



City & Guilds NPTC Level 2 Award in Forest Machine Operations – Processing QAN (600/9105/8)

Version 1.0 (March 2024)

Assessment Pack – Centre and Candidate Version

Version and date	Change detail	Section
1.0 March 2024	First version	All

Contents

Introduction	4
211 Prepare and operate machinery to process trees	5
Appendix 1 Practical table	15
211 Prepare and operate machinery to process trees	15
Appendix 2 Sources of general information	16

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:

211 Prepare and operate machinery to process 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 process felled trees
5. Know how to prepare machinery
6. Know how to process 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:

Felled trees suitable for processing with the machine the candidate is being assessed on and within capabilities of the processor, minimum of 10 trees.

Equipment/Machinery:

Base unit which the candidate already holds the COC for and processing 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 processing 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

211 Prepare and operate machinery to process trees

Activity number and description from check list	Assessment criteria
1.1	<p>Identify the hazards and risks associated with the working area and the proposed work</p> <p>Identify hazards (anything with the potential to cause harm) and risks (who might be harmed), relevant to: 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 • other machine operators • public • 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	<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 maintain 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 poststart checks to test all operating functions of the equipment	<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 <p>Pre and post start checks on base machine according to the operators handbook and to include:</p> <ul style="list-style-type: none"> • machine on level ground

		<ul style="list-style-type: none"> • 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 processor</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
--	--	--

		<ul style="list-style-type: none"> • 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 • 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
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

		<ul style="list-style-type: none"> • 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
3.2	Manoeuvre 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 • appropriate speed for conditions • appropriate use of brakes • parking brake applied and effective • stop in accordance with manufacturers recommendations • safe egress
4.1	Process the felled trees in accordance with the job specification	<p>Process trees according to site specification</p> <ul style="list-style-type: none"> • safely and efficiently • branches removed methodically • excessive damage to stems • products are de-limbed cleanly and within the standard • ensure that any brash is placed clear of timber zone • ensure that any damage to the remaining standing trees or to the environment is minimal <p>Cross-cut</p> <ul style="list-style-type: none"> • ensure products are not in the brash zone • cross-cut to job specification • saw not to be pointed at cab • position machine correctly, safely and effectively

		<ul style="list-style-type: none"> measuring device zeroed before processing begins
4.2	Segregate logs to enable ease of extraction	<p>Timber processed according to specification</p> <ul style="list-style-type: none"> logs graded and segregated into specification organised timber zones are maintained ensuring that any brash is placed clear of timber stack logs to enable efficient extraction
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>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

		<ul style="list-style-type: none"> • torque wrench • operators handbook <p>Tension criteria</p> <ul style="list-style-type: none"> • according to manufacturers 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 • 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
<p style="text-align: center;">5.2</p>	<p>Describe safe driving techniques that should be used on site</p>	<p>Importance of loader position and machine stability</p> <p>Loader position</p> <ul style="list-style-type: none"> • maintain the centre of gravity • over reaching

		<ul style="list-style-type: none"> • 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 select size and species to meet the job specification	<p>Size and species may include:</p> <ul style="list-style-type: none"> • measure tree diameter • identify tree species • stem straightness • branch formation
6.2	Describe how to process trees	<p>To include:</p> <p>Double</p> <ul style="list-style-type: none"> • cut before fork • zero measurement • deal with double as two singles • other <p>Shattered</p>

		<ul style="list-style-type: none"> • optimize the value of the stem • cut to waste • other Diseased <ul style="list-style-type: none"> • cut out diseased section • other Rotten, Dead and malformed <ul style="list-style-type: none"> • maximise value • other • Refer to operators manual • outside the parameters of the processor • other
6.3	Describe how to measure log length to ensure it meets specification	To include: <ul style="list-style-type: none"> • regular checks on specification of processed timber during operation and recognise malfunctions • measures manually with tape or other measuring device
7.1	Outline current health and safety legislation, codes of practice and any additional requirements	Outline key points from the legislation listed below: <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> <p>record keeping</p> <ul style="list-style-type: none"> • operators adequately trained • equipment fit for purpose • other <p>Lifting Operations and Lifting Equipment Regulations (1998) (LOLER)</p> <p>main requirements of the LOLER required by the machine</p> <ul style="list-style-type: none"> • risk zones • safe working load • inspection by a competent person • operating controls labelled • other <p>Reporting of Injuries, Diseases and Dangerous 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 team work 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 • maintenance schedule • other

Appendix 1 Practical table

211 Prepare and operate machinery to process trees

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 maintain health and safety	
1.4 Carry out work to minimise environmental damage	
2.1 Carry out pre and poststart checks to test all operating functions of the equipment	
3.1 Drive the machine on site in a safe and effective way	
3.2 Manoeuvre the machine on site in a safe and effective way	
4.1 Process the felled trees in accordance with the job specification	
4.2 Segregate logs to enable ease of extraction	
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 select size and species to meet the job specification	
6.2 Describe how to process trees	
6.3 Describe how to measure log length to ensure it meets specification	
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 team work within the working environment	
7.3 Describe the types of records that may be required for management and legislative requirements	

Appendix 2 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

Please visit the Contact Us section of the City & Guilds website, **Contact us**

About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. We offer over 500 qualifications across 28 industries through 8500 centres worldwide and award around two million certificates every year. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group is a leader in global skills development. Our purpose is to help people, organisations and economies develop their skills for growth. We work with education providers, employers and governments in over 100 countries across the world to help people, businesses and economies grow by shaping skills systems and supporting skills development.

The Group is made up of City & Guilds, ILM, Kineo, The Oxford Group, Gen2, and Intertrain. Together we set the standard for professional and technical education and corporate learning and development around the world.

Copyright

The content of this document is, unless otherwise indicated, © The City & Guilds of London Institute and may not be copied, reproduced or distributed without prior written consent. However, approved City & Guilds centres and learners studying for City & Guilds qualifications may photocopy this document free of charge and/or include a PDF version of it on centre intranets on the following conditions:

- centre staff may copy the material only for the purpose of teaching learners working towards a City & Guilds qualification, or for internal administration purposes
- learners may copy the material only for their own use when working towards a City & Guilds qualification

The Standard Copying Conditions (see the City & Guilds website) also apply.

Published by City & Guilds, a registered charity established to promote education and training

City & Guilds of London Institute
Giltspur House
5-6 Giltspur Street
London
EC1A 9DE

cityandguildsgroup.com

