



Govt. of India  
भारत सरकार  
Ministry of Labour and Employment  
श्रम एवं रोजगार मंत्रालय  
Directorate General of Mines Safety  
खान सुरक्षा महानिदेशालय



DGMS (Tech) circular No. 04.

dt.08.4.2011

To  
All Owner, Agent, Manager of Opencast Mine

**Sub: Training for operators in Heavy Earth Moving Machinery using Simulator.**

Investigation into the accident of heavy earth moving machinery revealed that the numbers of accidents are occurring due to operator's negligence, harsh driving and lack of knowledge of equipments. Accidents in transportation machinery in opencast mine continue to remain high and rising every year.

Effective training has a huge impact on operating skills and helps in reducing accidents. All safety conferences on mine has deliberated in detail and insisted on providing training to operators for better productivity and to reduce accidents.

Simulator is a state-of-the-art indoor mining equipment that imparts basic and advanced skills required to operate the heavy earth mining equipment like Dumpers, Shovels/Excavators, Dozers of various capacities and operating either on wheels or tracks in challenging environment. The simulator has different training lessons for new, experienced and out-of-touch operators, supervisors and trainers. Simulators trains recruits into skilled operators, reduces downtime of equipment, reduces maintenance cost, optimally utilizes the capacity and increases safety thus reduce accidents.

The simulator uses 3D computer generated imagery and simulates realistic motion feel visuals and sounds. The training progresses from equipment familiarization to advanced levels of training and testing under complex driving scenarios. The simulator also has features for interactive fault-finding and rectification. They have the same set of controls, ergonomics and transmission systems. In the mining simulators the operator / driver operates the system and get familiarized in using the parts such steering, brakes, lights, horns, indicator etc and has a feeling of operating the main equipment.. The operator can be evaluated and further training may be given if necessary.

Training should follow carefully prepared and devised programmes. The instructor should explain and demonstrate each stage, and should allow operator to practice in turn. It is essential that practice is closely and constantly monitored. Each operator will be

required to pass a practical skills test and theory and on successful completion of the training on equipment, the operator shall be issued certificate to operate the machine on which he has been trained. The management shall ensure to appoint such operators' possessing certificate.

It is recommended that all mining companies having opencast working and use heavy earth moving equipment shall install simulator training for operators. In respect of small mechanized mine the matter may be taken up by the group vocational training centers create common facility in infrastructure for simulator training.

It is recommended that in the interest of safety, all mining companies' shall initiates necessary action to provide Simulator training for operators in heavy earth mining equipment.

*S. M. M.*  
*2/4/11*

**Director General of Mines Safety**