Skidder Assessment

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

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	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	n or hazard zones and safe zone	es			
	☐ Overhead or buried pow	ver or gas				
	☐ 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	;				
	☐ 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 changing a logging plan?			
	☐ Communicate to all work			
	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	uipm	ent?
		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				
	Asses	ssment Instruction: P – 9	from li	st		
		Assessment:		Outcome met		Outcome not met

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2.1	Name eight pieces of welding equipment and supplies used on heavy equipment			
	Oxy acetylene cutting sy	ystems .		
	☐ 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 f	rom list				
	Assessment:					

1082 - Describe General Heavy Equipment Inspection and Maintenance Procedures

Locator	Questi	ions				
	Mechanized Harvesting / Road Building					
1.1	What a		components or systems that	require maintenance and		
		Engine systems				
		Hydraulic systems				
		Electrical systems				
		Attachments				
		Undercarriage				
	Assess	sment Instruction: S				
		Assessment:	☐ Outcome met	☐ Outcome not met		
1.2	What a	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 w	ater 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 batterion	es		
	Asse	ssment Instruction: P – 10 fr			
		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	s of an engine and their funct	ion?			
	☐ 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	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 of air to the turbo charged engine					
		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 attachm	ents or implements				
		Hoses – delivers fluid to m	notors or cylinders				
		Valves – Controls flows					
		Tank and fluid level indica	tor – identify levels of fluids				
	Asses	ssment Instruction: P – 3 from list					
		Assessment:					
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 machine to rotate					
		Final drives – drives tracks					
		Engine – primary source of	of power				
		Pumps – secondary source	e of power				
	Asses	ssment Instruction: P – 3 from	om list				
		Assessment:	☐ Outcome met	☐ Outcome not met			

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4.1	What	hat 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	ssment Instruction: P – 4 fro	om list				
		Assessment:	☐ Outcome met	☐ Outcome not met			
6.1	Name	e three common parts of electrical systems and their function					
		Alternators – creates elec	trical current				
		Starters – starts the engin	е				
		Batteries – powers the sta	rter				
		Fuses – fail safe for syste	m				
		Solenoids – a electromagnetic switch					
		Switches - turns power on and off					
	Asses	sessment 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					
		Assessment:	☐ Outcome met	☐ Outcome not met			

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7.1	Name three types of ground e	ngaging systems and their fu	nction			
	☐ Blades – pushes material					
	☐ Buckets – carries materia	I				
	☐ Scarifiers – digs up groun	d				
	☐ Grapples – grabs logs					
	☐ Rock hammer – breaks ro	ocks				
	☐ Compactors – compresse	s material				
	☐ Drill hammer – drills holes	s in rocks				
	Assessment Instruction: P – 3 from list					
	Assessment:	☐ Outcome met	☐ Outcome not met			

1093 - Describe and Operate Skidder

Locator	Questions							
1.1	•	me two places an operator can find information on operational capabilities, itations, and restrictions of skidders						
	☐ Operator manuals	Operator manuals						
	☐ Standard operating proceed	dures						
	Assessment Instruction: S	I	I					
	Assessment:	☐ Outcome met	☐ Outcome not met					
1.3	What should be considered wh	nen developing a harvest plar	1?					
	☐ Other phases							
	☐ Terrain and soil conditions	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							
	Assessment Instruction: P -4 from	n list						
	Assessment:	☐ Outcome met	☐ Outcome not met					
1.4	What are hazards related to op	erating a skidder?						
	☐ Slips and falls							
	☐ Crush points							
	☐ Fire from debris build up w	vith 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			
	Asse	ssment Instruction: P – 4 fro	m list		
		Assessment:	☐ Outcome met		Outcome not met
2.7	What	long-term effect does con	stantly sitting in a poor body	posit	ion cause?
		Sore back			
		Sore neck			
		Sore shoulders			
		Carpal tunnel syndrome			
	Asse	ssment Instruction: P – 3 fro	om list	I	
		Assessment:	☐ Outcome met		Outcome not met
3.3	What	basic repairs may an ope	rator perform on a skidder?		
		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		
	Asse	ssment Instruction: P – 5 fro	m list	I	
		Assessment:	☐ Outcome met		Outcome not met
4.1	What	types of attachments are	found on a skidder?		
		Winch			
		Blade			
		Chokers			
		Mainline			
		Grapple			
	Asse	ssment Instruction: S			
		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			
 Layered clothing appropriate to the elements for working and transport conditions 			
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			
 Candidate is not obviously physically or mentally impaired (by drugs, alcohol, personal situations, fatigue) 			
Knows where ERP is located			
B) PERSONAL PROTECTIVE EQUIPMENT (where applicable)	ОМ	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			
 Good condition including sole tread pattern 			
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	ı		
Housekeeping	ı		
Radio operational			
D) COMMUNICATION	ОМ	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	ОМ	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	П
Lubrication systems			_
Air intake systems			
Air system reservoir			
Fuel tank sump			
Drain air system/water separator			
Drain Fuel filters/water separator			
Inspect and clean components			
Housekeeping			
 Track tension (where applicable) 			
 Tire pressure (where applicable) 			
Greasing			
• Fueling			
Check for leaks			
Basic repairs			
 Hydraulic hoses/fittings/O-rings 			
Fuel/air filter			
Engine oil change			
Belt tension			
Battery terminals			
 Attachment teeth/buckets (where applicable) 			
Change lights			
Repair wiring			
G) OPERATE SKIDDER	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			

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Operator functions on skidder		
 Function of differentials locks and/or traction assist 		
Lift grapple and blade		
Move forward		
• Stop		
Back up		
Raise or lower arch		
Move boom ahead and back		
Rotate grapple		
Left or right and open and close		
Watches for tail swing		
Builds a bladed skid trail		
Articulates for steering including maintaining traction on uneven terrain		
Smooth operations		
Use and maintain skidder attachments		П
Smooth operations	_	_
Winch system		
Blade		
• Chokers		
Mainline		
• Boom		
Grapple		

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Hazard awareness		
Debris build up in machine	_	_
Roll over		
Crush injuries		
Slips trips falls		
Pinch points		
Roll over		
Jill pokes		
Unstable		
Unsecured runaway		
Harvest map		
Identify decking locations		
Skid trail locations		
 Understand terrain and soil conditions including drainage patterns 		
Stumps cut to correct height		

This is the last page of the assessment.

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

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







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