MOTOR VEHICLE INSTRUMENT PANEL LABORATORY IMPACT TEST PROCEDURE—HEAD AREA—SAE J921b SAE Recommended Practice

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1. Scope—This SAE Recommended Practice describes a laboratory test procedure for evaluating the head impact characteristics of such areas of an automotive instrument panel as may be required to meet impact performance established for the protection of lap-belted front seat occupants.

2. References

2.1 Applicable instrument panel performance requirements including their associated definition of "head impact area."

2.2 SAE J984, SAE J211, and SAE J826.

3. Items To Be Measured

3.1 The following items shall be measured:

3.1.1 IMPACT VELOCITY—The velocity of the headform at the moment of contact with the test specimen.

3.1.2 ACCELERATION—TIME HISTORY OF THE HEADFORM—The tangential acceleration time curve of the axis of symmetry of the headform during the period of contact with the test specimen.

3.1.3 START OF IMPACT—An electrical contact shall be placed on the sample such that an indicating mark will register on the record when the headform initially contacts the test specimen.

3.2 Measurement of the following items is optional:

3.2.1 REBOUND VELOCITY—The maximum velocity of the headform after it breaks contact with the test specimen.

3.2.2 DYNAMIC HEADFORM DISPLACEMENT—The maximum penetration of the headform after initial contact with the test specimen.

4. Location and Direction of Impact (Fig. 1)—All impacts shall be conducted in accordance with the following procedure:

4.1 Impact points shall be determined considering the applicable instrument panel performance requirements.

4.2 At impact, for selected impact points on the instrument panel top surface (includes all points of the upper instrument panel surface that can be vertically projected to a horizontal plane above the instrument panel), the direction of travel of the leading point of the headform device shall be:

4.2.1 In side view of the panel section containing the selected impact point, perpendicular to a "baseline" drawn through a horizontal, transverse line which is 5 in. (127 mm) horizontally forward and 0.75 in. (19 mm) vertically above the seating reference (H) point, and tangent to the instrument panel assembly surface. (See Fig. 1.) The "baseline" is established by pivoting an