

# *50 Years of Engineering in Mining*

## *My Journey*



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**DPI Electrical Engineering Safety Conference**


**November 2008**

# *50 Years of Engineering in Mining*



- Engineering Contribution to the Mining Industry
- MEMMES Contribution
- Engineers Contribution
  - OEM's
  - Inspectorate
  - Our Mentors
  - Our Individual Contribution

*50 Years of Engineering in Mining*  
*The Now and The Future*  
*Engineers Contribution*



- Our Contribution to the Mining Industry
  - Our Values
  - Our Professionalism
  - Our Responsibilities
  - Our Legacy

# *50 Years of Engineering in Mining*

- 18 Years with Coal and Allied (JABAS)
- 16 Years with NSW Electricity Commission Mines (Elcom Collieries)
- 16 Years Consulting
  - Australia – Coal – Nickel –Gold – U/G - Open Pit
    - Manufacturing and Mining Services
  - New Zealand
  - Indonesia

# *Richmond Main Colliery*



## *Richmond Main – My Learning's*

- My workmates commanded my respect
- My workmates looked after me
- Respect the Horses
- As a 16 year old boy, if I was prepared to Learn, I was taught.
- If in doubt – ask
- Do what you were told!

# *Coal Mining - 1960 to 1980*

## *Mining Methods*



- Hand mining
- Conventional Mining
- Continuous Miners
- Long Wall Mining
- Open Pit Mining
  - Truck and Shovel
  - Dragline

# *Coal Mining - 1960 to 1980*

## *Mining Management*




- Positional Authority
- CMRA – Proscriptive
- No Mechanical Statutory recognition
- Production Driven
- New Mines – new technology
- Management methods combination old and new

# *Mine managers perceptions of Engineers Function in the 1980's.*

- i) Fix it skills
- ii) People/ communication skills
- iii) Engineering maintenance skills
- iv) Engineering management skills
- v) Experience
- vi) Qualifications

# *Mine engineers - perceptions in the 1980's*



- i) Technical skills - 60% of job
- ii) Management skills - 20% of job
- iii) Financial skills - 10% of job
- iv) Industrial relations - 10% of job

## *Mine engineers – realities in the 1980's*



- i) Technical skills - 10% of job
- ii) Management skills - 40% of job
- iii) Financial skills - 20% of job
- iv) Industrial relations - 30% of job

## *Engineers in The 1990's*

- From hand mining to world capacity longwall
- Concentrated on improving technology and task efficiency – not effectiveness!
- Coming to grips with a global market
- Mine ownership change from Australian to Overseas.

# *Thoughts as we entered 1990's*

- Causes of Poor Productivity In The Australian Workplace
  - 1. Direct Overmanning
  - 2. Poor Work Organisation
  - 3. Excessive Demarcation Disputes
  - 4. Unnecessary Down-Time
  - 5. Expensive Maintenance

Prof. Fred. Hilmer 1989

# *Thoughts as we entered 2000*



We cannot expect to solve problems  
by using the same mind set that existed  
when we created them.

Einstein

# *Thoughts as we entered 2000*



- We are not entitled to do the same thing the same way and expect a different result.

The law of insanity

# *Coal Mining – 2008 and Beyond*

## *Mining Industry Environment*

- Management by Global Business Rules
- Business Profit Driven
- New Mines – Quantum leap in technology and production rates
- Engineering struggling to supply business needs
- Less grey hair
- CMH&S/OH&S Act – Proscriptive/Punitive?
- Engineering (all levels) Specific Statutory Accountability

# *Engineers Contribution*



- Technology revolution – developed by engineers
- Need additional skills – Engineers going back to school?
- Must engineer and maintain congruent to the business plan
- Must guide Management to manage the technology

# *Engineers Contributions*



- Our Values
- Our Professionalism
- Our Responsibilities
- Our Legacy

# *Our Values*



- Recognise as Engineering Managers we must have the courage to make “Engineering Business Decisions” rather than “Career Decisions”
- We must create an “achieving environment” rather than “fear of failure”.
- We must continue to be “ethical and practicing Professionals”

# *Our Values*



- When in Command take Charge
- When faced with a decision “Do what’s Right”

General Norman Schwarzkopf

# *Our Professionalism*



- Peoples lives (our workmates and their families) depend on our professional practices and judgments
- As technology and mining methods change –as engineers we must be in front of the technology
- By continued learning increase our understanding and knowledge

# *Our Responsibilities*

- Our technical skills can only deal with the application of the laws of physics
- Our real worth may well be our ability to give our workforce comfort the technology we developed will be managed for their safety and prosperity
- We must become managers of the “people and the technology”

## *A Sad Moment in my Journey*



- On May 28<sup>th</sup> 2004 at Kayuga Colliery Jamie Sullivan died when performing his normal duties as a Dogman.

## *A Sadder Moment in my Journey*



- To tell a 25 year old Wife and Mother and a her 2 year old Daughter “Dad” was not coming home ever again.

*A Sadder Moment in my Journey*  
*Reconsider our priorities*



- It makes us reconsider our responsibilities and priorities to those who rely on us “doing what’s right”.

# *Our Responsibilities*

- I can think of few other professions or professionals who have individually and collectively, a greater community responsibility for safety, prosperity and community comfort in the 21<sup>st</sup> Century than Engineers.
- As engineers in the mining industry, we must therefore also be diligent in the management of the engineering and technology we have given our industry.
- Without professional management our engineering will become just another good invention.

# *Our Responsibilities*



- We must recognise that “Good Business generates Good Profits”
- Not “Good Profits generating Good Business”

# *Our Legacy*



- How do we want to be remembered ?

# *Our Legacy*



- How do we want to be remembered ?
  - By our industry peers?
  - By our workmates?
  - By our families?

# *Our Legacy*



- Have we considered
  - How well we taught, encouraged and GREW our successors so they can continue our proud profession as Mining Industry Mechanical and Electrical Engineers

# *Our Legacy*



If a man is called to be a street sweeper  
He should sweep streets even as  
Michelangelo painted, or  
Beethoven composed music, or  
Shakespeare wrote poetry  
He should sweep streets so well that all the  
hosts of heaven and earth will pause to say,  
Here lives a great street sweeper.

Martin Luther King Jnr.

# *50 Years of Engineering in Mining*

## *My Journey*



- On reflection, in my almost 50 years journey in the mining industry I am eternally in the debt of those special men and women who encouraged me and taught me to grow.

## *Our Legacy*



- It would be great for us all to be remembered as those who grew engineers to do what is right.