

# School Bus Stop Arm

## —SAE J1133a

SAE Recommended Practice  
Last revised November 1977

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Society of Automotive Engineers, Inc.  
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096



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Report of Lighting Committee approved April 1976 and last revised by Lighting Committee November 1977. Rationale statement available.

φ 1. **Scope**—This engineering design specification provides design parameters and general requirements for School Bus Stop Arms equipped with alternately flashing lights. The stop arm is intended as an optional device which may be used in addition to, but not as a substitute for, school bus signal lamps covered by SAE J887 (July, 1964). Decision for adoption of the recommendations presented in the Appendix is left to governmental units or other bodies who adopt this practice.

2. **Definition**—A school bus stop arm is an auxiliary device used to signal that a school bus has stopped to load or discharge passengers. It supplements devices specified by SAE J887. It may be operated automatically or manually and shall contain alternately flashing lights.

φ 3. **General Requirements**—A stop arm shall have on both the front and rear the word STOP in letters which are at least 150 mm (6 in) in height and have a stroke of at least 20 mm (7/8 in); it also may optionally be reflectorized.

#### 4. Laboratory Requirements

4.1 The following sections from SAE J575 are a part of this recommended practice:

- 4.1.1 Section 2—Samples for Test
- 4.1.2 Section 3—Laboratory Facilities
- 4.1.3 Section 4.1—Vibration Test
- 4.1.4 Section 4.2—Moisture Test
- 4.1.5 Section 4.3—Dust Test
- 4.1.6 Section 4.4—Corrosion Test
- 4.1.7 Section 4.6—Photometry
- 4.1.8 Section 4.8—Warpage Test

4.2 **Plastic Materials**—Any plastic materials used in optical parts shall comply with the requirements of SAE J576.

4.3 **Color Test**—The color of the light from stop arm lamps shall be red, both to the front and rear and comply with the requirements of SAE J578.

4.4 **Durability**—The device shall be subjected to a test of 45,000 cycles at a rate not to exceed 10 cpm (0.2 Hz) and at a temperature of  $25^{\circ} \pm 3^{\circ}\text{C}$ . A cycle shall consist of movement from the parked or retracted position to the fully extended position and return to parked position. Failure of the device to operate in the intended electrical or mechanical manner during or at the conclusion of the test shall constitute a failure.

Failure of the light source shall not be considered as failure of the device.

5. **Photometric Requirements**—Each lamp used shall have a designed light output and distribution to the front and rear as outlined for red lamps in Section 3.9.1 and Table 1 of SAE J588. For service performance, see SAE J256.

#### 6. System Requirements

6.1 Lamps shall be activated at the commencement of the stop arm extension cycle and deactivated when the stop arm is retracted.

6.2 Lamps shall flash alternately in the range of 60–120 cpm.

6.3 The sum of the percent “on” time for both lamps shall be 90%–110%; the minimum for either shall be 30%.

7. **Installation Requirements**—The following requirements apply to the device as used on the vehicle and are not a part of the laboratory test requirements and procedures.

7.1 The stop arm shall be installed on the left outside of the bus body and be mounted so as to be seen readily when the arm is in the extended position by motorists approaching from either the front or rear of the bus.

7.2 Double-faced lamps shall be located in the top and bottommost portions of the stop arm, one above the other.

7.3 If the device is operated by a manual switch, that switch shall be located so as to be easily accessible to driver.

### APPENDIX

A1. As a matter of information, attention is called to SAE J567 for requirements and gages to be used in socket design. Attention is also called to SAE J1054—Warning Lamp Alternating Flashers.

A2. It is recommended that the word STOP be displayed as white letters against a red background.

φ A3. It is also recommended that a stop arm have the shape of a regular octagon which is at least 450 mm (18 in) by 450 mm (18 in). The octagon should have a white border at least 12 mm (0.5 in) wide. The maximum extension should not exceed 560 mm (22 in) beyond the left side of the vehicle.