International Mines Rescue Body (IMRB) - Foundation for Global Mine Rescue Standards

Alex Gryska - Director Ontario Mine Rescue
What is the IMRB

- Not for profit association established to share mine rescue information freely among nations.
- Key areas of focus:
  - Rescue Equipment
  - Procedures
  - Research
  - Emerging trends*
Why establish Global Standards

- Mine rescue is a relatively small global community.
- How many underground rescuers are there out there?
  - In Ontario
  - In Canada
  - Around the world
- Mine rescue is similar no matter where you go*
A tragic event occurred in Poland on February 24, 1998 at Niwka-Mostkowice coal mine. A Mine Rescue team performing routine ventilation work resulted in 6 fatalities, 1 critical, and 3 minor injuries. Contributing factors included:

- Deviation from standards procedures
- Lack of communication
- Lack of acclimatization and experience
- Elevated heat and humidity (26-31.5°C or 79–87°F and 95-98% RH)
The Need for Change

- A comprehensive investigation conducted by the State Mining Authority.
- Numerous recommendations made to ensure such an event is never repeated in Poland.
- 70 Regulatory changes made to address:
  - Mine Rescue team procedures
  - Mine operators
  - More rigorous enforcement
  - Improved standardized equipment and rescuer fitness testing
  - Mine rescue related research and equipment testing.*
International Sharing

• Polish Government felt it was important to share their learnings from this tragic event with the international mining community.

• Invited other coal mining jurisdictions to attend an information exchange in Bytom, Poland.

• Meeting attended by representatives from Australia, Czech Republic, France, Poland, Romania, Slovakia, South Africa, UK and USA*.
About IMRB

- Non-profit Association
- Informal Global organisation with 21 member nations
- Deep Pool of expertise
- Very focused
- Voluntary participation*
About IMRB

• Medium for sharing rescue-related information freely.
• Biennial host an international conference.
• Executive business meeting.
Areas of Mine Rescue Commonality

- All use SCBA’s rebreathers
- Gas checks
- Procedures are similar
- Highly trained specialists
- Powerful brotherhood*

International Mines Rescue Body
Areas of Difference

- Mandate can vary (underground, aerial, and underwater rescue)
- Specialties within rescue units vary (technicians, nurses, doctors, researchers, etc.)
- Full Time versus volunteer system*
Value of Competition

- International Competitions results in
  - increased standards
  - improved procedures
- Greater standardisation in equipment and approaches
- Learning from others*
Research and Sharing Findings

- Equipment standards gap is being closed
- Types and quality of equipment is improving
- In coal mine (inertization, continuous monitoring, improved communication systems etc.)
- Emergency response in deep hot mines*

*Emergency response in deep hot mines is a critical aspect of modern mine safety and rescue operations, focusing on improving equipment standards and response strategies to handle challenging conditions.
Limiting Exposure to Heat

Comparison of National Rescue Heat Codes

Rescue in hot and humid conditions
Niwka-Modrzejow coal mine

Critical factor

• Elevated heat and humidity (26-31.5C or 79 – 87 F and 95-98% RH)*
• Equipment manufacturing and testing (ISO TC 94 SC 15 respiratory protective devices).
• Self-rescuer testing standards.
• Heat and humidity rescue standards.
• Importance of fitness and acclimatization.*
ISO TC 94 SC 15 Respiratory Protective Devices

- ISO 16900-4 (2011) RPD – Methods of test and test equipment - Determination of gas filter capacity and migration, desorption and carbon monoxide dynamic testing
- ISO 16972 (2010) RPD – Terms, definitions, graphical symbols and units of measurements
- ISO/TR 16974 (2011) RPD - Marking and information supplied by the manufacturer

International Mines Rescue Body
Information Sharing

- IMRB Website.
- Resource network.
- Dissemination of research findings
- Hosting biennial IMRB mines rescue conference.
- Connecting expertise with organizations in need.
- Connection with ISSA (International Social Security Association) and assisting developing nations evolve with safety in mind.*
Benefit of Global Standards

• Improved safety of team members and emergency preparedness at mines.

• Impact on overall safety performance particularly emerging nations.

• Sharing of information and resources.

• International support at times of extreme emergency (i.e. San Jose and Pike river Incidents).*
Current IMRB Realities

• IMRB is the largest dedicated mine rescue network in the world.
• We have representation of ALL major global mining jurisdictions.
• We have one of the most comprehensive collections of mine rescue related information.
• The IMRB continues to improve and grow.*
# Sharing Vision .... Sharing Knowledge

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International Mines Rescue Body
21 IMRB Member Nations - 2012

- Austria
- Australia
- China
- Canada
- Czech Republic
- France
- Germany
- India
- Mongolia
- Norway
- Zambia
- New Zealand
- Poland
- Romania
- Russia
- Slovakia
- South Africa
- Ukraine
- United States
- United Kingdom
- Viet Nam
Challenges

• Expanding our reach to include:
  – Academia and research organisations
  – Organizing and cataloguing information, making information easily accessed.
  – Overcoming language challenges.
  – Helping developing nations*

International Mines Rescue Body
Future Directions

• Mandate of IMRB is being shaped by its member nations.

• Key areas of focus:
  – Equipment standardization
  – Equipment testing approvals and approval processes.
  – Responder preparation (medicals, fitness, acclimatization, etc.)
  – International competition standards.
  – Improved information hub.
  – Emerging technologies (i.e. communication systems, breathing apparatus)*
IMRB Canada 2013

- Niagara Falls and Sudbury Ontario (October 5 - 10 and October 10 to 13).
- We anticipate 300-350 global mine rescue experts from up to 40 nations.
- First time ever to be hosted by Canada.
Sharing Vision – Sharing Knowledge

Topics include:

- Mine Emergency Preparedness and Response Planning
- Crisis Management
- Effective Rescue Training
- Non-traditional Mine Rescue Training
- Mine Rescue Regulatory Requirements
- Expanding Role of Rescue Responders
- Mine Rescue Research
- Improved and Emerging Rescue Technologies
- Developing Effective Scenarios, Simulations and Evaluations
- Learning from Emergency Response
International Mines Rescue Body (IMRB)