MAMMOETMAIL 32

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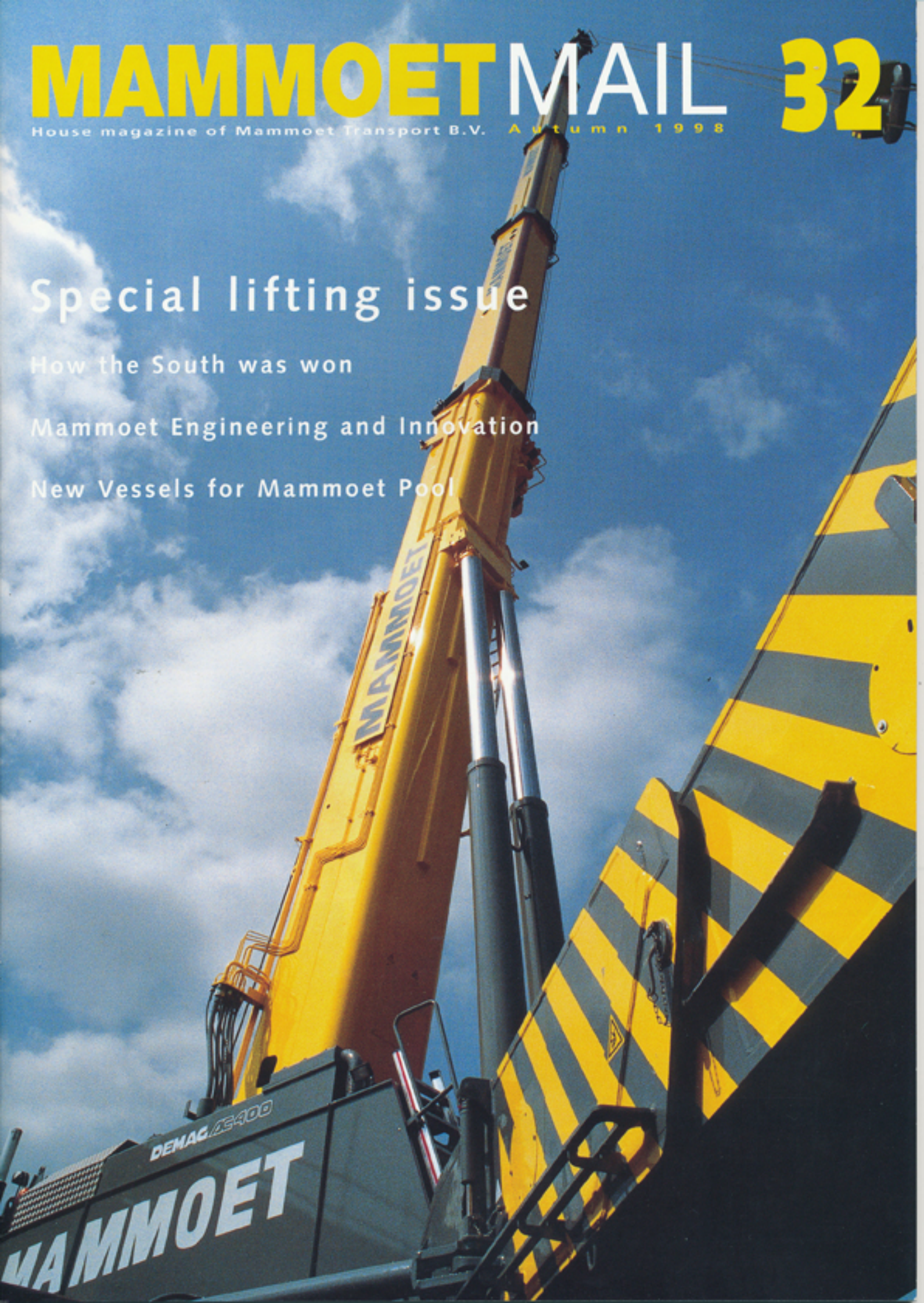
Special lifting issue

How the South was won

Mammoet Engineering and Innovation

New Vessels for Mammoet Pool



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The telescopic boom of a brand-new AC 400 mobile crane reaching for the sky. But, as the further contents of this magazine shows, this is not Mammoet's limit.

Colophon

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From the President

A year and a half have gone by since I took the helm from our former Mammoet President Jan IJmker. I realised then that it would not be an easy ride and it was exactly as I expected! Of course part of the bumpy ride is caused by the crisis in South East Asia, influencing many other economies in the world. This represents a major drawback for any company operating internationally, certainly when you are involved in (heavy) transport and shipping. As a consequence we have adjusted our expectations for the coming years, so that we can face the future with confidence for our organisation.

Another real challenge I was confronted with was the continuous growth of the Mammoet organisation, which is of course a necessity for a healthy company. On the other hand, growing too quickly may result in a decrease in the quality of internal communications between the different operating companies. In the seventies, Mammoet started as a small heavy lift company with hardly any international experience whatsoever. Because of the success of the company's "Factory to Foundation" philosophy and owing to the continuously high standard of heavy lift services, the name MAMMOET has become synonymous to reliable shipping, transportation and heavy lifting. This was achieved by a relatively small group of experienced people, highly independent in their way of thinking and working. While expanding the organisation we have succeeded in finding the right people with the right Mammoet attitude and it is one of my tasks to give support to them to the best of my capabilities in all aspects.

Another important responsibility is the establishment of new subsidiaries such as in South Africa and quite recently in Venezuela. They have all been accomplished with an open mind for the future and securing continuity of heavy lift operations. Lastly I do expect a great deal from the new Mammoet Think Tank, Mammoet Engineering and Innovation, which was established earlier this year. Mammoet Mail pays a great deal of attention to this fact in a main article in this issue.

I'm sure that our clients will appreciate our efforts to improve our performance of heavy lift services, no matter how difficult the economical situation may be. I'm certain that I speak for all my Mammoet colleagues when I say that we are looking forward to take on the great Third Millennium Challenge!

R.H.C. de Ruijter de Wildt

This issue

8 Nowadays, many different lifting systems are available; one could easily become lost between all these contraptions. Certainly, lifting innovation is not yet at its final station and will keep developing. The Mammoet HydraJack system and the Manitowoc M1200R ringer concept, for example, were mile stones in heavy lifting and the recently introduced MSG-50 is another.

14 Transport and lifting engineering is the artery of a serious heavy lift organisation. Right from the start in 1971 numerous heavy lift innovations have been introduced by Mammoet. As a logical next step a separate daughter-company by the name of Mammoet Engineering & Innovation was established at the start of this year. They are at home in a brand-new accommodation at Etten Leur in the Netherlands. Besides operating the new MSG 50 lifting system their task is to be a think tank for new heavy transport developments.

28 Setting up a Mammoet subsidiary is usually a time-consuming exercise. Mammoet Southern Africa was no exception to that rule and it took quite some effort to come to the right organisational structure in which the proper Mammoet standards can be maintained. While performing heavy transports on project basis for many years now, Mammoet has established a home-base in Johannesburg which serves as a threshold for an entire Continent.

New cranes for Mammoet Stoof

Mammoet Stoof add bigger cranes to their fleet for the European market

Breda – Three new Mannesman Dematic cranes were recently delivered to Mammoet Stoof in Breda, the Netherlands. The cranes, two lattice boom and a telescopic version had been ordered through Van der Spek in Vianen.

New cranes for

The crawler cranes were delivered in the first half of 1998 and started work immediately. The CC 1800 went to a project in Belgium where it lifted and positioned a 276 tonne transformer, while the CC 2600 was stationed in Bratislava, Slovakia for the extension of an oil refinery. The crawler cranes are mainly operated on project basis in the international market. The mobile telescope crane AC 400, which was delivered last month, will be operated in the day-market in the Benelux. Its first job was the assembly of a number of ship sections for a new-building at a shipyard in Gorinchem in the Netherlands.

Superlift attachment

The CC 1800 is equipped with a 250 kW (340Hp) Daimler Benz diesel engine. The length of the main boom is 60 metres, the fly jib extension measures 66 metres. The provided superlift attachment increases the lifting capacities and extends the outreach. The counter weight is 120 tonnes and the superlift can be ballasted with an additional 180 tonnes.

The Demag CC 2600 is the larger version of the CC 1800 and has a 320 kW (435 Hp) engine. Like the CC 1800, the CC 2600 is equipped with a swing-around cabin, which can be tilted for a better view on the lifting job. The length of the main boom is 78 metres, the fly jib also measures a length of 78 metres. Again, a superlift attachment is provided as part of the crane. Both crawler cranes can be mobilised very fast and economically.

Successor

The AC 400 is the successor of the well-known Demag AC 1200. The crane has a 14 x 8 x 12 propulsion/steering system. The crane carrier has a 405 kW (550 Hp) Daimler Benz engine, while the crane's superstructure has a 171 kW (232 Hp) Mercedes engine. All axles have independent suspension and the propelled axles are supplied with differential locks. For manoeuvring in confined areas the AC 400 has crab steering. The main boom can be extended in five parts with a maximum length of 59 metres. More lifting height and a bigger outreach can be provided with a 78 metres long fly-jib. The driver's cabin has the same specifications as those for the crawler cranes so that the crane operator always has the best view of the load. A superlift attachment was part of the delivery as well.

Mammoet Stoof

Demag CC 2600

With the investment in these cranes Mammoet Stoof confirms its leading position in the market for heavy lifting

Demag CC 1800

Lifting at ICI

Rozenburg - The first lift with the Demag CC2600 in new house style colours was carried out at the MDI-1 plant of ICI at Europoort in the Netherlands. A 120 tonne so-called splitter module was lifted and positioned over a 50 metre distance with pin-point accuracy. The splitter is part of a de-bottlenecking project to increase the capacity of highly functional polymeric, pure and mixed isomer MDI. The new equipment was built outside the plant area as a module structure.

The advantage of building outside the plant is the positive influence on safety, since work is not carried out in a live plant, and therefore production loss is minimised. For example, all welding and assembling took place outside the plant area, whereas these activities are forbidden in a life MDI plant. This way of building also reduced the number of extra people needed for construction work in a life plant. Another advantage of the modular approach is the shorter turn-around time later this year, when the module will only have to be connected in the main plant. During the lifting operation the MDI plant was shut down to minimise the risk of a release of toxic gasses should anything go wrong. But, the lift was a success. Within 90 minutes the module had been put in its place. In the November shutdown the module will be connected to the existing installation and the unit will be fully operational before the end of this year.

(Source ICI)

Demag AC 400

Mammoet International Crane Fleet Particulars

Crane	Units	Maximum capacity	Main boom	Jib	Superlift/ Counter weight	Construction	Type
M3900	3	130 tonnes	64.0 m.	18.3 m. fixed			crawler
CC600	2	140 tonnes	72.0 m.	48.0 m. fly			crawler
M4000W	8	160 tonnes	67.0 m.	18.3 m. fixed			crawler
LR1200	3	200 tonnes	63.0 m.	21.0 m. fixed			crawler
M4100W	9	208 tonnes	79.2 m.	18.3 m. fixed	125 tonnes	ringer	crawler
M888	3	208 tonnes	88.4 m.	24.4 m. fixed			crawler
M250	4	250 tonnes	91.4 m.	36.6 m. fixed			crawler
CC1100	1	250 tonnes	78.0 m.	48.0 m. fly	130 tonnes	superlift attachment	crawler
LG1280	1	280 tonnes	91.0 m.	84.0 m. fly			pedestal, rubber tyred
CC1800	1	300 tonnes	72.0 m.	66.0 m. fly	200 tonnes	superlift attachment	crawler
M4600	3	317/544 tonnes	94.4 m.	24.4 m. fixed	403 tonnes	ringer	crawler
CC2400	2	450 tonnes	84.0 m.	60.0 m. fly	225 tonnes	superlift attachment	crawler
CC4000	2	650 tonnes	72.0 m.	30.0 m. fixed	250 tonnes	superlift attachment	crawler
LGD1400	1	400/750 tonnes	91.0 m.	84.0 m. fly	210 tonnes	superlift attachment	pedestal, rubber tyred
TC3200	1	500/800 tonnes	72.0 m.	48.0 m. fly	225 tonnes	superlift attachment	pedestal, rubber tyred
CC2600	3	500/800 tonnes	90.0 m.	78.0 m. fly	250 tonnes	superlift attachment	crawler
PC/CC4200	1	600/1000 tonnes	72.0 m.	84.0 m. fly	350 tonnes	superlift attachment	crawler, pedestal
CC3800	1	600/1000 tonnes	84.0 m.	84.0 m. fly	350 tonnes	superlift attachment	crawler
RG912	2	1000 tonnes	100.0 m.	60.0 m. fly	550 tonnes	superlift attachment	crawler, pedestal
AK1200	1	1200 tonnes	128.0 m.		800 tonnes	superlift attachment	pedestal
M1200R	3	1300 tonnes	122.8 m.	fixed	795 tonnes	ringer	crawler
CC4800	1	800/1600 tonnes	121.0 m.	102.0 m. fly	400 tonnes	superlift attachment	crawler
M5G50	2	3600 tonnes	104.9 m.	70.9 m. fixed			sliding

Showtime for Mammoet

Stavanger – One of the exhibitions Mammoet attended this year was the offshore exhibition ONS '98 (Offshore Northern Seas) which was held in Stavanger, Norway from 25 - 28 August. Over 30.000 visitors came from 31 countries, while in total 1200 exhibiting companies presented their services on a net exhibition space of 19.100 m2. ONS is a showplace for all manner of offshore and offshore related technologies and it gives the opportunity to meet important key people.

Not many people probably realise that timely preparation of an exhibition stand is critical for the quality of the presentation. Preparations usually start about a year in advance and require a great deal of PR management in terms of arranging the right exhibition props and all related activities, such as communication with the exhibition organisers and instruction of the stand builders.
As usual, Mammoet was represented in a modest 24 m² stand. In it a large three-dimensional Mammoet logo was a striking eye catcher. The heavy transport and lifting capabilities of Mammoet Transport (Norge) were promoted and the heavy lift shipping facilities of Mammoet Shipping. Furthermore, the announcement could be made that Mammoet had been awarded a contract for the sea and land transportation and lifting and installation of 170 prefabricated structures ranging in weight from 10 to 600 tonnes. These items will be collected at their fabrication yards in different parts of Europe. The project concerns an extension of the original Kårstø Gas Process Facilities which is located near Stavanger. ■

Lifting Systems

Singapore — Nowadays the choice of heavy cranes and other lifting devices is great. Sometimes, even the people in the business have difficulty keeping track of new developments. A person to whom the lifting business definitely holds no secrets can be found in the Walter Wright Mammoet office in Singapore. Mammoet Mail meets Neil Birkbeck, Vice President of Walter Wright Mammoet. A comparison between the various lifting systems.

"There are many ways to lift something. If you ask ten engineers, you will get ten different answers. All systems would be very worthy and very safe, but in the end it is all about repeatability and economics. The decision which system to offer – crane versus lifting device – is not really that difficult. For example, if the client asks for a one-off lift of a vessel of 1000 tonnes and 100 metres, a hydraulic lifting device is most probably the right answer. But if that lift is below these parameters, a crane could be the ideal solution. And sometimes you have to make a combination, using the lifting device for the super heavy and tall lifts and a heavy crane for the medium to heavy lifts to be executed at various locations on the site."

Mr Birkbeck daily encounters the lifting needs of clients in South East Asia: "Initially, we used to work with the American Hoist Guy Derrick system. Then we cultivated the clients into using the ringer concept and once they saw that in operation and realised the system was not as static as they imagined it to be, they were quite happy with it. In Asia, we still feel that the concept of the ringer using a heavy lift attachment with a small to medium size crawler crane (like for example the M1200R/M250) is a good one. In fact you've got three options in one crane. You have a 275 tonne basic crawler crane and when putting a Maxer (a heavy lift attachment) on the back it increases its lifting capacity to 450 tonnes. And when you put it into a ring attachment it becomes a 1300 tonne crane. We believe the commercial benefits of that system outweigh the disadvantages when you come across certain jobs where you need the ability to pick up and carry the load. The nature of the work in Asia is such that there is not a great requirement for that type of work. That happens mainly in fabrication yards. Or the ability to pick up and carry is sometimes only required because of the crane's limited capacity at large radii and you have to get closer to land the load eventually. With a bigger capacity crane, like the M1200R, you can usually sit in one place and work from there without relocating."

Mr Birkbeck goes on explaining the lifting philosophy behind the M1200R: "When we first started talking with Manitowoc about the M1200R concept we initially envisaged a 1000 tonne machine. By the time it was built and delivered, it had become a 1300 tonne machine. You have to accept the fact that you will never have a big enough machine and that there is always someone to push "the envelope" that little bit more. With this in mind, we have added to the M1200R a new 1054 tons jib plus a hanging counterweight. This gives us enhanced capacities at all radii of as much as 50%. By adding these new attachments to the M1200R we believe that we are able to cater for most of our clients' requirements in the foreseeable future."

About the development of heavy cranes in the future, Neil Birkbeck has a clear vision. "There has to be a cut-off point in just how far manufacturers and owners will go in developing heavy cranes with much higher capacities. I cannot envisage a genuine 3000 tonne crawler crane, because physically it will be most probably much too big for most job sites and at the end of the day it becomes uneconomical. But a 3000 tonne lifting device – Yes! This method offers a high lifting capacity with a relatively low entry barrier in terms of investment, compared to

Compared

equivalently large crane capacity. I believe that the addition of the
new MSG-50 as developed by Mammoet Engineering & Innovation teams up perfectly with the well-proven HydraJack system. These systems cover the segment of the heavy lift market that cannot be handled by using, for instance, the M1200R or the Huisman Twin Ring."

One of the major drawbacks of large crawler cranes is their large shipping volume. According to Mr Birkbeck, this is often a major cost on any project. "By designing the new MSG-50 into container size parts, a substantial saving can be passed on to the client. As a matter of fact, Mammoet already applied this philosophy some years ago into the Self-Propelled Modular Transporters. Likewise, having the MSG-50's containers transferred into counterweight is very cost effective and a good idea. Furthermore, having swing and mobility capabilities with the MSG-50 has overcome the usual drawbacks of most pure lifting devices. There are definite advantages in the mobilisation and demobilisation, certainly compared to cranes in the same lifting league."

Neil Birkbeck relates the lifting machines to the requirements of the market. "We are talking of three different categories: medium to heavy run of the mill projects, let's say 200 to 500 tonnes and 500 to 1000 tonnes. When you are going beyond 1000 tonnes, you enter the league of super heavy lifters, in which case we start looking at something like the HydraJack and MSG-50 lifting devices. But it often occurs that there are a lot of other medium to heavy lifts to do and then you better consider the use of the ringer concept. Currently, the M1200R can lift 1300 tonnes on the main boom and after the upgrading with addition of the fly-jib we can accommodate vessels of 750 to 800 tonnes with a length of 100 metres. So, in-house Mammoet can cater for any lifting requirement or problem potential clients may have."

"Safety is definitely a prime requisite", according to Mr Birkbeck, "and pricing coupled to good planning is very important. The benefits for the client are twofold: the processes are changing constantly. By using big cranes you can put larger factory fabricated pieces in situ, which is a lot quicker than stick-built units. The plant comes on stream earlier and therefore the investors get an earlier return on their investment. It is a trade-off between the potential savings versus the extra costs of using a huge crane or ringer attachment." ■

AvL

"Price is certainly a major factor. But it is a trade-off between project scheduling and safety. In this business, your first mistake could well be your last. People's lives are at stake. That's where the Mammoet engineering, expertise and experience come in."

Characters in hea

Tokyo – It was an emotional farewell at the traditional biennial Mammoet party at the Palace hotel in Tokyo on 15 May. The centre of attention was Yuzo Komori, now retired General Manager of Mammoet Tokyo. In his "sayonara" speech he thanked the audience for all the support he had received during a lifetime working for the Mammoet organisation. Mammoet Mail spoke with him about his life with Mammoet. A portrait of a man admired by clients and colleagues.

"It was a long time ago, just after my wedding, that we were invited to attend a party with a lot of foreigners present. Being a typical Japanese at that time I thought that it was not so easy for me to have a conversation in English and after my initial promise to come I finally asked to be excused because of my busy work.
When my wife heard this she got very angry. She asked me why I did not attend the party and then I told her that I felt not comfortable at such a party with all these people from different countries. My wife said: 'Yuzo, cherish Japan! Do not hesitate to talk Japanese in front of these foreigners. They are in a different country and they are more scared to speak English than you are, because when they are in Japan they should talk Japanese.' That was my wife's advice and after that my conception has completely changed. We are all human beings, whether we are in Japan, Holland or the United States, there is no difference at all."

Port Captain

At that time, in the early seventies, Yuzo Komori was Port Captain with Royal Inter Ocean Lines in Kobe. In this job he had no connection with heavy lift shipping and transport. Most of his dealings were with general cargo and sometimes a heavy piece of 50 tonnes. "My first real experience with heavy cargo came when Mammoet arrived with the m.s. "Happy Pioneer" and that was not easy at all. But I found the challenge very interesting and then I met Arie Peterse of Mammoet Shipping: a specialist in the field of heavy lift techniques and I learned from him a lot."

"At the start, I had no experience in marketing and heavy lift, but I was very lucky. My personal friends (from school and the shipping business in Kobe) were already in Tokyo doing business in heavy plant fields. They taught me how the system worked and introduced me to clients, who, in their turn introduced me again to other clients. At that time I was an amateur in this line of business and I listened to the clients and learned a lot from them." As a remarkable fact Mr Komori mentions that these clients appreciated this and enjoyed teaching him the tricks of the trade. "And I also learned a lot from the experience of Jan IJmker.

vy transport

Mr Susumu Homma and Mr Yuzo Komori

I was stepping into a new field and also Mammoet was new in Japan. In a way it was easy, because I started my Mammoet career at the very beginning and I could make up my own mind. If I was then the successor of someone, like now Kokai-san, you have to be at a certain level and it would not be so easy. At that time I could start from zero; everything was new and exciting to me."

Yuzo Komori tells about the first contact he had with Jan IJmker and Max van Winsen, then Mammoet's marketing manager. Hij collected them from the old airport Haneda in Tokyo - Narita did not yet exist - and he instantly made an error of judgement. "I had never seen them before, I only had received a telex that they were coming and I was waiting at the airport. Max was the senior type of manager and had the Mammoet logo on his shirt. Jan IJmker was the slim type of person and did not look that old and that was the start of the confusion. I was sitting in the front of the taxi and started talking to Max about the schedule of a project or something, addressing him as Mr IJmker."
The real Jan IJmker kept a serious face and said nothing to clear the matter up. Only when Max van Winsen pointed to his neighbour in the back of the taxi, Yuzo Komori understood that he was the victim of mistaken identities.

Factory-to-Foundation

In the seventies Mammoet Shipping had only a few vessels: the converted heavy lift carrier "Happy Pioneer", followed by the "Happy Rider" and "Happy Runner". Obviously insufficient for the requirements of the Japanese market and owing to the commitment of Yuzo Komori the proper solutions could be found to satisfy the client's needs.
His first knowledge of the Mammoet organisation only covered the shipping side. "I did not know about the land transportation activities of Mammoet transport, although they were already operational in the Emirates and Saudi Arabia. Jan IJmker explained to me Mammoet's Factory-to-Foundation philosophy and then I thought: why not sell the total package here in Japan too." Shipping from one port to another – difficult as it may be – could be done by ship or barge, but according to Mr Komori land transportation from the port to the plant site was a big concern to all the clients. "I must admit, that was part of the secret of my success."

Komori-san thinks that unlimited growth of the Mammoet organisation should not be a target. "Mammoet is becoming bigger and bigger and in my opinion communication-wise that is not so good. Good communication is vital for any company nowadays". And about foreigners wanting to do business in Japan: "Nowadays more people in Japan can accept different cultures. However, if they wish to succeed they have to know the Japanese and their culture. And they sometimes have to accept the Japanese habits. In my Mammoet time I have often tried to make my colleagues abroad understand the position of the Japanese clients. And I have to admire my Mammoet friends and I very much appreciated the fact that they accepted what-ever I said....anyhow they always listened to what I said." ■

Mr Susumu Homma, General Manager of Ishikawajima-Harima Heavy Industries Co. Ltd (IHI)
"When I was Chief of the Chartering Department we handled a big project for General Motors. It concerned shipments of car presses to the U.S.A. and one lot was more than 6000 cbm. of project cargo, including a lot of heavy lifts. Mammoet had the most suitable fleet with the proper heavy lift capabilities and Komori-san was my point of entry for the Mammoet organisation. Although his English was not perfect, I must say that in communication in general he was the best interpreter in spirit and he conveyed perfectly to Mammoet Shipping what the requirements of IHI were. I remember Komori-san as a man of trust and he kept his promises always. It is IHI's philosophy to manufacture, to transport and construct and finally make things work. We see that as the same stream of business, not as different flow. Certainly at that point we agreed completely with each other."

Mr Shigeo Miyajima, Logistics Manager of Toyo Engineering Corporation
"I have had a long relationship with Captain Komori. Actually it started 15 years ago connected to a first assignment we had on m.s. "Happy Buccaneer". After that we had close contact with Mammoet Tokyo in all those years. Yuzo Komori could explain to the Mammoet people the Japanese mind and if there were any problems we could amicably sit around the table and find the proper solution.
Of course Komori was a Mammoet representative but nevertheless he always stayed quite neutral in those situations and he could explain the Japanese client's behaviour."

Mr Jan IJmker, retired President of Mammoet transport B.V
"Komori-san could bridge the thoughts between East and West. He always defended his client and as a consequence big fights arose internally. At the end of the heated conversations his final statement usually was: 'I quit the company!' However, he stayed on for 24 years and his dedication contributed definitely to the success of the Mammoet organisation".

AvL

Zeewolde - A whole new meaning was added to the phrase removal when Mammoet and Bresser/Van 't Wout moved a complete house in the low lands. The 350 tonne brick house was separated from its foundations and taken to its new location by public road over a distance of 12,5 km. Mammoet used their SPMTs in a 12 double-axle line configuration with 96 wheels. The removal was necessary since the house stood in the vicinity of an antennae park, of which the electrical field appeared to influence all the equipment in the house. Removing the house turned out to be cheaper than breaking it up and building anew.

Breda - Mammoet Stoof opened a new company gas station in their yard in Breda. The state-of-the-art fuelling station has its own computer programme which keeps record of the delivered quantity of diesel per truck or car. The mileage is also registered per vehicle.

PHOTO: MAMMOET STOOF

Mammoet

Vaasa - For client GEC Alsthom, Mammouth France lifted and skidded a 300 tonne generator in Vaasa, Finland with the HydraJack lifting system. Once arrived in the turbine hall of the Vaskiluodon Voima Oy power station the turbine was placed on temporary shimplates.

PHOTO: MAMMOET STOOF

PHOTO: JOS VOGELZANG

Böhlen - A Demag PC/CC 4200 in action lifting a 324 tonne reactor top-section at the BSL/Dow construction site in Böhlen, Germany. Several lifting operations were executed for client Fluor Daniel for the German Acrylate Monomers Project. The Mammoet crane was used in a pedestal configuration with a main boom of 36 metres with superlift attachment.

Europoort - In a nightly operation a boring machine weighing 120 tonnes was transported by Mammoet Stoof on a conventional 12-axle line platform trailer with 96 wheels. The tunneling machine with a diameter of 5,20 metres will be used to bore out a 335 m long pipeline tunnel under the river "Oude Maas".

PHOTO: BEN WIND

PHOTO: DAVENPORT MAMMOET

Convent - In Louisiana, halfway between New Orleans and Baton Rouge, Davenport Mammoet transported an 1180 t unloader, manufactured by Metalna and shipped from Slovenia. The original plan was to offload the 455' long semi-submersible barge perpendicular to the concrete pier. However, the current of the Mississippi river in the springtime is too strong to guarantee a safe offloading operation this way. An alternative was worked out. In stead, 60 axle-lines SPMT were used to achieve an even weight distribution on the dock. Nevertheless, the pier needed to be reinforced because the load's weight was close to critical. It certainly took some creative thinking to place the machines (there were two of them) in their rails. All in all a challenging job in every aspect.

in Focus

Port Dickson - A destillation tower was transported by Walter Wright Mammoet Malaysia. It was lifted and positioned onto foundation by the M1200R with a new fly-jib. Mammoet Shipping's Happy Buccaneer had taken care of the ocean transport.

PHOTO: WWM MALAYSIA

PHOTOS: BEN SEELT

Flushing - Mammoet was the centre of attention in Dutch television programme "Jules Unlimited". At the Heerema yard at Flushing a site-move was executed by Mammoet Stoof. For the occasion the usual SPMT trailer operator was temporarily substituted by a lady presenter. She was well-informed and explained the viewers the working of the Mammoet trailers.

Think tank for heavy

***Amsterdam** - Mammoet Decalift International B.V. has assigned the development of new heavy lift methods to an operating company by the name of "Mammoet Engineering and Innovation".*

With a staff of 16, this company previously worked under the name of StoTra B.V. in which Mammoet Decalift International B.V. already owned 50% of the shares. This interest has now been increased to 100%. Mammoet Decalift is a joint daughter company of Royal Nedlloyd N.V. in Rotterdam and Decafin Spa in Turin. Mammoet E & I is responsible for the development of new heavy transport and lifting methods, which methods are used for instance to build petrochemical plants. Such industrial plant installations are largely built in modular construction. The components that need worldwide transportation for such projects become ever more voluminous and heavy, making the transport methods more and more complex. In the 27 years of their existance, Mammoet have built up a reputation as innovator in the heavy transport market. Examples are the self-propelled modular platform trailers with lifting capacities of 10,000 tonnes and more, as well as a new generation heavy lift vessels with their own loading and discharge possibilities of up to 2500 tonnes.

Oosterhout – "It is our intention to prove with this lifting test that the jib of the MSG 50 has been well-constructed and that the capacity is as we calculated it."
Mammoet Mail joins Cees Segeren of Mammoet Engineering & Innovation at the test site of the MSG 50 just outside Oosterhout. The testing is carried out under the watchful eye of Lloyd's, the certifying organisation which has checked the strength calculations as well as the building of the crane parts.

"The best way to test a jib like that is to build up the whole crane, which means sixty-two metre main mast and forty-three metre jib. This combination is not a random choice, but we need this same configuration for a job next year. While testing, we can also show the client what we will do. We have extensively discussed the best test configuration with Lloyd's in which maximum forces will show. As an example, we now test with a radius of just under 100 metres with a lift of some 300 tonnes. This must show us that particular components have been constructed strong enough to withstand this pressure. Yesterday, we carried out a static test of 1020 tonnes with a short radius; the test weight for this were twelve containers filled with well over 1000 tonnes of sand."
The jib is slightly different in construction than intended, but we have persisted in the container measurements principle so that the crane remains easily transportable. "In order to keep the crane's weight low, we chose a round pipe construction. We stuck to the axiom, 'if it

cannot be container-size, it won't be part of the crane'. Parts of the jib can be nested, as is the case for the main mast, to save on cargo space."
Prior to the MSG 50 carrying out a lifting job in Canada, some lifting projects will be performed near Houston (U.S.A.). "Meanwhile, materials have been ordered for the second MSG 50. Mast parts are being produced and the lifting units have been ordered. In the Spring of 1999 we aim to have the crane more or less ready. Having learned from the first crane, we have been able to make a few small alterations. A number of lifting lugs will be better positioned and the adapter of the main mast must be slightly modified to make the coupling procedure easier. The original concept stays the same, though."

Modular standard elements

The MSG 50 is built up of modular standard elements and an important part of this is the skidding equipment. "We use two types of skidding shoes which are now lined up in a ring. On their own, they can also be used for straight movements. Early this year we used them for two ship lengthenings. The fore part of a ferry with a weight of 9000 tonnes had to be moved away over a distance of 20 metres. And we will soon carry out a load-out operation of an offshore module weighing 4500 tonnes, for which we will use twelve of these skidding units. This job will be carried out in Norway on the island of Stord with an in and out time of three to four weeks. For this business we use relatively small parts, which can again be moved in containers. The crane's power packs will also be used in this project. The skid itself weighs 4.5 tonnes and its capacity is 600 tonnes per skid. Observe the difference between weight and capacity. The separate lifting units of the crane can also be used multi-functionally and in other lifting constructions. These lifting units are computer steered."

Best bits of heavy lifting

"The screen gives instant information on what happens and it can be easily monitored how the forces are spread. In every possible situation the different forces can be shown. The MSG 50 is made to pick out the best bits of heavy lifting, the heavy single lift jobs in a larger plan. It is not a machine to be used for quick tiny lifts on the site or put in for the fast, light work. The Mammoet organisation owns other cranes for that kind of work. At one time, we contemplated to build-in trolleys for smaller lifting jobs, but they cannot be easily containerised. Anyway, the same safety standards are of course being adhered to as for ordinary cranes. The MSG 50 has a safety system for maximum loads coupled to a warning and cutting out system. Through this it is also possible to come back into the safe lifting situation."

AvL

transport methods

"In the shape of the MSG 50 the alignment of power is immediately recognisable. In fact the concept is as straight forward as possible with as little moment stresses as can be"

Innovative thinking

Etten Leur – "The world over, Mammoet is the best company in the heavy lift sector. Only few people within the company realise fully what a strong name we have. It seems as if one must have been away for a while to be able to judge that." Speaking is Piet Stoof, the new Technical Director in the Mammoet organisation and descendent of the pioneers in lifting and transportation of the family Stoof in the fifties and sixties.

"In 1973, straight from Technical College, I entered the Breda company. Stoof had already been sold to Mammoet Transport in Amsterdam by then, so it was not a 'son of the boss' entrance, but 'come over for an interview and see if you are taken'. The old company mentality was of course still there: in fact it was a kind of cowboy club, existing from pushing and shoving. Theory was a waste of time, muscle was what mattered. In a short period we set up an engineering department and the young guy I was then became head of operations. I was accepted by the older generation overseers as I still knew them from the time I worked for Stoof in my Summer holidays."

In Mammoet's early years we translated hands-on experience into theory. Calculating curves and rolling resistance, determining pulley forces, etc. and once we had taken stock of that we could immediately move on to the bigger work. In the period between 1973 and 1978 we made a tremendously large stride forward. An important factor was the up and coming offshore industry and Mammoet was the first and only company that started moving offshore modules on modular platform trailers. The heaviest weight for Stoof until then had been 400 tonnes, and now we suddenly moved weights up to 1200 tonnes!"

The combination of offshore industry and Mammoet Transport turned out to be a success. The rubber-tyred load-out operation was an unequalled innovation and subsequently lead to the development of the self-propelled modular platform transporters.
Through differences of opinion, Piet Stoof left Mammoet in 1978 and started his own company specialised in skidding work. Via StoTra and Mammoet Engineering & Innovation he returned to the Mammoet home this year as Technical Director. Mr Stoof, "StoTra was of course much more confined than Mammoet E&I. StoTra's main purpose was to develop new things and selling them. The MSG 50 is a very good example of this axiom, presenting a revolution in heavy crane building. On the other hand, Mammoet E&I is a think tank and we are given every possible space to think out new transport and lifting techniques. In fact, the whole branch is still in its childhood years and there is still so much to develop. The aim is to obtain a leading position in all heavy transport techniques. For Mammoet the rule must be: we must have every method in house – of the highest quality – and if the client comes and asks for method A it is very well possible that for both the customer and for us method C is much better."
"Should you not have access to certain techniques, the client will say, I won't have to go to Mammoet for skidding, for they don't carry that. But it might easily have

Think tank

"Only few people within Mammoet realise fully what a strong name we have. It seems as if one must have been away for a while to be able to judge that"

been a rolling job and then you have lost a client. Our engineers also have to be able to have that vision. We are not to say: we are a transportation or we are a lifting company; what we are is a problem solving company. And although the solution is usually cranes or wheels, which remains the majority of jobs, one must not loose sight of the other 20% of techniques."

The MSG 50 (Mammoet Sliding Gantry) is made up of a number of components that can also be used separately. Such as for instance the skidding system of the MSG 50. This was used recently for a load-out operation in Norway. Mr Stoof B.Sc., "A rough rule of thumb is that every module with a weight of more than 9000 tonnes can best be unloaded with a skidding system. Usually, these large modules are being built on the water front and on a pedestall so that lifting or skidding are equally good systems. Assuming that the surface condition is sufficient, ▸

Mr Jan IJmker, retired President of Mammoet Transport reveals the new name sign at the entrance of the office of Mammoet Engineering and Innovation at Etten Leur, The Netherlands.

or heavy transport methods

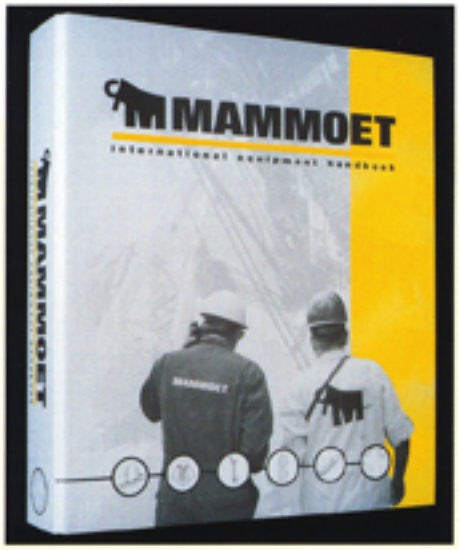
skidding is a cheaper option. If, however, you need to turn or carry out other movements, rollers are a better alternative." The pros and cons of the various load-out methods are not easily categorised. But it is clear that the choice for wheels or skids depends on weight, the route to be taken and the yard's infrastructure. And of course, the client's preferences influence the type of system that will be used. Both wheels and skidding systems are available within the Mammoet organisation. "For a load-out of about 10,000 tonnes we need twenty 500/600 tonne skidding units, ten on the left and ten on the right. Visual control during such an operation is optimal. Stability is also guaranteed as the sliding tracks are far apart. There is a forward movement and a backward movement, furthermore, the skid can be rotated and with a pivot construction on the skid a twisting movement can be made and the vertical stroke is comparable to the rollers: 600 mm. Such a skidding construction can be seen as a large wheel with a contact area of 4.5 metres."

Optimalisation

Piet Stoof has the following observation about the MSG 50; "We believe that we have found 98% of all the teething trouble and we are now working hard to optimise the container fitting. So far, the crane can be fitted into 50 containers, but may be we can make that 49. We are preparing a plan so that we know exactly which parts fit into which and how they must be fixed. We have gained a lot of experience in Bratislava. Don't forget, it is clear how such a crane must be built, but there must be a rhythm. We've gone through this process with the usual cranes too. For this machine we were not quite sure how to tackle the packaging. It is a learning process: by building the crane up regularly and taking it down again, by making special tools, speed can be built up. The whole process already goes a lot faster now."

Mammoet E&I closely observes developments in transportation. Zeppelins for cargo transportation are presently
a focal point, and even if this is not in line with really heavy transportation, Mammoet is interested. Piet Stoof B.Sc. comments, "At the time it was part of my thesis. It started with a helicopter moving through the air with a lifting capacity of 35 tonnes. Zeppelins were in the same range at that time. With the use of modern materials to build such air ships, the unit weight is much lower. Now there is talk of 120 or 130 tonnes – which is a weight that is already carried by the Russian transport planes. The problem for larger loads is that the volume of a hot air balloon will be enormous. But even when talking about 150 tonnes, the truly heavy work will never be carried through the air. And increase in weights can definitely be noted in our branch: I expect that offshore modules will increase to weights of 15 to 20,000 tonnes. And the lifting weights that are our present averages – 1000 to 1200 tonnes – will grow, I think, within a few years, partly through our MSG 50 system, to 2000, maybe even 3000 tonnes lifting weight." ■

AvL



■ A completely new international equipment handbook has been compiled with separate sections containing cranes, trailers, lifting devices and ships. It underlines the comprehensive integrated heavy lift services available within the Mammoet organisation. It can be obtained from your regular Mammoet contact person.

■ Statoil in Norway have awarded a contract to Mammoet for the transportation and installation of approximately 170 structures, ranging from 10 to 600 tonnes in weight. Mammoet will execute the sea and land transportation of the prefabricated plant from their fabrication yards in Japan, Belgium, the U.K., Denmark and the Netherlands to Norway. The project is the extension of the original Kårstø plant with additional gas process facilities.

■ MHLP pool partner Mitsui O.S.K. Lines decided to change the name of their pool vessel "Sailer Jupiter" into "Enchanter". The vessel is now sailing under Panamese flag.

■ Eastman Chemical Europe awarded Mammoet Stoof to execute all their heavy transport movements and cranage at their new sites in Europoort, The Netherlands.

Mammoet News

■ The 1999 Mammoet Planning Calender is available again, traditionally with a drawing by the well-known artist Jan Sanders. He made a matchless impression of a Mammoet operation in progress, this time situated in Sydney, Australia. Elements of most of the Mammoet activities can be recognised in the splendid drawing, only exceeded by the number of kangaroos.

■ A new Mammoet subsidiary was established in Venezuela by the name of Mammoet Venezuela C.A. Mammoet Decalift International holds 51% of the shares and Mamut de Colombia the other 49%. Mr Diederik Jan Antvelink has been appointed Branch Manager from 1 October. The present office address is as follows:

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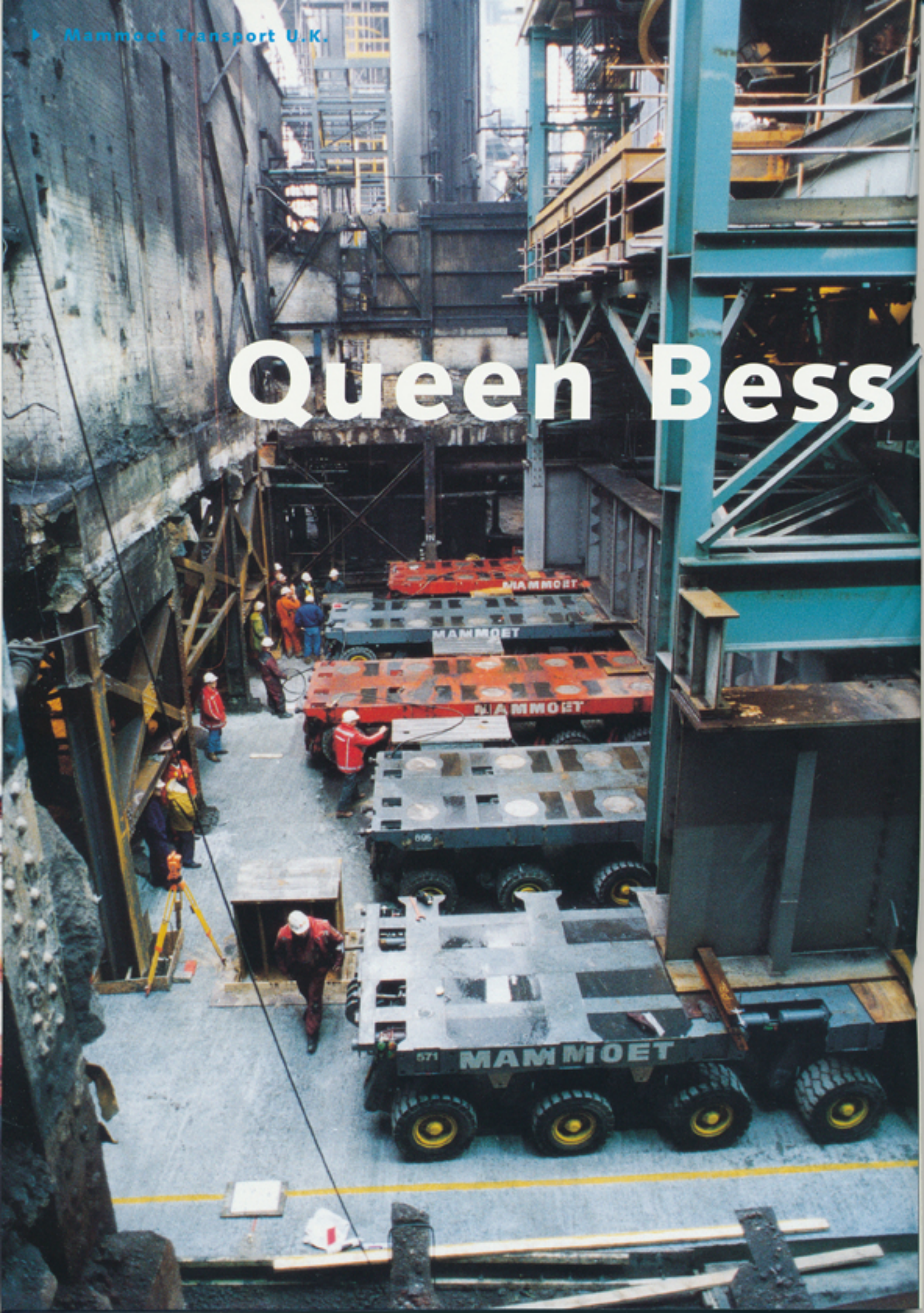
Edificio Sede Administrativa Puertos
Internacionales S.A. (PISA)
Piso 1, modulo B
Guanta, Edo, Anzoategui
Venezuela
Tel/fax: +58 81 682410
Office manager: Luis Alberto


MAMMOET
MAMMOET

Great Ship Award

Mammoet Shipping's award-winning m.s. "Happy River" leaving the port of Moji- ko in Japan full steam ahead with refinery columns destined for Laem Chabang in Thailand. Merwede Shipyard was elected by the influential American shipping Magazine "Maritime Reporter and Engineering News" as one of the outstanding shipbuilders for building m.s. "Happy River", which was among the "Great Ships of 1997".

Queen Bess



Scunthorpe – World iron-making engineering history was made with a 100 metre journey of the 2,650 tonne main module of the new Queen Bess furnace at Scunthorpe in the U.K.

on the move

Hearth, bosh, bustle main, and stack, together with the surrounding casthouse were driven into place just before Christmas in an innovative construction plan developed at the Scunthorpe site. Even the cooling elements and some refractory and cables were incorporated in the 38 m high unit. This whole assembly was carried on a frame specially designed by British Steel Engineers. The new furnace was built a hundred metres away from the site it now occupies and was moved on a self-propelled modular transport system more at home working in the oil and petrochemical industries. It involved the combination of SPMT units with 400 wheels, all controlled from a single point.
The journey took an hour, with final positioning taking a further four. The furnace had been put down within 5 mm of its planned location.

Moving the module was undertaken by Mammoet Transport (UK) Ltd from Middlesbrough, using a system specified for the transporting and load-out of, for instance, offshore modules. Although the SPMTs involved in this project work all over the world, they had never transported a blast furnace before.

Bess is the last of Scunthorpe's four furnaces to have been rebuilt. Mary in 1985, and then Anne and Victoria in 1989/91, were all renewed in modular form, to keep plant downtime to an absolute minimum. It is the construction method which has been different this time. The other three furnaces were built using a very large mobile crane to move the modules into place one after the other. For Queen Bess a number of those sections were built in one unit to form the main module, after which it could be steered into place in a one hour move. ■

Excerpt from "Steel News", February 1998

Anse - Until half a year ago they worked by the name of Nedlloyd Road Cargo. Since April 1 they have been part of Mammoet Ferry Transport . The brand new Mammoet office in Anse, France, in the middle of the beautiful Beaujolais region, takes like a duck to water within the close-knit Mammoet family. General Manager Renaud Paulat: "Now we belong to the well known Mammoet organisation and we're very pleased with that." Getting to know MFT's youngest.

With the means and know-how of their sister organisation Mr Paulat expects to build up a name in ferry transportation in the foreseeable future. "We never walked that road before. But we did bring with us a complete clientele and existing turnover when we joined the Mammoet family, which is an advantage to our new mother company. That basis gave us time to concentrate on how to develop the trade with the U.K. Because of the already established Mammoet name we are able to expand our service to the U.K. quickly and strongly. The company has an excellent reputation and is a major player in ferry transportation. The fact that MFT has been around for 15 years now is the living proof of that. We continue to build on their knowledge and sense of quality."

Through gradual expansion of the number of offices (now eight in total) MFT strengthens its position even further in the European transport market. That was one of the reasons to take over the Nedlloyd Road Cargo division in Anse. An interesting factor is that Anse had been concentrating entirely on the Continent, that is everywhere except Great Britain. The existing client records, however, offered some potential for the Ferry aspect. Being a specialist in the transportation of steel and chemicals, the U.K. presents an unmarketed area for the French company.

"MFT is a small organisation, known for its flexibility, and the company's top management is strongly involved with the employees. They keep in close contact with their people at all levels."

Expanding U.K. trade

Presently, ferry transportation holds some ten per cent of the total number of trips. The most important activity is still continental road transportation. During its six years existence as a transport company the office in Anse has mainly been focussing on Southern Europe, Belgium, the Netherlands and Luxemburg (the Benelux) and Germany and Austria.

Mr Paulat: "We continue with what we were doing but we also offer an extra service. That has already led to an increase in turnover. Our present clients use it, but we also get new customers all the time. Expanding the U.K. trade is a spear point for the coming years. On average, we take some six hundred trips per month, sixty of which cross the Channel."

The client list mainly contains producers of chemicals and steel. Big names in that field are Rhône Poulanc Agrochemical and Ugine, part of the Usinor group and one of the world's major steel producers. Forwarding companies are actually scarce among clients.

Mr Paulat: "Ninety percent of our turnover we earn through our direct clients. The rest are forwarders."

Steel coils

There are twenty regular drivers for Mammoet-red lorries of the Anse office. No more, no less. If demand is larger than supply, the necessary space is chartered on the market. For their largest client the steel coils always moved accompanied. Special tilt trailers must carry the twenty tonne masses safely to the other side, which demands some preparation of the drivers. The steel is tightly fixed in the 'hole' in the trailer and cannot move at all. MFT owns fifteen of these trailers. "Since the tilt is hugely expensive, we always travel accompanied. That makes us a special part of Mammoet. We are the only ones within MFT who carry out manned transports. If you have the material cross the channel unaccompanied, you run the risk of it getting damaged."

"We think that in future the market share can be enlarged, but we expect the greatest expansion to take place in unaccompanied Ferry transportation. We will direct our efforts mostly at clients with for instance paper or tissues. Since we have our office in a wine area, we also expect expansion in that direction. The British love French wines, especially the Beaujolais, and we are in the middle of that district."

PHOTOS: BEN WIND

Mammoet Ferry Transport strengthens its position

Fuel prices

To be able to deal with the growing number of clients for the ferry, Anse uses the MFT network in Europoort (the Netherlands) and Zeebrugge (Belgium). We also try to combine more cargoes with the tilt trailers. A full trailer is not paid for as well as it used to. So if part loads can be combined, the earnings improve."
Increase in fuel prices also has a direct effect on costs of transportation. The influential French trade unions therefore strongly plea for special fuel for trucks and lorries, such as is already customary in shipping. Last year October the union demands were stressed through a blockade of the French roads. This year, Mr Paulat supposes, that risk is not so great. "The most important issue at the moment is the discussion to reduce working time per week. The unions wish to reduce the present 39 hours to 35. Large companies will fit this in quite comfortably, but the smaller companies will certainly feel the effects."

He is not concerned that this will cause distress within the company,. "We have a strong bond with the other Mammoet offices. MFT is a small organisation, known for its flexibility, and the company's top management is strongly involved with the employees. They keep in close contact with their people at all levels. That makes the workers more involved with the company."

MdB

A lightweight Huckepack Mammoet Ferry trailer being loaded on a railcar at Europoort.

PHOTO: BAS VAN DER WEL

Mammoet Ferry Transport strengthens its position

Duisburg - More or less forced by increasing demand in the market, Mammoet Ferry Transport (MFT) opened their office in Duisburg in Germany five years ago. Specialised in the transportation of part cargoes, this office is the smallest MFT branch with only three staff. From the heart of the Ruhr, the young company waits on customers throughout Germany. No less than ninety percent of these customers are fellow transport companies who find a reliable partner in MFT Duisburg in the transportation of part loads.
Expensive and often complicated transportation necessitates a certain level of discipline and flexibility; aspects that the company, which remained small and client focussed through its limited scale, is praised for.

Whoever thinks of Mammoet sees in his mind's eye the moving by water of factory parts to, for example, Singapore, a giant crane in Bratislava or a heavy lift job in Australia. Nothing of all this describes Mammoet Ferry Transport, with their offices in the Netherlands, Germany, Belgium, France and the United Kingdom. Nearly four hundred trailers are committed to ferry transportation between the main land and the United Kingdom. The trailers are delivered at the Dutch or Belgian side, and picked up by an English lorry on the other side of the North Sea. Less spectacular, perhaps, than sister companies Mammoet Decalift and Mammoet Shipping, but every bit as interesting. Under the

skilful leadership of Managing Director Tom van der Enden the company has been holding its own between all the "big boys" for fifteen years. MFT likes to keep distinguishing itself. That is one of the reasons why it still keeps its trailers in the former house-style colours of the mother company, the ever appreciated Mammoet red. Furthermore, the Duisburg branch differentiates the company in the market. Planner Stephan Kohl: "We have been founded specifically for LTL (Less Than Load). Five years ago a kind of "gap" emerged when many forwarders asked for the transportation of part cargoes between Great Britain and the Continent. In the past we only took on complete cargoes. On the Continent we are the only Mammoet Ferry Transport office working in this niche. A comparison could be made perhaps with the office in Cumbernauld in Scotland, but they also carry complete cargoes. We do not."

"Schnaps" and spirits

"An important aspect of MFT Duisburg," according to Kohl, "is that we try to establish a relationship with our customers built on trust. For the main part, we work with fellow transportation companies, which means that confidentiality is a very sensitive issue. We are strictly neutral. Our clients know we do not touch their customers and that the business is always carried out according to their wishes. It works purely on trust."
For the mainly English, German and Dutch clients, the Duisburg branch carries chemicals and steel products, but also beverages, tea, electronics and car parts. And of course "schnaps" and spirits; everything that can be put into a regular trailer. Owing to the high exchange rate of the Pound Sterling, many British companies find it presently attractive to buy bits and pieces in Germany, according to Mr Kohl, "There has always been an imbalance between import and export to the U.K. in favour of the mainland. This is the best year we have had so far. We are absolutely experiencing an upward trend. Compared to the first half of last year we booked 25 per cent more turnover and so far it hasn't finished growing yet."

Some three quarters of the clients are based in the Ruhr area. The other twenty five percent can be found all over Germany, from Hamburg in the far north to Munich in the Bavarian south. Every now and then the office is contacted by clients from the new "bundeslands", but the flow of goods from there is still too small to form a regular basis. "So far, the unification has had very little influence on our management. It may be that erstwhile East Germany becomes more appealing in the future, but presently our possibilities for loading are rather poor. There are not enough facilities yet. Nor do we have the potential to combine cargoes, as cargoes from different clients seldom come in at the same time. So, if a cargo from that area does materialise, we try to have it shipped to Duisburg by a German trucker. Then we combine it here into a complete shipment."

Storage and transhipment

In contrast with the office in Deeside, Duisburg has the advantage of a warehouse, which is a fairly important sideline of the still young company. Cargoes, for instance, that have to be brought to England from the hinterland, can be transhipped in Duisburg. Apart from MFT with storage and transhipment of part cargoes and collect goods, the 800 m2 storage space is used by the Scottish company Alcan Chemicals Ltd. Mr Kohl: "Alcan's chemicals are stored here on average three to four months. The other goods usually leave here within two days. If we receive something that cannot be fitted in the trailer, it will be handled that same afternoon or the next morning. We use the main court behind the warehouse to change trailers. There we can exchange loaded trailers for unloaded ones and vice versa. This is also much in use by Mammoet Europoort. If they have an empty trailer, they come and trade it in for a full one here in Duisburg."

For the Duisburg office, so-called combi-traffic is not (yet) attractive. Being dependent on speed and flexibility, the fixed times of departure of the railway option is an unpassable hurdle for the German office. All cargoes go by road. "The combi-train is in Duisburg at 5 o'clock and that usually is too early for us. When our trailers move towards the port, it is already six or seven in the evening and then they must make haste to get there in order not to miss the boat. Since we only move part cargoes, the combi-concept just doesn't do for us. The only situation that causes us delays is the throng at the loading spots. It is possible that our trailer arrives at a certain company very early in the morning to pick up cargo and that there are already twenty others waiting. Of course, that has a knock-on effect. Encounter one problem in the morning and you'll find five in the afternoon." Still, the Duisburg branch can live with that. Because of its flexibility, reliability and of course by word of mouth, the little company has meanwhile built up a big name. ■

MdB

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How the South

Johannesburg - Mammoet Southern Africa (Pty) Ltd is the new name for a company which has been working in South Africa for many years. Originally a South African company, it is now part of the globally operating Mammoet organisation with its head office in the Netherlands.

Mammoet Southern Africa is not a newcomer in the South African market. It had already delivered heavy lift shipments and the company acquired an excellent reputation when loading out heavy offshore modules for the Mossgas project some years ago. From its headquarters in Johannesburg the company now offers a heavy-haulage service with modular hydraulic platform trailers capable of transporting oversized loads or heavy loads exceeding 600 tonnes. Traction is supplied by Mammoet's four 8x8 driven MAN prime movers of 700 Hp each. They are reckoned to be the most powerful units in South Africa.

A self-propelled four-legged gantry system with a lifting capacity in excess of 350 tonnes is being used for specialised rigging jobs. It can move very heavy, condensed loads over its own tracks inside buildings and in other confined areas. This system has proved its value during the recently completed Huletts project in Pietermaritzburg. Various 215 tonne mill stands were moved and placed onto their foundations below ground level. In addition to this gantry system, Mammoet operates self-climbing jacks with a combined lifting capacity of 900 tonnes and self-propelled skidding units. This capacity can be increased to a multiple of 900 tonnes to perform a lift or to lower a heavy load in a deadlevel situation without having to use double sets of cribbing. When the skidding system is placed underneath the load, which is the regular system, it can be used to move the load into or out of a factory building without having to remove part of the building. These hydraulic lifting, shifting and erecting units are highly mobile and only require a short time for mobilisation. They can also often be used as an economic alternative for tandem crane lifts.

Apart from the above-mentioned systems, the Mammoet subsidiary offers a wide range of crane services, not just as a simple crane hire service but as a full service heavy transport operator which undertakes lifts on a lumpsum basis during project or time related operations.

Among the contracts that Mammoet Southern Africa has been awarded for this year and the next there is one which concerns the lifting, among smaller items, of a 170 tonne work boat from the water and to replace it after repairs. Another project concerns the construction of a T-shaped pier. 62 tonne concrete beams with a length of 21 metres will have to be lifted and positioned onto their foundations. For these operations an outreach is required of more than 30 metres from the centre of the crane. Astounding feature of this project is that the first lifts are carried out from a floating barge, where after the crane will be relocated onto the earlier placed beams to proceed its work for another 12 months.

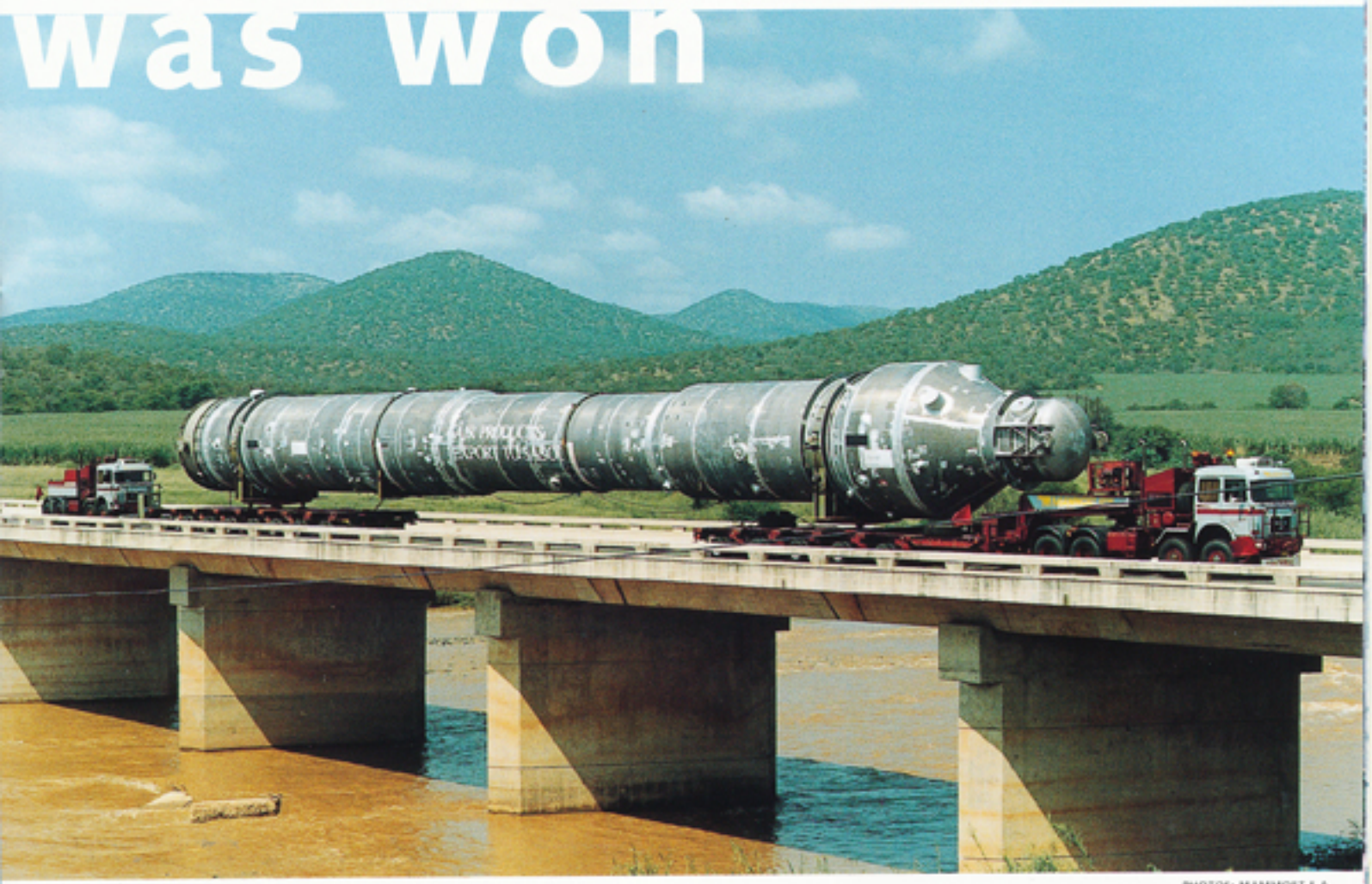
Integrated transport philosophy

Earlier this year, Mammoet Southern Africa moved a 350 tonne furnace with a length of some 24 metres and a diameter in excess of 8 metres from its fabrication yard to the building site. Inside the building, the self-climbing jacking system was used to lift the furnace more than 3 metres above ground level. Finally, a sliding system was used which placed the furnace onto its trestles with a tolerance of one millimetre.

Part of Mammoet Southern Africa's integrated transport philosophy is a worldwide operating heavy lift fleet with lifting capacities ranging up to 1100 tonnes. Another part of this philosophy is carried out with the land based mobile and ringer cranes with lifting capacities in excess of 1300 metric tonnes and Mammoet's Self-propelled Modular Transporters (SPMTs). These can move heavy loads in any conceivable direction on level or hilly sites without the need of additional traction.

Mammoet Southern Africa can rely on many years of worldwide experience and vast engineering know-how when offering the most advanced heavy lift services to its South African and Sub Equatorial clients, be they in the petrochemical and mining industries, power sector or other related heavy industries. One could say that Africa's Big Five now have expanded with the arrival of Mammoet into Africa's Big Six!

was won



PHOTOS: MAMMOET S.A.

Transformers for Zimbabwe

***Kwe Kwe** - Transformers are important objects to be carried by road by Mammoet Southern Africa. They are often transported to the neighbouring countries and Mammoet S.A. is one of few transport companies which have the knowledge to acquire special permits and avoid embargoes for heavy transportation.*

On September 28 an 87 tonne transformer, manufactured by Pauwels for Polytra, was transported by Mammoet S.A. from the Durban Docks to Kwe Kwe in Zimbabwe. The cargo had a length of 28 metres, it was 4.25 metres wide and 6 metres high. Its total weight was 120 tonnes. A MAN tractor 48-700 was used in combination with a 7-axle low-bed trailer and the distance to cover was approximately 1400 km involving all the usual paperwork for crossing borders. As it is difficult in this region for such transports to refuel – most fuel stations cannot accommodate such trailer combinations – the transport was escorted by a Mercedes Benz 508 Tanker truck. Furthermore Nissan escort vehicles were used in front and at the back to make sure the roads were clear.

Once arrived at its final destination in Zimbabwe, Mammoet's gantry system had already been mobilised. The transformer load was driven alongside the foundation, whereafter the gantry took over the load from the trailer. By means of the top-beam sliding system, the transformer was positioned with only one millimetre tolerance.

Pietermaritzburg - A huge production facility for the manufacturing of rolled aluminium is being built for Hulett in South Africa. The nuclei in the process line are the hot mill and the stands which were erected by Mammoet Southern Africa. These mills roll the raw aluminium ingots into plates and coils of various thicknesses. Effectively, a whole range of aluminium commodities will leave the factory from 600 mm ingots to microns-thin foils. Mr Brian Clark is construction manager for the entire project. He is employed at the BKS Hatch/Fluor Daniel Joint Venture, whom Hulett has engaged for construction management.

Hulett aluminium rolled products e

"We're extremely busy at the moment. We are finishing off the civil and structural contracting and we are well on our way with the mechanical installation. In order to ensure appropriate focus in this very tight schedule we meet with the contractors twice a day, morning and afternoon, on the mechanical and electrical side and identify what needs to be done. Furthermore, we have a huge interface with the equipment supplier, Mannesmann Demag, on the hot line, who are providing specialist supervision for the installation of the mills. A local company is contracted to execute the installation. So we have to deal with a lot of interfaces. The mechanical contractor started in January of this year. All the green equipment you see out there was installed between then and now, the civil work started a year earlier. We have selected crews working around the clock. There is a significant amount of hydraulic piping: all the operations on the mill are hydraulic. All this piping represents one of the critical paths of the project."

Mr Clark underlines that all parties concerned have a very good working relationship. "I knew about Mammoet, but it is in fact the first time that I actually worked with them. We were in a real predicament with regard to the heavy lifts. We wanted to get the building covered as soon as the stands were installed. The timing was such that when we awarded the mechanical contractor it was too late for him to tell us how he was going to put these mill stands in. If they had used a conventional ringer crane, the building contract would be jeopardised. So what we had to determine early, before we even appointed a mechanical contractor, was the rigging package for the erection of the heavy components, essentially the mill stands and the motors. In order to determine how far we could proceed with the building, it was necessary for us to understand the rigging method of the selected contractor. And that was the big advantage of Mammoet's gantry lifting system; that we essentially could finish the building. Whereas if we had gone for a conventional crane we would have had to leave out significant parts of the construction."

xpansion

"Another concern was that there is such a big mechanical interface with the rigging operations in terms of getting it set in the right place and to the right levels, etc. Therefore, we appointed Mammoet as a nominated contractor to the main mechanical contractor so that they could work together. That worked out well. It was perfect, particularly the motors, which had to be assembled on site. The rotor had to be inserted in the stator and the motors had to be positioned on foundations. Again, when using conventional cranes you don't have the precise control. The tolerances between the parts are pretty close and with your system we were able to do things slowly and controlled. Everybody was very impressed."

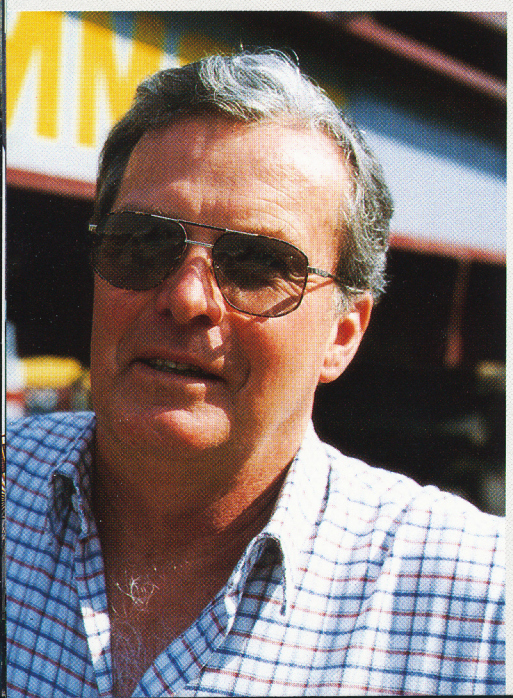
AvL

"The mill stands were manufactured way before we appointed the contractor and knew where to pick them up. Particularly on the roughing mill some clever work had to be done because the trunnions did not suit the height of your jacks. Your guys did a super job by designing the proper bridal to overcome this problem"

Bott, Drennan, Maud are Civil Engineering & Superload consultants and in that capacity they are frequently requested by the local heavy lift industry to co-ordinate heavy transport route clearance investigations and related civil works. According to Mr Mike Bott these activities include bridge checking and design of strengthening and widening if required.

"In fact we are doing what I'm sure Mammoet are doing all over the world as well: ensuring that the routes are geometrically clear for various heavy loads and convoys. In other words checking the horizontal and vertical geometrics. Once we have looked at a route, we then look at the bridges and inspect them for the load that Mammoet is going to put on the road. Once that's done, we apply to people like ESKOM (electricity supply) and Telkom (telephone) and local authorities for the clearances of overhead lines. We then advise the road authorities in order to obtain the permits. In certain cases we weigh the load on the trailers – we have facilities to do that – to be sure that everything is loaded correctly. We work closely with the transporter and sometimes act as liaison between them and the Province."

Mr Bott says that the required standards may differ from authority to authority.



"They try to unify the standards but they do change. Also you find when you go to neighbouring countries like Namibia, Zimbabwe or Botswana that some of the roads are not built to the same standards and the bridges are built only to take normal traffic. We will go there and get the plans of those bridges — generally from the bridge engineers and then we actually redesign the bridges for that specific heavy load, from the foundations to the deck. We do a visual inspection as well and depending on the condition (cracks, etc.) we'll get it checked out promptly. We have just done that in Lesotho where we found two bridges we were concerned about. When required we strengthen the bridges if possible with steel plates glued to the deck with epoxy. Sometimes, we even install a new deck or earth anchors into the abutments. For the main abnormal load route from Richard's Bay to Segunda since 1976 we've strengthened about twenty bridges and also built laybyes so that the trailers can pull off overnight to allow traffic to pass."

Bott, Drennan, Maud are responsible for the good condition of the bridges during the transportation. "Once checked for a specific loading, we remain responsible until that load has passed. We've been working with abnormal loads since 1969, when the construction of the NATREF Refinery in the Orange Free State was carried out. The heaviest load then was 140 tonnes, which was considered to be extremely heavy. Since working together with Ian Brown, Operations Manager Mammoet Southern Africa we have moved loads of 440/460 tonnes, which is not heavy by European standards, but we have to move them over a distance of 600 kilometres, from Richard's Bay to Secunda and Sasolburg at least 76 bridges were crossed."

At the moment, Mike Bott is working on quite an interesting project. "It is called the Lesotho Highland Water Scheme. They have built a huge dam and will be sending water through tunnels to South Africa to assist the water supply here. They have drilled these tunnels and now have to bring back the tunnelling machine after three years of work. Bolt Drennan Maud are investigating the feasibility of bringing it to another dam in Lesotho. The route involves mountain passes and bridges and on the question who should do the transporting, we advised Mammoet, because they have the right type of trailers which can cope with these mountain passes. Of course they have to make up their own mind." ■

AvL

New v Heavy

Amsterdam - Four new heavy lift vessels will come on the market during 1999-2000. The vessels will be employed in the pool of Mammoet Heavy Lift Partners, operated by Mammoet Shipping B.V.

These vessels are four of the newbuildings of the "Confidence" type, a series of totally 12 multi-purpose container vessels, ordered by Graig-Clipper at the Zonghua Shipyard in Shanghai. Contrary to the Graig-Clipper vessels, these vessels will, however, be fitted with two heavy lift cranes, of 275 t SWL each, of Huisman-Itrec make.

The vessels will be named "Tramper", "Trader", "Transporter" and "Traveller" Delivery of the vessels is planned from 1999 until early 2000.

The ships are optimally designed to carry project cargoes and heavy lifts. A large intake of cargo is realised by a ship type of restricted length and draft, which together with the excellent manoeuvrability makes the vessels very suitable for projects where cargo must be discharged at small ports or site jetties. The location of the heavy lift cranes on port side aft and starboard forward and the large outreach of the cranes makes handling long heavy lifts up to 500 tonnes feasible, the cranes working in tandem, requiring minimum ballasting.

essels Mammoet Lift Partners

Apart from project cargoes, any dry cargo commodity – forest products, steel plates, pipes, bulk cargoes – can be carried as the ship's hold is box-shaped and totally flush. The vessel is of "open hatch" type and fully container fitted. The service speed of about 16 knots fulfills shipper's requirements of short transit times.

After the introduction of these four vessels, Mammoet Heavy Lift Partners will have completed two phases of fleet renewal. Four vessels of the "Happy River" type – 15,600 t dwt, lifting capacity of 2 x 400 tonnes – were introduced in 1997 and 1998 and are successfully trading. The four "Tramper" types are expected to perform in the "lower end" of the heavy lift market with the same efficiency and success.

When the "Tramper" types come into service, older vessels in the Mammoet pool fleet will be phased out. The fleet consists currently of 13 vessels; it is the intention to operate a fleet of 12 to 15 units, to be able to fulfill clients' requirements worldwide. The timing of phasing out older vessels of the "Project" type and/or the "En-" types will depend on market developments. When phasing out old tonnage it will be made sure that these vessels are definitely disappearing from the heavy lift market. ■


MAMMOET

ihange 3

Huy - In the record time of 15 days, three steam generators were exchanged last summer in the Tihange 3 nuclear power station, Belgium. It was the latest steam generator exchange project in the Electrabel nuclear power stations of Doel and Tihange which was carried out by Tractebel and Mammoet. Philippe D'Haeyer, steam generator replacement project coordinator of Tihange 3 provides the following comments on it.

"A job like this is always a new challenge, it is always different. I have been involved in two so far: Tihange 1 in 1995 and now Tihange 3; the steam generators of Tihange 2 will be exchanged in 2001. It is difficult to assess in advance what the life cycle of a steam generator will be: The stations Doel 1 and 2 near Antwerp, which started commercial operation in 1974, still operate on the original generators. The service life of the Tihange 1 steam generators was the longest: 20 years.

The service life depends mainly on the evolution of mechanical phenomenen, i.e. corrosion of the pipe bundles. Corrosion can lead to hair line cracks, which in turn can cause leakage from the primary cooling system to the secondary side of the steam generator. Every outage, the tube bundles of the steam generators are inspected; suspicious tubes are plugged off and put out of order. This cannot be done indefinitely as it decreases the heat exchange capacity margin and therefore also the station's output. But it can also cause new mechanical problems; excessive vibration and fatigue."
Various Mammoet disciplines were involved in the exchange project. Mammoet Stoof moved the 475 tonne steam generators with the self-propelled SPMTs until underneath the gantry, where the HydraJack system guaranteed an extremely precise lifting operation. With Mammoet's push and pull skidding system the steam generators were subsequently brought into the reactor building and ultimately, the polar crane of the utility took care of the final placing of the generators on to the support posts.

"The original steam generators have been installed with the polar crane, so it has sufficient capacity for such lifting operations. Furthermore, during a shut-down in August last year, the crane has been completely checked out. At the beginning of this outage it has been completely overhauled, cables were shortened and the whole system was put into assembly configuration."
In previous exchange operations which Mammoet carried out in the U.S.A. the HydraJack system had also been used for positioning of the generators in the cubicle.
According to Mr. D'Haeyer, renewing steam generators takes a considerable investment in material and manpower. Preparations alone take more than three years, during which technical and safety-related studies must be carried out. "There is a clear exchange of expertise between Electrabel, Tractebel and Westinghouse/PCI. Sometimes the station has the leading voice, at other times Tractebel and the subcontractors lead the band. But in the end, the plant co-ordinates the outage and steam generator exchange operations. In fact, it is a complete system of interactions. The whole operation is a huge success mainly due to the tremendously good atmosphere between all parties involved." ■

AvL

"The whole operation is a huge success mainly due to the tremendously good atmosphere between all parties involved"

The truth is

***Amsterdam** – As a global player in heavy transport, Mammoet communicates with its clients on a worldwide scale. One detail, which is always on our mind in this communication, is that a comparatively small audience must be reached and that this audience is spread all over the world. Therefore, Mammoet's branche offices play an important role in this communication. Important trades such as the petrochemical and power sectors, offshore industries and mining are approached regularly.*

Furthermore, direct mail instruments are used, such as Mammoet Mail, which is sent out following the subsidiaries' client lists, and of course personal visits to clients. Obviously, the latter absorbs a lot of time, money and effort, among other things in maintaining a workable and up to date data-base. Even so, the full target potential may not always be reached. To chart the remaining white areas, Mammoet has launched an advertising campaign in prominent trade magazines in the most important industrial sectors such as power, offshore and petrochemical industries. The campaign has started in the second half of this year and will run well into 1999.

Two different advertisements were developed. One presents the "Factory to Foundation" philosophy of the Mammoet organisation. In this ad, the different heavy lift modes are highlighted such as heavy lift shipping, heavy transportation and lifting, including special skidding and hydraulic lifting techniques. The other advertisement features the many-faceted erection, lifting and positioning capabilities, including lifting engineering which is required to tackle such projects. Both advertisements show the wide range of heavy lift services offered by Mammoet through pictures of accomplished projects all over the world. Both are headed by the catch phrase: THE TRUTH IS OUT THERE, which is equivalent to saying "the proof of the pudding is in the eating". By the way, any connection to a world-wide renowned tv series is a mere coincidence.

out there...

One hurdle for the use of actual action shots in our advertisements arose through the introduction of the new Mammoet house style. In some of the pictures, the Mammoet equipment was still in the old house style colours, even though presently most of the equipment has meanwhile been painted in the yellow/grey universal Mammoet colours. Digital adjustment of the colours in the pictures solved this problem.

The best part of the mix

Of course, as a medium, advertising has its limitations and it has to be looked at as part of the marketing mix. For Mammoet, the best part of the mix is Mammoet Mail, which can be used as a response medium after a reaction on the advertisement. Most of the chosen magazines have a response service and pass on names and addresses of interested parties to the advertisers. They, in their turn, can contact these valuable prospects. Another extension of the readership of Mammoet Mail is pursued by including a modified cover of Mammoet Mail in some of the trade magazines to inform people of the existence of our house magazine. By faxing a coupon to the Mammoet PR Department they can request for a free copy of Mammoet Mail. In the 15 years of its existence, the magazine has now reached a circulation of 15,000 copies.

Another recent development to improve on our marketing mix is the newly developed Mammoet website. The site by the name of http://www.mammoet.com has now been operational for almost a year and reactions are ample. The trick of keeping a good website is to update it regularly and find a way to attract people with a professional interest only. Experience has taught us, however, that the majority of information requests coming through the Internet are from students and heavy transport/shipping enthusiasts, also including the occasional model maker, be they living in South Africa or Alaska. On the other hand, one may argue that students can be future prospects and, what's more important, every real interest deserves an honest answer. This certainly is one of the Mammoet PR principles.

Last but not least: the largest quantity of reactions by e-mail were generated by the Discovery documentary "Megatrucks" in the "Extreme Machines" series. A substantial part of this episode features Mammoet's Self-propelled Modular Transporters (SPMTs) causing a flood of requests, which still goes on, probably until the last broadcast has been shown in some or other remote part of this world. ■

AvL

Rotterdam - A shipunloader (25x19x35 m), a shiploader (39x18x13 m) and a so-called tripper (42x15x13 m) were loaded by Mammoet Shipping's "Sailer Jupiter" in the port of Rotterdam. The three structures were destined for Gresik in Indonesia and notwithstanding the fairly light weights of the pieces, the lifting operation deserved quite some attention. The first piece, the 190 tonne shipunloader was lifted on board and thereafter rolled over rails towards the fore part of the ship. The shiploader, weighing 90 tonnes, was thereafter lifted and placed directly onto the aft ship. Lastly the 33 tonne tripper was lifted and placed in the centre of the ship's deck.

Mammoet i

Bordeaux - Mammoet Shipping's m.v. "Happy Rover" took care of the transportation of a 564 tonne offshore module built by Ponticelli in Bordeaux for the ELF Congo Tchibouela Field project. With her own two 400 tonne heavy lift cranes the vessel took the approximately 20x29x15 metre module on board, whereafter a flare with a length of 34 metres followed. At a determined spot at sea off Point Noire in Congo, the cargo was lifted off the "Happy Rover" by crane barge "Polaris" and directly placed onto the foundation jacket.

Venice – M.v. "Happy Ranger" is seen here leaving Porto Marghera through the old canal past Venice. On her way to Jubail to unload the 800 tonne reactor vessel, "Happy Ranger" was to drop off the 273 tonne boiler module at Ras Laffan.

Panama City - M.v. "Envoyager" loaded eight reels for Wellstream at Stord, Norway with her own lifting gear and took them to Panama City in Florida.

Rotterdam - Several columns, manufactured by Winkels in Kleve, Germany and delivered by Trans Global, were loaded on board m.v. "Happy River", for Nippon Express in Tokyo. After closing the McGregor rolling hatches, a B.3800 dredger of 282 tonnes was placed on top of them as deck cargo. The 37.4 x 12.85 x 11.35 metre dredger was destined for Male at the Maldive Islands.

n Focus

Rotterdam - M.s. "Project Europa" loaded two distillation towers with lengths of 62 and 78 metres and weights of respectively 400 and 580 tonnes. The vessels were loaded with the ship's own derricks in the port of Rotterdam. The columns were manufactured by SIF in Roermond and ordered for a refinery in Thailand.

Mammoet Shipping's agency network

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fax: +41-61-6315087
e-mail: frankltd@frankltd.ch

Houston - Davenport Mammoet took care of a load-out operation of a 639 tonne module by means of Self-Propelled Modular Transporters. The m.v. "Project Arabia" of sister company Mammoet Shipping took the cargo in over her ro/ro ramp and sailed with it to Mumbai, India.

MAMMOET

EUROPE

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• for complete list of agents see page 39

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