Australian Government

Department of Education, Employment and Workplace Relations

RTC2309A Operate tractors

Release: 1

RTC2309A Operate tractors

Modification History

Not applicable.

Unit Descriptor

This competency standard covers the operation of tractors with or without attached equipment. It requires the application of skills to safely utilise the various components and controls of tractors, check and confirm operational status, and set and secure equipment for operation. It also requires knowledge of the distinguishing characteristics of individual tractors including rated power, steering systems, and operational complexities. In addition, competence in tractor operation requires an awareness of licensing and legislative requirements, duty of care to self, others and the environment. The work in this standard is likely to be carried out under some supervision with regular checking within enterprise guidelines.

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Application of the Unit

Not applicable.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Prepare tractor for operation	1.1 **OHS hazards** in the work area are identified, risk assessed and reported to the supervisor.
	1.2 **Routine checks of tractors** are conducted prior to use according to manufacturers specifications and **enterprise requirements.**
	1.3 **Attached equipment** is identified and selected appropriate to work requirements, checked for safety and set for operation.
	1.4 Tractor and attached equipment faults or malfunctions are identified and reported for repair according to enterprise requirements.
2 Operate tractor	2.1 **Risks** to self, others and the environment are recognised and avoided according to OHS and enterprise requirements.
	2.2 Suitable **personal protective equipment** is selected, used, maintained and stored according to OHS and enterprise requirements.
	2.3 Tractor is operated in a **safe and controlled manner** and monitored for performance and efficiency.
	2.4 Hazards are identified, anticipated and controlled through the application of safe and defensive driving techniques.
	2.5 **Environmental implications** associated with tractor operation are recognised and positive enterprise environmental procedures applied where relevant.

3 Complete and check tractor operation	3.1 **Shut-down procedures** are conducted according to manufacturers specifications and enterprise requirements.
	3.2 Malfunctions, faults, irregular performance or damage to tractor and attached equipment is detailed and reported according to enterprise requirements.
	3.3 Tractor and attached equipment is cleaned and decontaminated where necessary, secured and stored according to enterprise and OHS requirements.
	3.4 Tractor operational **reports** are maintained to industry standards according to enterprise requirements.

Required Skills and Knowledge

Not applicable.

Evidence Guide

What evidence is required to demonstrate competence for this standard as a whole?

Competence in this standard requires evidence of the ability to safely operate tractors with or without attached equipment relative to operating conditions. This includes the application of skills to match and attach equipment appropriate to work requirements, secure loads within working specifications, perform routine pre-operational checks, recognise and control hazards and risks, demonstrate emergency procedures, and monitor and maintain operational records. Evidence must also be demonstrated in safe workplace and positive environmental practices. The skills and knowledge required to operate tractors must be **transferable** to a different work environment. For example, this could include different tractors, terrain and weather conditions.

What specific knowledge is needed to achieve the performance criteria?

Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts and to deal with unplanned events. The knowledge requirements for this competency standard are listed below:

Tractor components, controls and features and operational functions.

Tractor steering systems and features.

Attached equipment, features and operational functions and procedures.

Operating principles and operating methods.

Load limits and the principles of weight distribution with regard to load shifting and tractor movement.

Effects of adverse weather and difficult terrain conditions on tractor operation.

Environmental Codes of Practice with regard to machinery operation.

OHS legislative requirements, hazard identification and risk assessment.

Relevant legislation with regard to machinery operation and licensing requirements.

OHS Codes of Practice including the use and control of hazardous substances.

What specific skills are needed to achieve the performance criteria?

To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:

Calculate and measure distance, volumes and weights.

Steer, manoeuvre and position tractor in a smooth and controlled manner.

Safely and effectively operate tractors in adverse weather and difficult terrain conditions.

Demonstrate safe and environmentally responsible workplace practices.

Interpret manufacturers specifications, work and maintenance plans, and MSDS.

Effectively communicate faults and hazards, interpret and apply task instructions, report and maintain operational records.

What processes should be applied to this competency standard?

There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

1. How can **communication of ideas and information** (**1**) be applied?	Information with regard to hazards and unsafe work practices associated with the operation of tractors may be reported to the supervisor and work team.
2. How can **information be collected**, **analysed and organised** (**1**)?	Information with regard to tractor performance, faults and maintenance requirements may be detailed and recorded for reference and organised by reports.
3. How are **activities planned and organised** (**1**)?	Tractor operation may be planned and coordinated around work schedules.
4. How can **team work** (**1**) be applied?	Team work may be applied in the application of methods and procedures to complete operating procedures and maintain records.
5. How can the use of **mathematical ideas and techniques** (**1**) be applied?	Mathematics may be applied in the calculation and measurement of load and weight, servicing requirements, and distance and fuel consumption.
6. How can **problem-solving skills** (**1**) be applied?	Breakdown, faults or malfunctions will require arrangements for repair or replacement to achieve work schedules.
7. How can the **use of technology** (**1**) be applied?	To communicate, measure and record information with regard to maintenance, usage and performance of tractor.

Are there other competency standards that could be assessed with this one?

This competency standard **could** be assessed on its own or in combination with other competencies relevant to the job function.

There is essential information about **assessing this competency standard for consistent performance** and **where and how it may be assessed**, in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to both the **Assessment Guidelines** and the relevant **Sector Booklet**.

Range Statement

Range of Variables

The Range of Variables explains the range of contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment may depend on the work situations available

What **OHS** requirements may be relevant to this standard?	Safe systems and procedures for: the safe operation of tractors and attached equipment including the fitting of guards and shields hazard and risk control safe mounting and dismounting manual handling including lifting and carrying the application of emergency/defensive driving techniques handling, application and storage of hazardous substances outdoor work including protection from solar radiation, dust and noise the appropriate use, maintenance and storage of personal protective equipment roll over protection secured if required wearing a seatbelt passengers only been carried when there is a seat approved by manufacturer.
What **hazards** may be associated with the operation of tractors?	Hazards may include exposure to loud noise and fumes, hazardous substances (fuel, oils), solar radiation and organic and other dusts. It may also include ergonomic hazards associated with posture and mechanical vibration. Other hazards may include bystanders, livestock and wildlife, difficult terrain and varying gradients, broken ground, potholes, ditches, gullies, embankments, obstacles, adverse weather conditions, electricity, overhead hazards including powerlines, loose clothing, speed and fatigue, load shifts, mechanical malfunctions, exposed moving parts including hydraulics, run over by tractor, crushed by roll-over, and

	other machinery.
What **routine checks** might be carried out prior to operation?	This may include cabin drills, pre-start and safety checks including an assessment of tyres, wheels, controls and cables, lights, safety mirrors, electrics, safety restraints, chain/driveshaft, chassis, seatbelts, suspension, power take-off equipment and guards, roll-over protection, spark arresters, pneumatic and hydraulic systems. It may also include checking of cooling system, fuel, oils and lubricants, battery levels; tyre pressure, fan belts, leads, lines, connections, air filters, air conditioning, brakes, clutch, gearbox, steering, lighting and transmission. Inspection of hitch and towing points.
What operational characteristics may vary in **tractors**?	Tractors may be two wheel drive, four wheel drive, front wheel assist, articulated tractors including scrapers, track or crawler driven. Steering systems may include conventional front-wheel steering, all wheel steering and articulated. Variational characteristics also include rated horsepower and complexities of operations and controls.
What **enterprise requirements** may be applicable to this standard?	Standard Operating Procedures (SOPs), industry standards, production schedules, Material Safety Data Sheets (MSDSs), work notes and plans, product labels, manufacturers specifications, operators manuals, enterprise policies and procedures (including waste disposal, recycling and re-use guidelines), and supervisors oral or written instructions.
What range of operations may be conducted using **attached equipment**?	Tractors may be set up and operated for blade, belt pulley, drawbar, front-end loader, power-take-off, remote hydraulics, linkage mounted equipment.
What **risks** may be associated with the operation of tractors?	Tractor rollover, which may be caused by traversing a steep slope or cornering too sharply at speed. Tractor back flip which may be caused by driving off in low gear but with high engine speed, rapid acceleration (particularly when driving uphill or pulling a heavy load), attempting to drive forward when the wheels are unable to move forward

	(bogged), rapid engagement of the clutch of the tractor. Power-take-off entanglement (loose clothing).
What **personal protective equipment** may be relevant to this standard?	Boots with non-slip soles, overalls, seatbelts, gloves, protective eyewear, hearing protection, respirator or facemask, and sun protection (sun hat, sunscreen).
How might the operation of a tractor be demonstrated in a **safe and controlled** manner?	Appropriate selection and use of tractor controls, features, settings and operational techniques for the terrain and all weather conditions without causing damage to tractor, equipment, person, property or environment.
What **environmental implications** may be associated with the operation of tractors?	Negative environmental impacts may result from excessive noise and exhaust emissions, the unsafe use and disposal of maintenance debris (oil containers, chemical residues), and hazardous substances (fuel, oils). High traffic activity, particularly the repeated use of tracks, may negatively impact in soil disturbance, dust problems and increased run-off flows from unsafe cleaning and servicing activities.
What may be involved in shut **down procedures** for tractors?	This may include turning the engine off, safe dismounting and securing the tractor, and ensuring hydraulic equipment is lowered to a safe position. It may also include parking away from hazards, maintaining a clear thoroughfare, refuelling and cleaning the tractor, engaging handbrake and removing keys.
What **reports** may be relevant to this standard?	This may include routine checks and maintenance, scheduled maintenance activities, mandatory or statutory inspections, log books, faults, malfunctions and damage details, and hazard and incident reports.

For more information on contexts, environment and variables for training and assessment, refer to the Sector Booklet.

Unit Sector(s)

Not applicable.