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INTERNATIONAL
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SURFACE VEHICLE RECOMMENDED PRACTICE

An American National Standard

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Superseding J220 MAR91

Crane Boomstop

***Foreword*—**This Reaffirmed Document has been changed only to reflect the new SAE Technical Standards Board Format. The Definition section has been changed to Section 3. All other section numbers have changed.

***1. Scope*—**This SAE Recommended Practice applies to the boomstop for the main boom of all mobile construction type cranes having rope supported booms, equipped for hook work, clamshell, magnet, grapple, or concrete bucket attachments.

1.1 Purpose—The purpose of the document is to establish performance standards for crane boomstops.

***2. References*—**There are no referenced publications specified herein.

3. Definitions

3.1 Boomstop—A boomstop is a device which limits the normal angular movement (generally upward and backward) of the crane boom with respect to the machinery base on which the boom is mounted. Boomstops are installed for the purpose of protecting the crane operator and minimizing damage to the machine or other property in the event of an accident from causes such as the following:

a. Sudden release of all rated loads due to failure of the load line or rigging due to operator error;
b. Wind forces on a high boom;
c. Traveling on uneven ground of steep grades with the boom at a high angle;
d. Failure to stop the load hoisting function before the load block or load contacts the boom tip (two blocking);
e. Failure to stop the boom hoisting function at the upper limit of boom operating range.

4. Performance Requirements

4.1 The complete boomstop with supporting attachments shall be designed to meet or exceed either or both of the following criteria:

a. The boomstop shall be designed to develop the ultimate strength of the boom in bending at the point where the boomstop acts on the boom.
b. The boomstop shall be designed to absorb all the energy imparted to it by the boom under the condition of 3.1(a) which delivers maximum energy to the boomstop.

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4.2 The boomstop shall provide energy absorbing resistance to the upward and rearward movement of the boom through an angular movement of at least the last 5 degrees about the boom foot pin.

4.3 Since the boomstop is only one part of a total system which includes the boom, boomstop, attachment devices, and structural elements of the crane, the boomstop shall be functionally and structurally compatible with the machine on which it is used.

4.4 The boomstop shall limit the movement of that portion of the boom below the point at which the boomstop acts on the boom to a maximum boom angle as recommended by the crane manufacturer.

4.5 The boomstop shall be designed to function, when properly maintained, under climatic conditions normally encountered by this type of machine.

4.6 The boomstop point of attachment shall be located near the outer end of the base intelsection of the boom. However, the point must be at least 5 ft above the operator's normal seat level when the crane is level and the boom vertical.

5. Maintenance and Usage

5.1 A preventive maintenance program based on the boomstop manufacturer's recommendations shall be established. This program shall include periodic inspection of the boom, boomstop, attachments, and crane structural members to assure that there has been no structural damage which would reduce the effectiveness of the boomstop system.

5.2 The boomstop alone should not be relied upon to prevent overtopping of the boom caused by overhoisting of either the load or the boom.

6. Instructions—The boomstop manufacturer shall furnish complete instructions for installation, operation, and maintenance of the boomstop, including identification of machine models for which the boomstop has been approved.

7. Notes

7.1 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.

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