

(9) *Accidents in Storage, Transportation, and Use.*—Accidents which occur by fire or explosion in the storage and transportation of explosives should also be brought to the notice of the department; in those cases in which the storage or transportation comes under the control of the new Act, it may be desirable to have an inquiry held by an official of the department. In other cases, the co-operation of the Provincial Governments and the Railway Commissioners should be sought, in order to obtain as complete a record as possible of such accidents. Doubtless, the Provincial Inspectors of mines will be willing to inform the new department of the results of their investigations. As regards accidents in transportation by rail, the services of an inspector of explosives should be placed at the disposal of the Railway Commissioners, should they so desire it, to assist in carrying out investigations.

By far the larger number of accidents which occur with explosives arise from their use; it is of the utmost importance that all accidents occurring when the explosives are in use should be thoroughly investigated and classified. I have reason to believe that the Provincial Inspectors of Mines will be willing to co-operate with the department by forwarding accounts of accidents occurring in the mines under their jurisdiction. I understand, however, that a large number of accidents occur in works where there is no legislation affecting the use of explosives. I think it would be advisable for the Minister of Mines to take power in the proposed bill to frame rules to regulate the storage and use of explosives in such works, to require the reporting of accidents, and to have investigations made when such a course appears necessary.

It may be of interest to summarize the causes of the more frequently occurring accidents which arise from the use of explosives in mines, quarries, and construction works in Great Britain.

1. *Prematures.*—Often due to the use of short or bad fuse, or the use of straws and squibs to ignite the charge. May arise from a man attempting to light too many shots and thus being unable to take cover.

2. *Hang-fires.*—Often due to irregular fuse, or the ignition of explosive, which burns until sufficient pressure is set up to cause it to explode; this may be due to inferior quality of explosive or a weak detonator. Sometimes due to miscounting shots and returning too soon.

3. *Electrical Prematures.*—Generally due to the shot firer allowing another man to connect the detonator leads to the firing cable, which has been previously attached to the battery.

4. *Ramming.*—Due to frozen nitro-glycerine explosive, broken cartridge leaving a thin film of explosive in the bore hole. Cartridge sticking in the bore hole and being violently forced home. It is of the utmost importance that no explosive which is unduly sensitive to friction or percussion should be authorized for use.

5. *Striking Unexploded Charge when Removing Debris.*—Generally due to frozen nitro-glycerine explosive, or to weak detonator which fails to cause propagation of detonation through all the cartridges, or to the cartridges becoming separated by a layer of dirt in the shot hole.

6. *Boring into a Missed Shot.*

7. *Tampering with a Missed Shot.*

8. *Not Taking Proper Cover.*—In the case of electrical firing generally due to use of too short a cable.

9. *Fumes.*—Either due to defective ventilation, men returning too soon, or ignition instead of detonation of high explosive. The gases evolved by burning