

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

**SAFE USE OF CRANES, CRANE-SHOVELS
DRAGLINES AND SIMILAR EQUIPMENT
NEAR ELECTRIC POWER LINES**

Headquarters, Department of the Army, Washington, DC
December 2, 1987

1. Purpose. This bulletin provides safety information and guidance for operating personnel and Commanders of U.S. Army Cranes, crane-shovels draglines and similar equipment when operating in the proximity of energized power lines.

2. Scope. The requirements prescribed by this bulletin apply to referenced equipment issued to Army units, CONUS, and oversea, for operational use. It contains specific information concerning safety inspections, operating clearances, safety procedures, and training, which are the minimum required for operational use.

3. General. The effectiveness of this bulletin is dependent upon strict adherence to all requirements herein specified.

4. Operating Procedures. Commanders will evaluate areas of operation when there is electrocution potential. Application of safeguards, as outlined below, will insure safety for the operator, ground personnel, and equipment.

a. Cranes shall not operate in the vicinity of overhead power lines, unless **ONE** of the following **TWO** conditions is satisfied:

(1) Power has been shut off, and positive means taken to prevent the lines from being energized.

(2) Equipment or any of its parts does not have the capability of coming within the following minimum clearances from energized overhead lines. Equipment has been positioned and blocked to assure that none of its parts, including cables, can come in within the following clearances:

*Power Line
Norman System*

*Maximum
Required
Distance*

Under 50 Kilovolt(KV)	10 feet
69KV	12 feet
115-161KV	15 feet
230-285KV	20 feet
345KV	25 feet
500KV	35 feet

b. Operators around high voltage lines will utilize a qualified signalman to control movement.

c. Frames of cranes or equipment operating in close proximity to energized lines must be grounded wherever possible.

d. In the event the crane boom or cable should come into contact with an energized power line, the operator should stay on the equipment and clear the equipment from the line if this can be done without breaking the line.

e. If fire or other causes make it impossible for the operator to remain on the equipment, he should jump, making certain that all parts of his body are clear of the equipment before his feet touch the ground.

f. Operators shall be familiar with the operation and care of fire extinguishers provided.

g. Cranes shall not be moved between work areas with the boom raised.

h. All equipment safety devices, electrical or mechanical, must be inspected before operation.

i. Three 18 inch x 24 inch weather proof non-reflective warning decals showing requirements consistent with those designated in a (1) and

Approved for public release; distribution is unlimited.

*This technical bulletin supersedes TB 385-101, 15 June 1979.

(2) above shall be permanently attached to the exterior front and sides of the equipment, and be in plain view. Each decal must be legible at 12 feet. A similar 4 inch x 8 inch decal will be applied over the existing warning plate in the cab and/or in plain view from the operator's position. Instructions contained in these decals will be mandatory. "WARNING DECAL KIT": 7690-00-267-5778,, TB 385-101 (19099) consisting of four (4) decals will be requisitioned through S9G.

Defense General Supply Center
Richmond, VA 23297

A small decal set can be ordered for cranes under 10 ton capacities with NSN 7690-01-205-6014.

NOTE

Cut a piece of sheet metal, plywood, etc., and adhere decal to it before installing on camouflaged equipment. To facilitate removal of the decals from equipment that has to be camouflaged, two (2) methods of attaching the decals are suggested:

1. Weld or bolt hooks on equipment where decals are to be located. Drill hole in decals and hang them on hooks.

2. Weld 1/2 inch angle iron on equipment so that it forms a slot cradle for the decal to rest in."

j. Taglines (safety lines) for controlling loads will be used at all times.

5. Training. a. Commanders will insure that personnel concerned with operation of this type of equipment are:

(1) Able to read and understand the signs, notices, operating instructions, and are knowledgeable with the signals used by the designated signalman. They should have good hearing and sight, being able to distinguish red, green, and yellow regardless of position of colors.

(2) Knowledgeable in the potential hazards involved in operating equipment near high tension lines.

(3) Required to follow procedures listed in paragraphs 4 a (1) and (2).

b. Training listed in a above, will be obligatory on a continuing basis, and the training recorded.

6. Reporting Errors and Recommending Improvements. You can help improve this manual. If you find any mistake or if you know of a way to improve the procedures, please let us know. Mail your DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, US Army Tank-Automotive Material Readiness Command, ATTN: AMSTA-MBA, Warren, MI 48397-5000. A reply will be furnished to you.