

# An Insight into the Swedish Heart of Atlas Copco

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## ABSTRACT

Atlas Copco is one of the world's leading providers of industrial productivity solutions (Atlas Copco, 2009). Furthermore, the company spans 160 markets and held 34 000 employees at the end of 2008. The company is organised under three 'techniques' whereby the Construction and Mining Technique's business division is located within Örebro, Sweden. This paper is aimed at briefly facilitating information on how the company and more specifically, the Construction and Mining Technique is run. Also, by sharing my experiences, this paper is intended to encourage and motivate students currently studying for a degree relevant to the minerals industry, to apply for this extremely beneficial scholarship.

Through a number of presentations relating to the various divisions, products and aftermarket services of the company, I came to realise that Atlas Copco extends beyond simply selling equipment suitable for the mining and civil industries. This tour through Sweden also contained highlights of visiting the Underground Rock Excavation factory, Surface Drilling Equipment factory and Secoroc divisions. I was also fortunate enough to participate in a tour of the LKAB mine in Kiruna. In addition, time was allocated to less industry related activities, and I was able to go dog sledging, sip vodka cocktails out of ice glasses at the Ice Hotel and enjoy traditional Swedish foods of moose and reindeer. Most important and memorable to me; however, was the ability for employees of Atlas Copco to speak of the company and their products with such passion and enthusiasm, which truly made this a motivational and unforgettable experience.

## INTRODUCTION

Every year, Atlas Copco provides students studying in technical degrees relating to the minerals industry a chance to apply for the Atlas Copco Scholarship. As the receiver of the Atlas Copco Scholarship of 2008, I was presented with the chance to visit Sweden in order to gain further understanding of Atlas Copco and its many services specifically relating to the Construction and Mining Technique. This trip began at the end of February 2009 and spanned two weeks over which a number of activities had been organised.

## GLOBAL EXPLORER

I had always intended on spending a couple of weeks travelling through Europe once I had finished my degree. When applications for the Atlas Copco Scholarship opened in 2008, I jumped at the chance of potentially including Sweden and this world renowned company into my plans. Elation would have been an understatement for what I had felt when I found out that I had been successful in obtaining the scholarship. Come to think of it, I should send my apologies to the poor man who notified me, as he would now be slightly deaf from my screams of excitement over the phone!

In order for me to book my flights to London, where I would begin my journey to Stockholm, I needed to find suitable dates of travel that would fit in with the company. I contacted Sue Goc of Atlas Copco based in Sydney and not only did she provide me with feedback on suitable dates of travel, but also informed me that Atlas Copco would pay for all my flights, provided that they were within Europe! My couple of weeks travelling through Europe had then expanded into a two month journey covering a one week visit in London, two weeks in Scotland, a three week

guided tour through Western Europe and finally two weeks in Sweden. With my limited finances, this was quite a remarkable feat and it was all due to the fact that Atlas Copco were more than happy to pay for my flights.

## ÖREBRO

My tour through the Swedish heart of Atlas Copco began in the beautiful, small town of Örebro, located approximately 200 km west of Stockholm. The town is also home to Atlas Copco Rock Drills AB's main production facilities. I was to spend just over a week at this location, with a short junket to Kiruna also occurring during this time. Of the eight divisions within Construction and Mining Technique (CMT), several are based in and around Örebro.

On the first day I had the privilege of being presented with information on the various pieces of equipment within Underground Rock Excavation (URE). The first presentation was to do with load, haul and dump (LHD) equipment, where I learnt about the various LHDs and haul trucks available. Of particular interest to me was the low profile equipment in this range. Having the ability to fit into drives as low as 1.8 m, these were built to combat the problems of mining in narrow vein deposits. I also listened to presentations involving tunnelling and mining equipment (TME) and raise boring equipment (RBE). To tie in all these facts and figures, I was then taken on a URE factory tour (Figure 1).



FIG 1 - A Simba M6C out the back of the URE factory.

To see the manufacturing of all types of drill rigs, haul trucks and LHDs was quite unbelievable. It was also incredible to see first hand the cleanliness and precision with which the underground equipment was being produced.

The following day was spent at the surface drilling equipment plant (SDE), located on the outskirts of town (Figure 2). Several presentations were provided and included a briefing on aftermarket services and the SDE product range. I was particularly interested in the latest Silenced SmartRig ROC D7C/D9C, which not only combines the technologies of the Rig Control System (RCS) but an enclosure of the rig enabling noise

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FIG 2 - Posing out the front of the SDE plant.

levels to be set at 10 dBA, thus making it very suitable for use within urban areas.

A visit to the Atlas Copco Rock Drills Distribution centre had also been arranged. At this location around 10 000 parts per week are handled and sent to customer centres and customers alike throughout the world. All parts are stored in the 10 000 m<sup>2</sup> warehouse at the rear of the centre and are arranged in such a precise manner that I think it would be impossible to lose anything!

## KIRUNA

On a Wednesday night, people generally go straight home from a day of work and retire to bed early and then repeat this process the next day. The residents of Örebro; however, have a slightly different idea and celebrate a somewhat loose tradition commonly referred to as 'lilla Lördag', or in English 'little Saturday' whereby many university students and, on this occasion, employees of Atlas Copco have a few drinks and dance well into the night at one of the city's night clubs. I had the privilege of taking part in this activity and found it very entertaining.

The next morning, however, was a different story! Recovering from a slight headache, I woke at 6.30 am, just in time to meet Marie and Jennica (my chaperones and employees of Atlas Copco) to be collected by our personal driver for a venture to Arlanda Airport in search of the town that is home to KLAB mine and the Ice Hotel. Kiruna is a Swedish town nestled above the Arctic Circle. Yes, that's right, THE Arctic Circle! Temperatures quite commonly can drop well below -30°C and during some of the winter months the city is in continual darkness. I'd like to say that I survived these extreme temperatures but we were fortunate enough to be visiting on sunny and rather 'hot' days ranging from -10°C to -15°C.

Besides this brutally cold weather, the city also offered some unique and certainly unforgettable tourist attractions. These included taking a dog sledge through the countryside and walking around the Ice Hotel – both of which had been organised for my trip by Atlas Copco.

Speeding through the beautiful landscape on a sledge pulled by 14 dogs at around 20 km/h was certainly not something I had ever imagined I'd have the opportunity of doing, and it was incredible! Liking Australian tourists, the driver even let me steer for quite a distance, although this only consisted of pressing the brakes a couple of times. To my surprise, the dogs generally know which trails to take and in the event of them detouring slightly off course, the driver simply gives them a verbal command. After this hour long trip from the airport we found ourselves standing on the frozen Torne River overlooking the Ice

Hotel. This hotel is comprised of a church, reception, designer ice suites, ice family suites and ice rooms. To say it is amazing really doesn't do it justice. Admiring the chandeliers fully composed of ice, while sipping on mango vodka cocktails at the original Absolute Ice Bar (Figure 3) simply topped off the experience. The trip to Kiruna had been truly incredible thus far and to top the night off, we ventured to Ripan, a restaurant that I would regard, as a university student, as a place providing extravagant meals with price tags to match. The dinner we had selected consisted of five meals and included a moose fillet and reindeer steak. Both of which were absolutely delicious!



FIG 3 - The Absolute Ice Bar at the Ice Hotel.

Our second day consisted of a tour through the LKAB mine, regarded as the world's largest and most modern underground iron ore mine (Mining-Technology.com, 2009). With a production rate exceeding 80 000 t/day in past years and utilising sublevel caving, I knew it would be something special – certainly not anything which could be experienced in Australia. At dimensions of 6 m by 7 m, the drift used to enter the mine was not only huge, but contained a concrete flooring which enabled buses to transport tourists to the InfoMine located 500 m below the surface. Contained within this underground facility was a cinema, mining museum and even a café. As we were travelling as representatives of Atlas Copco, we were also privileged enough to get up close and personal to one of the Simba 4689 rigs in remote operation. LKAB mine are also in possession of fully automated LHDs supplied by Atlas Copco. Interestingly, production is anticipated to move from 775 L to 1365 L in 2012, which will result in the caving zone being situated right below the town. A gradual moving of the entire settlement is therefore planned and is expected to be completed by 2033. This would be an amazing engineering feat and proves how vital the mine is to the town's economic prosperity.

Visiting Kiruna was an amazing experience and will certainly be treasured for years to come!

## RETURN TO ÖREBRO

After a weekend of sightseeing, I was ready to investigate a couple of additional departments before I continued on my journey back to Stockholm. The first department I was fortunate enough to visit was Rocktec. This unit acts to provide support and knowledge to the engineering departments within CMT. The department is divided into areas of Applied Mechanics, CAD Support, Industrial Design, Materials and Rock Drills Lab and Measuring Technique. These areas work together to ensure new CMT products are not only technically sound, but ergonomically designed and aesthetically identifiable as an Atlas Copco product.

Like any successful, world renowned manufacturer of equipment, Atlas Copco are finding that pirate parts offering a cheaper solution, but with less than adequate quality, are being purchased as replacement parts for their machinery. The Materials and Rock Drills Lab are working to acquire these parts and identify their composition so as to make customers aware of the detrimental impact these parts are capable of causing, and thus reduce the overall problem. For someone who didn't particularly enjoy materials engineering at university, this aspect of the company was certainly interesting.

To conclude my time at Atlas Copco Örebro, I met some employees from the Communications department. Learning about the ways in which they seek to promote the company definitely appealed to me. The Atlas Copco brand is known by everyone within the minerals industry and I guess you could say that, as a result, this department and others like it located around the world have succeeded in at least half the Atlas Copco motto, *'First in mind, first in choice'*.

### ORICA MINING SERVICES

As part of the scholarship, I was also fortunate enough to be offered a tour of one of Orica's production facilities located approximately 45 minutes north of Örebro in Gyttorp. Interestingly, when Orica acquired parts of Dyno Nobel in 2006, this site also changed hands. As a result, many of the explosive products still contain the Dyno Nobel labelling. This transition process, however, is anticipated to be completed by 2012. The site is home to the production of both electric and non-electric detonators. Safety and productivity have both been accounted for with the majority of processes being completed using robots and other computer aided devices. To be guided through the manufacturing of these products was a very big privilege. This experience has certainly given me a new perspective on a product used all the time within the mining industry.

### FAGERSTA

My final stop before I reached Stockholm was to visit the Atlas Copco Secoroc headquarters located in Fagersta, roughly an hour north-east of Örebro. This division of the company produce and also design rock drilling consumables required for CMT. These include rotary, raise boring, topammer, down-the-hole and COPROD products. An overview in the form of a series of presentations was provided for me. Following this, I was taken on a factory tour where I was able to see the production of the various parts. The majority of the processes utilised in this production are automated, which has therefore resulted in increased output as well as a higher level of safety for employees. Most processes are undertaken within the confines of steel cages or enclosed capsules. Atlas Copco has injected a significant amount of funding into these automated processes over the last five years and will continue to upgrade current systems throughout this year. This production process was amazing to see and the personnel guiding me around were so knowledgeable and enthusiastic. I particularly enjoyed watching the friction welding process utilised as a means of joining steel parts together. At the end of the day, I had even acquired an additional backpack full of Secoroc merchandise!

### STOCKHOLM

After catching a train from Fagersta to Stockholm, I checked into the rather flashy Radisson SAS Royal Viking Hotel situated in the centre of Stockholm. I retired to bed quite early in preparation for my last day at Craelius, part of the Geotechnical Drilling and Exploration (GDE) division of Atlas Copco. GDE develop, manufacture and market products and services for exploration drilling as well as selected applications and markets

within ground engineering and rock reinforcement. This division contains six manufacturing facilities with roughly 400 employees worldwide. At GDE, Craelius diamond core drilling bits; exploration and ground engineering capital equipment are manufactured. Listening to several presentations, I found the methods of exploration quite interesting and in particular learning about reverse circulation rigs.

My final day was spent sightseeing in centre of Stockholm. I was both surprised and overwhelmed at how many attractions this city had to offer (certainly more than one day's worth) and I have therefore vowed to return as soon as my finances will let me! I started the day at Gamla Stan, which translates to 'old town' and offers a range of historic buildings dating back to the 13th century. Upon the recommendation of some Atlas Copco employees, I also visited the Vasa Museum containing a ship from the 17th century. The Vasa had sunk in 1628 in the harbour of Stockholm, and it stayed there until 1961 when the ship was brought to the surface, restored and then put on display. The museum was not something I'd usually visit, but its craftsmanship was certainly something to admire. The rest of the day was spent simply walking around the streets of Stockholm and taking in the atmosphere. From the snow on the ground, to the beautiful architecture surrounding the shorelines, Stockholm was certainly a place I didn't want to leave. With time and finances having run out, however, departing from this beautiful place was inevitable. The next day I returned to Arlanda airport for the final time and returned home (sigh!).

### WHY NOT APPLY?

This scholarship is so rewarding and enriching from my perspective, in that it allows an individual to not only experience a completely different culture, but also obtain a greater understanding of the minerals industry on a global scale. I have established great connections with so many influential people from the company and plan to continue communications with them well into the future. If I ever have the opportunity to purchase equipment within my role in the industry, Atlas Copco and its products will certainly be at the front of my mind. I'd highly recommend spending an hour of your day filling in the application for this scholarship because the benefits are just so great. This has truly been a once in a lifetime opportunity!

### ACKNOWLEDGEMENTS

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