

<b>Company Name:</b>	<b>Equipment/Job Identification: Low Roof Scaler</b> <b>Type of Equipment: Gradall Low Roof Scaler (1269)</b> <b>Make: Gradall</b> <b>Model: XL510</b> <b>Year: 2001</b> <b>Use:</b>
<b>Mine Name:</b>	
<b>Date of Analysis:</b>	

### Pre-Assessment

All MSHA Part 48 requirements must be met including Task Training  
Company policy requirements and SOPs  
Task training records must be on file prior to operating any mobile equipment

### Duty 1: Start of Shift Activities

Learner will explain the importance of start-of shift activities. The learner will explain each job step, why it is conducted, any associated risk, and how to implement appropriate controls. Start-of-shift activities include the following steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Conduct self assessment		1		
Tag in	Failure to tag in and tag out may cause loss of production and/or personal injury due to the blasting schedule. You could be left in the mine.	2		
Punch time clock		1		
Obtain and put on PPE		1		Hard hat, cap lamp, self-rescuer and mine belt, eight inch lace up steel toe boots, safety glasses and ID tag.
Obtain and fill water cooler with water		1		
Walk to production shaft		1		
Contact hoist operator		1		
Ensure the man cage is spotted		1		
Ensure horn is sounded prior to opening shaft gate		1		
Open the shaft gate		1		
Open the man cage door		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Enter man cage		1		
Close the shaft gate		1		
Close man cage door		1		
Signal hoist operator for proper level		1		
Ride man cage down to the 900' level after signal is given to the hoist operator		1		
Ensure that horn is sounded prior to opening man cage door		1		
Open the man cage door		1		
Open shaft gate		1		
Exit man cage		1		
Close man cage door		1		
Close shaft gate		1		
Release the man cage		1		
Enter the air-lock		1		
Close air-lock doors		1		
Open inside air-lock door and exit		1		
Close air lock after last person has exited the air-lock		1		
Walk to transportation		1		
Travel to 1600' level shop		1		
Save lunch in lunch room		1		
Attend pre-shift line up with supervisor	Failure to attend this pre-shift line up with supervisor could reduce production by not knowing location of equipment and/or what is scaled. Safety and/or maintenance information may be missed.	2		
• Location of scaler		2		
• What room to scale?		2		
• Where is the next face?		2		
• Discuss any maintenance issues		2		

## Duty2: Workplace Inspection

Learner will demonstrate how to safely and efficiently perform a workplace inspection. The learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient performance of a workplace inspection includes the following steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Inspect ground conditions for loose scales (Back/Roof, Face and Ribs)	Failure to inspect could cause disabling injury or death by loose ground falling on persons. Equipment damage could occur from falling material which would cause production to stop.	3		The back, face and ribs of mine shall be inspected.
Inspect floor for slip, trip, and fall hazards	Failure to inspect floor could cause disabling injury or death because of slip, trip and fall hazards. Equipment damage could occur from running over large chunks of salt on floor. Running over chunks could cause injury due to flying salt pieces.	3		If any unsafe condition is found, contact supervisor and/or correct unsafe condition(s).
Inspect for misfire caps	Failure to inspect face and ceiling for misfires could cause disabling injury, death, and property damage due to a pre-mature detonation.	3		Notify supervisor
Fill out work place inspection form immediately	Failure to fill out and submit inspection form may cause unsafe conditions to go uncorrected.	1		It is the responsibility of the operator to complete the form. If the form is not completed, the employee would be disciplined.

### Duty 3: Conduct Pre-Shift Inspection

Learner will demonstrate how to safely and efficiently perform the pre-shift inspection on the XL510 Gradall Low Roof Scaler (1269). The learner will also explain the job duties, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient performance of the pre-shift on the XL510 Gradall Low Roof Scaler (1269) includes the following steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Conduct a general walk around of scaler		1		
<ul style="list-style-type: none"> <li>Look for any unusual/unsafe conditions around and under the scaler</li> </ul>		1		
<ul style="list-style-type: none"> <li>Look for puddles of fluid on floor, around and under scaler</li> </ul>		1		
Check Engine oil by pulling dip stick		1		The trainer should point out the proper operating levels.
Check engine coolant reservoir for proper level		1		Ensure engine is not hot prior to opening. The trainer should point out the proper operating level line during training.
Check fuel level		1		
<ul style="list-style-type: none"> <li>Observe fuel gauge in operators cab on left side of control panel</li> </ul>		1		
Check hydraulic oil level		1		
<ul style="list-style-type: none"> <li>Observe site glass on front side of hydraulic tank</li> </ul>		1		
Check V-belts for wear, cracks and splits		1		
Check radiator hoses for wetness and cracks		1		
Check engine compartment guards	Failure to ensure guards are in place could cause someone to become entangled in moving machine parts causing disabling injury or death.	3		Refer to company policy and procedure manual on guarding.
<ul style="list-style-type: none"> <li>Assure (2) guards are in place</li> </ul>				
Check boom extension swivel		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
• Check for hydraulic leaks		1		
• Check for loose bolts on swivel		1		
• Check Allen bolts on swivel		1		
• Check mounting bracket		1		
Check pick cylinder and pick		1		
• Check to ensure all pins are in place and are properly retained		1		
• Check for hydraulic leaks		1		
Check rollers and cams		1		
• Inspect visually for wear and tear of rollers		1		
• Inspect cams visually to ensure bolts are in place		1		
Check boom lift cylinder & pins		1		
• Assure all pins are in place and properly retained		1		
• Check for hydraulic leaks		1		
Check housekeeping		1		
• Check for and remove all trash	Could lose control causing property damage and/or injury.	1		Trash could block brake and tram pedals functions.
Check air filters on engine		1		Contact supervisor to replace filter.
• Unscrew wing nut, remove end plate cover, and remove filter to inspect		1		Proper inspection procedure will be demonstrated.
Check tires for inflation, peeling, wear and tear		1		
Check wheel lugs for tightness		1		
• Ensure that all lugs are there		1		
Check steering cylinders and ball joints		1		
• Check for fluid leaks and visually inspect ball joints to ensure nut is secured in place		1		
Inspect counter weight retainer bolts		1		
• Ensure all bolts are in place and tight.		1		
Check hydraulic hoses	Leaking/Spraying hydraulic fluids	3		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
	could contact hot engine components which may lead to a fire causing equipment damage, stopping production and possibly causing a disabling injury or death.			
<ul style="list-style-type: none"> <li>Look for wetness and cracks around the hose and fittings</li> </ul>		1		
<ul style="list-style-type: none"> <li>Check for excessive wear and leaks</li> </ul>		1		
Check boom swing turn table bolts		1		
<ul style="list-style-type: none"> <li>Assure bolts are in place</li> </ul>		1		
<ul style="list-style-type: none"> <li>Check for hydraulic leaks</li> </ul>		1		
Check boom extension cylinders and pins		1		
<ul style="list-style-type: none"> <li>Assure all pins are in place and properly retained</li> </ul>		1		
<ul style="list-style-type: none"> <li>Check for hydraulic leaks</li> </ul>		1		
Check steering cylinders and pins		1		
<ul style="list-style-type: none"> <li>Ensure all pins are in place and are properly retained</li> </ul>		1		
<ul style="list-style-type: none"> <li>Check for hydraulic leaks</li> </ul>		1		
Ensure all necessary grease points have been greased		1		Contact supervisor if not properly greased.
Check fire extinguisher	Inspecting fire extinguishers may result in the detection of mal-functioning extinguishers. A mal-functioning extinguisher could cause delay in fighting the fire and it being extinguished. Fires can spread causing disabling injury, death, loss of production and/or property damage.	3		Underground mine fires cause carbon monoxide gas, as well as, an oxygen deficient atmosphere which can be explosive with the right mixture of oxygen. At least one fire fighting system must be operable at all times. If defects are found on both systems, tag-out drill and immediately report it to supervisor.

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> <li>Check gauge to ensure extinguisher is properly charged</li> </ul>	A discharged extinguisher will not work properly and will cause a delay while you obtain another extinguisher	3		
<ul style="list-style-type: none"> <li>Ensure pin is in place and is secure</li> </ul>	If the pin is not in place, accidental discharging could take place. Some extinguisher propellants are potentially harmful to vision and breathing. Accidental discharge could result in injury from the surprised event.	3		
Check fire suppression cartridge & ring pin	Inspecting fire suppression systems may result in the detection of a mal-functioning system. A mal-functioning fire suppression system may result in a delay in extinguishing a fire. This could slow or stop an escape resulting in a disabling or fatal injury. Equipment will be damaged and production will be stopped.	3		Underground mine fires cause carbon monoxide gas, as well as, an oxygen deficient atmosphere which can be explosive with the right mixture of oxygen.
<ul style="list-style-type: none"> <li>Check gauge to ensure extinguisher is properly charged</li> </ul>	A discharged extinguisher will not work properly and will cause a delay while you obtain another extinguisher.	3		
<ul style="list-style-type: none"> <li>Ensure pin is in place and is secure</li> </ul>	If the pin is not in place, accidental discharging could take place. Some extinguisher propellants are potentially harmful to vision and breathing. Accidental discharge could result in injury from the surprised event.	3		
<ul style="list-style-type: none"> <li>Ensure LED indicator is functioning and green light is on</li> </ul>	If the LED indicator and green light are not functioning, the system may not be working.	3		
Inspect ROPS structure		1		
<ul style="list-style-type: none"> <li>Check for cracks</li> </ul>		1		
<ul style="list-style-type: none"> <li>Check for broken weld</li> </ul>		1		
<ul style="list-style-type: none"> <li>Check for loose or missing bolts</li> </ul>		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Start engine		1		Never leave equipment idling unnecessarily due to DPM regulations.
<ul style="list-style-type: none"> <li>Enter cab</li> </ul>	Failure of using the 3 points of contact could result in a slip, trip or falling causing a fatal or disabling injury.	3		Maintain 3 points of contact during mounting and dismounting.
<ul style="list-style-type: none"> <li>Turn key clock wise</li> </ul>		1		
Ensure backup alarm is functional		1		All operators shall look behind prior to backing up.
Ensure horn is functional		1		Horn buttons (red) located on both joy sticks.
Check hydraulic safety switch	Failure to operate scaler without the hydraulic safety switch functional could result in injury and/or death. Accidental rotation of the turn table could occur, trapping the operator between the cab and the turntable.	3		Safety switch is located on the right arm rest of operator's seat.  Raise arm rest to disengage hydraulic functions.
Check lights		1		
<ul style="list-style-type: none"> <li>Flip toggle switch to on position</li> </ul>		1		Leave lights toggle in the on position.
<ul style="list-style-type: none"> <li>Ensure all lights are on</li> </ul>		1		
Check windshield		1		Clean windshield as needed.
<ul style="list-style-type: none"> <li>Check for cracks</li> </ul>		1		
<ul style="list-style-type: none"> <li>Ensure windshield is properly within the seal</li> </ul>		1		
Check for wiper operation		1		
Check engine speed control		1		
<ul style="list-style-type: none"> <li>Dial knob to desired RPMs</li> </ul>				
Check tram alarm	The face is a congested area. Failure to sound a tram alarm would most likely injure co-workers and damage equipment.	2		
<ul style="list-style-type: none"> <li>Release parking brakes</li> </ul>		2		
<ul style="list-style-type: none"> <li>Tram forward and reverse to assure alarm is functioning</li> </ul>		2		
<ul style="list-style-type: none"> <li>Listen for alarm</li> </ul>		2		



Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Check yellow strobe light		1		Strobe light must be operational before scaling operation begins. This is a secondary precaution to the posted warning signs.
Check park brakes		1		
<ul style="list-style-type: none"> <li>Engage park brake by lifting mushroom knob up and attempt to tram forward and reverse.</li> </ul>		1		If park brakes do not hold, tag out and inform supervisor.
Check digging brakes		1		<p>While in low tram, the digging brake will apply automatically when tram pedal is released.</p> <p>While in high tram, the digging brake will not apply when tram pedal is released. Manual brakes must be used when using high tram.</p>
Report any safety defects and/or unusual conditions to the supervisor and immediately shut down and tag out equipment	Failure to shut down and tag equipment could result in the operation of defective equipment. This could cause a disabling injury and/or death. Failure to tag out equipment when defects are noted would result in disciplinary action.	3		
Fill out pre-shift inspection form immediately after conducting pre-shift inspection	Failure to fill out and submit pre-shift form may cause unsafe conditions to go uncorrected or addressed.	1		<p>It is the responsibility of the operator to complete the form. If the form is not completed the employee would be disciplined.</p> <p>Pink copy is kept with the machine.</p>

## Duty 4: Tramming and Back Scaling Operation

Learner will demonstrate how to safely and efficiently tram and back scale. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient tramming and back scaling operations include the following steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Complete Pre-Shift Inspection (Duty 3) prior to tramming		1		
Throttle engine to desired RPM		1		Three quarter throttle desired.
Release park brake after air pressure reaches approximately 90 PSI		1		
Lower right arm rest to engage hydraulic system		1		Right arm rest serves as a safety switch.
Raise boom 2 feet from ceiling by pulling back on left joystick		1		Lights aid in inspecting ceiling when tramming.
Push or pull on steering wheel to adjust to a comfortable operating position		1		
Push or pull steering wheel to adjust		1		
Depress foot pedal to forward position release digger brakes		1		
Begin Tram		1		
<ul style="list-style-type: none"> <li>Press foot pedal and steer scaler with steering wheel</li> </ul>		1		
Tram to desired location		1		
<ul style="list-style-type: none"> <li>Inspect for scales on back and ribs while tramming</li> </ul>		1		While tramming be aware of trailing cables, mobile equipment, power centers, and pedestrian traffic. If scales are observed, follow scaling procedures.
Post room with sign: "scale area do not enter"		1		
Inspect face area for any unusual atmospheric condition		1		Refer to gas chart.

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Inspect face area		1		
<ul style="list-style-type: none"> <li>Lower boom to parking position before dismounting</li> </ul>		1		
<ul style="list-style-type: none"> <li>Set park brake</li> </ul>		1		
<ul style="list-style-type: none"> <li>Dismount scaler using caution maintaining 3 point contact</li> </ul>	Failure of using the 3 points of contact could result in a slip, trip or falling causing a fatal or disabling injury.	3		Explain mounting and dismounting hazards. i.e. 3 points of contact and Do not jump from ladder.
<ul style="list-style-type: none"> <li>Remain approximately 60 feet from face area (2 shots back)</li> </ul>		1		
<ul style="list-style-type: none"> <li>Inspect face for misfire caps</li> </ul>	The cap could explode unexpectedly if not found and removed.	2		Never attempt to remove a misfire cap unless trained.
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Check for exposed lead lines of caps (green line)</li> </ul> </li> </ul>	The cap could explode unexpectedly if not found and removed.	2		
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Post area with blasting sign if a misfire is found</li> </ul> </li> </ul>	The cap could explode unexpectedly if not found and removed.	2		
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Notify supervisor and any other workers immediately when a misfire is found</li> </ul> </li> </ul>	The cap could explode unexpectedly if not found and removed.	2		
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>Back scaler out of face, approximately 150 feet</li> </ul> </li> </ul>	Property damage could occur if equipment is left in direct line of blast.	2		
Inspect ceiling for abnormally large scale		1		Notify supervisor if scaler determines that the scale could cause potential equipment damage and/or endanger operator.
Inspect for uneven floor		1		Uneven floors will affect the stability of scaler.  Use caution when this condition exists.
Tram to center of room approximately 60 feet from face in preparation for scaling		1		

## Duty 5: Scale Ceiling (A)

Learner will demonstrate how to scale the ceiling. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. The proper procedures for working safely while scaling the ceiling area include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Begin Scaling on the left side of ceiling scaling to the right side (clockwise)		1		
Stop machine at desired location		1		
Release tram throttle to set digger brakes		1		
Set park brakes		1		Set park brakes if condition warrants: incline or decline.
<ul style="list-style-type: none"> <li>Pull up on park brake knob to set brakes</li> </ul>		1		
Raise boom to working height		1		
Swing boom clockwise inspecting ceiling around scaler		1		If scale is observed, remove the scale.
Position boom over the left front tire by continuing to swing in a clockwise motion.		1		Follow boom radius chart.
<ul style="list-style-type: none"> <li>Push right joystick to the right to swing right</li> </ul>		1		Swinging left with boom lowered creates a blind spot.
Curl pick up by pushing the left joystick to the left		1		
Extend boom to area to be scaled by pressing the right joystick forward		1		
Curl pick down when contact is made with ceiling by pulling left joystick to the right		1		This should create an approximate half inch impression in salt.
Maneuver boom by rotating it if necessary to aid in knocking scales down and to see the tip of pick		1		
<ul style="list-style-type: none"> <li>Push right joystick toggle switch left or right to rotate boom</li> </ul>		1		Instructor needs to explain functions of boom roll.

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Extend boom while curling pick down and lowering boom (simultaneously)		1		This will create a scraping action across the ceiling knocking down scales. Extend boom by pushing right joystick forward. Curl pick by pulling left joystick to the right. Lower boom by pushing left joystick forward. Boom should never be extended beyond half the telescoping range (approximately 23 feet). This prevents unnecessary stress on equipment and long term breakdowns.
Retract boom while curling pick up and raising boom (simultaneously)		1		Retract boom by pulling right joystick back. Curl pick up by pulling left joystick to the left. Raise boom by pulling left joystick back.
Swing boom right approximately 6-12 inches and repeat scraping process throughout swing radius (to the right tire)		1		Refer to boom radius chart.  Assure swing radius area is completely scaled.
Reset to next setup		1		
• Release park brakes if applied		1		
• Tram forward to desired location (approximately 23 feet)		1		
• Set park brakes if needed		1		
• Repeat ceiling scaling process		1		
Repeat process until all loose scale has been removed from ceiling in position A.		1		

## Duty 6: Scale Face (A)

Learner will demonstrate how to properly scale the face area. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Proper procedures for working safely while face scaling includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Retract boom completely		1		
Tram forward toward face (stopping approximately 5 feet from face)		1		
Set park brakes if needed		1		
Extend boom to the point where the ceiling and face meets		1		Extend Boom by pushing right joystick forward.
Curl pick up		1		Curl pick up by pushing the left joystick to the left.
Scale face and rib by curling pick in a downward motion until pick breaks contact with face		1		Curl pick down by pulling the left joystick to the right.  This should create an approximate half inch impression in salt.
Maneuver boom by rotating it if necessary to aid in knocking scales down and to see the tip of the pick		1		
<ul style="list-style-type: none"> <li>Push right joystick toggle switch left or right to rotate boom</li> </ul>		1		Instructor needs to explain functions of boom roll.
Swing boom to the right (approximately 6-12 inches)		1		See to boom radius chart  Assure boom radius area is completely scaled.
Repeat process from ceiling to floor within boom radius until all scale has been removed		1		Refer to boom radius chart.
Raise the boom to working height		1		
Release park brakes if applied		1		
Ensure there are no obstacles in travel way of scaler		1		

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Back equipment away from face		1		
<ul style="list-style-type: none"> <li>Depress the base (heel) of the tram pedal fully</li> </ul>		1		
Tram approximately 80 feet from the scaled portion of the face		1		
Reposition to scale ceiling and rib of right side of room (B)		1		
<ul style="list-style-type: none"> <li>Steer scaler to right side of room on an angle</li> </ul>		1		See scaling diagram.
<ul style="list-style-type: none"> <li>Set park brakes if needed</li> </ul>		1		

## Duty 7: Scale Ceiling (B)

Learner will demonstrate how to scale the ceiling. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. The proper procedures for working safely while scaling the ceiling area include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Begin Scaling on the left side of ceiling scaling to the right side (clockwise)		1		
Stop machine at desired location		1		
Release tram pedal to set digger brakes		1		
Set park brakes if condition warrants		1		Set park brakes if condition warrants: incline or decline.
<ul style="list-style-type: none"> <li>Pull up on park brake knob to set brakes</li> </ul>		1		
Raise boom to working height		1		
Swing boom clockwise inspecting ceiling around scaler		1		if scale observed, remove prior to scaling the ceiling
Position boom over the left front tire by continuing to swing in a clockwise motion.		1		Follow boom radius chart.
<ul style="list-style-type: none"> <li>Push right joystick right to swing right</li> </ul>		1		Swinging left with boom lowered creates a blind spot.
Curl pick up by pushing the left joystick to the left		1		
Extend boom to area to be scaled by pressing the right joystick forward		1		
Curl pick down when contact is made with ceiling by pulling left joystick to the right		1		This should create an approximate half inch impression in salt.
Maneuver boom by rotating it if necessary to aid in knocking scales down and to see the tip of the pick		1		
<ul style="list-style-type: none"> <li>Push right joystick toggle switch left or right to rotate boom</li> </ul>		1		Instructor needs to explain functions of boom roll.



Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Extend boom while curling pick down and lowering boom (simultaneously)		1		This will create a scraping action across the ceiling knocking down scales. Extend boom by pushing right joystick forward. Curling pick by pulling left joystick to the right. Lower boom by pushing left joystick forward. Boom should never be extended beyond half the telescoping range (approximately 23 feet). This prevents unnecessary stress on equipment and long term breakdown.
Retract boom while curling pick up and raising boom (simultaneously)		1		Retract boom by pulling right joystick back. Curl pick up by pulling left joystick to the left. Raise boom by pulling left joystick back.
Swing boom right approximately 6-12 inches and repeat scraping process throughout swing radius (to the right tire)		1		Refer to boom radius chart.  Assure swing radius area is completely scaled.
Repeat process until all loose scale has been removed from ceiling in position B		1		

## Duty 8: Scale Face and Rib (B)

Learner will demonstrate how to properly scale the face and rib areas. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Proper procedures for working safely while face and rib scaling include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Retract boom completely		1		
Tram forward towards face (stopping approximately 5 feet from face)		1		
Set park brakes if needed		1		
Extend boom to the point where the ceiling and face meets		1		Extend Boom by pushing right joystick forward.
Curl pick up		1		Curl pick up by pushing the left joystick to the left.
Scale face and rib by curling pick in a downward motion until pick breaks contact with face		1		Curl pick down by pulling the left joystick to the right.
Maneuver boom by rotating it if necessary to aid in knocking scales down and to see the tip of pick		1		
<ul style="list-style-type: none"> <li>Push right joystick toggle switch left or right to rotate boom</li> </ul>		1		Instructor needs to explain functions of boom roll.
Swing boom to the right (approximately 6-12 inches)		1		Refer to swing radius chart;  Assure swing radius area is completely scaled.
Repeat process from ceiling to floor within boom radius until all scale is removed		1		Refer to boom radius chart
Raise the boom to working height		1		
Release park brakes if applied		1		
Ensure there are no obstacles in travel way of scaler		1		Remove or maneuver around all obstacles in travel way.  Obstacles are objects too large to run over.

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Back equipment away from face		1		
<ul style="list-style-type: none"> <li>Depress the base (heel) of the tram pedal fully</li> </ul>		1		
Tram approximately 80 feet from the scaled portion of the face		1		
Reposition to scale ceiling and rib of left side of room (C)		1		
<ul style="list-style-type: none"> <li>Steer scaler to left side of room on an angle</li> </ul>		1		See scaling diagram.
<ul style="list-style-type: none"> <li>Set park brakes if needed</li> </ul>		1		

## Duty 9: Scale Ceiling (C)

Learner will demonstrate how to scale the ceiling. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. The proper procedures for working safely while scaling the ceiling area include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Begin Scaling on the left side of ceiling scaling to the right side (clockwise)		1		
Stop machine at desired location		1		
Release tram pedal to set digger brakes		1		
Set park brakes		1		Set park brakes if condition warrants: incline or decline.
<ul style="list-style-type: none"> <li>Pull up on park brake knob to set brakes</li> </ul>		1		
Raise boom to working height		1		
Swing boom clockwise inspecting ceiling around scaler		1		If scale observed, remove scale.
Position boom over the left front tire by continuing to swing in a clockwise motion.		1		Follow boom radius chart.
<ul style="list-style-type: none"> <li>Push right joystick right to swing right</li> </ul>		1		Swinging left with boom lowered, creates a blind spot.
Curl pick up by pushing the left joystick to the left		1		
Extend boom to area to be scaled by pressing the right joystick forward		1		
Curl pick down when contact is made with ceiling by pulling left joystick to the right		1		This should create an approximate half inch impression in salt.
Maneuver boom by rotating it if necessary to aid in knocking scales down and to see the tip of the pick		1		
<ul style="list-style-type: none"> <li>Push right joystick toggle switch left or right to rotate boom</li> </ul>		1		Instructor needs to explain functions of boom roll.

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Extend boom while curling pick down and lowering boom (simultaneously)		1		This will create a scraping action across the ceiling knocking down scales. Extend boom by pushing right joystick forward. Curling pick by pulling left joystick to the right. Lower boom by pushing left joystick forward. Boom should never be extended beyond half the telescoping range (approximately 23 feet). This will prevent unnecessary stress on the equipment and long term break downs.
Retract boom while curling pick up and raising boom (simultaneously)		1		Retract boom by pulling right joystick back. Curl pick up by pulling left joystick to the left. Raise boom by pulling left joystick back.
Swing boom right approximately 6-12 inches and repeat scraping process throughout swing radius (to right tire).		1		See boom radius chart.  Assure swing radius area is completely scaled.
Reset to next set up		1		
• Release park brakes if applied		1		
• Tram forward to desired location (approximately 23 feet)		1		
• Set park brakes if need		1		
• Repeat ceiling scaling process		1		
Repeat process until all loose scale has been removed from ceiling in position C		1		

## Duty 10: Scale Face and Rib (C)

Learner will demonstrate how to properly scale the face and rib areas. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Proper procedures for working safely while face and rib scaling include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Retract boom completely		1		
Tram forward towards face (stopping approximately 5 feet from face)		1		
Set park brakes if needed		1		
Extend boom to the point where the ceiling and face meets		1		Extend boom by pushing right joystick forward.
Curl pick up		1		Curl pick up by pushing the left joystick to the left.
Scale face and rib by curling pick in a downward motion until pick breaks contact with face		1		Curl pick down by pulling the left joystick to the right
Maneuver boom by rotating it if necessary to aid in knocking scales down and to see the tip of the pick		1		
<ul style="list-style-type: none"> <li>Push right joystick toggle switch left or right to rotate boom</li> </ul>		1		Instructor needs to explain functions of boom roll.
Swing boom to the right (approximately 6-12 inches)		1		Refer to boom radius chart.  Assure boom radius area is completely scaled.
Repeat process from ceiling to floor within boom radius until all scale has been removed		1		Refer to boom radius
Raise the boom to working height		1		
Release park brakes if applied		1		
Ensure there are no obstacles in travel way of scaler		1		Remove or maneuver around all obstacles in travel way.  Obstacles are objects too large to run over.

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Back equipment away from face		1		
<ul style="list-style-type: none"> <li>Depress the base (heel) of the tram pedal fully</li> </ul>		1		
Turn scaler around		1		
Tram scaler completely out of face area to prevent congestion		1		Back scale while tramming out of face as needed.
Tram to next room if time permits		1		Always watch for trailing cables, equipment, and/or other workers while tramming.

## Duty 11: End of Shift Activities

Learner will demonstrate how to safely and efficiently perform end of shift activities. The learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient end of shift activities include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Tram scaler out of blast area and travel ways to the parking location	If not properly parked, the scaling machine could hinder other traffic or be damaged during the blasting stage.	2		
Ensure boom is lowered to floor level		1		
Apply park brakes		1		
Idle engine for 5 minutes before shutdown		1		This allows the turbo charger to slow down preventing engine damage.
Shut down scaler		1		Equipment should not be left unattended when it is running.
Leave job site approximately 45 minutes prior to end of shift and travel to lunch room		1		
Communicate with supervisor and turn in pre-shift and work place inspection reports	Failure to submit pre-shift form may cause unsafe conditions to go uncorrected.	2		Communicate to supervisor the scaling progress that was completed.
Leave lunch room approximately 30 minutes prior to end of shift		1		
Travel to 900' level production shaft		1		
Wait until supervisor calls the man cage (approximately 2-3 minutes)		1		
Enter the air- lock		1		
Close air-lock doors		1		
Open inside air-lock door and exit		1		
Close air lock after last person has exited the air-lock		1		
Ensure the man cage is spotted		1		
Assure horn has sounded prior to opening shaft gate		1		
Open shaft gate		1		



Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Open man cage door		1		
Enter man cage		1		
Close shaft gate		1		
Close man cage door		1		
Ride man cage to surface after signal is given to the hoist operator		1		
Assure that horn has sounded prior to opening man cage door		1		
Open the man cage door		1		
Open shaft gate		1		
Exit man cage		1		
Close man cage door		1		
Close the shaft gate		1		
Release the man cage		1		
Walk to the change room		1		
Punch out time clock		1		
Save mine light and place on charger		1		
Tag out	Failure to tag in and tag out may cause loss of production and/or personal injury due to the blasting schedule. Could be left in the mine.	2		
Replace PPE in personal locker		1		
Walk to vehicle		1		