



City & Guilds NPTC Level 2 Award in Forest Machine Operations – Felling (0020-17)

Version 1.1 (March 2025)

Assessment Pack – Centre and Candidate Version

Version and date	Change detail	Section
1.0 March 2024	First version	All
1.1 March 2025	Formatting changes	Throughout

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Introduction

This assessment relates to the unit in the Qualification handbook. The assessment can be achieved at pass only. If any task is not yet met the candidate is unsuccessful.

This assessment is for the following units and learning outcomes:

210 Prepare and operate machinery to fell trees covering the following learning outcomes:

1. Be able to work safely
2. Be able to select and prepare machinery
3. Be able to drive and manoeuvre machinery
4. Be able to fell trees
5. Know how to prepare, drive and manoeuvre machinery
6. Know how to fell trees
7. Know relevant health and safety legislation and industry good practice

General guidance on the requirements for assessment can be found in the Assessor Guidance General guidance on the requirements for assessment can be found in the Assessor Guidance document available on the City & Guilds web site www.nptc.org.uk

The assessor must complete the Practical Table mark sheet for each candidate which should be kept by the assessor for a minimum period of twelve months.

Record of assessment (ROA)

A prepopulated record of assessment must be completed by the assessor following an assessment. The number of outcomes is listed above, these must be ticked into the relevant met or not met sections of the ROA.

ARAS Forms

An Assessment Result Advice Slip (ARAS form) must be completed by the assessor following an assessment. The ARAS is not a certificate but, based on the evidence of the candidate's performance, is a recommendation to City & Guilds that the candidate is either met or not met the assessment criteria. All feedback is to be recorded by the assessor on the feedback section of the ARAS form.

Assessment Time

The expected assessment time for this qualification is 1.5 – 3 hours.

Site/workshop requirements:

Trees suitable for felling with the machine the candidate is being assessed on and within capabilities of the felling head, minimum of 10 trees (5 single cut and 5 multiple cut).

Equipment/Machinery:

Base unit which the candidate already holds the COC for and felling head all fit for purpose and suitably maintained. Any tools which may be needed to carry out any maintenance which may be required. If relevant an in date LOLER certificate.

Consumables:

Fuels, oils and grease as may be required, if relevant to the felling head being used suitable replacement chains. PPE required as per site and machine. Operators' manual and/or training materials should be available if needed.

This is not an open book assessment; however additional technical information may be sought from the relevant manufacturer's operator manuals or any other appropriate training or safety publication.

Practical observation descriptor table

210 Prepare and operate machinery to fell trees

Activity number and description from check list		Assessment criteria
1.1	Identify the hazards and risks associated with the working area and the proposed work	<p>Identify hazards (anything with the potential to cause harm) and risks (who might be harmed), relevant to:</p> <p>The work area/work to be done</p> <p>Hazards</p> <ul style="list-style-type: none"> • power lines • terrain • access routes • chain shot • risk zones • struck by timber • other <p>Risks</p> <ul style="list-style-type: none"> • others on site • operator • public • other machine operators • other <p>The machine</p> <p>Hazards</p> <ul style="list-style-type: none"> • struck by machine • access and egress • moving parts • hot surfaces • working at heights • high pressure fluids • other <p>Risks</p> <ul style="list-style-type: none"> • public • operator • environment • other
1.2	Use appropriate tools, equipment and Personal Protective Equipment	<p>To include:</p> <ul style="list-style-type: none"> • All tools, equipment and Personal Protective Equipment are used in line with industry good practice e.g. AFAG/HSE. • During all on site operations PPE in accordance with industry good practice must be worn

		<p>Personal Protective Equipment identified could include:</p> <ul style="list-style-type: none"> • safety helmet (if required) • hearing protection (where needed) • suitable protective gloves • protective boots • non snag outer clothing • high visibility clothing where risk assessment identifies it • hand cleaning materials • first aid kit • other
1.3	Carry out work specification in accordance with relevant legislation, industry good practice and maintains health and safety	<ul style="list-style-type: none"> • All activities must be completed in a way which protects the operator and those around them
1.4	Carry out work to minimise environmental damage	<ul style="list-style-type: none"> • It is ensured that any possible environmental damage is minimised at all times during on site operations
2.1	Carry out pre and post start checks to test all operating functions of the equipment	<p>Pre and post start checks on base machine according to the operator's handbook and to include:</p> <ul style="list-style-type: none"> • machine on level ground • ensure machine services in neutral and lowered where applicable • engine stopped and key removed • check engine oil, transmission/hydraulic oil, coolant and fuel level, engine air filter • importance of cleanliness • seat, steering mechanism and mirror adjustment • operator seat restraint is functional (where applicable) • check operator protection systems • check relevant access and egress points • check wheel nuts • check pin bush wear and security • check for cracks/fatigue • check for hydraulic leaks • security of components • check safety decals • LOLER certificate (if required) • radiators (coolant and hydraulic) • fuel filters and/or water trap • grease where and when appropriate <p>Check security of loader to base:</p>

		<ul style="list-style-type: none"> • bolts cracks leaks <p>Check security of loader attachment:</p> <ul style="list-style-type: none"> • bolts cracks <p>Check attachment:</p> <ul style="list-style-type: none"> • security • condition • hydraulic leaks • pin and bushes • pipe work • guarding <p>Maintenance of forwarder:</p> <p>Chassis/ Frame</p> <ul style="list-style-type: none"> • cracks • pin security • bushes • cylinders • attachment • loose or broken bolts • cables and connections • guarding <p>De-limbing mechanism</p> <ul style="list-style-type: none"> • security • sharpness • cracks • profile • pins and bushes • lubricant <p>Saw chain (if fitted)</p> <ul style="list-style-type: none"> • sharpness • tension (if applicable) • wear and tear • broken tie straps • lubricant • guarding <p>Guide bar (if fitted)</p> <ul style="list-style-type: none"> • straight • overheating • sprocket • nose • lubricant <p>Sheers (if fitted)</p> <ul style="list-style-type: none"> • sharp • cracks • straight • alignment • lubricant
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		<ul style="list-style-type: none"> • guarding <p>Circular saw (if fitted)</p> <ul style="list-style-type: none"> • sharp • straight • cracks • missing teeth • set • lubricant • guarding <p>Hydraulic hoses</p> <ul style="list-style-type: none"> • leaks • cracks • cuts • abrasions • security • guarding <p>Environmental considerations</p> <ul style="list-style-type: none"> • disposal • storage of oils on site • spill kit mats used
2.2	Plan work and the work site to maintain safe working areas to operate the timber processor	<p>Planning work may include:</p> <ul style="list-style-type: none"> • with minimal damage to the worksite • standing trees • tracks • roads • drains • environment • in accordance with the site and job specification • other <p>Utilise additional safeguards such as:</p> <ul style="list-style-type: none"> • barriers • banksman • signs • other workers • risk zone e.g. adjacent roads and tracks • other
3.1	Drive the machine on site in a safe and effective way	<p>Candidate to drive or manoeuvre machine</p> <ul style="list-style-type: none"> • safe access • start in accordance with manufacturers recommendations • appropriate gear selection • smoothness of take off • drive in a straight line • left and right turn • reverse

		<ul style="list-style-type: none"> • appropriate speed for conditions • appropriate use of brakes • parking brake applied and effective • stop in accordance with manufacturers recommendations • safe egress
3.2	Manoeuvre the machine on site and in a safe and effective way	<p>Candidate to drive or manoeuvre machine</p> <ul style="list-style-type: none"> • safe access • start in accordance with manufacturers recommendations • appropriate gear selection • smoothness of take off • drive in a straight line • left and right turn • reverse • appropriate speed for conditions • appropriate use of brakes • parking brake applied and effective • stop in accordance with manufacturers recommendations • safe egress
4.1	Identify trees in accordance with the job specification	<p>Tree Identification may include:</p> <ul style="list-style-type: none"> • marking • paint • GPS and digital mapping • site plan • tape • other
4.2	Fell trees in accordance with the job specification	<p>To include:</p> <p>Single cuts</p> <ul style="list-style-type: none"> • use machinery in accordance with relevant legislation and manufacturer's instructions • identify and fell trees in accordance with job specification • correct felling sequence i.e. tree selection • correct positioning of base machine • correct positioning of felling head • stem gripped correctly • tree felled in correct direction • avoid damage to remaining crop • low stump height • stump treatment (if applicable) • avoidance of splits, spikes and shattered butts

		<ul style="list-style-type: none"> environmental and conservation requirements complied with industry recognised guidelines are followed <p>Multiple cuts:</p> <ul style="list-style-type: none"> use machinery in accordance with relevant legislation and manufacturer's instructions identify and fell trees in accordance with job specification correct felling sequence i.e. tree selection correct positioning of base machine correct positioning of felling head stem gripped correctly first cut placed in the intended felling direction second cut level or slightly above first cut avoid damage to remaining crop low stump height stump treatment (if applicable) avoidance of splits, spikes and shattered butts environmental and conservation requirements complied with industry recognised guidelines are followed <p>Thinning:</p> <ul style="list-style-type: none"> fell to prevent damage to the stems machine positioned to avoid root, stem and branch damage position of product relative to standing trees thinning regime identified
4.3	Use machinery in accordance with relevant legislation and manufacturer's instructions	<p>Use machinery in accordance:</p> <ul style="list-style-type: none"> relevant legislation and manufacturer's instructions other
5.1	State the safety requirements, routine and functional checks required for machine and operator protection	<p>To include:</p> <p>Level ground</p> <ul style="list-style-type: none"> all fluid levels can be accurately checked other <p>Machine Services</p> <ul style="list-style-type: none"> security unauthorised third party operation other <p>Cleanliness</p>

		<ul style="list-style-type: none"> • personal contamination • system contamination • other <p>Adjustment</p> <ul style="list-style-type: none"> • ergonomics • visibility • other <p>Restraint systems</p> <ul style="list-style-type: none"> • personal safety • HSE requirement • other <p>Operator protection systems</p> <ul style="list-style-type: none"> • roll over protective structure (ROPS) • falling object protective structure FOPS) • operator protection structure (OPS) • other <p>Access and Egress</p> <ul style="list-style-type: none"> • operator safety • PUWER • other <p>Wheel nuts</p> <ul style="list-style-type: none"> • visually • torque wrench • operator's handbook <p>Tension criteria</p> <ul style="list-style-type: none"> • according to manufacturer's recommendations • other <p>Safe procedure for detection of leaks:</p> <ul style="list-style-type: none"> • hands not used for detection of leak • use a piece of card or paper • other • appropriate PPE identified • use of spill kit • hydraulic system lowered and pressure relieved • importance cleanliness • vacuum pump (if fitted) • shut off valve (if fitted) <p>Tools</p> <ul style="list-style-type: none"> • spanners x 2 <p>Criteria for pipe replacement</p> <ul style="list-style-type: none"> • pressure rating • length • end fittings • bore
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		<ul style="list-style-type: none"> referred to Operators manual new hose fitted ensuring inside of hose and joints are clean correctly routed not twisted switch off vacuum pump (if fitted) open valve (if fitted) hydraulic oil topped up and checked as required start machine operate function check for leaks clean up spill kit re-check oil level <p>Environmental considerations</p> <ul style="list-style-type: none"> waste bagged and labelled licensed disposal recycle other
5.2	Describe safe driving techniques that should be used on site	<p>Importance of loader position and machine stability</p> <p>Loader position</p> <ul style="list-style-type: none"> maintain the centre of gravity overreaching over loading slope/steep ground loader parking position <p>Machine stability</p> <ul style="list-style-type: none"> use of legs (if fitted) oscillation lock ballast of tyres/traction aids ground condition <p>Safe driving techniques may be applied by</p> <ul style="list-style-type: none"> correct gear selection and engine speed route selection and planning patching and brash matt repair appropriate use of difflock appropriate use of traction aids stability avoid standing crop other
5.3	Explain the implications of terrain, ground conditions, season, weather and tree condition on planning access routes and driving the machine	<p>Route planning may be achieved by assessing:</p> <p>Terrain</p> <ul style="list-style-type: none"> roughness, slope other <p>Ground conditions</p>

		<ul style="list-style-type: none"> • load to match ground conditions (ground bearing capacity) • other <p>Seasonal</p> <ul style="list-style-type: none"> • winter, summer • other <p>Tree species</p> <ul style="list-style-type: none"> • transport of brash from worked racks • tree species relevant to brash availability • other
6.1	Describe how to recognise trees to be felled to meet the job specification	<p>Tree Identification may include:</p> <ul style="list-style-type: none"> • marking • paint • GPS and digital mapping • site plan • tape • other
6.2	Describe how to assess trees to determine felling method	<p>Tree assessment may include:</p> <ul style="list-style-type: none"> • operator's manual • maximum felling diameter • machine handling limit • stability of the machine • species of the tree • tree size
6.3	Explain how to carry out windblow clearance and other difficult and dangerous operations	<p>To include:</p> <p>Windblown</p> <ul style="list-style-type: none"> • correct positioning of machine • grips tree correctly (stem) • be alert to the possibility of stem and other material movement • make every endeavour to replace the severed root plate • stump treatment as directed by management • presentation of stems for processing • industry recognised guidelines are followed • other <p>Forked or mis-shaped tree</p> <ul style="list-style-type: none"> • machine capability <p>Alternative methods:</p> <ul style="list-style-type: none"> • motor manual • assisted felling <p>Sever a hung up tree:</p>

		<ul style="list-style-type: none"> • use machinery in accordance with relevant legislation and manufacturer's instructions • identify and fell trees in accordance with job specification • correct felling sequence i.e. tree selection • correct positioning of base machine • correct positioning of felling head • stem gripped correctly • be alert to stem and other material movement • tree felled in direction of lean • avoid damage to remaining crop • rootplate re-instated • stump treatment (if applicable) • avoidance of splits, spikes and shattered butts • environmental and conservation requirements complied with • industry recognised guidelines are followed • other
7.1	Outline current health and safety legislation, codes of practice and any additional requirements	<p>Outline key points from the legislation listed below:</p> <p>Health and Safety at Work Act (HSWA) (1974) –</p> <ul style="list-style-type: none"> • general duties for employers and employees • maintain safe places of work • other <p>Provision and Use of Work Equipment Regulations 1998 (PUWER 98) –</p> <ul style="list-style-type: none"> • record keeping • operators adequately trained • equipment fit for purpose • other <p>Lifting Operations and Lifting Equipment Regulations (1998) (LOLER)</p> <ul style="list-style-type: none"> • main requirements of the LOLER required by the machine • risk zones • safe working load • inspection by a competent person • operating controls labelled • other <p>Reporting of Injuries, Diseases and Dangerous</p>

		<p>Occurrences Regulations 1995 (RIDDOR)</p> <ul style="list-style-type: none"> • reporting of accidents • reporting of dangerous occurrences • other <p>Working at Heights</p> <ul style="list-style-type: none"> • adequate precautions taken for safe working procedures • any height constitutes working at heights • other <p>Control of Substances Hazardous to Health (COSHH) Regulations (2002)</p> <ul style="list-style-type: none"> • correct PPE to be identified • correct storage and application • disposal • other <p>Industry Good Practice</p> <ul style="list-style-type: none"> • Arboriculture Forestry Advisory Group (AFAG) information • Health and safety in forestry • Forest and water guidelines • Operators' manual <p>Lone working</p> <ul style="list-style-type: none"> • effective communication system • fail to safe system • reporting in times <p>Line contact possible procedures:</p> <ul style="list-style-type: none"> • where possible, drive away to safe area • if safe, stay in machine and contact power company/supervisor • jump from machine, bunny hop as far as possible <p>Power lines:</p> <ul style="list-style-type: none"> • designated crossing point (goal posts) • liaison with power companies • site maps • AFAG • electricity at work • other
7.2	Explain why it is important to maintain good communication and teamwork within the working environment	<p>Importance of communication could include:</p> <ul style="list-style-type: none"> • health and safety • site planning/co-ordination • other
7.3	Describe the types of records that may be required for management and legislative requirements	<p>Records:</p> <ul style="list-style-type: none"> • logbook • service logbook • time sheet

		<ul style="list-style-type: none"> • maintenance schedule • other
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Practical table

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All criteria must be achieved.

Activity number and description	Achieved
1.1 Identify the hazards and risks associated with the working area and the proposed work	
1.2 Use appropriate tools, equipment and Personal Protective Equipment	
1.3 Carry out work specification in accordance with relevant legislation, industry good practice and maintains health and safety	
1.4 Carry out work to minimise environmental damage	
2.1 Carry out pre and post start checks to test all operating functions of the equipment	
2.2 Plan work and the work site to maintain safe working areas to operate the timber processor	
3.1 Drive the machine on site in a safe and effective way	
3.2 Manoeuvre the machine on site and in a safe and effective way	
4.1 Identify trees in accordance with the job specification	
4.2 Fell trees in accordance with the job specification	
4.3 Use machinery in accordance with relevant legislation and manufacturer's instructions	
5.1 State the safety requirements, routine and functional checks required for machine and operator protection	
5.2 Describe safe driving techniques that should be used on site	
5.3 Explain the implications of terrain, ground conditions, season, weather and tree condition on planning access routes and driving the machine	
6.1 Describe how to recognise trees to be felled to meet the job specification	
6.2 Describe how to assess trees to determine felling method	
6.3 Explain how to carry out windblow clearance and other difficult and dangerous operations	
7.1 Outline current health and safety legislation, codes of practice and any additional requirements	
7.2 Explain why it is important to maintain good communication and teamwork within the working environment	
AC 7.3 Describe the types of records that may be required for management and legislative requirements	

Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. To download the documents and to find other useful documents, go to the **Centre Document Library** on www.cityandguilds.com or click on the links below:

Quality Assurance Standards: Centre Handbook

This document is for all approved centres and provides guidance to support their delivery of our qualifications. It includes information on

- Centre quality assurance criteria and monitoring activities
- Administration and assessment systems
- Centre-facing support teams at City & Guilds / ILM
- Centre quality assurance roles and responsibilities.

The Centre Handbook should be used to ensure compliance with the terms and conditions of the Centre Contract.

Quality Assurance Standards: Centre Assessment

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications. Quality assurance includes initial centre approval, qualification approval and the centre's own internal procedures for monitoring quality. Centres are responsible for internal quality assurance and City & Guilds is responsible for external quality assurance. All external quality assurance processes reflect the minimum requirements for verified and moderated assessments, as detailed in the Centre Assessment Standards Scrutiny (CASS), section H2 of Ofqual's General Conditions. For more information on both CASS and City & Guilds Quality Assurance processes visit: the **What is CASS?** and **Quality Assurance Standards** documents on the City & Guilds website.

This document sets out the minimum common quality assurance requirements for our regulated and non-regulated qualifications that feature centre assessed components. Specific guidance will also be included in relevant qualification handbooks and/or assessment documentation.

It incorporates our expectations for centre internal quality assurance and the external quality assurance methods we use to ensure that assessment standards are met and upheld. It also details the range of sanctions that may be put in place when centres do not comply with our requirements, or actions that will be taken to align centre marking/assessment to required standards. Additionally, it provides detailed guidance on the secure and valid administration of centre-assessments.

Access arrangements - When and how applications need to be made to City & Guilds

provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **Centre Document Library** also contains useful information on such things as:

- Conducting examinations
- Registering learners
- Appeals and malpractice

Useful contacts

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City & Guilds is the global skills partner, empowering people, organisations and economies to develop the skills they need for growth. With almost 150 years of trusted expertise, we support people into work, help them develop on the job and move into the next job.

We work with Governments, employers, training providers, colleges and industry stakeholders to design and deliver high-quality training, qualifications, assessments and credentials that lead to meaningful career progression. We understand the life changing link between skills development, social mobility and success. Our solutions span critical sectors including construction, engineering, transport, energy and electrical, serving over 1 million learners annually.

Through our comprehensive portfolio of brands and trusted global network, we set industry-wide standards for technical, behavioural and commercial skills to improve performance and productivity. We believe you can achieve your potential - and we're here to help make it happen.

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