

Model Answers

Domain Forestry > Forest Operations

Unit 24575 v5 Demonstrate knowledge of factors that affect the quality of commercial forestry operations Level 3 Credits 5

Entry information

There are no pre-requisite requirements for this unit.

Assessment instructions

You will need to be able to show you can:

- Demonstrate knowledge of quality control in forestry operations.
- Demonstrate knowledge of factors that impact on the efficiency of a forest operation.
- Analyse the effect of personal performance on productivity and product quality.

Important information

- Carefully read through the rest of this Assessment so you know exactly what is expected.
- All evidence you provide for this assessment must be your own work.
- Clearly name and label all attached evidence.

What you need to do



Question Set 1 – Affecting Quality and Efficiency



Question Set 2 – Planning for Quality and Efficiency



Question Set 3 – Measuring Quality and Efficiency

You can also attach additional evidence which shows you have the required skills and knowledge, e.g. photos, worksite documents, checklists, work samples, videos.

Unit standard information

Explanatory notes

- This unit standard must be assessed against on-job.
- The quality of an operation is assessed on factors such as overall efficiency, financial efficiency, waste minimisation, time management, resource management, output quality, level of re-work required, safety record, and teamwork demonstrated.

Definitions

- *Forestry operations* - include forest establishment, silviculture, harvesting, forest inventory, and forest and crew management.
- *Job prescription* - refers to any written instructions for the operation and may include maps, harvest plans or cutting plans.
- *Worksite procedures* - refer to documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, quality assurance procedures, housekeeping standards, procedures to comply with legislative and local body requirements.

Unit standard evidence map

Unit 24575 v5		Demonstrate knowledge of factors that affect the quality of commercial forestry operations	Level 3	Credits 5
Outcomes and Performance Criteria		Evidence	No.	
Outcome 1: Demonstrate knowledge of quality control in forestry operations.				
1.1	Forestry operations are described and factors that improve quality within each operation are identified. Range: forestry operations – establishment, silviculture, harvesting.	Question Set 1	1,2,3,4	
1.2	Quality control is explained in terms of job prescriptions.	Question Set 3	1	
1.3	The importance of regular quality control to the candidate's operation is described. Range: production, rework time, contract stability, crew morale, value, safety, fatigue.	Question Set 3	2	
1.4	Methods used to measure quality in the candidate's operation are described. Range: sampling type, equipment, job prescription requirements.	Question Set 3	3,4,5	
Outcome 2: Demonstrate knowledge of factors that impact on the efficiency of a forest operation.				
2.1	Operational planning in relation to the quality of the operation is described in accordance with worksite procedures. Range: identification of bottlenecks, management of people and equipment, compliance requirements.	Question Set 2	1,2,3,4	
2.2	The importance of personal time management and crew time management is described in terms of its impact on the operation.	Question Set 2	5	
2.3	The impact of training on operational efficiency is described in terms of productivity, quality, and health and safety.	Question Set 2	6	
2.4	The impact of operational efficiency on the overall quality and profitability of the operation is described.	Question Set 2	7	

	Range: plant, equipment, labour.		
Outcome 3: Analyse the effect of personal performance on productivity and product quality.			
3.1	The effect of personal time management on own productivity is described. Range: includes but is not limited to – start time, breaks, finish time, distractions from personal life.	Question Set 1	5
3.2	The effectiveness of personal performance is described in terms of product quality.	Question Set 1	6
3.3	The impact of personal performance on downstream operations is described.	Question Set 1	7,8
3.4	Methods to improve personal performance are described. Range: time management, quality, distractions from personal life.	Question Set 1	10
3.5	The effect of training on personal performance is described.	Question Set 1	9



Question Set 1 –Quality and Efficiency

These questions are about affecting quality and efficiency in forestry operations.

Use your own words. Your assessor may ask you more questions to check your understanding.

Judgement statement

- Answers show an understanding of what affects quality and efficiency in a forest operation.
- Answers are in accordance with accepted industry practice and worksite procedures.

1. Describe clearly what is involved in each stage of the following operations:



Assessor

This question supports PC 1.1.

Judgement statements

- The candidate correctly describes what each stage of forest operations involves.
- Stages include: establishment, silviculture, harvesting.

Example answers

Establishment
Preparing Preparing the land for planting, e.g. clearing, cultivating etc.
Planting Planting seedlings.
Blanking Replanting an area where trees have died or not been planted correctly.
Releasing Releasing – manual or chemical removal of competing weeds from around recently planted trees.
Silviculture
Pruning Pruning e.g. removing branches from trees.
Thinning Removing unwanted or poorest quality trees.

Mechanised or manual processing of stems.
Harvesting
<p>Tree felling</p> <p>Cutting down trees in preparation for extraction.</p> <p>Mechanised or manual processing of stems.</p> <p>Extraction</p> <p>Moving the tree stems from the felling area to a processing area/landing.</p> <p>Log making and processing</p> <p>Processing stems into logs for sale to a customer e.g. delimiting, cutting to length.</p> <p>Mechanised or manual processing of stems.</p>

2. What are **two** factors that positively impact crop quality in establishment?

Assessor

This question supports PC 1.1.

Judgement statement

- The candidate correctly describes **two** factors that positively impact crop quality in establishment.

Example answers

- Clearing weeds before planting helps seedlings get a healthy start.
- Planting seedlings in well-cultivated soil helps maximise tree size.
Tree releasing by keeping weeds clear from around the planted seedlings helps get better tree form and survival.

3. What are **two** factors that positively impact crop quality in silviculture?

Assessor

This question supports PC 1.1.

Judgement statement

- The candidate correctly describes **two** factors that positively impact crop quality in silviculture.

Example answers

- Pruning to the required height helps produce higher value clear wood stems.
- Thinning allows the remaining trees additional space to grow.
Thinning removes the poorest quality trees to maximise final crop growth.

4. What are **two** factors that positively impact crop quality in harvesting. 

Assessor


This question supports PC 1.1.

Judgement statement

- The candidate correctly describes **two** factors that positively impact crop quality in harvesting.

Example answers

- Planning direction trees will be felled will increase safety and reduce damage.
- Correct settings of the mechanised harvesting head functions will minimise stem damage and wood wastage.
- Shovel and bunching tree stems will increase safety and efficiency and reduce stem damage.

5. How does your personal time management affect how much work you get done? Include in your answer distractions from personal life, your own use of time, including start time, breaks and finish time. 

Assessor

This question supports PC 2.2, 3.1.

Judgement statement

- The candidate describes how their personal time management , including distractions from personal life, their start time, breaks and finish time, affects their own productivity.

Example answer

If I am late starting work, take too long over breaks, finish early, distract others or spend too much time on my phone when I am working, it directly affects how much work I get done. I am paid to do a job, and need to make sure I make good use of my time throughout the day to ensure I keep up with the work required.

6. How does the quality of your own work affect product quality? 

Assessor

This question supports PC 3.2.

Judgement statement

- The candidate describes how their personal performance affects product quality.

Example answer

As the head breaker-out. Preparation and planning to insure everyone remains safe and drags are efficient and stem damage is minimised are

some of my key responsibilities. That way, stems will get to the landing in the best condition for processing.

7. What downstream operations does your work affect? 

Assessor

This question supports PC 3.3.

Judgement statement

- The candidate identifies downstream operations that their work affects.

Example answer

Downstream operations relevant to the candidate's current role are identified. For example loading logs may affect the safe transporting of logs.

8. How does your own work affect these downstream operations? 

Assessor


This question supports PC 3.3.

Judgement statement

- The candidate identifies downstream operations that their work affects.

Example answer

(Quality control) If the mechanised processor is cutting logs that are out of specification, it will mean more work for crew e.g. cut-backs and regrade logs. This can mean lower grade recovery and less money for the forest owner.

9. How does the training you have been given affect the way you work? 

Assessor

This question supports PC 3.5.

Judgement statement

- The candidate describes how training affects their personal performance which affects product quality.
- It is clear the candidate understands the effect of training on their personal performance.

Example answer

When I was trained I was first trained in all the critical rules and safe techniques for felling trees.

My trainer explained to me how my work as a faller could affect everyone else.

Too few trees on the ground meant low production for our crew.

It was also made clear that I need to make the best use of my time, and do the best work I can. In terms of output and quality of my work do my job to the best of my ability and use my time productively. This means I am always aware of how important it is to do my job efficiently, and use my time as well as I can to meet targets.

If I hadn't had that training, I would have not known how my own work has a flow-on effect on the quality and output of the whole operation.

10. How can you improve the way you work?



Assessor

This question supports PC 3.4.

Judgement statements

- The candidate describes how their personal performance affects product quality.
- It is clear the candidate understands the effect of their personal performance on product quality.

Example answers

Time management

How the candidate can improve their own time management is described clearly, e.g. take only allowed time for breaks.

Quality

How the candidate can improve the quality of their work is described clearly, e.g. (feller) ensure stems are felled consistently in the direction required by the felling plan; trim stems more carefully etc.

Distractions from personal life

How the candidate can improve the way distractions from personal life affect their work performance e.g. take time off if required.

Assessor – record key points from candidate's verbal answers as accurately and fully as possible.

These answers were written by:


Candidate

Assessor



Question Set 2 – Planning for Quality and Efficiency

These questions are about to plan and maintain quality and efficiency in a forestry operation.
Use your own words. Your assessor may ask you more questions to check your understanding.

1. Give **two** examples of how your crew manager organises the crew to ensure quality is maintained. 

Assessor

This question supports PC 2.1.

Judgement statement

- The candidate correctly describes **two** ways their crew manager plans crew use to ensure quality is maintained.


Example answers

Description may include details of any **two** of:

- Onsite training.
- Crew meetings.
- Giving responsibility to senior members.
- Quality control and audits.
- Explaining the job specs or the job prescription.
- Worker and contractor certification.

1.

2.

2. Give **two** examples of how your crew manager plans equipment use to ensure quality is maintained. 

Assessor

This question supports PC 2.1.

Judgement statement

- The candidate correctly describes **two** ways their crew manager plans equipment used to ensure quality is maintained.


Example answers

Description may include details of any **two** of:

- Selecting the right equipment.
- Maintaining equipment correctly.
- Calibrating equipment regularly.
- Training operators to use equipment correctly.
- Planning e.g. tree felling plan, extraction plan, landing plan.

1.

2.

3. How does your crew manager identify and manage bottlenecks to ensure quality is maintained? 

Describe at least **two** ways.

Assessor

This question supports PC 2.1.

Judgement statement

- The candidate correctly describes at least **two** ways their crew manager identifies and manages bottlenecks to ensure quality is maintained.

Example answers

Description may include any **two** of the following, but is not limited to:

- Walking and planning the block.
- Equipment checks.
- Weather forecasts.
- Tailgate meetings.
- Daily job prescriptions.
- Hazard management.

- Crew plans to address problems / issues of the day etc.

4. Give **two** examples of how your crew manager makes sure compliance requirements are met. ☑

Assessor

This question supports PC 2.1.

Judgement statement

- The candidate correctly describes **two** ways their crew manager makes sure compliance requirements are met.

Example answers

Description may include but is not limited to:

- Crew meetings to explain the requirements
- Regular checks to ensure compliance is maintained.
- Worker and contractor certification.
- Issuing worker and contractor PPE.

1.

2.

5. How can effective crew time management help a forestry operation? ☑

Assessor

This question supports PC 2.2.

Judgement statement

- The candidate correctly describes how effective crew time management can help a/their forestry operation.

Example answers

- Maintaining effective use of crew time by planning so that there is no unnecessary downtime.
- Start, finish and break times are adhered to helps the crew meet production requirements.

6. How can crew training affect the efficiency of a forestry operation?

Assessor

This question supports PC 2.3.

Judgement statement

- The candidate correctly describes how crew training can affect the efficiency of a forestry operation.

Example answer

Training crew in correct methods and use of equipment, handling a range of roles, efficient use of their time etc can make the whole operation work more efficiently. If everyone knows how to do their job properly there is a lot less quality and time management issues.

7. How does efficient use of plant (machinery), equipment and labour affect the overall quality and profitability of a forestry operation?

Assessor

This question supports PC 2.4.

Judgement statement

- The candidate describes how efficient use of plant, equipment and labour affects the overall quality and profitability of a forestry operation.

Example answer

Efficient use of plant, equipment and labour means that less time is wasted, greater output can be achieved, and a higher quality of product achieved. This reduces extra processing time, and enables a greater profit to be made by keeping costs as low as possible.

Assessor – record key points from candidate's verbal answers as accurately and fully as possible.

These answers were written by:

Candidate

Assessor



Question Set 3 – Measuring Quality and Efficiency

These questions are about how quality and efficiency are measured in a forestry operation.
Use your own words. Your assessor may ask you more questions to check your understanding.

1. Why are job prescriptions important in quality control? 

Assessor


This question supports PC 1.2.

Judgement statement

- The candidate explains why job prescriptions are an important part of quality control.

Example answers

- A Job prescription is provided by the forest owner to give instructions for the operation being carried out and outlines the quality requirements of the operation.
- A job prescription is a way of making sure best practice is understood and followed by everyone or their worksite.

2. Why is regular quality control important for each of the following: 

- maintaining production output
- avoiding unnecessary rework time
- maintaining stable contracts
- keeping up crew morale
- adding value
- safety
- fatigue

Assessor

This question supports PC 1.3.

Judgement statement

- The candidate explains why regular quality control is important to maintaining production, avoiding unnecessary rework time, maintaining stable contracts, keeping up crew morale, adding value, maintaining safety and reducing fatigue.

Example answers

Maintaining production	Regular quality control can pick up any work quality issues before they result in a rework. This saves wasted time and helps maintain efficient production output.
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Minimising rework time	The most effective way to prevent wasted time in reworks is to regularly check that the work is being done to the required standard.
Contract stability	Keeping the operation at a high level of quality helps keep the forest owner / manager happy, and maintains the contract with the forest owner / manager.
Crew morale	Continued non-compliance with forest owner / manager standards leads to reworks, lost pay and work discontent. Regular quality control avoids all this.
Adding value	It is important that the crew is aware of the value they add in the job they are carrying out. Make sure this is expressed at all crew meetings.
Safety	To keep everyone safe ensuring that all safety information is provided at tailgate meetings and crew meetings.
Fatigue	<ul style="list-style-type: none"> • Reduces the ability to maintain personal contribution to production and quality • Reduces awareness of risk of harm to self or others • Reduces motivation & interest in the job.

3. How are Job Prescriptions used to set quality standards?

Assessor

This question supports PC 1.4.

Judgement statement

- Candidate correctly describes how job prescriptions are used to set quality standards.

Example answer

Details given of their current job prescription, harvest plan, log specs or other written instructions that set quality standards to measure quality against.

4. Describe **two** sampling methods used to measure quality.

Assessor

This question supports PC 1.4.

Judgement statement

- The candidate correctly describes **two** sampling methods used to measure quality.

Example answer

Methods of quality control used in the operation described. May include: audits, plots, visual assessments, remeasures, random samples.

5. Describe **three** items of equipment used to measure quality.

Assessor

This question supports PC 1.4.

Judgement statement

- The candidate correctly describes **three** items of equipment used to measure quality.

Example answer

Items could include but are not limited to: tape, diameter tape, vertex, spray paint, job specs/prescription, height pole, clinometer/suunto, compass or GPS etc.

Assessor – record key points from candidate's verbal answers as accurately and fully as possible.

These answers were written by:

Candidate

Assessor