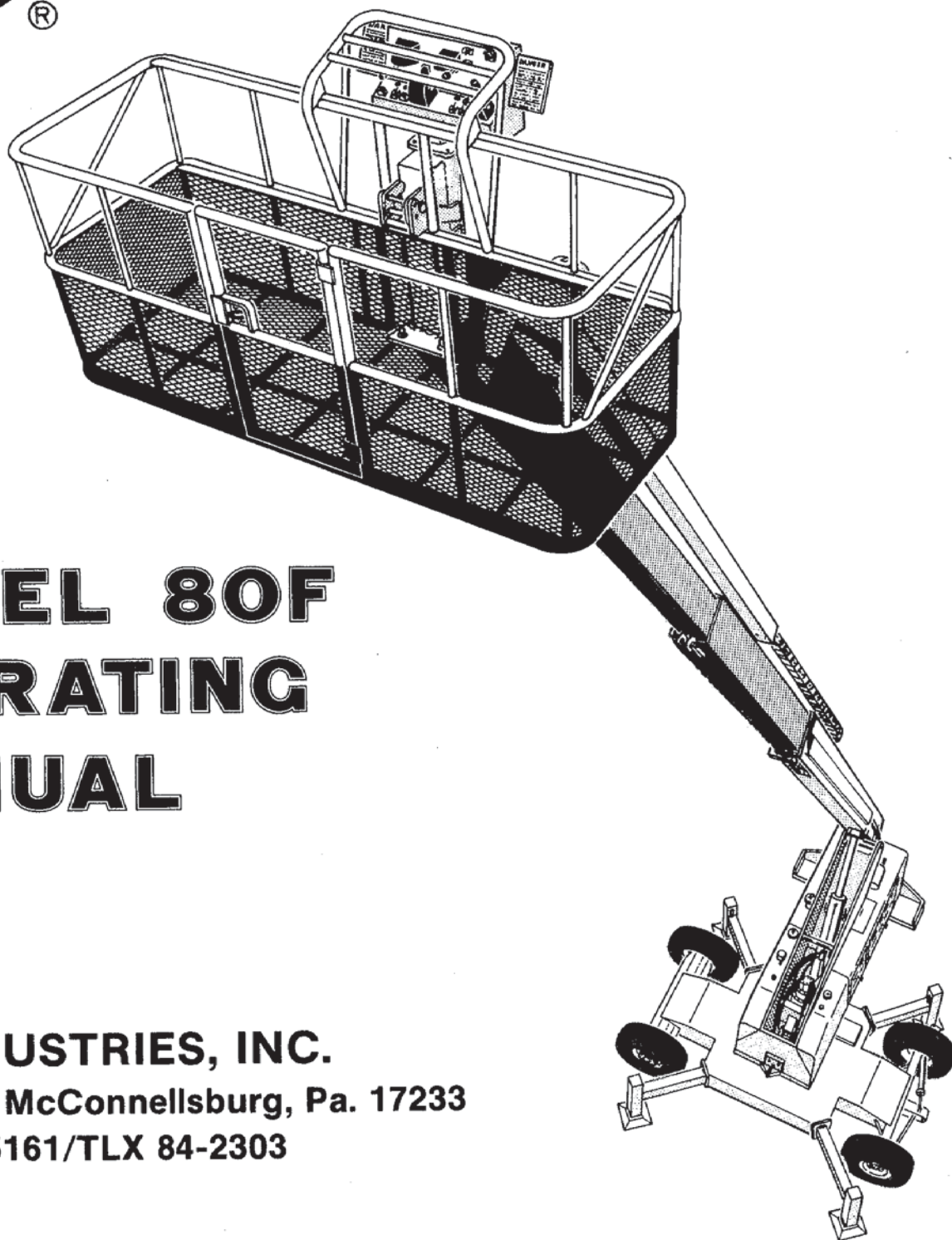




JLG lift®



MODEL 80F OPERATING MANUAL

JLG INDUSTRIES, INC.

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LIST OF EFFECTIVE PAGES

Insert latest changed pages; dispose of superseded pages.

Note

On a changed page, the portion of the text affected by the latest change is indicated by a vertical line in the outer margin of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to wiring and hydraulic diagrams and schematics are indicated by shaded areas.

Dates of issue for original and changed pages are:

Original . . . 0 . . . 15 July 1981

Total number of pages in this manual is (41) consisting of the following:

Page No.	Change No.	Page No.	Change No.
Title	0		
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PLEASE READ

FOREWORD

The purpose of this manual is to provide the customer with the operating procedures essential for the promotion of proper machine operation for its intended purpose. It is impossible to over-stress proper usage. All information in this manual should be **READ** and **UNDERSTOOD** before any attempt is made to operate the machine. **YOUR OPERATING MANUAL IS YOUR MOST IMPORTANT TOOL** — Keep it with the machine.

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

ALL PROCEDURES HERE IN ARE BASED ON THE USE OF THE MACHINE UNDER PROPER OPERATING CONDITION, WITH NO DEVIATIONS FROM THE ORIGINAL DESIGN. ALTERATION AND/OR MODIFICATION OF THE MACHINE IS STRICTLY FORBIDDEN WITHOUT WRITTEN APPROVAL FROM JLG INDUSTRIES, INC.

A MOST IMPORTANT FACT TO REMEMBER IS THAT ANY EQUIPMENT IS ONLY AS RELIABLE AS THOSE WHO OPERATE IT.

WARNING, CAUTION, AND NOTE DEFINITIONS

Since safety of personnel and proper use of the machine are of primary concern, **WARNINGS, CAUTIONS, and NOTES** are inserted throughout this manual to emphasize these areas. They are defined as follows:

WARNING

IF NOT CORRECTLY FOLLOWED, COULD RESULT IN INJURY OR DEATH TO PERSONNEL.

CAUTION

IF NOT STRICTLY OBSERVED, COULD RESULT IN DAMAGE TO, OR DESTRUCTION OF, EQUIPMENT.

Note

Provides information of special interest to illustrate the text.

Note

In this manual, all stencilled or placarded nomenclature is capitalized.

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SECTION 1 — SAFETY PRECAUTIONS

1-1. GENERAL.

- a. This section prescribes the proper and safe practices for major areas of machine usage which have been divided into three basic categories: Driving, Towing and Operation. In order to promote proper usage of the machine, it is mandatory that a daily routine be established on instructions given in this section. A maintenance program must also be established by a qualified person and must be followed to ensure that the machine is safe to operate.
- b. The user of the machine should not accept operating responsibility until this manual has been read and operation of the machine, under the supervision of a qualified user, has been completed. If there is a question on application and/or operation, JLG Industries Safety Engineering should be consulted before undertaking the intended use.

WARNING

SINCE THE MANUFACTURER HAS NOT DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICE IN THIS AREA IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

WARNING

MODIFICATION OF THE MACHINE WITHOUT CERTIFICATION BY A RESPONSIBLE AUTHORITY THAT THE MACHINE IS AT LEAST AS SAFE AS ORIGINALLY MANUFACTURED IS A SAFETY VIOLATION.

1-2. DRIVING/TOWING.

- a. Before undertaking any driving applications the user should be well orientated with the machine to ensure movement in the desired direction. The user should also become familiar with the required braking distance before working in close quarters.
- b. The user should be familiar with the driving surface before driving. The surface should be firm and level and grades should not exceed 20 percent. The user should also check clearance of work areas before traveling. It should be noted that the machine is uninsulated and caution must be exercised when traveling near electrical lines and other potential electrical hazards.
- c. Towing the unit should not be attempted before first placing the boom in the stowed position, locking the turntable, disconnecting the drive hubs and placing the steer-tow selector valve to the tow position. Towing is permitted only for emergency travel on the jobsite. Highway towing is not permitted and is a safety violation. Refer to Towing in Section 4 for specific instructions.

Note

Remember that the key to proper usage is common sense and its proper application.

SECTION 1 — SAFETY PRECAUTIONS

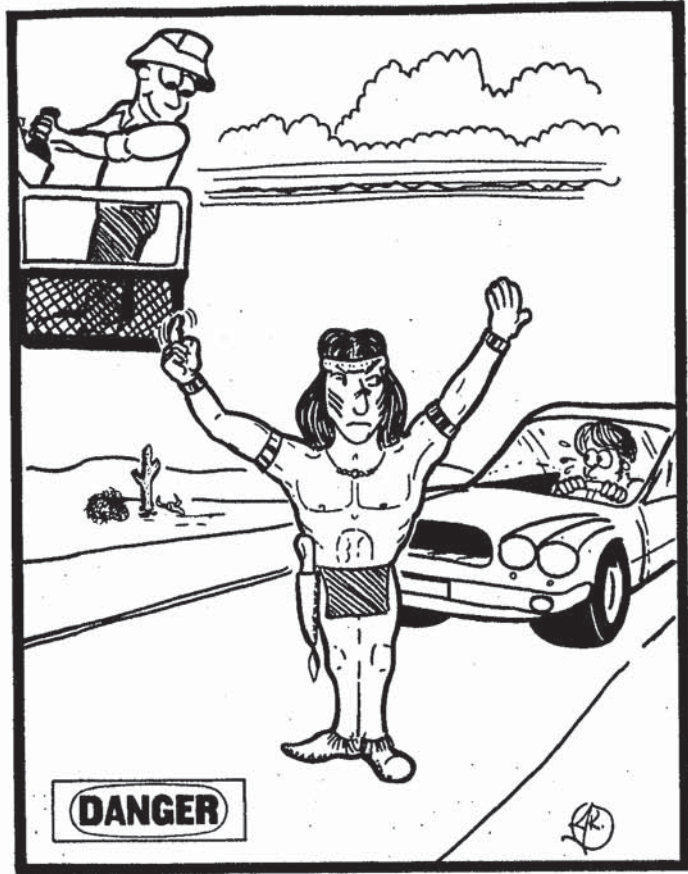
WARNING

FAILURE TO COMPLY WITH SAFETY REGULATIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH IS A SAFETY VIOLATION.

ASSURE THAT MACHINE IS IN STOWED POSITION AND TURNTABLE IS SECURED WHEN TOWING.

BE AWARE OF CLEARANCES WHEN TRAVELING OR TOWING.

POSITION BOOM OVER REAR AXLE AND BETWEEN REAR WHEELS FOR ALL DRIVING OR TOWING. RETRACT AND LOWER BOOM FOR DRIVING AND TOWING.



ALWAYS POST A LOOKOUT WHEN OPERATOR'S VIEW IS OBSTRUCTED.

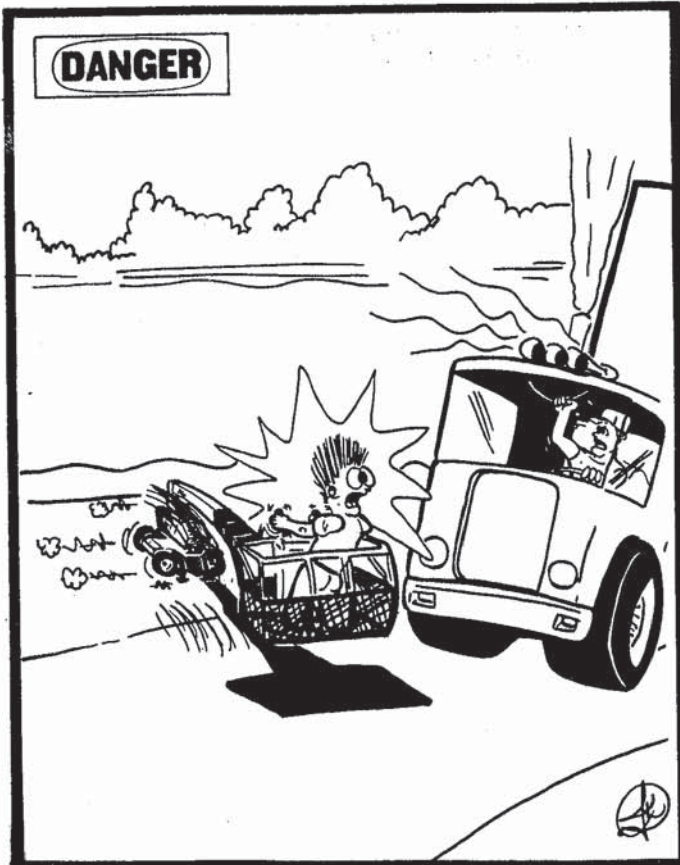
ALWAYS SECURE TURNTABLE PRIOR TO ANY EXTENDED TRAVELING.

Note

Towing permitted only for emergency travel on jobsite. No highway towing permitted.

NEVER DRIVE MACHINE WITH OUTRIGGERS EXTENDED.

ASSURE OUTRIGGER BEAMS AND JACKS ARE COMPLETELY RETRACTED PRIOR TO MOVING.



SECURE TURNTABLE BEFORE TRAVELING.

SECTION 1 — SAFETY PRECAUTIONS

WARNING

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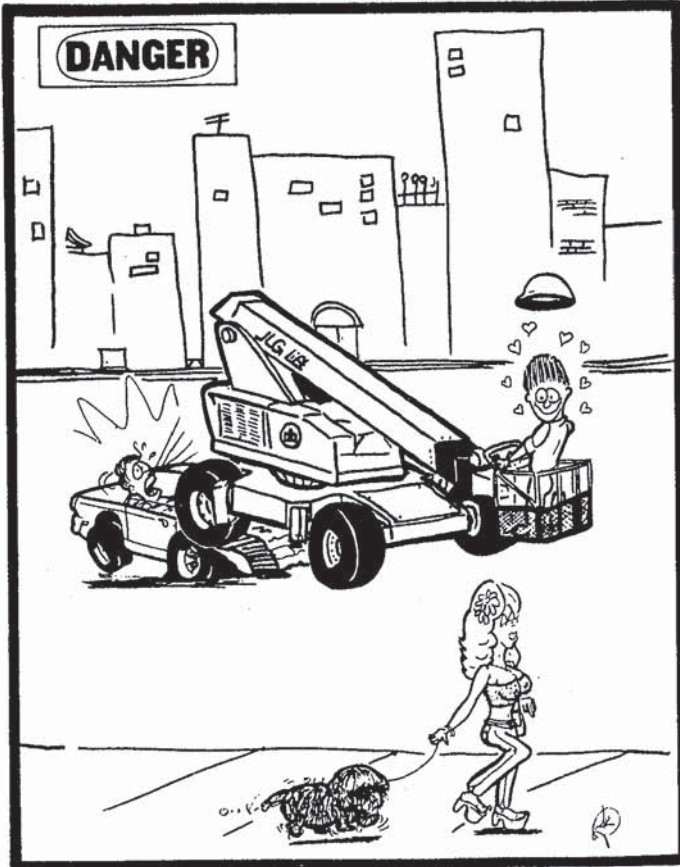
KEEP YOUR EYES AND MIND FIXED IN THE DIRECTION OF TRAVEL.

NEVER PERMIT PERSONNEL ON MACHINE OR IN PLATFORM WHEN TOWING.

MACHINE MUST BE MECHANICALLY ASSISTED WHEN TRAVELING GRADES EXCEEDING 20 PERCENT.



NEVER OPERATE ON SOFT OR UNEVEN SURFACES.



DO NOT TRAVEL OR WORK MACHINE ON SOFT OR UNEVEN SURFACES, AS TIPPING WILL OCCUR.

ASSURE STEER/TOW SELECTOR VALVE PULLED OUT; DRIVE HUBS DISCONNECTED PRIOR TO STARTING TOW OPERATIONS.

DO NOT EXCEED 10 MPH WHILE TOWING.

MAXIMUM TOWING GRADE PERMISSIBLE IS 25%.

ALWAYS LOOK IN DIRECTION OF TRAVEL.

WARNING

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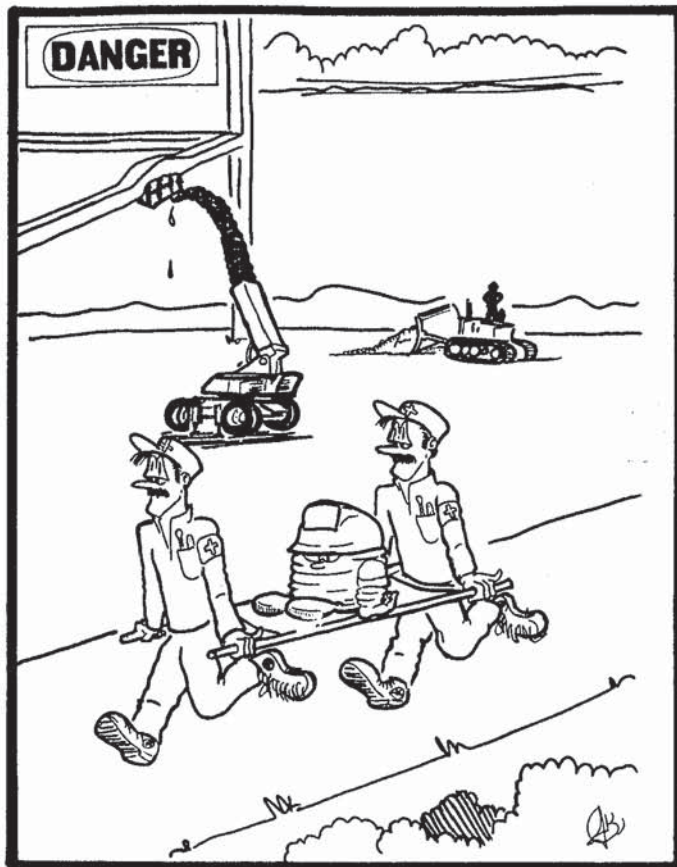
OPERATION.

MACHINE AXLES MUST BE FULLY EXTENDED, OR OUTRIGGER BEAMS MUST BE FULLY EXTENDED AND ALL JACKS SET ON FIRM SURFACE, WITH MACHINE LEVELED, BEFORE ANY BOOM OPERATION IS PERMITTED.

MAINTAIN SAFE CLEARANCE FROM ELECTRICAL LINES AND ARRARATUS. YOU MUST ALLOW FOR PLATFORM AWAY, ROCK OR SLAG AND ELECTRICAL LINE SWAYING.

THIS MACHINE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.

YOU MUST MAINTAIN A CLEARANCE OF AT LEAST 10 FEET BETWEEN ANY PART OF THE MACHINE OR ITS LOAD AND ANY ELECTRICAL LINE OR APPARATUS CARRYING UP TO 50,000 VOLTS. ONE FOOT ADDITIONAL CLEARANCE IS REQUIRED FOR EACH ADDITIONAL 30,000 VOLTS OR LESS.



THOROUGHLY CHECK ALL CLEARANCES BEFORE POSITIONING PLATFORM.

ALLOW ONLY THOSE AUTHORIZED AND QUALIFIED PERSONNEL TO OPERATE MACHINE WHO HAVE DEMONSTRATED THAT THEY UNDERSTAND THE PROPER OPERATION AND MAINTENANCE OF THE UNIT.

NEVER USE BOOM FOR ANY PURPOSE OTHER THAN POSITIONING PERSONNEL AND THEIR TOOLS AND EQUIPMENT AND FOR EXTENDING AXLE OPERATION.

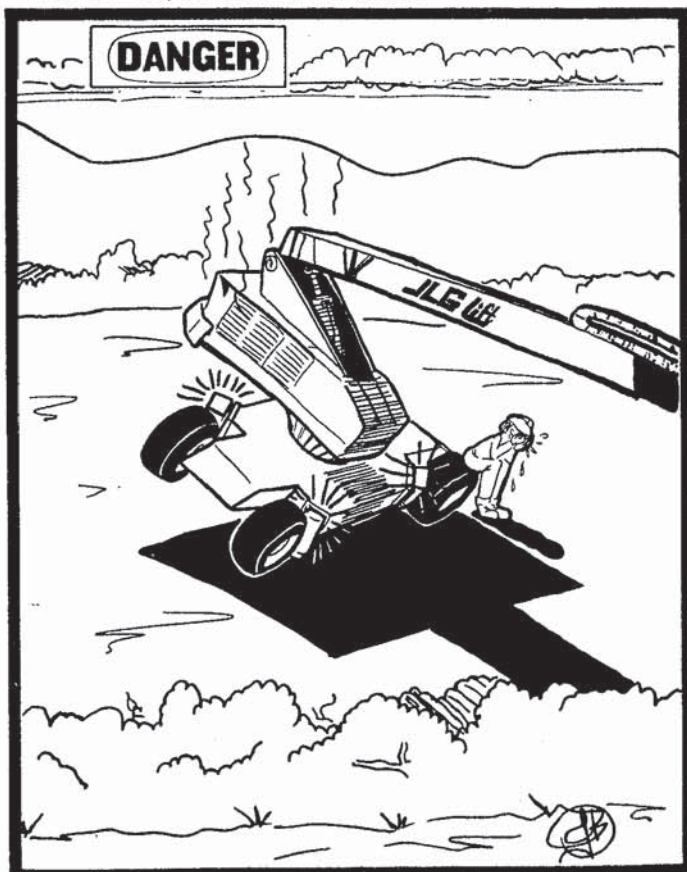
CHECK CLEARANCES ABOVE AND ON SIDES AND BOTTOM OF PLATFORM WHEN RAISING, LOWERING, SWINGING, AND TELESCOPING BOOM. IN ADDITION, CHECK CLEARANCES AROUND THE ENTIRE TURN-TABLE WHEN SWINGING BOOM.

CHECK TAILSWING (COUNTERWEIGHT) CLEARANCE BEFORE SWINGING THE TURN-TABLE.

CHECK CLEARANCE ON BOTH SIDES BEFORE OUT-RIGGERS OR AXLES ARE EXTENDED AND SET.

SET OUTRIGGER JACK PADS ONLY ON SOLID FOOTING.

CHECK MACHINE STABILITY BEFORE POSITIONING PLATFORM.



ENSURE OUTRIGGERS ARE SET BEFORE OPERATING BOOM FUNCTIONS.

SECTION 1 — SAFETY PRECAUTIONS

WARNING

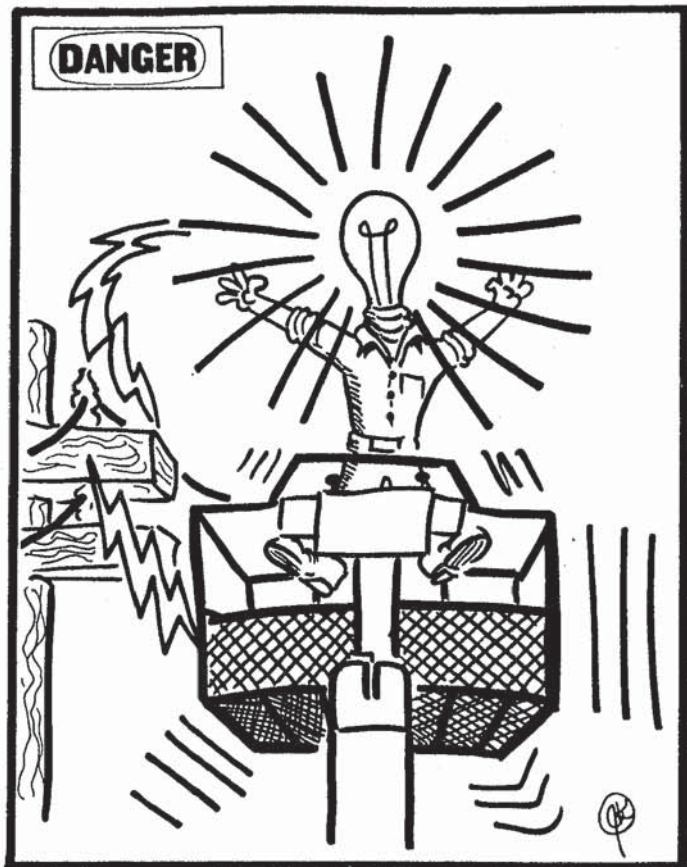
FAILURE TO COMPLY WITH SAFETY REGULATIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

NEVER EXCEED MANUFACTURER'S RATED PLATFORM CAPACITY — REFER TO PLACARD ON BOOM, ADJACENT TO PLATFORM.

PLATFORM CAPACITY RATING VALID ONLY WITH AXLES FULLY EXTENDED, OR OUTRIGGERS FULLY EXTENDED, AND PADS SET IN FIRM CONTACT WITH SURFACE, AND MACHINE LEVEL.

NEVER RETRACT OUTRIGGERS OR AXLES UNTIL BOOM IS FULLY RETRACTED.

KEEP OIL, MUD, GREASE, AND LIKE SLIPPERY SUBSTANCES CLEANED FROM YOUR FOOTWEAR AND PLATFORM DECK.



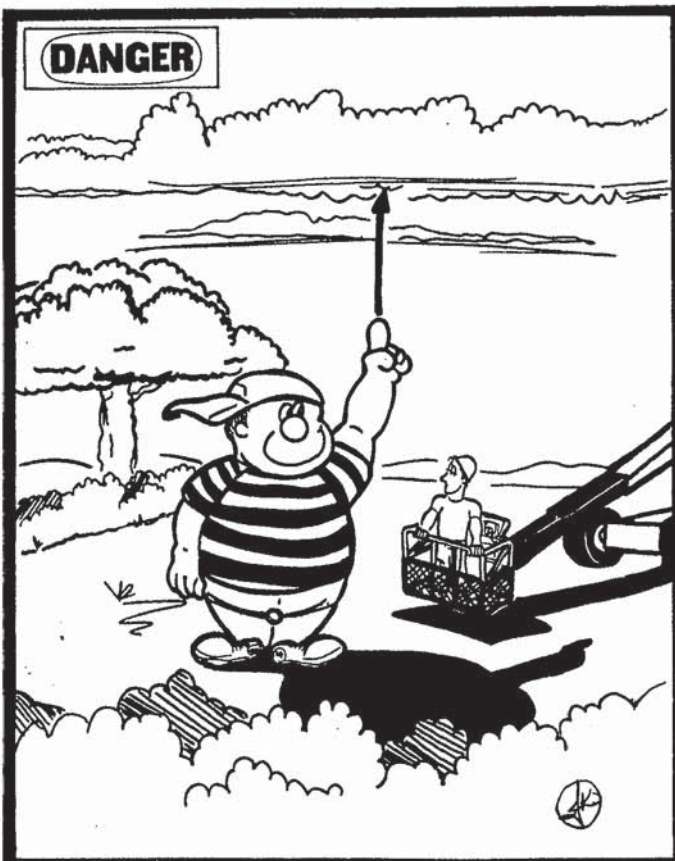
MAINTAIN A SAFE CLEARANCE FROM ELECTRICAL LINES AND APPARATUS.

ALL WHEELS SHOULD BE CHOCKED WHILE MACHINE IS BEING USED IN STATIONARY OPERATION. (EXTENDABLE AXLE ONLY.)

NEVER EXCEED MANUFACTURER'S RATED PLATFORM CAPACITY — REFER TO CAPACITY INDICATOR.

NEVER OPERATE A MALFUNCTIONING MACHINE. IF MALFUNCTION OCCURS, SHUT DOWN THE MACHINE AND NOTIFY PROPER AUTHORITIES.

TO AVOID FALLING — USE EXTREME CAUTION WHEN ENTERING/LEAVING PLATFORM ABOVE GROUND. ENTER/EXIT THRU GATE ONLY. PLATFORM MUST BE WITHIN ONE (1) FOOT OF ADJACENT — SAFE AND SECURE — STRUCTURE. ALLOW FOR PLATFORM VERTICAL MOVEMENT WHEN ENTERING OR LEAVING PLATFORM.



KNOW YOUR CAPACITY AND OPERATE WITHIN IT.

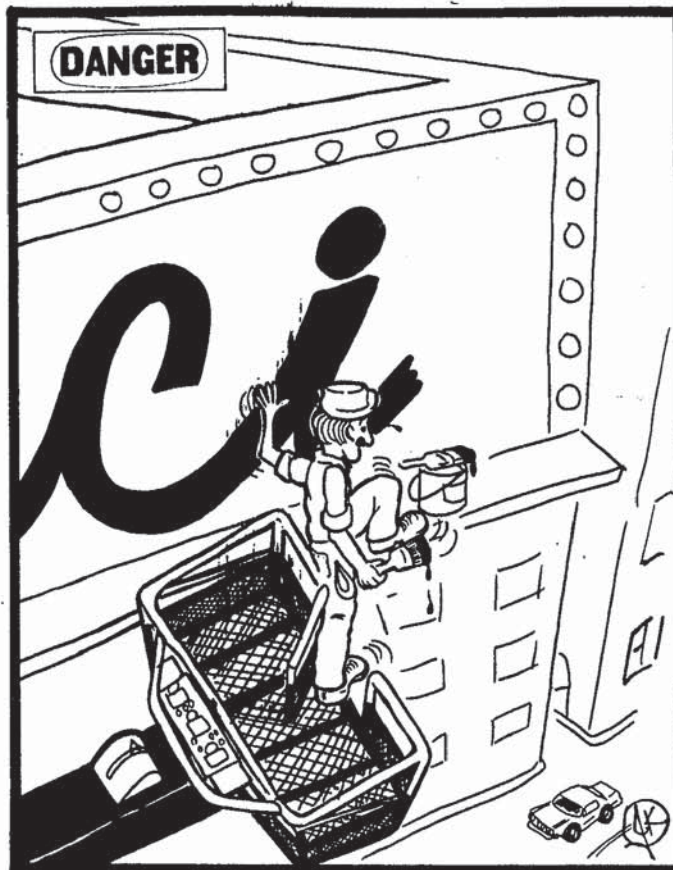
WARNING

FAILURE TO COMPLY WITH SAFETY REGULATIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

READ AND OBEY ALL WARNINGS, CAUTIONS, AND OPERATING INSTRUCTIONS ON MACHINE AND IN THIS MANUAL.

REFER TO AND FOLLOW THE INSTRUCTIONS GIVEN IN THE EMERGENCY SECTION OF THIS MANUAL SHOULD AN EMERGENCY SITUATION OCCUR.

MAKE SURE MACHINE IS POSITIONED WITH AXLES FULLY EXTENDED OR OUTRIGGERS FULLY EXTENDED AND ALL JACKS SET ON A FIRM, SUPPORTING SURFACE BEFORE RAISING OR EXTENDING BOOM.



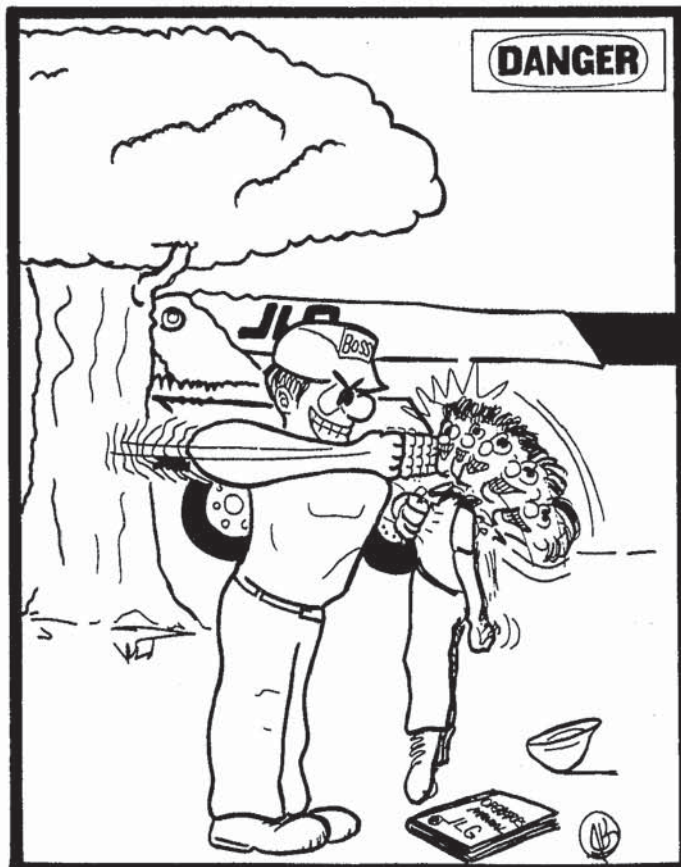
EXERCISE CAUTION WHEN ENTERING OR LEAVING PLATFORM.

DO NOT ALLOW GROUND PERSONNEL IN AREAS AROUND AND UNDER RAISED PLATFORM.

APPROVED HEAD GEAR SHOULD BE WORN BY ALL OPERATING AND GROUND PERSONNEL.

BE FAMILIAR WITH LOCATIONS AND OPERATION OF ALL ALTERNATE AND OVERRIDE CONTROLS.

MACHINE SHOULD ALWAYS BE SHUT DOWN AND GROUNDED WHEN REFUELING. NO SMOKING IS MANDATORY. NEVER REFUEL DURING AN ELECTRICAL STORM. ENSURE THAT CAP IS CLOSED AND SECURE AT ALL OTHER TIMES.



READ YOUR MANUAL; UNDERSTAND WHAT YOU'VE READ — THEN BEGIN OPERATIONS.

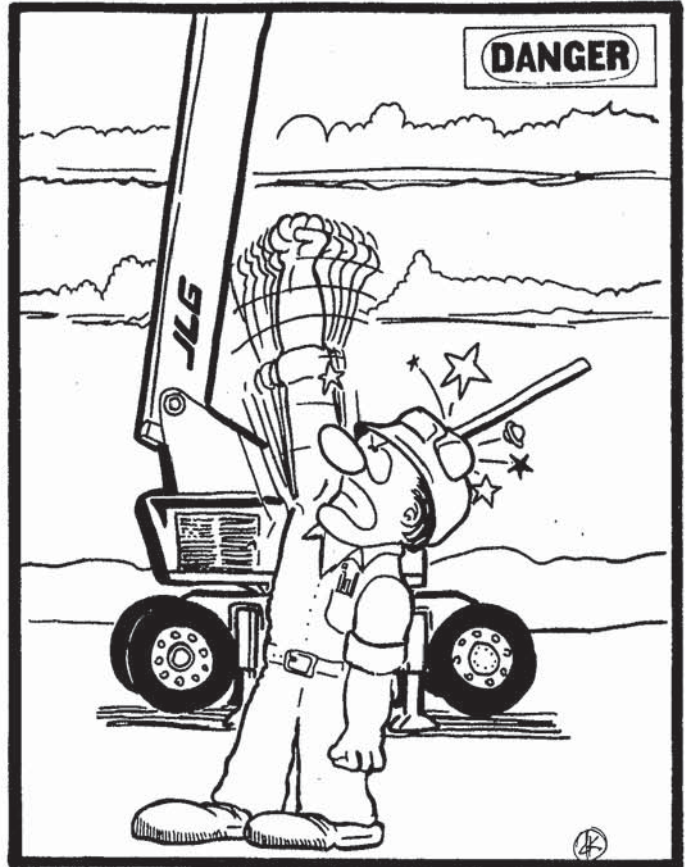
SECTION 1 — SAFETY PRECAUTIONS

WARNING

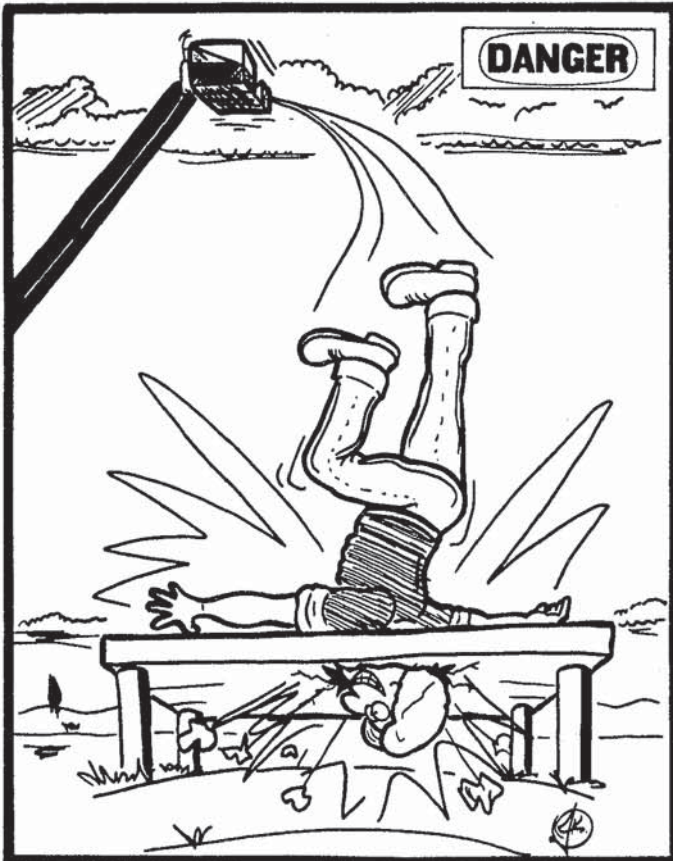
FAILURE TO COMPLY WITH SAFETY REGULATIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

NEVER ATTEMPT TO FREE MACHINE BY LIFTING IT OFF THE GROUND WITH THE BOOM.

NEVER ATTACH WIRE, CABLE, OR ANY SIMILAR ITEMS TO PLATFORM FOR THE PURPOSE OF LIFTING LOADS.



KEEP EVERYONE CLEAR OF A WORKING PLATFORM.



WHEN RIDING IN OR WORKING FROM PLATFORM, BOTH FEET MUST BE FIRMLY POSITIONED ON THE DECK.

ALWAYS USE SAFETY BELT. SECURE BELT LANYARD TO PROPER ATTACH BAR ON CONTROL STAND, AS REQUIRED BY OSHA, NEVER TO ADJACENT OBJECT OR STRUCTURE.

KEEP BOTH FEET ON DECK, OR YOU MAY GO DOWN IN HISTORY!

SECTION 1 — SAFETY PRECAUTIONS

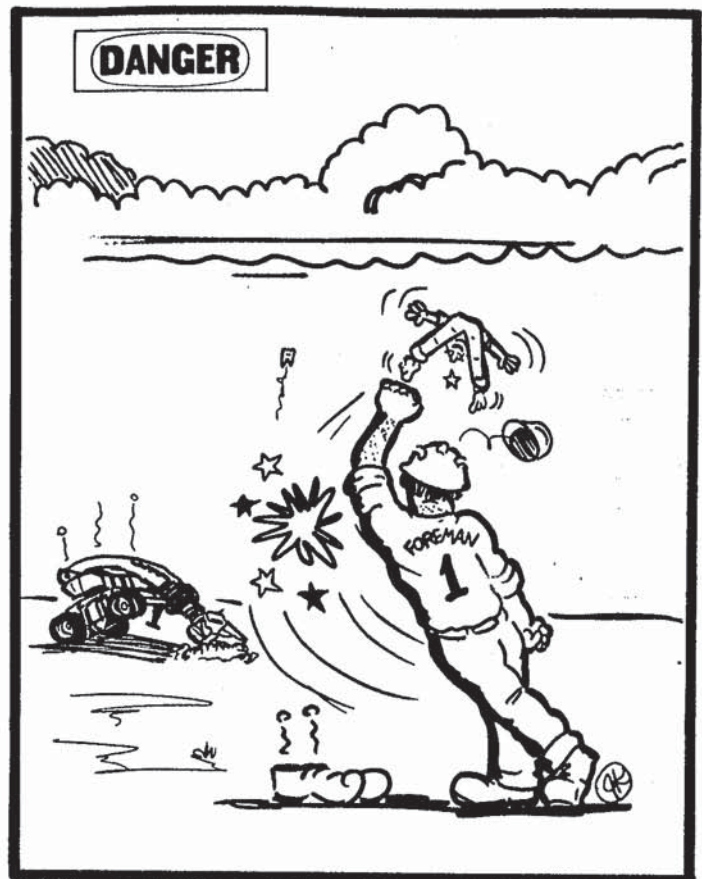
WARNING

FAILURE TO COMPLY WITH SAFETY REGULATIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

DO NOT USE THE DRIVE, LIFT OR TELESCOPE FEATURES OF THE MACHINE TO MOVE OTHER OBJECTS.

DO NOT OPERATE ANY MACHINE ON WHICH DANGER, WARNING, CAUTION OR INSTRUCTION PLACARDS OR DECALS ARE MISSING OR ILLEGIBLE.

DO NOT ACCEPT OPERATING RESPONSIBILITY OF THE MACHINE UNTIL HAVING BEEN TRAINED IN ITS OPERATION BY COMPETENT AND KNOWLEDGEABLE PERSONNEL.

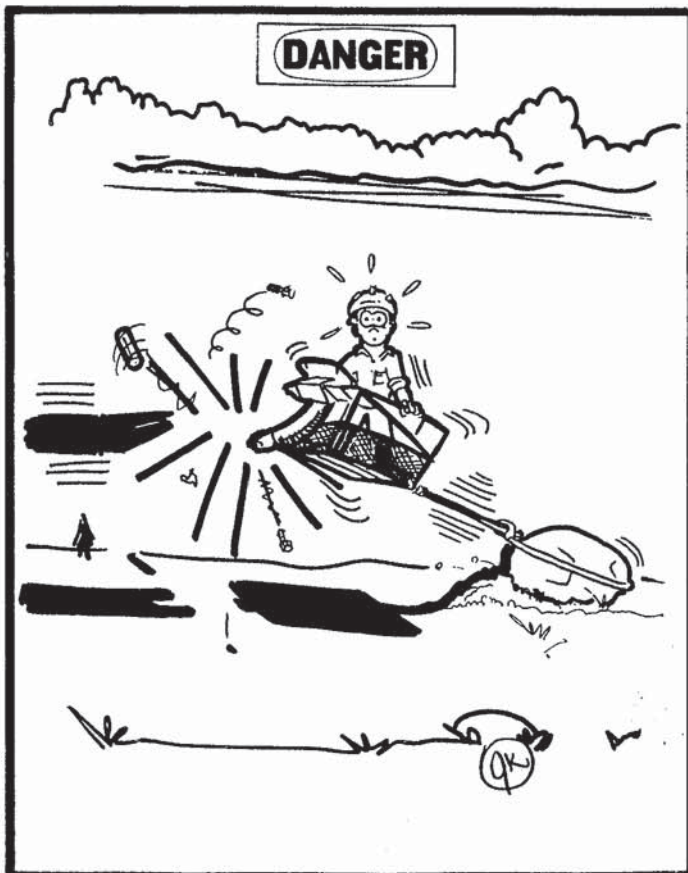


USE THE BOOM ONLY FOR EXTENDING AXLES AND LIFTING, NOT AS A JACK.

DO NOT PERFORM OPERATIONS ON ANY MACHINE THAT FUNCTION CONTROL WORDING, WARNING, CAUTION AND DANGER PLACARDS ARE MISSING OR NOT READABLE.

DO NOT PULL THE MACHINE OR OTHER OBJECTS BY ATTACHING WIRE, CABLE OR SIMILAR ITEMS TO THE PLATFORM AND THEN RETRACTING THE BOOM.

DO NOT ATTEMPT TO USE THE BOOM FOR CRANE FUNCTIONS.



NEVER PULL THE MACHINE, OR OTHER OBJECTS BY RETRACTING THE BOOM.

SECTION 1 — SAFETY PRECAUTIONS

WARNING

FAILURE TO COMPLY WITH SAFETY REGULATIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

NEVER "WALK THE BOOM" TO GAIN ACCESS TO OR LEAVE PLATFORM.

NEVER "SLAM" A CONTROL LEVER THROUGH NEUTRAL TO OPPOSITE DIRECTION, INSTEAD, RETURN LEVER TO NEUTRAL; STOP — THEN PROCEED.

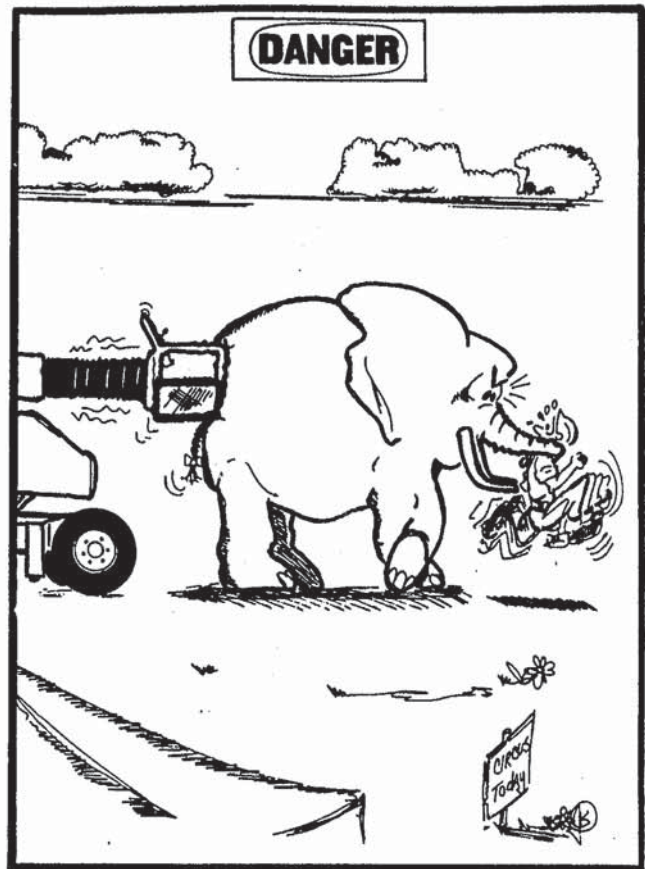
NEVER POSITION LADDERS, STEPS, OR SIMILAR ITEMS ON UNIT TO PROVIDE ADDITIONAL REACH FOR ANY PURPOSE.

ALWAYS ACTUATE CONTROLS WITH SLOW EVEN PRESSURE.

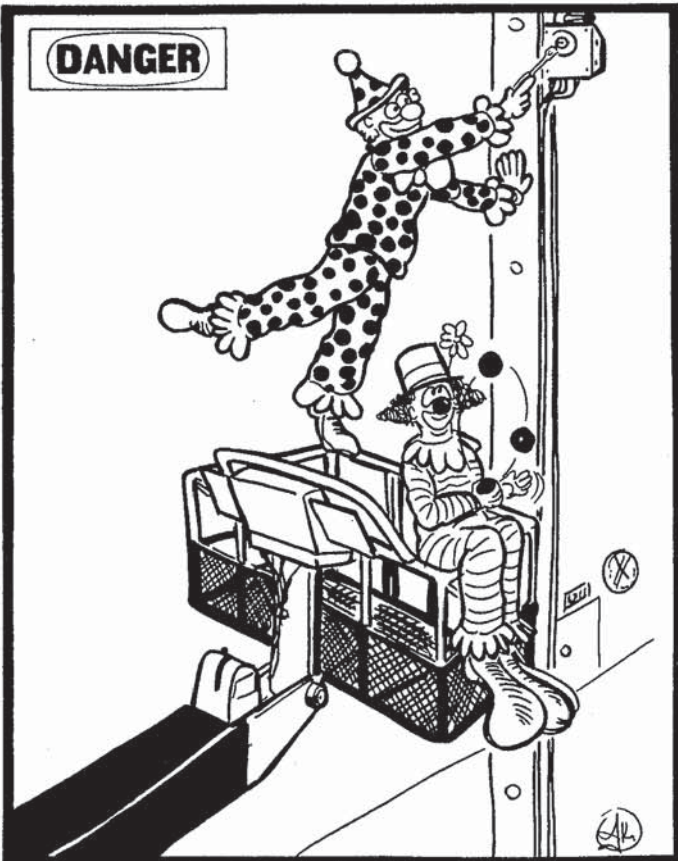
STOW BOOM AND SHUT OFF ALL POWER BEFORE LEAVING MACHINE.

Note

Safety is your responsibility, use common sense.



NEVER PUSH THE MACHINE, OR OTHER OBJECTS, BY TELESCOPING THE BOOM.



NO CIRCUS ACTS IN PLATFORM.

SECTION 2 — PREPARATION AND INSPECTION

2-1. GENERAL.

This section provides the necessary information needed by those personnel that are responsible to place the machine in operation readiness, and lists checks that are performed prior to use of the machine. It is important that the information contained in this section be read and understood before any attempt is made to operate the machine. Ensure that all necessary inspections have been completed successfully before placing the machine into service. These procedures will aid in obtaining maximum service life and safe operation.

WARNING

SINCE THE MACHINE MANUFACTURER HAS NO DIRECT CONTROL OVER THE FIELD INSPECTION AND MAINTENANCE, SAFETY IN THIS AREA IS THE RESPONSIBILITY OF THE OWNER/OPERATOR.

2-2. PREPARATION FOR USE.

- a. Before a new machine is put into operation it must be carefully inspected for any evidence of damage resulting from shipment, and inspected periodically thereafter, as outlined in the Delivery and Periodic Inspection. The unit should be thoroughly checked for hydraulic leaks during initial start-up and run. A check of all components should be made to assure their security.
- b. All preparation necessary to place the machine in operation readiness status should be the responsibility of management personnel. Most preparatory requirements are relatively simple and usually involve little more than good common sense, (i.e. telescope works smoothly and brakes operate properly) coupled with a series of visual inspections. This method is most effective toward attaining constant readiness. The mandatory requirements are given in the Machine Daily Inspection.
- c. It should be assured that the items appearing in the Delivery and Periodic Inspection and Functional Check are complied with prior to putting the machine into service.

2-3. DELIVERY AND PERIODIC INSPECTION.

The following checklist provides a systematic inspection to assist in detecting defective, damaged, or improperly installed parts. The checklist denotes the items to be inspected and conditions to examine.

a. Chassis.

- (1). Check front tire and wheel assembly for security of components, wear and cuts.
- (2). Check steering assembly for loose or bent tie rods, cylinder and lines for leaks and security, and hardware for proper installation.
- (3). Check rear tire and wheel assembly for security of components, tires for wear and cuts.
- (4). Check drive hubs, hydraulic motors, brakes, and lines for visible damage and leaks.
- (5). Drive motors and brake shield — properly secured, no missing hardware.
- (6). Check oil level in drive hub by removing pipe plug on side and feeling for oil level. (Contact service personnel for assistance if needed.)
- (7). Check counterbalance, flow divider valves, hydraulic swivel assembly and lines for visible damage, evidence of leakage, security, and electrical connections for corrosion and tightness.
- (8). Check outrigger and extending axle assemblies for evidence of leakage and security; pressure lines for abnormal chafing.
- (9). Check outriggers and extending axles for visible damage/loose or missing parts.

b. Turntable.

- (1). Check turntable for visible damage, loose or missing parts, and security. Check lift cylinder and lines for visible damage; evidence of leakage, and security. Check swing drive hub, hydraulic motor, and brake for visible damage, loose or missing parts, lines and housing for evidence of leakage; pinion for proper mesh with swing gear.

SECTION 2 — PREPARATION AND INSPECTION

- (2). Check swing bearing for visible damage and evidence of lubrication and security.
 - (3). Check solenoid valves and lines for visible damage, evidence of leakage, security, and electrical connections for corrosion and tightness.
 - (4). Check ground controls for visible damage, loose or missing parts, security, electrical connections for corrosion, tightness, and wiring for defects and chafing damage. Assure that all switches function properly.
 - (5). Check manual descent valves for visible damage, evidence of leakage and security. Assure that valves function properly.
 - (6). Check battery for visible damage, loose or missing vent caps, electrical connections for corrosion, tightness, holddown brackets for tightness, and electrolyte for proper level. Add only clean distilled water to battery.
 - (7). Engine Air Filter — Oil in bowl clean. Pre-cleaner free of dirt. (Diesel: Air cleaner filter, clean or replace.)
 - (8). Air Shrouding and Radiator — No visible damage; loose or missing hardware. No obstructions. Coolant at proper level.
 - (9). Engine Oil Supply — Full mark on dipstick; filler cap secure.
 - (10). Muffler and Exhaust System — Properly secured; no evidence of leakage.
 - (11). Check engine and accessories for visible damage, loose or missing parts, evidence of leakage, and security. Check throttle solenoid and linkage for visible damage, and electrical connections for corrosion and tightness.
 - (12). Check fuel lines for visible damage, evidence of leakage, and security.
 - (13). Check all cowl and access doors for visible damage, proper operation of latches and props, and security.
 - (14). Check fuel tank and lines for visible damage, evidence of leakage and security.
 - (15). Check hydraulic reservoir and lines for visible damage, evidence of leakage and security.
 - (16). Hydraulic Oil Filter — Element condition (check indicator with engine operating at high speed and oil warm). Clean or replace element as required.
 - (17). Hydraulic Oil Supply — Full mark on dipstick (all cylinder retracted, all systems shut down, machine in stowed position).
 - (18). Check master leveling cylinder and cross pins, and lines for visible damage, wear, lubrication, evidence of leakage, and security.
 - (19). Check boom pivot bearings for evidence of lubrication and wear.
 - (20). Check lift cylinder and hydraulic lines for evidence of leakage and security.
 - (21). Check all attach pins for damage, wear and security.
- c. Boom.**
- (1). Check pivot and lift cylinder shaft retainer screws and nuts for visible damage and security. Lubricate pins as required.
 - (2). Check telescope cylinder and cross pins, and lines for visible damage, war, lubrication, evidence of leakage, and security.
 - (3). Check boom for visible damage, loose or missing parts, and security.
 - (4). Check wear pads for visible damage, wear, and security.
 - (5). Check hydraulic line and electrical cable track assembly for visible damage, loose or missing parts, and security.
 - (6). Check hydraulic and electrical lines in cable track for visible damage.
 - (7). Check slave leveling cylinder and cross pins and lines for visible damage, wear, lubrication, evidence of leakage, and security.
 - (8). Check boom/platform pivot pins for security and lubrication.
 - (9). Check lift cylinder boom attach pivot points for wear, security, and evidence of lubrication.
 - (10). Power Track — No loose, damaged or missing parts; hydraulic and electrical lines no visible damage.

SECTION 2 — PREPARATION AND INSPECTION

- (11). Check capacity indicator for any damage and that decal is not defaced.
- (12). Check boom tape for correct length and for tearing or defacing at any point.

d. Platform.

- (1). Check platform and control console for visible damage, loose or missing parts, and security (lock pins in place).
- (2). Check control levers for visible damage, loose or missing parts, and security. Assure that levers function properly (return to neutral when released).
- (3). Check control switches for visible damage, loose or missing parts, security, electrical connections for corrosion and tightness, and wiring for defects and chafing damage. Assure that switches function properly.
- (4). Check access gate hinges and latch for damage and security.

Note

Check all warning, caution, danger and instruction placards for legibility and security around the entire machine.

WARNING

DO NOT OPERATE MACHINE IF ALL PLACARDS ARE NOT ON MACHINE OR ARE DEFACED AND NOT READABLE. USE OF MACHINE WITHOUT CORRECT PLACARDS IS A SAFETY VIOLATION.

2-4. DAILY INSPECTION.

- a. It is the user's responsibility to inspect the machine before the start of each workday. It is recommended that each user inspect the machine before operation, even if the machine has already been put into service under another use. This Daily Inspection is the preferred method of inspection.
- b. In addition to the Daily Inspection, be sure to include the following items:
 - (1). Check all standing surfaces for oil, fuel, and hydraulic oil spillage and foreign objects. Ensure overall cleanliness.
 - (2). Keep all information and operating placards clean and unobstructed. Cover when spray painting to protect legibility.

- (3). Ensure a machine operating record is kept, check to see that it is current and that no entries have been left uncleaned, leaving machine in an unsafe condition for operation.

- (4). For those items pointed out in the Daily Inspection requiring daily lubrication refer to the Lubrication Chart, for specific requirements.

- c. Perform the following checks and services before attempting to operate the machine.

WARNING

DO NOT OPERATE A MALFUNCTIONING MACHINE UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND ALL MALFUNCTIONS HAVE BEEN CORRECTED. USE OF A MALFUNCTIONING MACHINE IS A SAFETY VIOLATION.

- (1). Visually inspect machine for loose or missing parts, foreign objects, hydraulic leaks from lines or components, and structural damage.

Note

Check boom mercury switch for proper operation and security both visually and manually. Mercury switch must shutdown high engine speed and high drive speed when boom is raised above horizontal.

- (2). Start each day with a full fuel tank. Ensure filler cap is closed and secure.
- (3). Check oil level in engine crankcase. Fill to FULL mark on dipstick — DO NOT overfill. Ensure fill cap is securely in place.
- (4). Check engine radiator for proper coolant as necessary. Ensure radiator cap is securely in place. (Refer to manufacturer's manual for cold weather coolant.)
- (5). Check battery for proper electrolyte level, cables for security, visible damage, and corrosion. Add only clean distilled water — DO NOT overfill. Check cell caps for security.
- (6). Inspect boom pivot pin, lift cylinder rod end pin, and platform pivot pin. (Refer to Lubrication Chart, Figure 2-1.)
- (7). Check platform footswitch for proper operation. Switch must be released to start engine and depressed to operate machine functions.
- (8). Check capacity indicator for any damage and that decal is not defaced.

SECTION 2 — PREPARATION AND INSPECTION

LUBE KEY

- MPG - MULTIPURPOSE TYPE GREASE
- EPGL - EXTREME PRESSURE GEAR LUBE
- RESERVOIR CAPACITY - 60 U.S. GALLONS
- EO - ENGINE CRANKCASE OIL - SAE 30
- MoS₂ Molybdenum Disulphide Dry Film Lubricant.

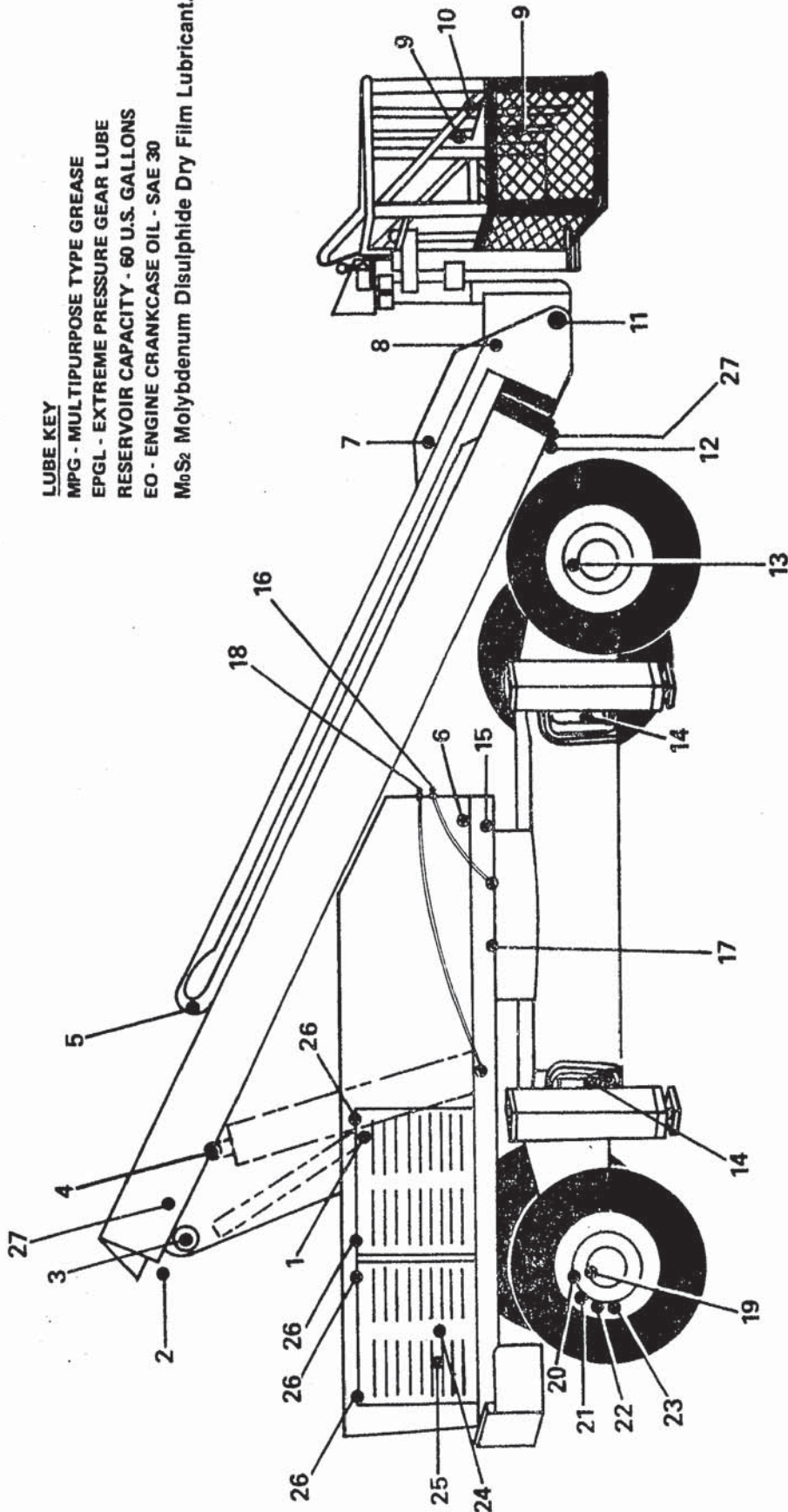


Figure 2-1. Lubrication Chart (Page 1 of 2).

SECTION 2 — PREPARATION AND INSPECTION

INDEX NO.	COMPONENT	NUMBER/TYPE LUBE POINTS	LUBE METHOD	INTERVAL (HOURS)
1	Master Leveling Cylinder (Base Shaft)	1 Grease Fitting	MPG—Pressure Gun	50
2	Master Leveling Cylinder (Rod End Shaft)	1 Grease Fitting	MPG—Pressure Gun	50
3	Boom Pivot Bearing	2 Grease Fittings	MoS2—Pressure Gun	10
4	Lift Cylinder (Rod End Shaft)	2 Grease Fittings	MPG—Pressure Gun	10
5	Power Track Links	N/A	SAE—10—Oil Can	100
6	Speed Reducer (Turntable)	Fill Plug	EPGL (SAE—90)	500
7	Slave Leveling Cylinder (Base Shaft)	1 Grease Fitting	MPG—Pressure Gun	50
8	Slave Leveling Cylinder (Rod End Shaft)	1 Grease Fitting	MPG—Pressure Gun	10
9	Platform Door Hinges	N/A	SAE—10—Oil Can	100
10	Platform Door Latch	N/A	SAE—10—Oil Can	100
11	Platform Attach Pin	1 Grease Fitting	MPG—Pressure Gun	10
12	Fly Section Drive Chain	N/A	MPG—Pressure Gun	10
13	Drive Hub	Fill Plug	MPG—Brush	50
14	Outrigger Cylinders	4 Grease Fittings	EPGL (SAE—90)	500
15	Swing Bearing Gear	N/A	MPG—Pressure Gun	50
16	Swing Bearing	2 Grease Fittings	MPG—Brush	100
17	Speed Reducer Pinion	N/A	MPG—Pressure Gun	100
18	Lift Cylinder (Base Shaft)	1 Grease Fitting	MPG—Brush	100
19	Front Spindle	1 Grease Fitting	MPG—Pressure Gun	50
20	Tie Rod (Spindle Attach End)	1 Grease Fitting	MPG—Pressure Gun	50
21	Steer Hitch Pivot Shaft	1 Grease Fitting	MPG—Pressure Gun	50
22	Tie Rod (Hitch Attach End)	1 Grease Fitting	MPG—Pressure Gun	50
23	Steer Cylinder	1 Grease Fitting	MPG—Pressure Gun	50
24	Engine Crankcase	Fill Cap	EO	50
25	Engine Oil Filter	N/A	Replaceable Cartridge	100
26	Door and Access Panel Hinges	N/A	SAE—10—Oil Can	200
27	Mid Section Drive Chain Sprockets	3 Grease Fittings	MPG—Pressure Gun	50
28	Wheel Bearings	N/A	EPLG (SAE—90)	500
29	Extending Axle Cylinders	8 Grease Fittings	MPG—Pressure Gun	50

Notes:

1. Be sure to lubricate like items on each side of machine.
2. Recommended lubricating intervals are based on normal use. If machine is subjected to severe operating conditions, user must adjust lubricating requirements accordingly.
3. Lubricating intervals are calculated on 50 hours of machine operation per week.

Key:

- MPG Multi-purpose Grease having a minimum dripping point of 350°F.
- EPGL Extreme pressure gear lube (oil) meeting API class GL-5.
- EO Engine Oil.
- MoS2 Molybdenum Disulphide Dry Film Lubricant.

Figure 2-1. Lubrication Chart (Page 2 of 2).

SECTION 2 — PREPARATION AND INSPECTION

- (9). Check that brakes activate and restrain machine with engine operating and traveling controls in neutral.
- (10). Check indicator on top of hydraulic oil reservoir filter with engine running for condition of element. Change element and clean magnets as required.
- (11). With all systems shutdown, all cylinders retracted and machine in stowed or travel mode, check oil level in hydraulic reservoir/fill to FULL mark on dipstick.

Note

On a new machine, those recently overhauled, or after changing hydraulic oil, operate all systems a minimum of two complete cycles and recheck oil level in reservoir.

- (12). Assure that all items requiring lubrication are serviced. Refer to Lubrication Chart, for specific requirements.
- (13). Refer to Torque Requirements and assure torques have been complied with.
- (14). Perform Functional Check.

WARNING

MAKE NO ATTEMPT TO OPERATE MACHINE BEFORE FIRST, READING AND SECOND, UNDERSTANDING ALL SAFETY PRECATUIONS CONTAINED IN SECTION 1 OF THIS MANUAL.

2-5. FUNCTIONAL CHECK.

A functional check of all systems, under no load, should be performed once the machine is ready for service from the ground control panel if possible. Perform Functional Check in accordance with the following procedure:

- a. Drive FORWARD and REVERSE; check for proper operation.
- b. Steer LEFT and RIGHT; check for proper operation.
- c. EXTEND axles, or extend outriggers and set. Follow procedures outlined in Outrigger Operation.

Note

Check boom mercury switch for proper operation and security both visually and physically. Mercury switch must shutdown high engine speed and high drive speed when boom is raised above horizontal.

- e. Raise, lower, and swing boom to LEFT and RIGHT a minimum of 45 degrees. (Cycle functions several times.) Check for smooth elevation and swing motion.
- f. Telescope boom IN and OUT several cycles at various degrees of elevation heights. Check for smooth telescope operation.
- g. Check that platform automatic self-leveling system functions properly, during raising and lowering of boom.
- h. Check platform level adjustment system for proper operation.

2-6. TORQUE REQUIREMENTS.

The Torque Chart (Figure 2-2), consists of standard torque values based on bolt diameter and grade, also specifying dry and wet torque values in accordance with recommended shop practices. This chart is provided as an aid to the operator in the event he/she notices a condition that requires prompt attention during the walk-around inspection or during operation until the proper service personnel can be notified. The Service and Maintenance manual provides specific torque values and periodic maintenance procedures with a listing of individual components. Utilizing this Torque Chart in conjunction with the preventive maintenance section in the Service and Maintenance Manual, will enhance safety, reliability, and performance of the machine.

SECTION 2 — PREPARATION AND INSPECTION

SIZE	BOLT DIAMETER D (IN.)	TENSILE STRESS AREA (SQ. IN.)	SAE GRADE 5 BOLTS			SAE GRADE 8 BOLTS			RECOMMENDED TORQUE WRENCH SIZE (PRODUCTION)		
			CLAMP LOAD P (LB.)	TIGHTENING DRY K = 0.20	TORQUE LUB. K = 0.15	CLAMP LOAD P (LB.)	TIGHTENING DRY K = 0.20	TORQUE LUB. K = 0.15	IN-OZS.	IN-LBS.	FT-LBS.
				LB. IN.	LB. IN.		LB. IN.	LB. IN.			
4	0.1120	0.06584	380	8	6	540	12	9	160	10	
4 1/2	0.1120	0.00651	420	9	7	600	13	10	160	18	
6	0.1380	0.00909	580	16	12	920	23	17		25	
6 1/2	0.1380	0.01015	610	18	13	920	25	19		25	
8	0.1640	0.01400	900	30	22	1260	41	31		25	
8 1/2	0.1640	0.01474	940	31	23	1320	43	32		25	
10	0.1900	0.01750	1120	43	32	1580	60	45		58	
10 1/2	0.1900	0.02000	1285	49	36	1800	68	51		58	
1 1/4	0.2500	0.0318	2020	96	75	2860	144	108		108	
1 1/2	0.2500	0.0364	2320	120	86	3280	168	120		208	
			LB. FT.		LB. FT.		LB. FT.			LB. FT.	
5/16	0.3125	0.0524	3340	17	13	4720	25	18		200	25
3/8	0.3125	0.0580	3700	19	14	5220	25	20		200	25
7/16	0.3750	0.0775	4940	30	23	7000	45	35		300	35
1/2	0.3750	0.0878	5600	35	25	7900	50	35		300	35
9/16	0.4375	0.1063	6800	50	35	9550	70	55		600	50
5/8	0.4375	0.1187	7550	55	40	10700	80	60		600	50
3/4	0.5000	0.1419	9050	75	55	12750	110	80		1200	100
7/8	0.5000	0.1599	10700	90	65	14400	120	90		1200	100
1 1/8	0.5625	0.1820	11600	110	80	16400	150	110		1200	100
1 1/4	0.5625	0.2030	12950	120	90	18250	170	130		1200	100
1 1/2	0.6250	0.2260	14400	150	110	20350	220	170		1800	150
1 3/8	0.6250	0.2560	16300	170	130	23000	240	180		1800	150
1 1/2	0.7500	0.3340	21300	260	200	30100	380	280		2400	200
1 3/4	0.7500	0.3730	23800	300	220	33600	420	320		2400	200
1 7/8	0.8750	0.4620	29400	430	320	41600	600	460		3500	300
2	0.8750	0.5090	32400	470	350	45800	660	500		3500	300
1 1/8	1.0000	0.6060	38600	640	480	51500	900	680		7200	600
1 1/4	1.0000	0.6630	42200	700	530	59700	1000	740		7200	600
1 1/2	1.1250	0.7630	47500	800	600	68700	1280	960		7200	600
1 3/4	1.1250	0.8560	53900	880	660	77000	1440	1080		7200	600
1 7/8	1.2500	0.9690	59600	1120	840	87200	1820	1360		7200	600
2	1.2500	1.0730	64100	1240	920	96600	2000	1500		7200	600
2 1/8	1.3750	1.1550	73000	1460	1100	104000	2380	1780		7200	600
2 1/4	1.3750	1.3150	78000	1680	1260	118100	2720	2040		7200	600
2 1/2	1.5000	1.4050	87700	1940	1460	126500	3160	2360		7200	600
2 3/4	1.5000	1.5800		2200	1640	142200	3560	2660		7200	600

NOTE: Tensile strength for bolt size 4 to 1 - 120,000 (min. psi), size 1 1/8 to 1 1/2 - 105,000 (min. psi).
 *Torque multiplier. Torque specifications are usually given in foot-pounds - - - - lower ranges in inch-pounds or inch-ounces.



Figure 2-2. Torque Chart.

SECTION 3 — USER RESPONSIBILITIES AND MACHINE CONTROLS

3-1. GENERAL.

This section provides the necessary information needed to understand control functions. Included in this section are the operating characteristics and limitations, and functions and purposes of controls and indicators. It is important that the user read and understand the proper procedures before operating the machine. These procedures will aid in obtaining maximum service life and safe operation.

WARNING

SINCE THE MANUFACTURER HAS NO DIRECT CONTROL OVER MACHINE APPLICATION AND OPERATION, CONFORMANCE WITH GOOD SAFETY PRACTICES IN THESE AREAS IS THE RESPONSIBILITY OF THE USER AND HIS OPERATING PERSONNEL.

3-2. PERSONNEL TRAINING.

- a. The Aerial Lift Platform is a personnel handling device; therefore, it is essential that it be operated and maintained only by qualified personnel who have demonstrated that they understand the proper use and maintenance of the machine. It is important that all personnel who are assigned to and responsible for the operation and maintenance of this machine, undergo a thorough training program and checkout period in order to become familiar with the operating characteristics prior to operating the machine.
- b. The initial phase of training should include a comprehensive study and understanding of this manual, and supporting manuals. Actual operation of all functions, under simulated conditions, including emergency procedures, which may be encountered in actual use should be understood.

WARNING

MAKE NO ATTEMPT TO OPERATE MACHINE BEFORE FIRST, READING AND SECONDLY, UNDERSTANDING ALL SAFETY PRECAUTIONS CONTAINED IN SECTION 1 OF THIS MANUAL.

Note

Manufacturer or Dealer will provide qualified personnel for training assistance with first unit(s) delivered.

3-3. OPERATING CHARACTERISTICS AND LIMITATIONS.

a. General.

A thorough knowledge of the operating characteristics and limitations of the machine is always the first requirement for any user, regardless of user's prior experience with similar types of equipment.

b. Control Placards.

Important points to remember during operation are provided at the control stations by DANGER, WARNING, CAUTION and INSTRUCTION placards. This important information is placed at various locations for the express purpose of alerting personnel of potential hazards constituted by the operating characteristics and load limitations of the machine. They are defined as follows:

DANGER and WARNING: An operating procedure, practice, which if not correctly followed may result in personal injury or death.

CAUTION: An operating procedure, practice, which if not strictly observed, will result in damage to, or destruction of equipment.

INSTRUCTIONS: An operating procedure, condition, which is essential to proper operation.

c. Capacities and Stabilization.

- (1). All load capacity ratings of this equipment are based on the following criteria:
 - (a). Machine is positioned with outriggers or axles set on a firm, level surface.
 - (b). All braking devices are engaged.
 - (c). Load is within manufacturer's rated design capacity, as indicated by capacity indicator.

3-4. CONTROLS AND INDICATORS.

a. Ground Station. (Figure 3-1.)

WARNING

PERFORM PRE-OPERATIONAL CHECKS AND INSPECTIONS FROM THE GROUND STATION. WHEN PERSONNEL ARE IN THE PLATFORM, OPERATION OF THE BOOM WILL ONLY BE PERFORMED WITH THE PERMISSION OF THE PLATFORM USER.

(1). Control Station Selector.

A three-position PLATFORM/GROUND SELECT control switch supplies operating power to the controls on the platform control console, when positioned to PLATFORM. With the switch in GROUND position, power is shut off to the controls at the platform station, and only the controls on the Ground Control Panel are operable.

Note

With PLATFORM/GROUND SELECT control switch in center position, power is shut off to controls at both operating stations.

(2). Ignition.

Model 80F machines are equipped with an ON-OFF IGNITION switch and a separate START push button switch on the Ground Control Panel which supplies electrical power to the starter solenoid, when the ignition switch is placed in the "on" position and the START button is depressed.

(3). Choke. (Gas Engine Only.)

A toggle CHOKE switch installed on the Ground Control Panel supplies power to the choke solenoid when operated.

Note

LIFT, SWING, and TELESCOPE control switches are spring-loaded and will automatically return to neutral (off) when released.

WARNING

WHEN OPERATING THE BOOM ENSURE THERE ARE NO PERSONNEL AROUND OR UNDER PLATFORM.

(4). Lift Control.

A three-position LIFT control switch permits raising and lowering of the boom when positioned to UP or DOWN.

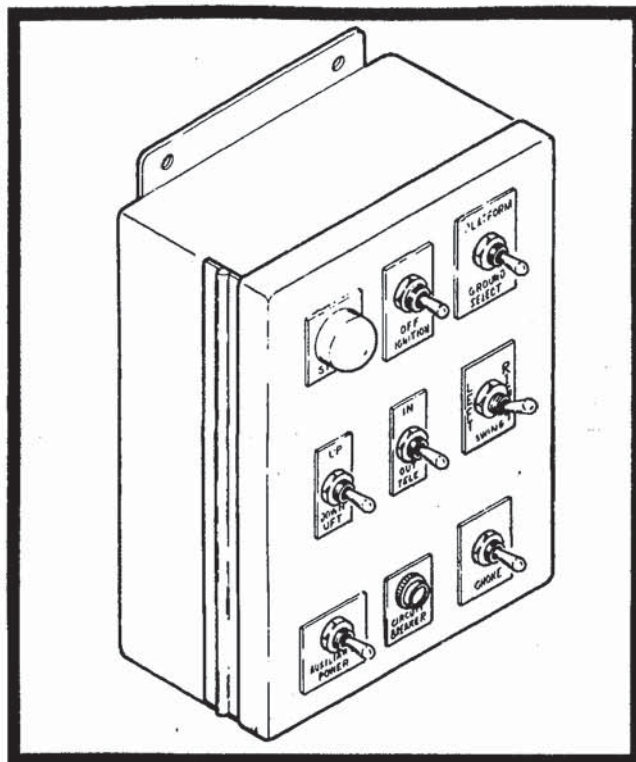


Figure 3-1. Ground Control Station.

(5). Swing Control.

A three-position SWING control switch provides 360 degrees continuous turntable rotation when positioned to RIGHT or LEFT.

(6). Telescope Control.

A three-position TELE control switch affords extension and retraction of the boom, when positioned to IN or OUT.

(7). Circuit Breaker (10A).

A reset push button circuit breaker switch returns control power to all functions when depressed.

CAUTION

WHEN OPERATING ON AUXILIARY POWER, DO NOT OPERATE MORE THAN ONE FUNCTION AT THE SAME TIME. SIMULTANEOUS OPERATION CAN OVERLOAD THE AUXILIARY PUMP MOTOR.

(8). Auxiliary Power Control.

A toggle-type AUXILIARY POWER control switch, on the ground control panel, energizes the electrically-operated auxiliary hydraulic pump, when actuated. (Switch must be held "on" for duration of auxiliary pump use.)

SECTION 3 — USER RESPONSIBILITIES AND MACHINE CONTROLS

b. Platform Station. (Figure 3-2.)

Note

For engine starting the footswitch must be in the released (up) position. Footswitch must be actuated in order for controls to function.

(1). Platform Footswitch.

A design safety feature which must be depressed to allow operation of the platform controls. Releasing the switch disables all functions except for the HORN, EMERGENCY STOP, CHOKE, and START.

(2). Ignition/Emergency Stop.

A combined IGNITION/EMERGENCY STOP switch is located adjacent of the LIFT control lever. The guarded type switch serves as the ignition switch when positioned to IGNITION ON and as an emergency stop switch when the guard over the switch is pushed down.

(3). Engine Speed Control.

A two-position ENGINE SPEED control switch affords the operator either high or low engine rpm as required for operation. When lifting boom, HIGH ENGINE will cutout when boom lifts above horizontal.

(4). Glow Plug Control (Diesel Engine).

A two-position toggle switch which when positioned to "on" assures engine preheat power to the engine glow plugs.

(5). Fanbelt Light (Deutz).

Red illuminator that indicates a broken fanbelt. If light is illuminated the engine is not cooling.

Note

LIFT, SWING and TELESCOPE control levers are spring-loaded and will automatically return to neutral (off) when released.

(6). Lift Control.

The LIFT control lever permits raising and lowering of the boom when positioned to UP or DOWN, as desired.

(7). Swing Control.

The SWING control lever provides 360 degree continuous swing when positioned to LEFT or RIGHT.

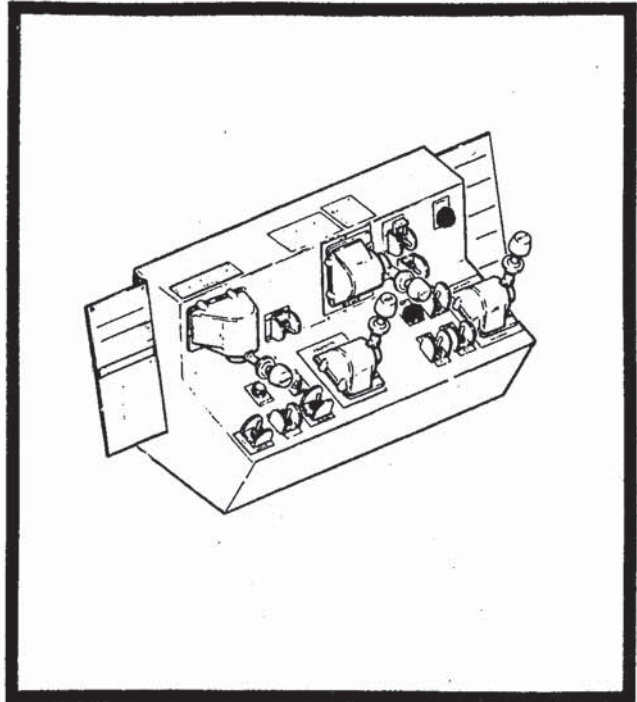


Figure 3-2. Platform Control Station.

(8). Telescope Control.

A three-position TELE control switch affords extension and retraction of the boom, when positioned to IN or OUT.

Note

Platform LEVEL and ROTATE control switches are spring-loaded and will automatically return to neutral (off) when released.

(9). Platform Rotation Control.

A three-position ROTATE control switch affords 90 degrees of platform rotation (in either direction from boom center line) when positioned to LEFT or RIGHT.

(10). Platform Leveling Control.

A three-position LEVEL control switch allows the operator to compensate for any difference in the automatic self-leveling system by positioning the control to UP or DOWN as required.

SECTION 3 — USER RESPONSIBILITIES AND MACHINE CONTROLS

Note

The DRIVE control lever and STEER control switch are spring-loaded and will automatically return to neutral (off) when released.

(11). Drive Control.

The DRIVE control lever permits traveling the machine either forward or to the rear when positioned to FORWARD or REVERSE.

(12). Drive Speed Control.

A two-position DRIVE SPEED control switch affords additional oil flow to the drive circuit when positioned to ON.

Note

HIGH DRIVE SPEED and HIGH ENGINE SPEED is automatically cutout when boom is raised above horizontal.

(13). Steer Control.

Positioning the STEER control switch RIGHT or LEFT enables steering the machine to the right or left respectively.

(14). Travel Warning Horn.

A button-type HORN switch supplies electrical power to an audible warning device when pressed.

CAUTION

WHEN OPERATING ON AUXILIARY POWER, DO NOT OPERATE MORE THAN ONE FUNCTION AT THE SAME TIME. (SIMULTANEOUS OPERATION CAN OVERLOAD THE AUXILIARY PUMP MOTOR.)

CAUTION

THE PRIMARY FUNCTION OF THE AUXILIARY POWER CONTROL IS TO PROVIDE AUXILIARY POWER TO LOWER THE PLATFORM. DETERMINE REASON FOR POWER FAILURE AND HAVE THE PROBLEM CORRECTED BY QUALIFIED PERSONNEL.

- (15). A toggle-type AUXILIARY POWER control switch energizes the electrically-operated hydraulic pump, when actuated. (Switch must be held "on" for duration of auxiliary pump use.)

- (a). The auxiliary pump functions to provide sufficient oil flow to operate three basic machine systems should the main pump or engine fail during operation. The auxiliary pump enables the operation of telescope in, lift down, and swing left and right.

- (b). It should be noted that the functions will operate at a slower than normal rate because of the lower gpm delivered.

c. Engine Compartment.

CAUTION

WHEN THE MACHINE IS SHUTDOWN THE MASTER SWITCH MUST BE POSITIONED TO THE "OFF" POSITION TO PREVENT DRAINING THE BATTERY AND BURNING IGNITION POINTS.

(1). Master Ignition Control.

A rotary key on the main terminal box furnishes battery power to the platform or ground control ignition switches when station power is selected from the ground control panel and the master ignition switch is positioned "on".

(2). Glow Plug Indicator (Diesel Engine).

A glow plug indicator coil illuminates when engine is preheated.

(3). Fanbelt Indicator (Deutz).

Illuminates when the fanbelt breaks, indicating the engine cooling fan has stopped.

(4). Ammeter.

An ammeter, installed on an indicator panel in the right side of the engine compartment, indicates the battery condition, i.e., charging, charged or discharging. (Ammeter pointer vertical indicates charged battery, with engine operating.)

(5). Hourmeter.

An hourmeter, installed on an indicator panel in the right side of the engine compartment, records the engine operating time.

(6). Oil Pressure Gauge.

An oil pressure gauge, installed on an indicator panel in the right side of the engine compartment, indicates oil pressure during operation.

SECTION 3 — USER RESPONSIBILITIES AND MACHINE CONTROLS

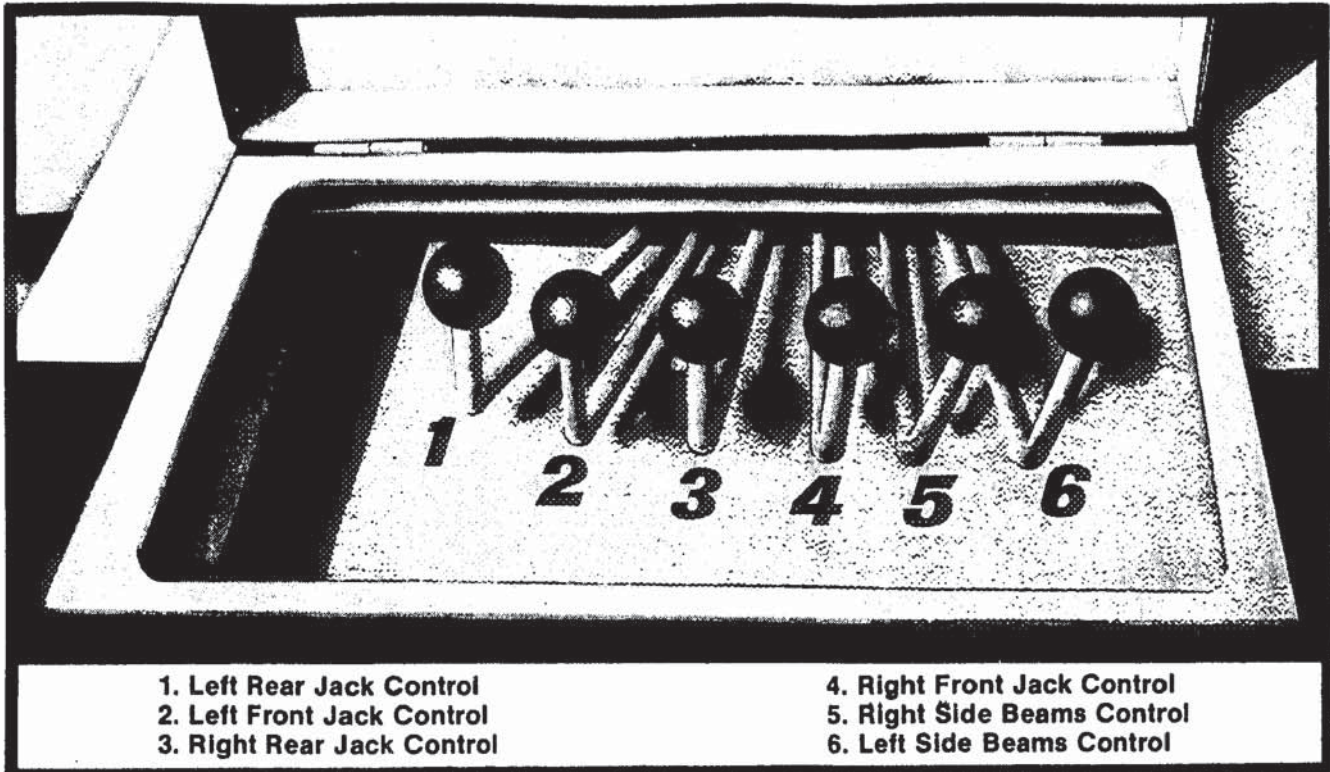


Figure 3-3. Outrigger Control Station.

3-5. OUTRIGGERS. (See Figure 3-3.)

Controls.

Note

Controls referenced are located at the outrigger control station, with two exceptions; the outriggers selector switch and outrigger NOT SET Indicator are located on the Platform Control Console.

a. Outrigger/Selector Switch.

A two-position outrigger selector switch enables oil to flow to the outrigger STEER valve bank when positioned to outrigger.

- b. Outrigger controls are multi-position spring-loaded, self-centered levers which extend or retract individual horizontal beams or vertical jacks as selected. Lever must be held in this position until function is complete. Outriggers must be firmly set, and fully extended, to properly activate the limit switch sensing each outriggers status.

3-6. EXTENDABLE AXLES.

Controls.

Note

Controls referenced are located on the Platform Control Console with the exception of the STEER/AXLE SELECTOR VALVE, which is located adjacent to the left front wheel.

a. Steer/Axle Selector Valve.

A two-position diverter valve, located adjacent to the left front wheel, regulates the oil flow for the steer and axle circuit. For extending the axles the valve must be pushed to AXLE and then to STEER for normal machine operation.

b. Extendable Axle/Steer Switch.

A two-position EXTENDABLE AXLE/STEER switch serves as the control for extending and retracting the machine axles or for normal steering operation of the machine as desired.

c. Axles Set Indicator.

An AXLES SET indicator (light) informs the operator that the axles are properly set.

Note

Operators cannot perform telescope functions past 8 feet or lift the boom above horizontal if the indicator light is not illuminated; upon setting the axles, operator control will be returned to those functions.

SECTION 4 — MACHINE OPERATION

4-1. GENERAL.

This section provides the necessary information needed for operating the machine. Included in this section are the procedures for starting, stopping, traveling, steering, parking, outriggers, extending axles, platform loading, swing, telescope, and lifting. It is important that the user read and understand the proper procedures before operating the machine.

4-2. ENGINE OPERATION.

a. Starting Procedure.

WARNING

BEFORE STARTING ENGINE, ASSURE THAT OUTRIGGER SELECTOR SWITCH ON PLATFORM CONTROL CONSOLE OR STEER/AXLE DIVERTER VALVE IS IN THE STEER POSITION.

CAUTION

IF ENGINE FAILS TO START PROMPTLY, DO NOT CRANK FOR AN EXTENDED PERIOD, TURN OFF IGNITION FOR A BRIEF PERIOD. SHOULD ENGINE FAIL TO START ONCE AGAIN ALLOW STARTER TO "COOL OFF" FOR 2 TO 3 MINUTES. IF ENGINE FAILS AFTER SEVERAL ATTEMPTS REFER TO ENGINE MAINTENANCE MANUAL.

- (1). Place ENGINE SPEED control switch, on platform control console, to low.
- (2). Position IGNITION switch to ON and depress START button.

CAUTION

ALLOW ENGINE TO WARM UP FOR A FEW MINUTES AT LOW SPEED BEFORE APPLYING ANY LOAD.

- (3). After engine has had sufficient time to warm up, position ENGINE SPEED control switch to desired setting.

b. Shutdown Procedure.

CAUTION

IF AN ENGINE MALFUNCTION NECESSITATES UNSCHEDULED SHUTDOWN, DETERMINE AND CORRECT CAUSE BEFORE RESUMING ANY OPERATION.

- (1). Position ENGINE SPEED control switch on platform control console, to low.
- (2). Remove all load and allow engine to operate at low speed setting for 3 to 5 minutes; this allows for faster reduction of engine internal temperature.

- (3). Position IGNITION switch off.

Note

Refer to Engine Manufacturer's Manual for detailed information.

4-3. TRAVELING (DRIVING).

WARNING

AVOID HOLES, ROCKS, SOFT SURFACES, OR ANY SIMILAR OBSTACLES WHICH COULD CAUSE MACHINE INSTABILITY.

ASSURE THAT TURNABLE LOCK IS ENGAGED BEFORE BEGINNING ANY EXTENDED TRAVELING.

TRAVEL GRADES IN DRIVE SPEED LOW, ENGINE SPEED HIGH ONLY.

BEFORE DRIVING, DETERMINE DIRECTION OF TURNABLE. IF ROTATED 180°, FROM THE NORMAL OPERATING POSITION (BOOM OVER DRIVE MOTORS), THE DIRECTION OF PLATFORM TRAVEL REVERSES IN RELATION TO CONTROL MOTION.

CAUTION

IF UNIT BECOMES STUCK DURING TRAVEL, DO NOT "ROCK" IN AN ATTEMPT TO REGAIN TRACTION AS DAMAGE TO DRIVE HUBS MAY RESULT.

a. Traveling Forward.

- (1). If machine is shutdown, start engine and allow warm-up period before beginning any travel.
- (2). Position DRIVE SPEED control switch to desired position, (high or low).
- (3). For forward travel, DRIVE control lever is positioned to FORWARD position and held for duration of desired travel.

b. Traveling in Reverse.

WARNING

TRAVELING IN REVERSE IS TO BE USED ONLY FOR ADDED JOB SITE MOBILITY.

- (1). Traveling the machine in reverse is accomplished in the same manner as traveling forward, with the exception of positioning the control lever to REVERSE. (See Traveling Forward.)

SECTION 4 — MACHINE OPERATION

4-4. STEERING.

Note

Steer/Axle or Steer/Outrigger selector valve must be in the STEER mode for the system to function. For those machines equipped with the optional tow package ensure the Steer/Tow selector valve knob is in the steer position. To steer machine, STEER control switch is positioned to RIGHT for traveling right, or to LEFT for traveling left.

4-5. PARKING AND STOWING.

For park and stow machine as follows:

- a. Retract outriggers; assure full retraction.
- b. Park machine in travel position; boom lowered over rear, all access panels and doors closed and secured, and ignition off; lock turntable.
- c. Check that brakes hold machine in position.
- d. Chock wheels at front and rear.
- e. Turn off master switch and remove key.

WARNING

BEFORE LEAVING MACHINE, ASSURE THAT TURNTABLE LOCK IS ENGAGED.

4-6. OUTRIGGER OPERATION.

Note

Engine operation must be performed from the ground control panel when setting and stowing the outriggers.

- a. Setting Outriggers.

WARNING

BEFORE STARTING ENGINE, ENSURE THAT OUTRIGGER SELECTOR SWITCH ON PLATFORM CONTROL CONSOLE IS IN DOWN POSITION. THIS SWITCH SHOULD NEVER BE POSITIONED TO OUTRIGGER EXCEPT AS PRESCRIBED IN THE FOLLOWING PROCEDURE.

- (1). Position OUTRIGGER/STEER selector switch, at platform control console, to OUTRIGGER.

WARNING

BEFORE EXTENDING OUTRIGGER BEAMS, ENSURE THAT AREA IS CLEAR OF ALL PERSONNEL AND OBSTRUCTIONS.

- (2). Actuate RIGHT SIDE BEAMS and LEFT SIDE BEAMS control levers and hold until beams are fully extended.

WARNING

DO NOT SET OUTRIGGER JACKS NEAR HOLES OR ON SOFT, ROCKY OR UNEVEN SURFACES. THIS MAY CAUSE MACHINE TO TIP, RESULTING IN INJURY TO PERSONNEL.

- (3). Actuate selected jack control lever and hold, until jack pad firmly contacts surface; repeat, as required, for remaining jacks.
- (4). Level machine by further extending jack(s) on down slope (low) side, if applicable.
- (5). After outriggers are extended and set, and machine is level, position outrigger switch on platform console down to prevent inadvertent retraction of outriggers.

- b. Stowing Outriggers.

WARNING

NEVER POSITION OUTRIGGER SELECTOR SWITCH TO OUTRIGGER, EXCEPT AS PRESCRIBED IN THE FOLLOWING PROCEDURES.

- (1). Position outrigger selector switch to outrigger.
- (2). Actuate selected jack control lever and hold until jack cylinder is fully retracted; repeat, as required for remaining jacks. Actuate RIGHT SIDE and LEFT SIDE BEAMS control levers and hold until beams are fully retracted.
- (3). Position outrigger selector switch to down.

4-7. STEER/AXLE SELECTOR VALVE.

A two-position diverter valve, located adjacent to the left front wheel, regulates the oil flow for the steer and axle circuit. For extending the axles the valve must be pushed in AXLE and then to STEER for normal machine operation.

SECTION 4 — MACHINE OPERATION

4-8. EXTENDING AXLE OPERATION.

a. Extending Axles.

WARNING

DO NOT SWING OR EXTEND THE BOOM OVER 10 FEET OR ELEVATE IT ABOVE HORIZONTAL WITH ANY WHEEL RETRACTED.

- (1). Activate the machine hydraulic system, and raise the boom and extend the boom no more than eight (8) feet.
- (2). Position STEER/AXLES valve, located adjacent to left front wheel, to AXLES.
- (3). Position the boom over the drive wheel end of the machine.
- (4). Position the LIFT control to DOWN and hold until the drive wheels rise from the ground; it may be necessary to feather the LIFT control to maintain drive wheel elevation.
- (5). Position EXTENDABLE AXLE/STEER located on platform control console to LEFT until axles are fully extended.
- (6). Position LIFT control to UP to lower the machine; elevate the boom sufficiently and reposition the boom over the steer wheel end of the machine.
- (7). Remove the tie rod lock pins.
- (8). Position LIFT control to DOWN and hold until the steer wheels rise from the ground; it may be necessary to feather the LIFT control to maintain wheel elevation.
- (9). Position EXTENDABLE AXLE/STEER switch on platform control console to LEFT until axles are fully extended.
- (10). Align steer wheels and insert tie rod lock pins.
- (11). Position LIFT control to UP to lower the machine steer wheels; position STEER /AXLES valve to STEER.
- (12). Cycle steer system in both directions to ensure tie rods are properly locked.

b. Retracting Axles.

- (1). Position STEER/AXLES valve located adjacent to left front wheel, to AXLES.
- (2). Activate the machine hydraulic system and raise the boom and extend the boom no more than eight (8) feet.
- (3). Position the boom over the steer wheel end of the machine; remove tie rod lock pins.

Note

It may be necessary to elevate the wheels and jog the steer control for removal of lock pins.

- (4). Position the LIFT control to DOWN and hold until the steer wheels rise from the ground; it may be necessary to feather the LIFT control to maintain wheel elevation.
- (5). Position EXTENDABLE AXLE/STEER switch located on platform control console to RIGHT, until axles are fully retracted.
- (6). Align steer wheels and insert tie rod lock pins.
- (7). Position LIFT control to UP to lower the machine; elevate the boom sufficiently and reposition the boom over the drive wheel end of the machine.
- (8). Position LIFT control to DOWN and hold until the drive wheels rise from the ground; it may be necessary to feather the LIFT control to maintain drive wheel elevation.
- (9). Position EXTENDABLE AXLES/STEER switch, on platform control console, to RIGHT, until axles are fully retracted.
- (10). Position LIFT control to UP to lower the machine drive wheel; position STEER /AXLES valve to STEER.
- (11). Cycle steer system in both directions to ensure the tie rods are properly locked.

4-9. PLATFORM.

a. Loading.

- (1). The platform maximum rated loaded capacity is shown on the capacity indicator and is based upon the following criteria:
 - (a). Machine is positioned on a firm, uniform and level surface.
 - (b). All outriggers are fully extended with jacks set or the axles fully extended.
- (2). It is recommended when additional weight is to be added in an elevated and extended mode that the boom be positioned to a maximum elevation prior to loading. When additional weight is to be added in a less than fully elevated mode the boom must be fully retracted and then extended only when the boom is fully elevated. Always ensure that maximum capacity as shown on capacity indicator is not exceeded.
- (3). The capacity indicator (Figure 4-1), indicates to the user the maximum allowable load in accordance with the boom elevation angle and extension of the boom. The color coded decal on the capacity indicator housing and the color type on the fly boom are color coordinated to ensure correct and easy reading. A pendulum indicator pointer, mounted on the capacity indicator housing, indicates boom angle (left edge of color code decal) and the maximum allowable load for the angle, for the color which agrees with the color tape on the fly boom at the point it enters the mid-boom to determine the load limit.

b. Platform Level Adjustment.

- (1). Leveling UP. To raise platform, LEVEL control switch is positioned to UP and held until level attitude is attained.
- (2). Leveling DOWN. To lower platform, LEVEL control switch is positioned to DOWN and held until level attitude is attained.

c. Rotating the Platform.

- (1). To rotate the platform, ROTATE control switch is positioned to LEFT or RIGHT for direction desired.

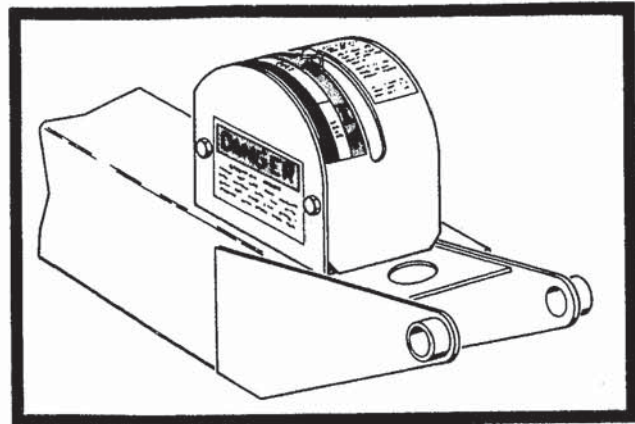


Figure 4-1. Capacity Indicator.

4-10. BOOM.

a. Swinging the Boom.

WARNING

BEFORE SWINGING BOOM, ASSURE THAT AREAS IN SWING PATH OF PLATFORM, BOOM, AND TAIL COUNTERWEIGHT ARE CLEAR OF ALL OBSTRUCTIONS AND PERSONNEL.

CAUTION

ASSURE THAT TURNABLE LOCK IS DISENGAGED BEFORE STARTING ANY SWING OPERATIONS.

- (1). To swing boom, SWING control lever is positioned to RIGHT or LEFT for direction desired.

b. Raising and Lowering the Boom.

WARNING

BEFORE RAISING BOOM, ASSURE THAT AREAS ABOVE AND UNDER BOOM AND PLATFORM ARE CLEAR OF ALL OBSTRUCTIONS AND PERSONNEL.

(1). Raising the Boom.

To raise boom, LIFT control lever is raised up to the UP position and held until desired height is reached.

Note

The boom will not raise above horizontal until the axles have been properly extended or the outriggers have been properly extended and set.

SECTION 4 — MACHINE OPERATION

WARNING

BEFORE LOWERING THE BOOM, ASSURE THAT AREAS UNDER BOOM AND PLATFORM ARE CLEAR OF ALL OBSTRUCTIONS AND PERSONNEL.

(2). Lowering the Boom.

To lower boom, LIFT control lever is pushed downward to the DOWN position and held until desired height is reached.

c. Telescoping the Boom.

WARNING

BEFORE EXTENDING BOOM, ASSURE THAT AREA AHEAD OF PLATFORM IS CLEAR OF ALL OBSTRUCTIONS AND PERSONNEL.

(1). Extending the Boom.

Note

The boom will not extend beyond eight (8) feet until the axles have been properly extended or the outriggers have been properly extended and set.

(2). Retracting the Boom.

To retract the boom, TELESCOPE control lever is positioned to IN and held until platform reaches desired position.

4-11. STEER/TOW SELECTOR VALVE.

A push-pull type selector valve, located in the left side of the engine compartment, regulates oil flow in the steer circuit for steering and towing applications for those machines having the optional towing package. When steering the unit (self-propelled operation) the valve knob is pulled "out" to the float position.

4-12. TOWING.

- a. Prior to towing the machine equipped with the optional towing package, complete the following:

WARNING

ALWAYS SECURE TURNTABLE WITH BOOM OVER REAR BEFORE TOWING MACHINE. (TURNTABLE CAN BE LOCKED OVER FRONT OR OVER REAR OR CHASSIS.) NEVER TOW MACHINE WITH PERSONNEL OR NON-STANDARD EQUIPMENT ON PLATFORM OR ANY OTHER AREA OF MACHINE. TOWING PERMITTED ONLY FOR EMERGENCY TRAVEL ON JOB SITE. NO HIGHWAY TOWING PERMITTED.

WARNING

TOWING VEHICLE MUST BE ABLE TO CONTROL MACHINE ON ANY GRADE ON WHICH IT IS TOWED. A 25% GRADE IS THE MAXIMUM TOWING GRADE PERMISSIBLE.

CAUTION

DO NOT TOW MACHINE WITH ENGINE OPERATING OR DRIVE HUBS ENGAGED.

- (1). Ensure that all axles, or outriggers (depending on how machine is equipped) are retracted and that lock pins (extendable axle machines) are in place.
- (2). Retract, lower, and position the boom over the rear in line with direction of travel; lock turntable.
- (3). Connect tow bar to steering hitch and to towing vehicle with attach pins.
- (4). Disconnect drive hubs by inverting disconnect cap. (See Figure 4-2.)

SECTION 4 — MACHINE OPERATION

- (5). Actuate steer/tow selector valve for towing; pull valve knob out to float position. (This opens the steer circuit to reservoir, allowing the steer cylinder rod free travel.) The machine is now in the towing mode.
- b. After towing the machine, complete the following:
- (1). Actuate steer/tow selector valve for steering; push valve knob into the actuated position.
 - (2). Reconnect drive hubs by inverting disconnect cap. (See Figure 4-2.)
 - (3). Disconnect tow bar from steering hitch and from towing vehicle. The machine is now in the operation mode.

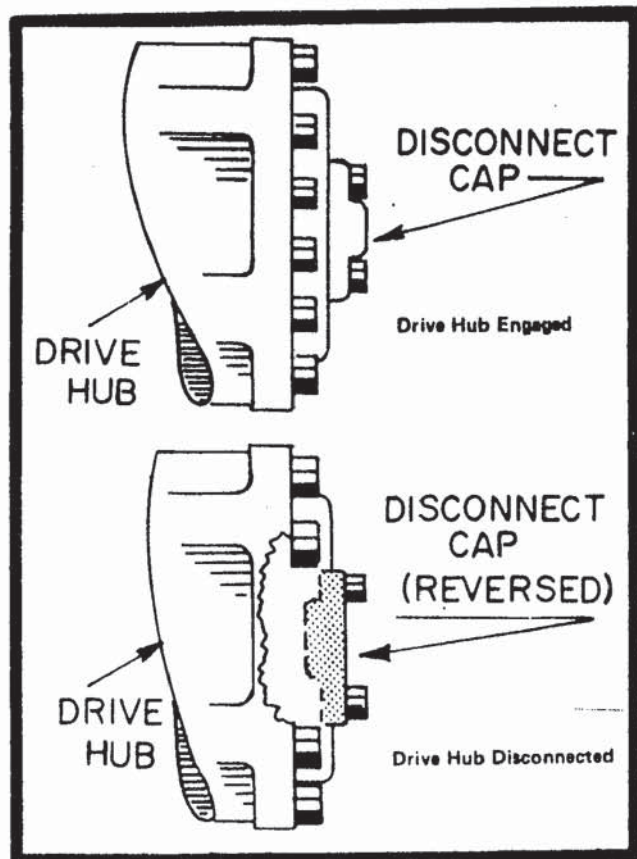


Figure 4-2. Drive Disconnect Hub.

SECTION 5 — OPTIONAL EQUIPMENT

5-1. ROTATOR.

A momentary three-position toggle switch located on the platform control console allows for platform rotation 90 degrees from center in both right and left directions. The rotator is designed to give added jobsite versatility and should be returned to center position for all other operations.

5-2. HOSTILE ENVIRONMENT AND SANDBLAST PACKAGE.

The Hostile Environment and sandblast package provides additional protection against the entry of dust, dirt, sand and other abrasive materials into the hydraulic system, control handles and switches, cylinders, boom chains and wear pads areas, and the air inlet of the engine. The package was intended for machines that will be exposed to painting, sandblasting or other similar hostile conditions. The hostile environment and sandblast package includes boom wipers, cylinder bellows, a hydraulic reservoir air breather, an engine air cleaner and a control console cover. Although the boom wipers are contained in the hostile environment and sandblast package some machines may be equipped with boom wipers only, this depends on the options specified when machine was ordered from factory.

a. Boom Wipers.

A one piece U-shaped neoprene strip is attached to the front of the base boom section which wipes the top and both sides of the mid section. The bottom side of the mid section is protected by a straight neoprene strip which is also attached to the base section. The fly boom section is protected by wipers which are attached to the front of the mid boom section in the same manner as those attached to the base boom section.

b. Cylinder Bellows and Turntable Shield.

A one piece accordian shaped rubber bellows is attached to the rod end of the cylinder barrel and to the cylinder rod as close to the rod attach bushing as possible. The bellows affords protection to the cylinder rod in either the extended or retracted position. The bellows are installed on the lift cylinder, master level cylinder, slave level cylinder and steer cylinder. A one piece shield is attached to the turntable uprights directly under the boom. This shield protects against the entry of contaminants into the area of the swing components.

c. Hydraulic Reservoir Air Breather.

A spin-on canister type air breather is installed on top of the hydraulic reservoir in place of the standard breather cap. This further prevents the entry of contaminants into the hydraulic reservoir.

d. Farr Air Cleaner.

The Farr air cleaner is self-cleaning and is used in place of the conventional dry type or oil bath air cleaners and is available for gasoline engines. The air cleaner is mounted on the engine hood and is connected to the air intake of the engine by a flex hose. An aspirator, installed on the outlet of the exhaust muffler is connected to the air cleaner via a flex hose. The air cleaner filters all dust, dirt, etc. from the air and confines it, the aspirator creates a vacuum, thus drawing the confined dirt from the air cleaner is self-cleaning. It also incorporates a replaceable element which should be serviced in accordance with the manufacturers recommendations pending how hostile the conditions may be.

e. Control Console Cover.

The control console cover is a one piece vinyl coated nylon cover which attaches to the lower rear portion of the control console. The cover, when in position, will protect the entire platform control console and the control handles located on each side of the console. Cover must be lifted to operate any function. After desired position is reached, position cover over console before starting any painting or sandblasting operations.

5-3. DESERT ENVIRONMENT PACKAGE.

The Desert Environment Package is designed to provide additional protection to the machines vital components under extreme hot, dry and sandy conditions. This package includes the boom wipers, cylinder bellows, heavy duty air cleaner, console cover, and air breather described in the Hostile Environment and Sandblast package in paragraph 5-2. In addition to these items a hydraulic oil cooler fitted with a sand and dust filter is installed on the machine turntable. A hydraulically driven motor serves to turn the fan which draws air down through the sand and dust filter. The air is then forced down through the heat exchanged cooling the constant flow of hydraulic oil within.

SECTION 5 — OPTIONAL EQUIPMENT

5-4. L.P. GAS.

The Liquefied Petroleum Gas system includes twin pressure cylinders which are mounted on the side of the turntable in place of the standard gasoline tank. Mounted in line between the pressure tank and carburetor, this system includes a filter, vaporizer and regulator.

The L.P. gas system provides many advantages over gasoline fuel, such as increased engine life, fewer oil changes, longer ignition and spark plug life, and lower initial operating costs. Refer to applicable manufacturers instructions for service.

5-5. TOW BAR.

The optional tow bar attaches at one end to the steering hitch of the machine, while the other end provides a ball hitch attachment for hookup to the tow vehicle. Utilizing the brackets welded to the tow vehicle. Utilizing the brackets welded to the machine frame, the tow bar, when not in use, may be mounted to the machine where it is easily accessible at all times.

5-6. TRAVEL ALARM.

Two 12-volt travel alarm horns may be mounted on brackets attached to the forward and aft ends of the turntable. These horns provide an audible warning of the machines movement in the drive forward or the drive reverse mode.

5-7. CIRCULAR LEVEL GAUGE.

Bubble level gauges are installed on the right front and the left rear axles. By visually checking the position of the bubble, it is possible to determine when the machine is in a level position.

6-1. GENERAL.

This section provides information on the procedures to be followed and on the systems and controls to be used in the event an emergency situation is encountered during machine operation. Prior to operation of the machine and periodically thereafter, the entire operating manual, including this section, should be reviewed by all personnel whose responsibilities include any work or contact with the machine.

6-2. THE EMERGENCY CONTROLS AND THEIR LOCATIONS.**a. Emergency Stop Switch.**

This switch is located directly in the center of the platform console panel. When the switch is depressed it will immediately stop the machine.

b. Ground Control Panel.

The ground control panel is located at the engine end of the turntable (opposite the platform). The controls on this panel provide the means for overriding the platform controls and for controlling the boom lift, swing and telescope functions from the ground. Place the station select switch in **GROUND** position and operate the proper switch to lift, swing or telescope.

c. Manual Descent and Retraction. (Figure 6-1.)

The manual descent valves are located at the engine end of the turntable (opposite the platform). They should be used if there is a total power failure since the valves will permit use of gravity to retract and lower the boom. The procedures for use of the valves for descent and retraction are given adjacent to the valves.

d. Auxiliary Power.

A toggle-type auxiliary power control switch is located on the platform control panel and another is located on the ground control panel. Operation of either switch turns on the electrically driven hydraulic pump. This should be used in case of failure of the main power plant. Any control may then be operated while holding the auxiliary power control switch on for the duration of pump use.

6-3. EMERGENCY PROCEDURES.**a. KNOW HOW TO USE THE GROUND CONTROLS IN AN EMERGENCY SITUATION.**

Ground personnel must be thoroughly familiar with the machine operating characteristics and the ground control functions. Training should include operation of the machine, review and understanding of this section and hands-on operation of the controls in simulated emergencies.

b. IF THE PLATFORM OPERATOR IS PINNED, TRAPPED OR UNABLE TO OPERATE OR CONTROL THE MACHINE.

- (1). Operate the machine from ground controls **ONLY** with the assistance of other personnel and equipment (cranes, overhead hoists, etc.) as may be required to safely remove the danger or emergency condition.
- (2). Other personnel on the platform may use the platform controls with regular or auxiliary power. **DO NOT CONTINUE OPERATION IF CONTROLS DO NOT FUNCTION NORMALLY.**
- (3). Use the **MANUAL DESCENT SYSTEM AS FIRST CHOICE** for bringing the platform and operator down, particularly **IF THERE IS INDICATION OF CONTROL MALFUNCTION.** Further use of hydraulic power may cause more severe injury or death.
- (4). Cranes, forklift trucks or other equipment which may be available should be used to remove platform occupants and stabilize motion of the machine in case machine controls are inadequate or malfunction when used.

c. IF THE PLATFORM OR BOOM IS CAUGHT OR SNAGGED.

If the platform or boom becomes jammed or snagged in overhead structures or equipment, **DO NOT CONTINUE OPERATION OF THE MACHINE** from either the platform or the ground until the operator and all personnel are safely moved to a secure location. Only then should an attempt be made to free the platform using any necessary equipment and personnel. Do not operate controls to cause one or more wheels to leave the ground.

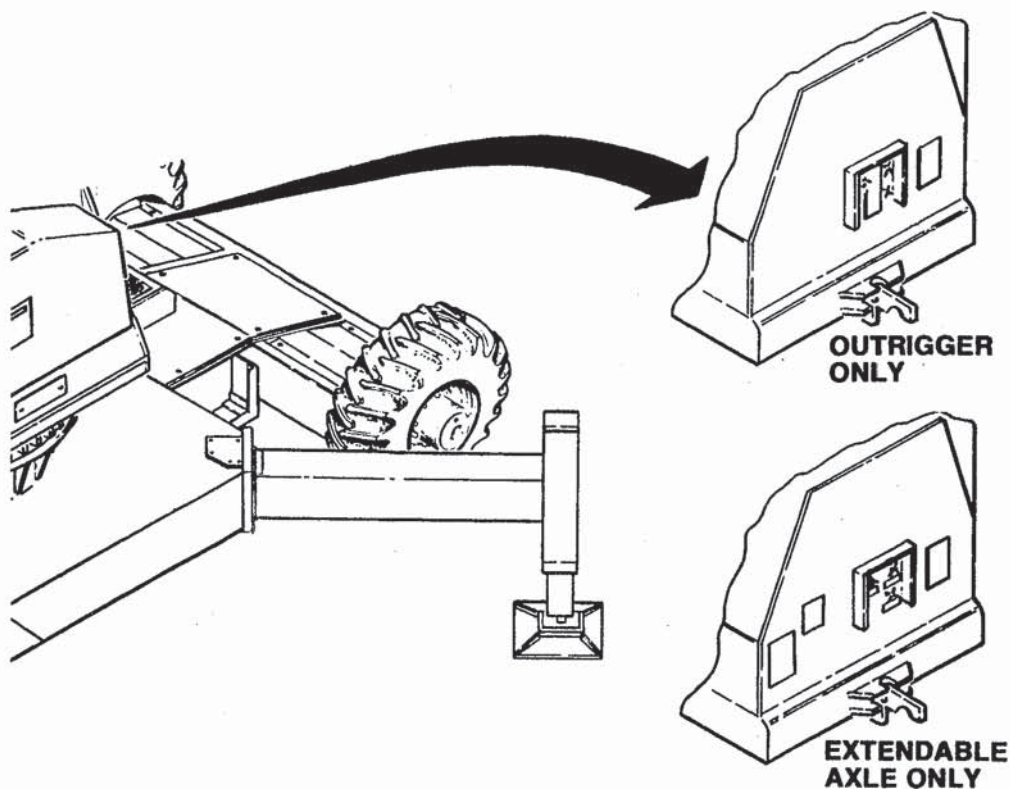


Figure 6-1. Manual Descent Valves.

d. IF THE MACHINE BECOMES UNSTABLE OR STARTS TO TIP.

If it appears that the machine is becoming unstable and on the verge of tipping, the extent of injury can be greatly reduced or eliminated if the operator stays in the platform with safety belt attached. Platform descent speed in a tipping situation is always less than free fall.

e. RIGHTING OF TIPPED MACHINE.

No attempt should be made to right the machine using platform controls. A fork truck of suitable capacity or equivalent equipment may be placed under the elevated side of the chassis and the manual descent valve opened to permit lowering chassis without elevating platform. A crane or other lifting equipment may also be used to lift the platform while the chassis is lowered by a fork truck, jacks or other means. Remove all personnel and equipment from the area before starting operation.

- f.** Following any accident, thoroughly inspect the machine and test all functions first from the ground controls, then from the platform controls. Do not lift above ten (10) feet until you are sure that all damage had been repaired, if required, and that all controls are operating correctly.

6-4. INCIDENT NOTIFICATION.

- a.** It is imperative that JLG Industries Inc. is notified immediately of any incident involving a JLG product. Even if no injury or property damage is evident, the Safety Engineering Department at the factory should be contacted by telephone and provided with all necessary details.
- b.** It should be noted that failure to notify the Manufacturer of an incident involving a JLG Industries product within 48 hours of such an occurrence may void any warranty consideration on that particular machine.



TRANSFER OF OWNERSHIP

To: JLG, Gradall, Lull and Sky Trak 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 (717) 485-6573 or mail to address as specified on the back of this form.

Thank you,
Product Safety & Reliability Department
JLG Industries, Inc.
1 JLG Drive
McConnellsburg, PA 17233-9533
Telephone: (717) 485-5161
Fax: (717) 485-6573

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

Mfg. Model: _____

Serial Number: _____

Previous Owner: _____

Address: _____

City: _____ State: _____

Zip: _____ Telephone: (_____) _____

Date Of Transfer: _____

Current Owner: _____

Address: _____

City: _____ State: _____

Zip: _____ Telephone: (_____) _____

Who in your organization should we notify?

Name: _____

Title: _____

Please cut on the dotted line and fax to 717-485-6573





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