

CONTENT D.G.M.S. CIRCULARS FOR 2003

TECHNICAL

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DGMS(Tech)/Circular No.1 Dt. 28/01/2003

To,

Owners, Agents and Managers of all Coal Mines.

Sub.: Fatal Accident in a direct Rope Haulage while guiding the Rope for proper booking in the drum.

Recently a fitter helper lost his life while he was guiding the slack rope coils on the drum of a direct haulage with his hand. These slack rope coils were formed as a result of derailment of the empties which were being lowered along a haulage plane dipping at 1 in 48. As the gradient of the haulage plane was mild, the empties were lowered by releasing the brakes fully so that the empties gravitate down. Derailment of one of the tubs resulted in sudden stoppage of the empties. However, due to momentum the haulage drum kept on rotating for some more time which resulted in formation of slack coils on the drum. The fitter helper who was present nearby started guiding the slack ropes with his hands. In the meantime, the tub was re-railed and the empties were set in motion. This resulted in tightening of the slack rope coils on the drum and the fitter helper's hand was trapped in the coils of the rope and he was pulled in it causing his instant death.

The accident focuses the need for guiding rope on to a drum only with a lever or other proper appliance, and persons likely to be endangered need to be warned before the tubs are set into motion as required under the provisions of Regulation 87(2) (b) and 89 (2) (a) of the Coal Mines Regulations, 1957.

Attention is also invited to this Directorate's Circular No. 8 of 1973 in which a similar accident to an engine driver was highlighted. It is once again reiterated that no person is to be permitted to guide rope on to a drum except with the help of a lever or other proper appliance.

Further attention is draw to this Directorate's Circular No. 13 of 1982 where it was recommended that lowering of tubs shall be done with motor 'ON' without declutching to stop over-speeding of the rake which may lead to derailment/brake failure and other dangerous occurrences. In case of mild gradient, suitable "Dak"/loaded tub may be attached with the rake to develop adequate momentum but the lowering has to be done with motor power 'ON'. Adopting the above system/over-speeding of the down going rake can be effectively controlled and thus chances of derailment due to over-speeding shall be reduced to a great extent.

You are requested to follow the above guidelines in the interest of safety.

DIRECTOR - GENERAL OF MINES SAFETY

No. DGMS (SOMA)/ (Tech) Cir No. 2 of 2003 Dt. 31/01/2003.

To

All Owners, Agents and Managers of Mines

Subject.: Dangers due to blasting projectiles.

Accidents due to project files ejecting from blasting had been a major source of accident in both below ground and opencast workings.-Under the existing provisions of Coal Mines Regulations, 1957 and the Metalliferous Mines Regulations, 1961, before a shot is charged, stemmed of fired the shotfirer/blaster required, amongst other things to ensure that all persons within a radius of 300m from the place of firing (referred to hereinafter as danger Zone) have taken proper shelter, apart from giving sufficient warning by efficient signals or other means approved by the manager over the entire zone. There had been, however, a number, of instances where flying fragments due to blasting had ejected not only within but also beyond the danger Zone, resulting into serious and even fatal accidents.

This Directorate from time to time had drawn the attention of all concerned about the dangers from flying projectiles through issue of DGMS Circulars Viz. Circular Tech. 15/1977 and 8/1982, Recently however, another fatal accident occurred due to same reason.

Enquiry into the accident revealed that in an open cast coal mine, overburden had been kept dumped against the free face of OB bench, 12 No. first row of holes were left uncharged because of spontaneous heating in the seam below, 17 holes of 150 mm 6.5 mt. Depth drilled in 7 mt. x 5 mt. Pattern (spacing & burden) charged with 75 kg./ hole and 42 holes of 6.5 m depth 250 mm dia drilled in 6 mt. x 6 mt. pattern charged with 130 kg /hole were blasted. The projectiles ejected due to blasting travelled for a distance of about 412 m in the reverse direction away from the free face and hit a mechanical supervisor. The enquiry further revealed that the deceased had taken proper shelter in a blasting shelter shelter but had come out of the shelter immediately on hearing to the sound of blast and was subsequently hit by the projectiles.

Over years there had been refinement of blasting practices as well as development in explosives and accessories, whereby it is possible to control the throw and prevent ejection of flying fragments within a safe distance, with relative ease. There is, therefore, no reason why such type of accident should continue to occur.

The matter is brought to your attention so that following corrective measures are taken in case similar conditions exists in any mine under your control.

- (1) In the interest of safety to treat all the places within a radius of 500 mt. of the place of firing as the danger zone, all persons who are required to remain within the danger zone at the time of blasting should take protection in substantially built shelter.

- (2) Formilate a code of practice for controlled blasting Technique with milli-second delay detanators / electric shock tubes/ cord relays or use of sequential blasting machines or by adequately muffling of holes including precautions to be taken during blasting operation until all clear signal given by blaster.
- (3) Training of persons and their helpers engaged in such blasting operation

Director General of Mines Safety.

DGMS (Tech) / Circular No. 3 / Dt. 06/03/2003

To,

Owners, Agents and Manager of all Coal Mines.

Sub.: Safe us, of Fluid Coupling in underground coal mines.

A large numbers of fluid couplings are in use at underground coal mines used for transmission of power in conveyors and other machineries.

It has been brought to my notice that still large number of such fluid couplings in use are made of Aluminium working with Mineral Oil.

There is already a directive that alloys and metals likely to give incentive sparking shall not be used in construction of any underground machinery.

Full iron casting body fluid couplings are now available in the country which can work with either plain water or with 5% Emulsion Type Fire Resistant Hydraulic Fluid as per BIS 10532 Part -1. Such full iron casting body fluid couplings are being used for a long time in coal mines of England and Australia.

Therefore, in the interest of safety, to avoid fire from fluid couplings, all Aluminium body fluid coupling maybe replaced by full iron body fluid couplings with Water or 5% Emulsion as mentioned above.

Director-General of Mines Safety

DGMS (TECH) CIRCULAR No. 4 of Dt. 09/05/2003

To.

Owners Agents & Managers of All Mines

In some mines, inclines are opened from the bed of quarry for working deeper horizon by belowground method. These openings are used as haulage roadways, traveling roadways and fan drift etc. This requires deployment of persons and equipment in the vicinity of high benches which have been reduced to final limit and may collapse.

Recently, in a manganese mine, openings to belowground workings had been established from the bed of the quarry at the depth of about 75m. One of the openings was provided with the main mechanical ventilator at the distance of about 5m from foot of the benches on the footwall side. The contact zone between the footwall and ore body dipping at 55° to 75° consisted of weak formations like muscovite schist, pink gneiss and pegmatite. Subsequently, after a heavy rainfall, a portion of benches on the footwall side measuring about 35m in length, 23 m in breadth and 8 m in width slid along the weak contact zone between the ore body and the footwall and rested on the opening housing the fan drift. This resulted in collapse of the fan drift and complete damage of the fan house. The mine had to be kept stopped for about a month till a new mechanical ventilator was installed in another opening on hanging wall side.

In order to prevent recurrence of such incidences it is essential to ascertain the stability of the benches which have been reduced to final limits, especially near weak zones at regular interval. All openings from the edge of the quarry should be made safe by construction side walls and roofing of substantial strength preferably with RCC so as to sustain the load of the benches, should a collapse of the benches takes place. Such structures should protrude to a distance sufficiently ahead of the edge of the quarry so as not to be affected by any falls of benches at a later date.

The matter is brought to your notice so that adequate corrective measures are taken under similar conditions.

Director General of Mines Safety

DGMS (Tech) Circular No. 5 of 2003 Dt. 09/05/2003

To

The Owners Agents and Managers of all coalmines.

Sub.: Recommendations of Bagdigi Court of Inquiry.

The Court of inquiry appointed under section 24 of the mines Act, 1952 to enquire into the causes and circumstances attending the accident that occurred in Bagdigi Colliery of M/s. Bharat Coking Coal Limited on 2nd February, 2001 causing loss of 29 lives due to inundation, have made the following recommendations:

I. Dewatering of old workings:

By experience, it is learnt that danger from inundation arises due to existing source of water adjoining a mine. The old workings of mines get gradually filled in with water, particularly if they are on dip side and in absence of dewatering, accumulation of water in these old workings considerably increases the volume of water there in. Though the water of such mines is sometimes stored for the purpose of controlling fire or even for the purpose of domestic supply, such accumulated water bodies are definitely potential danger to the dip side workings further down below. Furthermore, the exact extent of these old workings is always doubtful. It is, therefore, necessary that no water should be allowed to accumulate in the old working of any mine. If water is required to be stored for specific purpose, prior permission from the DGMS should be obtained, who may prescribe safety measures for storing of water as well as the quantity of water that may be stored.

II. Application of latest geophysical methods for proving the barriers/parties:

It has been seen that connection between adjoining old water lodged working and current workings ultimately takes place due to eating away of the prescribed coal barrier between the two. Application of Regulation 127 of Coal Mines Regulation, 1957, arises only when partings between such workings becomes less than 60 m. the proving of barrier or parting by actual survey is arduous and time taking, while proving the same by means of long bore holes, drilled by Safety Boring Machines requires special machines, skilled operators and adequate arrangement at the Colliery. Latest Geo-physical methods of proving the barrier/ partings have been developed recently and successfully tried by CMRI Dhanbad and NIRM, KGF. One of these new Geo-physical methods is based on ground penetration radar system and it has been seen that the method yields near accurate results and is able to give thickness of barrier within an accuracy of few meters. This new method should be applied in cases where the present workings have reached the cautionary zone of 120 m as per water Danger Plan.

III. Discontinuance of the practice of having both Agent and Manager for single mine

the practice of having both Agent and Manager for a single mine should be discontinued and thus the status of the Mine Manager should be restored. An agent may be appointed for controlling 2/3 mines and not a single mine. Promotions may be granted to the Manager to higher grade, but his designation should continue to remain as Manager as is the practice in Nationalized Banks where a Manager of a big branch may be in the same scale as a Regional Manager of the Area. This would ensure the requisite authority and respectability of the post of Mine Manager.

IV. Vesting of executive power and greater authority to the internal safety organisation (ISO) as per the management structure of Coal India Ltd.

There is an internal Safety Organisation (ISO) in each subsidiary company of CIL, under the charges of Executive Director (Safety and Rescue). This Organisation was constituted for the purpose of internal safety and as an internal watch-dog for the mines in respect of safety matters. It appears, however, that this organisation does not have any real and effective powers. It does not require greater emphasis to understand that for ensuring requisite safety measures there has to be a regular and through inspection of the workings from the safety point of view. The DGMS has stated that they are unable to carry out general inspection of the individual mines, even once in two years on account of acute shortage of inspecting officers. Therefore, if though inspection of the mines is carried out by the ISO at least once in a year and a detailed report of inspection is submitted promptly, the Mine official will be expected to rectify the short-comings promptly as pointed out in the reports. With greater authority and executive power vested in ISO, it can ensure prompt compliance of the recommendations given in the inspection reports and non compliance of the recommendation would attract adverse ratings against the mines officials in their respective Annual Confidential Rolls.

V. joint Survey and Periodical Check Survey.

It has been observed that joint surveys are not conducted properly and there have been occasions where the Manager and Surveyors of the adjoining mines merely endorse their signatures on the Joint Survey plans prepared not by actual survey, but by comparing field books of other mines. The Area Survey Officer should be entrusted with specific duty to supervise joint survey and he should certify that joint survey was actually carried out and joint survey plan was prepared only after conducting joint survey.

Recommendations for conducting sample check surveys of every operational mine have been given from time to time in the recommendations of the safety conferences and Tripartite Safety Committee meetings and Circulars in this context have also been issued by the DGMS. Need to conduct check survey particularly in respect of workings which have water logged bodies in its adjoining areas is highly essential. This would ensure that the development of the mine is being correctly made according to the stipulation in the projection plan. Failure to conduct check survey in the instant case had caused failure to detect the extent to deviation, which the workings had undergone. It is therefore necessary to conduct Check Surveys of the workings at regular intervals, particularly where the mines where the workings have reached within 120 m of any adjoining mine which may contain water or any other liquid and no work should

proceed without completion of a check survey and subsequent order in writing by the Manager/ Agent to that the effect.

In addition, a special team should be constituted in the area only for conducting check survey who should not be entrusted with any other non-statutory job.

VI. Improvement in Surveying Organisation at Mine level

As per the management structure of the BCCL a Surveyor though appointed for a particular mine is under the control and authority of the Manager and under the superior control of the agent. It has come to light that superior officers tend to play dominant role sidelining surveyors who in fact, are deprived of a free hand in the performance of their duties. The surveyors are not provided with the requisite survey machines and other facilities and more often than not they are constrained to perform non statutory jobs. The Surveyors are thus rendered ineffective and are unable to perform their duties with sincerely. It is therefore suggested that authorized surveyors should not be given non statutory jobs as far as possible. The Manager of the Mine should countersign plan prepared after being sure of the accuracy of the survey by checking field books, calculation etc. The Manager may be assisted by Assistant Manager(Survey) appointed on the lines of ventilation officer, Safety Officer etc to help the Manager and to ensure that survey works are being actually conducted.

VII. INSTALATION OF V-NOTCH for recording seepage of water;

Abnormal increase of seepage of water is a definite indication of probable danger from inundation, it is recommended therefore that for measuring the quantity of increase in seepage of water, V-Notch should be installed in roadways leading to faces within 120m of water logged workings. This would promptly indicate any abnormal increase In the seepage with the progress of faces. The recordings and the results obtained from the apparatus should be maintained in a bound page book counter signed by the Manager.

VIII. GREATER CONSTRUCTIVE ROLE OF TRADE UNIONS

The Involvement and role of trade unions in the industry in general and the coal industry in particulars basically for ensuring the safety of workers and protection of their rights. It is their responsibility to see that adequate protective measures are taken by the management for the safety of lives of workers at place of work. In respect of mines, a provision has been made for posting of Workman Inspector for every mine, such inspector being primarily the representative of the labour union. The workman Inspector claimed to have regularly inspected the workings of the 7th seam for the purpose of verifying safety measures. Yet, it transpired that he was not conscious at all of the conditions prevailing in the workings and consequently had never noticed any defect in the workings. Even the trade union had never pointed out the glaring detects in the workings of the 7th seam even though the workers had repeated complained about the abnormal increase in seepage of water. It also appears that though occasional meetings of Pit Safety Committee used to be organised and recommendations used to be given by the representatives of trade union in respect of safety measures, yet no sincere efforts were made to see that the recommendation were implemented by the management. Had

such steps been taken promptly, the management would have been compelled to take prompt protective measures and the tragedy would have been avoided. It is therefore, felt that trade unions should show a greater degree of concern and play a more constructive role in sincerely and honestly pointing out defects in safety measures and their rectification.

proper implementation of these recommendations can bring about definite improvement in the safety standards in the mines.

You are, therefore requested to take suitable steps to implement the abovementioned recommendation of the Bagdigi Court of Enquiry in all mines under your control.

Director- General of Mines Safety

DGMS(Tech) Circular No. 6 of 2003 Dt. 09/09/2003
No. 14(26)79-Genl/4081 -4355

To,

All Owners, Agents and Managers of Coal Mines.
Manufacturer of Explosive.

Subject.: Procedure to be followed for approval of a New Permitted Explosive.

Dear Sir,

You are aware that the Chief Inspector of Mines (also designated as Director General of Mines Safety) is empowered to grant approval for the use of Permitted Explosive under the Regulation 2(23) of Coal Mines Regulation, 1957 and Regulation 2(24) of the Metalliferous Mines Regulation 1961. In suppression of this Directorate's letter No. 14(26) 79-Genl/1956-63 dated 9.2.1983 the following procedure will be adopted while approving a new permitted explosive :-

1. The explosive manufacturer shall submit an application to the DGMS in the prescribed format for approval of an explosive composition along with copies of the test reports from the Central Mining Research Station, Dhanbad. The test report shall include result of tests for incendivity, COD, Air-gap sensitivity and Fume Characteristics. The test report shall also include results of test of Deflagration characteristics for P5 type of explosive.
2. On the basis of satisfactory test report, an approval for conducting fields-trials in mines may be granted.
3. The explosive manufacturer will intimate well in advance the date of field-trials to the field officers of this Directorate so that an officer of the Directorate may also witness few blasts.
4. The field-trials will be conducted jointly by the representatives of the concerned mine management and the explosive manufacturer.
5. The faces for trial-blasts shall be carefully selected. These faces should be about 30 meters in bye of the last ventilation. During field-trials normal pattern of shot-holes shall be followed.
6. Quantitative measurements shall be made of NO+N02 and Carbon monoxide in post detonation fumes 5 minutes after blasting.

7. During field-trials, about 100 Kgs of the explosive shall be fired. In case of ordinary electric detonators minimum 500 nos. and in case of delay detonators 200 nos from each delay types will be blasted during the field trial. On-completion of the trials, a report in original on the performance and safety characteristics of the explosive composition shall be submitted in Form-1 along with the blast details (enclosed) jointly, signed by the Mine Manger/Agent and the Technical Service Engineer of the explosive manufacturer.
8. A new explosive composition may be approved if its performance during field trials is found to be satisfactory. The initial approval will normally be for a period of one year. During this period the explosive may be supplied and used at a large number of mines. The explosive manufacturer will keep the Directorate and the concerned field officers of the Directorate fully apprised of the details of supplies. Consumer will watch the performance of new explosive composition both from safety and productivity points of view and will submit reports on the same after six months of introduction of the explosive composition in the mine. The concerned explosive manufacturer shall also submit a consolidated performance report. The performance reports of the explosive composition during period of provisional approval shall be submitted in Form -II (enclosed)
9. The approval may be renewed if the performance of new explosive composition is found to be satisfactory during the period of initial approval.
10. Approval to P3 and P-5 types of explosive compositions which normally be granted in stages first for degree I then II and finally for degree III gassy mines.
11. The above procedure may be brought to the notice of all concerned for taking necessary action in the matter.

Director-General of Mines Safety

BLAST DETAILS

Sl. No	Particular	1st Blast	2nd Blast	3rd Blast	Remarks.
1.	Site of trial blast				
2.	Ventilation:				
	a. Distance of face from last junction				
	b. Quantity of air at the last ventilation junction/face.				
	c. Velocity of air at the face.				
	d. Method of coursing air to the face.				

- e. Percentage of inflammable gas in general body of air, at face.
- 3. Gallery Dimensions.
- 4. a) Depth of cut.
b) Depth of Holes.
- 5. No. of Holes
- 6. Quantity of explosives used (kgs)
- 7. Tonnage of coal produced per Kg. explosive.
- 8. Comments oh fragmentation, throw etc.
- 9. Misfires, if any
- 10. Depth of sockets, presence of Expl. in socket, any other unusual happening, such as deflagration, etc.
- 11. Post Detonation Fumes.
 - a. Comments on the visible fumes produced.
 - b. i) CO% (shall not exceed 50 ppm)
ii) NO & NO₂% (shall not exceed 50 ppm)
- 12. Effect on roof/sides from blasting vibrations.
- 13. General comments regarding handling, storage, transport, priming. cartridging of material etc.
- 14. Any other remarks

Signature

Designation

Date

Form-1

REPORT ON PERFORMANCE AND SAFETY CHARACTERSTICS OF
 _____EXPLOSIVE COMPOSITION FIELD TRIAL CONDUCTED AT
 _____COLLIERY

- 1 .
 - a) Name of the Explosive

- b) Name of Manufacturer :
- c) Type of Explosive :
 - (i) P-1/P-3/P-5
 - (ii) N. G Based
 - (iii) Slurry/ Emulsion

- 2 Details of DGMS approval (for trials)
 - a) Letter No. _____ Dt. _____
 - b) Valid upto _____
 - c) For gassy seams of _____ degree(s)

- 3 Details of sites of Trials :
 - (i) a) Name of seam :
 - b) Gassiness Name of District :

 - (ii) a) Working thickness, gradient of seam, etc :
 - b) Nature of coal(hardness, Cleavage, bands, etc) :
 - c) Method of work; (depillaring of devl., BOS or M/c cut/ face):

- 4
 - a) Period of Trial
 - b) Total quantity (in Kgs.) of explosive used during trials blasts:
 - c) No. of shots fired during trials blasts.

- 5 General Remarks :
 - a) Name of DGMS Official Who attended the blast: ___ on ___
 - b) Blast details (Appended)
 - c) Determination of Post detonation fume by : (apparatus)
 - d) Comparative assessment of the performance & Safety characteristics of the explosive with other comparable composition(s)
 - e) Any other remarks

- 6 Conclusion regarding suitability of the explosive.

Signature/ Designation / Date
Explosive Manufacturer

Signature/ Designation / Date
Mine Manager / Agent

Consolidated report on Performance and Safety characteristics of the Explosive composition during its Regular Approval (Required for renewal of approval)

- 1
 - a) Name of the Explosive
 - b) Name of Manufacturer :
 - c) Type of Explosive : (i) P-1/P-3/P-5
(ii) N. G Based
(iii) Slurry/ Emulsion

- 2 Details of DGMS approval
 - d) Letter No. _____ Dt. _____
 - e) Valid upto _____
 - f) For gassy seams of _____ degree(s)

- 3
 - a) Name of Mine(s) with degree of gassiness to which this consolidated report relates.
 - b) Total Quantity of explosives used during the period

- 4 General Comments on
 - a) Explosive Performance :
 - b) Post detonation fumes Characteristics
 - c) Frequency of Misfires of any other unusual occurrences (specify) :
 - d) Blasting vibrations effect on roof/ sides:
 - e) Safety and ease in handling storage, transport, priming etc. :
 - f) Any other remarks:

- 5 Comparative assessment of the performance & Safety characteristics of the explosive with other comparable composition(s)
- 6 Conclusion regarding suitability of the explosive.

Date:

Signature

Place:

Name:

Designation

DGMS (Tech)/Circular No. 7 Dt. 09/11/2003

To

Owner of all Coal, Metal and Oil Mines.

Sub.: Testing and examination of apparatus under pressure.

The provision of Regulation 183(3) of the Coal Mines Regulations, 1957, Regulation 173(3) of the Metalliferous Mines Regulation, 1961 and Regulation 78(3) of Oil Mines Regulation, 1984, require that when apparatus under pressure is put into commission, the Engineer or other competent person shall subject it to a hydraulic test at a pressure at least one and half times maximum permissible workings pressure. It is also required under the same regulation, that a similar test shall be made after every renewal or repair and in any case at intervals of not more than three years. The result of such tests is required to be recorded in bound- paged book kept for purpose and be signed and dated by the person carrying out the test.

In recent past a few dangerous occurrence due to bursting of compressed air tanks have place prior to completion of three years. It seems that at the time of hydraulic test the internal condition of the tank vis-à-vis wall thickness was not inspected/ assessed and the permissible safe workings pressure in the tank was not calculated keeping all factors in mind.

In view of the above, it is recommended that henceforth whenever hydraulic test is done as required under the law, assessment of the safe working pressure shall also be done based on residential thickness, pitting and corrosions of the wall of such pressure vessels. The present thickness of wall, seam etc. shall be compared with original thickness and a decision to repair/ replace the receiver shall be taken. Where it is not possible to measure the thickness of wall physically, use of ultrasonic thickness gauge is recommended. The report of the result of every text/ examination made shall be maintained as per proforma given below :-

REPORT OF EXAMINATION

1. Name of the Mine
2. Name, description and distinct number of pressure vessel:
3. Name and Address of the manufacturer of the air vessel:
4. Particular of vessel -
 - a) Date of construction
 - b) Thickness of wall
 - c) Date on which the vessel was taken first to use.
 - d) Safe working pressure recommended by manufacturer:
5. Date of last hydraulic test (if any) and pressure applied.

6. The vessel exposed to weather
7. What examination and test were made :-
 - a) Hydraulic testing (pressure applied and duration)
 - b) NDT testing (minimum thickness in wall, seam)
 - c) Condition of vessel of further use (permissible safe working pressure and calculated)
8. Date of examination
9. Repair required and period within which should be executed.
10. **Other observation:-**
State the condition of fittings and appliances provided in the vessel.
11. Mention the type of Ultrasonic Thickness gauge used :-
12. Remarks-

Signature of the Competent Person Carrying out the Test & Examination

Name:

Qualification:

Date:

The above recommendation shall be followed strictly in the interest of safety.

Director - General of Mines Safety

DGMS(Tech)/Circular No. 8, Dt 09/10/2003

To,

Owners, Agents and Managers of all Coal, Metal and Oil Mines.

Sub.: Proper layout of workshop located in the precincts of opencast mines.

Enquiry into some of the fatal accidents which had occurred in the Precincts of workshop of opencast mines in the recent past has revealed that there was lack of proper parking place for dumpers and other heavy earth moving machineries (H.E.M.M.) leading to haphazard parking. Further, canteen, time office, bi-cycle and other two wheeler sheds, site officer, stores etc. were so located that employees and visitors had to regularly use the area frequented by H.E.M.M. All these observations bring to focus the need for proper layout of workshops.

The 7th Conference on Safety in Mines had also recommended that adequate attention should be given towards proper layout of repair sheds and workshop to ensure due protection to work persons employed at these places from the movement of heavy earth moving machineries. Each company should ensure that for every mine a scheme is drawn and implemented for proper maintenance, repair, overhaul and erection in respect of H.E.M.M. This scheme should cover places such as sheds and workshops. Every help if required should be obtained from manufacturers also.

IN order to prevent occurrence of such accidents, besides implementing the relevant recommendation of the Conference of Safety in Mines, following additional steps may be taken in respect of layout of workshop :-

- 1) The path of move of H.E.M.M. and that of other light vehicles shall be completely separate.
- 2) Canteen, time office, site offices, stores, two wheeler shed etc. shall be located where the movement of H.E.M.M. is the least.
- 3) Minimum number of persons are required to pass through workshop area.
- 4) Proper parking area for H.E.M.M. and exclusive earmarked paths for their movement shall be provided.
- 5) Exclusive brake (costing area properly demarcated and protected by substantial fencing shall be provided in the precincts of the workshop where the operators may test the brakes of the H.E.M.M. as and where required.

The above recommendations shall be implemented strictly in the interest of safety.

Director - General of Mines Safety

DGMS (Tech) / Circular No. 9 Dt. 03/12/2003

To,

Owners, Agents and Managers of all Mines.

Sub.: Provision of proper Audio Visual Alarm during reversing of vehicles.

Occurrence of accidents due to dumpers, tippers, trucks and other surface transportation machineries during reversing still remains a matter of concern. In the past, attention was drawn vide DGMS (Tech) Circular No. 7 of 1977 and Circular No. 12 of 1999 but it revealed during inspections that in many dumpers and tippers, still audio visual alarms (to be actuated automatically while reversing) have not been provided and wherever provided, most of them were found nonfunctional. It is also learnt that audio visual alarm sets can not cope up with the vibration, dusty condition and rain water / other water sources used for cleaning.

It is, therefore, recommended that no dumper and tipper, henceforth, shall be allowed to be in use without providing reliable type of audio visual alarms to be actuated automatically during reversing. The following specification of such audio visual alarm is recommended.

- (1) Such audio visual alarm (A.V.A.) shall conform to IS 13947 (Part I) of 1993 for the following protection against dust and water.

Degree of Protection

Test conditions as per IS 13947 (Part I) –
See Sub Clause

- | | | |
|----|---|---------------|
| 1) | Protected against dust and prevent ingress of dust..... | C 7.5 & C 7.6 |
| 2) | Protected against dripping water..... | 08.1. |
| 3) | Protected against spraying water..... | C8.3 |
| 4) | Protected against splashing water..... | C8.4 |

- (2) Such audio visual alarm shall also conform to IS 13109 (Part I) of 1991 for the following environmental requirements :-

Test

Test Conditions

- | | | |
|----|----------------------|--|
| 1) | Vibration Test | As per Table 1 of IS 13109 (Part I) of 1991. |
| 2) | Shock Test | |
| 3) | Bump Test | |
| 4) | Drop and Topple Test | |
| 5) | Cold Test | |

- (3) The above tests (as per BIS 13947 & 13109) carried out as per SAE J 994 may also be accepted. In addition, the following Endurance Test of A.V.A. may be carried out as a type test in accordance with SAE J 994.

The details of SAE J 994 is given below:-

(Title - Alarm - Back up - Electric Laboratory - Performance testing, Publication date 08-01-1993, Publisher-Society of Automatic Engineers, U.S.A.)

Test	Test Conditions
a) Endurance Test at High Temperature)	As per Para 7.1
b) Endurance Test at Room Temperature)	and Para 7.2
(4) Sound levels to be checked before after the above tests. Sound level to be checked as described in SAE J 994 Standard Sound level after the test shall be within + 4 dBA of the value for which the equipment is designed.	
(5) Allowable Sound Level: The sound of the Audio-visual alarm should be more than the surrounding noise level so that it can be heard distinctly. Since the reversing process take normally 2 to 3 minutes, 110 db sound level is recommended for Audio - visual alarm. Self adjusting back up alarm may be preferred where the sound level is automatically maintained at 5 db higher level than the surrounding noise level.	
(6) Protection against splashing of mud and water on the pressure switch shall be provided by the HEMM manufacturer/ user industry.	
(7) Mechanical Lock may be provided to prevent unauthorised tampering of the alarm.	
(8) Test facilities for the above tests are available in C.M.R.I., Dhanbad and in other B.I.S. approved test houses. Fresh test report for every major lot should be insisted.	

You are requested to comply to these recommendations in the interest of safety.

Director General of Mines Safety

No. DGMS (Legis) Circular No. 2 of 2003, Dt. 17/07/2003.

To,

The Owner / Agent / Manager of all Mines.

Subject.: Termination of Services of Workers following Medical Examination conducted under Rule 29B of Mines Rules, 1955

It has come to the notice of this Directorate that the provisions of conducting Medical Examinations under Rule 29B of Mines Rules, 1955 have been used with malafied intentions to terminate services of persons employed in mines by some mining companies.

This is to clarify that all medical examinations under Rule 29B shall be conducted as per the standards prescribed under Rule 29F read along with Form "P" & "T- Y of Mines Rules, 1955. The provision of Rule 29M (1), Unfit persons not to be employed shall only be used in rare cases where a worker is suffering from permanent disability which cannot be cured or controlled and the worker cannot be given any alternative employment in any part of the mine or mining operation. Such cases if required, may be referred to Appellate Medical Board constituted by Central Government for medical re-examination under Rule 29J of Mines Rules, 1955.

It may please be complied with strictly.

Yours faithfully
Director General of Mines Safety

No. DGMS (Legis) Circular No.I of 2003, Dt. 23/052003.

To,

The Owners / Agents / Managers of all Mines.

Subject.: Certification of First Aid Course conducted by Multi Disciplinary Centre on Safety, Health & Environment, Bhubaneswar - clarification thereof.

Sir,

Your attention is drawn to DGMS (Legis) Circular No.I of 1999, dated the 11 th February, 1999 through which it was brought to notice that the syllabus for First Aid Course prescribed by the Multi Disciplinary Centre on Safety, Health and Environment, Bhubaneswar, an autonomous, body sponsored by Govt of Orissa is of the same standard is prescribed by St. John Ambulance Association (India) for th6 purpose of Rule 41 of Mines Rules, 1955 , Regulation 15 (1) (b) of Coal Mmes Regulations, 1957 and 15 (1)(b) of Metalliferous Mines Regulations, 1961

This is to clarify further that, die validity of First Aid Certificate issued by MDC - SHE, Bhubaneswar shall be similar to the First Aid certificate issued by St. Johns Ambulance Association, i.e. Senior Certificate for 3 years Vouchers Certificate for 5 years and Medallion Certificate for life-long.

This is for information and necessary action of all concerned.

Yours faithfully
Director General of Mines Safety

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