

# Operation & Safety Manual

Keep this manual with machine at all times.

*Model G6-42P* 

S/N 0160004018 & After

31200148

Original November 25, 2008





# CALIFORNIA PROPOSITION 65 BATTERY WARNING

Battery posts,
terminals and related
accessories contain
lead and lead compounds,
chemical known to the
State of California
to cause cancer and
reproductive harm.

WASH HANDS AFTER HANDLING!

# CALIFORNIA PROPOSITION 65 **EXHAUST WARNING**

Diesel Engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

# **REVISION LOG**

November 25, 2008 - A - Original Issue of Manual

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#### Read This First

This manual is a very important tool! Keep it with the machine at all times.

The purpose of this manual is to provide owners, users, operators, lessors, and lessees with the precautions and operating procedures essential for the safe and proper machine operation for its intended purpose.

Due to continuous product improvements, JLG Industries, Inc. reserves the right to make specification changes without prior notification. Contact JLG Industries, Inc. for updated information.

#### **Operator Qualifications**

The operator of the machine must not operate the machine until this manual has been read, training is accomplished and operation of the machine has been completed under the supervision of an experienced and qualified operator. Operation within the U.S.A. requires training per OSHA 1910.178.

Operators of this equipment must possess a valid, applicable driver's license, be in good physical and mental condition, have normal reflexes and reaction time, good vision and depth perception and normal hearing. Operator must not be using medication which could impair abilities nor be under the influence of alcohol or any other intoxicant during the work shift.

In addition, the operator must read, understand and comply with instructions contained in the following material furnished with the material handler:

- This Operation & Safety Manual
- Telehandler Safety Manual (as required)
- All instructional decals and plates
- · Any optional equipment instructions furnished

The operator must also read, understand and comply with all applicable Employer, Industry and Governmental rules, standards and regulations.

#### **Modifications**

Any modification to this machine must be approved by JLG.

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This product must comply with all safety related bulletins. Contact JLG Industries, Inc. or the local authorized JLG representative for information regarding safety-related bulletins which may have been issued for this product.

JLG Industries, Inc. sends safety related bulletins to the owner of record of this machine. Contact JLG Industries, Inc. to ensure that the current owner records are updated and accurate.

JLG Industries, Inc. must be notified immediately in all instances where JLG products have been involved in an accident involving bodily injury or death of personnel or when damage has occurred to personal property or the JLG product.

#### FOR:

- · Accident Reporting and Product Safety Publications
- · Current Owner Updates
- Questions Regarding Product Applications and Safety
- Standards and Regulations Compliance Information
- · Questions Regarding Product Modifications

#### **CONTACT:**

Product Safety and Reliability Department JLG Industries, Inc. 13224 Fountainhead Plaza Hagerstown, MD 21742 USA

or Your Local JLG Office (Addresses on back cover)

#### In USA:

Toll Free: 1-877-JLG-SAFE (877-554-7233)

#### **Outside USA:**

Phone: +1-717-485-5161

E-mail: ProductSafety@JLG.com

#### Other Publications Available

Service Manual	.91404002
Illustrated Parts Manual	.91404001

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Inspection, Maintenance and Repair Log

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# **SECTION 1 - GENERAL SAFETY PRACTICES**

#### 1.1 HAZARD CLASSIFICATION SYSTEM

### Safety Alert System and Safety Signal Words



**DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION** indicates a potentiality hazardous situation which, if not avoided, may result in minor or moderate injury.

#### 1.2 GENERAL PRECAUTIONS

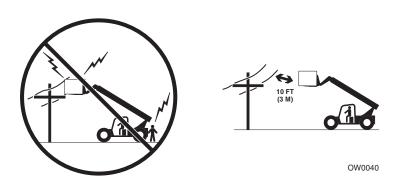
# **A** WARNING

Before operation, read and understand this manual. Failure to comply with the safety precautions listed in this manual could result in machine damage, property damage, personal injury or death.

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#### 1.3 OPERATION SAFETY

#### **Electrical Hazards**



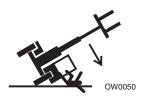
- This machine is not insulated and does not provide protection from contact or being near electrical current.
- **NEVER** operate the telehandler in an area where overhead power lines, overhead or underground cables, or other power sources may exist without ensuring the appropriate power or utility company de-energizes the lines.
- · Always check for power lines before raising the boom.
- Follow employer, local and governmental regulations for clearance from powerlines.

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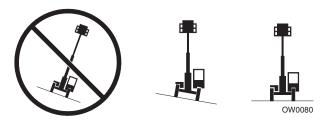
## **Tip Over Hazard**

#### General

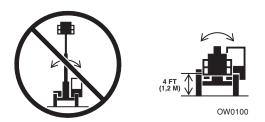
• For additional load requirements, refer to the appropriate capacity chart.



- Never use an attachment without the appropriate JLG approved capacity chart installed on the telehandler.
- Understand how to properly use the capacity charts located in cab.
- **DO NOT** exceed rated lift capacity.
- Be sure that the ground conditions are able to support the machine.



• **DO NOT** raise boom unless frame is level (0 degrees), unless otherwised noted on capacity chart.



DO NOT level machine with boom/attachment above 4 ft (1,2 m).
 (AUS - DO NOT level machine with load more than 11.8 in. (300 mm) above ground surface).

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- MAINTAIN proper tire pressure at all times. If proper tire pressures are not maintained, this machine could tip over.
- Refer to manufacturer's specifications for proper fill ratio and pressure requirements for tires equipped with ballast.



- · Always wear the seat belt.
- Keep head, arms, hands, legs and all other body parts inside operator's cab at all times.

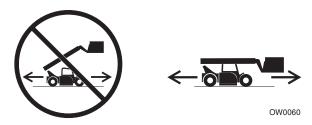


If the telehandler starts to tip over:

- DO NOT JUMP
- BRACE YOURSELF and STAY WITH THE MACHINE
- KEEP YOUR SEAT BELT FASTENED
- HOLD ON FIRMLY
- LEAN AWAY FROM THE POINT OF IMPACT

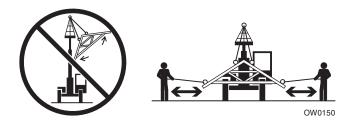
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#### Non-Suspended Load



DO NOT drive with boom raised.

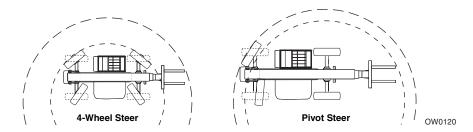
#### Suspended Load



- · Tether suspended loads to restrict movement.
- DO NOT raise the load more than 11.8 in (300 mm) above ground surface or the boom more than 45°.
- Weight of all rigging (slings, etc.) must be included as part of load.
- Start, travel, turn and stop slowly to prevent load from swinging.
- When driving with the boom raised, **DO NOT** exceed walking speed.
- Beware of wind. Wind can cause a suspended load to swing and cause dangerous side loads - even with tag lines.
- DO NOT attempt to use telehandler frame-leveling to compensate for load swing.
- · Keep heavy part of load closest to attachment.
- · Never drag the load; lift vertically.

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#### Travel Hazard



- Steering characteristics differ between 4-Wheel Steer & Pivot Steer telehandlers as shown above. Identify the telehandler you are operating & others on the jobsite.
- Ensure that adequate clearance is provided between both rear tail swing and front fork swing.
- Unlike a conventional 4-wheel steer telehandler the rear wheels of a pivot steer telehandler turn a wider circle than the front wheels.
- Look out for and avoid other personnel, machinery and vehicles in the area. Use a spotter if you DO NOT have a clear view.
- Before moving be sure of a clear path and sound horn.
- When driving, retract boom and keep boom/attachment as low as possible while maintaining visibility of mirrors and maximum visibility of path of travel.
- Always look in the direction of travel.
- Always check boom clearances carefully before driving underneath overhead obstructions. Position attachment/load to clear obstacles.

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# **Load Falling Hazard**



- Never suspend load from forks or other parts of carriage.
- DO NOT burn or drill holes in fork(s).
- Forks must be centered under load and spaced apart as far as possible.

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## **Lifting Personnel**



• When lifting personnel, **USE ONLY** a JLG approved personnel work platform, with proper capacity chart displayed in the cab.



• DO NOT drive machine from cab when personnel are in platform.

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### **Driving Hazards on Slopes**





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To maintain sufficient traction and braking capabilities, travel on slopes as follows:

- When unloaded, the rear of the machine is the "heavy end." Drive with forks pointed downhill.
- When loaded, the front of the machine is the "heavy end." Drive with the forks pointed uphill.
- For additional travel requirements, refer to the appropriate capacity chart.
- To avoid overspeeding the engine and drivetrain when driving down slopes, downshift to a lower gear and use the service brake as necessary to maintain a slow speed. DO NOT shift into neutral and coast downhill.
- Avoid excessively steep slopes or unstable surfaces. To avoid tip over DO NOT drive across excessively steep slopes under any circumstances.
- Avoid turning on a slope. Never engage "inching" or shift to "Neutral" when going downhill.
- DO NOT park on a slope.

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#### **Pinch Points and Crush Hazards**

Stay clear of pinch points and rotating parts on the telehandler.



• Stay clear of moving parts while engine is running.



• Keep clear of steering tires and frame or other objects.



• Keep clear from under boom.

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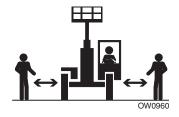
• Keep clear of boom holes.



• Keep arms and hands clear of attachment tilt cylinder.



• Keep hands and fingers clear of carriage and forks.



• Keep others away while operating.

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#### **Fall Hazard**



- Enter using the proper hand holds and steps provided. Always maintain 3-point contact when mounting or dismounting. Never grab control levers or steering wheel when mounting or dismounting the machine.
- DO NOT get off the machine until the shutdown procedure on page 4-4 has been performed.



• **DO NOT** carry riders. Riders could fall off machine causing death or serious injury.

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#### **Chemical Hazards**

#### **Exhaust Fumes**

- DO NOT operate machine in an enclosed area without proper ventilation.
- DO NOT operate the machine in hazardous environments unless approved for that purpose by JLG and site owner. Sparks from the electrical system and the engine exhaust can cause an explosion.
- If spark arrestors are required, ensure they are in place and in good working order.

#### Flammable Fuel



DO NOT fill the fuel tank or service the fuel system near an open flame, sparks
or smoking materials. Engine fuel is flammable and can cause a fire and/or
explosion.

#### **Hydraulic Fluid**



- **DO NOT** attempt to repair or tighten any hydraulic hoses or fittings while the engine is running or when the hydraulic system is under pressure.
- Stop engine and relieve trapped pressure. Fluid in the hydraulic system is under enough pressure that it can penetrate the skin.
- **DO NOT** use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks. Wear gloves to protect hands from spraying fluid.

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# **SECTION 2 - PRE-OPERATION AND INSPECTION**

#### 2.1 PRE-OPERATION CHECK AND INSPECTION

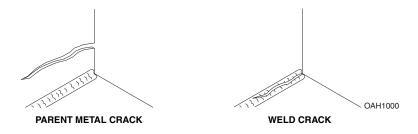
**Note:** Complete all required maintenance before operating unit.

# WARNING

**FALL HAZARD.** Use extreme caution when checking items beyond your normal reach. Use an approved ladder.

The pre-operation check & inspection, performed at beginning of each work shift or at each change of operator, should include the following:

- 1. **Cleanliness** Check all surfaces for leakage (oil, fuel or battery fluid) or foreign objects. Report any leakage to the proper maintenance personnel.
- 2. **Structure** Inspect the machine structure for dents, damage, weld or parent metal cracks or other discrepancies.



- 3. **Safety Decals** Ensure all safety decals are legible and in place. Clean or replace as required. See page 2-3 for details.
- 4. **Operation and Safety Manuals** Operation and Safety Manual and AEM Safety Manual (as required) are located in cab manual holder.
- 5. Walk-Around Inspection See page 2-6 for details.
- 6. Fluid Levels Check fluids, including fuel, hydraulic oil, engine oil and coolant. When adding fluids, refer to Section 7 Lubrication and Maintenance and Section 9 Specifications to determine proper type and intervals. Before removing filler caps or fill plugs, wipe all dirt and grease away from the ports. If dirt enters these ports, it can severely reduce component life.
- Attachments/Accessories Ensure correct load charts are installed on the telehandler. If provided, reference the Operation and Safety Manual of each attachment or accessory installed for specific inspection, operation and maintenance instructions.

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### Section 2 - Pre-Operation and Inspection

8. Operational Check - Once the walk-around inspection is complete, perform a warm-up and operational check (see page 2-8) of all systems in an area free of overhead and ground level obstructions. See Section 3 - Controls and Indicators for more specific operating instructions.

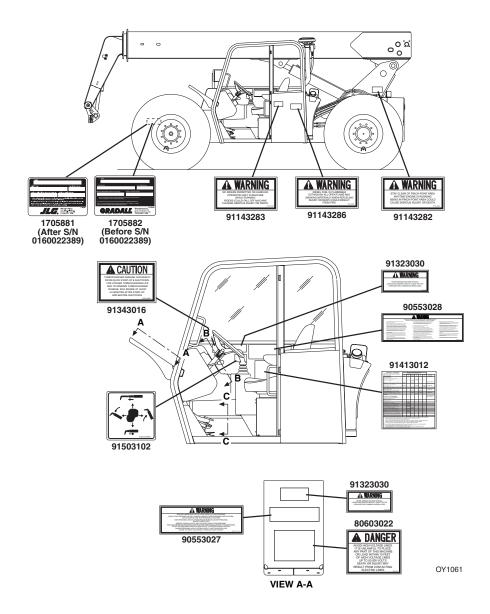
# WARNING

If telehandler does not operate properly, immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

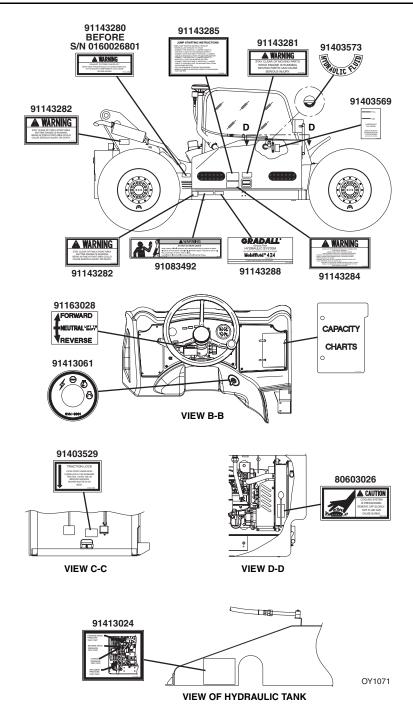
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### 2.2 SAFETY DECALS

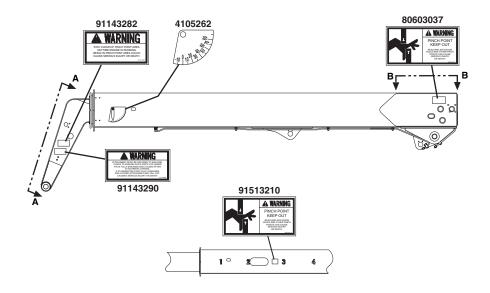
Ensure all **DANGER**, **WARNING**, **CAUTION** and instructional decals and proper capacity charts are legible and in place. Clean and replace as required.

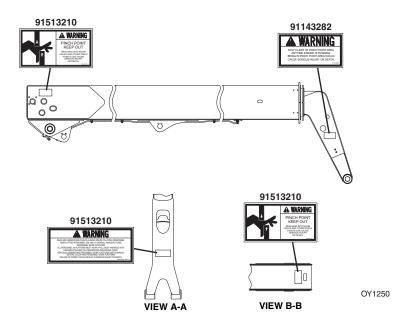


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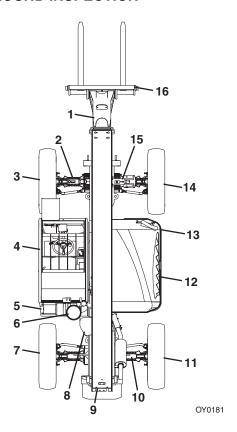
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#### 2.3 WALK-AROUND INSPECTION



Begin your walk-around inspection at item 1, as noted below. Continue to your right (counterclockwise when viewed from top) checking each item in sequence.

INSPECTION NOTE: On all components, make sure there are no loose or missing parts, that they are securely fastened and no visible leaks or excessive wear exists in addition to any other criteria mentioned. Inspect all structural members including attachment for cracks, excessive corrosion and other damage.

- 1. Boom Sections & Lift, Tilt, Extend/Retract, Compensating (Slave) Cylinders -
  - Check front, top, side & rear slider pads for adequate grease.
  - Pivot pins secure; hydraulic hoses undamaged, not leaking.
  - Check extend/retract cables and adjustment blocks for adequate tension.
- 2. <u>Front Axle</u> Pivot pins secure; hydraulic hoses undamaged, not leaking.
- 3. Wheel/Tire Assembly Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.

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#### 4. Cab & Electrical -

- Check window glass is in place and clean; gauges, switches, joysticks, foot controls & horn operational.
- General appearance; no visible damage; proper load charts and applicable Operator & Safety manual located in manual holder.
- Make sure emergency escape hammer is in place (enclosed cabs only).
- Check seat belt for damage, replace belt if frayed or cut webbing, damaged buckles or loose mounting hardware.
- 5. Fuel Tank Check fluid level, refill as required; filler cap is securely fastened.
- **6.** <u>Air Cleaner</u> Air cleaner element condition indicator, check for clogged condition. Replace element as required.
- 7. Wheel/Tire Assembly Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
- 8. Main Control Valve See Inspection Note.
- 9. Back-up Alarm See Inspection Note.
- **10.** Rear Axle Steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
- 11. Wheel/Tire Assembly Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
- 12. Engine Compartment -
  - · Engine Crankcase and Radiator, check level & refill as required.
  - Drive belts, check condition & replace as required.
  - Hydraulic pump & reservoir, recommended fluid level on sight gauge (lubricant must be cool), breather cap secure and working.
  - Engine cover properly secured.
- **13.** Mirrors Clean and undamaged.
- 14. Wheel/Tire Assembly Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
- 15. Sway Cylinder Pins secure; hydraulic hoses undamaged, not leaking.
- **16.** Attachment Properly installed, see "Attachment Installation" on page 5-7.

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#### 2.4 WARM-UP AND OPERATIONAL CHECKS

#### Warm-Up Check

During warm-up period, check:

- 1. Heater, defroster and windshield wiper (if equipped).
- 2. Check all lighting systems (if equipped) for proper operation.
- 3. Voltmeter should show 13.5 to 14 volts.
- 4. Adjust mirror(s) for maximum visibility.

# WARNING

**CUT/CRUSH/BURN HAZARD.** Keep engine cover closed while engine is running except when checking hydraulic filter condition indicator.

### **Operational Check**

When engine warms, perform an operational check:

- 1. Service brake and parking brake operation.
- 2. Forward and reverse travel.
- 3. Steering in both directions with engine at low idle.
- 4. Horn and back-up alarm. Must be audible from inside operators cab with engine running.
- 5. All boom and attachment functions operate smoothly and correctly.
- 6. Perform any additional checks described in Section 8.
- 7. Hydraulic Filter Condition Indicator.

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#### 2.5 OPERATOR CAB

The telehandler is equipped with a standard open ROPS/FOPS cab. An optional enclosed ROPS/FOPS cab is available.

# **A** WARNING

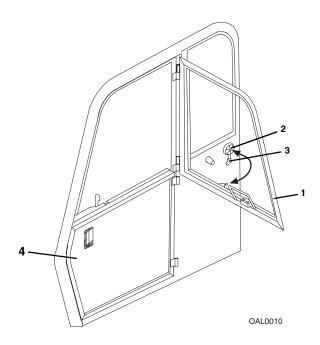
Never operate telehandler unless the overhead guard and cab structure are in good condition. Any modification to this machine must be approved by JLG to assure compliance with ROPS/FOPS certification for this cab/machine configuration. If damaged, the **CAB CANNOT BE REPAIRED**. It must be **REPLACED**.

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#### 2.6 WINDOWS

Keep all windows and mirrors clean and unobstructed.

## **Cab Door Window (if equipped)**



- During operation the window must either be latched open or closed.
- Open the cab door window (1) and secure it in the latch.
- Press the release button (2) inside the cab or pull on the lever (3) outside the cab
  to unlatch the window.
- During operation the lower door (4) must be closed.

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# **SECTION 3 - CONTROLS AND INDICATORS**

#### 3.1 GENERAL

This section provides the necessary information needed to understand control functions.

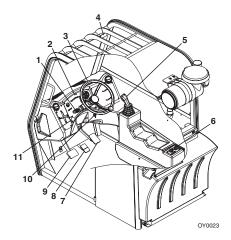
**Note:** The manufacturer has no direct control over machine application and operation. The user and operator are responsible for conforming with good safety practices.

# **NOTICE**

**EQUIPMENT DAMAGE.** When a red light illuminates, immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

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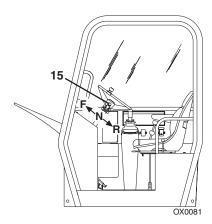
#### 3.2 CONTROLS



- 1. <u>Transmission Control Lever</u>: See page 3-3.
- 2. Instrument Panel: See "Dash Controls and Indicators" on page 3-8.
- Steering Wheel: Turning the steering wheel to the left or right steers the machine in the corresponding direction.
- Frame Level Indicator: Enables the operator to determine the left to right level condition of the telehandler.
- 5. Boom Joystick: See page 3-5.
- 6. Heater Control (if equipped): See page 3-10.
- Accelerator Pedal: Pressing down the pedal increases engine and hydraulic speed.
- 8. Traction Lock Pedal: Operates traction-lock valve which functions to restore traction when a wheel spins.
- Service Brake Pedal/Inching Travel Pedal: Operates the service brakes on the front axle. Permits slow travel speed while engine speed is kept high for other handler functions. The further the pedal is depressed, the slower the travel speed.
- 10. Ignition Switch: Key activated. See page 3-4.
- Attachment Tilt and Frame Sway Lever: See page 3-6 Auxiliary Control Joystick (if equipped): See page 3-7

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#### **Transmission Control Lever**



Transmission control lever (15) engages forward or reverse travel.

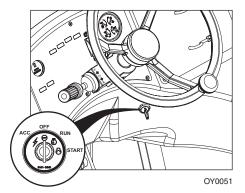
- Lift and push lever forward for forward travel; lift and pull lever rearward for reverse travel. Move lever to centered position for 'Neutral'.
- When traveling in REVERSE, the back-up alarm will automatically sound.
- Drive in reverse and turn only at slow rates of speed.
- Do not increase engine speed with the transmission in forward or reverse and the service brake depressed in an attempt to get quicker hydraulic performances.
   This could cause unexpected machine movement.

# **A** WARNING

**TIP OVER/CRUSH HAZARD.** Bring telehandler to a complete stop before shifting transmission control lever. A sudden change in direction of travel could reduce stability and/or cause load to shift or fall.

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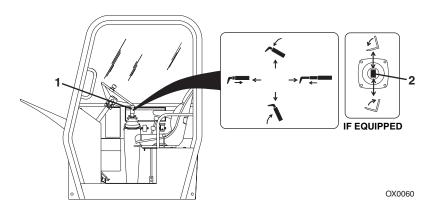
## **Ignition Switch**



- In "ACC" or "RUN" position, voltage is available for all electrical functions.
- Full clockwise rotation to "START" engages starter motor.
- Counter-clockwise rotation to "OFF" stops engine and removes voltage from all electrical functions.

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### **Boom Joystick**



The boom joystick (1) controls the boom and attachment tilt (if equipped) functions.

#### **Boom Functions**

- Move the joystick back to lift boom; move joystick forward to lower boom; move joystick right to extend boom; move joystick left to retract boom.
- The speed of boom functions depends upon the amount of joystick travel in corresponding direction. Increasing engine speed will also increase function speed.
- For two simultaneous boom functions, move the joystick between quadrants. For example; moving the joystick forward and to the left will lower and retract boom simultaneously.

#### **Attachment Functions (if equipped)**

Tilt control is actuated by the switch (2).

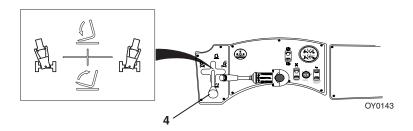
• Depress the rear of the switch to tilt up; depress the front of switch to tilt down.

# **A** WARNING

**TIP OVER/CRUSH HAZARD.** Rapid, jerky operation of controls will cause rapid, jerky movement of the load. Such movements could cause the load to shift or fall or could cause the machine to tip over.

31200148 3-5

## **Attachment Tilt and Frame Sway Lever**



This lever (4) controls the attachment tilt and the left to right frame sway.

#### Attachment Tilt Function

Move lever forward to tilt attachment down; move lever back to tilt attachment up.

#### Sway Function

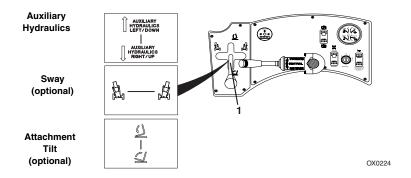
- Move the lever left to sway frame left, move the lever right to sway frame right.
- A level indicator is located in the upper front window frame to permit operator to determine whether the telehandler frame is level.

## WARNING

**TIP OVER HAZARD.** Always move boom as low as possible while allowing for best visibility of right hand mirror before leveling frame. Attempting to level machine with boom raised could cause it to tip over.

3-6 *31200148* 

## **Auxiliary Control Joystick (if equipped)**



The auxiliary control joystick (1) controls the auxiliary hydraulic functions, left to right frame sway (if equipped), and attachment tilt (if equipped).

#### **Auxiliary Hydraulics Function**

 Controls function of attachments that require hydraulic supply for operation. See Section 5 - Attachments for approved attachments and control instructions.

### Frame Sway (if equipped)

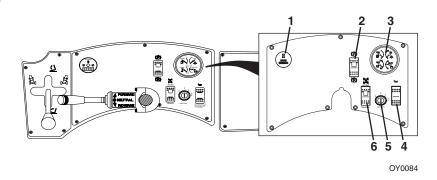
- Move the joystick left to sway frame left, move the joystick right to sway frame right.
- A level indicator is located in the upper front window frame to permit operator to determine whether the telehandler frame is level.

#### Attachment Tilt (if equipped)

• Move joystick up to tilt down; move joystick down to tilt up.

*31200148* 3-7

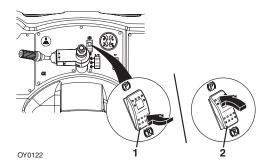
#### **Dash Controls and Indicators**



- Hourmeter: Indicates total time of engine operation in hours and tenths of hours.
- 2. Park Brake Switch: See page 3-9.
- 3. 4-in-1 Gauge:
  - a. Engine Coolant Temperature Gauge
  - b. Engine Oil Pressure Gauge
  - c. Fuel Gauge
  - d. Voltmeter indicates alternator output and battery condition.
- 4. Horn Button: Depress button to sound horn.
- 5. Ignition Switch: See page 3-?.
- 6. 4X2/4X4 Switch: Engages and disengages rear-wheel drive motors. Rear drive motors are engaged for four-wheel drive. Indicator light on switch glows (amber) to indicate four-wheel drive is engaged. When park brake is applied, light will not glow.

3-8 *31200148* 

#### Park Brake Switch



Park brake switch controls the application and release of the park brake. Indicator light illuminates to indicate brake is applied.

- With the engine running and the park brake switch in "OFF" position (1), park brakes are disengaged.
- With switch in "ON" position (2), park brake is engaged and transmission will not engage forward or reverse.

# WARNING

**MACHINE ROLL-AWAY HAZARD.** Always move park brake switch to "ON" position, lower boom to ground and stop engine before leaving cab.

## **A** WARNING

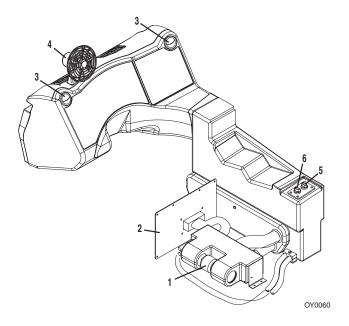
**CRUSH HAZARD.** Turning engine off applies the park brake. Applying park brake or turning engine off while traveling will cause unit to stop abruptly and could cause load loss. Either may be used in an emergency situation.

## **Parking Procedure**

- 1. Using service brake, stop telehandler in an appropriate parking area.
- 2. Follow "Shut-Down Procedure" on page 4-4.

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#### Heater



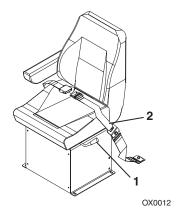
- 1. Heater
- 2. Access Cover/Heat Vent
- 3. Air Vents
- **4.** <u>Defroster Fan</u>: Two speed fan. Press fan switch down for slow speed; press switch up for fast speed. Return switch to middle position to turn off.
- 5. Temperature Control Switch
- 6. Heater Fan Switch: On/Off switch.

3-10 *31200148* 

## 3.3 OPERATOR SEAT

## **Seat Adjustments**

#### Before S/N 0160016100

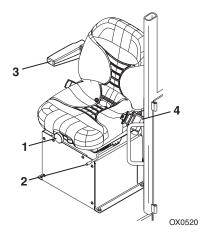


Prior to starting engine adjust seat for position and comfort as follows:

- 1. Use handle to move seat fore and aft
- 2. A two inch seat belt is standard equipment. If required, an optional three inch belt is available.

*31200148* 3-11

#### S/N 0160016100 & After



Prior to starting engine adjust seat for position and comfort as follows:

- Turn the knob on the front of seat to adjust the suspension. Turn the knob clockwise to increase stiffness. Turn the knob counterclockwise to reduce stiffness.
- 2. Pull up on handle to move seat fore and aft.
- 3. Arm rest can be moved up or down for comfort.
- **4.** A two inch seat belt is standard equipment. If required, an optional three inch belt is available.

3-12 *31200148* 

#### **Seat Belt**

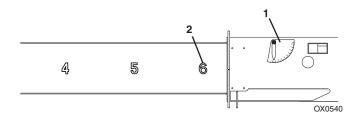


#### Fasten seat belt as follows:

- Grasp both free ends of the belt making certain that belt webbing is not twisted or entangled.
- 2. With back straight in the seat, couple the retractable end (male end) of the belt into the receptacle (buckle) end of the belt.
- 3. With belt buckle positioned as low on the body as possible, pull the retractable end of the belt away from the buckle until it is tight across the lap.
- 4. To release belt latch, depress red button on the buckle and pull free end from buckle.

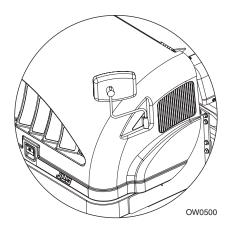
*31200148* 3-13

### 3.4 BOOM ANGLE AND EXTENSION INDICATORS



- The boom angle indicator (1) is located on the left side of the boom. Use this indicator to determine the boom angle when using the capacity chart (see "Use of the Capacity Chart" on page 5-4).
- The boom extension indicators (2) are located on the left side of the boom. Use these indicators to determine boom extension when using the capacity chart (see "Use of the Capacity Chart" on page 5-4).

#### 3.5 MIRROR



- Keep all windows and mirror(s) clean and unobstructed.
- Adjust mirror(s) as required for maximum visibility, before and during operation.

3-14 *31200148* 

## **SECTION 4 - OPERATION**

#### 4.1 ENGINE

### Starting the Engine

This machine can be operated under normal conditions in temperatures of 0°F to 104°F (-20°C to 40°C). Consult JLG for operation outside this range or under abnormal conditions.

- 1. Make sure all controls are in "Neutral" and all electrical components (lights, heater, defroster, etc.) are turned off. Set parking brake.
- Turn ignition switch to "START" to engage starting motor. Release key immediately when engine starts. If engine fails to start within 20 seconds, release key and allow starting motor to cool for a few minutes before trying again.
- After engine starts, observe oil pressure gauge. If gauge remains on zero for more than ten seconds, stop engine and determine cause before restarting engine. Reference engine manual for minimum pressure at operating temperature.
- 4. Warm up engine at approximately 1/2 throttle.

**Note:** Engine will not start unless transmission control lever is in "Neutral" and park brake switch is applied.

# **A** WARNING

**UNEXPECTED MOVEMENT HAZARD.** Always ensure that transmission control lever is in neutral and the service brake is applied before releasing park brake. Releasing park brake in either forward or reverse could cause the machine to move abruptly, causing an accident.

*31200148* 4-1

### **Cold Weather Starting Aids**

JLG approved starting aids employ ether. If your telehandler is equipped with an ether starting aid, the following applies:

- Injection of ether is triggered by temperature sensor located on engine.
- At start-up, temperature sensor on engine will detect if ether is needed. Follow normal start-up procedure.
- Ether will be automatically injected if needed, to keep engine running.
- A second battery is added for additional cold-cranking capacity.

## WARNING

**ENGINE EXPLOSION.** If your telehandler is equipped with a cold start aid, do not spray additional ether into air cleaner. If machine is not equipped with cold start aid, follow instructions listed in the engine manual supplied with the telehandler.

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## **Battery Boosted Starting**







If battery-boost starting (jump-start) is necessary, proceed as follows:

- · Never allow vehicles to touch.
- Connect the positive (+) jumper cable to positive (+) post of discharged battery.
- Connect the opposite end of positive (+) jumper cable to positive (+) post of booster battery.
- Connect the negative (-) jumper cable to negative (-) post on booster battery.
- Connect opposite end of negative (-) jumper cable to ground point on machine away from discharged battery.
- · Follow standard starting procedures.
- Remove cables in reverse order after machine has started.

## WARNING

**BATTERY EXPLOSION HAZARD.** Never jump start or charge a frozen battery as it could explode. Keep sparks, flames and lighted smoking materials away from the battery. Lead acid batteries generate explosive gases when charging. Wear safety glasses.

31200148 4-3

### Section 4 - Operation

### **Normal Engine Operation**

- Observe gauges frequently to be sure all engine systems are functioning properly.
- Be alert for unusual noises or vibration. When an unusual condition is noticed, park machine in safe position and perform shut-down procedure. Report condition to your supervisor or maintenance personnel.
- Avoid prolonged idling. If the engine is not being used, turn it off.

#### Shut-Down Procedure

When parking the telehandler, park in a safe location on flat level ground and away from other equipment and/or traffic lanes.

- 1. Apply the park brake.
- 2. Shift the transmission to "Neutral."
- 3. Lower forks or attachment to the ground.
- 4. Operate engine at low idle for 3 to 5 minutes. **DO NOT over rev engine.**
- 5. Shut off engine and remove ignition key.
- 6. Exit telehandler properly.
- 7. Block wheels (if necessary).

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#### 4.2 OPERATING WITH A LOAD

### Lift Load Safely

 You must know the weight and load center of every load you lift. If you are not sure of the weight and load center, check with your supervisor or with the supplier of the material.

## **A** WARNING

**TIP OVER HAZARD.** Exceeding lift capacity of the telehandler could damage the equipment and/or cause tip over.

 Know the rated load capacities (refer to Section 5) of the telehandler to determine the operating range in which you can safely lift, transport and place a load.

### Picking Up a Load

- Note the conditions of the terrain. Adjust travel speed and reduce amount of load if conditions warrant.
- · Avoid lifting double-tiered loads.
- Make sure load is clear of any adjacent obstacles.
- Adjust spacing of forks so they engage the pallet or load at maximum width. See "Adjusting/Moving Forks" on page 5-9.
- Approach load slowly and squarely with fork tips straight and level. NEVER attempt to lift a load with just one fork.
- NEVER operate telehandler without a proper and legible Capacity Chart in the operator's cab for the telehandler/attachment combination you are using.

*31200148* 4-5

## Transporting the Load



After engaging the load and resting it against the backrest, tilt the load back to position it for travel. Travel in accordance with the requirements set forth in Section 1 - General Safety Practices and Section 5 - Attachments.

## **Leveling Procedure**

- 1. Position machine in best location to lift or place load.
- 2. Apply parking brake and move transmission control lever to NEUTRAL.
- 3. Move boom/attachment to 4 ft (1,2 m) off ground.
- 4. Observe level indicator to determine whether machine must be leveled prior to lifting load.

#### Important things to remember:

- Never raise the boom/attachment more than 4 ft (1,2 m) above ground unless telehandler is level.
- The combination of sway and load could cause the telehandler to tip over.

The telehandler is designed to permit swaying the main frame 8° to left or right to compensate for uneven ground conditions.

4-6 *31200148* 

## **Placing the Load**

Before placing any load be sure that:

- The landing point can safely support the weight of the load.
- The landing point is level; front to back and side to side.
- Use the capacity chart to determine safe boom extension range. See "Use of the Capacity Chart" on page 5-4.
- Align forks at the level load is to be placed, then position boom slowly until load is just above area where it is to be placed.
- · Lower the boom until the load rests in position and the forks are free to retract.

## Disengaging the Load

Once the load has been placed safely at the landing point, proceed as follows:

- With the forks free from the weight of the load, the boom can be retracted and/or the telehandler can be backed away from under the load if surface will not change level condition of telehandler.
- 2. Lower the carriage.
- 3. The telehandler can now be driven from the landing location to continue work.

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#### 4.3 OPERATING WITH A SUSPENDED LOAD

### Lift Load Safely

 You must know the weight and load center of every load you lift. If you are not sure of the weight and load center, check with your supervisor or with the supplier of the material.

## WARNING

**TIP OVER HAZARD.** Exceeding lift capacity of the telehandler could damage the equipment and/or cause tip over.

 Know the rated load capacities (refer to Section 5) of the telehandler to determine the operating range in which you can safely lift, transport and place a load.

### Picking Up a Suspended Load

- Note the conditions of the terrain. Adjust travel speed and reduce amount of load if conditions warrant.
- · Avoid lifting double-tiered loads.
- · Make sure load is clear of any adjacent obstacles.
- NEVER operate telehandler without a proper and legible capacity chart in the operator cab for the telehandler/attachment combination you are using.
- · Only use approved lifting devices rated for the lifting of the load.
- Identify the proper lifting points of the load, taking into consideration the center of gravity and load stability.
- Ensure to always properly tether loads to restrict movement.
- Refer to See "Use of the Capacity Chart" on page 5-4. for proper lifting guidelines in addition to the appropriate capacity chart in the operator cab.

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## Transporting a Suspended Load





- Travel in accordance with the requirements set forth in Section 1 General Safety Practices and Section 5 Attachments.
- For additional requirements, refer to the appropriate capacity chart in the operator cab.

#### Important things to remember:

- · Ensure the boom is fully retracted.
- Never raise the load more than 11.8 in (300 mm) above ground surface or the boom more than 45°.
- The combination of frame leveling and load could cause the telehandler to tip over.
- The guide men and operator must remain in constant communication (verbal or hand) and be in visual contact with the operator at all times.
- Never place the guide men between the suspended load and the telehandler.
- Only transport the load at walking speed, 0.9 mph (0.4 m/s), or less.

## **Leveling Procedure**

- 1. Position machine in best location to lift or place load.
- Apply parking brake and move transmission control lever to NEUTRAL.
- 3. Move boom so load is no more than 11.8 in (300 mm) above ground surface and boom/or boom is raised no more than 45°.
- Observe level indicator to determine whether machine must be leveled prior to lifting load. Level machine with frame level joystick.

The telehandler is designed to permit leveling the main frame 8° to left or right to compensate for uneven ground conditions.

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### Section 4 - Operation

### Placing a Suspended Load

Before placing any load be sure that:

- The landing point can safely support the weight of the load.
- The landing point is level; front to back and side to side.
- Use the capacity chart to determine safe boom extension range. See "Use of the Capacity Chart" on page 5-4.
- Align load at the level load is to be placed, then position boom slowly until load is just above area where it is to be placed.
- Ensure that the guide men and operator remain in constant communication (verbal or hand) when placing the load.

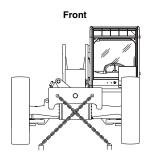
### Disengaging a Suspended Load

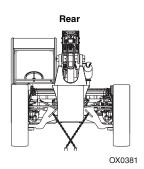
- Never place the guide men between the suspended load and the telehandler.
- Once at the destination of the load, ensure to bring the telehandler to a complete stop and apply the park brake prior to disengagement of the lifting devices and tethers.

4-10 *31200148* 

#### 4.4 LOADING AND SECURING FOR TRANSPORT

#### **Tiedown**





- 1. Level the telehandler prior to loading.
- 2. Using a spotter, load the telehandler with boom as low as possible.
- Once loaded, apply parking brake and lower boom until boom or attachment is resting on deck. Move all controls to "Neutral," stop engine and remove ignition key.
- 4. Secure machine to deck by passing chains through the designated tiedown points as shown in the figure.
- 5. Do not tiedown front of boom.

**Note:** The user assumes all responsibility for choosing the proper method of transportation and tie-down devices, making sure the equipment used is capable of supporting the weight of the vehicle being transported and that all manufacturer's instructions and warnings, regulations and safety rules of their employer, the Department of Transportation and/or any other state or federal laws are followed.

# WARNING

**TELEHANDLER SLIDE HAZARD.** Before loading telehandler for transport, make sure deck, ramps and telehandler wheels are free of mud, snow and ice. Failure to do so could cause telehandler to slide.

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### Section 4 - Operation

### Lifting

- When lifting machine, it is very important that the lifting device and equipment is attached only to designated lifting points. If machine is not equipped with lifting lugs contact JLG Product Safety for information.
- Make adjustments to the lifting device and equipment to ensure the machine will be level when elevated. The machine must remain level at all times while being lifted.
- Ensure that the lifting device and equipment is adequately rated and suitable for the intended purpose. See Section 9 - Specifications for machine weight.
- Remove all loose items from machine prior to lifting.
- Lift machine with smooth, even motion. Set machine down gently. Avoid quick or sudden motions that could cause shock loads to machine and/or lifting devices.

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## **SECTION 5 - ATTACHMENTS**

#### 5.1 APPROVED ATTACHMENTS

To determine if an attachment is approved for use on the specific telehandler you are using, perform the following prior to installation.

#### Before S/N 0160037689

- The attachment model/option number on the attachment identification plate must match the attachment number on a capacity chart located in the operator cab.
- The model on the capacity chart must match the model telehandler being used.
- The load center of the fork (if equipped) must match the load center as indicated on the capacity chart.
- Hydraulically powered attachments must only be used on machines equipped with auxiliary hydraulics.
- Hydraulically powered attachments that require auxiliary electrics must only be used on machines equipped with auxiliary hydraulics and electrics.

#### S/N 0160037689 & After

- The attachment type, weight, dimensions and load center must be equal to or less than the data shown on a capacity chart located in the operator cab.
- The model on the capacity chart must match the model telehandler being used.
- Hydraulically powered attachments must only be used on machines equipped with auxiliary hydraulics.
- Hydraulically powered attachments that require auxiliary electrics must only be used on machines equipped with auxiliary hydraulics and electrics.

If any of the above conditions are not met, do not use the attachment. The telehandler may not be equipped with the proper capacity chart or the attachment may not be approved for the model telehandler being used. Contact JLG or a local distributor for further information.

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#### 5.2 UNAPPROVED ATTACHMENTS

Do not use unapproved attachments for the following reasons:

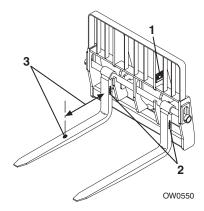
- Range and capacity limitations for "will fit," homemade, altered, or other non-approved attachments cannot be established.
- An overextended or overloaded telehandler can tip over with little or no warning and cause serious injury or death to the operator and/or those working nearby.
- The ability of a non-approved attachment to perform its intended function safely cannot be assured.

## WARNING

Use only approved attachments. Attachments which have not been approved for use with your telehandler could cause machine damage or an accident.

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#### 5.3 TELEHANDLER/ATTACHMENT/FORK CAPACITY



Prior to installing the attachment verify it is approved and the telehandler is equipped with the proper capacity chart. See "Approved Attachments" on page 5-1.

To determine the maximum capacity of the telehandler and attachment, use the **smallest** of the following capacities:

- Capacity stamped on the attachment identification plate (1).
- Fork capacities and load centers are stamped on the side of each fork (2) (if equipped). This rating specifies the maximum load capacity that the individual fork can safely carry at the maximum load center (3). Total attachment capacity is multiplied by the number of forks on the attachment (if equipped), up to the maximum capacity of the attachment.
- Maximum capacity as indicated on the proper capacity chart. See "Approved Attachments" on page 5-1.
- When the load rating of the telehandler differs from the capacity of the forks or attachment, the lower value becomes the overall load capacity.

Use the proper capacity chart to determine maximum capacity at various machine configurations. Lifting and placing a load may require use of more than one capacity chart based on machine configuration.

Other than block forks, all forks should be used in matched pairs, block forks used in matched sets.

## **A** WARNING

Never use an attachment without the appropriate JLG approved capacity chart installed on the telehandler.

*31200148* 5-3

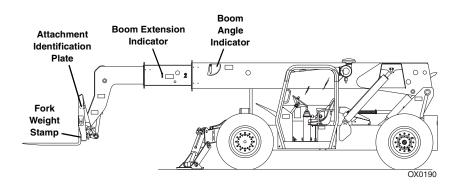
#### 5.4 USE OF THE CAPACITY CHART

To properly use the capacity chart (see page 5-5), the operator must first determine and/or have the following:

- 1. A JLG approved attachment. See "Approved Attachments" on page 5-1.
- 2. The proper Capacity Chart(s).
- 3. Weight of the load being lifted.
- 4. Load placement information:
  - a. HEIGHT where the load is to be placed.
  - DISTANCE from the front tires of the telehandler where the load is to be placed.
- On the Capacity Chart, find the line for the height and follow it over to the distance.
- The number in the load zone where the two cross is the maximum capacity for this lift. If the two cross at a division between zones, the smaller number must be used.

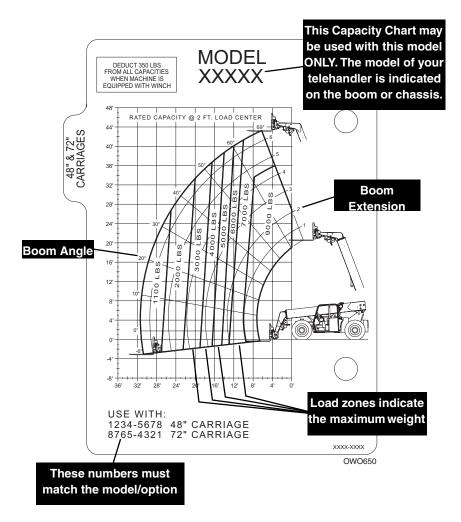
The number in the load zone must be equal to or greater than the weight of the load to be lifted. Determine the limits of the load zone on the Capacity Chart and keep within these limits.

## **Capacity Indicator Locations**



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## Sample Capacity Chart



**Note:** This is a sample capacity chart **only! DO NOT** use this chart, use the one located in your operator cab.

# **A** WARNING

**TIP OVER HAZARD.** All loads shown on rated capacity chart are based on machine being on firm ground with frame level (see page 4-6); the forks being positioned evenly on carriage; the load being centered on forks; proper size tires being properly inflated; and the telehandler being in good operating condition.

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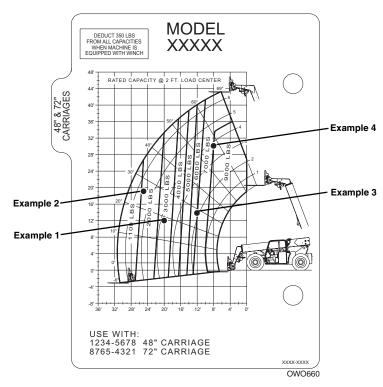
### **Example**

A contractor owns a model xxxxx telehandler with a 48" Carriage. He knows this attachment may be used with his model since:

- The attachment model/option number, matches the attachment number on the capacity chart.
- The capacity chart is clearly marked for model xxxxx and corresponds with machine configuration being used.

Below are examples with various conditions the contractor may encounter and whether or not the load may be lifted.

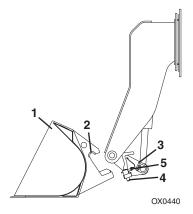
	Load Weight	Distance	Height	OK to Lift
1	2000 lbs (907 kg)	20 ft (6,1 m)	12 ft (3,6 m)	Yes
2	3000 lbs (1361 kg)	25 ft (7,6 m)	19 ft (5,8 m)	NO
3	6000 lbs (2722 kg)	12 ft (3,6 m)	14 ft (4,3 m)	Yes
4	8000 lbs (3629 kg)	8 ft (2,4 m)	30 ft (9,1 m)	NO



**Note:** This is a sample capacity chart **only! DO NOT** use this chart, use the one located in your operator cab.

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## 5.5 ATTACHMENT INSTALLATION



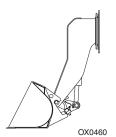
- 1. Attachment
- 2. Attachment Pivot Pin Recess
- 3. Quick Switch
- 4. Lock Pin
- 5. Retaining Pin

This installation procedure is designed for one-person operation.

Retract Quick Switch™ to provide clearance.
 Check to be sure lock pin is secured in out position with retainer pin.



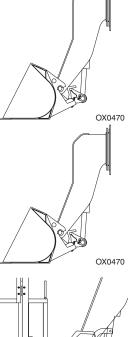
Align attachment pivot pin with recess in attachment. Raise boom slightly to engage attachment pivot pin in recess.



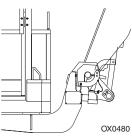
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3. Engage Quick Switch™.

 Shut off engine. Exit cab and remove retainer pin and slide lock pin in fully. Secure lock pin in locked position using retainer pin.



5. If equipped, swing attachment saddles down and pin in place.



- 6. If equipped, connect auxiliary hydraulic hoses.
- 7. If equipped, connect auxiliary electric harness.

## WARNING

**CRUSH HAZARD.** Always be certain that carriage or attachment is properly positioned on boom and is secured by lock pin and retainer pin. Failure to ensure proper installation could permit carriage/attachment/load to disengage.

5-8 *31200148* 

### 5.6 ADJUSTING/MOVING FORKS

Carriages may have different locations where forks can be positioned. Two different methods can be used for repositioning, depending upon the carriage structure.

**Note:** Apply a light coating of appropriate lubricant to ease sliding of forks or fork bar.

#### To slide forks:

- 1. Ensure attachment is properly installed. Refer to "Attachment Installation" on page 5-7.
- Elevate attachment to approximately 5 ft (1,5 m) and tilt carriage forward until fork heel is free from attachment.
- 3. Stand at the side of the carriage. To slide fork toward the center of the carriage, push the fork near the fork eye. To slide fork toward the edge of the carriage, pull the fork near the fork eye. To avoid pinching, do not place fingers or thumb between the fork and carriage structure.

#### If removing fork bar is necessary:

- 1. Rest forks on ground.
- 2. Remove fork bar.
- 3. Reposition forks.
- 4. Reinstall the fork bar and fork bar retaining mechanism(s).

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#### 5.7 ATTACHMENT OPERATION

- Capacities and range limits for the telehandler change depending on the attachment in use.
- Separate attachment instructions must be kept in Manual Holder in cab with this Operation & Safety Manual. An additional copy must be kept with the attachment if it is equipped with a manual holder.

## **NOTICE**

**EQUIPMENT DAMAGE.** Some attachments may contact the front tires or machine structure when the boom is retracted and the attachment is rotated. Improper use of attachment may result in attachment or machine structural damage.

## **NOTICE**

**EQUIPMENT DAMAGE.** Avoid contact with any structure or object when lifting a load. Maintain clearance around boom structure and load. Failure to maintain clearance may result in attachment or machine structural damage.

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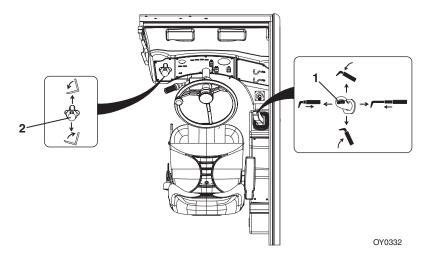
## Carriage w/Forks



<u>Description</u>	<u>P/N</u>
Carriage, 48 in	91405073
Carriage, 72 in	91405074
Carriage, Drywall	91405077
Fork, Cubing 2x2x48 in	91403359
Fork 1-3/4x4x48 in	91403364
Fork, Drywall 1-3/4x4x48 in	91403366
Fork 2x6x60 in	91403580
Fork 2-1/4x5x48 in	91563141
Fork 2-1/4x6x60 in	91563142

#### Use Carriage Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

The tilt lever (2) controls the fork tilt.

- · Move joystick forward to tilt down.
- · Move joystick back to tilt up.

#### **Installation Procedure:**

Refer to "Attachment Installation" on page 5-7.

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#### **Crane Hook**

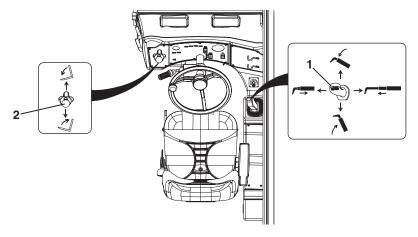


<u>Description</u>	<u>P/N</u>
Crane Hook	91565094

Use Appropriate Carriage Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.

Suspend loads in accordance with requirements set forth in Section 1 - General Safety Practices.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

The tilt lever (2) controls the crane hook tilt.

- · Move lever forward to tilt down.
- Move lever back to tilt up.

#### Installation Procedure:

- Refer to "Attachment Installation" on page 5-7.
- Secure the crane hook to the forks by sliding the crane hook onto the parent forks and install the retaining pin behind the vertical shank of the fork.

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## Operation:

- Pallet or lumber forks of an appropriate load rating must be used. Do not use with cubing or block forks.
- Weight of crane hook and rigging must be included as part of total load being lifted.
- Do not use crane hook with attachments capable of rotating (i.e. side tilt and swing carriages) without disabling the rotation feature(s).

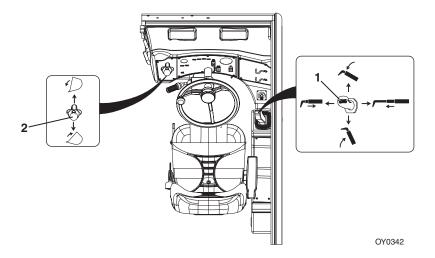
## **Bucket**



<u>Description</u>	<u>P/N</u>
Bucket 60 in - 3/4 yd <sup>3</sup>	91405054
Bucket 74 in - 1-1/4 yd <sup>3</sup>	91405055
Bucket 102 in - 1-1/4 yd <sup>3</sup>	91405071

## Use Appropriate Bucket Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

The tilt lever (2) controls bucket tilt.

- Move joystick forward to tilt down.
- Move joystick back to tilt up.

### **Installation Procedure:**

• Refer to "Attachment Installation" on page 5-7.

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### **Equipment Damage Precautions**

- Drive into stockpile smoothly with boom fully retracted to load bucket. Loading bucket with boom extended could damage boom or extension chains/cables. Do not corner-load bucket.
- Do not use bucket as a lever to pry material. Excessive prying forces could damage bucket.
- Do not use bucket for "back dragging." This could cause severe damage to quick switch and retraction cables/chains.

#### Operation:

- · Raise or lower boom to appropriate height for loading material from stockpile.
- Align telehandler with face of stockpile and drive slowly and smoothly into pile to load bucket.
- Tilt bucket up far enough to retain load and back away from pile.
- Travel in accordance with requirements set forth in Section 1 General Safety Practices.
- · Tilt bucket down to dump load.

### Truss Boom

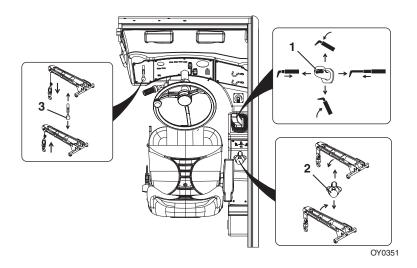


<u>Description</u>	<u>P/N</u>
Truss Boom 10 ft w/winch	.91405081
Truss Boom 10 ft	.91405083
Truss Boom 15 ft w/winch	.91405080
Truss Boom 15 ft	.91405082

Use Truss Boom Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.

Suspend loads in accordance with requirements set forth in Section 1 - General Safety Practices.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

### **Truss Boom Control:**

The rear joystick (2) controls truss boom tilt.

- · Move joystick forward to tilt down.
- Move joystick back to tilt up.

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### **Truss Boom W/Winch Control:**

The auxiliary joystick (3) controls the truss boom mounted winch.

- · Move joystick up to lower cable.
- · Move joystick down to raise cable.

#### Installation Procedure:

• Refer to "Attachment Installation" on page 5-7.



**CRUSH HAZARD.** Maintain a minimum of three wraps of wire rope on the cable drum at all times. Failure to comply could cause object or load to fall.

#### **Boom Head-Mounted Winch**



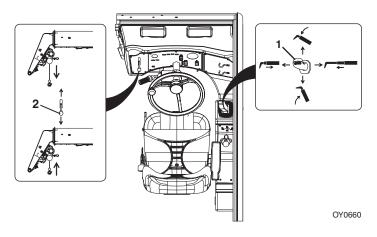
 Description
 P/N

 Winch
 91515036

Use Carriage Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.

Suspend loads in accordance with requirements set forth in Section 1 - General Safety Practices.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

### **Winch Control:**

The auxiliary control joystick (2) controls the winch.

- · Move joystick up to lower cable.
- · Move joystick down to raise cable.

# WARNING

**CRUSH HAZARD.** Maintain a minimum of three wraps of wire rope on the cable drum at all times. Failure to comply could cause object or load to fall.

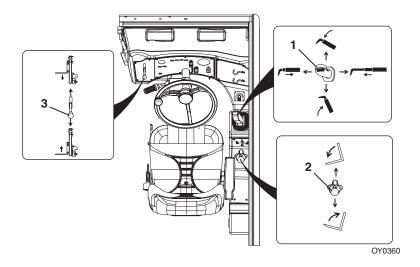
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# 6 ft (1,8 m) Mast with 48 or 72 in (1,2 & 1,8 m) Carriage



Use 6 ft Mast Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

The rear joystick (2) controls the mast tilt.

- · Move joystick forward to tilt down.
- · Move joystick back to tilt up.

### To Raise/Lower Mast:

The auxiliary control joystick (3) controls the lift/lower movement of the mast.

- · Move joystick up to lower forks.
- · Move joystick down to raise forks.

#### Installation Procedure:

• Refer to "Attachment Installation" on page 5-7.

# WARNING

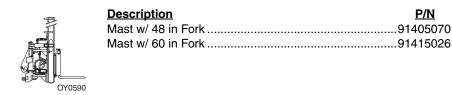
**CRUSH HAZARD.** Do not use mast to push or pull objects or load. Failure to comply could cause object or load to fall.

## Operation:

- · Lower forks fully in mast before engaging load.
- Travel in accordance with requirements set forth in Section 1 General Safety Practices.
- Use a signal person to assist in positioning of load if necessary.

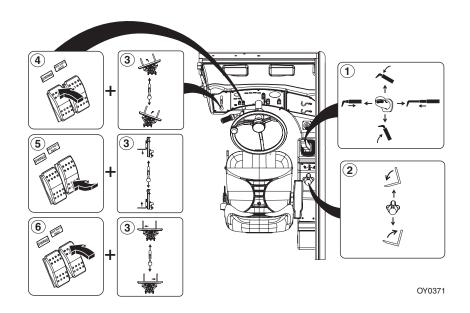
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# 6 ft (1,8 m) - 100° Swing Mast W/Side Shift



Use 6 ft Swing Mast Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

The rear joystick (2) controls the mast tilt.

- Move joystick forward to tilt down.
- · Move joystick back to tilt up.

### Section 5 - Attachments

#### To Swing:

Pull Swing Switch (4) back, located on dash panel to activate Swing function.
 With Swing Switch activated, move the auxiliary control joystick (3) down to swing forks right or up to swing forks left.

### To Raise/Lower Mast:

Pull Forks Raise/Lower Switch (5) back, located on dash panel to activate Forks
Raise/Lower function. With Forks Raise/Lower Switch activated, move the
auxiliary control joystick (3) down to raise forks or up to lower forks.

#### To Side Shift:

 Press Side Shift Switch (6) forward, located on dash panel to activate Side Shift function. With Side Shift Switch activated, move the auxiliary control joystick (3) down to shift forks right or up to shift forks left.

#### Installation Procedure:

Refer to "Attachment Installation" on page 5-7.

# **WARNING**

**CRUSH HAZARD.** Always level forks (horizontally) and telehandler frame before swinging load to side. Swinging unlevel forks could cause load to slide off forks.

# WARNING

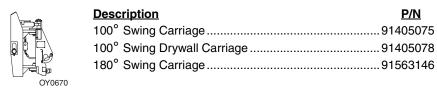
**CRUSH HAZARD.** Do not use mast to push or pull objects or load. Failure to comply could cause object or load to fall.

### Operation:

- Always lower forks fully in mast and position forks straight ahead before engaging load.
- To drive with a load, lower forks fully in mast, keep forks pointed forward and travel in accordance with the requirements set forth in Section 1 - General Safety Practices.
- Use a signal person to assist in positioning load if necessary.

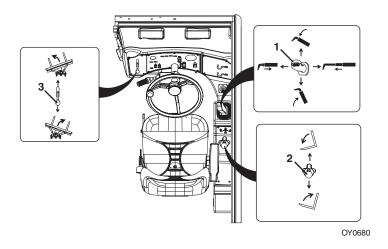
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# **Swing Carriage**



Use Swing Carriage Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

The rear joystick (2) controls the carriage tilt.

- · Move joystick forward to tilt down.
- · Move joystick back to tilt up.

### To Swing:

The auxiliary control joystick (3) controls the Swing function.

- Move joystick up to swing left.
- · Move joystick down to swing right.

# WARNING

**CRUSH HAZARD.** Always level forks (horizontally) and telehandler frame before swinging load to side. Swinging unlevel forks could cause load to slide off forks.

# **A** WARNING

**CRUSH HAZARD.** Do not use swing carriage to push or pull objects or load. Failure to comply could cause object or load to fall.

# WARNING

**CRUSH HAZARD**. Use retaining pin (if equipped) for locking swing frame to fixed frame when carrying loads greater than 5000 lb. Failure to comply could cause object or load to fall.

### Operation:

 To drive with a load, keep forks pointed forward and travel in accordance with the requirements set forth in Section 1 - General Safety Practices.

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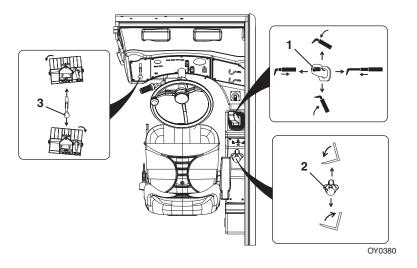
# **Side Tilt Carriage**



<u>Description</u>	<u>P/N</u>
Side Tilt 48 in	91405101
Side Tilt 72 in	91405079

Use Side Tilt Attachment Capacity Chart

To determine maximum capacity, refer to "Telehandler/Attachment/Fork Capacity" on page 5-3.



The joystick (1) controls lift/lower and the extend/retract movement of the boom.

The rear joystick (2) controls the mast tilt.

- · Move joystick forward to tilt down.
- · Move joystick back to tilt up.

#### To Side Tilt:

The auxiliary control joystick (3) controls the carriage side tilt.

- · Move joystick up to (side) tilt carriage left.
- · Move joystick down to (side) tilt carriage right.

## Section 5 - Attachments

#### Installation Procedure:

• Refer to "Attachment Installation" on page 5-7.

## Operation:

- Approach load with forks centered on load and stop telehandler.
- Level telehandler before side tilting carriage to engage load.
- Side tilt carriage to left or right to align forks with load and engage load.
- Raise load slightly and then level carriage side to side.
- Travel in accordance with requirements set forth in Section 1 General Safety Practices.

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### **Personnel Work Platform**

The operator and personnel in platform must read and understand the separate personnel work platform manual prior to installing and using a platform.

### **Preparation and Setup**

- Check to ensure the personnel platform is securely attached at the Quick Switch™ or is securely attached to the forks and/or carriage is using a fork mounted personnel work platform. Follow installation procedure on page 5-7 for JLG Quick Switch™ mounted personnel work platforms.
- 2. Ensure the telehandler is on a firm surface and is level.
- 3. Engage the park brake. Blocking the wheels is also recommended.
- Level the platform, both side to side (frame sway) and front to back (attachment tilt).
- 5. Keep area under the platform free from personnel.
- When personnel are on platform, the operator must remain seated in cab with personnel in direct line of sight.
- 7. **DO NOT** lift or carry persons in the bucket or on forks.

Never tilt the platform forward, rearward, or sway the machine when the platform is occupied. Serious injury or death could result.

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# **SECTION 6 - EMERGENCY PROCEDURES**

#### 6.1 TOWING A DISABLED PRODUCT

The following information assumes the telehandler cannot be moved under its own power.

- Before moving the telehandler, read all of the following information to understand options available. Then select the appropriate method.
- The steering system permits manual steering if engine or power assist feature fails; however, steering will be slow and will require much greater force.
- DO NOT attempt to tow a telehandler that is loaded or the boom/attachment is raised above 4 ft (1,2 m).

## **Moving Short Distances**

 If it is only necessary to move telehandler a short distance, less than 100 ft (30 m), it is permissible to use a vehicle of sufficient capacity to tow the unit with no previous preparation.

# **Moving Longer Distances**

 If the telehandler must be moved longer distances, it must be loaded onto a trailer of sufficient capacity.

Contact your local Authorized Distributor for specific instructions if neither of these methods are applicable.

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#### **EMERGENCY LOWER OF BOOM** 6.2

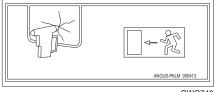
In the event of total loss of engine power or hydraulic pump failure with an elevated load, the situation must be properly evaluated and dealt with on an individual basis. Contact your local Authorized Distributor for specific instructions.

Secure the telehandler using the following procedures:

- 1. Clear the area around telehandler of all personnel.
- 2. Engage the parking brake. Place the transmission control lever in "NEUTRAL".
- Block all four wheels.
- 4. Section off a large area under the boom with string or tape to restrict any personnel from entering this area.

## **EMERGENCY EXIT FROM ENCLOSED CAB**

IIn an emergency, an escape hammer, located directly below the rear window in an enclosed cab, can be used to exit the telehandler.



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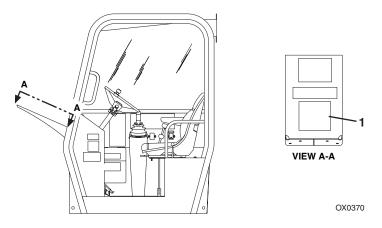
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# **SECTION 7 - LUBRICATION AND MAINTENANCE**

### 7.1 INTRODUCTION

Service the product in accordance with the maintenance schedule on the following pages.

Service intervals are based on machine usage of 1500 hours annually. Use of your product may vary significantly and you must adjust service frequency for your usage to obtain maximum service life.



The Service Instruction Plate (1) is located as indicated in figure. It contains general service instructions that must be followed to keep this product in good operating condition. The Operation & Safety Manual and Service Manual contain more detailed service information with specific instructions.

# **Clothing and Safety Gear**

- Wear all the protective clothing and personal safety devices issued to you or called for by job conditions.
- DO NOT wear loose clothing or jewelry that can get caught on controls or moving parts.

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## 7.2 GENERAL MAINTENANCE INSTRUCTIONS

Prior to performing any service or maintenance on the telehandler, follow the shut-down procedure on page 4-4 unless otherwise instructed. Ensure telehandler is level, for proper fluid readings.

- Clean lubrication fittings before lubricating.
- After greasing telehandler, cycle all functions several times to distribute lubricants. Perform this maintenance procedure without attachment installed.
- Apply a light coating of engine oil to all linkage pivot points.
- Intervals shown are for normal usage and conditions. Adjust intervals for abnormal usage and conditions.
- · Drain engine and gear cases after operating when oil is hot.
- Check all lubricant levels when lubricant is cool. For ease of filling hydraulic reservoir, use a funnel with a hose or flexible tube for best results.

**Note:** Be certain to check boom cable adjustment every 5 weeks or 250 hours and adjust as required. Cable damage can occur if cable is not adjusted properly.

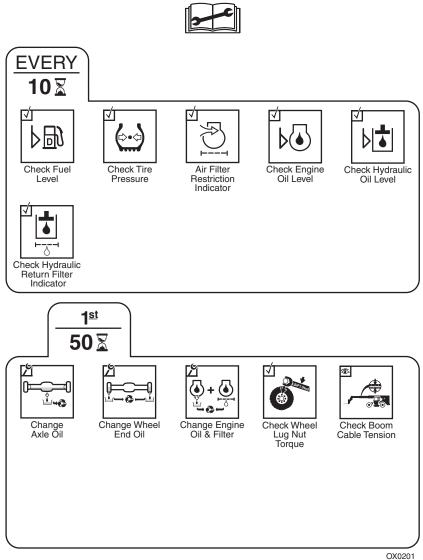
# WARNING

**CUT/CRUSH/BURN HAZARD.** Do not perform service or maintenance on the machine with the engine running, with the exception of the transmission level and hydraulic return filter indicator checks.

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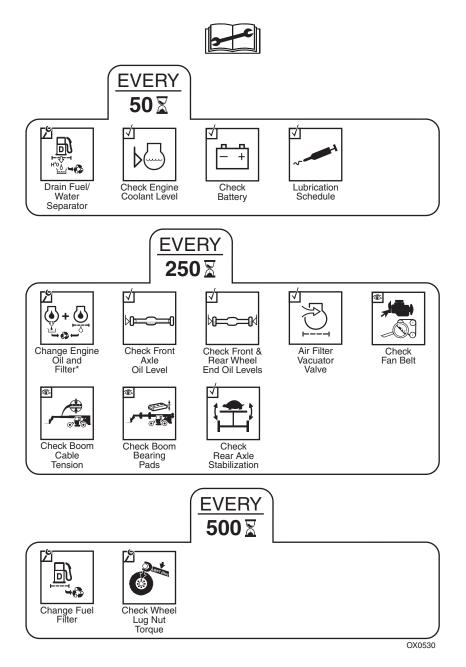
# SERVICE AND MAINTENANCE SCHEDULES

## 10 & 1st 50 Hour Maintenance Schedule



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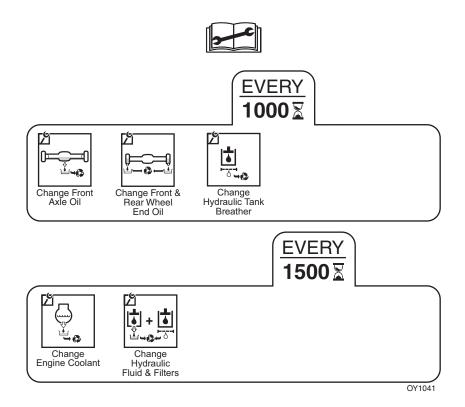
## 50, 250 & 500 Hour Maintenance Schedule



Note: Engine oil & filter service interval can be extended, see page 7-12 for details.

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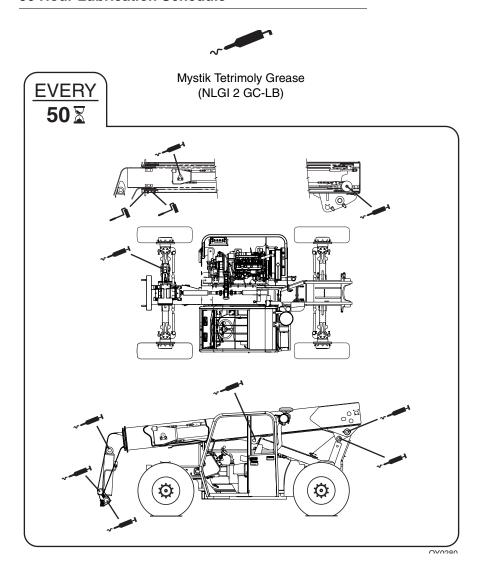
## 1000 & 1500 Hour Maintenance Schedule



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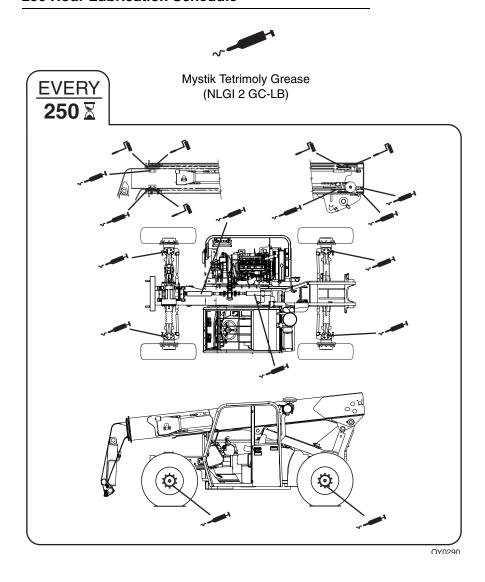
# 7.4 LUBRICATION SCHEDULES

## **50 Hour Lubrication Schedule**



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# 250 Hour Lubrication Schedule



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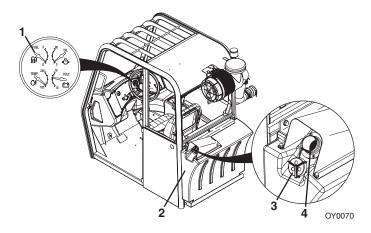
## 7.5 OPERATOR MAINTENANCE INSTRUCTIONS

## **Fuel System**

### A. Fuel Level Check

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- 1. Check fuel gauge (1) located on instrument panel in cab.
- 2. If fuel is low, proceed to fuel source and perform "Shut-Down Procedure" on page 3-5.
- 3. Locate fuel tank (2), turn fuel tank cap (3) and remove from filler neck (4). Add diesel fuel as needed. Replace fuel tank cap.

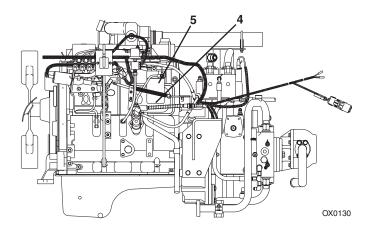
Note: Replenish diesel fuel at end of each work shift to minimize condensation.

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## **B. Drain Fuel/Water Separator**

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- 1. Perform "Shut-Down Procedure" on page 4-4.
- 2. Open the engine cover.
- 3. Loosen drain cock (4) on underside of fuel filter (5) and allow all water to drain into a glass until clear fuel is visible. Tighten drain cock.

4. Close and secure the engine cover.

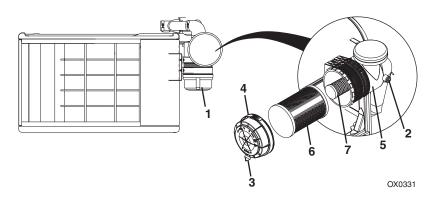
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## Air Intake System

#### A. Air Filter Restriction Indicator Check

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- 1. Perform "Shut-Down Procedure" on page 4-4.
- 2. Locate air cleaner (1) and check restriction indicator (2). If red band is visible, filter(s) must be replaced.
- 3. Remove dust from vacuator valve (3) by squeezing bottom of valve to allow loose particles to fall out.

**Note:** Only remove canister cover to service the elements as restriction indicator indicates. Excessive access to check an element can lead to premature element failure.

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## B. Element Change (as restriction indicator indicates)

- 1. Unlock air cleaner cover (4), turn counterclockwise and remove from air cleaner canister (5).
- 2. Remove outer primary element (6) and inspect for damage. Damaged elements should not be reused.
- 3. Thoroughly clean the interior of the air cleaner canister and vacuator valve.
- 4. Replace inner safety element (7) after every third primary element change. If replacing the inner safety element at this time, carefully slide the element out and replace with new element.
- 5. Slide the new primary element over the inner element making sure the sealing edge is flush with the base of the air cleaner.
- 6. Position air cleaner cover in place, turn clockwise and lock into position.
- 7. Depress button on restriction indicator to reset.

**Note:** An inner safety element should never be washed or reused. Always install a new element.

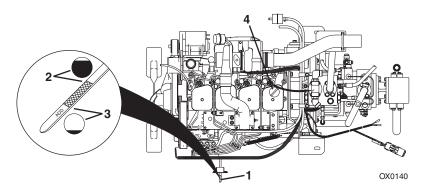
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## **Engine Oil**

## A. Engine Oil Level Check

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- 1. Perform "Shut-Down Procedure" on page 4-4.
- Remove dipstick (1) and check oil mark. The oil should be between the full (2) and add (3) marks within the crosshatched area of the dipstick. Replace dipstick.
- 3. If oil is low, open the engine cover, remove oil fill cap (4) and add motor oil to bring oil up to the full mark in the crosshatch area.
- 4. Replace oil fill cap.
- 5. Close and secure the engine cover.

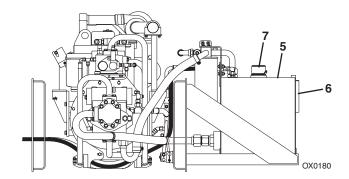
**Note:** The standard service interval for engine oil and filter is 250 hours maximum. If an extended service interval is desired, see the engine manual for specific quidlines for optimizing oil change intervals.

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# **Hydraulic Oil**

## A. Hydraulic Oil Level Check





- 1. Be sure all cylinders are fully retracted and machine is level.
- 2. Perform "Shut-Down Procedure" on page 4-4.
- 3. Check level of hydraulic oil in tank at the sight gauge (6) on the hydraulic tank (5). The oil level should be visible in the gauge window.
- 4. If hydraulic oil is low, open the tank cover and remove oil fill cap (7) from filler neck. Add hydraulic fluid to bring oil up to the upper mark on the sight gauge.
- 5. Replace hydraulic oil fill cap.
- 6. Close and secure the tank cover.

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#### **Tires**

#### A. Tire Air Pressure Check

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- 1. Perform "Shut-Down Procedure" on page 4-4.
- 2. Remove valve stem cap.
- 3. Check tire pressure using a good quality gauge.
- 4. Add air if required.

13.00 x 24, G-2/L-2 Bias-Ply Traction - 12 Ply	65 psi (4.5 bar)
13.00 x 24, G-3/L-3 Bias Ply Rock - 12 Ply	65 psi (4.5 bar)
13.00 x 24, G-2/L-2 Radial - 1 Star	70 psi (4.8 bar)
15.50 x 25, G-2/L-2 Bias-Ply Traction - 12 Ply	58 psi (4.0 bar)
15.50 x 25, G-3/L-3 Bias Ply Rock - 12 Ply	65 psi (4.5 bar)
15.50 x 25, G-2/L-2 Radial - 1 Star	70 psi (4.8 bar)

Replace valve stem cap.

## **B. Tire Damage**

For pneumatic tires, JLG recommends that when any cut, rip or tear is discovered that exposes sidewall or tread area cords in the tire, measures be taken to remove the JLG product from service immediately. Arrangements must be made for replacement of the tire or tire assembly.

For polyurethane foam filled tires, JLG recommends that when any of the following are discovered, measures must be taken to remove the product from service immediately. Arrangements must be made for replacement of the tire or tire assembly.

- A smooth even cut through the cord piles which exceeds 3 in (7.5 cm) in total length.
- Any tears or rips (ragged edges) in the cord plies which exceeds 1 in (2.5 cm) in any direction
- Any punctures which exceed 1 in (2.5 cm) in diameter.

If a tire is damaged but within the above noted criteria, the tire must be inspected daily to ensure the damage has not propagated beyond the allowable criteria.

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### C. Tire and Wheel Replacement

JLG recommends a replacement tire to be the same size, ply and brand as originally installed. Refer to the appropriate parts manual for ordering information. If not using a JLG approved replacement tire, JLG recommends that replacement tires have the following characteristics:

- Equal or greater ply/load rating and size of original.
- Tire tread contact width equal or greater than original.
- Wheel diameter, width and offset dimensions equal to the original.
- Approved for the application by the tire manufacturer (including inflation pressure and maximum tire load).

Unless specifically approved by JLG, do not replace a foam filled or ballast filled tire assembly with a pneumatic tire. Due to size variations between tire brands, when selecting and installing a replacement tire ensure both tires on the axle are the same.

The rims installed have been designed for stability requirements which consist of track width, tire pressure and load capacity. Size changes such as rim width, center piece location, larger or smaller diameter, etc., without written factory recommendations, may result in unsafe condition regarding stability.

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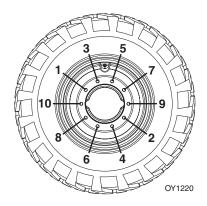
## Section 7 - Lubrication and Maintenance

#### E. Wheel Installation

Torque lug nuts before first use and after each wheel removal.

**Note:** If machine is equipped with directional tire assemblies, the wheel and tire assemblies must be installed with the directional tread pattern "arrows" facing in the direction of forward travel.

- Start all nuts by hand to prevent cross threading. DO NOT use a lubricant on threads or nuts.
- 2. Tighten lug nuts in an alternating pattern as indicated in figure. Torque to 350-400 lb-ft (475-543 Nm).



# **WARNING**

**TIP OVER HAZARD.** Lug nuts must be installed and maintained at the proper torque to prevent loose wheels, broken studs and possible separation of wheel from the axle.

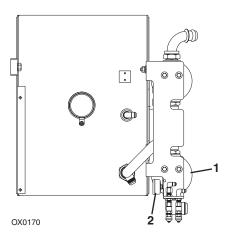
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# **Hydraulic Return Filter**

# A. Hydraulic Return Filter Indicator Check

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- 1. Apply park brake, shift transmission to "Neutral" and lower forks or attachment to horizontal position.
- Check hydraulic return filter indicator with engine at normal operating temperature.
- 3. Have an assistant open the tank cover.
- 4. With the engine at full throttle and the assistant observing the indicator (2) located on the hydraulic return filter (1), extend and retract the boom 10-12 ft (3,0-3,7 m). The gauge should be within the green area.
- Replace filter before the gauge reaches the red area on the indicator. If it reaches the red area, the filter is too dirty and hydraulic oil is bypassing the filter.
- 6. Close and secure the tank cover.

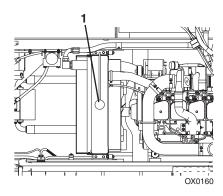
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## **Engine Cooling System**

## A. Engine Coolant Level Check

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- 1. Perform "Shut-Down Procedure" on page 4-4.
- 2. Open the engine cover.
- 3. When coolant is cool, remove cap (1). Check coolant level in radiator.
- 4. If coolant is low, add coolant (50/50 mixture of ethylene glycol and water) as required.
- 5. Replace radiator cap.
- 6. Close and secure the engine cover.

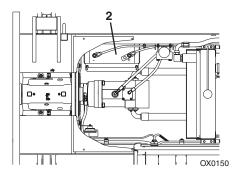
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#### **Battery**

#### A. Battery Check

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- 1. Perform "Shut-Down Procedure" on page 4-4.
- 2. Remove the front cover.
- 3. Wearing eye protection, visually inspect the battery (2). Check terminals for corrosion. Replace battery if it has a cracked, melted or damaged case.
- 4. Replace the front cover.

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# **SECTION 8 - ADDITIONAL CHECKS**

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# **SECTION 9 - SPECIFICATIONS**

### 9.1 PRODUCT SPECIFICATIONS

## Fluid and Lubrication Capacities

Engine Crankcase Oil
Capacity with Filter Change
Type of Oil
Fuel Tank
Capacity
Type of Fuel#2 Diesel
Cooling System
System Capacity
Type of Coolant
Hydraulic System
System Capacity43 gallons (163 liters)
Reservoir Capacity to Full Mark20 gallons (75,7 liters)
Type of OilMobilfluid® 424 Tractor Hydraulic Fluid (ISO 46)
Axles
Housing Capacity (Front Axle)5 gallons (18,9 liters)
Hubs (Rear Axle)3 pints each (1,6 liters)
Type of Fluid Mobilfluid® 424 Tractor Hydraulic Fluid (ISO 46

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# Section 9 - Specifications

### Tires

Pressure	
13.00 x 24, G-2/L-2 Bias-Ply Traction - 12 Ply Pneumatic	
13.00 x 24, G-3/L-3 Bias Ply Rock - 12 Ply Pneumatic	,
13.00 x 24, G-2/L-2 Radial - 1 Star Pneumatic 542 lb (246 kg) Foam	
15.50 x 25, G-2/L-2 Bias-Ply Traction - 12 Ply Pneumatic	
15.50 x 25, G-3/L-3 Bias Ply Rock - 12 Ply Pneumatic	
15.50 x 25, G-2/L-2 Radial - 1 Star Pneumatic 600 lb (272 kg) Foam	,
Wheel Lug Nut	
Torque	50-400 lb-ft (475-542 Nm)
	50-400 lb-ft (475-542 Nm)
Torque3	
Torque	6,600 lb (2.994 kg)
Torque	

## **Dimensions**

Overall Height	95.40 in (2.423 mm)
Overall Width	96.23 in (2.444 mm)
Cab Width	37 in (940 mm)
Track Width	82.24 in (2.089 mm)
Wheelbase	128 in (3.251 mm)
Length at Front Wheels	183.5 in (4.661 mm)
Overall Length (less Forks)	212.59 in (5.4 mm)
Ground Clearance	17 in (432 mm)
Turning Raduis Over Tires	141.25 in (3.588 mm)
Turning Raduis at Forks	182.4 in (4.633 mm)
Gross Vehicle Weight with Forks	20,400 lb (9.253 kg)
Front Axle Weight	9,695 lb (4.398 kg)
Rear Axle Weight	10,705 lb (4.856 kg)

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# Inspection, Maintenance and Repair Log

Serial Number
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Date	Comments

# Inspection, Maintenance and Repair Log

Date	Comments



### TRANSFER OF OWNERSHIP

#### To Product Owner:

If you now own but ARE NOT the original purchaser of the product covered by this manual, we would like to know who you are. For the purpose of receiving safety-related bulletins, it is very important to keep JLG Industries, Inc. updated with the current ownership of all JLG products. JLG maintains owner information for each JLG product and uses this information in cases where owner notification is necessary.

Please use this form to provide JLG with updated information with regard to the current ownership of JLG products. Please return completed form to the JLG Product Safety & Reliability Department via facsimile or mail to address as specified below.

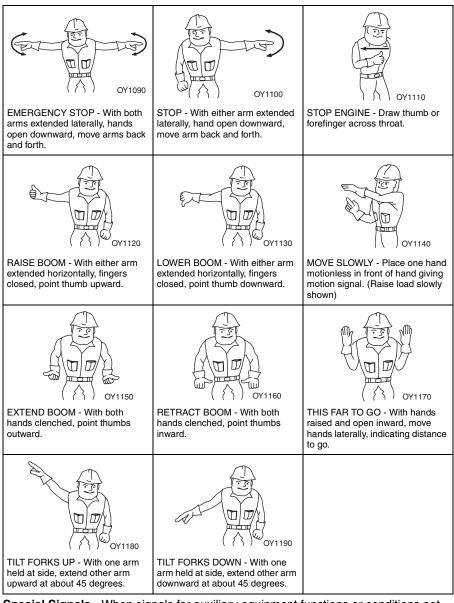
Thank You,
Product Safety & Reliability Department
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Telephone: +1-717-485-6591 Fax: +1-301-745-3713

NOTE: Leased or rented units should not be included on this form.

Mfg. Model:			
Previous Owner: _			
Address:			
	Telephone: ()		
Date of Transfer: _			
Current Owner:			
Address:			
	Telephone: ()		
Who in your organization should we notify?			
Name:			
Title:			

#### **Hand Signals**



**Special Signals** - When signals for auxiliary equipment functions or conditions not covered are required, they shall be agreed upon in advance by the operator and signalman.



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