

REVIEW OF THE COAL MINE EXPLOSION RESEARCH PROJECT REPORT

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The inspection of a coal mine subsequent to an explosion has to be systematic, methodical, and scientifically sound. All available investigatory techniques should be used to provide evidence as to why and how the explosion occurred. All evidence should be permanently recorded so that a review is possible at a later date.

This Report describes in detail all the evidence provided at the Warden's Inquiry into the Moura No.4 Mine explosion, together with other material collected as a result of a further investigation into that disaster. Emphasis has been placed upon the contributions that can be made by forensic science and pathology, plus physical and mathematical modelling.

Unfortunately the Report does not describe a dispassionate consensus view of the reviewing team, there is obvious evidence of individuals promoting their favoured hypothesis.

Deductions and interpretations of photographic evidence must be scientifically sound having considered all possible explanations for the details recorded. As far as possible, other than to save life, all items of note should be photographed in detail before being disturbed. It must be remembered that the after explosion condition and position of any item may not reflect the situation existing at the time of the explosion. In the Moura No.4 mine disaster there were two events, that may have occurred concurrently or sequentially namely:

- (1) a major collapse of the roof in the goaf, and
- (2) an explosion.

Under such circumstances interpretation, of what is normally an extremely difficult task, becomes almost impossible.

Evidence produced from physical and mathematical models is only as good as the input data and the inherent accuracy of the modelling procedures and assumptions.

In spite of all the extra material provided in this Report I come to the conclusion that there is no evidence that clearly establishes the cause of the Moura No.4 mine explosion.

Nevertheless the report emphasises that:

- (1) the flame safety lamp can be a potential source of ignition under certain atmospheric conditions, and
- (2) there is a need to provide an inert atmosphere in coal mine goafs where there is the possibility of explosions associated with incendive sparking.

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