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SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J983

REAF. OCT1998

Issued 1967-04
Reaffirmed 1998-10

Superseding J983 OCT80

Submitted for recognition as an American National Standard

Crane and Cable Excavator Basic Operating Control Arrangements

***Foreword*—**This reaffirmed document has been changed only to reflect the new SAE Technical Standards Board format. References were added to Section 2.

1. ***Scope*—**This SAE Recommended Practice applies to mobile, construction type, crane and cable excavator hand and foot controls. It should not be construed to limit the use of, or to apply to combination controls, automatic controls, or any other special operating control requirements.

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

3. ***General Notes*—**These general notes apply to all six of the control diagrams which cover specific applications of crane and cable excavator machines.

1. The arrangement of the basic controls should be as shown in the application diagrams (see Figures 1 to 6). Controls 1, 2, 3, and 4 are levers for hand operation; controls 5 and 6 are pedals for foot operation.
2. Controls for other functions, such as auxiliary drums and throttles, may be installed between or beside the basic controls, but such controls shall be positioned to avoid operator confusion and physical interference. Nothing in this document precludes the use of additional controls subject to the foregoing requirements.
3. The master clutch control shall be readily operable from the operator's seat.
4. Controls 2, 3, 5, and 6 should be confined solely to the specified operating functions shown in the application control diagrams, except for shovel and hoe application. Controls 1 and 4 may be temporarily converted from their specified operating function to operate nonsimultaneous auxiliary functions (that is, travel controlled by swing control) provided that:

   a. In the specified application, all basic controls should operate as specified in the application control diagram.
   b. The disconnected function is restrained against unintended movement.

   Independent controls for any and all basic and auxiliary operating functions are permissible.
5. All controls shall return to their released positions automatically upon operator release when not knuckled in.

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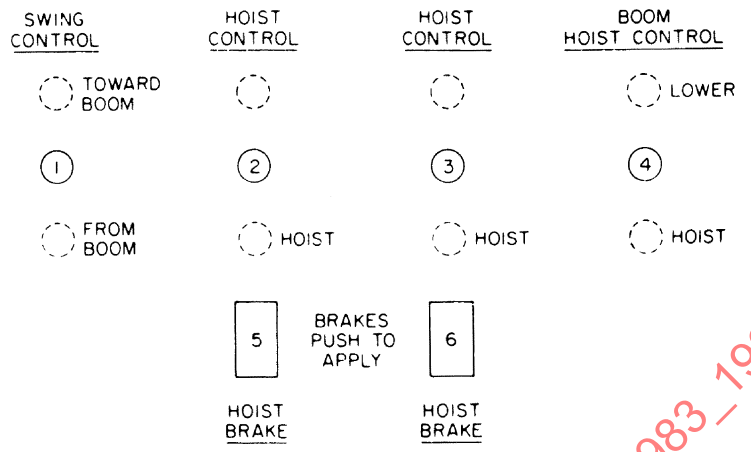
CRANE CONTROL DIAGRAM
(Viewed from operator's seat)

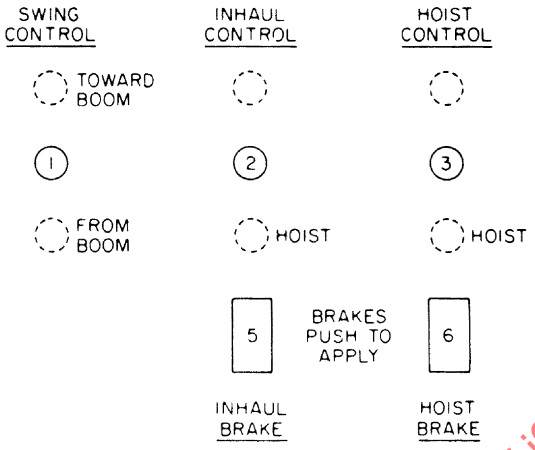


Notes:

Control	Operation
1. Swing Control	Push forward to swing toward boom, swinging left for right side operator position or swinging right for left side operator position. Pull back to reverse these actions.
2. Hoist Control	Pull back to hoist. Center (release) to lower by brake 5. Push forward to lower, if provided with powered load lowering on this drum.
3. Hoist Control	Pull back to hoist. Center (release) to lower by brake 6. Push forward to lower, if provided with powered load lowering on this drum.
4. Boom Hoist	Pull back to raise boom. Push forward to lower boom. Center (released) position must hold boom stationary even with boom safety pawl released.
5. Hoist Brake	Push to hold or to stop lowering load. Release to lower load.
6. Hoist Brake	Push to hold or to stop lowering load. Release to lower load.

FIGURE 1—CRANE CONTROL DIAGRAM
(VIEWED FROM OPERATOR'S SEAT)

HOE CONTROL DIAGRAM
(Viewed from operator's seat)

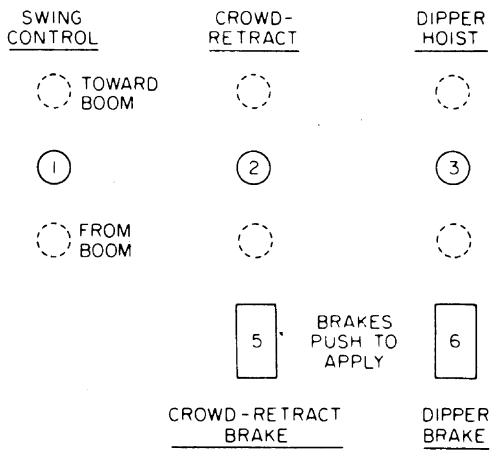


Notes:

Control	Operation
1. Swing Control	Push forward to swing toward boom, swinging left for right side operator position or swinging right for left side operator position. Pull back to reverse these actions.
2. Inhaul Control	Pull back to drag in bucket. Center (release) to control by brake 5.
3. Hoist Control	Pull back to extend bucket. Center (release) to control by brake 6.
5. Inhaul Brake	Push to hold bucket. Release to extend bucket and when control 2 is engaged.
6. Hoist Brake	Push to hold bucket raised and extended. Release to lower bucket and when control 3 is engaged.

FIGURE 2—HOE CONTROL DIAGRAM
(VIEWED FROM OPERATOR'S SEAT)

SHOVEL CONTROL DIAGRAM
(Viewed from operator's seat)

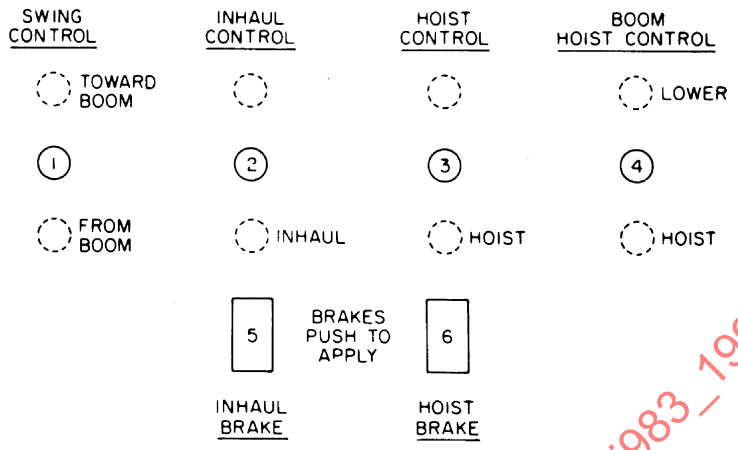


Notes:

Control	Operation
1. Swing Control	Push forward to swing toward boom, swinging left for right side operator position or swinging right for left side operator position. Pull back to reverse these actions.
2. Crowd—Retract	Direction of action of control is optional.
3. Bucket Hoist	Direction of action of control is optional. Center (release) to lower bucket by brake 5.
5. Crowd Brake	Push to hold. Release to crowd or retract or when control is engaged.
6. Bucket Brake	Push to hold bucket up. Release to lower bucket or when control 3 is engaged.

FIGURE 3—SHOVEL CONTROL DIAGRAM
(VIEWED FROM OPERATOR'S SEAT)

DRAGLINE CONTROL DIAGRAM
(Viewed from operator's seat)

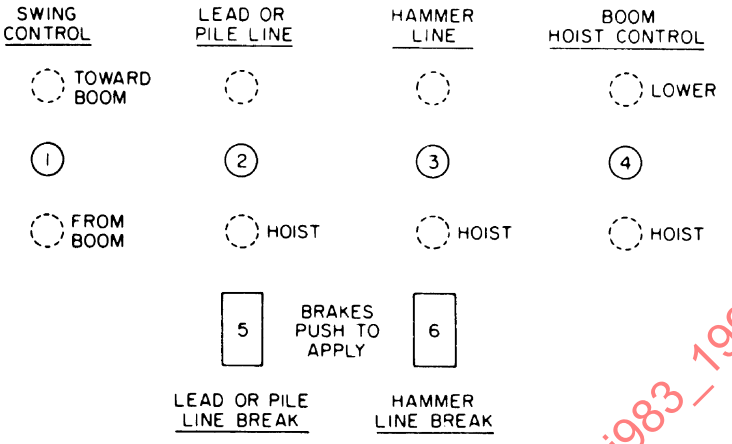


Notes:

Control	Operation
1. Swing Control	Push forward to swing toward boom, swinging left for right side operator position or swinging right for left side operator position. Pull back to reverse these actions.
2. Inhaul Control	Pull back to drag in bucket. Center (release) to control by brake 5.
3. Hoist Control	Pull back to hoist bucket. Center (release) to lower bucket by brake 6.
4. Boom Hoist	Pull back to raise boom. Push forward to lower boom. Center (released) position must hold boom stationary even with boom safety pawl released.
5. Inhaul Brake	Push to hold bucket. Release to dump load.
6. Hoist Brake	Push to hold or to stop lowering bucket. Release to lower bucket.

FIGURE 4—DRAGLINE CONTROL DIAGRAM
(VIEWED FROM OPERATOR'S SEAT)

PILE DRIVER CONTROL DIAGRAM
(Viewed from operator's seat)



Notes:

Control	Operation
1. Swing Control	Push forward to swing toward boom, swinging left for right side operator position or swinging right for left side operator position. Pull back to reverse these actions.
2. Lead or Pile Line	Pull back to hoist piling. Center (release) to lower piling by brake 5. Push forward to lower piling, if provided with powered load lowering on this drum.
3. Hammer Line	Pull back to hoist hammer. Center (release) to drop hammer or to lower by brake 6. Push forward to lower hammer, if provided with powered load lowering on this drum.
4. Boom Hoist	Pull back to raise boom. Push forward to lower boom. Center (released) position must hold boom stationary even with boom safety pawl released.
5. Lead or Pile Line Brake	Push to hold or to stop lowering load. Release to lower load.
6. Hammer Line Brake	Push to hold or to stop lowering hammer. Release to drop or to lower hammer.

FIGURE 5—PILE DRIVER CONTROL DIAGRAM
(VIEWED FROM OPERATOR'S SEAT)