

To the...

MARITIME MINING RECORD

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SELECTED QUESTIONS AND ANSWERS.

(Science and Art of Mining.)

SAFETY IN MINES.

Q.—Describe briefly the points to be attended to in connection with safety in working at the face in long wall or other system of working.

A.—Several points require to be carefully attended to to produce the maximum amount of safety at the face. To endeavour to describe these fully would require more space than is allowed here, therefore, below will be found the chief points in as brief a manner as possible.

Timbering.—The majority of the accidents which occur in mines are due to falls of roof and side; to prevent these, systematic timbering should be employed. At the face the timber should be set at distances specified by the manager or at least distance if the conditions of the roof require it; the timber should also be withdrawn from the gob in regular order so as to allow the roof to break down, and thus reduce the weight of the face, with the exception of where packs are required. In withdrawing timber suitable appliances must be provided; the best one for this purpose is Sylvester's "pulling jack". In long wall work the packs should be kept well up, especially the gate packs. One thing to be specially attended to is that suitable timber is kept ready for use close to the workings.

Shot Firing.—In many mines shot-firing has to be resorted to to break down the coal. To produce safety in this, no one except the person appointed to fire shots shall attempt to charge or fire such. In the firing of shots the rules laid down in the Explosives in Coal Mines Order must be carefully observed as to the stemming, tools, testing for gas, warning persons, the firing of shots, etc.

Safety-Lamps.—Where safety-lamps are used, they shall be used with care so as to prevent injury to them, for it must be borne in mind that, however good a safety lamp is, it is only safe as long as it is in an ideal condition. The chief danger from this is:

1.—Injury to the gauze by being struck with the miner's pick.

2.—From the glass being broken, either by a direct or indirect blow, such as a blow from some tool, or by a nail flying and hitting the glass, or by a piece of stone etc.

By defective lamps being taken into the workings.

The above should be remedied by strict compliance with the Coal Mines Regulation Act as to safety-lamps.

Approaching Old Workings.—When known to be working towards old workings likely to contain accumulations of water, General Rule 13 must be complied with as to the position and distance of bore-holes, width of road, etc. A strong ventilating current should be

maintained along the face, sufficient to carry away any gas which may be given off from old workings or newly exposed face.

Dip Workings.—In this class of working many accidents result from runaway tubs. To prevent these efficient appliances should be provided (drags, safety blocks, etc.) Man holes should be provided for refuge in case the tubs break away.

Underground Fires.—In some mines fires occur spontaneously owing to the oxidation of small coal thrown into the waste. This is greatly increased when iron pyrites is contained in the coal. In mines of this character as little coal as possible should be left in the waste, but should be sent to the surface. Preparations should be made for cutting off the supply of air in case of a fire taking place.

Examination of Working Places.—In accordance with the Act persons must be appointed for the purpose of inspecting the various parts of a mine as regards the condition of roof and sides, state of ventilation, and general condition of the mine. The quality of these inspections greatly determines the safety both at the face and other parts of the mine.

The above I think covers the chief items which require attention at the face to reduce the danger to a minimum.

FIRST AID.

Q.—In a case of asphyxia state fully how you would treat.

A.—It would perhaps be best to point out a few of the commonest causes of asphyxia, which is known more widely as suffocation, and is applied to that description of accident in which a greater or less degree of interference with the breathing functions is represented. As the main duty in breathing is that of getting rid of the waste products which accumulate in the blood as a result of our bodily work, and also the taking in of oxygen gas (which is a necessary part of our food, and without which all vital action would cease), it can be readily seen that when obstruction to breathing exists grave results may be produced in a very short time.

Asphyxia may be produced in several ways. The case of choking caused by a mass of food becoming impacted at the top of the wind pipe (Trachea) offers a typical illustration of asphyxia.

Hanging represents another cause of asphyxia, and may be either the result of an accident, or, as is more usually the case, may be attempted for suicidal purposes, or as in a case when the extreme penalty of the law is carried out, the third or fourth cervical vertebra is dislocated, and no treatment is required in this case. Breathing of poisonous gases offers another cause of asphyxia, being the result of persons breaking rules and