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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J321b

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Submitted for recognition as an American National Standard

(R) TIRE GUARDS FOR PROTECTION OF OPERATOR OF EARTHMOVING HAULAGE MACHINES

Foreword—This Document has also changed to comply with the new SAE Technical Standards Board Format.

1. Scope—This recommended practice establishes a minimum zone of protection for the operator of the machine and certain structural requirements for guards on pneumatic-tired earthmoving haulage machines capable of speeds in excess of 25 km/h (15 mph). Earthmoving machines covered by this recommended practice are dumpers, and tractor-scrapers as identified in SAE J1057a (June, 1975).

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J397a JUL73—Deflection Limiting Volume—ROPS/FOPS Laboratory Evaluation
SAE J1057a JUN75—Identification Terminology of Earthmoving Machines

3. Definitions

3.1 Zone of Protection—This is the area designated to provide protection for the operator from material thrown tangentially from a rotating tire of the machine, in a plane parallel to the rotation of the tire for all oscillation and steering angles in a hauling position.

4. General Requirements

4.1 Zones of Protection

4.1.1 FORWARD ZONE OF PROTECTION—When the operator is located forward of the tire centerline. This area is defined by a line intersecting the forward extremity of the Deflection Limiting Volume (DLV), as defined in SAE J397a (July, 1973), and by a vertical tangent to the rear edge of the tire as shown in Figure 1.

4.1.2 REARWARD ZONE OF PROTECTION—When the operator is located rearward of the tire centerline. This area is defined by lines drawn tangent to the tire and intersecting the extremities of the DLV. The rear zone line shall form an inclusive angle to the ground line of not greater than 90 deg as shown in Figure 2.

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4.1.3 The width of the Zone of Protection shall be as shown in Figure 3.

4.2 Guard—The guard shall provide circumferential coverage per 4.1.1 and Figure 1 and/or 4.1.2 and Figure 2.

4.3 Protection—This may be accomplished by a guard, structure of the machine, and/or attachments or by the lateral location of the DLV away from the plane of the tire.

4.4 Material—The guard may be either rigid or flexible. The construction shall provide energy absorption (at least equal to USA 14 gauge mild steel), for tangentially-thrown material without rupture.

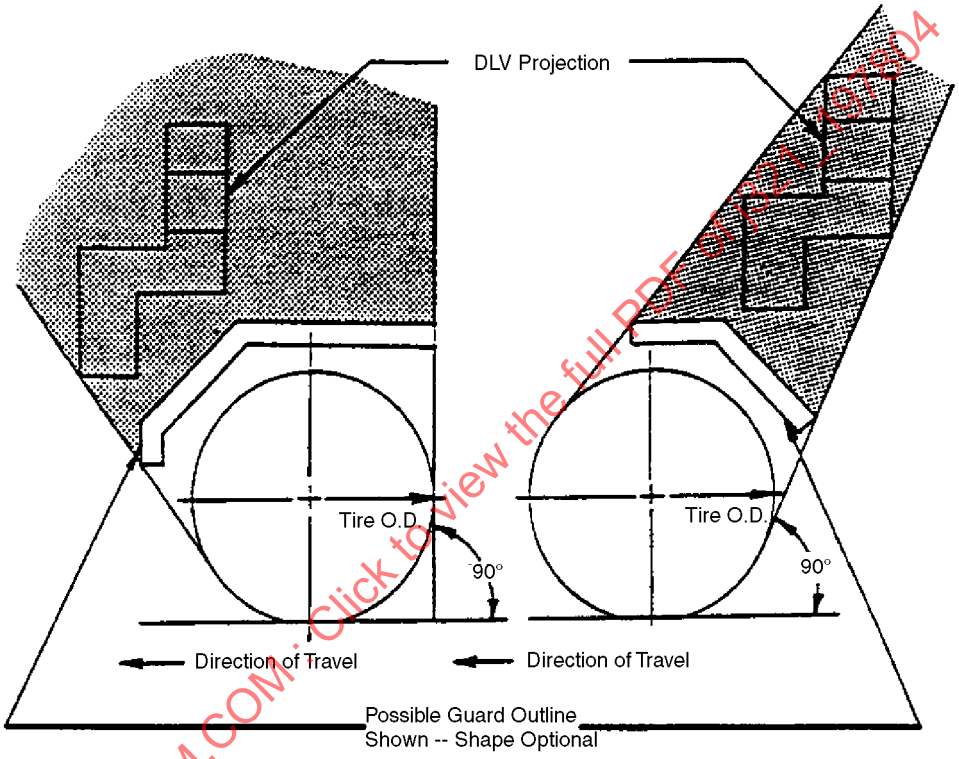

FIGURE 1—CIRCUMFERENTIAL COVERAGE REQUIREMENTS WITH OPERATOR LOCATED FORWARD OF TIRE(S) AND

FIGURE 2—CIRCUMFERENTIAL COVERAGE REQUIREMENTS WITH OPERATOR LOCATED REARWARD OF TIRE(S)

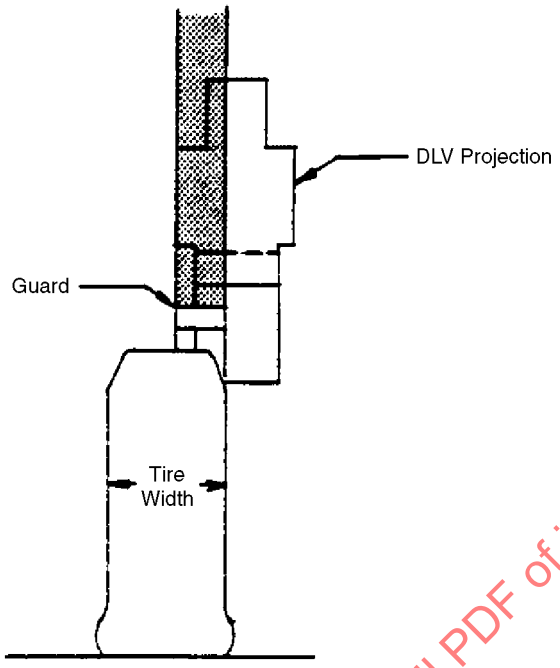

FIGURE 3—LATERAL TIRE COVERAGE REQUIREMENTS FOR OPERATOR PROTECTION (ON A LEVEL SURFACE)

NOTE— Shaded areas to Figures 1, 2, and 3 indicate minimum zone of protection in a hauling position.

5. Notes

5.1 Marginal Indicia—The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE OFF-ROAD MACHINERY TECHNICAL COMMITTEE