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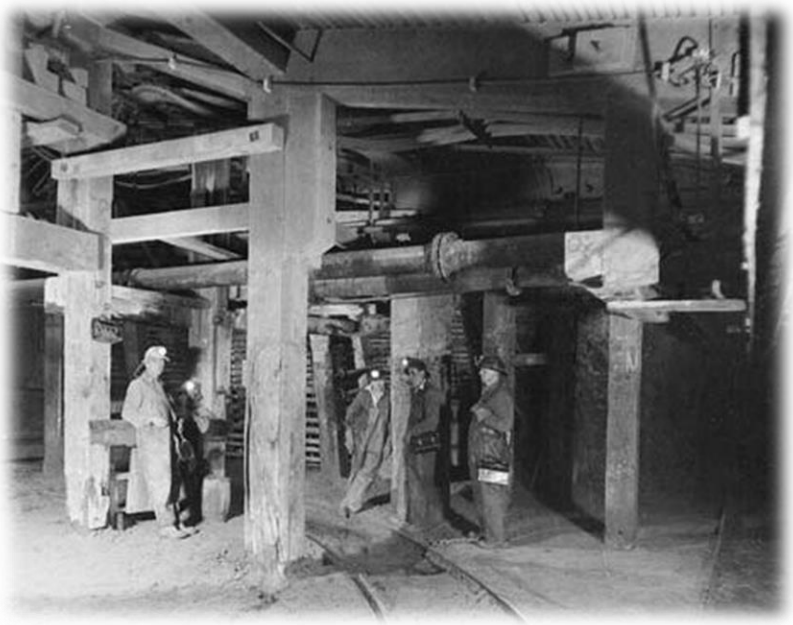
Mine Rescue – Luxury or Necessity?

Reality Check

- **Raise of hands** if….
  - A family member has died in a mining incident.
  - You have lost a friend/colleague in a mining incident .
  - You suffered a critical injury in a mining incident.
  - You know of a friend/colleague who suffered a critical injury in a mining incident.

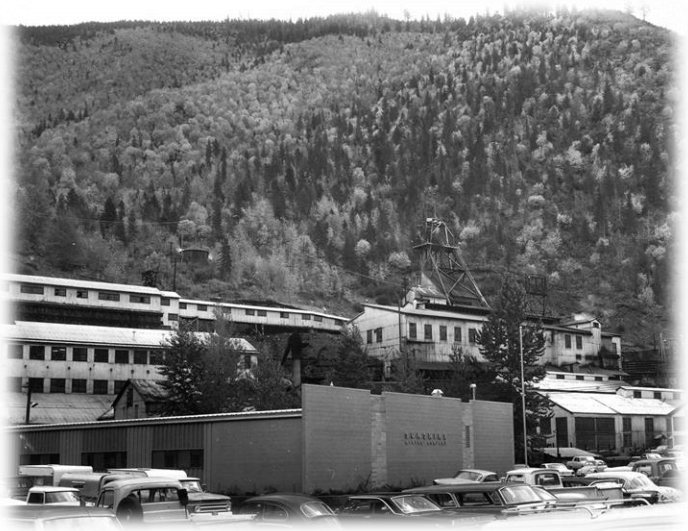
A Lesson in History

Hollinger Mine Tragedy



39 miners die in Timmins Ontario
February 10th 1928.

Sunshine Mine Disaster



91 miners die in Idaho USA,
May 2nd 1972.

How these two Tragedies Compare

- Both were **metal mines**.
- Fundamental false belief that "there is nothing can burn".
- Poor work practices.
- Lack of **emergency plans**.
- **Ill-prepared** to handle a major catastrophic event.
- Both events were **so similar its unbelievable that history could repeat itself.**

Another Lesson in History

Westray Mine Disaster

26 miners die in Plymoth, Nova Scotia May 9th , 1992.

Pike River Mine Disaster

29 miners die in New Zealand on November 19th , 2010.

Different Yet so Similar

Westray Mine Disaster

- "Predictable path to disaster".
- **Management failed**.
- Workers were **discouraged from reporting safety deficiencies**.
- Intense pressure to produce.
- Ineffective health and safety policies and procedures.
- **Failure** on the part of the **inspectorate**.
- Incompetence, apathy by many levels of workplace parties

Pike River Mine Disaster

- **Financial difficulties** resulting in ineffective address of safety issues.
- Inadequate ventilation and gas drainage.
- **Lack of experienced** staff underground.
- **No effective worker participation** in health and safety.
- Lack of management action despite repeated high gas concentration warnings.
- **Ineffective corporate oversight** regarding health and safety.
- **Ineffective government** mine safety legislation and **enforcement**.

A Lesson in Tragedy, Learning and Change

Niwka-Modrzejow Coal Mine

6 mine rescuers die, 4 others injured In Poland on February 24th , 1998.

Goldstrike Decline

2 mine rescuers die in Elko Nevada, USA on October 17th, 2002.

Sustainable Learning and Change

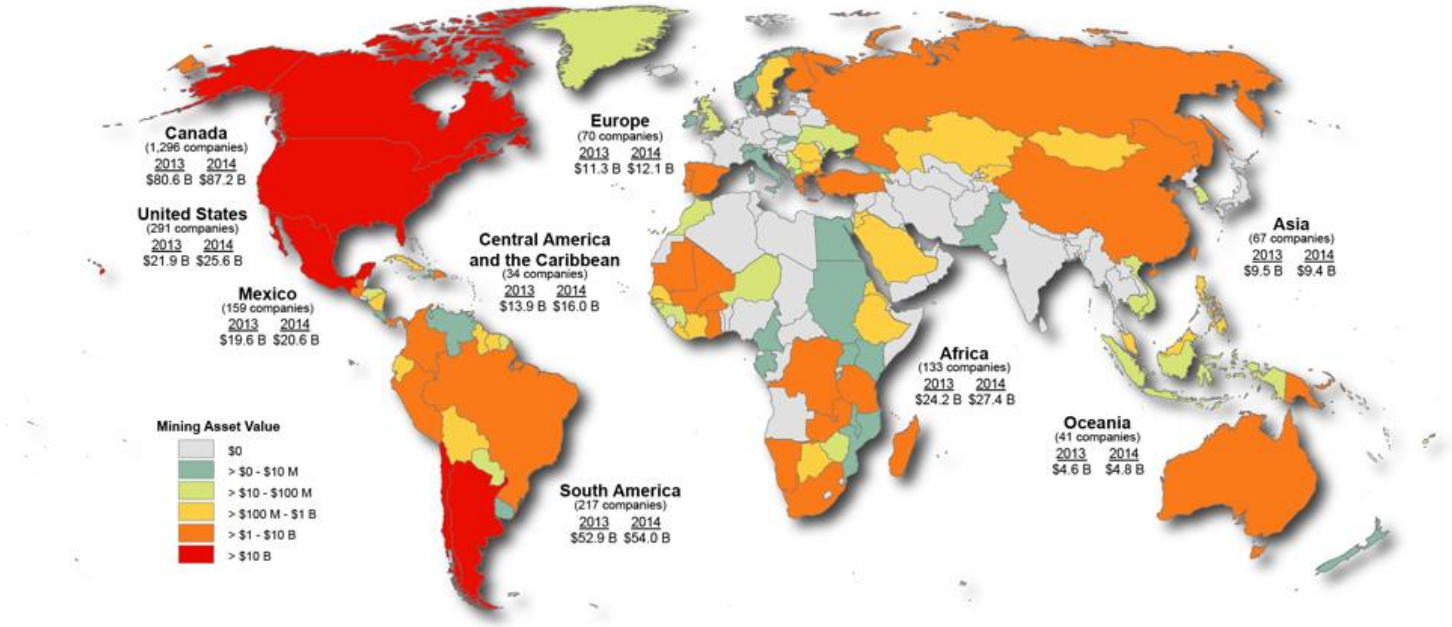
- Niwka-Modrzejow Coal mine accident was different.
- Investigation resulted in 70 regulatory changes.
- Some of the key recommendations:
  - Additional specialized M/R equipment (micro-climatic conditions)
  - Additional Management training (team deployment)
  - Mines Rescuer **selection criteria upgraded**.
  - More comprehensive **medical monitoring**.
  - Improved training record keeping.
  - **Acclimation** training for mines rescuers.
  - **Research into rescuer behavior** while working in hot and difficult environments.
  - Identified the need for global information sharing and learning which led to the **creation of the IMRB/IMRC.***

What are Leading Mine Rescue Jurisdictions Doing

- Multinationals are adopting **highest standards**.
- **Expanding risk assessments** to include unforeseen incidents.
- Bolstering **regulatory mines rescue requirements**.
- Participating at **numerous levels of competition**.
- Adopting **rigid rescuer fitness standards**.
- **Partnering with sister organizations** (police, EMS, fire departments, military etc.) for training exercises and complex simulations.
- Participating in **strategic research**. *

Multinationals Adopting Highest Standards

- Local regulatory requirements are mandating that the **highest corporate safety/mines rescue standards** are adopted.



Anticipating Highest Level of Risk

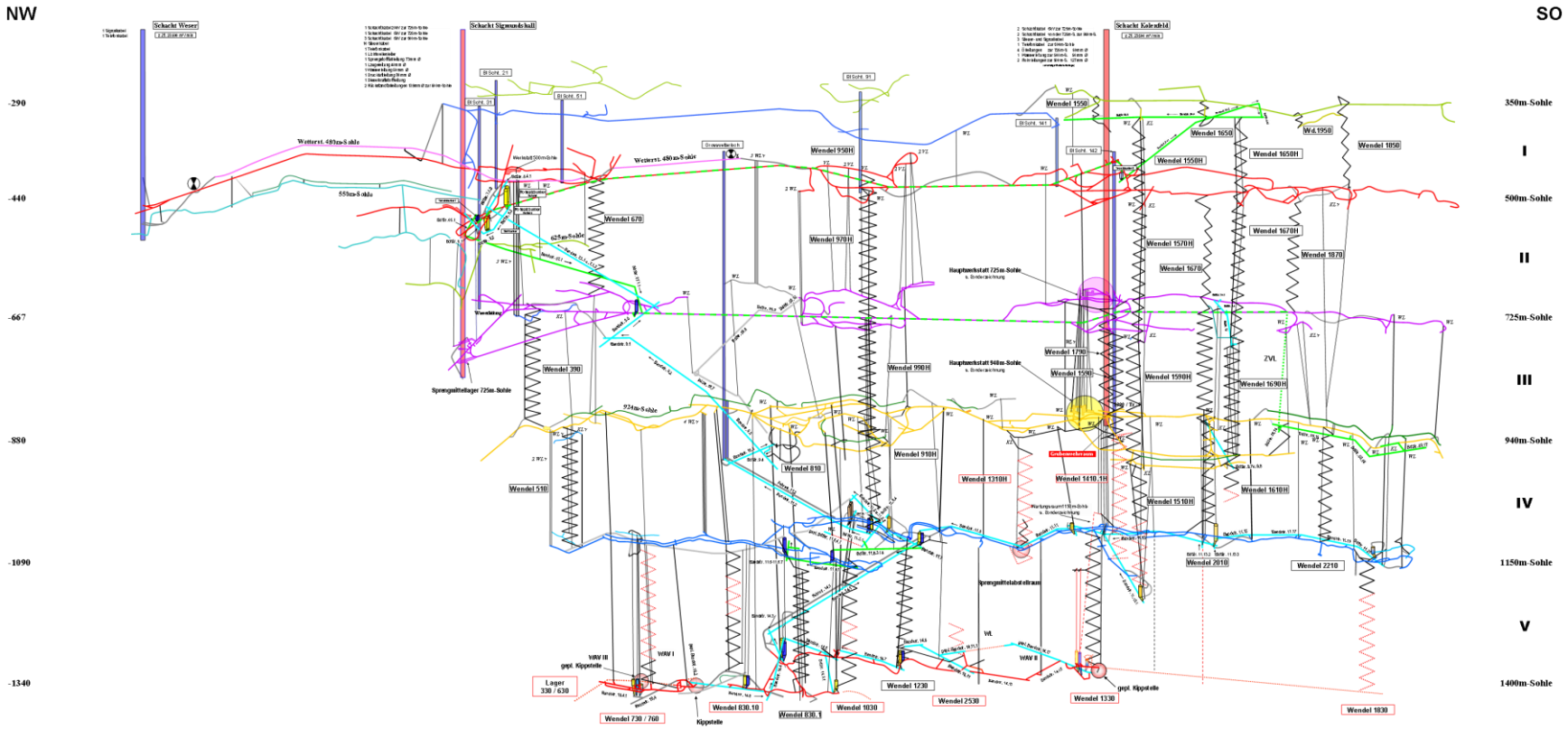
- Planning for events of a **catastrophic nature**.
- Establishing **Multi-national Mutual Aid Agreements.**

Safety/Mine Rescue Leadership

Sigmundshall Mine

- More than 100 years in operation.
- Deep and extremely hot Potash/salt mine.
- Vertically/laterally expansive.
- Adaptive to Modern mining.

Sigmundshall Mine



Sigmundshall Mine

Strengthening Regulatory Requirements

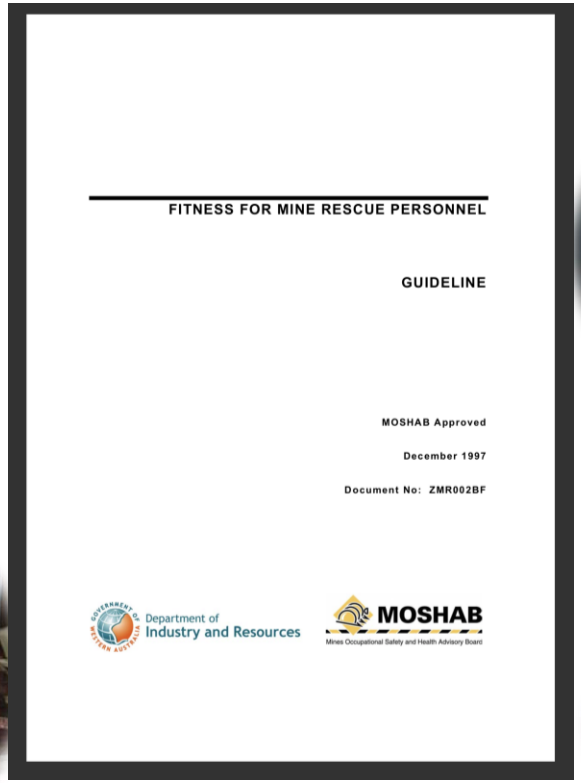
- Enacting legislation that requires mine **operators** to have **knowledge** and **practical experience in mines rescue**.
- Designation of **Mines Rescuers** as a **"trade".**
- Legislated requirements for conducting periodic **mine wide simulations**.

Center of Excellence

- Russia Novokuznetsk MR Station
- Innovation
- Research
- Rapid Response

The Importance of Fitness

- The **team** is only as strong as its **weakest link**.



Legislated ER Simulations

Australia

- **Level 1 mine emergency exercise.**
- Coordinated mine-wide exercise **initiated and conducted by enforcement and mines rescue.**

Incident Command

MR Responders

Simulations

Mine Rescue Integral Part of the Core Curriculum

Collaboration with academia to ensure Mine rescue is a component of post secondary curriculum.

Expand Information Sharing/Learning

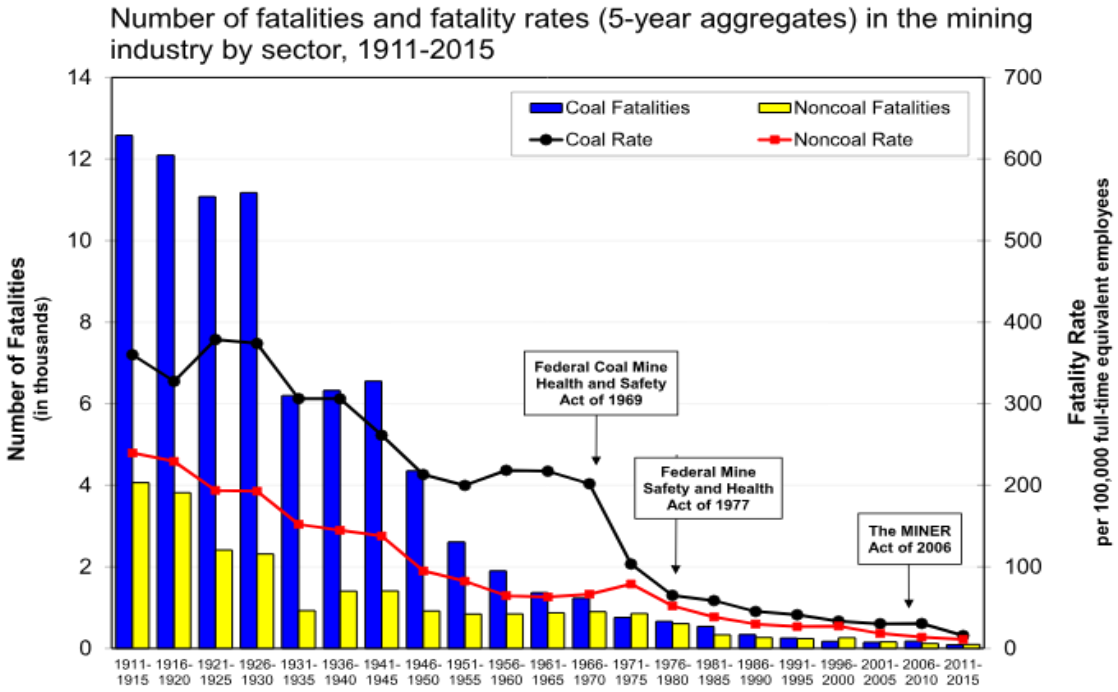
- **Mines rescue** is highly specialized fraternity which is **similar** in all jurisdictions therefore it is **easy to learn from one another**.
- **Competitions** are essential in **honing and evaluating mines rescue skills** and participation in cross-jurisdictional or international competitions is essential.
- Complacency is the adversary of safety/mines rescue … beware of situations when **"things are going just too good".**

Benefits of Mines Rescue

- Establishes a pool of **highly-trained specialists** that have the ability to respond to fire, non-fire and other types of emergencies.
- Rescuers possess many **transferable technical skills** that are useful in many other occupations/situations.
- Mines rescuers perform the **most dangerous** mining work and have learned **how to manage risk well and know the consequences of serious error**.
- Mines rescuers move up the corporate ladder because of the **unique leadership skills** they have learned from mines rescuers.

Necessity of Mines Rescue

- Is Mines Rescue a luxury or necessity … answer is obvious however need to explore **how to expand mine rescue role**:



NOTE: Excludes office employees. Noncoal includes metal, nonmetal, stone, and sand & gravel operations. Sand & gravel miners included starting in 1958. Hours for 1911-1923 computed on assumption that weighted average length of workday was 9.36 hours. Full-time equivalent employees (2,000 hours = 1 FTE employee). Data source: USBM and MSHA

"The most important thing to come out of a mine is the miner."

Frédéric Le Play (1806-1882)
French sociologist and inspector general of mines of France

Thank you … any Questions?