# **Hoe Chucker Assessment**

	This document can be used:
	For gathering evidence in a training environment
Assessment	As a competency check of knowledge on an existing worker; or
	As a summative assessment.
Candidate Name	
Assessor Name	
Date of Assessment	
	☐ The candidate met all outcomes of the worker assessment
Summary of	☐ The candidate has <b>NOT</b> met all outcomes of the <b>worker assessment</b>
Assessment	☐ Gap training plan developed
Date of Reassessment	
Summary of	☐ The candidate met all outcomes of the worker assessment
Summary of Reassessment	☐ The candidate has <b>NOT</b> met all outcomes of the <b>worker assessment</b>
	<ul> <li>Complete the assessment with the candidate adding notes to justify your decisions.</li> </ul>
	Ensure the first page of this document is completed (all fields).
Instructions	Develop a gap training plan for practical deficiencies if required.
	<ul> <li>Use the same form for reassessment (if applicable) only reassessing the areas where gaps exist.</li> </ul>
	<ul> <li>Conduct the competency conversation before conducting the practical assessment.</li> </ul>

**Note:** This worker assessment covers the technical components of a specific role. For general knowledge and a complete picture of a worker's competency, BC Forest Safety recommends the optional Basic Forest Worker competency profile and assessment tools that can be found at www.bcforestsafe.org.

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# **Part 1 - Competency Conversation**

#### **General Instructions**

To conduct a competency conversation, ask the worker the questions in this first part of the assessment to determine if they understand the knowledge components of their role. It is acceptable to rephrase the question in a way that the worker understands but the worker cannot be given hints to the correct answer. The assessment should not be used as a training opportunity; instead any deficiencies identified in this assessment should be collected into a gap training plan and addressed with the worker later.

**Important Note:** Do not conduct competency conversation while operating equipment.

#### **Training and Assessment Rubric**

# **Assessment Instruction**

- S This means that the candidate must supply all responses listed, as the knowledge is **safety** critical or important.
- B This means the candidate must at a minimum verbalize the **bolded** responses, and additional responses are further proof of competence.
- P The candidate must give a **percentage** of responses correctly to reasonably show competence in the area.

#### 1068 - Describe Signals Used in Forestry

Locator	Questions					
	General Yarding / General Mechanized Harvesting					
1.2	What is the signal process before blasting?					
	☐ 12 short whistle signals sounded at 1 second intervals					
	☐ Two minutes elapse after the last warning signal before initiating the blast					
	After blast and inspection one prolonged whistle of at least 5 second duration must be sounded before permission granted to return announced by radio					
	Assessment Instruction: S					
	Assessment:	☐ Outcome met	☐ Outcome not met			

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### 1090 - Describe Harvesting Methods

Locator	Questions				
	General Forestry				
1.1	In what conditions are cable	-logging systems generally us	ed?		
	Cable logging is general ground based mechaniz	lly conducted on steep slope, we led harvesting	et, or inaccessible terrain for		
	Assessment Instruction: S				
	Assessment:	☐ Outcome met	☐ Outcome not met		
1.2	What are safety consideration	ns related to ground based m	echanized harvesting?		
	☐ Machine limitations (slop	pe and stability, handling loads)			
	☐ Ground conditions				
	☐ Steep slopes				
	☐ Lock out				
	☐ Three-point contact				
	☐ Crush points				
	☐ Minimum safe separatio	☐ Minimum safe separation or hazard zones and safe zones			
	☐ Overhead or buried pow	☐ Overhead or buried power or gas			
	☐ Danger trees	☐ Danger trees			
	Assessment Instruction: P -7 f	rom list			
	Assessment:	☐ Outcome met	☐ Outcome not met		
1.3	What are safety consideration	ns related to cable logging sy	stems?		
	☐ Runaway trees				
	☐ Bight				
	☐ Clearing				
	☐ Workers in area				
	☐ Minimum safe distances	<b>S</b>			
	☐ Danger trees				
	☐ Crushing				
	Assessment Instruction: P – 6	from list			
	Assessment:	☐ Outcome met	☐ Outcome not met		

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2.3	What is critical to do when ch	nanging a logging plan?	
	☐ Communicate to all work  Assessment Instruction: S	ers what the changes are	
	Assessment:	☐ Outcome met	☐ Outcome not met

### 1081 - Describe Tools and Equipment for Heavy Machinery

Locator	Questions					
	Mechanized Harvesting / Road Building					
1.1	What are 9 common and spe	cialty tools used on heavy eq	uipment?			
	☐ Multi-testers					
	☐ Inspection mirrors					
	☐ Pick up magnets					
	☐ Easy outs					
	□ Wrenches					
	☐ Taps and dies					
	☐ Hammers					
	☐ Shovels					
	☐ Drift and pry bars					
	☐ Chisel					
	☐ Files					
	☐ Jack					
	☐ Air tools					
	☐ Impact wrenches					
	☐ Ratchets					
	☐ Die grinder					
	☐ Greaser					
	☐ Hose press					
	Assessment Instruction: P – 9	from list				
	Assessment:	☐ Outcome met	☐ Outcome not met			

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2.1	Name eight pieces of welding	g equipment and supplies us	ed on heavy equipment
	Oxy acetylene cutting sy	/stems	
	☐ Air arc		
	☐ Chip hammers		
	☐ Propane gas torch 'tiger	torch'	
	☐ Wire brush		
	☐ Chalk		
	☐ Tip cleaner		
	☐ Grinder		
	☐ Drill		
	☐ Cut off saw		
	☐ Air tools		
	☐ Flux chippers		
	☐ Grinders		
	☐ Vice		
	☐ Cutting table		
	☐ Plasma cutter		
	Assessment Instruction: P – 8	from list	
	Assessment:	☐ Outcome met	☐ Outcome not met
2.2	What are three types of weld	ing commonly used on heavy	y equipment?
	☐ Stick		
	☐ Wire feed		
	☐ Brazing		
	Assessment Instruction: S		
	Assessment:	☐ Outcome met	☐ Outcome not met
2.3	What PPE is mandatory whe	n using welding equipment?	
	☐ Gloves		
	☐ Welding helmet		
	☐ Cutting goggles		
	☐ Fireproof clothing		
	☐ Safety glasses		
	Assessment Instruction: S		
	Assessment:	☐ Outcome met	☐ Outcome not met

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3.1	What are common gas-powered tools used on heavy equipment?			
	☐ Cut off saw			
	☐ Pressure washers			
	☐ Gas or electric compressors			
	☐ Gas or diesel generators			
	☐ Pumps			
	☐ Plate compactor			
	Assessment Instruction: P – 4 from list			
	Assessment:	☐ Outcome met	☐ Outcome not met	

### 1082 - Describe General Heavy Equipment Inspection and Maintenance Procedures

Locator	Ques	tions				
	Mechanized Harvesting / Road Building					
1.1	What inspe	hat are the major mechanical components or systems that require maintenance and spection?				
		Engine systems				
		Hydraulic systems				
		Electrical systems				
		Attachments				
		Undercarriage				
	Asses	ssment Instruction: S				
		Assessment:	☐ Outcome met	☐ Outcome not met		
1.2	What	are common symptoms o	r indicators of failure?			
		Noise				
		Vibration				
		Smells				
		Leaks				
		Cracks				
		Lack of power				
		Improper function				
		Exhaust colour				
		Gauges				

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	☐ Warning lights				
	Asse	ssment Instruction: P – 7 fro	m list		
		Assessment:	☐ Outcome met		Outcome not met
2.1	What	are the three main pre-sta	art procedures?		
		External visual equipment	checks		
		Fluid checks			
		Operational (in cab) checks	S		
	Asse	ssment Instruction: S			
		Assessment:	☐ Outcome met		Outcome not met
2.2	What	are the main consideration	ns for shut down procedures	?	
		Parking position			
		Attachments grounded			
		Cool down time			
		Maintenance log			
	Asse	ssment Instruction: S			
		Assessment:	☐ Outcome met		Outcome not met
2.3	What	are common maintenance	e procedures on heavy equip	ment?	
		Lock out or zero energy sta	ate		
		Greasing			
		Adding fluids and fuel			
	☐ Draining fuel sumps and water separators				
		Tightening loose hardware			
		Repair leaks			
		Replacing O-rings			
		Replacing hoses			
		Replacing filters			
		Bleeding air from fuel syste	ems		
		Adjust track tension			
		Adjust belt tension			
		Maintain tire pressure			
		Clean and maintain batterio	es		
	Asse	ssment Instruction: P – 10 fr	om list		
		Assessment:	☐ Outcome met		Outcome not met

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## 1083 - Describe Heavy Equipment Mechanical Systems

Locator	Questions				
	Mechanized	Harvesting / Road Building			
1.1	What are two basic components of an engine and their function?				
	☐ Turbo charger – increases	power on an engine			
	☐ Cylinder head – Allows air/f	uel into/out of combustion char	mber		
	☐ Piston – creates compressi	on			
	Assessment Instruction: P – 2 from	n list			
	Assessment:	☐ Outcome met	☐ Outcome not met		
1.2	Name two things a driver should	d check in an engine lubricat	ion system		
	☐ Oil level				
	☐ Oil pressure				
	☐ Grade of oil required				
	Assessment Instruction: P – 2 from	n list			
	Assessment:	☐ Outcome met	☐ Outcome not met		
1.3	What are two components of a	cooling system and their fund	ction?		
	☐ Radiator – allows air and water flow to cool engine				
	☐ Hoses – water to circulate				
	☐ Fan – draw air into radiator				
	☐ Fan belts – drive the fan				
	Assessment Instruction: P – 2 from	n list			
	Assessment:	☐ Outcome met	☐ Outcome not met		
1.4	What are three components of a	fuel system and their functi	on?		
	☐ Tanks – holds fuel				
	☐ Lines – deliver fuel from tank to engine				
	☐ Filters – removes foreign debris from fuel				
	☐ Pump – Deliver fuel to engine				
	Assessment Instruction: P – 3 from	n list			
	Assessment:	☐ Outcome met	☐ Outcome not met		

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1.5	What	t are three components of air induction and exhaust systems and their function?				
		Pre-cleaner – Takes coars	se particulates from air supply			
		Air filter – Removes fine particulates from air supply				
		Air to air – Delivery system	n of air to the turbo charged en	gine		
		After treatment (DEF) – S	ystem that minimizes air pollution	on in exhaust		
	Asses	ssment Instruction: P – 3 fr	om list			
		Assessment:	☐ Outcome met	☐ Outcome not met		
2.1	What	are three components of	hydraulic systems including	function?		
		Pumps – pump fluid				
		Motor – propulsion on con	nponents			
		Cylinders – move attachments or implements				
		Hoses – delivers fluid to motors or cylinders				
		Valves - Controls flows				
		Tank and fluid level indicator – identify levels of fluids				
	Asses	ssment Instruction: P – 3 from list				
		Assessment:	☐ Outcome met	☐ Outcome not met		
3.1	What	are three components of	a powertrain system includir	ng function?		
		Travel motor – allows mad	chine/component to move			
		Transmissions – transfer p	power form engine to drive syst	ems		
		Differentials – transfers po	ower from transmission to axles			
		Swing gear – allows mach	ine to rotate			
		Final drives – drives tracks	S			
		Engine – primary source of	of power			
		Pumps – secondary source	e of power			
	Asses	ssment Instruction: P – 3 fro	om list			
		Assessment:	☐ Outcome met	☐ Outcome not met		

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4.1	What	What are three components of track systems including function?				
		Tracks – enables machine	e to move			
		Idler – allows track to rotate around				
		Sprocket – drives track to	rotate around			
		Bottom and top (carrier) ro	ollers – reduce friction within the	e undercarriage system		
		Track adjuster – keeps tra	ick tight			
	Asses	ssment Instruction: P – 3 fro	om list			
		Assessment:	☐ Outcome met	☐ Outcome not met		
5.1	What	are four types of braking	systems?			
		Air system				
		Hydraulic system				
		Air/hydraulic system				
		Engine braking system (co	ompression, exhaust)			
		Hydrostatic system				
	Asses	ssessment Instruction: P – 4 from list				
		Assessment:	☐ Outcome met	☐ Outcome not met		
6.1	Name	Name three common parts of electrical systems and their function				
		Alternators – creates elec	trical current			
		Starters – starts the engin	е			
		Batteries – powers the sta	arter			
		Fuses – fail safe for syste	m			
		Solenoids – a electromag	netic switch			
		☐ Switches - turns power on and off				
	Assessment Instruction: P – 3 from list					
		Assessment:	☐ Outcome met	☐ Outcome not met		
6.1	What	are the two common type	es of electrical systems?			
		12 V and 24 V				
	Asses	ssment Instruction: S				
i)						

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7.1	Name three types of ground engaging systems and their function					
	☐ Blades – pushes material					
	☐ Buckets – carries material					
	☐ Scarifiers – digs up ground					
	☐ Grapples – grabs logs					
	☐ Rock hammer – breaks ro	cks				
	☐ Compactors – compresses material					
	☐ Drill hammer – drills holes in rocks					
	Assessment Instruction: P – 3 from list					
	Assessment:	☐ Outcome met	☐ Outcome not met			

### 1095 - Describe and Operate Hoe Chucker

Locator	Questions							
1.1	Name two places an operator can find information on operational capabilities, limitations, and restrictions of hoe chuckers							
	☐ Operator manuals	Operator manuals						
	☐ Standard operating proced	ures						
	Assessment Instruction: S							
	Assessment:	☐ Outcome met	☐ Outcome not met					
1.3	What should be considered who	en developing a harvest plan	?					
	☐ Other phases							
	☐ Terrain and soil conditions	including drainage patterns						
	☐ Site sensitive area and no-	Site sensitive area and no-go zones						
	☐ Skid direction	Skid direction						
	☐ Decking locations	Decking locations						
	Assessment Instruction: P -4 from	n list						
	Assessment:	☐ Outcome met	☐ Outcome not met					
1.4	What are hazards related to ope	erating a hoe chucker?						
	☐ Slips and falls							
	☐ Crush points							
	☐ Fire from debris build up wi	ith machine						
	☐ Roll over							
	☐ Other worker in work area							

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	☐ Energized machines		
	☐ Communication failure		
	☐ Unstable soil		
	☐ Slippery machine surfaces		
	☐ Jill pokes		
	☐ Logs entering cab		
	Assessment Instruction: P – 9 from	m list	
	Assessment:	☐ Outcome met	☐ Outcome not met
2.6	What long-term effect does con	stantly sitting in a poor body	position cause?
	☐ Sore back		
	☐ Sore neck		
	☐ Sore shoulders		
	☐ Carpal tunnel syndrome		
	Assessment Instruction: P – 3 fro	om list	
	Assessment:	☐ Outcome met	☐ Outcome not met
3.3	What basic repairs may an ope	rator perform on a hoe chuck	er?
	☐ Replace hydraulic hoses		
	☐ Replace / clean fuel filters		
	☐ Change engine oil and filte	r	
	☐ Adjust belt tension		
	☐ Clean battery terminals		
	☐ Adjust track tension or air t	ire pressure	
	Assessment Instruction: P – 5 from	m list	
	Assessment:	☐ Outcome met	☐ Outcome not met

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# Part 2 - Practical Assessment

#### **General Instructions**

To conduct the practical assessment, monitor the worker in a variety of situations to determine if they can consistently perform the skill components of their role in a safe and effective manner. Once confident that the worker can conduct the skills consistently, mark the outcome met. If the worker cannot consistently perform the skills required, add this component to the gap training plan.

Remember not to distract the operator when conducting the practical assessment.

#### **Training and Assessment Rubric**

# Outcome Not Met (ONM)

**Skills:** Can complete the task but only with direct instruction and supervision, may lack consistency in application.

**Knowledge:** Does not understand what they are doing, or are not aware of a knowledge deficiency, or need guidance and support.

**Attributes:** Displays limited or no professional attributes including being fit for work, prepared for the day, working in an organized manner, achieving work outcomes, or lacks in consistency.

### Outcome Met (OM)

**Skills:** Consistently completes the task using safe work practices multiple times in a variety of contexts.

**Knowledge:** Has a solid grasp of underpinning knowledge, consistently applies it, and can explain it.

**Attributes:** Consistently displays professional attributes including being fit for work, prepared for the day, working in and organized manner and achieving work outcomes.

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A) PREPARE FOR THE DAY	ОМ	ONM	N/A
Arrived on time			
Clothing for conditions			
<ul> <li>Layered clothing appropriate to the elements for working and transport conditions</li> </ul>			
Nutrition and water			
Adequate food for the day			
Sufficient hydration for work and weather conditions			
Fit for work			
Candidate is physically able to do the task			
3-point contact on and off machine			
Able to get up and down machine			
Able to perform simple maintenance			
Able to change attachments			
Can fit through escape hatch			
Not noticeably impaired		П	П
<ul> <li>Candidate is not obviously physically or mentally impaired (by drugs, alcohol, personal situations, fatigue)</li> </ul>		_	
Knows where ERP is located			
B) PERSONAL PROTECTIVE EQUIPMENT (where applicable)		ONM	N/A
Hard hat			
CSA – less than 3 years old / ANSI – less than 5 years old			
No dents/cracks, modifications			
Suspension maintained (4-point min)			
Hi-Vis			
Minimum 120 square inches front and back			
Not faded, discoloured, torn or permanently dirty			
Contrasts with the work environment			
Leg protection			
Minimum 3600/4100 FPM rating			
Kevlar not compromised or exposed			
Pants maintained and repaired (no loose tears to outer layer)			

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Face/Eye protection			
Face screen free of holes			
Moves freely between down and raised position			
Safety glasses used when appropriate			
Hand protection			
Not damaged and free of holes			
Appropriate to weather conditions			
Sized correctly for hands			
Hearing protection			
Minimum 24 NRR			
Maintained and in working condition			
Footwear			
<ul> <li>Good condition including sole tread pattern</li> </ul>			
Must be laced			
Has fire extinguisher in cab			
Dust mask	]	]	
NIOSH N95 compliant			Ш
PPE inspected and maintained			
PPE used consistently as required			

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C) PRE-WORK ACTIVITIES	ОМ	ONM	N/A
Equipment manuals available			
Pre-start equipment checks			
Walk around and check for leaks			
Check for loose components			
Check for cracks, loose, missing bolts			
Check for damage to machine			
Obstructions			
Fluid levels			
Water/Coolant			
Hydraulic			
Engine			
Night switch			
Check track pads (where applicable)			
Tire pressure (where applicable)			
Check for tire damage (where applicable)			
Wheels and wheel nuts (where applicable)			
Close air reservoir (where applicable)			
Safety equipment check			
Start-up procedures			
Maintain three-point contact on and off machine			
Find key			
Check gauges			
Warning systems			
Start and warm up hydraulics			
Check transmission			
Warning lights			
Wipers			
Seatbelt			
Lock out			
Parking brake			
All controls and major systems			

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Escape hatch			
Housekeeping			
Radio operational			
D) COMMUNICATION	OM	ONM	N/A
Attend pre-work meetings			
Ensures hazards are understood			
Communicates hazards throughout workday			
Uses signals as required			
Consistently communicates work plans			
Professional communication throughout workday			
E) ERGONOMICS	OM	ONM	N/A
Lifts correctly (where applicable)			
Best practice for body position while operating			
Walks safely in the bush (where applicable)			
F) COMPLETE TASKS	ОМ	ONM	N/A
Shut down procedures			
Safe parking location			
Brake on (where applicable)			
Lower boom/blade/attachments			
Position for ease of access and egress			
Level position for fluid checks			
Cool down before shut-down			
Walk around and general check			
Secure/lock machine			
3-point contact on and off			
Turn off night switch			
Close air reservoir access (where applicable)			

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Daily maintenance tasks	П		П
Lubrication systems	1		
Air intake systems			
Air system reservoir			
Fuel tank sump			
Drain air system/water separator			
Drain Fuel filters/water separator			
Inspect and clean components			
Housekeeping			
<ul> <li>Track tension (where applicable)</li> </ul>			
Tire pressure (where applicable)			
Greasing			
• Fueling			
Check for leaks			
Basic repairs			
<ul> <li>Hydraulic hoses/fittings/O-rings</li> </ul>			
Fuel/air filter			
Engine oil change			
Belt tension			
Battery terminals			
<ul> <li>Attachment teeth/buckets (where applicable)</li> </ul>			
Change lights			
Repair wiring			
G) OPERATE HOE CHUCKER	ОМ	ONM	N/A
Maintains 3-point contact on and off machine			
Ability to use multiple functions while operating equipment			
Monitors equipment performance while operating			
Situational awareness at all times			
Manoeuvre safely over variety of terrain			
Control logs			

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Operator functions on hoe chucker		
Raise and lower boom	ļ	
Extend and retract stick		
<ul> <li>Operate grapple (open, close, rotate)</li> </ul>		
Track forward and back	ļ	
Swing with loads		
Boom assisted turns (boom down to turn)	ļ	
Adequate puncheon used in travel routes		
Smooth operations		
Multiple functions at once		
Hazard awareness		
Debris build up in machine		
Roll over		
Crush injuries		
Slips trips falls		
Pinch points		
Roll over		
Jill pokes		
Unstable		
Unsecured runaway		
Runaway logs		
Logs entering cab		
Attachments entering cab		

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Harvest map			
Identify decking locations	_	_	
Skid trail locations			
Understand terrain and soil conditions including drainage patterns			

#### This is the last page of the assessment.

In consultation with industry subject matter experts, the BC Forest Safety Council (BCFSC) facilitated the production of this material. Funding was provided by the Government of Canada, the Province of British Columbia, and industry in-kind contributions.

Printed copies are considered uncontrolled and may be outdated. Current versions are available from the BCFSC. Refer to <a href="https://www.bcforestsafe.org/node/2823">https://www.bcforestsafe.org/node/2823</a> for more information.

Feedback is welcome and may be sent to training@bcforestsafe.org.







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