

**Subject: Precautions to be observed during the operation and maintenance of
Derrick Cranes.**

Dear Sir

An accident occurred recently in a marble mine where a derrick crane, while lifting load, fell down into a pit, along with its operator, killing him instantly. Enquiry into this accident revealed that cracks had developed in the welded joint of jib plates of derrick crane. About 50% of the joint was found to be rested. The plate therefore came out of the joint and crane fell down in the pit.

Fabrication of derrick cranes involves welding of structures and in due course of time cranes are likely to develop at welded joints due to fatigue and shock loads.

The enquiry further revealed that although the manufactures had recommended that the jib should not be lowered beyond 15 degrees, this was not compiled and this accident occurred when the jib was almost horizontal in the process of lifting the load.

In order to avoid similar accidents in future, you are advised to implement the following:

- 1 The welded joints of the structure of derrick crane should be examined by 'Die- penetration Test' method, once in at least three months and by 'Magnetic Particles' testing method, once in a year. This test shall be conducted by any Govt. Test house or any other DGMS approved Test houses.
- 2 Limit switches should be provided to restrict movements of jib within the safe permissible limits.
- 3 While lifting the marble blocks, it should be ensured that these are not dragged along the ground, during the process of lifting by the derrick cranes so as to prevent additional stress on the structure and swinging of marble blocks after lifting.

You are requested to comply with the above recommendations in the interest of Safety.

Sd/-
(R. Sharma)
Director General of Mines Safety