

ECS 3: Advanced Tree Felling Techniques (Medium & Large Trees)		Diagnostic tools				Critical	
		Written	Practical	Oral	Other		
What the chainsaw operator must be able to do: (Practical Test: Recommended min. guide bar size 38cm, at least one tree over effective guide bar length in diameter at felling height)							
Max. time allowed 2hr30min							
Pre-requisite: ECC2							
ECS3-1	TAKE CARE OF YOURSELF (PPE) AND OTHERS AROUND YOU AT WORK: Candidate to wear appropriate PPE, sign RA & show ID:	√	√				1
1:1	Chainsaw safety trousers		√			√	1:1
1:2	Chainsaw safety boots		√			√	1:2
1:3	Safety helmet		√			√	1:3
1:4	Eye & ear protection		√			√	1:4
1:5	Gloves appropriate to task		√				1:5
1:6	Non-snag outer clothing		√				1:6
1:7	Personal /Squad First Aid Kit - on work site		√			√	1:7
1:8	Whistle/Mobile/Radio		√				1:8
ECS3-2	PLANNING THE WORK INCLUDING WHAT TO DO IF THERE IS AN EMERGENCY: Candidate to identify hazards relevant to the site & trees:	√	√				2
2:1	Risk Assessment – walk site		√			√	2:1
2:2	Method statement - verbal		√				2:2
2:3	Emergency planning		√				2:3
ECS3-3	OPERATIONAL SAFETY CHECKS (chainsaw ON): Candidate to check chainsaw for condition/sharpness etc and pre-use safety:	√	√				3
3:1	Cold/Warm start method (ground/'leg lock')		√				3:1
3:2	Safe start distance from fuel (min.1m or greater according to national guidance)		√				3:2
3:3	Chain brake tested with saw running		√			√	3:3
3:4	Saw checked for oiling (e.g. oil throw test or oil present on drive links)		√				3:4
3:5	Chain not moving when throttle released (no chain creep)		√				3:5
3:6	On/off switch is working (pull choke to stop if not, then label not to be used)		√				3:6
3:7	Chain tension 'warm' re-checked		√				3:7
ECS3-4	MEET LEGAL & SITE ENVIRONMENTAL REQUIREMENTS IN ACCORDANCE WITH NATIONAL STANDARDS - Candidate to check specifications:	√	√				4
4.1	Protection of fauna, flora, wildlife, waterways, site specifications etc, regards pollution/damage:					√	4.1
ECS3-5	PREPARE THE TREE FOR FELLING BY SAFE BRASHING: Candidate to remove low branches considering:	√	√				5
5:1	Correct "break-in"		√				5:1
5:2	Position of the saw in relation to the operator, bar on opposite side of stem or out of line of head/neck and body		√				5:2

5:3	Saw body not above shoulder height		✓		✓	5:3
5:4	Operating technique		✓			5:4
5:5	Brushing close to the stem as appropriate to the situation		✓			5:5
ECS3-6	FELL A MINIMUM OF 2 TREES IN A SAFE & ERGONOMIC WAY (One tree should be hung-up) - Candidate to fell an upright tree and either a backward, forward or side-weighted tree as chosen by the assessor (One tree over 38cm and one tree over 56cm at felling height). A winch may be used to assist the felling if felling aids not considered sufficient.	✓	✓			6
6A:1	Trees Inspected for signs of rot or decay, loose branches & accurate evaluation of weight distribution and selection of fuel storage		✓		✓	6A:1
6A:2	Choice of felling direction made		✓			6A:2
6A:3	Escape route(s) prepared and selected		✓		✓	6A:3
	Candidate to cut a sink to determine felling direction, using:					
6B:1	Safe stance		✓			6B:1
6B:2	Top sink / notch cut made (normally between 45-60°)		✓			6B:2
6B:3	Bottom sink cut as close to ground as practicable (unless site criteria different)		✓			6B:3
6B:4	Cuts 20-30% into stem unless tree condition dictates otherwise		✓			6B:4
6B:5	Sink cuts to meet accurately (not undercut)		✓		✓	6B:5
6B:6	Sink facing in the chosen direction of fall		✓			6B:6
6B:7	Chain brake as appropriate		✓			6B:7
6B:8	Boring cut made where appropriate into the middle of the sink at appropriate height, depth and width to remove center of the tree		✓			6B:8
	Candidate to make the main felling cut/s using a safe and effective felling method (e.g. a standard cut, a bore and radial cut, a 'split-level' cut, a "boring cut" technique leaving rear hold; "Danish" / 'saved corner' cut; or any other cut) appropriate to the aspect of the tree.					
6C:1	Correct felling method chosen for the particular aspect of the tree		✓		✓	6C:1
6C:2	Safe stance		✓			6C:2
6C:3	Buttresses removed &/or "ears" cut to avoid tearing, as appropriate depth and height to avoid tearing as appropriate		✓			6C:3
6C:4	Site check for safety before the main felling cut started completed & shout verbal warning (engine off)		✓		✓	6C:4
6C:5	Main felling cut no more than 10% of tree diameter above level of sink		✓			6C:5
6C:6	Felling cuts made with "pushing chain" or "pulling" chain as appropriate		✓			6C:6
6C:7	Safe withdrawal of the saw and chain brake used as appropriate		✓			6C:7
6C:8	Final position of operator is in safe position relative to aspect of tree		✓			6C:8
6C:9	A hinge retained appropriate to the tree diameter, aspect and condition		✓		✓	6C:9
6C:10	Appropriate aid tools as required to fell tree		✓			6C:10
6C:11	Use a prepared escape route as soon as the tree begins to fall, not losing sight of tree		✓		✓	6C:11
6C:12	Look up and check for loose branches, tops etc.		✓			6C:12
ECS3-7	REMOVE BRANCHES & CROSSCUT STEMS IN A SAFE & ERGONOMIC WAY (crown breakdown of suitable large conifer or broadleaf of adequate weight should be used) - Safe working practice will include:	✓	✓			7
7A:1	Correct stance and support of the saw on tree and/or right leg		✓			7A:1
7A:2	Left thumb around the front handle		✓			7A:2
7A:3	Neither handle released while the chain is moving		✓			7A:3
7A:4	Apply chain brake or switch off saw if reaching across bar, clearing branches or when negotiating obstacles		✓		✓	7A:4

	Candidate to avoid:				
7A:5	Walking when saw is on same side of tree as operator	✓			7A:5
7A:6	Reaching too far round with saw on far side of tree	✓			7A:6
7A:7	Cutting towards legs or body	✓		✓	7A:7
7A:8	Using kick-back zone on tip of guide bar	✓		✓	7A:8
7A:9	Overreaching with chainsaw	✓			7A:9
7A:10	Straddling the stem or branches	✓			7A:10
7A:11	Working on lower side of tree on side slopes	✓			7A:11
	Trees are de-limbed / broken down using a safe and effective method appropriate for the branching habit, cut flush with the stem:				
7B:1	Sequence of cuts and position of the saw to remove branches is appropriate for the branching habit , end result flush with the stem	✓			7B:1
7B:2	Work from top side of the tree on side slopes	✓		✓	7B:2
7B:3	Small branch wood removed before cutting main branches as appropriate	✓			7B:3
7B:4	Work only from compression side of branches under severe 'side' tension	✓		✓	7B:4
7B:5	Compression and tension forces are assessed and appropriate cuts used	✓			7B:5
7B:6	Heavy branches gradually reduced in length	✓			7B:6
7B:7	Work inwards carefully to deal with ascending and overhanging branches on the upper side of the stem	✓			7B:7
7B:8	Do not work under overhanging limbs	✓		✓	7B:8
7B:9	Retain main supporting branches on stem as appropriate	✓			7B:9
7B:10	Roll the trunk to bring branches over shoulder height to a safe cutting level as appropriate	✓			7B:10
7B:11	Saw is switched off or chain brake applied before clearing severed branches according to Job Specification	✓			7B:11
	Candidate to remove the top of the tree in accordance with site specifications (top cut at right angles with appropriate tension/compression cuts):				
7C:1	Cut top(s) at appropriate diameter	✓			7C:1
7C:2	Remove top(s) with a safe method of cutting	✓			7C:2
7C:3	Dispose of top(s) according to Job Specification	✓			7C:3
	Remove remaining branches using a safe and effective method (using an "under sweep" technique only, is not acceptable):				
7D:1	Turn stem using appropriate aid tools/techniques	✓			7D:1
7D:2	Use stem for protection when removing remaining branches	✓			7D:2
7D:3	Use a safe and effective method to sever remaining branches	✓			7D:3
7D:4	All branches removed flush with the stem	✓			7D:4
	Crosscut pole length timber over guidebar length in diameter to a specification. Candidate to use:				
7E:1	Safe stance; head/neck are not allowed across of line of chain	✓		✓	7E:1
7E:2	Reducing cuts as appropriate	✓			7E:2
7E:3	Correct boring technique	✓			7E:3
7E:4	Correct angle and depth of cuts	✓			7E:4
7E:5	Compression cut first as appropriate	✓			7E:5
7E:6	Correct location of final (tension) cut	✓			7E:6
7E:7	Correct use of throttle	✓			7E:7

7E:8	Correct accuracy of cuts		√				7E:8
7E:9	Correct use of chain brake		√				7E:9
7E:10	Accuracy of measurement within reasonable tolerance		√				7E:10
7E:11	Appropriate aids for rolling / lifting		√				7E:11
ECS3-8	TAKE DOWN A HUNG-UP TREE IN A SAFE & ERGONOMIC WAY WITH A WINCH: (Winch can be hand or machine operated but must be adequate for the size of tree. All components, including anchor points, must be fit for purpose and compatible with the system used.) Safe working practice will include:	√	√				8
	Candidate to prepare the site to facilitate take down procedure:						
8A:1	Assess position of tree and check condition of hinge		√				8A:1
8A:2	Remove debris and obstacles from take down route		√				8A:2
8A:3	Decide on the final felling direction		√				8A:3
8A:4	Prepare new escape routes as appropriate		√		√		8A:4
8A:5	Select and position winch equipment as required		√				8A:5
8A:6	No unauthorized person within two tree lengths or directly below on steep slopes		√		√		8A:6
	Candidate to partially sever the hinge of hung-up tree with the chainsaw using:						
8B:1	Correct stance		√				8B:1
8B:2	Safe position to side of tree		√		√		8B:2
8B:3	Position and angle of cuts for removal of appropriate part of the hinge		√				8B:3
8B:4	Safe withdrawal of the saw leaving 10-20% retaining hinge either side		√				8B:4
	Candidate to set up winch taking into consideration:						
8C:1	Stump Shaped (if applicable)		√				8C:1
8C:2	Supporting remnants of hinge removed carefully		√		√		8C:2
8C:3	Position of strop on the butt		√				8C:3
8C:4	Attachment of winch cable to strop		√				8C:4
8C:5	Position and anchorage of winch		√				8C:5
8C:6	Communication with winch operator is clearly established (if applicable)		√		√		8C:6
8C:7	Gloves used if cable handled		√				8C:7
	Candidate safely operates the winch:						
8D:1	Position of winch operator		√				8D:1
8D:2	Winch is operated until tree falls		√				8D:2
8D:3	Reposition strop at butt or reposition anchor as appropriate		√				8D:3
8D:4	Offset winch with e.g. a snatch block on steep slopes or around obstacles if appropriate		√				8D:4
8D:5	Use escape route(s)		√		√		8D:5
8D:6	Tree is winched until stable condition on the ground		√				8D:6
8D:7	Strops removed, checked and stowed		√				8D:7
8D:8	Winch rope rewound correctly		√				8D:8
8D:9	Site left safe & tidy		√				8D:9
What the chainsaw operator must know and understand: (Theory Test) ECS3:							

1	Demonstrate knowledge of how to identify hazards and comply with the control measures of risk assessments	√	√			√	1
2	Demonstrate knowledge of emergency planning and procedures for the site using the actual emergency plan for that site	√	√	√		√	2
3	Demonstrate knowledge of electrical emergency planning and procedures	√	√	√			3
4	Demonstrate knowledge of the safety considerations to be observed in planning the felling operation	√				√	4
5	Demonstrate knowledge on safety points to consider when felling a larger tree that is weighted in the felling direction	√	√				5
6	Demonstrate knowledge on safety points to consider when felling a larger tree which is weighted against the intended felling direction		√				6
7	Demonstrate knowledge of optional techniques that help to ensure the felling direction and / or quality of timber is maintained when felling large trees					√	7
8	Demonstrate knowledge of the consequence of not using the correct technique to a tree is that is weighted in the felling direction	√				√	8
9	Demonstrate knowledge of the consequences of not using the correct technique when felling a tree which is slightly weighted against the intended felling direction	√				√	9
10	Demonstrate knowledge of felling rotten or dead trees	√				√	10
11	Demonstrate knowledge of identification of safety points when planning the branch removal procedure	√					11
12	Demonstrate knowledge of the safety considerations required during crosscutting	√					12
13	Demonstrate knowledge of how to remove a trapped saw	√					13
14	Demonstrate knowledge of requirements to consider when timber is stacked	√					14
15	Demonstrate knowledge of the safety considerations when selecting the winching equipment used	√				√	15
16	Demonstrate knowledge of the safety points that the chainsaw operator needs to consider in relation to the winching operation	√	√				16
17	Demonstrate knowledge of multiplication of forces encountered when using pulleys/snatch blocks for offset pulling and double rigging and choice of anchor points	√	√				17
		Written	Practical	Oral	Other	Critical	