



NPTC

Registered Charity No. 1096429

STONELEIGH PARK, WARWICKSHIRE CV8 2LG

Tel: 024 7685 7300 Fax: 024 7669 6128

Email: information@nptc.org.uk

LEVEL 2
CERTIFICATE OF COMPETENCE
IN
FOREST MACHINE OPERATIONS

ASSESSMENT SCHEDULE

FMO1 BASE MACHINES

FMO1.1	TR	- Tracked Rigid
FMO1.2	TS	- Tracked Slewing
FMO1.3	WR	- Wheeled Rigid
FMO1.4	WA	- 4/6 Wheeled Articulated
FMO1.5	WA 8	- 8 Wheeled Articulated

NPTC

LEVEL 2 CERTIFICATE OF COMPETENCE IN FOREST MACHINE OPERATIONS

FMO1 BASE MACHINES

Introduction

The scheme is administered by NPTC.

NPTC will:

- Publish
 - scheme regulations
 - assessment schedule
 - assessment material
- Approve centres to co-ordinate and administer the scheme
- Set standards for the training of Verifiers and Assessors
- Recruit, train and deploy Verifiers
- Manage verification
- Issue certificates to successful Candidates

The Certificate of Competence/ID Card

Certificates of Competence/ID Cards will be awarded to Candidates who achieve the required level of competence in the Units to which their Certificate relates.

Instruction

Attendance at a course of instruction is not a pre-requisite to an application for an assessment but potential Candidates are strongly advised to ensure that they are up to the standard that will be expected of them when they are assessed.

NPTC does not hold a register of instructors; however instruction will normally be available from recognised training providers and/or centres of further or higher education active in the areas covered by this certificate. Further information on training may be obtained from the local Assessment Centre.

Access to Assessment

Assessment Centres will be responsible for arranging assessment on behalf of a Candidate. Assessment may only be carried out by an Assessor approved by NPTC for that scheme. Under no circumstances can either instructors involved in the preparation of candidates, or the candidates work place supervisors, or anyone else who might have a vested interest in the outcome, carry out the assessment.

The minimum age limit for Candidates taking certificates of competence is 16 years. There is no upper age limit.

Assessment

Assessment is a process by which it is confirmed that the Candidate is competent in the Units within the award to which the assessment relates. It is a process of collecting evidence about his/her capabilities and judging whether that evidence is sufficient to attribute competence.

The candidate must be registered through an NPTC approved Assessment Centre for this qualification prior to assessment.

The schedule of assessment contains the criteria relating to:

- Observation of practical performance
- Assessment of knowledge and understanding

When all the criteria within the Units for which assessment has been sought have been completed the result(s) will be recorded on the Candidate Assessment Report Form(s).

Performance Evaluation

At the Assessment the Assessor will evaluate each activity against the following criteria:

- 4 = Exceeds the requirements of the assessment criteria for both the practical performance and the underpinning knowledge, with no 'critical' faults. Delivering a safe, polished, efficient, unsupervised performance of the practical skill.
- 3 = Satisfies the requirements of the assessment criteria for both the practical performance and the underpinning knowledge, with no 'critical' faults. Candidate has sufficient fluency to perform the task safely, unaided and unsupervised.
- 2 = Does not fully satisfy the requirements of the assessment criteria. Candidate required some support or excessive time to perform the task satisfactorily and/or potentially causes a "critical fault". Weaknesses in performance exceed strengths.
- 1 = Does not satisfy the requirements of the assessment criteria. Candidate is unable to demonstrate sufficient skill or underpinning knowledge and weaknesses in performance substantially exceed strengths and/or causes a "critical fault".

A list of registered Assessment Centres is available from NPTC. (www.nptc.org.uk)

Verification

Verification is a process of monitoring assessment; it is an essential check to confirm that the assessment procedures are being carried out in the way that NPTC has laid down. The overall aim of verification is to establish a system of quality assurance that is acceptable in terms of both credibility and cost effectiveness.

Approved Assessors will be subject to a visit by the Verifier at a time when assessments are being undertaken.

A selection of assessment reports completed by the assessor will be evaluated by NPTC.

Compliance with the verification requirements is a pre-requisite for Assessors remaining on NPTC's list of approved assessors.

Learning outcomes:

The Candidates will be able to:

1. Carry out pre-start checks and routine maintenance
2. Carry out a Risk Assessment and site appraisal
3. Operate a base machine in a safe and effective manner
4. Drive the machine on a variety of terrains as available on site
5. Demonstrate knowledge of traction aids (chains and band tracks)

Note 1: The Candidate is required to pass Part I and Part II.

Note 2: Candidates seeking assessment in Agri Base Machines **with** readily de-mountable equipment must take Part III (hitching) and will have their certificates endorsed 'rd' (**r**easily **d**e-mountable) e.g FMO1.1rd, FMO1.3rd, FMO1.4rd.

Note 3: Assessment of Part III is not required for Candidates using purpose built machines, but will be required should they wish to transfer their skills to Agricultural Base Machines fitted with hitching attachments.

Safe Practice:

1. Assessors must hold a current 'First Aid at Work' Certificate.
2. It is strongly recommended that Candidates hold at least a recent, recognised 'Emergency First Aid' Training Certificate.
3. All forest machines used in the assessments must comply with relevant Arboriculture and Forestry Advisory Group (AFAG) Safety Guides
4. Candidates should be familiar with the machine that they are going to operate.
5. Appropriate Personal Protective Equipment (PPE) must be worn at all times.
6. A First Aid kit meeting current regulations, of the appropriate size for the number of persons on site, must be available.
7. The candidate must be equipped with a personal first aid kit.
8. The Assessor must ensure a Risk Assessment has been carried out, and sufficient control measures implemented. In particular, the location of the site and weather conditions should be assessed, details of access, etc, which may be required by emergency services must be noted, as well as the nearest Accident and Emergency Hospital Unit. The means of contacting the emergency services must be established. Manual handling techniques must comply with current legislation.
9. Any necessary permissions must have been granted, and notifications made as appropriate: (e.g. Forestry Commission, Forest Enterprise, Private owners etc).
10. All equipment being used for this assessment must comply with relevant requirements of the Provision and Use of Work Equipment Regulations (PUWER) 1998 and Lifting Operations and Lifting Equipment Regulations (LOLER) 1998.
11. Information may be sought from the relevant operator manuals or any other appropriate training or safety publication.
12. The current Regulations for transport, handling and storage of fuel and oils must be complied with.
13. Provision must be made to avoid the risk of environmental pollution.
14. It is the responsibility of the Assessor and the Candidate to ensure that any additional requirements and provisions are met as relevant to this qualification.
15. Whenever the Candidate leaves the base machine, the parking brake must be applied.
16. When the Base Machine is parked and left unattended, or a pto shaft is being attached or detached the Candidate must carry out the full safe stop procedure of parking brake on, gears in neutral, engine off, key removed and placed in pocket.
17. The Base Machine must be operated in such a way that the Candidate, Assessor, other persons or equipment are not endangered.
18. All ancillary equipment, when detached must be safely parked.
19. Candidates must comply with current regulations when working at heights of greater than 2 metres.
20. The assessment is carried out in accordance with the safety guidelines laid down in Arboriculture and Forestry Advisory Group (AFAG) Safety Guides, Health and Safety publications and current legal requirements.

Validation of Equipment:

Any Base Machine complying with legal requirements is acceptable for the test, provided it is suitably equipped for **all** assessment activities to be carried out.

PART I

Assessment Activity		Assessment Criteria
PREPARATION		
TR, TS, WR, WA 4/6, WA 8	1. Demonstrate knowledge of legal requirements and safety regulations	<ul style="list-style-type: none"> - Awareness of any safety implications imposed by Risk Assessment on the machine and the operation - Awareness of statutory guarding requirements - Awareness of statutory regulations when in operation or in transport on public highway - Braking requirements for machine and equipment - Lifting Operations and Lifting Equipment Regulations (LOLER) - Provision and Use of Work Equipment Regulations (PUWER)
TR, TS, WR, WA 4/6, WA 8	2. Demonstrate knowledge of requirements to safeguard the environment	<ul style="list-style-type: none"> - Awareness of statutory requirements under control of pollution - Fuel spillage/storage - Erosion - Oil/leakage
TR, TS, WR, WA 4/6, WA 8	3a. Demonstrate knowledge of the danger of driving at high speed and the correct procedure and precautions to be observed when driving with heavily loaded trailers and implements up and down hill across a slope over rough ground	<ul style="list-style-type: none"> - The dangers of driving at high speed - The benefits of wide wheel track settings
WA 4/6, WA 8	3b	<ul style="list-style-type: none"> - The dangers of driving at high speed - The benefits of wide wheel track settings
TR, TS	3c.	<ul style="list-style-type: none"> - Change of centre of gravity when slewing

Assessment Activity		Assessment Criteria
TR, TS, WR, WA 4/6, WA 8	4a. Demonstrate knowledge of operating a base machine to obtain economic fuel use whilst maintaining maximum efficiency and work output	<ul style="list-style-type: none"> - Effect of partially blocked air cleaner - Use of engine speed control - Tractormeter and gear selection - Possible wheel/track slip and use of differential lock - Weight transfer and correct selection of hydraulic services
WR WA 4/6, WA 8	4b. Demonstrate knowledge of traction aids	<ul style="list-style-type: none"> - Use of bands and chains - Half tracks - Other
TR, TS, WR, WA 4/6, WA 8	5. Demonstrate knowledge of: interpretation of instrument reading function of all controls	<ul style="list-style-type: none"> - The function of and understanding of the significance of the information displayed: - Tractormeter and associated chart - Oil pressure gauge (or warning light) - Ammeter, battery condition indicator or warning light - Other warning lights (as applicable) - The function and setting of the following controls for efficient working: - Starting devices, including cold start - Engine speed control - Stop control - Gear selection - Clutch - Differential lock (where applicable) - Pto lever engagement and speed range selector (where applicable) - Brakes (independent and parking) and remote braking device if fitted - Hydraulic controls - Draft control (as applicable) - Position control (as applicable) - Other controls provided - External services <p>Lights, direction indicators, horn, screen wash/wipe, heating and ventilation controls and any safety warning device (where applicable)</p>
TR, TS, WR, WA 4/6, WA 8	6. Inspect and comment on general machine serviceability	<ul style="list-style-type: none"> - Steering (including power operated) - Stop control - Clutch pedal or lever free play (if applicable) - Brake pedal free travel - Correct function of all lights and direction indications - Safety requirements including health & safety at work act, and statutory regulations - Window glass (if fitted) - Window wipers (if fitted) - All gauges - All cab warning lights - Warning buzzer (if fitted) - All exterior lights

Assessment Activity		Assessment Criteria
TR, TS, WR, WA 4/6, WA 8	7f.	Demonstrate knowledge of causes of battery exploding <ul style="list-style-type: none"> - Danger of excessive charge rate - Charger switched off before connection or disconnection while on charge - Sparks near gas outlet
TR, TS, WR, WA 4/6, WA 8	7g.	Check that battery is properly secured and battery leads correctly connected <ul style="list-style-type: none"> - Leads connected and checked for damage - Terminals cleaned satisfactorily - Anti-corrosion grease put on leads and terminals when reconnecting - Bolts are tight but not over-tightened - Knowledge of where earth straps connect to frame
TR, TS, WR, WA 4/6, WA 8	7h.	Demonstrate knowledge of the procedure when replacing a hydraulic hose <ul style="list-style-type: none"> - System lowered to ground - Spare hose checked for cleanliness and end cap protection - Connections cleaned thoroughly - Old hose fitted ensuring joints are clean - Correctly routed not twisted - Environmental considerations - Hydraulic oil topped up as necessary
WR, WA 4/6, WA 8	7i.	Either: Demonstrate knowledge of different tyre types and relevant pressures and behaviour <ul style="list-style-type: none"> - Correct selection and use of tyre pressure gauge - Crossply - Radial - Ballasted tyres
TR, TS	7j.	Or: Demonstrate knowledge of track maintenance <ul style="list-style-type: none"> - Condition and tension of band tracks and/or chains if fitted - Condition Fittings: <ul style="list-style-type: none"> - Grouser plates - Rubber pads - Tension

Part II		OPERATION	
		Assessment Activity	Assessment Criteria:
TR, TS, WR, WA 4/6, WA 8	8.	Mount machine	- Candidates must mount and dismount from machine using the hand and foot holds provided and facing into the cab
		Carry out safety checks, to be made before starting engine	- Check of controls to ensure engine is not under load when started (e.g. Disengagement of gearbox, pto and hydraulic services)
		Start engine	- Knowledge of cold starting techniques
TR, TS, WR, WA 4/6, WA 8	9.	Check that brakes operate and are satisfactory for the requirements of the test	- Balance - Stopping efficiency
		Drive machine to a given position, park check parking brake and stop engine	- Parking brake efficiency
		Demonstrate knowledge of precautions to be observed when parking on steep slopes	- Parking across steep slopes - Chocks/stumps - Other acceptable methods

Part III – HITCHING Applicable to Candidates assessed on Agricultural Base Machines (TR, WR or WA 4) with readily de-mountable equipment. Certificates will be endorsed 'rd'.

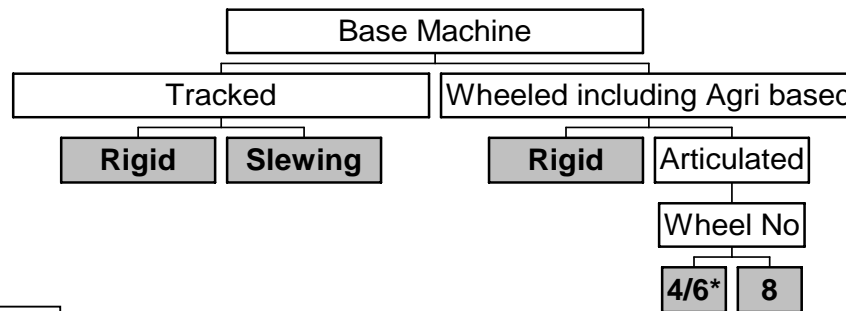
Note: Assessment of Part III is not required for Candidates using purpose built machines, but will be required should they wish to transfer their skills to Agricultural Base Machines fitted with hitching attachments.

Assessment Activity		Assessment Criteria
1.	<p>Hitch prime mover to trailed machine and connect hydraulic coupling(s) (a pick up hitch or clevis drawbar may be used)</p> <p>Demonstrate knowledge of the dangers of coupling two clevis hitches together and of allowing too much slackness of hydraulic pipe</p>	<ul style="list-style-type: none"> - Coupling(s) checked for cleanliness connect hydraulic coupling(s) - Connect trailer braking pipe (if fitted).
2.	<p>Drive prime mover and trailer.</p> <p>Demonstrate knowledge of relative load carrying capacity of drawbars on short and long reach positions.</p> <p>Reverse in a confined space including at least one right angle turn</p>	<ul style="list-style-type: none"> - Smoothness of take off - Speed and gear selection - Slowing at corners - Speed over rough ground - Gear changing - Braking - Manoeuvring and safety - A heavy load could cause the drawbar to break if in the long reach position - The draw bar is stronger in the short reach position but the turning circle is greatly reduced - Safe speed - Forward manoeuvre - Reverse manoeuvre - Environmental considerations - Avoidance of obstacles and damage to standing crop - Condition of ground service
3.	<p>Drive prime mover and trailer to specified position</p> <p>Park trailer, uncouple and park prime mover</p>	<ul style="list-style-type: none"> - Safe parking of trailer e.g. Brakes applied and/or chocked - Condition of ground surface - Slopes - Overhead hazards - Load distribution - Safe disconnection and storage of hydraulic pipe

Assessment Activity		Assessment Criteria:
4.	<p>Attach a three\four point linkage implement to the prime mover and demonstrate knowledge of adjusting height and level of implement</p> <p>Demonstrate knowledge of the safe operator position for this task</p> <p>Demonstrate knowledge of how to convert one linkage category to another</p>	<ul style="list-style-type: none"> - Elimination of undue side play. - No person must be between the prime mover and machine whilst the Candidate manoeuvres and couples the machine. Also if a remote linkage control is used, the operator must not be in a position whereby injury may be caused by the prime mover or implement - Step pins - Sleeves
5.	<p>Attach a pto driven machine to the prime mover, fit pto shaft</p> <p>Demonstrate knowledge of the correct use of 540 rev/min and 1000 rev/min pto speeds and their application</p>	<ul style="list-style-type: none"> - Elimination of undue sideplay on the drawbar or linkage - Security of attachment, height, level and length (where appropriate) of drawbar or linkage - Correct length and alignment of pto - Correct fitting and security of pto guards - Engine must be stopped before fitting or adjusting pto drive - Use of 'economy mode' if applicable - Use of correct pto shaft (6 or 21 spline) - Dangers of driving 540 rev/min pto machine too fast by using 1000 rev/min pto shaft
6.	<p>Detach and park implement or machine and park prime mover</p>	<ul style="list-style-type: none"> - Selection of suitable site - Safe parking procedure - Use of jacks and stands - Detaching pto shaft - Securing three-point linkage mechanism - Hand brake on, gears in neutral, engine stopped and key removed
7.	<p>Demonstrate knowledge of: cleaning procedure</p> <p>inspection for defects</p>	<ul style="list-style-type: none"> - Removal and safe disposal of unwanted residues - Inspection for wear, damaged and/or missing components - Reporting procedure - Use of operator's instruction book

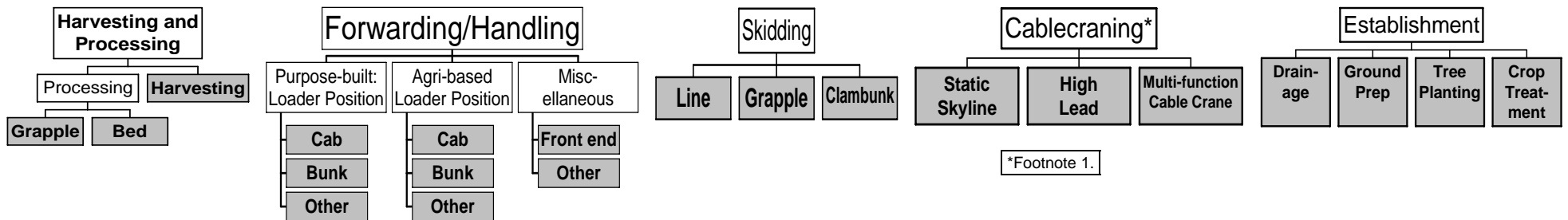
Base Machine and Operation Categories Qualification Structure

Machine category



Operation category

- Footnotes**
1. The chokerperson is assessed as part of the team and the certificate endorsed accordingly if they do not operate the winch.
 2. The proposed classification does not intend to preclude older or improved technologies.
 3. There will be a time-limited post-training provisional licence system.
 4. If wheels are fitted with tracks, the machine is still to be regarded as a wheeled machine.



*Footnote 1.