

# Work **Safe!** Bulletin

## MULTIPLE MOBILE CRANE LIFTS

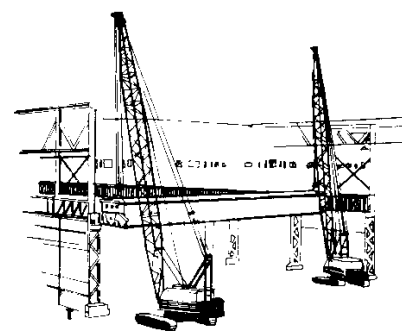
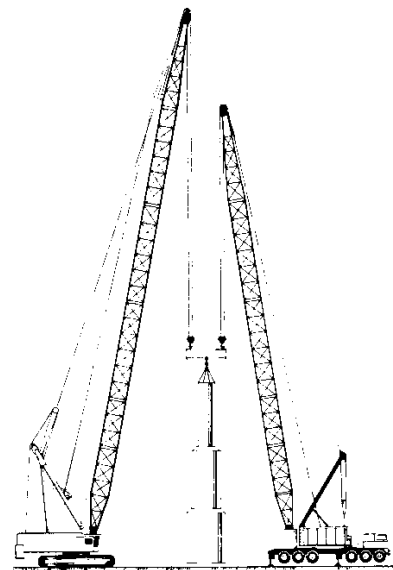
Bulletin No.: 149  
February 1996

Lifts involving two or more cranes are complex operations requiring skill and detailed planning. The lift must be planned and carried out by skilled and qualified personnel under the direction of an on-site qualified erection supervisor.

It is necessary that a written detailed procedure (lift plan) be developed, documented and kept on site. This procedure must be signed by the site superintendent, the erection supervisor, the crane operators and the "signal persons" involved as evidence that the procedure has been reviewed, discussed and understood by all workers involved in the operation. Any change in procedures or personnel shall be documented and signed by all workers involved.

The planned procedure should include the following requirements:

1. Ground conditions must be stable, compacted and level. (If not, they must be corrected by blocking mats or compaction.)
2. All cranes must rest on solid blocking.
3. All cranes must be level.
4. The weight and center of gravity must be determined exactly for the load being hoisted.
5. Longest load radius of each crane for the complete operation must be measured exactly.
6. Boom length and boom angles must be determined exactly.
7. Rated capacity of each crane must be determined for the whole operation.
8. **For a multiple crane lift, no crane should be loaded to more than 75% of its net capacity.**
9. All cranes must be in good operating condition.
10. The lead crane must be equipped with a load gauge to ensure that the lift stays within the safe operating conditions and lift plan.
11. Consideration must be given to the symmetry and center of gravity of the load. The load each crane will carry must be determined precisely.
12. Swing and booming motions must be kept to a minimum.
13. Wherever possible, the cranes should not travel with load. If travel is necessary, then the cranes should have equal boom lengths.



**14. Signal persons, riggers and operators must know exactly what they have to do and what movements will have to be made before the lift begins.**

15. Conduct a dry run without load.

16. All communications during the lift should be made by radio (preferably closed or hardline rather than walkie-talkie).

**17. It is imperative that one person (the signal-person) direct and control the operation. That person should be positioned to view the total operation and should maintain radio contact with the operators.**

18. One crane shall be designated the 'lead' crane taking instruction from the signalperson. The other crane(s) shall follow, with the swing brake off. The lead crane may shift from one crane to the other during the lift.
19. All crane and load movements should be made as smoothly as possible. Brakes and clutches should be applied gradually.
20. **Hoist lines must be kept vertical at all times. This is absolutely critical.** When the lines are not vertical, the cranes are throwing extra load on each other and may cause sideloading.

Note: Certain lifts such as cantilever type, multiple crane, joining lead lines, and other specialized lifts, shall be designed and supervised by a professional engineer.

This bulletin is intended as a general reminder about potential workplace hazards. However, situations may vary and should further information be necessary, please contact:

Workplace Safety and Health  
Room 200 - 401 York Avenue,  
Winnipeg, Manitoba, R3C 0P8  
Telephone: 945-3446.