Advanced Rock Blasting Technique


SAFE & EFFICIENT BLASTING COURSE

Sweden June 2012
Dear Reader.

It is our pleasure to invite you to participate in our Annual International Safe & Efficient Blasting (SEB) Course 2012, being conducted in the Nordics. As in previous years, the 2012 program includes excursions to operations in Sweden. Guest lecturers together with specialists from Orica Mining Services and other companies will ensure a solid source of knowledge in the field of Blasting Technology. Of course, participants should also take this opportunity to discuss individual technical challenges. Over the years, a substantial number of Blasting Technicians from around the globe have successfully completed their training with us. Orica’s number one priority is promoting safety and efficiency in rock blasting operations.

The presentations and content of the SEB Course are designed to introduce all personnel involved in the blasting process to the latest State of the Art Techniques & Technology. The Course will enable participants to make informed decisions on how to optimise their blasting operations and the “Mine to Mill process”, thereby ensuring that blasting products and processes result in downstream benefits. Facts about the characteristics and applications of explosives and initiation systems as well as techniques, both in Open Pit and Underground operations are included.

We feel confident that you will benefit from and appreciate your training in the Nordics, both from a professional and social point of view.

Best wishes,
Dr. Frank Hammelmann
Senior Manager - Technical Services
Europe - Middle East - Africa

Course in Advanced Rock Blasting Techniques

Please mark on your application which workshops you will attend. The workshops SHOTPlus®-i and SHOTPlus® Tunnel contain training in Blasting Software. For those Participants that want to have SHOTPlus® installed on their Laptops, please note the following:

- Bring your own Laptop with a separate (real) mouse.
- You will need to have Administrator Rights for installation of SHOTPlus® on your Laptop.
- 2 Month Software License is included as part of the Course.

Bring your Spouse to Sweden!
You can bring your Spouse to join you during the Course for the cost of 1,800 €. This fee covers transfer, accommodation and common events costs during Program 1 of the Course, as well as some special Spouse events.

Program 1

Saturday June 2.
- Arrival Arlanda Airport, Stockholm
- Check-in at the Radisson Blue Arlandia Hotel
- Sightseeing in Stockholm - In Alfred Nobel's footsteps
  - Lunch
  - Dinner

Sunday June 3.
- Registration
- Introduction and presentation of Orica Mining Services
- Initiation Systems - Pyrotechnical - Electronic
- Coach transfer to Nora - Check-in at the Hotel
  - Lunch
  - Dinner

Monday June 4.
- Visit to Orica Mining Services IS-plant in Gyttorp
- How Explosives break Rock
- Blast Design Geometry - Pre Split - Trim Shots
- Explosives and Rock properties
- Drilling - Surface (Atlas Copco)
- Drilling - Underground (Sandvik)
  - Lunch
  - Dinner

Tuesday June 5.
- Rock to Specification
- SHOTPlus®-i Family
- SHOTPlus®-i and SHOTPlus® Tunnel Introduction
- Workshops: SHOTPlus®-i and SHOTPlus® Tunnel
  - Lunch
  - Dinner

Wednesday June 6.
- Workshops: Uni Tronic™ - i-kon™
- Bulk Explosives: Underground - Surface
- Case Studies: EBS & Bulk Explosives
- Workshops: SuRBS, NCVib.
  - Lunch
  - Dinner

Thursday June 7.
- Bulk System: MMU® & MCU®
- Advanced Vibration Management & Blast Survey
- Coach transfer to Stockholm.
  - Lunch
  - Dinner

Friday June 8.
- Visit to Nitro Consult and Tunnel project.
- Free time in Stockholm
  - Lunch

Saturday June 9.
- Coach transfer to the harbour for the Finland Cruise
- Blasting in Modern Tunnel Operations
- Minova
  - Lunch
  - Dinner

Sunday June 10.
- Safety always comes first
- Take 5
- Closing Ceremony
  - Dinner

Monday June 11.
- Arrival in Stockholm
- Coach transfer to the Airport
**Program 2, Mining Tour**
For those with a particular interest, we are organising a tour to the underground operations of LKAB, BOLIDEN’s Processing Plant at Aitik, an Orica Customer Service Center (CSC) and a Quarry in Sweden.

The modern mining techniques as well as the spectacular scenery in “The Land of the Midnight Sun” never fail to impress our visitors.

<table>
<thead>
<tr>
<th>Day</th>
<th>Activities</th>
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| Monday June 11 | Flight to Northern Sweden  
|              | Check-in at Grand Hotel, Gällivare  
|              | Dinner                                                                      |
| Tuesday June 12 | Coach transfer to Malmberget  
|              | - Visit to LKAB Mine (sub-level caving)  
|              | Lunch  
|              | Dinner                                                                      |
| Wednesday June 13 | Site visit Boliden’s Processing Plant at Aitik.  
|              | Visit to an Orica Customer Service Center (CSC)  
|              | Flight back to Stockholm - Check-in at Hotel  
|              | Lunch                                                                      |
| Thursday June 14 | Check-out, Coach transfer for Quarry Site Visit  
|              | Coach transfer back to Arlanda Airport  
|              | (Flight back home to be booked after 3pm)  
|              | End Program 2                                                              |

**General Information**

**Tutoring language: English**

**Location**
The SEB Course will be held at:
Radisson Blue Arlandia Hotel in Stockholm,
Nora Stadshotel near Gyttorp,
A central Hotel in Stockholm,
Cruise ship to Helsinki, Finland.

**Participation fee**
- Program 1, 3,200 €
- Spouse on Program 1, 1,800 €
- Program 2, Mining Tour, 2,000 €

**Program 1 includes:**
- Full accommodation
- Meals as per program
- Coach Stockholm - Nora - Stockholm
- Ferry Stockholm - Finland - Stockholm, incl.single cabin
- Documentation
- Special event for Spouses (only with min.10 Spouses).

**Program 2 includes:**
- Flights, transfers and meals as program during Mining Tour dates.

**Payment**
Payment should be made on receipt of confirmation of acceptance and must have been received by our Stockholm Bank before 1st of May, 2012.
Account No is 9195-0320016 of Den norske Bank, PO Box 5550, SE 114 85 Stockholm, Sweden. Swiftaddress:DNBasesx.

When making payment please state:
- Name of participant
- Name of company
- Number of invoices

If further information is needed, please do not hesitate to contact us.

Kristina Json Karlsson  
Phone: +46 587 85367

Dr. Frank Hammelmann  
Phone: +49 2241 4829 1064
We hereby apply for participation in Orica’s Safe & Efficient Blasting Course in June 2012. (Please type or use block letters)

<table>
<thead>
<tr>
<th>Name of participant</th>
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<tbody>
<tr>
<td>Name of Spouse (Program 1 ONLY)</td>
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<td>Participant’s date of birth (necessary information for the trip to Finland)</td>
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<td>Spouse’s date of birth (necessary information for the trip to Finland)</td>
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<td>Company name and address</td>
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Please state your main interest in blasting by ticking appropriate box(es) below:
- Open Pit Mining
- Quarry & Construction
- Underground Mining
- Others

**Software**
- I will bring my own LapTop to the Course and I am able to download the software in advance. Send the Product Key to my e-mail address (Type/use block letters)

**Programs**

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<thead>
<tr>
<th>Program 1, SEB Course</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Special Spouse Events</td>
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<td>Program 2, Mining Tour</td>
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<td>Workshops in parallel - choose one each</td>
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<tr>
<td>SHOTPlus®-i</td>
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<td>or SHOTPlus® Tunnel</td>
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Accomodation costs, before and after Course end, is to be carried by the participant himself.

We hereby accept that if cancellations are made later than 1st of May, 2012 or if we for any reason do not attend, we are liable for 50 % of the participation fee.

**Visa applications**: Note! Visa for Sweden is necessary from certain countries.

**Further information**
We reserve the right to cancel, make substitutions, change presentation schedule and/or cancel the entire Course if necessary and if minimum reservation requirements are not met. We also reserve the right to limit and/or refuse admission.

Send by mail or fax to:
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Orica Sweden AB
International Course 2012
SE - 713 82 Nora
Sweden

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