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SAE J153 MAY87

Operator Precautions

**SAE Recommended Practice
Revised May 1987**

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OPERATOR PRECAUTIONS

1. **PURPOSE:** The purpose of the recommended practice is to define a list of operator precautions that should be stressed in operator training and in the preparation of operator manuals.
2. **SCOPE:** These general operator precautions apply to off-road work machines as defined in SAE J1116, JUN85, Categories one, two, four and five and agricultural tractors in Category three. These should not be considered as all inclusive for all specific uses and unique features of each particular machine. Other more specific operator precautions not mentioned herein should be covered by users of this recommended practice for each particular machine application.
3. **PERSONNEL PRECAUTIONS:**
 - 3.1 Avoid loose fitting clothing, loose or uncovered long hair, jewelry and loose personal articles.
 - 3.2 Know and use the protective equipment that is to be worn when operating this machine. Hard hats, protective glasses, protective shoes, gloves, reflector type vests, respirators and ear protection are examples of types of equipment that may be required.
 - 3.3 Do not rush. Walk, do not run.
 - 3.4 Know and use the hand signals required for particular jobs and know who has the responsibility for signaling.
4. **OPERATOR - GENERAL PRECAUTIONS:**
 - 4.1 It is the responsibility of the operator to read and understand the Operators Manual and other information provided and use the correct operating procedure. Machines should be operated only by qualified operators.

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- 4.2 Wear the seat belt to maximize the protection capability of a ROPS (Roll Over Protective Structure) when the machine is so equipped.
- 4.3 Do not permit riders on the machine if there is no manufacturer's designated place for a rider.
- 4.4 Make sure that all protective guards, canopies, doors, etc. are in place and secure.
- 4.5 Remove all loose objects stored in the machine. Remove all objects which do not belong in or on the machine and its equipment.

5. MOUNTING AND DISMOUNTING PRECAUTIONS:

- 5.1 Use the recommended hand holds and steps with at least three points of support when getting on and off the machine. Keep steps and platform clean. Face the access system when climbing up and down.
- 5.2 Do not jump off the machine.
- 5.3 Do not dismount while the machine is in motion.

6. STARTING AND STOPPING PRECAUTIONS:

- 6.1 Walk around the machine and warn all personnel who may be servicing the machine or are in the machine path prior to starting. Do not start until all personnel are clearly away from the machine.
- 6.2 Check that the parking device is applied, place the transmission in neutral or park as specified by the manufacturer, and disengage the PTO before starting the machine.
- 6.3 Adjust, secure and latch the seat and fasten the seat belt (if provided) before starting the machine.
- 6.4 Start and operate the machine only from the operator's station.
- 6.5 Do not bypass the machine's neutral-start system. The neutral-start system must be repaired if it malfunctions.
- 6.6 Use jumper cables only in the recommended manner. Improper use can result in battery explosion or unexpected machine motion.
- 6.7 Do not operate the engine in an enclosed area without adequate ventilation.
- 6.8 Park the machine on level ground whenever possible and apply the parking device. On grades, park the machine with the wheels or track securely blocked.
- 6.9 Before leaving the operator's station, place the transmission in the park position as specified by the manufacturer, lower the equipment to the ground or put in the locked position, disengage the PTO, set the parking device and shut off the engine.

6.10 Remove the starter key or disconnect switch key when leaving the machine parked or unattended.

7. OPERATING PRECAUTIONS:

- 7.1 Check brakes, steering and other machine control devices in accordance with the manufacturers instructions prior to starting operation. Observe all gauges or warning instruments for proper operation. Operate all controls to insure proper operation. If any malfunctions are found, follow the shutdown procedure of paragraph 6.9, and report the malfunction for resolution.
- 7.2 If a failure that causes loss of control such as steering, service brakes or engine occurs, stop the machine motion as quickly as possible, follow the shutdown procedure of paragraph 6.9, and keep machine securely parked until the malfunction is corrected or the machine can be safely towed.
- 7.3 Understand the machine limitations and keep the machine under control.
- 7.4 Drive the machine with care and at speeds compatible with conditions. Use extra caution when operating over rough ground, on slopes, and when turning the machine.
- 7.5 Note and avoid all hazards and obstructions such as ditches, underground lines, trees, cliffs, overhead electrical wires or areas where there is danger of a slide.
- 7.6 Carry loads in recommended positions for maximum stability.
- 7.7 Never lift loads in excess of capacity.
- 7.8 Use the recommended machine ballast and counterweighting.
- 7.9 Know and understand the job site traffic flow patterns and obey flagmen, road signs and signals.
- 7.10 Watch for bystanders and never allow anyone to be under or to reach through the machine and its equipment while operating.
- 7.11 Select a gear that will prevent excessive speed when going downhill. Do not coast downhill.
- 7.12 When roading a machine, know and use the signaling devices required on the machine. Provide an escort for roading where required.
- 7.13 On machines with independently operated wheel brakes, lock the brake pedals together when roading to provide equalized brake application.
- 7.14 Use the recommended transport devices when roading the machine.
- 7.15 Use the approved drawbar and/or attachment point when using the machine for towing. If a cable or chain is used, keep people away from the tow line (see paragraph 8.12).

8. MAINTENANCE PRECAUTIONS:

- 8.1 Do not attempt repairs unless trained. Refer to manuals and experienced repair personnel for help.
- 8.2 Wear protective glasses and other required safety equipment when servicing or repairing the machine.
- 8.3 Wear gloves to protect hands when handling cable.
- 8.4 Disconnect the battery before working on the electrical system.
- 8.5 Avoid lubrication or mechanical adjustments with the machine in motion or the engine operating. If the engine must be in operation to make certain adjustments, place the transmission in neutral, apply the parking device, place the equipment in a safe position, securely block the wheels and use extreme caution.
- 8.6 Securely block the machine or any component that may fall before working on the machine or component.
- 8.7 To prevent unexpected movement, securely block working elements when repairing or changing working tool parts such as cutting edges.
- 8.8 Never make repairs on pressurized components, fluid, gas or mechanical until the pressure has been relieved according to the manufacturer's instructions.
- 8.9 Use extreme caution when removing radiator caps, drain plugs, grease fittings or pressure taps. Park the machine and let it cool down before opening a pressurized compartment.
- 8.10 Release all pressure before working on systems which have an accumulator. Use a piece of cardboard or wood to check for pressurized leaks to prevent fluid penetrating the skin. Repressurize accumulators with the proper gas according to manufacturers recommendations.
- 8.11 When inflating tires, use a self-attaching inflation chuck with remote shutoff and stand clear of the tire.
- 8.12 When necessary to tow the machine, do not exceed the recommended towing speed. Be sure the towing machine has sufficient braking capacity to stop the towed load. If the towed machine cannot be braked, a towbar must be used or two towing machines must be used - one in front pulling and one in the rear to retard. Avoid towing over long distances (see paragraph 7.15).
- 8.13 Observe proper maintenance procedures.
- 8.14 Whenever servicing or replacing hardened pins, etc. use a brass drift or other suitable material between the hammer and pin.
- 8.15 Keep the brakes and steering systems in good operating condition.
- 8.16 Replace all missing, illegible or damaged safety signs. Keep all safety signs clean.

9. FUEL HANDLING PRECAUTIONS:

- 9.1 Do not smoke or permit open flames while fueling or near fueling operations.
- 9.2 Never remove the fuel cap or refuel gasoline engine powered machines with the engine running or hot. Never allow fuel to spill on hot machine components.
- 9.3 Maintain control of the fuel filler nozzle when filling the tank.
- 9.4 Do not fill the fuel tank to capacity. Allow room for expansion.
- 9.5 Clean up spilled fuel immediately.
- 9.6 Tighten the fuel tank cap securely. Should the fuel cap be lost, replace it only with the original manufacturers approved cap. Use of a non-approved cap without proper venting may result in pressurization of the tank.
- 9.7 Never use fuel for cleaning purposes.
- 9.8 Use the correct fuel grade for the operating season.

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RATIONALE:

The intent of this 5-year review is to update J153, Safety Considerations for the Operator by modifying and expanding its content in keeping with today's broader activities, machine changes, operating conditions and changing safety standards effected since this recommended practice was approved in 1970.

It is proposed that the title be changed to "Operator Precautions" in place of "Safety Considerations" to comply with SAE J1159 AUG79 "Preparation of SAE Technical Documents", paragraph 6.7.5.

RELATIONSHIP OF SAE STANDARD TO ISO STANDARD:

Not applicable.

REFERENCE SECTION:

SAE J1116 JUN85, Categories of Off-Road Self-Propelled Work Machines

APPLICATION:

The purpose of the recommended practice is to define a list of operator precautions that should be stressed in operator training and in the preparation of operator manuals.

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