

# Blast Training Course Guide







# Explosives Awareness

## Duration

4 Hours

## Who Will Benefit

Those on a mine site, or in a quarry or construction blast environment will benefit from this course. The course is suitable for a range of roles including equipment operators, supervisory staff, surveyors, and engineers.

## Course Objective

To provide participants with a basic understanding of the properties and safe handling procedures of explosives and initiating systems. The course material is continuously updated and is at the forefront of product knowledge.

The course is designed to meet industry needs and is based on Orica's extensive knowledge of explosives and safety procedures. It covers the following topics:

- What is an explosive
- What is a detonator
- Properties of explosives
- Firing procedure
- Misfire causes
- Safety and risks

## Course Outcomes

At the end of the course participants will be able to:

- Have a basic understanding of explosive products
- Be aware of safe handling procedures for explosives

## Participants Will Receive

- Certificate of Attendance

# Support Shotfiring

## Duration

1 Day

## Who Will Benefit

- Those assisting the shot crew – both experienced and new starters with limited exposure on bench
- Candidates sitting for the Open Cut Examiners ticket

## Course Objective

To provide participants with a greater understanding of their duties and responsibilities as a Support Shotfirer.

The course is based on the National Competencies:

RIIBLA201A	Support Surface Shotfiring Operations
RIIBLA202A	Support Underground Shotfiring Operations

The course covers the following topics:

- State Acts and Regulations
- Australian Standard 2187
- Magazine and Transport of Explosives
- Organise to fire the Shot
- Initiation Systems
- Geology

## Course Outcomes

At the end of the course participants will be able to:

- Understand and comply with Explosives and Mining Regulations pertaining to explosives
- Apply correct and safe methods for storage and transport of explosives
- Prime and charge blastholes to ensure optimum performance
- Select a suitable Initiation System, delay intervals and hook-up methods

## Participants Will Receive

- Statement of Attainment
- Blasting Guide
- Practical Assessment
- Log Book

# Surface Shotfirer

# Underground Shotfirer

## Duration

4 Days

## Who Will Benefit

This course is designed for those who have had some association with explosives at an operating mine site. Course development has been driven by industry and caters for:

- Experienced persons seeking to work in surface environments who gained an earlier qualification under an old system and who require an upgrade to the new national certification
- Existing Shotfirers who want to update on blasting technology and methods in surface operations
- Anyone who has assisted or worked around shotfiring operations and wants to apply for a shotfiring licence.

## Course Objective (Surface)

To provide course participants with a qualification towards obtaining their Shotfiring Licence. The course complies with the National Surface Blasting Competencies, Regulations, Codes and Standards.

RIIBLA301A	Conduct Surface Shotfiring Operations
RIIBLA305A	Conduct Secondary Blasting
RIIBLA205A	Store Handle and Transport Explosives

## Duration

3 Days

## Who Will Benefit

This course is designed for those who have had some association with explosives at an operating mine site. Course development has been driven by industry and caters for:

- Experienced persons seeking to work in the underground environment who gained an earlier qualification under an old system and who require an upgrade to the new national certification
- Existing Shotfirers who want to update on blasting technology and methods in underground operations
- Anyone who has assisted or worked around shotfiring operations and wants to apply for a shotfiring licence.

## Course Objective (Underground)

To provide course participants with a qualification towards obtaining their Underground Shotfiring Licence. This course is designed to comply with National Underground Blasting Competencies, Regulations, Codes and Standards.

RIIBLA303A	Conduct Underground Development Shotfiring
RIIBLA304A	Conduct Underground Production Shotfiring
RIIBLA305A	Conduct Secondary Blasting

## Course Outcomes

At the end of these courses, participants will be able to:

- Understand and comply with Explosives and Mining Regulations pertaining to explosives
- Identify potential safety hazards relating to explosives and how to avoid them
- Conduct Job Safety Analysis (JSA) Assessments for common blasting environments
- Compare explosives types and decide a reasonably cost-effective combination, including blast pattern and explosives quantities
- Know how to prime and charge blastholes to ensure optimum performance
- Select a suitable Initiation System, delay intervals and hook-up methods
- Modify blast patterns in difficult or unusual areas to maintain good results
- Control excessive flyrock, ground vibrations and airblast
- Understand correct and safe methods of storing and transport of explosives

## Participants Will Receive

- Statement of Attainment
- Blasting Guide
- Shotfiring Manual
- Shotfirer's pocket guide
- Information CD-ROM
- Practical Assessment
- Log Book

# Safe & Efficient Blasting

## Duration

2 Days

## Who Will Benefit

The Safe and Efficient Blasting Course is designed to further enhance the skills and knowledge of mining industry personnel including:

- Shotfirers
- Blasting Crew
- Foremen
- Supervisors
- Engineers
- Mine Operations Staff
- Government/Regulatory Inspectors
- Anyone seeking a blasting overview

## Course Objective

To give course participants a greater understanding of drilling and blasting technology so they can carry out their jobs with greater:

- Safety – without risk of injury or damage
- Efficiency – maximising blast performance while optimising blast costs

## Course Outcomes

At the end of the course, participants will be able to:

- Compare explosive types for cost-effective blast patterns
- Correctly prime and charge blastholes for optimum performance
- Select a suitable initiation system, including delay intervals and hook-up methods
- Modify blast patterns in difficult areas to maintain good results
- Control excessive flyrock, vibrations and airblast
- Identify potential safety hazards relating to explosives and how to avoid them
- Comply with explosives and mining regulations
- Evaluate risks associated with blasting
- Analyse the wider operational cost implications of changing blast methods

## Participants Will Receive

- Certificate of Attendance
- Safe and Efficient Blasting Manual
- Shotfirer's Pocket Guide
- Timing cards
- Information CD-ROM

## SEB Program

### DAY 1

Introduction & Terminology

Workshops – Problem Solving Misfire

Explosives Properties

Explosives/Rock Interaction

Explosives Range & Selection

High Speed Films/Blast Videos

Priming Options & Effectiveness

Workshop – Rules of Thumb for Blast Design

Charging Methods

Initiation Systems – General

Initiation Applications

Workshop – Initiation Exercises

Workshop – Computerised Initiation SHOTPlus®

### DAY 2

Blast Design & Geometry Options

Workshop – Calculating Drill & Blast Costs

Optimisation Techniques & Tools

Vibration/Airblast/Flyrock

Workshop – Special Blasting Techniques

Special Blasting Techniques

Safety Awareness Exercise – Who Cares?

Workshop – Safety Investigation

Safety, Accidents, Destruction of Explosives

*Safe and Efficient Blasting courses are offered in market-specific formats for Open Cut Coal, Open Cut Metal, Underground and Quarry Services.*

# Blast Management & Design

## About Orica's Commercial Blasting Courses

### Duration

1 Day

### Who Will Benefit

The Blast Management & Design Course is designed to further enhance the skills and knowledge of mining industry personnel including:

- Experienced Shotfirers
- Foremen
- Supervisors
- Engineers
- Mine Operations Staff
- Government/Regulatory Inspectors

### Course Objective

To provide participants with the necessary knowledge in Blast Management and Design, drawn from the following topics according to participant interest, demand and field experience.

- Wall Control Techniques
- Delay Timing Principles
- Initiation Exercises – SHOTPlus®
- Risk/Safety Management
- Coal Loss/Ore Dilution
- Through-seam Blasting
- Cast Blasting
- Soft/Hard & Low Density
- Vibration/Airblast Controls
- Digital Blasting & Case Studies
- Misfire & Incident Investigation
- Calculating New Patterns
- Deck Charging Gasbags
- Incidents, Issues, SHE
- Mine Process Modelling – I-mining
- Reactive & Hot Ground
- Rehab Blasting
- Workshop – Caprock Problems
- Workshop – Production Optimisation
- Precision & Construction Blasting

### Course Outcomes

Completion of the course will equip participants to apply and understand the topics selected from the list above.

### Participants Will Receive

- Certificate of Attendance
- Safe and Efficient Blasting Manual
- Shotfirer's pocket guide
- Timing cards
- Information CD-ROM

*Attendance at a Safe & Efficient Blasting Course is highly recommended prior to attending 'Blast Management & Design'.*

### Course Delivery

The presenters and trainers are drawn from Orica Australia's extensive network of Blasting Engineers and Technical Specialists. Many of these are widely acknowledged as "Experts" in their field with collective experience in the explosives/blasting industry of over 100 years of practical blasting experience in most blasting environments. If required, the course can be run for a small group from one organisation at a mine site or at a training venue convenient to the workplace.

### Training Methods

The course is presented with the aid of clear, colourful computer graphic displays, in order to promote the exchange of ideas, the courses are highly interactive and make use of materials such as case studies, videos and questionnaires during information sessions, demonstrations and group workshops.

### National Accreditation

Upon successful completion of the theory and practical components of the Shotfiring course participants will be issued with a Statement of Attainment that is required to apply for Shotfiring Licence. The course complies with the National Shotfiring competencies, Regulations, Codes and standards. A Certificate of completion is presented to Safe and Efficient Blasting participants.

### What to Bring

All participants are required to bring a calculator, pencil and ruler. SEB participants are requested to bring a laptop computer and a mouse if they are able to. This will allow installation of a trial version of SHOTPlus®, to be used during the course. There may be a limited number of laptops provided to share amongst the group.

### Enrolment

To enrol in one of Orica Mining Services Blasting Courses please register on-line at [www.oricamining.com/courses](http://www.oricamining.com/courses) or phone 1300 303 797.

### Payment Methods

Credit Card, Cheque or Company Order for Orica customers. For further assistance please contact Customer Service on 1300 303 797, your Local Technical Services Engineer or local Orica representative.

Orica Mining Services is a Registered Training Organisation (RTO No. 7113)

### Please note

Orica reserves the right to change the venue or presenters, or postpone the course if applications do not meet minimum requirements. If the course must be postponed all registered participants will be notified. Participant cancellations, two weeks prior to the course, attract cancellation fees. No-Shows without notice forfeit the full course fee. Substitution of attendees is accepted. Please advise cancellation or substitutions.

### Blast Based Services

Orica's Blast Training Courses are delivered under the quality assurance of our Global Blast Based Services team. Blast Based Services combine the best of Orica's knowledge, experience, technology and tools to keep customers at the leading edge of blasting developments while delivering outcomes of productivity growth, profitability, efficiency, safety, health and environment. From Blast Training Courses through to Advanced Solutions, the Blast Based Services team ensures that Orica goes beyond the sale and supply of products to offer technical and operational blast solutions throughout the mining, quarrying and construction markets.



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## Contact Information

For further assistance please contact Customer Service on 1300 303 797,  
your local Technical Services Engineer or your local Orica representative

[www.oricamining services.com](http://www.oricamining services.com)