The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE RECOMMENDED PRACTICE

An American National Standard

SAE J1404

REAF. JUN2000

Issued 1977-05
Reaffirmed 2000-06

Superseding J1404 JUN1993

Service Brake Structural Integrity Requirements—Vehicles Over 4500 kg (10 000 lb) GVWR

Foreword—The requirements in this SAE Recommended Practice represent the accumulation of the best information available from investigation of the brake system performance of new motor vehicles designed for roadway use.

1. Scope—This SAE Recommended Practice presents requirements for the structural integrity of the brake system of all new trucks, buses, and combinations of vehicles designed for roadway use and falling into the following classifications:

a. Truck and Bus—Over 4500 kg (10 000 lb) GVWR
b. Combination of Vehicles—Towing vehicle over 4500 kg (10 000 lb) GVWR

The requirements are based on data obtained from SAE J294 JAN93.

1.1 Purpose—The purpose of this document is to establish the minimum service brake system requirements with regard to structural integrity.

2. References

2.1 Applicable Publication—The following publication forms a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

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

SAE J294—Service Brake Structural Integrity Test Procedure—Vehicles over 4500 kg (10 000 lb) GVWR

3. Test Procedure—The vehicle is to be tested in accordance with SAE J294 JAN93.

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Printed in U.S.A.

4. Acceptance Performance Requirements

4.1 Actuation System

4.1.1 On hydraulic braked vehicles, the pedal shall not go to the floor or the limit of travel on any stop on any system check application.

4.1.2 Brake failure warning devices shall not remain on after any stop.

4.1.3 On hydraulic braked vehicles, there shall be no evidence of fluid leakage from the master cylinder, booster, wheel and brake assembly, valves, hose, fittings, or tubing.

4.1.4 On air braked vehicles, with the brakes fully applied and held, the service pressure drop shall not exceed 69 kPa (10 psi) in 3 min with the engine off.

4.1.5 There shall be no distortion of the brake pedal or treadle, master cylinder, actuating valve, or their attachment hardware or brackets so as to prevent continued braking operation.

4.2 Foundation Brakes and Drums/Rotors

4.2.1 When the brakes are released after the last stop of the test, and the vehicle is moved, all wheels should rotate freely. In this document, the phrase, all wheels should rotate freely, is defined as: The wheels can be manually rotated by one person when the axle is raised.

4.2.2 On check stops there shall be no uncontrollable braking action causing any tire of a vehicle to leave a 3.7 m (12 ft) wide roadway lane.

4.2.3 On check stops no wheel shall lock.

4.2.4 There shall be no permanent distortion of foundation brake components, drum/rotors, or their attachment hardware or relative movement between the brake assembly and the axle flange so as to prevent continued braking operation.

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PREPARED BY THE SAE TRUCK AND BUS FOUNDATION BRAKE SUBCOMMITTEE OF
THE SAE TRUCK AND BUS BRAKE COMMITTEE