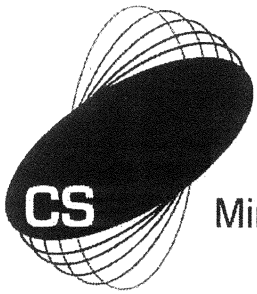

Mines Rescue Pty Limited

GRETLEY MINE DISASTER

by
Allan Clapham
Training Officer – Newcastle Mines Rescue Station

Abstract

On the 14th November 1996 mining operations in a development panel at Gretley Mine holed into old workings that were not on the mine plans.

The eight man panel crew were working a stager lunch break with four at the `cribroom' and four cutting at the face. The four at the `cribroom' survived the in rush but unfortunately the fore at the face did not.

This paper discusses the occurrence and the authors role as `surface co-ordinator' on the day.

THE MINES

The Young Wallsend Colliery (the old working holes into)

This colliery, near Wallsend, was opened by the Young Wallsend Coal Mining Company Limited in 1890 for the purpose of extracting coal from a seam (now known as the Young Wallsend seam) about 450 feet below the surface, and from the Borehole seam at about 520 feet.

For various reasons the mine ceased operations in 1892 and was closed down.

In 1907 the mortgagee in possession, commenced the unwatering of the mine and operations resumed. However, the mine finally closed in 1912 after further financial difficulties. It seems that the Borehold seam had not been developed except for the shaft connections.

The mine remained closed, its two shafts capped and was formally declared abandoned on 19th June 1928 by the Department of Mines, no Notice of Abandonment having been received.

The Newcastle Wallsend Coal Company Pty. Limited – Gretley Mine

The company has produced coal since 1861 and operates two underground collieries, Gretley near Wallsend and Pelton/Ellalong Colliery near Cessnock. Gretley has been operated by the company since 1968 and was upgraded in 1988 with the introduction of miniwall mining.

In March 1994, the company secured a coal lease under the Coal Mining Act 1973 from the Minister for Mines of some 385 hectares of land adjacent to the land it was working at Argenton and which included the abandoned Young Wallsend Colliery. The purpose of obtaining this lease was to enable the company to continue to produce coal from the Young Wallsend seam for several more years.

THE ACCIDENT

At about 5.30 a.m. on 14th November 1996, employees of The Newcastle Wallsend Coal Company Pty. Limited (the company), a wholly owned subsidiary of Oakbridge Pty. Limited, were engaged in work on the night shift at the company's mine, the Gretley Colliery (Gretley). Four men of a team of eight were in the process of developing a roadway (known as C heading) in an area of the mine called 50/51 panel, operating a continuous mining machine. The remaining four members of the team were in a crib room a little distance away.

Suddenly, with tremendous force, water rushed into the heading from a hole in the face made by the continuous miner. That machine, weighing between 35 and 50 tonnes, was swept some 17.5 metres back down the heading where it jammed against the sides. The four men were engulfed by the water, swept away and drowned. The remaining team members survived the disaster by reason of being in the crib room, which itself was flooded.

The deceased men were: Edward Samuel Batterham, mining deputy – 48 years of age; John Michael Hunter, miner – 36; Mark Kenneth Kaiser, mechanical fitter – 30; and Damon Murray, miner – 19.

The water came from the long-abandoned old workings of the Young Wallsend Colliery. The mine was working to a plan, which had been approved by the Department of Mineral Resources (the Department). The plan showed the Young Wallsend Colliery more than 100m away from the point of holing-in.

It is now clear that the plan was wrong. At the commencement of the night shift at 11.00 p.m. on 13th November 1996, the Young Wallsend Colliery was only 7 or 8 metres away.

The workings of the old mine were full of water. Moreover, the water extended to the surface by means of the mine shafts, thereby providing what is known as a head of water. This head of water had the effect of significantly increasing the water pressure.

RESCUE TEAM 1

Upon arrival at 7c/through heading, a team member noticed a cap lamp outbye C heading under about 600cm of water about 4m from the intersection of 7c/through. The team member reached under the water and pulled the cap lamp up, the cap lamp's number being 30 or 40.

Another team member saw what appeared to be a body further outbye. The person was declared deceased and was wearing Self Rescuer 139.

At this stage another body was seen outbye of the ventilation fan and was also assessed as being deceased – cap lamp number 214.

At this point the team evacuated to the fresh air base at the crib room.

RESCUE TEAM 2

First deceased was found on the right side of the belt structure with no light or helmet and with abrasions to the body.

The second deceased was found on the floor of heading. All clothing except Self Rescuer 80 and belt were torn off.

SURFACE CONTROL

My role in this incident was as the surface Co-Ordinator and I would like to give the following description of this role.

Surface Co-Ordinator : Role and Responsibilities

When an emergency occurs in the NSW coalfields, there may be a need for a response from the NSW Mines Rescue Service. It is readily understood that persons will be formed into teams and in certain instances deployed to remediate, investigate, recover bodies or otherwise intervene. There are personnel who have to remain outside the response zone to supply backup to the active teams and participants who are underground. These persons have the necessary competence and expertise to be team members, as well as having other skills and knowledge.

One of those persons is the designated Surface Co-Ordinator. This person is the conduit through which men, materials and supplies are oganised and delivered to locations necessary for that particular emergency.

The Surface Co-Ordinator must be able to recognise, know the location of, and acquire the resources that are required for the response situation. The Surface Co-

Ordinator will have positional power being a member of Mines Rescue and also personal power attributes so that co-operation can be achieved between Mines Rescue and the many diverse organisations that may attend a coal mine incident.

The Surface Co-Ordinator at a mines rescue incident has a number of important roles to fill.

Under the NSW Mines Rescue Guidelines, surface controllers have these roles dictated to them.

- Transport first response and minimum equipment to the site. (This may be the first action of a person before being designated as the surface controller).
- Establish facilities and equipment for the brigade.
- Prepare first response and minimum equipment for immediate response.
- Maintain and refurbish equipment as necessary.
- Address any deficiencies and defects and report such to the Manager/delegate.

That person may be responsible for

- Providing ongoing resources for the rescue operation.
- Organising the efficient deployment of persons and equipment on the surface ready for any operations that may be required.
- Organising transport of men and materials.
- Liaising with colliery officials in arranging the transport of resources to the FAB or incident site.
- Organising teams for mines rescue.
- Determining fit for duty status of mines rescue brigades persons.
- Liaising with external agencies to provide food and refreshment.
- Liaising with other outside agencies such as police, ambulance and coroner's representative.
- Liaising with IMT to determine resources necessary and time factors.
- Notifying IMT of any shortfalls in equipment required or timeframes before that equipment can be obtained and in a state of readiness.
- Providing IMT with an inventory of response readiness at any one time.
- Replenishing used equipment.

- Sending equipment away to be refurbished or repaired.
- Providing access to CISD for any persons under his control, after or if necessary, during the incident.
- Communicating with FAB on its requirements.

Conclusion

The role I played was important as support to the teams. I found the role very demanding but satisfying as part of the overall incident.

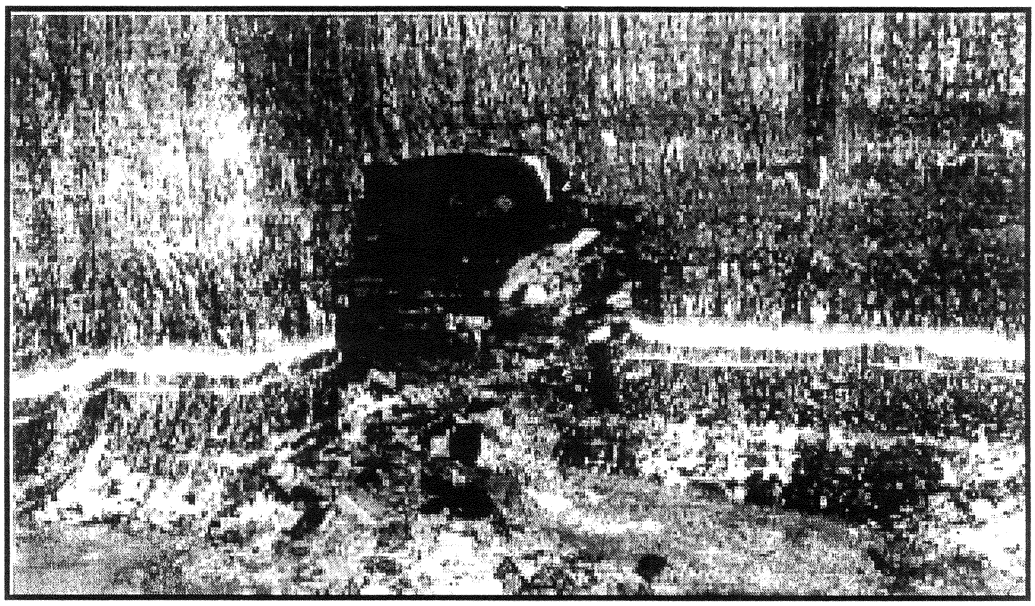

Figure 1 – 1 meter x 1 meter hole into old workings

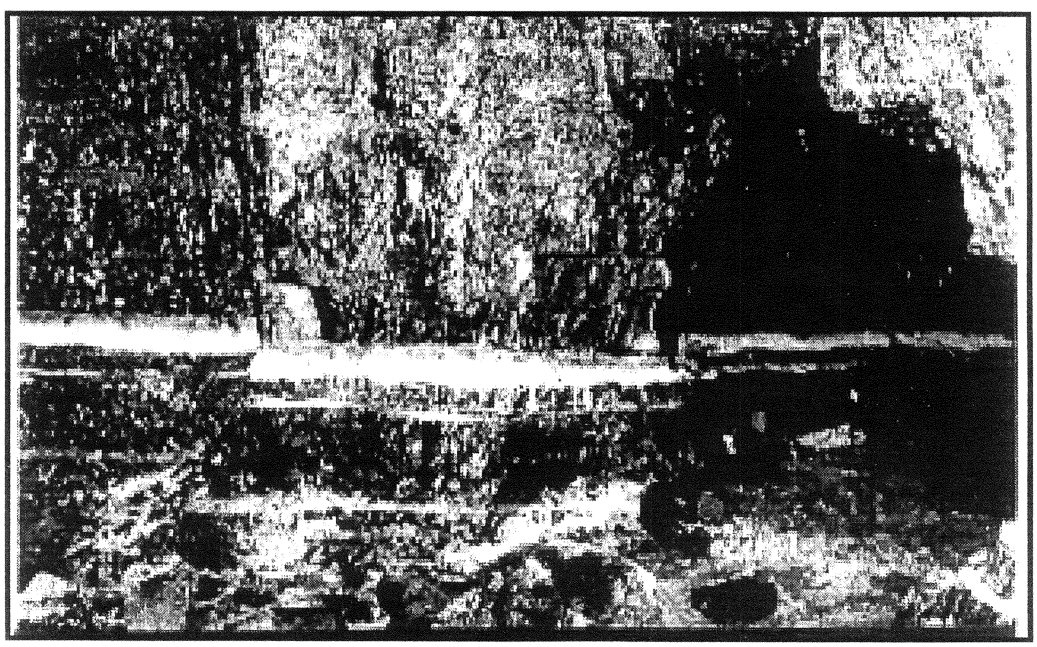

Figure 2 - Close up of holing

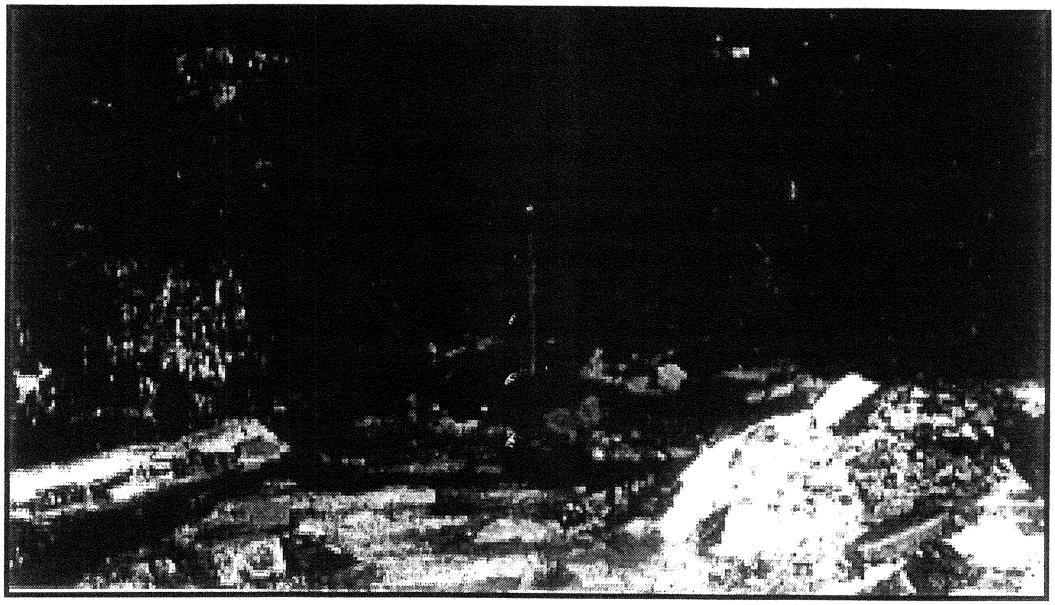

Figure 3 - A view into the old Workings

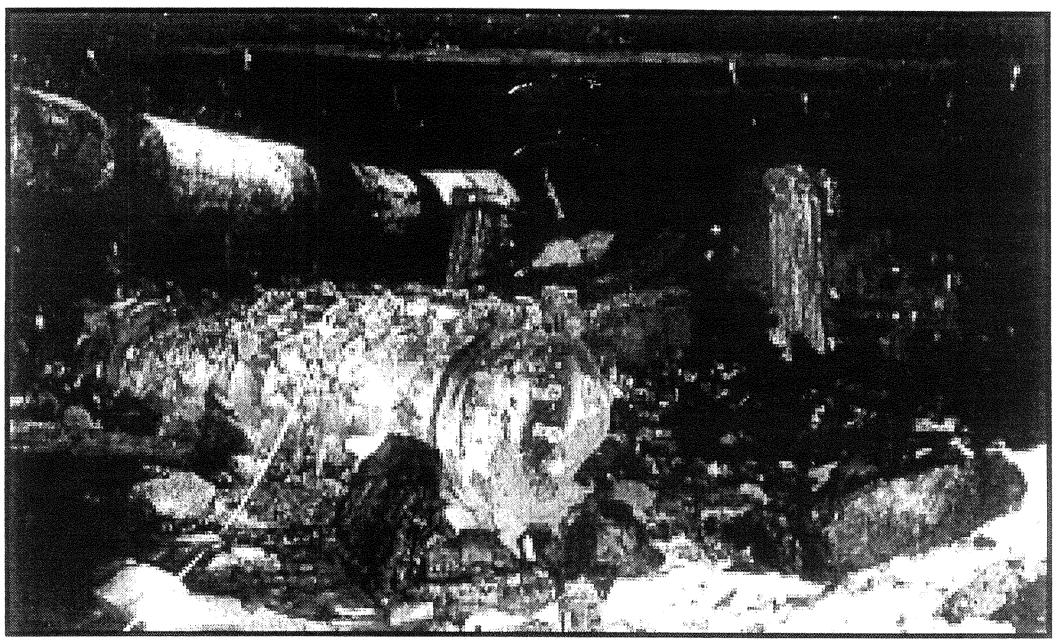

Figure 4 - Miner pushed 15 meters back from holing point

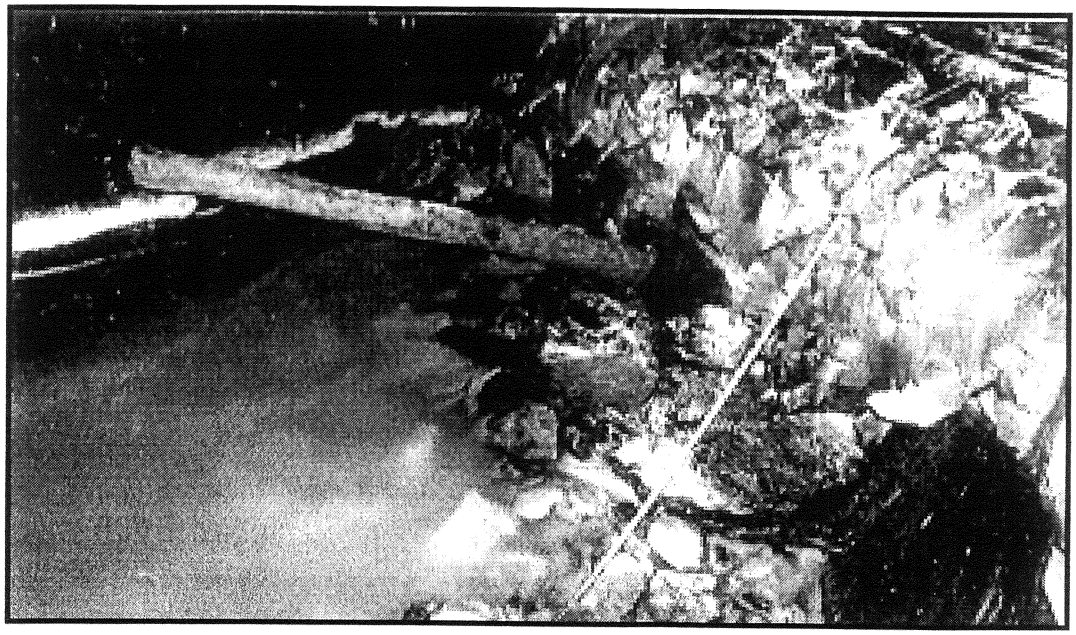

Figure 5 - Debris jammed into head of Miner

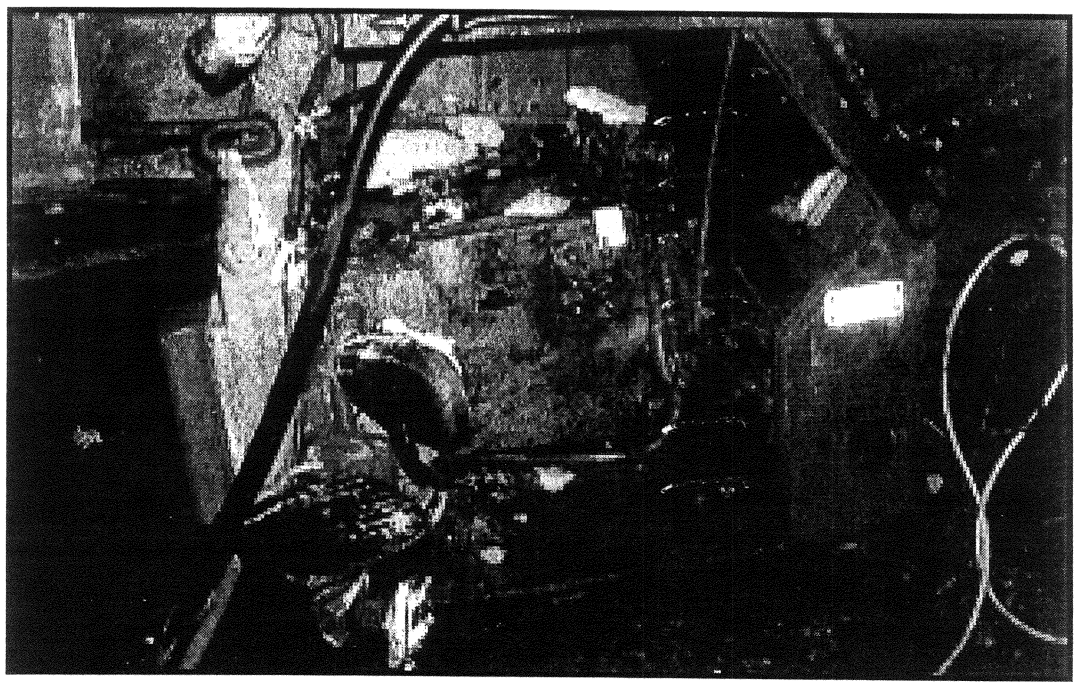

Figure 6 - Miner `Water Blasted' clean - Note position of seat

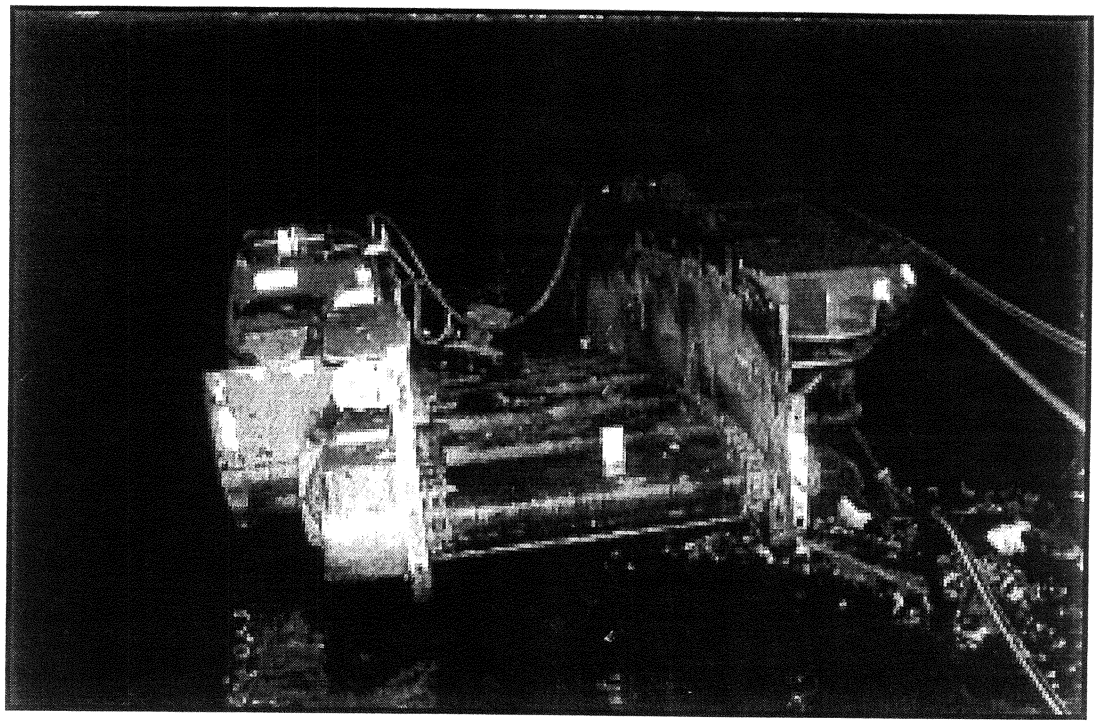

Figure 7 - Shuttle Car (which was full of coal) is water blasted clean

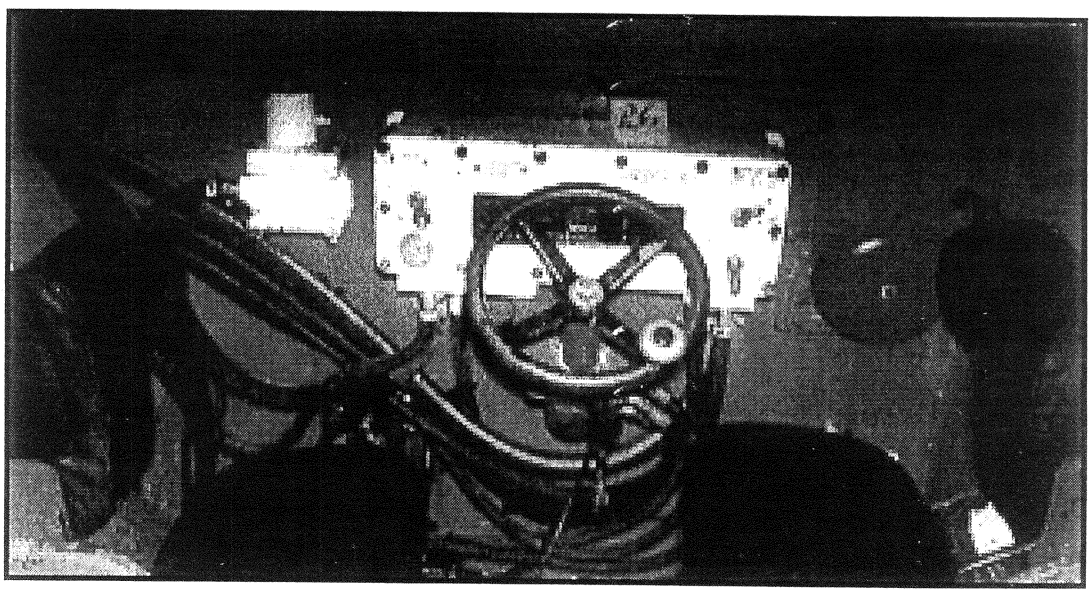

Figure 8 - Shuttle Car control panel - water blasted clean.

THE ROLE OF THE INCIDENT MANAGEMENT TEAM IN THE MANAGEMENT OF AN UNDERGROUND MINE EMERGENCY

ABSTRACT

This presentation will identify the roles of the Incident Management Team (IMT) to manage an Underground mine emergency. Reference will be made to a Simulated Emergency Exercise held at North Goonyella Coal Mine in Queensland, Australia on Monday, 4th November, 2002. It will highlight the importance of communication and relaying information, training and that management systems should be flexible enough to manage an underground emergency. The presentation will highlight key issues, which will include:

- Duty Card Systems
- Training of Personnel
- Communication
- The role of the IMT
- How to manage a mine incident that is located in a remote location

It will conclude with feedback from conference delegates, reflecting on their own emergency plans, systems and IMT resources that are in place at their mines.

ABOUT THE AUTHOR

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SCENARIO

The incident scenario provided an opportunity to critically analise the decision making process used by the Incident Management Team (IMT) during it's emergency response and the ability of the IMT to accurately receive and pass on information to control an underground mine emergency incident.

The scenario itself involved a fire on diesel mobile machine (EIMCO) which was situated outbye a Longwall and a development panel. (See attached plan) The diesel machine operator was unable to extinguish the fire. The Machine Operator notified the Control Officer of the fire and that he was unable to extinguish it. This led to the Control Officer implementing the Mine Emergency Plan that involved a duty card system.

The duty card instructed him to evacuate the mine and to contact other mine personnel.

A message was sent out through the Personal Emergency Device (PED),which is a one way paging device that displays a message on a text screen located on the top of the cap lamp battery. This communication system should notify all underground personnel to evacuate the mine.

During the evacuation of the mine, which took approximately one and three quarter hours, it was pre-arranged that two people would be reported missing and it was estimated that the machine fire had been burning for two hours.

DEVELOPMENT OF IMT

The duty card instructed the Control Officer to contact the Mine Manager and Ventilation Officer, but due to the mines remote location they were one and a half-hours away.

The IMT was only truly formed when the men in charge, (which at this stage was the Project Manager and Contract Ventilation Officer), were made aware of the missing people.

Until then, it was only a mine evacuation being co-ordinated by a Control Officer and a Project Manager.

During the evacuation of the mine, the communication system only allowed one-way communication. Therefore, there was no confirmation that the people were evacuating, nor what position or condition they were in

Confirmation protocols are needed to determine that the messages that are sent and received are understood.

When the Mine Manager and the Ventilation Officer arrived on site, there was no documentation, clear objectives or goals that could be used to differentiate between the two incidents that were occurring.

Use of IMT room resources (e.g.: scribing, recording) meant that the incident could have been divided into the key focus areas, based on risk and mitigating solutions.

Where and what was the condition of the two missing men and the condition of the fire? The IMT had to try and analyse the condition of the fire through gas sample points throughout the mine.

The technical skills required become all the more important when applied during an emergency. What sampling points are available and what are they telling us? Fight the fire or search for the men? Are there sufficient trained rescue personnel available? And is it safe to enter the mine? There are 19 rescue team members available, carbon monoxide readings are increasing and there is no other flammable gas.

The IMT made the decision to send three teams underground, one to fight the fire, the other two to go inbye, via a segregated intake airway, to set up a fresh air base and search for the missing men.

Points that may not have been considered by IMT:

1. ***There was no back up for the fire fighting team***
2. ***There are teams inbye fire that there is no information about***
3. ***Visibility for the search was not considered***

IMT received a message that both coal ribs were on fire, fire fighters were unable to determine the spread of the fire inbye and they required low expansion foam for the machine fire. The two inbye teams indicated to the IMT that they had heavy smoke in the intake and return, and no visibility. They asked for directions.

What would this do to decision making in the IMT?

The IMT requested an update on the fire situation. The fire fighters reported that the fire was 'under control'. The IMT then instructed the inbye team to continue the search. The inbye team reported back that they still had no visibility.

Clear communication is required as the fire fighting team meant that the fire was not spreading however, the IMT interpreted 'under control' to mean that the fire was out.

The IMT then focused on the fire and instructed the search teams inbye to come and assist the fire fighters at the fire.

The Industry focuses on getting people to 'safety' first and then worry about controlling the threats to that safety later.

Seven hours after the fire was reported the fire was out.

The IMT instructed the teams to search for the two missing men. They discovered that one man was still alive and requiring assistance to the surface and one man was deceased.

Is the situation over?

- ***Is an Ambulance required for the injured person***
- ***Does a body recovery protocol need to be adopted***
- ***Will a Coroners Report be necessary***
- ***Will a Critical Incident Stress de-brief counselor be required***

CONCLUSIONS

This presentation has highlighted that the discipline of emergency management is far more rigorous and requires more structure and discipline than normal operational management. The application is outside the normal routines and decision making of mine managers. The technical skills required become all the more important when applied during an emergency – where time is always critical and stress, fatigue and personal responsibilities take their heavy toll. Such circumstances are clearly outside the day-to-day managerial environment in which people routinely operate.

How could that group of highly trained people make such a fundamental mistake?

Poor communications saw opportunities lost during the early stages of the incident leaving the mine in crisis. The inability to control the fire early was significant and the inability to manage the smoke and recognise the developing conditions in the mine shows a process that is ineffective. As can be seen from a study of the Exercise Timeline, the inability of the IMT to impact on the survival rate of the persons underground resulted in the loss of at least one life – a most unsatisfactory result given the reasonably straightforward evacuation faced by the lost worker.

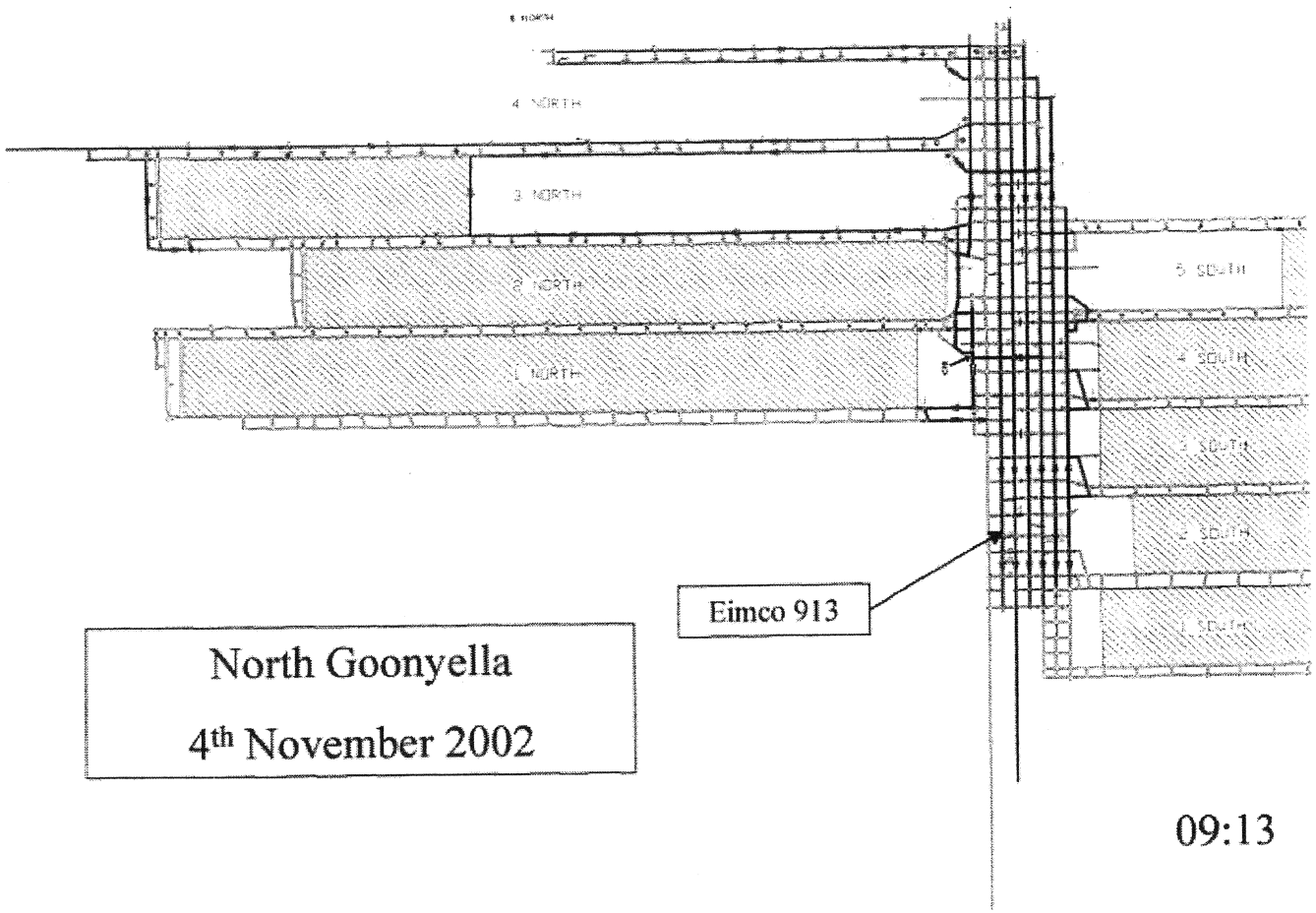
Can Duty Cards, as a static document, control a dynamic situation?

REFERENCES

1. Report on the simulated Emergency Exercise held at North Goonyella Coal Mine, Monday 4th November 2002,
   Queensland Government,
   Natural Resources and Mines.

2. Shane Stephen MBA, ASA
   Queensland Department of Mines & Energy

3. Coal Mine Qualification course
   Mines Rescue Pty Limited
   NSW Australia



North Goonyella

4th November 2002

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