

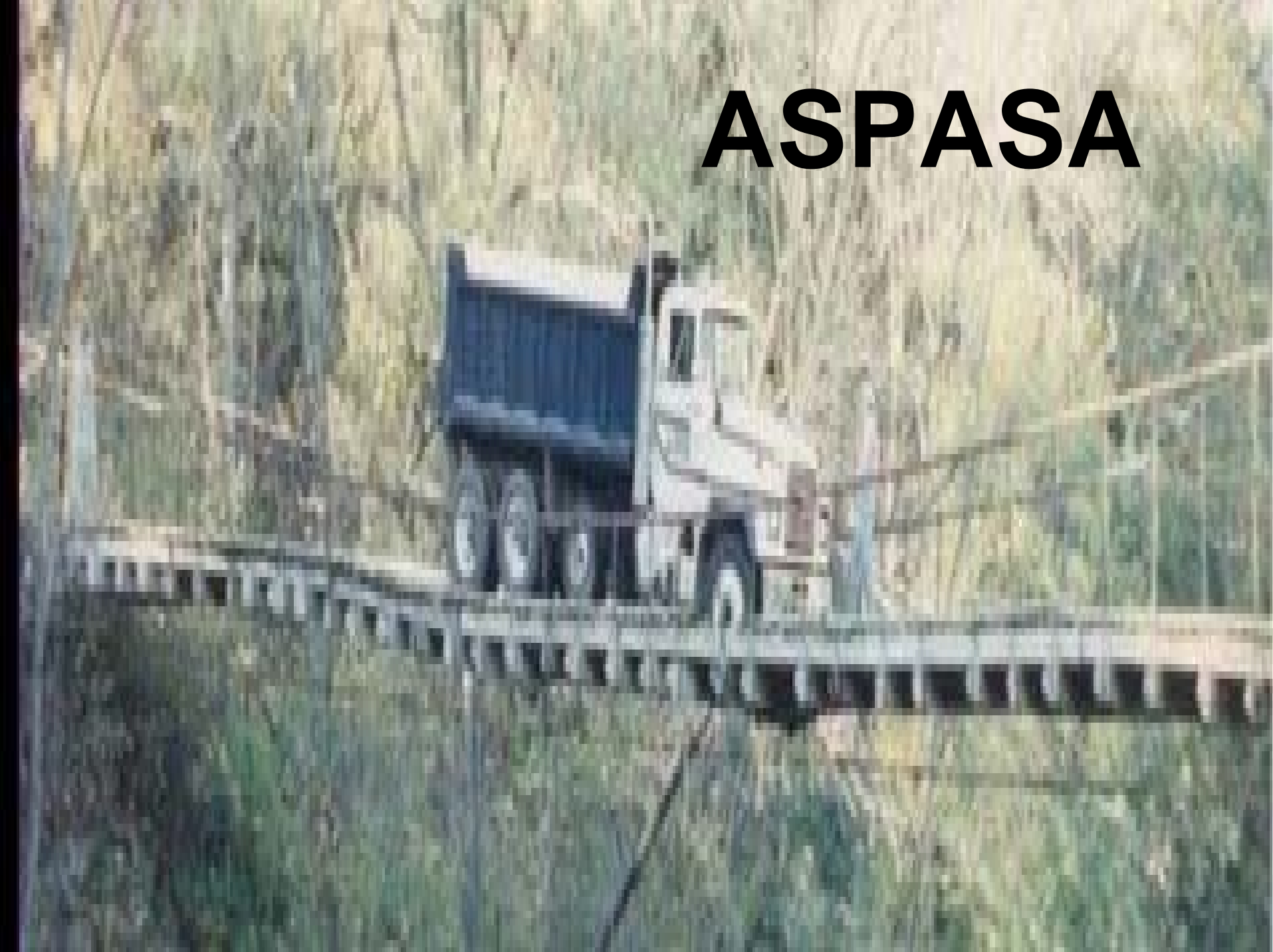
RPF 13 – 14 MAY 2009

Skills Shortages in Industry

Nico Pienaar



ASPASA



Skills Shortages in Industry

ASPASA – Aggregate and Sand

- 🌸 Industry resorts under mining industry
- 🌸 Qualifications and Learnerships are developed at MQA.
- 🌸 Industry has developed its own co-ordinating body – CLAS.
- 🌸 CLAS manages consultants who develop unit standards, qualifications and skills programs at TRG20 at MQA.
- 🌸 MQA does not do training, but does accredit the training providers.

Skills Shortages in Industry

- Industry has a body called IOQ which individuals belong to and this body needs to co-ordinate training.
- Problems are:-
 - Not enough service providers
 - Employers not committed to training
 - Employers do not want to send “students” to big centres for training.




Skills Shortages in Industry

Main areas of skills shortages

- 🌸 Quarry Management
- 🌸 Technical Specialists
- 🌸 Quality Specialists
- 🌸 Occupational Health and Safety Practitioners
- 🌸 Risk Assessment knowledge
- 🌸 Legal issues in quarrying
- 🌸 Handling of explosives
- 🌸 Crushing and screening
- 🌸 Handling of Explosives
- 🌸 Basic Construction Material Testing
- 🌸 Drivers
- 🌸 Conditions of Contracts

U K Developments

The IOQ objectives in the UK are:

-  Develop and maintain an industry e-learning provision to the best standard that is realistically achievable.
-  Find ways of extending the use of the e-learning materials, both in the UK and overseas.
-  Try to ensure that, where possible, the content of any qualifications/training packages developed provides a common standard for companies with global training/competence requirements.

U K Developments

- 🌸 Promote the benefits of using education/training material developed specifically for **the** aggregate product industries, rather than the less focused approach of mining/minerals engineering.
- 🌸 Seek to reduce the cost of traditional face-to-face education/training programs through their replacement, in as far as is practical, by the more efficient delivery of e-learning materials.
- 🌸 Enhance the professional standing of the Institute around the world through wider recognition of its work in the field of education and training.

Current Position in UK

Quarry Technology Diploma

- a. 12 module course equivalent to ½ Degree and covers all the main vocational knowledge requirements required by a quarry manager.
- b. 2008/9 137 students 80% UK, 20% overseas (currently Republic of Ireland, Turkey, Falkland Islands, United Arab Emirates, Qatar, Ghana, Holland, South Africa, West Indies, Singapore and India).
- c. Over half of the 66 quarry specific units have already been converted for online delivery and the complete by midyear.


Quarry Technology Diploma

- 🌸 ***Asphalt Technology Diploma*** - Similar to above, but with about half the students and just starting e-learning conversion work.
- 🌸 ***Certificate in Construction Materials (IQ/IAT)*** - single module course mainly used for training laboratory technicians and other materials specialists.
- 🌸 ***Certificate in Concrete Technology (IQ)*** - single module course which shares some content with *Construction Materials* and provides students with a basic understanding of the production and use of concrete.

You have to be cautious



Training Materials

 The unitized structure of the provision provides the opportunity to create training/CPD packages for a wide range of needs.


*The UK proposed University Certificate in
Quarry Operations*

Training Materials

Overview

Designed for use overseas as a simplified version of the Diploma in Quarry Technology run by the University of Derby in partnership with the Institute of Quarrying.

Available from September 2009 via e-learning system
Emphasis on practical, rather than academic knowledge
Aimed at providing either:-

-  Basic knowledge requirements for quarry, assistant, section or conversion course for engineering graduates with no quarrying experience

Training Materials

Content

- 🌸 One (academic) year programme comprised of 4 modules (42 units).
- 🌸 Learning materials adapted from Diploma program.
- 🌸 Module/unit titles to reflect current operational priorities.
- 🌸 Units reworked with UK specific content replaced with generic best practice.
- 🌸 Some units renamed to give better indication of content.
- 🌸 Proposed new units on 'Maths for Quarry Management' and 'Basics of Business Management' to be developed specifically for course.
- 🌸 All units contain Self Assessment Questions to help learners test their knowledge and understanding of the subject.

Training Material

Delivery

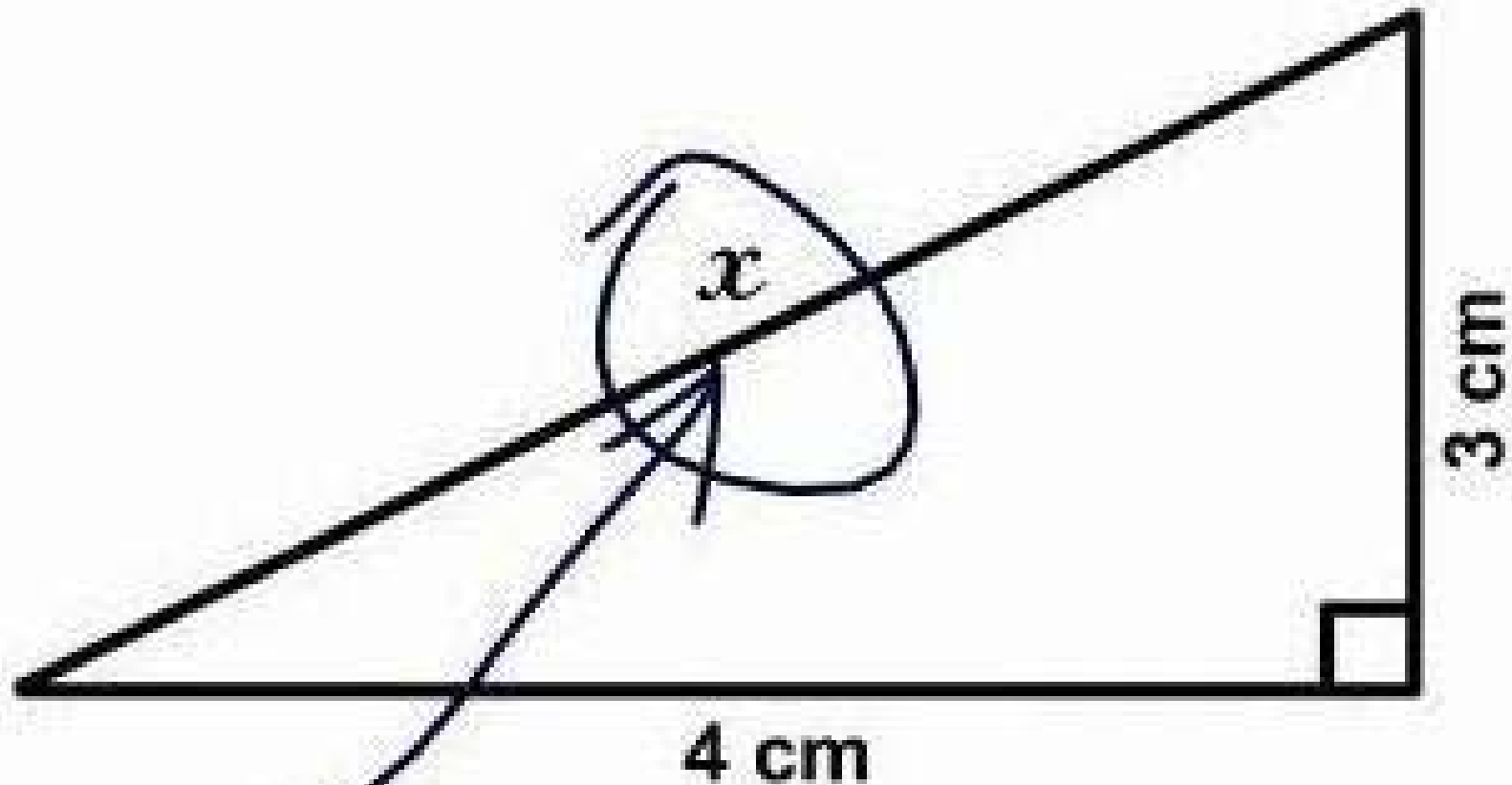
- 🌸 Course to be made available via the University's business unit so that registrations etc can be effected on a corporate, rather than individual, basis.
- 🌸 Student entry requirements as Diploma ie no minimum academic requirement, but learners may be asked to complete an exercise to assess basic literacy/numeracy skills.

Training Material

Local support/mentoring recommended.

- 🌸 Some units to contain online assessment questions which will contribute towards final result.
- 🌸 Examinations taken overseas supervised by British Council which has offices in most major cities (5 in South Africa).

Find x .



Here it is

Draft Syllabus

Module 1. Quarry Development & Management Systems

- 1 Introduction to Geology
- 2 Rock Types
- 3 Structural Geology
- 4 Justification for a New Quarry
- 5 Proving the Reserve

Module 1

- 6 Planning a New Quarry
- 7 Environmental Awareness 1.
 - Responsibility for the Wider Environment
- 8 Environmental Awareness
 - Effect of Operations on Local Environment
- 9 Environmental Management Systems
- 10 Health & Safety Awareness
- 11 Safe Systems of Work

Module 2 – Quarry Blasting

- 1 Blast Hole Drilling
- 2 Primary Blast Design
- 3 Detonators and Blasting Accessories 4 Initiation and Priming Systems
- 5 Environmental Considerations of Blasting
- 6 Control/Transport Storage Disposal of Explosives
- 7 Blasting Agents
- 8 Explosives General
- 9 Alternatives to Blasting

Module 3 – Extraction & Processing

Feeders

- 2 Crushers
- 3 Screening
- 4 Hydraulic Classification
- 5 Washing and Primary Separation
- 6 Beneficiation
- 7 Safe Guarding of Machinery
- 8 Conveyors
- 9 Loading at the Face
- 10 Dump trucks, Scrapers, Tyres and Chains
- 11 Mechanical Power Transmissions

Module 4 – Operational Best Practice

- 1 Method of working
- 2 Geotechnical Appraisals
- 3 Maths for Quarry Manager
- 4 Manage waste
- 5 Fire prevention
- 6 Emergency planning procedures
- 7 Electrical safety awareness
- 8 Plant maintenance
- 9 Hazardous substances
- 10 Maintenance of fixed structures
- 11 Basics of Business Management

Training is not easy!!

(Men will understand)



So what about South Africa

Good question!! We as the Educational sub-committee of the IOQ-SA are planning the following:-

- 🌸 To see how we can use the UK material for SA. Some talks and discussions with UK counterparts have been taking place in Durban.
- 🌸 In the meantime we are planning to hold a one day workshop in the regions in the latter part of the year.

The planning is being done and we are planning to cover issues such as crushing and screening, blasting and health and safety.

We are working on dates and presenters.

SARMA



Skills Shortages in Industry

SARMA – Southern Africa Readymix Industry

- ❁ Falls under construction industry.
- ❁ This part of the industry has good service providers that do training.
- ❁ Cement and Concrete Institute does technical & skills training for Concrete related functions in companies.
- ❁ Various other private service providers also supply services to the industry.
- ❁ Focus on batcher plant manager training.

Skills Shortages in Industry

Some areas of concern are:

 Driver Training

 Quality Skills Training

 Middle Management Training

WHY HAVE A COMPUTER?



A concrete mixer truck with a red and white drum is driving on a newly completed concrete bridge deck. The bridge is a large, multi-arched structure spanning a deep, green canyon. The background shows a vast landscape with rolling hills and a body of water in the distance. The sky is clear and blue.

**THANKS TO THOSE WHO WERE
LISTENING AND THOSE WHO
WERE SLEEPING!!!**