

Boliden Tara Mines

Mine Rescue Competition 2015

9 & 10 October 2015

Report



Message from Tara’s General Manager

On behalf of Boliden Tara Mines I would like to congratulate everyone who participated in and organised our Mine Rescue Competition in October. The standards set by the adjudicators were high, and all teams rose to the challenge. Mine Rescue is an important part of our emergency response system, and this competition has enhanced everyone’s skills further.

Well Done!



**STEFAN ROMEDAHL
GENERAL MANAGER
BOLIDEN TARA MINES**

Introduction:

The All Ireland and UK Mine Rescue competition 2015 was hosted and run by Somincor, Lundin’s Neves Corvo mine in Portugal from the 7th to the 9th of May 2015 as the European Mines Rescue Competition.

Due to some teams being unable to travel to Portugal, the annual internal Boliden Tara Mine Rescue Competition 2015 was kindly opened to external teams to compete in and was hosted & run at New Boliden Tara Mines on the 9th & 10th October 2015.

The competition which took place over 2 days involved a Search and Rescue response exercise at the Tara Mines purpose built surface training facility. Separate class room components further challenged the teams’ mine rescue knowledge, skills and abilities.

All teams, trainers, accompanying management and visitors were welcomed by Tara senior management, safety induction was carried out and extensive arrangements were made to facilitate viewing of the exercises.

Tara Mines, a complex Pb/Zn mine in the heart of Navan town continued in production during the hosting of this event. The mine is now in operation for over 40 years and has extracted over 85m tonnes of ore to date.

The Competition Matrix:

| Friday 09/10/2015 | | | |
|------------------------------|----------------------|----------------------|----------------------|
| Emergency Scenario Exercise. | | Class Room Exercise. | |
| Tara A | 08:00Hrs – 10:00Hrs. | Tara C | 08:00Hrs - 09:15Hrs. |
| Tara B | 10:00Hrs – 12:00Hrs. | Irish Salt | 10:00Hrs - 11:15Hrs. |
| Tara C | 13:30Hrs – 15:30Hrs. | Tara A | 13:00Hrs – 14:15Hrs. |
| Irish Salt. | 15:30Hrs – 17:30Hrs. | Tara B | 15:00Hrs – 16:15Hrs. |

| Saturday 10/10/2015 | | | |
|------------------------------|----------------------|----------------------|----------------------|
| Emergency Scenario Exercise. | | Class Room Exercise. | |
| Winsford | 08:00Hrs – 10:00Hrs. | Lisheen. | 08:00Hrs - 09:15Hrs. |
| Lisheen. | 10:00Hrs – 12:00Hrs. | Dalradian Gold. | 10:00Hrs - 11:15Hrs. |
| Dalradian Gold. | 13:30Hrs – 15:30Hrs. | Winsford | 13:00Hrs – 14:15Hrs. |

Emergency Scenario Incident Logic:

A mine rescue team (Team 1) were tasked with entering the #4 crusher area to carry out ventilation remedial works. The presence of Sulphur Dioxide gas (SO₂) above OEL & STEL levels necessitates mine rescue personnel to wear respiratory protection.

The team’s #4 man was deployed wearing a PSS 7000 Normal Air as a precaution because he had to cut extractor fan fastening bolts with a grinder. This posed a strict time limiting factor on the duration of **Team 1** operations. The remainder of the team were wearing BG4 breathing apparatus.

Utilising lifting tackle anchored off an eye bolt to manoeuvre the heavy steel vent duct, a section of ground collapsed causing the steel vent duct to kick forward knocking the team captain, trapping and injuring him. His radio also got smashed. One team member went to the team captain to evaluate and assist.

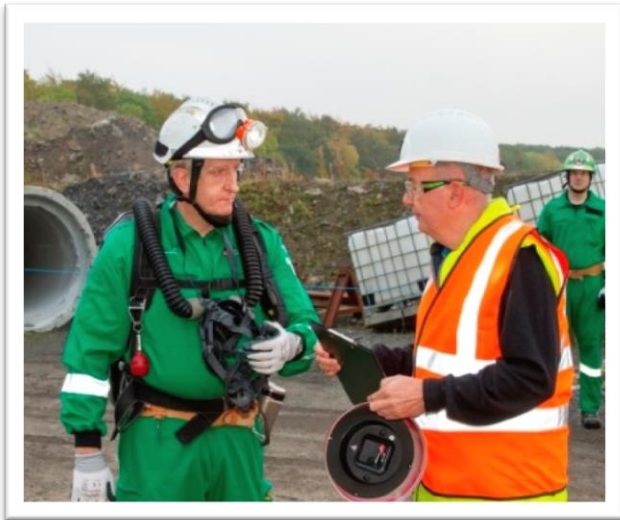
Another team member, the vice-captain, was on the upper level. He had a radio but his access to the lower crusher level was compromised by the fall of ground.

Two team members, including the man wearing the PSS 7000 normal air had just entered the vent spigot to access regulator #2 south with instructions from their team captain to gain access to the tunnel complex remaining in line of sight as they proceed.

The fall of ground impacted with electrical wiring causing arc flash / sparks, this in turn caused a drum of lubrication oil to catch fire at the lube bay opposite the crusher floor access.

Emergency Scenario Exercise:

On reaching the Rescue Training Facility the competing mines rescue teams were met by a competition official who instructed them to synchronise their watches to 10:00Hrs. The teams were then requested to report to the briefing officer at the Fresh Air Base (FAB).



The briefing officer gave each competing team a briefing on work being carried out by the mine rescue team on active duty and advised that they were to stand by as the back-up team.

Background Brief (as read along with plan provided to Team Captain)

Ore with high iron content (Pyrite Ore) can produce Sulphur Dioxide (SO₂) gas if allowed time to oxidise. The Occupational Exposure Limit for SO₂ is 0.5ppm. It is an irritant at lower dose concentrations and poisonous at higher dose concentrations.

Mine Rescue have been tasked with removing reactive pyrite ore from the mine utilising the **#4 crusher system**. SO₂ levels at the crusher dump point, located on the level above the crusher system, are reading 6ppm. The source of the SO₂ is the reactive pyrite ore.

A ventilation fan, located at the #4 crusher system ground floor, is not operational. Consequently adequate ventilation of the area is being inhibited.

This issue must be rectified to allow the reactive pyrite ore removal to continue.

A 5 man mine rescue team, **Team 1**, have been tasked with restoring effective ventilation as follows:

1. Remove the non-operational ventilation fan and vent duct at the service tunnel vent spigot.
2. Open Regulator #2 in the South tunnel complex.
3. Open the upper return vent access regulator door to direct air flow to the return air system.

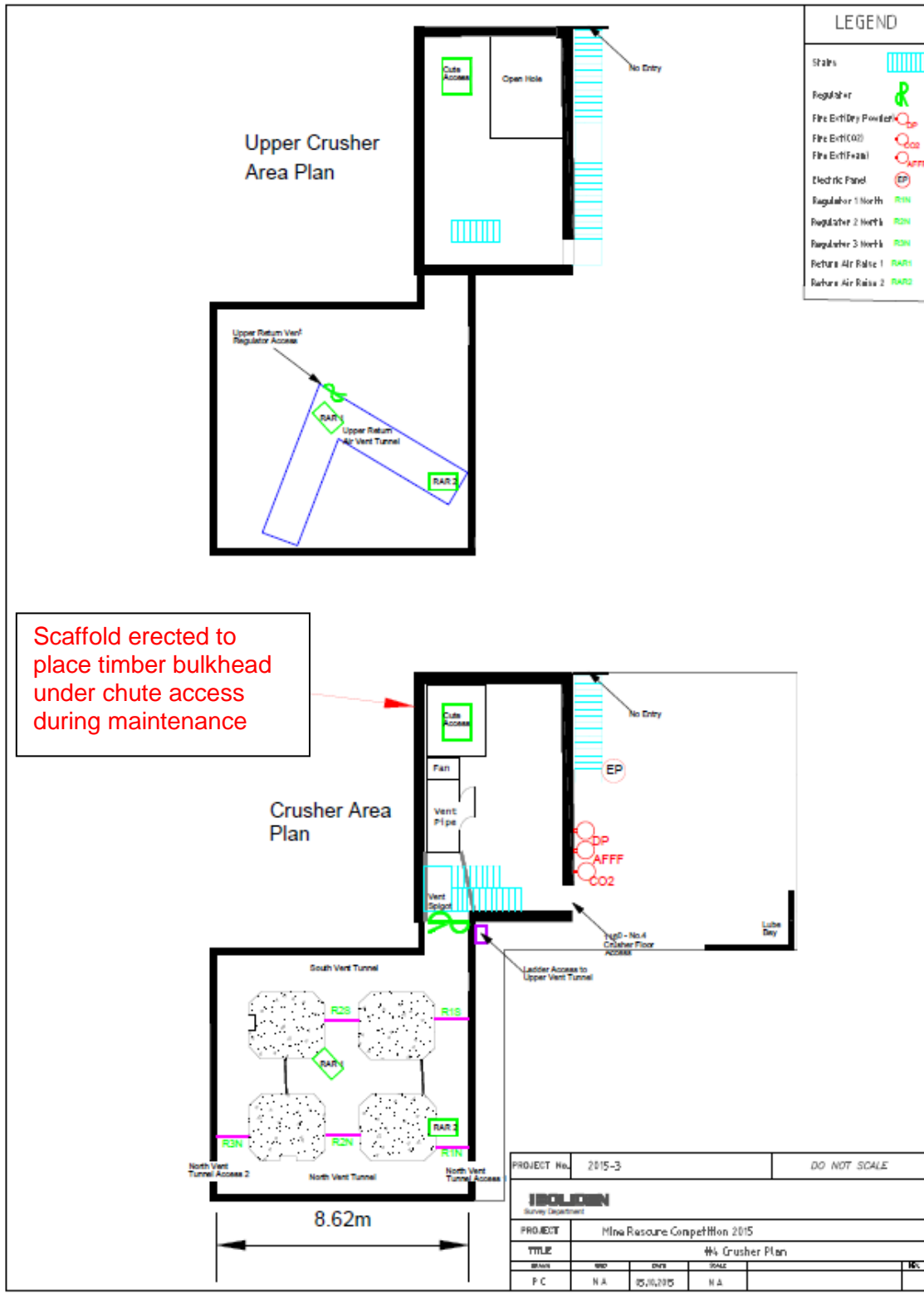
Team 1 Time Limit: 30 minutes based on **Team 1** - #4 man wearing PSS 7000 Normal Air.

Communications: 2 Way Radio. Gas measurement: MX4: Oxygen / Sulphur Dioxide (SO₂)

| Team 1 | | Gauge Card Readings | | | | | | | Comments |
|-------------------|----------|---------------------|--|--|--|--|--|--|----------|
| Time: | | 09:56 | | | | | | | |
| Trevor Lynch | Captain | 196 | | | | | | | BG4 |
| Ciaran McLaughlin | #2 man | 200 | | | | | | | BG4 |
| Michael Reilly | #3 man | 200 | | | | | | | BG4 |
| Tommy Maree | #4 man | 200 | | | | | | | PSS 7000 |
| Alan O'Brien | V. Capt. | 197 | | | | | | | BG4 |

As a rescue team are active in the field you as a back-up team are assembled and advised of the operational task being undertaken.





Scaffold erected to place timber bulkhead under chute access during maintenance

First Radio Communication from active Team 1

“Briefing Officer, come in”

“Go ahead”

“Team check, all ok, cylinder readings: **Captain 187, #2 man 191, #3 man 190, #4 man 170, Vice-captain 180.**

The SO₂ is reading at 8ppm, O₂ 20.7% and a slight dust haze. Visibility is good. The fan is now separated from the vent duct. The vent duct is nearly moved back from the spigot, we are going to finish positioning the duct and then we’ll adjust the regulator, over”


“Understood, proceed”

Rescue Team Continued Briefing - at F.A.B.

Team 2 instruction:

Act as back up team for **Team 1.**

Technical Advice to Backup team:

- Communication with briefing officer is two way radios. A 2 way radio will be issued to the team.
- An MX4 Gas detector unit will be issued to the team.
- A stretcher equipped with a MARS resuscitator unit, box splint, 2 blankets and a first aid kit will be issued to each team.
- To allow regulator timber removal and installation the timber piece is cut at a slight angle. The long side should be to the top: 
- It is not possible to remove regulator timbers from the direction of the inner tunnel complex.
- Warning: There is confined space & Low head room in tunnel complex.

- A tower scaffold was erected on the crusher lower floor to place a timber bulkhead under the upper floor chute door during maintenance. If using the ladder three point contact must be maintained facing the ladder at all times. No person should be directly beneath the ladder during its use.



Regulator in tunnel complex



#4 Crusher – View towards access

Second Radio Communication from active Team 1

“Emergency, emergency, emergency, Briefing Officer, come in”

Briefing Officer to caller: “Go ahead,”

“Captain down, captain down, we need help!”

Briefing Officer to caller: “Who is this?”

“Alan O’Brien, vice-captain.”

Briefing Officer to caller: “Repeat status, are you ok?”

“I’m on the upper level, there is a lot of dust & sparking, something has collapsed and I’m ok. Over”

Briefing Officer to caller: “Can you give me team status report? Over”

“My way down is blocked. It looks like a collapse of ground at the crusher floor access point. I can see the captain is down, he is not moving. There is a man with him.

“I can’t see the rest of the guys. Looks like there might be some smoke developing, seems hazy to me, over”

Briefing Officer to caller: “Ok, stand by. We will send the back-up team to assist. If you have further information call me immediately, over”

“Ok”

Back up Rescue Team now active:

Instruction to Back up Team:

Ensuring the safety of the team:

1. Enter via the North Vent Tunnel; establish a route of travel to the crusher floor area reporting on conditions as you proceed.
2. Assist **Team 1** to evacuate the area.
3. Complete ventilation adjustments as follows:
 - a. Open Regulator #2 South.
 - b. Open the upper return vent access regulator door to allow air flow from the crusher floor directly to the return air system.
 - c. Close all North Tunnel Regulators to prevent short circuiting and prevent SO₂ contamination in the North Tunnel.
4. Submit a report.

Each competing rescue team were given a further opportunity to ask questions, were advised that 30 minutes had elapsed since Team 1 started their task and were asked to estimate their time for rescue of Team 1.



Final Radio Communication from active Team 1

“Briefing Officer call back”

“Go ahead”

“The man with the captain is Ciaran McLaughlin. He says he is ok. He says the captain’s leg is caught under the steel ducting. The captain is responding to voice but is confused and in pain. His pulse is 115, his breathing rate hard to define. I can’t see the other guys! Ciaran cannot see them but can hear them in the vent spigot area. This radio battery is low and I don’tend of communication - **Radio failure.**”

Scenario Design, Construction and Overview:

By Richie Cahill - Mine Rescue Officer, Boliden Tara Mines



**Review of the Emergency Scenario Exercise:
By Pat Griffin - Senior Inspector, Health and Safety Authority**

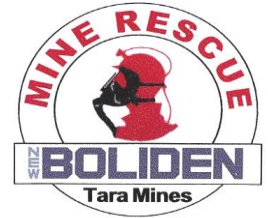
Team Brief:

The briefing officer made sure that all teams fully understood the scenario and the exercise would be in a confined space with low head room as most of the teams competing had never used the Tara Mines rescue training facility before.

The method of donning and checking the rescue sets varied considerably between teams. This could benefit from an element of standardisation.

Most teams fully understood the briefing quite quickly and immediately commenced planning their route of travel, how they were going to alter the ventilation and their sequence to assist evacuating Team 1 members.

- The majority of the teams failed to check that the plan being used was up-to-date or have it signed by the briefing officer.
- While most teams asked for a back-up team many neglected to confirm that the emergency plan for the mine was implemented or to confirm that a doctor, ambulance and emergency services had been called out.
- The description of the emergency called in by the Team 1 vice-captain mentioned a fall of ground, smoke, haze, sparking and the fact that the Team 1 captain was trapped under the steel ducting. It was expected that teams would request a scaling bar, isolation of power, availability of fire extinguishers and maybe, as one team did, availability of lifting gear. While some asked for one or two items, no team identified the need for all these items.
- The teams briefing and donning procedures were being marked from the moment the teams entered the FAB area. The time allocation for the exercise only started when the team left FAB, all with the clear understanding that the allocated time was 1 hour to complete the exercise, which was the estimated time by almost all teams.

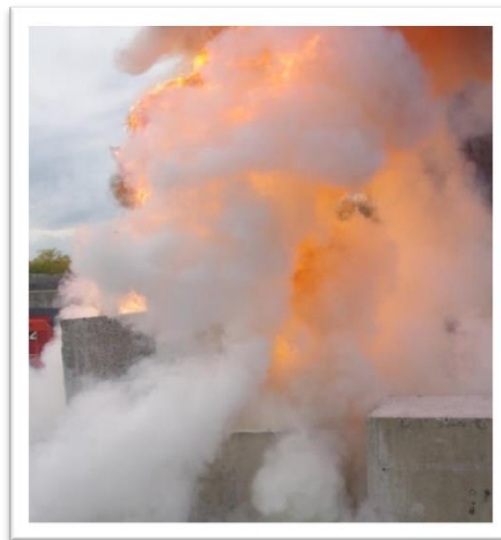


On Route from FAB

It is best practice to regularly check the condition of the team members, breathing apparatus cylinder readings and measure atmospheric conditions particularly if moving into a contaminated atmosphere. However, only one team stopped and checked all three issues on leaving FAB and encountering the fire.



The fire was clearly a liquid hydrocarbon fire and the selection of the correct fire-fighting medium was critical. The optimal choice and action was to approach the fire from a low position not getting too close, to choose Dry Powder to extinguish the fire followed up with a second team member with a Foam extinguisher to achieve coating and cooling of the liquids and metals respectively.



Using water or the application of extinguishing mediums too close to the fire risked significant spreading of the fire which occurred in at least 2 occasions. Having extinguished the fire, cylinder readings, gas readings and the safety of the team and the area should have been assessed again by the captain.

Most teams hurried to the north tunnel access, failing to attempt or make any verbal contact with those trapped in the crusher through the open access door which had become blocked by the fall of ground. Making contact at this point would have reassured the trapped team that help was on the way with the possibility also of getting further vital information on Team 1 members' status and locations. While some teams brought a fire extinguisher past the location of the fire and one team brought it through the tunnel complex, a number failed to bring a fire extinguisher past the fire and could have been trapped if the fire reignited.

On reaching the North Tunnel Access a number of teams took cylinder readings, gas readings and assigned a sequence of entry but only a few teams checked for heat on the door or for the presence of personnel in-by before opening the door, risking flashback in a real scenario; fewer still linked up on going into smoke and almost zero visibility.

All competing teams took the long route to the crusher chamber through R3N having to pass obstructions on their way when it would have been far simpler and more efficient to progress either through R1N or R2N and get Team 1 rescue team members to open R1S or R2S from inside respectively.



A very positive outcome was that every competing team identified the need to prioritise the extraction of the Team 1 member #4 man wearing the PSS 7000 Normal Air set as it had very limited capacity left. A negative however was that one team got this rescue man to remove his PSS 7000 & don an M20 self-rescuer risking inhalation of dangerous toxic gases in the process.

Several teams extricated the first 2 men leaving their stretcher in-by which in the circumstances was efficient use of resources. That said one team became completely separated when 2 team members were tasked with retrieving the stretcher from the tunnel complex to assist the rescued man who fell when exiting the tunnel system injuring his arm. Only a couple of teams got the marks available for doing a basic assessment and treatment of this injury, most teams prioritising getting back to FAB, simply telling the injured party to get up and walk or we'll leave you behind.

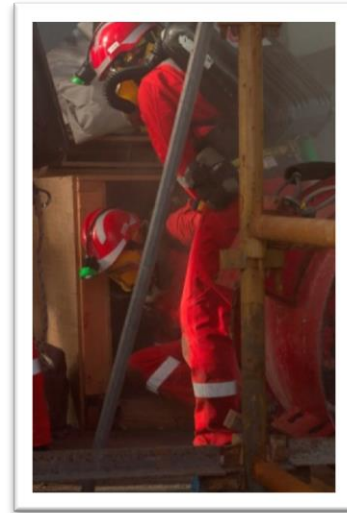
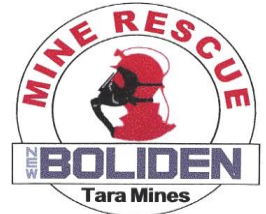
There was generally a swift return to FAB to handover the two rescued men and update the briefing officer of the current situation before returning to the crusher chamber to rescue the remaining members of Team 1.

Returning to Crusher Chamber

Again, most teams hurried to the north tunnel access, failing to attempt or make any verbal contact with those trapped in the crusher area. Again, on reaching the North Tunnel Access very few teams checked cylinder readings, condition of team members or for heat on the access door. While one or two teams had effected the alteration in ventilation required and were therefore going into improved conditions and visibility, most teams needed to affect this ventilation alteration on their second sortie.

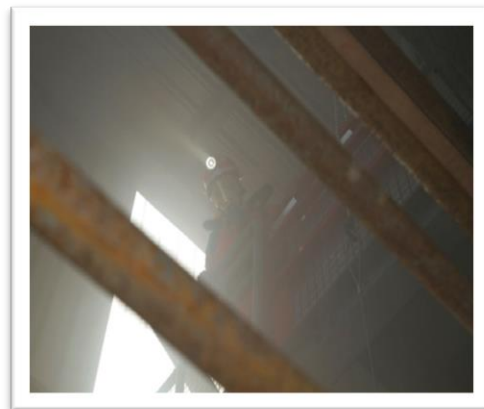
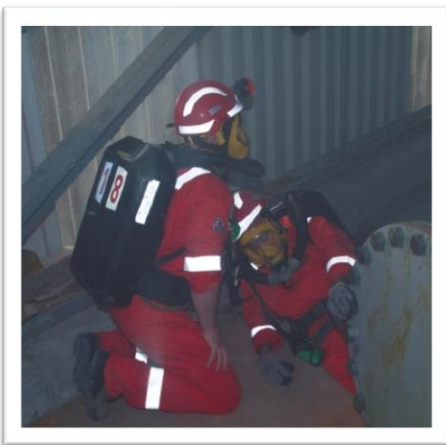
Some teams had difficulty locating and opening the upper return vent access regulator, the briefing officer gave every assistance and instruction to make this as easy as possible.

On entering the crusher chamber through the vent spigot only one team made an adequate assessment of ground conditions, checking for and dealing with loose. All teams were told that the fall of ground was such that it was preventing the vice-captain of Team 1 from using the access stairway.



All other teams seemed to fail to understand that there was loose in the area even to the extent of picking up both scaling bars (left in their way) and throwing them to one side. In fact rather than scale and make safe teams were happy to climb over or crawl through the steel vent ducting (as one team member did) to get to the trapped captain of Team 1.

Teams generally worked well in the crusher chamber; however the very best teams were those where their captain stood back ensuring good overview of the situation and delegated tasks to various team members. This is generally the action of the winning captain and team.



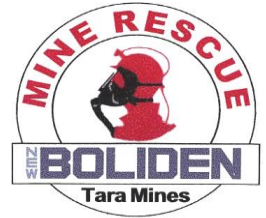
The Team 1 captain's leg trapped beneath the steel ducting could be very simply released by removing his safety boot allowing him to be pulled out. This action would have negated the need and risks associated with lifting the steel ducting.



While the first aid provided to the leg injury was better than that given to the first injured rescue man, points were lost by most teams as the extent of the injury was not assessed properly.

Some issues around using the lifting gear included some poor and possibly dangerous slinging practice and notably almost all lifting activity had to be stopped to ensure that the heavy steel ducting was chocked with timber wedges as the lift progressed.

Once the casualty was loaded onto the stretcher extrication in all cases moved fast and was generally efficient. That said, the captain or a team member should be tasked to monitor any signs of stress on those carrying the stretcher, making sure to make maximum use of all team members as a number came under some pressure while returning to FAB.



Care of the casualty while on the stretcher was again generally good, but great care has to be taken to ensure the air hoses are not kinked if teams are going to reverse and rest a rescue set on the Team 1 casualty's chest.



Most teams made it back to FAB with the remaining members of Team 1 and therefore were able to hand over to the briefing officer and write up and submit their report, all of which was essential for good scoring.

Every team showed very high levels of skill and commitment to the task and made considerable efforts to complete, but as with all competitions the scoring was designed to reward and score higher marks to the teams that both completed the rescue and followed procedures to ensure team safety.

What went well?

- Understanding the brief and calm approach at FAB.
- Leadership from team captains and team support.
- Breathing apparatus testing and coupling up procedures.
- Urgency shown once in the field.
- Control and confidence shown by all captains.
- Identification and execution of priorities.
- Monitoring of condition of #4 man wearing PSS 7000 Normal Air apparatus.
- Completion of ventilation task.
- Completion of rescue of all Team 1 personnel.
- Handover and reporting at FAB.

Points for Improvement

- Questioning and establishing level of back-up at FAB.
- Checking of team safety once atmospheric conditions change, especially where smoke and poor visibility is involved.
- Dealing with hydrocarbon fire and bringing firefighting capability past the location of the fire.
- Communications with FAB early in the exercise and reporting progress at critical times.
- Ensuring that team does not become separated ideally by observing line of sight.
- Linking up in poor visibility and checking team condition.
- Full assessment of casualty injuries and appropriate treatment.
- Monitoring of team members particularly during stretcher work.

Pat Griffin
Senior Inspector - Health & Safety Authority



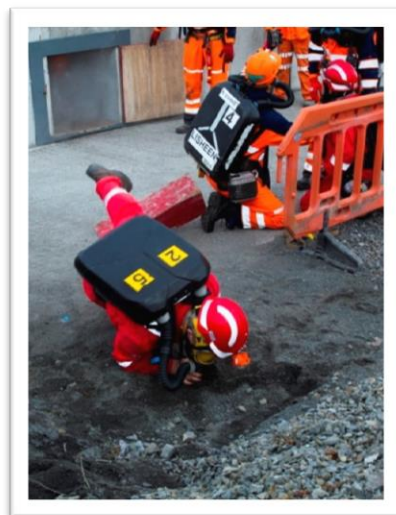
Review of the First Aid Treatment:

By Jim Mooney – Irish Red Cross

The first aid element of the competition was judged on the treatment of two injured casualties who were incorporated into the emergency scenario exercise, and a Cardio pulmonary resuscitation (CPR) exercise in the classroom challenge.

First Aid - Search & Rescue Exercise

Two men were located and rescued from a confined space, which was contaminated by smoke, and removed to a fresh air base. One man was wearing a normal air breathing apparatus which had a limited air supply left. As the men were being assisted from the confined space the second man tripped and fell from which he sustained an open fracture to his right lower arm.

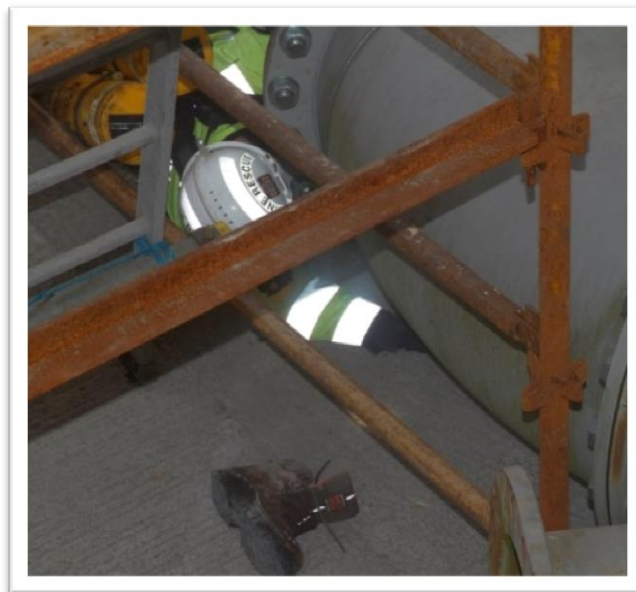


All teams were very quick to render assistance to the casualty who had fractured his arm. Some of the teams applied a sling immediately to support the arm. All teams very quickly got the casualty to his feet and removed him to the fresh air base. It was expected of all teams to expose and examine the injury prior to removal to the fresh air base.

All teams were very conscious of the time element relating to the limited quantity of air remaining for the man who was wearing the normal air breathing apparatus. It was very satisfying that all teams identified the urgency of getting this man to the FAB as quickly as possible before his air supply was exhausted.

The second injured man was trapped underneath a large pipe and had sustained a suspected fracture to his left lower leg. The team and casualties were still in a contaminated area of the mine.

This casualty who was trapped could have been rescued by just removing his boot however only one team proceeded to do this. All teams immediately suspected that this casualty had a crush injury; however, as one team discovered when they removed the boot the casualty's leg could be extracted from underneath the pipe therefore enabling them to treat the injury. When the limb was removed from underneath the pipe only one team exposed the limb to ascertain the extent of the injury. The other teams immobilised the injury in various ways without determining the extent of the injury.



First Aid - Class Room Challenge

The class room challenge required two men to carry out CPR using the MARS resuscitator on a casualty in cardiac arrest in a contaminated atmosphere. The men were wearing their breathing apparatus face mask.



Treatment:

All teams were quick to access the casualty and to call for further assistance namely a defibrillator and ambulance crew.

Treatment overview:

Teams were slow in commencing compressions but once the first cycle of compressions was completed some teams continued to give effective CPR.

Even though CPR was effective in some cases the current protocols were not being implemented by all teams.

Summary of outcome:

A tremendous effort was put in by all teams, each member of the team worked extremely hard to try and win the competition for their team. The level of first aid given to the casualties was of a fair standard.

Review of the Classroom Challenge (four elements):

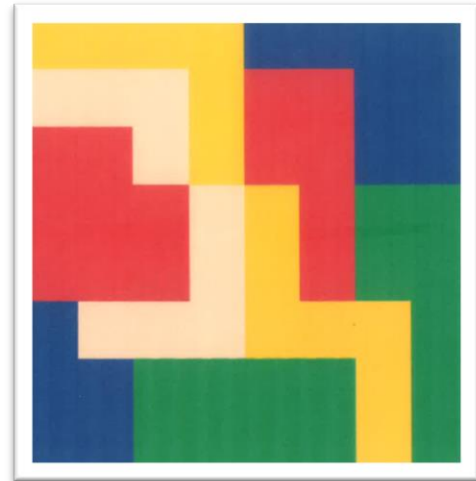
By John Boyd – Respro

Although it is appreciated that nerves and other factors come into effect when under pressure it was noticeable that a number of teams struggled with certain aspects of the class room tasks. When called to duty, teams must be able to think clearly in pressurised circumstances to safely achieve their objectives.

1 - Written Test: Teams demonstrated a good appreciation of Carbon Monoxide gas and safety precautions to be observed when handling compressed air and oxygen.

2 – CPR: The teams’ use of the Mars Resuscitator was generally good, however a couple of teams did not exercise due care and procedures were not followed correctly. In almost all cases the opening of the Oxygen cylinder was problematic and with the exception of one team nobody opened the oxygen cylinder fully. The CPR element was scored separately as part of the Competition First Aid.

3 - The Team Communication Exercise to assembly the Puzzle proved to be problematic for all but two teams. This was an exercise in good communication, discipline and teamwork.



4 -Desk Top Exercise:

Brief: You are a 5 man mine rescue team en route to a training scenario underground accompanied by the mine rescue training officer and one other person (mine rescue person to play casualty role).

You have your breathing apparatus (uncoupled) and are equipped with basic mine search and rescue equipment including a stretcher, first aid kit and reviving apparatus. You also have the level plans for the area you are in. The Gas man has a multi gas detection instrument.

You encounter a distressed miner, he is weak and in shock. His face is ashen and he is confused.

He says **they** were repairing vent ducting off a scissors lift, machine very smoky, cut out and wouldn't start.

He's able to show the last area they were working in on your mine plan.

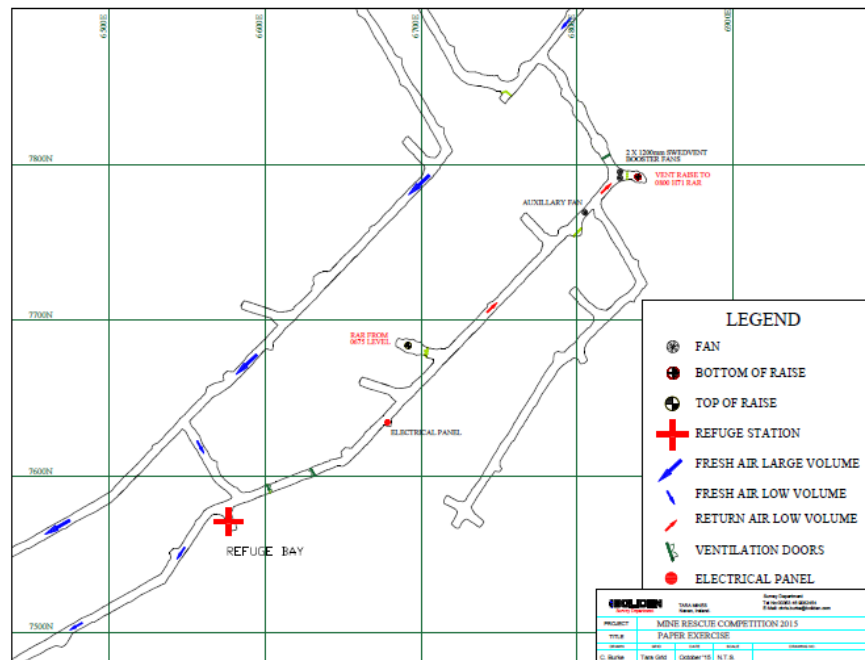
He then complains of a serious headache and tells you to leave him alone;

No more information can be gained from the man due to his condition.

The underground ambulance emergency contact number is 2270.

The C&D (Communication & Dispatch) emergency telephone number is 2222.

You Are to Develop 1 page bullet point response plan to this scenario based on all available information.



Teams were reminded about the importance of documenting their activities when on active duty. Using the mine plan to annotate relevant information is of upmost importance to ensure accurate records are available for review if required at a future date.

Such information should include casualty locations, gas measurements locations, hazardsetc.

Conclusion

The internal competition at Boliden Tara Mines, opened to external teams, was a huge success for all involved. The competition held over two days was often difficult and challenging for the teams involved and tested their technical knowledge, rescue skills, teamwork and perseverance. The Dalradian Mines Rescue Team from Northern Ireland following intensive training competed for the first time in competition and of particular note was that for the first time a rescue team in Ireland included a female rescue team member, Orla McKenna.

The judging panel saw many examples of excellent rescue work executed in very difficult conditions. The search and rescue exercise put rescue teams into near zero visibility requiring the teams to trust in their equipment and in their fellow rescue team members.

The objective of putting their knowledge and skills to the test was achieved. All teams demonstrated their ability to prioritise and execute an efficient rescue. The exercise also clearly highlighted some critical areas for improvement. One of these being the fact that it is essential that all rescue teams get further training on the different approaches required for different types of fires along with training on the safe use of all types of fire extinguishers.

Another critical learning point was that all captains and team members have to give team safety higher priority, every team member must realise that if they get detached or suffer an injury in the course of a rescue operation it may jeopardise the rescue and potentially lead to suspending rescue activity. Too much haste and too much focus on the rescue effort may result in not asking essential questions, not checking team members, not scaling poor ground, not isolating power, not checking lifting equipment set up, many of which could result in injuries to team members. Team captains must stand back, focus on team safety at every step, particularly as circumstances change and ensure the efficient but safe use of rescue capabilities.

Unless a team member needs help in assessing a situation or in making a particular decision the team captain should always stand back and maintain an overview on progress paying particular attention to his team safety.

All captains, team members, trainers and mine management can be truly proud of their rescue teams' capabilities and professionalism and while we always hope that these teams will not be required their expertise is very reassuring to all those who work below ground.

Patrick Griffin
Senior Inspector - Health & Safety Authority



*Report prepared with assistance from all adjudicators:
Joaquim Pereira, Jim Mooney, Maria Mooney, Michael Durnin, John Grennan, Vanda Pereira,
Armando Pereira, Pat Griffin, Brian Robinson, Pat McManus & John Boyd.*



Summary Comments from the Irish Mine Rescue Committee

Over the last 20 years or so strong bonds have developed between the mine rescue organisations in the Irish Mines of Tara, Galmoy, Lisheen and Kilroot, and in the English Mines of Winsford and Boulby. The cornerstone of this has been the **All Ireland and UK Mine Rescue Competition**.

The competition has its roots in the Irish base metal mines of the 1960s and 1970s. Famous mines such as Avoca, Tynagh and Silvermines competed for the annual trophy. As the Irish mining industry contracted and the old mines closed, Tara kept the flag flying by holding Celtic competitions with South Crofty and Wheal Jane in Cornwall. Neves Corvo from Portugal competed in 1996. (One of our 2015 adjudicators, Joaquim Pereira, was Captain of that team, and it's great to see him back after nearly twenty years!).

With a new phase of mining in Ireland in the 1990s, Galmoy and Lisheen entered the fray. The format of the competition was expanded at Lisheen in 2001, and Winsford Mine competed for the first time. In 2002 British Gypsum entered a team, and in 2004 the modern competition was hosted in the UK for the first time, by Winsford Mine in Cheshire. Kilroot Mine from Carrickfergus also initially competed that year.

Kilroot hosted the competition for the first time in 2006. Galmoy were the hosts in 2007, and TARA in 2008. Having initially competed in 2007, Boulby Mine hosted the event in 2009, where Maltby Colliery competed for the first time.

Lisheen held the competition in 2010, Winsford hosted in 2011, Kilroot in 2012, Tara in 2013 and Boulby (CPL) in 2014.

Also, in 2013 and 2014, an Iberian Mine Rescue Competition was held in Aljustrel, Portugal, and several Irish teams took part in those events.

With this increasing interaction between Ireland, UK, Portugal and Spain, Lundin Mining's Neves Corvo Mine kindly agreed to host this year's All Ireland and UK Competition. The competition was re-named the **European Mine Rescue Competition** for that particular event, and was a great success.

However, the Irish Mine Rescue Committee, who are the controlling authority of the All Ireland and UK Competition, were aware that several of the Ireland/UK group of mines had been unable to send teams to Portugal, and decided to ask Boliden Tara Mines Ltd if they would host a further competition in 2015.

Boliden Tara Mines kindly agreed, and hence we were able to stage this competition in an amalgamation with the Tara internal competition. We are also delighted that several of our colleagues from Portugal and the UK helped as judges in this event.

This year we saw Dalradian Gold competing for the first time, and the arrival of this new mine rescue team has instigated a new phase of co-operation between mine rescue organisations and state agencies in Northern Ireland and the Republic.

I observed the teams in action over the two days of competition. I was really impressed with the team spirit and dedication of all the teams.

It was great to see a new team, Dalradian Gold participating - their efforts were commendable and as Pat Griffin mentioned, Dalradian's Orla McKenna became the first woman to compete in Mine Rescue in Ireland. Well done Orla! Congratulations also to Winsford on winning the Safe Team Accomplishment, and in particular to their Captain Paul Booth, who won the Best Captain award. This is great recognition of many years of service to Mine Rescue by Paul. Irish Salt put in their normal energetic performance and won the Class Room Challenge. The three Tara teams put in excellent effort. They are the backbone of our Mine's emergency response and deserve great credit. Tara B won the First Aid award. It was fitting that Vedanta Lisheen's team won three awards, including the Best Overall Team, in the last months of their Mine's operation. Guided by their Mine Rescue Officer Ian Johnstone, Lisheen Mine Rescue have been integral in the Irish and UK mine rescue effort for 15 years, taking part in many real emergencies, practices and competitions. We wish them well as they disband and seek new adventures.

I would like to thank everyone at Tara Mines who helped to plan, organise and run the competition; Richie Cahill, Mine Rescue Officer at Tara, deserves special mention. The list of sponsors for the awards is shown at the back of this report. Many thanks to those companies and organisations who support Mine Rescue in Ireland by their sponsorship – you know who you are – thank you very much.

I would also like to thank all of our judges and adjudicators, some of whom travelled long distances to take part: Joaquim Pereira (Lundin Neves Corvo Mine), Jim Mooney (Irish Red Cross), Maria Mooney (Irish Red Cross), Michael Durnin (Boliden Tara Mines – retired), (John Grennan (Boliden Tara Mines – retired and Irish Mine Rescue Committee), Vanda Pereira (Portuguese Fire & Rescue Services), Armando Pereira (Lundin Rio Narcea Mine and Almina Mine), Brian Robinson (Mines Rescue Consultant UK), Paddy McManus (Mines Rescue Specialist UK) and John Boyd (Respro Ireland). Pat Griffin (Senior Inspector Health and Safety Authority and Senior Competition Adjudicator) deserves massive thanks – his commitment to Mine Recue in Ireland and beyond is immense and he controlled the safe adjudication of this competition with his usual professionalism and energy.

I would like to thank my colleagues in our Tara Mine Rescue Steering Committee – Roy Tallon (Mine Rescue Manager), Richie Cahill (Mine Rescue Officer), Aoife Tallon (Mine Rescue Administrator), Mick Flynn (Projects Manager) and Paschal Walsh (EHS Manager) for their support and guidance of mine rescue at our Mine. Special thanks also to Susan Keelan (Management PA and Competition Co-ordinator) for her great work on the information booklet, the competition weekend itself and this report.

These are difficult times in mine rescue in western Europe as the number of teams reduces, but also exciting times as we develop closer links between Ireland, UK, Portugal and Spain. This competition has helped to strengthen the bonds and friendships that already exist in our specialist underground world.

Thanks again and congratulations to all. See you in 2016!



Mike Lowther
Chairman, Irish Mine Rescue Committee
Manager of Mining, Boliden Tara Mines

18th December 2015

| Award | Sponsor | Winner | 2 nd Place | 3 rd Place |
|-------------------------------|----------------------------------|---|-----------------------|-----------------------|
| Overall Best Mine Rescue Team | Priority Drilling Limited | The Lisheen Mine – Vedanta | Tara B | Dalradian |
| Overall Best Tara Team | Boliden Tara Mines | Tara B – Boliden Tara Mines | Tara C | Tara A |
| Overall Best Irish Team | MA Healy & Sons Ltd | The Lisheen Mine – Vedanta | | |
| Best Captain | Irish Mining & Quarrying Society | Paul Booth - Winsford Rock Salt Mine - Compass Minerals | Lisheen | Tara B & Irish Salt |
| Search & Rescue | Boliden Tara Mines | The Lisheen Mine – Vedanta | Tara B | Dalradian |
| Safe Team Accomplishment | Smiley Monroe Ltd | Winsford Rock Salt Mine – Compass Minerals | Lisheen | Tara B |
| First Aid Award | MA Healy & Sons Ltd | Tara B – Boliden Tara Mines | Tara C | Irish Salt |
| Class Room Challenge | Respro | Irish Salt Mining & Exploration Co Ltd | Dalradian | Lisheen |

Participating Competition Teams:

1. Tara A – Boliden Tara Mines Ltd
2. Tara B – Boliden Tara Mines Ltd
3. Tara C – Boliden Tara Mines Ltd
4. Irish Salt Mining & Exploration Co Ltd
5. Salt Union – Winsford Rock Salt Mine – Compass Minerals
6. The Lisheen Mine – Vedanta
7. Dalradian Gold – Dalradian Resources

Mike Lowther
Chairman, Irish Mine Rescue Committee
Manager of Mining – Boliden Tara Mines

Pat Griffin
Senior Inspector Health & Safety Authority
Senior Competition Adjudicator



Boliden Tara Mines – Team A



Boliden Tara Mines - Team B



Boliden Tara Mines – Team C



Irish Salt Mine Rescue Team



Lisheen Mine Rescue Team



Winsford Mine Rescue Team



Dalradian Gold Mine Rescue Team.



Tara Team 1



Competition Emergency Scenario Adjudicators & Officials.
Left to right:
Joaquim Pereira, Jim Mooney, Michael Durnin, John Grennan, Vanda Pereira,
Armando Pereira, Pat Griffin, Brian Robinson



Classroom challenge above showing adjudicators in action:
Paddy McManus (Left picture). John Boyd & Maria Mooney with Ann Roe managing time.
Stefan Romedahl BTML GM (far right) observing the Lisheen Team in action!