

# Heavyweight News

from Sarens

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Dear Reader,

In line with our company policy to excel in performance and reliability, we are continuously upgrading our fleet. To be able to continue to provide first-class services, we have recently acquired the following state-of-the-art equipment:

- A 1,250 tonnes capacity Demag CC 8800 crawler crane (of the 1,500 tonnes class) which was purchased at the end of 2003.
- Three 350 tonnes Liebherr LR 1350/1 crawler cranes which were ordered in February 04 and will join the fleet in 2004.
- Seven Hitachi Sumitomo SCX 2500 crawler cranes which will be delivered in 2004.
- Sixty Kamag SPMT (self propelled modular trailer) lines which will be delivered in 2004.

Apart from these additions to our fleet, we continue to replace older special equipment as well as telescopic cranes.

To further support our worldwide activities, a strong project management department was created at our Head Office in Wolvertem, Belgium (see last page).

Enjoy this 2nd edition of Heavyweight News.

Ludo Sarens  
CEO Sarens Group



## Heavy Lifting Project on Bioko Island, Equatorial Guinea



Customer: CCIC (Consolidated Contractors Int'l Company) / Greece - Marathon Oil / US  
Location: Bioko Island, Equatorial Guinea (West-Africa)  
Equipment Used: Demag CC 8800

At the beginning of January 2004, Demag delivered a brand new CC 8800 lattice boom crawler crane from its 1,500 tonnes class capacity category.

The crane was immediately sent to Bioko Island near Malabo in Equatorial Guinea - West-Africa. There, the Demag, in SSL configuration, will handle all heavy lifting works for CCIC Greece. The major one was the lift of a fractionator of 400 T at a radius of 17m. CCIC is one of the main contractors of Marathon Oil, US.



## Replacing Railway Bridges in Paris, France



Customer: SNCF  
Location: Pantin, Paris / France  
Equipment Used: SPMT's, 600 ton climbing system, sartrain, Strand Jacks

Five bridge floorings of a railway bridge near Paris, dating from 1900, needed to be replaced with minimal disturbance to rail and road traffic. Replacing the bridge floorings using traditional methods would have required closing the bridge for six weekends.

The Sarens Group and project partner Rabot Dutilleul devised an innovative technique which caused minimal disturbance to traffic, made the project less complicated and reduced the timeschedule. The old bridge floorings were lifted from

the road using Kamags, a 600 ton climbing system, a custom-built supporting platform and trolleys.

In the first stage, the custom-built trolleys were placed on the supporting platforms and those platforms on a climbing system on top of the Kamags, all underneath the bridge. The old 85 tonnes bridge flooring was lifted with the 600 ton climbing system. Afterwards we made a connection with the existing railway and the trolleys were used to remove the bridge by rail.

In a second stage, the old bridge heads were replaced by new prefabricated ones using the same lifting concept, completed with Strand Jacks. The new bridge flooring was then lifted and moved to the site the same way. Finally, the new 138 tonnes bridge flooring was transferred from the railway onto the supporting platform and manoeuvred into place by the Kamags.



## Assembling a Tower Crane in Liège, Belgium



Customer: Neremat  
Location: Gare Guillemins Liège / Belgium  
Equipment Used: Liebherr LTM 1160/2 / Liebherr LTM 1300/1 / Demag AC 700

In Autumn 2003, one of the Belgian Sarens-tele entities was asked by Neremat in Ingelmunster, Belgium, to assemble a Potain MD 1000 tower crane in Liège.

The major challenge was that the tower crane had to be positioned at the bottom of a 20 m deep building excavation. Because the tower crane was located approximately 70 m from the edge of the building pit, 3 different telescopic cranes were used: a Demag AC 700, a Liebherr

LTM 1160/2 and a Liebherr LTM 1300/1 to execute the job safely.

First the Demag AC 700 lowered the Liebherr LTM 1160/2 into the pit. Then the Liebherr LTM 1300/1 transferred the tower crane components from the edge of the building pit to within reach of the Liebherr LTM 1160/2 as a service crane. Finally, the tower crane was assembled at a height of 24 m using the Liebherr LTM 1160/2.

The photograph shows the Liebherr LTM 1160/2 being lifted out of the excavation pit

after the successful assembly.



## Rebuilding the Sloboda Bridge over the Danube River



Customer: DSD Stahlbau / Germany  
Location: Novi Sad / Federal Republic of Yugoslavia  
Equipment Used: Demag TC 2000

The Sloboda (Liberty) Bridge in Novi Sad was almost completely destroyed by NATO action to end the civil war in former Yugoslavia. The Sloboda Bridge was the major link between the old and the new city district.

The European Agency for Reconstruction considered the restoration of navigation on the Danube of economic and commercial, environmental, cultural and political importance to Europe. It also recognized the importance of the Sloboda Bridge to the inhabitants of Novi Sad. The Agency donated funds to clear the

Danube of debris and to reconstruct the Sloboda Bridge.

Following public tendering, the contract to reconstruct the bridge was awarded to DSD Stahlbau, who subcontracted the crane works to the Sarens Group. The Sarens lattice boom Demag TC 2000 was transferred from Croatia to Yugoslavia. The work, which is carried out from both banks of the Danube, will take about 15 months.



## Heavy Lifting Work for a Power Plant in Santurce, Spain



Customer: Ciclo Combinado de Santurce UTE (Cobra, Ghesa, Gamesa)  
Location: Santurce / Spain  
Equipment Used: Liebherr LR 1750; Liebherr LTM 1400

In August / September 2003, the Sarens Group together with CEIT carried out heavy lifting work for an electricity plant extension in Santurce near Bilbao in Spain. The work consisted of:

- Transporting and lifting 18 modules of a Heat Recovery Steam Generator (HRSG), each weighing between 105 and 140 tonnes.
- Transporting and lifting three boiler drums weighing 125 tonnes, 40 tonnes and 25 tonnes.
- Assembling a 75 m high chimney from components weighing between 35 and 95 tonnes.

① The Sarens Group again built on its extensive experience in assembling lifting

equipment within a very limited space. We used a Liebherr LTM 1400 service & tail crane to assemble the Liebherr LR 1750 main crawler crane which was required for the heavy lifting works for the power plant.

② The Liebherr LR 1750, in the SLDBW-91m configuration, was used to unload the modules.

③ Subsequently, the modules were set on end using the Liebherr LR 1750 as the main crane, the LTM 1400 (TA) for tailing.

Finally, the modules were lifted and manoeuvred into position using a custom made sliding beam.



## Installing the Roof of the “Multifunktionsarena” in Düsseldorf, Germany



Customer: Hollandia-Bailey / The Netherlands  
 Location: Düsseldorf / Germany  
 Equipment Used: Tower Lifting System / LR1400 / LR1280 & LR1750 Crawler Cranes / SPMT's

At the end of 2003, the Sarens Group received from Hollandia-Bailey in The Netherlands a major order to carry out all heavy lifting work for the roof installation of the Düsseldorf Multifunktionsarena (Germany).

For this turnkey heavy lifting job, the project management team decided to use a tower lifting system for the installation of the two main beams (160 m long, 20 m high and weighing 1,600 tonnes

each). The Sarens Group used a 500 tonnes LR 1400 crawler crane and a 280 tonnes LR 1280 crawler crane for the pre-assembly works and the installation of the secondary beams. This first part of the project has been completed according to schedule.

In April 2004, two Liebherr LR 1750 cranes with a lattice boom capacity of more than 600 tonnes will be used to erect the last heavy part of the roof, the ‘flap roof’ section.



## Refinery Project in Bourgas (FCC revamp), Bulgaria



Customer: Lukoil Neftochim  
 Location: Bourgas / Bulgaria  
 Equipment Used: Demag CC 2800

The Sarens Group has assisted in the reconstruction and modernization of the catalyst cracking installation of the Lukoil refinery in Bourgas (Bulgaria).

The project presented us with several challenges. The space available for assembling the required Demag CC 2800 crawler crane and for installing the equipment was very limited.

Furthermore, the heaviest parts, the reactor and the regenerator heads, weighed between 90 and 193 tonnes, had to be picked up at a distance of 18

respectively 30 m using superlift ballast. Because the new reactor heads had much longer dip legs, they had to be lifted and manoeuvred into position with only millimetres spare.

Time was limited too: within a mere of five weeks, one reactor and one regenerator — including its auxiliary equipment — had to be replaced.

The demanding time schedule and the space constraints made extreme precision and careful planning and handling a must for success.



## Total Pilot Wind Farm in Dunkerque, France



Customer: TOTAL  
 Location: Wind Farm of Mardyck, Raffinerie des Flandres, Dunkerque / France  
 Equipment Used: Demag CC 2800 + tail & service cranes

In line with the European Directive to promote electricity from renewable energy sources, TOTAL has developed a pilot wind farm in the industrial complex of Mardyck. The wind turbines of the most recent generation can produce approximately 12 MW of electricity - enough to cover the domestic power consumption of 15,000 people.

Three different types of wind turbines (two Nordex N80, two Vestas V80 and one General Electric Wind Energy GE 3.2 turbine) have been installed. This will allow TOTAL to compare the performance of different technologies in view of future developments.

The Sarens Group used a Demag CC2800 crane (in SWSL 72 m/42 m configuration) to assemble the five wind turbines in August / September 2003. The dimensions of the wind turbines are impressive. The Nordex and Vestas wind turbines are 80 m high and the wings measure 80 m in diameter. The GE wind turbine towers are 100 m high and its blades are 50 m long. The weights involved are equally breathtaking: the heaviest part on top of the Nordex turbine weighs 95 tonnes and the total weight of the nacelle is 170 tonnes; the rotor and the three blades of the GE wind turbine weigh 91 tonnes.

Transporting, temporarily storing and lifting components of such exceptional dimensions required careful planning. Perfect collaboration between the different partners during all stages was the key to success in this demanding project.



## Bonga Project for Oil and Gas Exploitation in Nigeria



Customer: AMEC  
 Location: Wallsend assembly site / UK - final destination Nigeria  
 Equipment Used: 2 x Liebherr LR 1800

Following recent discoveries of additional gas reserves, Nigeria wishes to capitalise part of its huge resources. One of the fields marked for exploitation is the Bonga oil and gas field, a deep-water offshore field 120 km from the Nigerian shoreline.

In Wallsend (UK), the Sarens Group UK branch worked with AMEC to jointly assemble topsides oil and gas processing

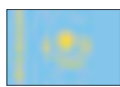
equipment on the Floating Production, Storage and Offloading (FPSO) vessel Bonga. Two Liebherr LR 1800 cranes were used to assemble the heavy modules and components which were introduced into the empty hull of the ship.



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[newsletter@sarens.com](mailto:newsletter@sarens.com)

# Tengiz Onshore Oil Project in Western Kazakhstan



Customer: TengizChevrOil / Parsons Fluor Daniel JV  
 Location: Tengiz / Kazakhstan  
 Equipment Used: PC 9600 / 36 axle lines SPMT / CC2600 / 2 x LR1400 / LR1250 + hydraulic cranes of various types

The Sarens Group won the contract to deliver heavy lifting equipment to TengizChevrOil / Parsons Fluor Daniel JV for the Second Generation and Sour Gas Injection Projects in Kazakhstan. These projects are located at the huge Tengiz onshore oil field in Western Kazakhstan, which has proven oil reserves of 9 billion barrels. The Second Generation Project, which will come on stream by mid 2006, will boost production with seven million

tonnes per year. The Sour Gas Injection Project will increase production with another three million tonnes per year by re-injecting gas into the reservoir to maintain reservoir pressure. The total production is expected to reach 23 million tonnes per year by 2007. The Sarens Group is proud to participate in this state-of-the-art project. Four crawler cranes with lifting capacities of around 500 tonnes and the 2000 tonnes class pedestral crane Demag PC 9600 will be deployed over an estimated period of 28 months.



## Coming up soon : projects 2004

Aker Stord – KEP 2005 - load in/out + erection of preassembled modules and vessels - Norway

Multibrid - Prototype windturbine 5MW - Germany

Siemens - Mymensingh Combined Cycle - Bangladesh

Samsung - AK 680 job - Thailand

Recovering Operation of Wartsila Diesel Engine - Azores (Portugal)

Krupp - Replacing of convertor - Germany

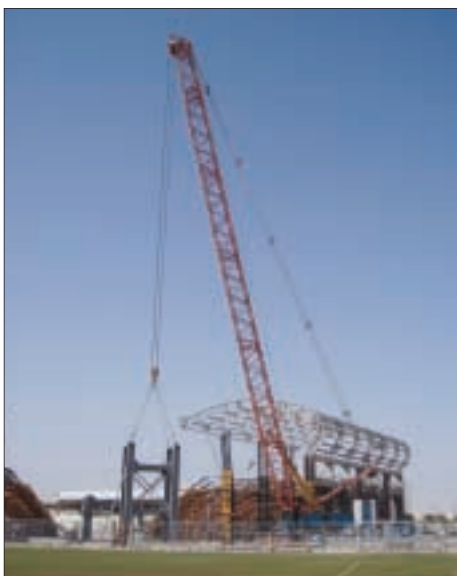
IHI - Desalination unit - Algeria

## Sarens “enters the arena” of Doha in Qatar



Customer: Donges / Germany  
 Location: Doha / Qatar  
 Equipment Used: CC2600

The Sarens Group is extending its operations into Doha in Qatar. Our Sarens Middle East entity, with headquarters in Bahrain, is using a CC 2600 crane to provide heavy lifting services for the German contractor Donges. Donges expressed his satisfaction. This Sarens Group project was yet another example of excellent internal communication and project management.



## Replacing a Fractionator Tower for Exxon in Rotterdam, The Netherlands

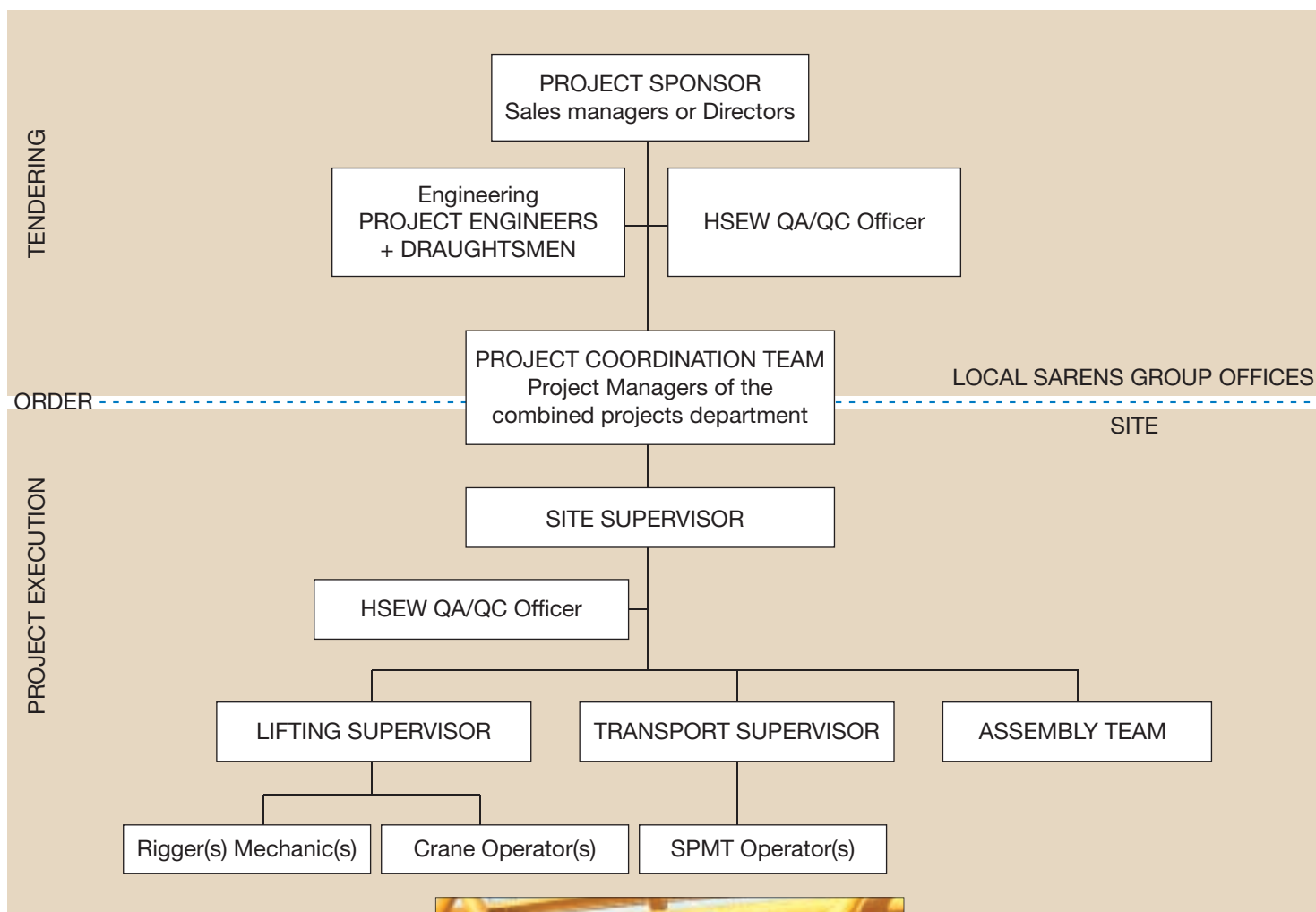


Customer: Exxon  
 Location: Rotterdam, The Netherlands  
 Equipment Used: LR1750, Demag AC 700, SPMT's (Kamag / Goldhofer)

The first phase of this project started by lifting out an existing fractionator tower with an LR1750 crane with superlift-carrier and 300 tonnes superlift-weight. Subsequently, we used both an LR1750 and a Demag AC 700 crane to bring the old fractionator tower in horizontal position and remove from the plant. In the second phase, the new fractionator tower, which weighs 210 tonnes, was conveyed using a combination of 2 x 4 SPMT-lines at the front and 1 x 5 SPMT-lines

at the back. The “Special Project Department” SPMT operators had to work extremely carefully and according to the engineering drawings because the space between life piping and tower was only 20 cm and the space separating the tower from the transformers was only 40 cm. The new fractionator tower was then put upright using the same LR1750 and a Demag AC 700 tail crane.

## Organisation Chart of the new “Combined Projects Departement”



From left to right, top row  
 Robert Demers - Lifting Supervisor & Surveyor  
 Dirk Besters - Project Manager  
 Patrick De Meirman - Site Supervisor  
 Joost Elsen - Project Manager  
 From left to right, bottom row  
 Didier Martens - Project Engineer  
 Danny Peeters - Lifting Supervisor  
 Bart Wauters - Project Engineer  
 Not present (at work on site):  
 Peter Houben - Lifting Supervisor



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