5) Basic felling cuts		34		75%
6) Wedging techniques		25		75%
7) Tree driving		20		75%
8) Environmental		6		65%
9) Planning		25		70%
10) Traffic control		10		70%
11) Communication		15		85%
RESULT – KNOWLEDGE QUESTIONS		232		70%

Practical skills	Tree faller's score	Maximum score possible	Tree faller's percentage	Minimum % required
12) Pre-start check – PPE		16		100%
13) Pre-start check – Documentation		11		65%
14) Pre-start – Felling equipment		10		85%
15) Pre-start – Chainsaw		26		95%
16) Stump check		80		90%
17) Individual tree assessment		45		90%
18) Safe work practices		130		85%
RESULT – PRACTICAL SKILLS TEST:		318		90%

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OVERALL RESULTS

Overall result	Tree faller's score	Maximum score possible	Tree faller's percentage	Minimum % required
Total score, knowledge and practical skills tests		550		80%
Result of Tree Felling Certification Assessment: <i>Circle the outcome ➔</i>			C	NC

CONGRATULATIONS ON COMPLETING THIS TREE FELLING COMPETENCY ASSESSMENT

Improving skills and renewing competency is a vital part of staying safe and productive on the job.

Now that you've completed this training tool, concentrate on correcting the things you could have done better. A registered trainer/assessor can help.

If you're satisfied with your result, and you reckon you are up to the challenge, contact a Forestry Industry Safety Council assessor and get an official assessment done. Go to the Safetree website for contact details.

Completing this assessment successfully means your achievements will be acknowledged in a national database. It also means you and your crewmates know you're a safe and competent tree faller, and others can see you're serious about keeping your skills sharp.

See Safetree.nz for more tools and information to help you and everyone around you stay safe.