

Title: Mobile Crane Safety Procedures	Document No.: SA-016-A Original Date: June 19, 2009 Revision No.:
	Approved By: Al Swavy

- 1.0 **Purpose:** The purpose of this policy is to minimize the risk to workers and the public from the operation of mobile cranes on University property and to ensure the stability of the crane by applying safe work practices whenever operating such machinery. It also provides guidance to be followed when operating such equipment around the Steam Tunnel on the South Campus
- 2.0 **Scope:** This procedure applies to the operation of all mobile cranes involved in all University construction and maintenance projects.
- 3.0 **Applicable Codes:**
- 3.1 OSHA 1910.180 – “Crawler, Locomotive and Truck Cranes”
 - 3.2 OSHA 1926.550(b) – “Crawler, Locomotive and Truck Cranes”
- 4.0 **Applicable Guidelines:**
- 4.1 ANSI B30.5-1968 – “Safety Code for Crawler, Locomotive and Truck Cranes”
- 5.0 **Responsibilities:**
- 5.1 Project Managers
 - 5.2 Site Supervisor
 - 5.3 Crane Operator
- 6.0 **Definitions:**
- 7.0 **Procedures:**
- 7.1 In the initial survey of crane operations, look for crane stability, physical obstructions to movement or operation, and proximity of electrical power lines, as well as the following:
 - 7.1.1 *Leveling* – has the crane operator set the crane up level and in a position for safe rotation and operation?
 - 7.1.2 *Outriggers* – are the outriggers, where applicable, extended and being used in accordance with manufacturer’s recommendations?
 - 7.1.3 *Stability* – the relationship of the load weight, angle of boom, and its radius (the distance from the crane’s center of rotation to the center of load) to the center of gravity of the load. Also, the condition of crane loading where the load moment acting to overturn the crane is less than the moment of the crane available to resist overturning.
 - 7.1.4 *Structural Integrity* – the crane’s main frame, crawler, track and outrigger supports, boom sections, and attachments are all considered part of structural components of lifting. In addition, all wire ropes, including stationary supports, help determine lifting capacity and are part of the structural elements of crane operations.
 - 7.1.5 *Access to Job Site* – the site must be secured by barricades (caution tape or fencing) to prevent unauthorized entry to the area by Faculty, Staff, Students, Visitors, and Construction personnel not part of the crane operation. The

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barricades must encompass the length the boom is extended and the area the boom and cab will swing.

7.2 Crane operators and personnel working with cranes need to be knowledgeable of basic crane capacities, limitations, and specific job site restrictions, such as:

- Access restrictions to job site
- Location of overhead electric power lines
- High wind conditions

Personnel working around crane operations also need to be aware of hoisting activities or any job restrictions imposed by crane operations, and ensure job site coordination of cranes. Crane operator should be aware of these issues and, prior to starting crane activity, take time to observe the overall crane operation with respect to load capacity, site coordination, and any job site restrictions in effect.

7.3 Accidents can be avoided by careful job planning. The person in charge must have a clear understanding of the work to be performed and consider all potential dangers at the job site. A safety plan must be developed for the job and must be explained to all personnel involved in the lift.

7.4 Steam Tunnel and Utility Vault Guidance – On the South Campus, the steam tunnel is a critical facility and needs to be protected from excessive loading. There are many utility vaults on the North and South campuses that also require protection from excessive loading. Because of the unusual loading that cranes may impart, their use over and near the steam tunnel and utility vaults must be controlled. Whenever a crane will be used on the North or South Campus, the entity or contractor that will be using it shall submit a crane access and use plan to the Code Enforcement Officer (CEO) in Facilities Planning & Design for review and approval. At a minimum, the plan shall include the crane’s loaded and unloaded weight, where the crane will setup, the route the crane will take to access the setup location and, if the crane will either cross the tunnel or utility vault. At the setup location, if either the crane’s main body or outriggers is within ten feet of the tunnel or utility vault, then a sealed certification from a Licensed New York State Professional Engineer of what steps are necessary to protect the steam tunnel shall be provided. The plan shall be approved by the CEO and all required temporary protection measures shall be properly completed prior to the crane being brought on-site.

8.0 **Document Management:** This procedure shall be reviewed once every two years, or as changes require.

9.0 **Associated UB Documents:**

9.1 *Campus Commitment to Safety*, University at Buffalo, Office of the Provost, Office of the Senior Vice President, April 3, 2001.

10.0 **Associated EH&S Documents:**

11.0 **Document Revision History:**

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Revision	Section(s) Changed	Change(s) Made:	Date
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12.0 **Document Author:** Al Swavy