Suction power in London’s Metro
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Backing-up academics
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Signals assignment on the Malmbanan (Iron-ore track)
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A successful introduction in England Page 4
When it comes to wet-beds, capacity has increased by approx. 300 percent compared to earlier methods.

"Besides the increased productivity, we have changed from an old, manual method to a new method which is much better from an environmental point of view," states Doug.

He also sees increased possibilities for new areas of use for the Tubevac-machine. It will be tested e.g. exchanging of ballast and renovating the shunters as well as with drainage work.

Clay becomes "wet spots"

London's Metro system is large and in many places the track passes through areas of marshy ground.

"Problems occur especially close to the rail joints," says Leif Dahlqvist who has been Railcare's man on-site, helping with the starting-up of work. When the underground trains pass the joints, they yield, causing the ballast to eventually be crushed. When the crushed rock comes into contact with water, clay is produced which stiffens and becomes very hard. This, in its turn, means that the problem "wanders further" on down the track. Another effect is that the track loses its position, both laterally and vertically. The clay can also work its way up onto the conductor rail. These so-called wet-spots result in poor contact creating sparks when the underground trains pass by. When we renovate these problem areas, the safety is improved, wear to the trains is reduced and passenger comfort is increased, as the ride is smoother.

Up until now some areas within the Picadilly Lines outer sections have been attended to, but according to Leif, the "market" for Tubevac on the London underground is enormous.

"We are completely satisfied. Tubevac has really lived up to our expectations." Doug Parker, project manager at Trans Plant New Works, has nothing but praise for Tubevacs first period of time in London’s Metro system. Since September 2005 there has been a specially constructed Tubevac on site for renovation work.

"Up until now we have mostly used it for renovating the so-called wet-beds, but we are now going to investigate other areas of use."

"It would need perpetual work to attend to the whole of London's Metro system! Only a few hours effective work at night are allowed.

Another machine

How many Tubevac-machines would be required is naturally impossible to say just now, but Trans Plant Works hopes that further investment will be made available shortly to procure further machines.

"We have also had many visits, such as our subsidiary, who are interested in both the method and the machine."

Easy to learn

Leif Dahlqvist is also responsible for the introduction of English operators. During two weeks, a test area on Trans Plants marshalling yard in Ruislip, western London, was used for training. The real work was then started in Enfield at Picadilly Lines northern end.

"Our hand-picked operators learned to handle the machines quickly," relates Doug Parker. I am on the whole very satisfied with the close collaboration between Railcare and Disab on the entire project. It has worked fantastically well!
"Come and look Ingvar, this looks very odd."
When working with the laying of cables before the upcoming rail change on the line between Bollnäs-Karlsjö, Railcare’s personal project manager, Ingvar Majlöv, noticed that the insulation under the rail lay suspiciously close to the rail.
Yes, the insulation lay much closer than the stipulated 30 cm which should be the distance between the underside of the sleepers and the special cellular plastic which constitutes the frost insulation.

"We notified our client Banverket, Mid-region, regarding this and received the assignment of investigating the entire distance, a total of 35 km," says Ingvar Majlöv.

A total of 465 test holes where excavated using the Railcvac. Then, measurements and records were taken of the distance between the railway sleepers and the insulation. These showed that for an entire 21 km of the distance, the frost insulation was too shallow. A layer of ballast that is too thin can lead to track instability, but it was especially a problem for the coming rail change since there was a great risk of the insulation becoming crushed by the machines being used. The insulation used is a special cellular plastic which is dimensioned to manage 25-ton loads.

**Discovered in time**
"Our client was very satisfied that we had noticed this and that it was discovered in time. We are now investigating the possibilities of attending to the problem," says Ingvar. "One possibility is to raise the track."

Rail change on that distance will begin during week 25 and Railcare will be undertaking associated cable laying. In the autumn, the work continues on the stretch, i.e. Karlsjö-Ljudsäl and Railcare will be supporting this work.
It was an employee of Carillion Innovations team who first came into contact with the Railvac-concept and visited Sweden in order to study the technique. After an initial introduction at the end of February 2005, the Railcare-group returned to follow-through on different jobs that started in November. The Railvac-machine has been specially adapted to work on the British railways. The red colour, was not acceptable due to British safety regulations, and the machine has been painted yellow. By March 2006, eight different assignments had been completed in different places throughout England. All have been visited by railway experts who have an eye for how things work.

“We are very satisfied”, explains Steve. “The machine has a large capacity; it is fast and requires few personnel. Reballasting of track, whilst in situ, particularly under switches and crossings is faster, cheaper, safer an less disruptive to traffic than current methods.” Until now Railcare’s own operators have been flown in from Sweden to operate the machine on work sites, mainly during the weekends. One of the operators is Adam Sundin. “It’s been fun since everyone is so impressed with the concept. Before we started the English were doubtful but most sceptics are now solid supporters of the system!”

Will the yellow Railvac-machines become a common sight in Great Britain? The joint Carillion/Network Rail/Railcare team worked on the introduction of Railvac during the last year feels that the chances are good. ”We are expecting to be given the green light for buying our own machine as the use of the machine is extended in 2006”, says Steve Mugglestone, the Carillions Transports project manager. “In the future I can see the need for some 10 machines working 24-hours a day – all year round!”

A Railvac-team

Steve Mugglestone is very satisfied with the cooperation between Railcare and the machine supplier Disab. ”It is not us and them any longer, we’re a Railvac-team! If the plans follow through and we can invest in our own Railvac, we will train our own operators.”

“ We hope to have our own machine very soon”
Full speed ahead at Eurovac and many plans for the future

Eurovac, the company for traffic safety, education and environmental issues in Railcare Group, has had a good year with many assignments, many from Banverket. Expectations are great for 2006, which looks to be a year when many projects will be starting. Some examples of Eurovac’s assignments during 2005:

**Accident investigations**
Investigations following accidents, traffic incidents and electrical safety within the railway area of Stockholm, on assignment from Banverket. This work will continue during 2006.

**Declarations for railway stations in Gothenburg**
Eurovac has had different assignments with Banverket’s Region West and the railway area of Gothenburg. Among other things, participating in the work of writing railway area declarations which by way of introduction includes the updating of the BIS-system.

Missives have also been written for a large number of investigations.
Both these assignments will continue during 2006 and Eurovac will carry out other assignments within the region.

**TRI-competence**
Eurovac is participating in Banverket’s main office project "TRI-competence". This entails the production of requirement specifications for safety officials and final testing prior to planned certification. The accident registry "Synergi", will be supplemented with incidents registered in two older systems. This requires certain adaptations which Eurovac has been chosen to implement.

**Education in safety**
During the winter/spring we have as usual been busy with safety training and it looks as though this will continue into the summer this year. One can see that there is great expectation at Banverket of there being many projects during 2006. We will also see a change in certification requirements for work on railway facilities. During this year, JP (railway person certification) will begin, which means that each person working on railway facilities will be required to have a certain "driving license". This will be followed-up with great interest by Eurovac and the branch organisations.

Concentration on exports during 2006

The Railcare-machines steam their way into Europe! Last year, Tubevac was successful in London’s Metro system and RA2 began its odyssey through England on a trial being led by Carillion. “2006 will be an exciting year as RA6, the machine of the next generation, will be introduced”, explains export manager Eric Hardegård at Disab.

He hopes that Network Rail, the English counterpart of Banverket, will within a short time approve Railcare’s method in England. This would mean coming many steps closer to selling machines that are specially adapted according to English rules and regulations. A RA2-machine has been in place for some time in England and carried out assignments in many places. These “work demonstrations” have been studied by a large number of interested parties.

**Great need in the Metro**
 "When it comes to Tubevac, I count on there being “a wave effect” and that we will receive other machine orders in addition to that which has been sold to Tubelines Ltd.,” say Eric. The Metro system in London is extremely large and the need for maintenance using effective methods the same.

**Next generation of machines**
2006, heralds the next generation when RA6 will be widely introduced. This will occur firstly through Innotrans (the International Trade Fair for Transport Technology), in Berlin. Eric believes that great interest will be shown by the entire railway industry, but counts on Finland being the nearest market for RA6.

**Finland next?**
“Finland’s method of working railways is similar to ours and with the development of RA6, we have collaborated with a Finnish company. Railcare has not been active in Finland because of the differences in rail width that makes the use their own machines for assignments in Finland impossible”, he explains.
Beat the drums for Railcare

Last year, Railcare Lining devoted a lot of time to marketing its unique method of renovating railway drums or culverts under the track.

Tremendous interest was shown by the visitors during the trade fair Nordic Rail in Jönköping. About 200 people gathered outdoors in the exhibition-area and were able to see for themselves how the method works.

"The visitors were very interested", relates Emil Burén, a manager at Railcare Lining. "We have now started to see the effects of the exhibition. Västra Banregionen has among others shown great interest."

Other demonstrations have been given in Härnösand and Katrineholm. Kiruna and Gothenburg are on the waiting list.

"We usually arrange the demonstrations together with a potential client who invites their interested parties. They can be anything from prospecting people to contractors, approximately 10 - 15 people per demonstration. We demonstrate our method on a drum or culvert which becomes a sort of reference for future renovations. There are usually three of us on-site from Railcare Lining who do the actual work along with a pair who will explain and serve coffee. The entire demonstration takes approximately one day to complete and it is usually much appreciated."

Large job for Railcare Lining

Railcare Lining has two large jobs waiting to be started. The largest is the line between Vännäs – Mellansel, a continuance of the so-called Stålpendeln (Iron Pendulum). Here, up to 50 culverts must be renovated. The assignment should have been carried out during 2005, but was moved forward due to changes in priorities following damage caused by the Gudrun-storm.

The company is also involved in the restoration of the Haparanda rails. Here, up to 20 culverts must be renovated.

FSJ grows and takes its place

The association FSJ (Sweden's Railway Contractors) is growing and has now 28 companies who are members.

Besides FSJ representing many working groups along with Banverket, last year, the organisation took its place on the Railways Safety Council, where Lars Nihlen, Carillion, is FSJ's representative. The board of directors includes Invar Majløv (chairman), Railcare; Robert Röder, Sv Banproduktion; Lars Nihlen, Carillion; Karl-Jörgen Mattisson, BB-Rail and Odal Lundmark, Skanska.

Personnel training of Railcare personnel

During 2005 Railcare developed its own all-encompassing personnel training. The training plan includes four main areas: technique, electronics, safety and company culture. It includes a whole week's course with the entire Railcare personnel sitting on the school bench.

"The idea is to increase competence within, e.g. the ability to solve technical problems and thereby increase the quality of our work", relates Michael Marklund of the Railcare Group. "We have personally developed the course plan and personnel with special knowledge teach these abilities to their fellow-workers."

Railcare's own education package will also be used in the future when e.g. introducing new employees. Apart from this basic training, Railcare personnel, like all others within the Railcare Group, received the usual training week at the beginning of each year.
RAILCARE CONTRACTING

BaneServicve Danmark A/S, the Danish company that is marketing the Railcare concepts in Denmark, has celebrated their first year. “We have had a very good year and have also moved to a new location where we have offices, storage and four overnight rooms for our operators”, explains Sven-Åge Sletbak, manager at BaneService.

Good move for BaneService

He relates that everything is moving well in Danmark and the season for railway work has already begun in March.

"More and more people are discovering the advantages of the Railcare-method and we are becoming involved in an increasing number of projects.

For now, we are working on two large jobs, one standard and one more innovative. One is at Copenhagen’s main railway yard where we are exchanging ballast.”

“A job which would have been impossible to do without the Railcare-method”, says Jens Peter Slotman. “There are an enormous amount of cables, signals and other obstructions in the ground. We have for many years, worked with Railvac-machines and have great confidence in both the machines and the method.”

The more innovative project is on the line between Copenhagen - Århus. This entails the change of the thermal insulation layer, that is so worn that the speed has been decreased to 60 km/h.

"If we had used the usual method with excavators the risk of damaging cables would have been great with disturbance of traffic as a result”, explains the project manager Jan Bille Hansen. “Now, we can use the suction night after night and all is going according to plan.”

Great interest for demos in Denmark

Was it the "Danish pölse (sausage)” and the beautiful late summer weather which enticed when BaneService invited people to the demonstration in Nåstved, Denmark, at the end of last summer?

"No, not at all”, says Sven-Åke Sletbak, BaneService. “The interest in the Railcare, scanner and in other equipment was great.”

Some 30 people came, a wonderful mixture of rail workers, foremen, planners and project managers. A Danish sausage cart was also in place for those who became hungry during the day. Thanks to an agreement with Banedanmark, we were allowed to use a stretch of rail where 15 sleepers were suctioned free from ballast and replaced with new ballast.

“A common reaction is that it is just as easy to do with the usual method, but when they see how it works, most realise that the Railcare-method is much better”, says Sven-Åge. “It is especially faster and less wearing for those that are doing the job.”

Many cable-people were on-site in order to see the laying of the cable and the scanner in action. Large preliminary investigations of the cables’ positions are unusual in Denmark, so it was exciting to give the demonstration.

“It was very successful”, says Sven-Åge. “The key is the simple concept: The Railvac-machine suctions the test holes at certain intervals, the scanner drives over and registers the rails’ profile, identifying each cable and its position. The results are presented in Excel where a report is shown on each stretch with information on the possibility of problems that may occur when recycling the ballast or when automatically changing rails.”

"On the whole a great day!” The following reactions were very positive with many direct orders and further presentations within the Banedanmarks system.

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"On the whole a great day!” The following reactions were very positive with many direct orders and further presentations within the Banedanmarks system.
Being an engineer at Bantåg means more than “just” driving a locomotive. “I work independently and solve problems by myself. It is interesting and not just routine.” This comment is made by Urban Lundström, Västerås, one of Bantåg’s engineers.

Urban has been an engineer for 20 years, with SJ and TGOJ Rental, now STIBI Rental. When downsizing occurred within STIBI Rental, Urban applied to Bantåg.

A philosophy
Michael Marklund, Railcare Group, explains that the engineers increase in work tasks is a well thought-out philosophy.

“We know that engineers have many important work tasks, but during the work day free-time comes up and then it is perfect for them to be able to strengthen the team on-site by helping with some other task.

“This is something that Urban Lundström has nothing against. “No, I would instead appreciate even more different tasks. This gives you a chance to develop”.

Railway engineers strengthen the team

The storm Gudrun played havoc with all of Sweden’s forests in the beginning of 2005. Even Weda Skog AB who buys timber for nine large saw works, five within the Moelven Group, became involved with taking care of the timber. The Norwegian Ofotbanan was contacted in order to take care of certain parts of the railway transports and they in their turn employed Bantåg AB, the company within the Railcare Group that offers engines and drivers.

“During last year nearly a third of the usual yearly consumption arrived at “our saw mills” from the storm-felled timber of Småland”, relates timber controller Hans Larsson at Weda Skog. It was a logical challenge since we normally do not buy timber from this area at all. It became no easier when both railways and lorry transporters as well as the cutting resources were heavily loaded by all those that came to help in the cleaning up after the storm. Of Weda Skogs 75 own machine systems (units for branch harvesting and cutting of timber) at least 45 were on–site in Småland. A large number of machine systems were also rented. Then, lorries had to be arranged that could transport the timber from the three railway depots which Weda Skog had established in Näsjö, Vislanda and Limmared.

Quickly on the job
“On February 15th, only one month following the storm, we were already on the job”, says Hans. In Limmared where we employed Ofotbanen with Bantåg as the subcontractor, the transports were working by April 15. New railway cars for timber transport were required and this was solved quickly. In the middle of February 2006 the last timber train left Limmared. In total 200 trains loaded with timber were transported by Ofotbanen/Bantåg on assignment from us. “We have had only positive experiences with Bantåg as a professional and constructive partner.”

When the project was underway, Bantåg took increasingly more direct responsibility for the transports and I feel that we often had many advantages thanks to Bantågs good contacts with Banverk”, says Hans Larsson.

Best for long transports
He feels that the whole process with the Gudrun-timber has been interesting and educational. “Railways are clearly the best method for long transports, one train is equivalent to between 25 to 40 lorries, making it both cheaper and more environment-friendly. It takes a little longer to build up the logistics, but we have learnt that even railway transports can be flexible. I think we will be working more with this in the future.”
Newly started IM Consulting backs-up young growing strength

"Instead of recruiting personnel from already established consulting companies, we chose another way of growing," explains Sture Åberg, manager of IM Consulting with its concentration on railway technical consulting services, started in January 2005. "We helped initiate a completely new education for unemployed academics. Today, many of them are employed by us."

In cooperation with Teknikresursen AB i Luleå, IMC has designed an all-embracing educational concept for new technicians/engineers. Teknikresursen has developed material with a lot of emphasis on the pedagogy.

4U shows the way

"In order to meet the growing railway market, we must be experts at what we call 4U", explains Sture. In this are included:

Consulting – We provide temporary staff i.e. qualified railway consultants, e.g. building and construction managers, building coordinators, project administrators and investigation managers.

Education – Railway technique, the operations within railways, contract law, project management and other management within the railway area.

Investigations – Technical investigations, competence analysis, market analysis, quality and operational control, calculation and logistical analysis.

Development – Work as project manager for the developmental projects within the railway.

Widespread needs

The educational concept includes a 16-week long building management and projection education within BEST. The reason for this is the widespread need within the railways for these categories of resources. The course was carried out during 2005 with very good results. As a “spin off” of this course we have also developed a complete newly-produced course in railway technique. The course is three days long and includes all types of techniques within BEST and contains the latest in the technical areas, e.g. the introduction of ERTMS. The course in railway technique was carried out during 2005 and 2006 for participants from Banverket’s different divisions, consulting and contracting companies as well as LKAB and Botniabanan.

Four staff at IMC

IMC has to date employed 4 participants from the course, all project engineers from the building programme (120 p) at Luleå “Instead of recruiting personnel from already established consulting companies, we chose another way of growing. As explained by Sture Åberg, manager of IM Consulting with its concentration on railway technical consulting services, started in January 2005, “We helped initiate a completely new education for unemployed academics. Today, many of them are employed by us.”

Bantåg has now received trafficking permission from Järnvägsstyrelsen (the Swedish Rail Agency) This is a new, complete permit which is valid for the transportation of goods on the Swedish railway system without limits (not environmentally dangerous goods) SAs

The all-encompassing quality manual is the foundation for the decision, where Bantåg has accounted for the company’s economical situation and administrative information regarding its personnel and technical equipment.
The work is a part of Malmbanans extensive restoration where the entire line from Kiruna to Narvik is being prepared for larger and more iron ore transports. The traincars that will run on Malmbanan will be up to 800 metres long and the new cars, loaded with iron ore, will weigh 100 tons! Most of the stations have been restored and the renovation is culminating in a rail change on the line between Björkliden and Riksgränsen. Korkvik is a strategically important station since it is that station which lies closest to Kiruna. Here, the trains will be able to meet and wait for each other.

One of Europe’s longest

According to unconfirmed information, Krokvik is now Europe’s fourth longest railway yard”, says Jan. It has new rails, new switches, and moveable crossings at both ends as well as a dead-end siding. This means lots of signal work, where we have changes boxes and assembled everything as well as taking part in their management. Three persons have been constantly employed and more were required during the operation.

Now, it is not only the iron-ore which will be transported on the rail. Norwegian fish is also a large product and there will soon be fish-trains rolling towards Russia via the new Haparandaban. Malmbanan (the Iron ore rail) is one of Sweden’s most profitable railway section and due to the development within the mining industry which is starting up in the area with large investments as a result, it is safe to say that profitability will continue.

Fun in Kiruna

“It’s fun to live in Kiruna now”, says Jan. “There is belief in the future and people are moving here. Don’t count on getting a hotel room in Kiruna, it’s always full!”

Even if the number of inhabitants increases, the private traffic on the stretch between Kiruna and Narvik will never be a large part of the rail traffic. This also applies to the station at Krokvik.

Krokvik is a small town with maybe 20 families, but the train will stop sometimes if someone has the need...
Ingvar Majlöv will take over the responsibility of Railcare Contracting starting April 1. He is a well-known name within the railway branch, with many years of experience from Banverket, as chairman for FSJ (Föreningen Sveriges Järnvägsentrepprenörer) as well being employed for the last ten years at Railcare. “The business will be strengthen and increased”, he says.

Railcare Contracting has during the last year built up its business with a concentration on its own whole or partial contracting within the BEST-area (see the article on contracting in Krokvik). In addition, we have the temporary staffing solutions of sending competent personnel directly to the client.

Stable employment
“...we will also diversify with other businesses”, explains Ingvar. “My goal is to build up a business which gives a stable and even employment, even during those periods which are normally low-season. We have two or three strong ideas and I hope that within a short period of time to present something new!”

“...we must also build up the collaboration with other, similar players.”

Ingvar Majlöv.
The Railcare Group currently includes nine solid companies. By using each others’ competence and combined resources, the Railcare-companies are on the whole an interesting partner - even for larger clients and for large contractors.

Our newest co-workers

Skellefteå Railcare AB
Lorenz Rydén
Machine operator

Skellefteå Railcare AB
Jonas Sundlöf
Machine operator

Skellefteå Railcare AB
Robert Persson
Machine operator

Skellefteå Railcare AB
P-O Andersson
Machine operator

Kiruna Railcare AB
Timo Liikavainio
Machine operator

Västerås Bantåg
Urban Lundström
Driver

Sala Bantåg
Sven-Erik Johansson
Driver

Skellefteå Railcare AB
Fredrik Burén
Machine operator

Skellefteå Railcare AB
Johan Lundmark
Machine operator

Luleå IM Consulting
Mårten Rutberg
Project engineer

Piteå IM Consulting
Jenny Holmgren
Assistant building manager

Luleå IM Consulting
Andreas Andersson
Projection manager

Luleå IM Consulting
Monica Sandsten
Coordinator

Luleå IM Consulting
Hans-Ola Johansson
Building coordinator manager