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**Operator Protection
for Industrial Equipment
— SAE J1042**

SAE STANDARD

APPROVED JANUARY 1974

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SOCIETY OF AUTOMOTIVE ENGINEERS, INC.

400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096



Report of Construction and Industrial Machinery Technical Committee
approved January 1974.

1. OBJECTIVE AND SCOPE-

The objective of this standard, with referenced documents, is to establish performance requirements of protective systems for operators of industrial equipment. The scope excludes mast-type forklifts and is limited to protection for the vehicle driver from hazards of vehicle rollover and/or falling objects. Protection for the operator of an attachment (for example, a backhoe) is not specifically included in the scope of this standard.

2. DEFINITION- Industrial equipment is defined as that class of tractors, either wheeled or track-type, and associated equipment used in operations such as landscaping, construction services, loading, digging, grounds keeping, and highway maintenance.

3.1 A rollover protective structure (ROPS) per SAE J1040. Wheeled vehicles similar in configuration to agricultural tractors may, as an alternative, be equipped with ROPS per SAE J334 or SAE J168.

3.2 Seat belts conforming to SAE J386 (preferred) or SAE J4.

3.2.1 The seat mounting and seat belt anchorage shall be tested in accordance with SAE J787, except that a 1000 lbf (4448 N) test load shall be applied to 45 + 10 deg to the horizontal instead of the 500 lbf (22 240 N) load applied at 10 deg as specified, and that seat inertia force shall be equal to four times the mass of all applicable seat components instead of 20 times as specified.

3.3 To reduce further the probability or severity of operator injury in event of rollover, attention to the following details is recommended:

3.3.1 Batteries, fuel tanks, oil reservoirs, and coolant systems should be constructed, located, or sealed to minimize spillage on the operator.

3.3.2 Edges, corners, or other sharp projections that might be struck by the head or torso of an operator restrained by a seat belt per paragraph 3.2 should be avoided, suitably padded, or designed to break away on impact.

4. PROTECTION FROM FALLING OBJECTS- For operator protection from falling objects, the vehicle may be equipped with a falling object protective structure (FOPS) per SAE J231 or SAE J1043. Wheeled vehicles similar in configuration to agricultural tractors may, as an alternative, be equipped with ROPS and FOPS per SAE J167.

4.1 FOPS per SAE J231 may be expected to provide reasonable protection from such falling objects as trees and rocks.

4.1 FOPS per SAE J1043 or SAE J167 would be expected to provide reasonable protection from such objects as bricks, concrete blocks, and hand tools that may fall from the relatively low heights encountered in operations such as highway maintenance or landscaping and other services on construction sites for buildings three stories or less in height.