



MINISTRY OF FUEL AND POWER

INTERIM REPORT

On the Causes of and Circumstances attending
the Explosion which occurred at Whitehaven
"William" Colliery, Cumberland, on the
15th August, 1947

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*Presented by the Minister of Fuel and Power to Parliament
by Command of His Majesty
October 1947*

LONDON
HIS MAJESTY'S STATIONERY OFFICE

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Cmd. 7236

Ministry
7, Millbank,
London, S.W.1.

15th October, 1947.

TO THE RT. HON. HUGH GAITSKELL, C.B.E., M.P.,
Minister of Fuel and Power.

SIR,

Explosion at Whitehaven "William" Pit, Cumberland.

1. In compliance with the directions of your predecessor in office, the Right Honourable Emanuel Shinwell, M.P., I have held a Formal Investigation under the provisions of section 83 of the Coal Mines Act, 1911, and under the Ministry of Fuel and Power Act, 1945, into the causes of, and circumstances attending, the explosion at the Whitehaven "William" Pit on Friday, 15th August, 1947, which resulted in the loss of 104 lives.

2. I have now the honour to submit the following Preliminary Report. I deem it necessary to do so with the least possible delay because of the danger portending in other pits in the country where a practice similar to that which led to this explosion is in operation. I shall submit a Final Report later.

3. The Inquiry commenced in the Methodist Church Schoolrooms, Whitehaven, on Tuesday, 7th October, 1947, and was completed on Friday, 10th October, 1947. Forty-six witnesses were examined in the course of the proceedings.

4. All the technical experts who gave evidence at the Inquiry were unanimous that the explosion originated with the firing of a charge of sheathed permitted explosive placed in a shot-hole drilled in the roof and directed towards the waste behind and immediately contiguous to a longwall machine-cut conveyor face in the Six-Quarters Seam. I am in complete agreement with this view.

5. The shot-hole in question passed through a roof break and the inner end of the hole either made contact with, or was in very close proximity to, a bed-separation cavity containing inflammable gas which was continuous with a larger accumulation of explosive gas in the inaccessible waste. The firing of the shot ignited the gas in the bed-separation cavity. After burning slowly for a short interval of time, the flame reached the larger accumulation of gas in the waste and there was a violent explosion, which was eventually arrested a considerable distance from the point of origin by lack of fuel, largely due to the liberal way in which the roadways had been treated with stone dust.

6. Contrary to the requirements of Clause 5(d) of the Explosives in Coal Mines Order, the shot-firer who charged and fired the shot, and who lost his life in the explosion, had no scraper or other means of detecting breaks in the hole and, therefore, could not have examined the hole for breaks running along or across it prior to charging it. This was a grave omission. The condition of the break as examined *after* the shot had been fired was such that its presence should easily have been detected by a reasonably careful examination. Whether the condition of the break *before* the firing of the shot was such that it could have been readily detected by the type of scraper in use at the colliery is a matter for conjecture.

7. Since the firing of shots in the roof in the waste at a longwall face—in some districts known as “cuckoo” shots, in others as “uppers”—for the purpose of obtaining stone for packing is practised in many pits throughout the country, it is necessary to direct the immediate attention of colliery managements at such collieries to the grave risks attending this practice in mines where inflammable gas is not unknown and more especially in those mines where there is no reasonable doubt that the wastes behind longwall faces contain or are likely to contain dangerous accumulations of inflammable gas.

8. Clause 5(f)(i) of the Explosives in Coal Mines Order states:—

“No shot shall be fired unless immediately before the shot is to be fired, the shot-firer has examined the place where the shot is to be fired and all contiguous accessible places within a radius of 20 yards from the place, and has found them clear of inflammable gas and in all respects safe for firing. If within the aforesaid radius of the place there is any cavity which may contain inflammable gas and cannot be so examined, or any break where an examination cannot be made for inflammable gas issuing from it (other than inaccessible cavities or breaks in the gob, goaf or waste) the shot shall not be fired.”

9. Because of the words within the brackets in the Clause just quoted, it is legally permissible to charge and fire a shot in close proximity to any inaccessible waste whether or not it contains or is likely to contain inflammable gas in such quantity as to be indicative of danger. There may be some who feel that the use of a permitted sheathed explosive surmounts the potential danger. Whilst the use of this type of explosive undoubtedly reduces the risk of ignition, even the most up-to-date permitted sheathed explosive is nevertheless capable of igniting firedamp and, indeed, has done so on several occasions where shots have been fired with the shot-hole in very close proximity to or passing through roof breaks or bed-separation cavities containing firedamp. Few will deny that the roof at the edge of a waste immediately behind a longwall face is one of the most likely places to contain roof breaks and bed-separation cavities.

10. I would not for one moment suggest that anyone would fire a shot if he thought that shot would cause an explosion. But I am satisfied that Clause 5(f)(i) allows too much latitude and leaves too much to the discretion of the shot-firer, especially on afternoon or night shifts when “uppers” or “cuckoo” shots are usually fired and when direct supervision by superior officials of the mine is at its lowest. I am, therefore, of the opinion that the statutory requirements in respect of the firing of shots in close proximity to inaccessible wastes in all coal mines where inflammable gas is not unknown should be strengthened in such a way as will restrict the latitude now allowed. We can no longer afford to run the risk attending the firing of shots in close proximity to any inaccessible wastes containing or likely to contain inflammable gas, on the grounds that such places are inaccessible and cannot be examined by the flame of a safety lamp.

11. An accumulation of inflammable gas anywhere in a working mine is always a potential source of danger. It becomes a lively hazard if it is near a place where persons have to work or pass or near any probable source of ignition. A goaf or waste containing firedamp and adjacent to a working face comes within this category.

behind a mechanized longwall face where shot-firing is practised either in the rippings, the coal face or at or near the edges of the wastes.

12. Until such time as the present statutory requirements in relation to shot-firing have been suitably amended or extended, I recommend that, in all coal mines where shot-firing is now practised in the roof of longwall faces in close proximity to inaccessible wastes containing or likely to contain inflammable gas in such quantities
ment should consider now the taking of one or other or all of the following steps:

(a) Prohibit the practice of shot-firing by explosives and adopt other measures for doing the work required;

(b) Keep the wastes as clear as possible from dangerous accumulations of firedamp. To do this, effective roof control measures should first be taken to regulate and, if possible, reduce the rate of emission of firedamp from the coal seam and surrounding strata. Thereafter, the wastes should either be packed tightly and completely, importing the packing material where necessary, or the firedamp should be constantly drained from the wastes by diverting part of the ventilating current through appropriate cundies, small openings or pipes suitably disposed in the wastes or packs.

(c) Strengthen the system of support and roof control not only to prevent as far as practicable the formation of roof breaks and bed-separation cavities but also to encourage the roof in the wastes to break down regularly as the temporary supports in the wastes are withdrawn. In this way the necessity for firing "uppers" or "cuckoo" shots may be entirely eliminated. Strong, straight rows of supports applied along the edges of wastes, and well-built packs of good quality would in most, if not all, cases concentrate force sufficient to cause the roof to break down in the wastes.

13. It was clear also, from the evidence given at the Inquiry, that not enough thought and attention were given to the whole business of the storage, use and handling of explosives, and shot-firing practice in general.

Among other things, it was disclosed in evidence that in the district where the explosion originated, the day-shift deputy on the day of the explosion had fired forty-two shots in addition to performing his statutory duties, and that the number of shot-holes required and their position were left to the discretion of the hole-borers. I further recommend, therefore, that at all collieries where explosives are used, a thorough investigation into shot-firing practice should be made by a superior official of the mine who, thereafter, should be given the direct responsibility for seeing that everything is done in accordance with the best practice. In this connexion it should not be overlooked that much valuable advice can be obtained on many of these matters from the technical mining engineers on the staff of the manufacturers of explosives and detonators.

14. Finally, I recommend that it should be made a statutory requirement that the maximum number of shots which it is permissible for shot-firers and deputies respectively to fire, should be fixed for each district of the mine after a trial made under working conditions, both in respect of the number of shots per statutory shift and per hour during the shift. These trials should have regard, in the case of a deputy, to his primary responsibility to carry out his statutory duties, and, in the case of both shot-firers and deputies, to any additional duties which may be assigned to them.

I have the honour to be, Sir,

Your obedient Servant,

A. M. BRYAN.