Cutting accidents and ill health
The successes and failures of the quarries hard target initiative

‘Rob Pearce’
Robbie Robertson – ‘an improved safety performance
Has been reflected in an improved financial performance
Confirming the adage that “Good safety is good business”’
THE BALANCED SCORECARD:
Norton & Kaplan: Translating strategy into action

FINANCIAL:
To succeed financially, how should we appear to our shareholders?

CUSTOMER:
To achieve our vision, how should we appear to our customers?

VISION & STRATEGY

INTERNAL PROCESSES:
To satisfy our shareholders and customers, what processes must we excel at?

LEARNING & GROWTH:
To achieve our vision, how will we sustain our ability to change and improve?
STRATEGIC PLAN
FOR METALS & MINERALS SECTOR

**H & S TARGET(S):**
What are the important industry target(s)?

**EDUC & TRAINING:**
What educ & training programmes are needed to improve h & s performance and hit targets?

**KEY GROUPS, PROCESSES:**
What are the key groups of people and processes that must be influenced to improve h & s performance and hit targets?

**PROMOTIONAL/ENFORCEMENT:**
What advice on standards is needed and HSE enforcement to improve h & s performance and hit targets?

**Publicity Drive Strategy**
STRATEGIC PLAN FOR QUARRIES

QUARRY TARGET:
To halve the number of accidents in the industry by 2005

EDUC & TRAINING:
# h & s on university etc courses
# h & s courses for worker reps
# h & s NVQs for managers

KEY GROUPS, PROCESSES:
# MDs etc - signing up meeting
# contractors - Passport scheme
# behavioural, m/c, health ...

HSC/E & Industry driving

ADVICE/ENFORCEMENT:
# More liaison with companies (eg Lead PI schemes)
# Robust HSE enforcement
# Inspectors check h & s documents
Signing up to reduce injury by 50% in five years
Hard target 50% reduction in 5 years

Progress to date
TARGET: HALVE ACCIDENTS IN 5 YEARS

EDUCATION & TRAINING
# Students at universities
# Contractors
# Managers' NVQs
# Worker reps
# Good practice cd
# Research
# Safety check list
# your role in rock

ADVICE & ENFORCEMENT
# Inspectors' visits
# QPA h & s competition
# Company on-site advice
# Four new quarry inspectors
# inspectors concentrate on falls manual handling, competence and training and geotechnical issues

PEOPLE & PROCESSES
# Heads of organ’, MDs
# Contractors, managers
# Industry association guidance
# New technologies (visibility, face edge protection, access to vehicles)

VISION

COMMITMENT

PUBLICITY

The Balanced Strategy, 2000/01 -
Failures

Education and training

- Failure to support higher education 80% loss in provision
- Failure to embrace worker representation training
- Slow take up of the NVQ’s
Perceptions of risk in comparative industries

- Quarries
- Mining
- General manufacturing
- Construction
- Agriculture

[Bar chart showing perceived vs. actual risk levels across industries]
Comparison of world mining and GB quarries

![Bar chart comparing mining and GB quarries for Newmont, Anglo, Rio tinto, and GB quarries. The bars show the output for each company with GB quarries having the highest output.]
Why are people killed and injured?

We found that many witnesses, not excluding those who were intelligent and anxious to assist us, had been oblivious of what lay before their eyes. It did not enter their consciousness. They were like moles being asked about the habits of birds.

The report tells not of wickedness but of ignorance, ineptitude and failure in communications.
Royal Commission on Quarries

‘in many cases, management was in the hands of persons who were better acquainted with the commercial rather than the working side of quarries so that safety did not receive its proper share of attention’.
Silica

- 39% of quarries do not know the design of their extraction systems.
- 15% of quarries expose personnel to over the MEL.
- Of those 73% did not know the parameters of the engineering control.
- Of the 85% which were below the MEL the dust levels could easily of been reduced further.
Design

Design and maintenance details 58%
Tips appraised 70
Assessed 63
Stockpiles as sig haz 49
Tip +ex rules 47
Undertaken stability recommendation 62
Safety committee reviewed design 59
Workforce understand control meas 77
What do the regulations want?

- An operator who
  - Designs
  - Equips
  - Commissions
  - Operates
  - Maintains

the quarry so that it is safe and healthy, and an involved workforce and management structure that is competent to do this.
Competence

Surveys of quarries and inspections show a lack of underpinning knowledge and interpretation of that knowledge is the main reason for injuries.

- This shows itself in:
  - Poor design
  - Poor awareness
  - Poor geotechnical controls
  - Use of wrong equipment
  - Poor maintenance systems
  - Under valuing of roles of staff
  - Lack of workforce involvement
Breadth of Training

Quarry design; electrical and mechanical engineering, Environmental assessment, finance, geology, geomechanics, marketing, personnel management, plant design, production processes, project management, sustainability, ventilation, health and safety
Underpinning knowledge (training)

- C Eng NVQ 5
- I Eng NVQ 4
- Eng Tech NVQ3
- NVQ 2

Area Manager
Manager
Supervisor (Deputising)
Supervisor

Masters Degree
Honours Degree
Foundation Degree
H Cert/DAP’s

Key stage 5
Key stage 4
Key stage 3
Key stage 2
National qualifications framework

Level H
- requiring the exercise of initiative and personal responsibility
- Requiring decision making in complex and unpredictable contexts and
- Requiring the learning ability needed to undertake appropriate further training of a professional or equivalent nature

Level C
- Requiring the exercise of some personal responsibility
The principles that underpin good education and training.

- The design and coverage of the training should be clear to the candidates, employers, and other stakeholders. It should have clear aims, objectives and opportunities for progression, and intended learning outcomes.

- It should be at a given level so that the candidate can identify what prior knowledge or preliminary training is required, or what training it can build on.
The principles that underpin good education and training.

- The training should be designed to fit with progression routes, and identify where it satisfies or is recognised by further qualifications.
- It should demonstrate clear relationships with the legislative, occupational and professional competencies.
- In addition to the discipline or occupational aspects it must also enhance the person's skills and abilities.
- It must provide recognition of the contextual issues relevant to the areas of coverage – environment, health and safety, profitability, equal opportunity.
Structured training must address

Group 1
Experience but no academic training

Group 2
No experience and no relevant academic training (graduate in arts or other subject)

Group 3
Limited experience and relevant training (honours degree in mining or quarrying)

Group 4
No / limited experience and training in a minerals related degree
Future targets

- Structured schools links programme
- A structured and integrated training programme, supporting CSM/Leeds/Doncaster
  - ? DAP’s students
  - 20 Foundation degrees
  - 50 undergraduate degrees
  - 20 Conversion degrees
- Assured competence by 2010
- Safety representatives trained to QNJ AC standards (2 each site?) 2010
Future targets

- Cut accidents further 50%
- Compliance with occupational health standards by 2010.
- Rehabilitation programme by 2010.