MAMMOET MAIL

House magazine
of Mammoet
Transport B.V.

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- Modularised Plant Construction in Singapore and Australia
- 65,000 tonnes loaded out
- Ferry Trailers "Light"
- Mammoet in Madurodam

Mammoet Shipping's new heavy lift vessel m.s. "Happy River" is seen here entering Port Hedland in Australia with a first shipment of modules. They were unloaded with the ship's own 400 tonne cranes and landed on to the heavy transport trailers. The heavy equipment is destined for the construction of a Hot Briquetted Iron Plant. Five more journeys will be made between Batangas in the Philippines and Port Hedland.

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THIS ISSUE

Tusks Towards Two Thousand

The main theme in this issue is the subject of wheels. Not particularly exciting for a transport company you would say, but for Mammoet it certainly is. Part of these wheels are built for heavy transport and are used to move loads of thousands of tonnes. The other Mammoet wheels are built for a different type of transportation. Also for the movement of thousands of tonnes, but not as individual weights. These tonnes are transported over the roads of the Continent and the United Kingdom in the specially developed light weight trailers of Mammoet Ferry Transport. Our other trailers are, of course, Mammoet's SPMTs (Self-Propelled Modular Transporter), an original Mammoet invention. Both types of trailer are part of the specialised transport services provided within the Mammoet Group of Companies. You'll read all about these activities in this issue, about the transport logistics behind them and, in a special, our customers' views of these wheels.

However, the integrated transport philosophy which makes Mammoet a unique company, needs more than wheels alone. Mammoet Shipping's newly-built heavy lift vessel "Happy River" is presently busy ferrying a large number of modules between the Philippines and Australia. Before that, she started her maiden trip with two container cranes from Rotterdam to Barcelona. Her sister, "Happy Rover", the second in the new-building series was launched in June and was commissioned on 16 August. A further two vessels are still under construction.

The third force in the Mammoet organisation is lifting. Mammoet Decalift International provides the market with a complete range of lifting systems and has recently expanded with a completely new lifting and skidding system. It was tested successfully for lifts up to 2000 tonnes, another innovative development in the heavy lift sector.

The Mammoet organisation is geared up for the next millennium in every way. Apparently, 2000 is the magic number and when writing these words my count-back watch shows there are still 21.242 hours, 16 minutes and 5 seconds to go .....

4 Last year Mammoet Mail visited the Foster Wheeler office in Reading, where Bill Meyer gave us an interesting narrative on a complicated transport and cranage project in Singapore, where 213 modules were moved and installed on a confined site by Walter Wright Mammoet. Meanwhile, Mr Meyer transferred to the Mammoet organisation in Rosharon where he is now Vice President of the Engineering and Crane Department.

8 Mammoet Ferry Transport remains in the forefront of a particularly competitive market. In charts compiled by the clients the company scores very high on client satisfaction. It takes much effort to stay that one step ahead in a business where margins are small. Renewal of the trailer fleet is a continuous process in which every extra kilo in trailer weight must be saved.

18 On both sides of the North Sea offshore activities rise to a peak during the Spring load-out season. With the weather favouring transport conditions, Mammoet moves from one place to the next to keep the offshore structures rolling. 65,000 tonnes in two month have been transported so far and Mammoet did not even take the effort to inform the Guinness Book of Records of their latest feat.

"fifty containers in a row"

Oosterhout, "What you see here are actually fifty 20" containers." This was said in Oosterhout by Piet Stoof, the designer and managing director of Stotra B.V., during the test lift of the SSG 50. He referred to the modular set-up of this new heavy lift system which makes it easy and cost effective to mobilise On Friday, 29 August Mammoet clients gathered at the test site and saw a 2000 tonne barge being lifted. This remarkable lifting/skidding system will perform its first job later this year in Bratislava, unloading, erecting and positioning three 1200 tonne reactor vessels.

In a previous issue of Mammoet Mail attention was given to the Singapore Aromatics project, a major transport operation executed by Walter Wright Mammoet in Singapore.

AROMATI

As the mechanical completion of the facility is finalised now, Mammoet Mail visits Foster Wheeler's head office in Reading near London. A retrospective look at the SAC project with the man on the job, Bill Meyer.

"There were actually 213 modules in total on the job. When you have such a large number of modules, you expect that most of them are small skids. But in fact, they were not. The module weights averaged 130 tonnes so they were relatively large and they went all the way up to 1130 tonnes. That really sets the perspective." Bill Meyer, at the time of the project Module Transport and Installation Manager for Foster Wheeler Eastern Pte Ltd, glances through the close-out report he made for the heavy lift and transport phase of the SAC project. "The intent, of course, was to maximise the utilisation of the M1200R ringer crane and minimise its time on the site. She did really extremely well by installing 99 modules — 16,255 tonnes in

CS

total. In fact we were fortunate that the M1200R had been designed and built. At the time she was the only crane that fitted into the lay-out of the site. We required a very compact crane for a very confined area. And apart from the fact that she is a very powerful lifter, you can actually cycle a large number of heavy lifts quite quickly. That's because you don't have to relocate your superlift each time you've done a lift. You can slew with all your superlift on the back, ready to grab the next module. So our plan to install one module per day — that includes all the contingencies for weather and for re-rigging and so on — was achieved. The number of crane relocations was six, actually one more that we had planned. The flexibility provided by the crane's compact size whilst maintaining high lifting capacities enabled us to change the installation sequence of some modules to suit our requirements on site. We were able to ship those modules later and in the meantime move on with the crane to the next location and come back later. At a confined site where you are sequence driven it was very nice to have the flexibility and compactness of the M1200R".

The aromatics complex was built on Pulau Ayer Chawan, a man-made island on the coast of Singapore. Building a plant on an island has its disadvantages and Bill Meyer explains why the foundations for the crane were piled. "The reason for that was because we did not want to have any differential settlement. We located the crane over these large duct banks with pre-pulled cables including fibre optics. We left the foundation top 55 mm below the final road surface level and integrated the foundations with the rest of the permanent facilities so that they could be paved over after the crane had left."

Talking about fibre optics as a transmission system Bill Meyer thinks that in the heavy lift sector lessons can be learned from the technologies used in the petrochemical industry: "On cranes in general the major areas of fault tend to be the sophistocated electronical systems. In the petrochemical industry, one or more parallel circuits are provided to ensure that critical data transmissions can be automatically be re-routed when the primary system malfunctions. In addition, the computer informs the plant's operating personnel that one of the systems has gone down so that it can be repaired. Crane manufacturers might like to think about a level of redundancy in their key electronic systems too."

Walter Wright Mammoet did not only perform the cranage for the job, but being an integrated heavy lift company they also did the transportation between the islands and the heavy transports like ro/ro operations and site moves. Bill Meyer stated that "... the SPMT is the most cost-effective way of positioning modules on this project and certainly for the heaviest modules there was no other option. The pipe rack modules were partly installed by SPMT and partly by the heavy lift cranes."

Mammoet Mail asks why this plant was constructed modularly. Bill Meyer: "If you can modularise a job you can be working on your civil as well as on your mechanical, engineering and installation works in parallel. Whereas when you stick-build you have to do that in sequence. Secondly the plant was built on an island and it is quite an operation to get the work-force out to the island.... and the steel and the pipes. From the point of view of manhour costs and productivety, it really was the ideal job to modularise." After a short silence Bill Meyer summarises: "Foster Wheeler has a very good name in modular construction. We certainly are proud of that. And as the jobs become more and more fast track, there is the potential to achieve shorter schedules by increasing the proportion of pre-assembled items, pre-dressed vessels and, for the projects that warrant it, for modularising ever larger sections of process units. Where the economics of production provide significant benefits to getting a plant on line as early as possible, the benefits of modularisation can be significant."

"At a confined site where you are sequence driven it was very nice to have the flexibility and compactness of the M1200R"

"What I found really exciting in this project was the fact that", Bill Meyer states it, "when we started we had a clean sheet of paper. Land was going to be reclaimed for the site so the infra-structure to be provided to meet the logistical challenge of bringing to site and installing 213 modules from seven module yards could be optimised for the project. It really requires a total commitment at all levels of management for both client and contractor before you can get this phenomenal rate of installation. It worked very well. When Walter Wright Mammoet came aboard — the philosophy and strategy of the project was firm and set — we made sure that we related properly with all the engineering groups within Foster Wheeler to make sure that it would be a smooth operation.
It was one of those projects where you are going to be running so fast when the site activity begins that you only have one opportunity to practice and that is ..... in the head. All the planning work and engineering activities paid off, providing a very successful heavy lift and transport operation on the Singapore Aromatics Project."

moving cranes

End of May this year the second vessel in Mammoet Shipping's newbuilding programme, m.s. "Happy Rover", was baptised and launched at the Merwede Shipyard at Hardinxveld-Giessendam. In the same month, her sister "Happy River" started her working life with loading cargo in the Port of Rotterdam. The purpose-built heavy lift vessel is equipped with two 400 tonne "Huisman" heavy lift cranes, which can handle a tandem lift of 800 tonnes.

Over the years, Mammoet Shipping has built up much experience in the handling of second hand container cranes. It was therefore no surprise that the "Happy River" sailed her maiden trip with this spectacular cargo on board. The two container cranes were loaded at ECT. The largest crane, which towered some 55 metres over the ship's deck, weighed nearly 720 tonnes, whereas the other, slightly smaller crane still put 634 tonnes on the scale. After the largest crane had been positioned on deck between the ship's two cranes, it was pulled towards the stern over temporary rails which had been welded to the deck of the ship. This was necessary to make space for the second structure, which was loaded using the same procedure. The ship's ballasting system kept everything in balance during the loading operations. Both cranes were securely lashed to the ship whereafter she could take to the sea and deliver the container cranes at the Port of Barcelona.

Apart from the cranes to be discharged at her first stop in Spain, the m.v. "Happy River" carried project cargoes below deck. In Rotterdam she had also loaded a column for a refinery in Cilacap in Indonesia and another for Batangas in the Philippines, 834 tonnes beams for a power station at Sual in the Philippines and steam drums and a heat exchanger for Port Hedland in Australia.

At Port Hedland the "Happy River" began her first major project, carrying BHP's modular-built Hot Briquetted Iron factory in seven voyages from Kwinana and Batangas to its destination in Western Australia.

Mammoet Ferry Transport

The smallest among the greatest among the

Mammoet Ferry Transport has taken delivery of 95 new light-weight curtain sided trailers with a tare weight of less than 6000 kgs. This new generation of trailers replaces 60 old ones and adds 35 to the fleet. Time for an investigation on the ferry trailer front. Mammoet Mail follows the tracks between the Continent and the U.K.

Europoort - "Actually, it doesn't matter what kind of transport company you operate, whether it is heavy transport or ferry trailers." This is Tom van der Enden speaking who has been steering Mammoet daughter Mammoet Ferry Transport for the last three years. He knows the Mammoet organisation inside out and has a clear view on the many-facetted disciplines of specialised transportation. "The difference is the quantity of cargo and the procedures for dealing with them. What is important is a well-oiled organisation with dedicated people, so that you can give the client optimal service. That is something you find in all Mammoet companies, though."

According to Mr Van der Enden within Mammoet Ferry Transport it is a case of connecting the very best possibilities. "You must see to it that not one unnecessary empty kilometre is being driven. Since we work with minimal margins, that is the difference between profit and loss. The planning department is a crucial department, because costs are of major importance. We pay 90% of our revenue to third parties, so there is a strong emphasis on the purchase of these services. With that I mean the purchase of equipment, sea freight, suppliers of services, trucking, etc. This is as important as optimum planning and I find it one of my core tasks to manage this as efficiently as possible."

Trailer fleet

With 310 own trailers and about 40 rented trailers, Mammoet Ferry Transport is one of the largest Dutch-owned ferry trailer operators. Mr Van der Enden states, "The truly large operators did originally start as English companies, e.g. P&O Ferrymasters who now own 2700 older trailers. We operate with some 350 and most of our Dutch competitors operate with between 100 and 200 trailers. We are therefore the smallest ferry trailer operator of the "big boys" and the largest operator of the smaller companies."

In between talking, Tom van der Enden arranges an urgent transport from Rotterdam which must be at its place of destination in Scotland the next morning. This turns out to be an expensive transport, compared to the normal service, as the time of delivery can only be met with a "self-drive". After some telephone calls Mr Van der Enden puts down the receiver and says, "We offer this special service to our regular customers. It does take a lot of time and planning but can be profitable if handled correctly. The margins in our business have diminished over the years. In 1990 we had 195 trailers and a turnover of 35 million. Now, in 1997 we have 350 trailers and a turnover of 70 million. At the time we made 40,000 km per year, now it is 70,000. Consequently, the turn around time of the trailers has increased. Of course, this is due to the vanishing borders in Europe.

"Committed to Excellence"

Sometimes the trailers had to wait for two days to clear and although the documentation gave an extra dimension on traffic to England, it is healthy that all this particular hassle has now disappeared."

Chemicals

A large proportion of the cargoes moved by Mammoet Ferry Transport are chemicals. Most of these cargoes are being moved under ADR conditions. Organisation wise,

great, small

and considering the level of service, this is rather demanding. It turns out that Mammoet Ferry Transport scores well in the eyes of chemical clients where carrier performance is carefully monitored. Mr Van der Enden: "We believe that quality is a priority and the goods must be transported at a fair price. That is why we will never compete with cheap, volume driven operators. Mammoet Ferry Transport distinguishes itself from other ferry trailer operators through its quality rather than quantity. We do everything to keep our reputation to a high standard by offering a good quality service. The most important resources to achieve this are the 63 people employed by Mammoet Ferry Transport. They are the most important asset, since trucks and trailers can be obtained anywhere, by anyone.

Euro

The introduction of the Euro is welcomed by Tom van der Enden. "However, our main partner in the European Union, the U.K. is not into it. The fact that the value of the pound has increased in the last twelve months by 25% is not very good for us. A large proportion of the costs to bring a trailer from Germany to England are calculated in English pounds. On the other hand, the revenues are in German marks, Dutch guilders or Belgian and French francs. Another, related problem is the imbalance of East-bound and West-bound traffic. Because of the expensive pound, the British are experiencing a harder time selling their products abroad. More and more we find ourselves returning from the U.K.

BASF Rozenburg

Rozenburg — Mammoet Mail's visit to BASF Nederland B.V. coincides with the announcement of the start of a new joint venture by BASF AG in Ludwigshafen and Hoechst AG in Frankfurt. The Joint Venture aims to strengthen their position in the developing market of Polypropylene and are now actually the largest supplier in Europe. The joint undertaking under the name of Targor GmbH will be controlled in Mainz. The sales and production activities in the Benelux will be the responsibility of a Dutch daughter company named Targor B.V. with a sales office in Brussels and the head office at Rozenburg. Mammoet Mail is welcomed by Piet Brussaard, Logistics Manager of the new joint venture at Rozenburg.

"We will be working in a joint venture with Hoechst and that means that we will become a lot bigger. We will then have seven factories in all and that will be a logistic challenge." Mr Brussaard pours us a cup of coffee and continues, "At the moment we have workgroups of BASF and Hoechst discussing the integration of finance, production and planning. For me the logistical angle is of course the most interesting issue as that will be my daily task. What kind of activities will we be encountering and what will the new policy be? I trust that the commercial part of transportation will be dealt with from here.

Before this, Mr Brussaard had already told us how his department operates. "In fact in our department we find all aspects of logistics. We receive the orders, have contact with sales offices, with marketing and it also means that we are responsible for production planning. On the other hand it is a question of buying: what are the needs for raw materials, catalysts and packaging. And at the end of the day — that is very obvious — we must deliver. We must be at the clients in time, with the right quality and the least problems."

At Rozenburg polypropylene is being produced, which is sent to the users as granules. Mr Brussaard, "Our materials are used to make such products as garden furniture, but it is also used in other products such as films, the packaging industry and the automobile industry, e.g. for making bumpers. We see a growth in use of some 6% per year. It is obvious that investments are regularly made. However, it is a sensitive market and when a new factory starts business, that is immediately reflected in the price levels.

Piet Brussaard does not find the transport to the client an isolated phenomena. He notices, however, that for some within the company there is a barrier between production and delivery. "In fact I wish to see the whole line, from the moment of producing until delivery at the client's, as one company. I can't help being completely customer-focussed and for me the transporter, in this case Mammoet Ferry Transport, is a small part of BASF. I always rather flatter myself to think that the other side experiences these matters as I do. Perhaps it is a rather emotional way of looking at things, but in my opinion this is a good approach.

with empty trailers and the margins on West-bound prices are not good enough to compensate for these additional costs.
At the premises of Mammoet Ferry Transport in Europoort a new warehouse is being built, amongst other activites, it will be used for the transfer of goods from Austria and Southern Germany. "We decided on this venture partly to safeguard the cargo we carry from these regions. East European companies transport these cargoes to Rotterdam, but they lack the required organisation and knowledge to proceed to the U.K. Transferring them here can cause problems but the new warehouse with the three loading ramps will offer a perfect solution. After this warehouse is finished, we will turn to the next project, which is a new office in Hull." Tom van der Enden explains that there is a major difference in allowable weights for truck and trailer plus load between the Continent and the U.K. "The allowable weight in the U.K. is 38 tonnes, whereas it is 50 tonnes in the Netherlands. As soon as you have the possibilities to rearrange the cargoes in the port, the weights of the cargo per trailer can be adjusted to the legal permitted level.

part loads

The offices of Mammoet Ferry Transport in England, Scotland, Germany, Belgium and the Netherlands form important links in the Mammoet Ferry Transport chain. "The transportation of combined cargoes has increased although when we introduced this possibility it was only as extra service for our clients. Continuing to move only full trailer loads would inevitably lead to a reduction in profitability. In particular our depot in Scotland uses their warehouse to receive cargo for every destination in Europe and then combines the loads in the most profitable and efficient manner. The transportation of part loads is now 25% of our turnover."

light weight trailers

Sil van Wanrooy, Technical Manager at Mammoet Ferry Transport in Europoort is talking to a representative of the new generation light-weight trailers. A trailer prototype is scrutinised to find out whether any more weight can be saved. Through this method, Van Hool Autobus & Bedrijfswagenfabriek (bus and trailer factory) can supply the definitive version. Mr Van Wanrooy says, "So far we have only worked with tilt trailers, which are trailers with a superstructure and a sheet. The new trailers have a sliding curtain on each side hence their name. They work like the curtains at home, so they have the advantage in that they can be opened and closed extremely quickly. The disadvantage is that they cannot be loaded overhead but when necessary we can always fall back on the existing tilt trailers which offer this possibility. Besides, the curtainsiders are wider inside and cargo of up to 2.5 metres can be loaded.

According to Mr Van Wanrooy the new trailer is still less common on the Continent and it turns out that some shippers are still apprehensive about the strength of the curtain sheets. "We have had these sheets tested and the result was that they are extraordinarily strong. In many ways they are stronger than the standard tilt trailers. The sheets can withstand a theoretic force to the side of 40 tonnes, but of course, with that much pressure, the trailer would fall over long before the sheet would tear. Another misunderstanding is that chemicals would not be allowed in such trailers. Transportation of such cargo is allowed and is even safer than transport in ordinary tilt trailers. Mammoet Ferry Transport has developed a securing system. Mr Van Wanrooy explains, "Since there are no boards in the sides of the curtain trailers, it was a problem to secure the cargo longitudinally. We developed a system with which the cargo could be very well secured and the clients received this in a very positive way. We don't take chances."The weight saved in the new trailers is considerable. "They only weigh 6,000 kilos and according to English regulations, one of the toughest in Europe with respect to cargo weights, they may take 25 tonnes of cargo legally, in combination with a tractor unit of 7,000 kilos."

Zeebrugge — Since the start of this year Mammoet Ferry Transport in Belgium has been using a new office in the transport area of Zeebrugge. They have moved into a new office and warehouse of one thousand square metres which makes it possible to offer part loads and storage. Mammoet Ferry Transport has been established in Belgium for the last twelve years.

Sandler nonwovens

Schwarzenbach — Following in Mammoet Ferry Transport's tracks through Europe we meet another interesting client in Germany. In the North Bavarian town of Schwarzenbach an der Saale Mammoet Mail has a pleasant conversation with representatives of Christian Heinrich Sandler GmbH & Co. KG, a company which produces light-weight and voluminous nonwovens. These products are used in the hygiene, upholstery, fashion and engineering markets.

Dieter Magiera, General Manager, gives a short exposition of the history of Sandler Vliesstoffe. "The company was founded in 1879 and started with the production of upholstery materials. At that time these materials were produced from textile scrap and until 1965 it was Sandler's main product. In the sixties we started producing synthetic wadding from polyester and they were the first steps on the road of producing nonwovens for various markets. Thermally and resin bound voluminous nonwovens were developed for the upholstery industry, as well as functional nonwovens such as padded jackets, coats, ski and sportswear for the garment industry. Filtration, construction and the automotive industry were other important markets. For the construction industry nonwovens were developed for insulation and as steam permeable variations for roofing."

Herr Magiera says that the voluminous aspect of the original nonwovens limited the transportation boundaries to about 1000 km. "A fully loaded Jumbo truck will only carry two tons in weight and we started asking ourselves what products would be suitable to be exported world-wide. From that point of view we ended up in the hygiene markets which now form 50% of our turnover. Presently, Sandler is supplying nonwovens for baby diapers, feminine care products and medical applications. This is also the kind of cargo that Mammoet Ferry Transport ships to the U.K. for Sandler. According to Herr Magiera, the voluminous upholstery material is not suitable, but the ultra-thin nonwovens for the hygiene industry are very well suited. Because of the sudden opening of the nearby east/west boarder, Eastern Europe has also become an important market for Sandler.

Frau Sofie Konigs, Schwarzenbacher by birth and working for Sandler for the last 25 years, is in daily contact with Mammoet Ferry Transport. Among other things, she is responsible for the shipment and dispatch of nonwovens to the U.K. "We must deliver 20 to 30 shipments a month and I think it a major advantage that I have two contact points within Mammoet Ferry Transport. They first moved our goods in November 1994 and we have always enjoyed a good cooperation. We think it important that a transporter always caters for our needs. We do not carry large stock and deliver more or less directly from the machine. Of course it is sometimes difficult to match our different circumstances; I sometimes have cargoes and there is no trailer near at that moment. On the other hand it happens sometimes, of course, that Mammoet Ferry Transport lets me know they have trailers in the vicinity and I don't have any cargo ready for shipment.

Helmut Wachter is also an old hand at Sandler's with 16 years of service. He is Deputy Manager for Shipments and as such he is responsible for sales as well as their consequential logistics. "The speed of transportation has become an important aspect of the way in which we manage our company. In the seventies part of our production was moved by the Bundesbahn and it could take some eight to ten days before a shipment was delivered in, lets say, Hamburg. At that time we built our own fleet of Jumbo lorries and we could reach our clients within 48 hours. This became an important sales tool in the battle for market share and from then on we support the slogan: ordered today, delivered tomorrow. This was also possible because of our fast and automated production methods, as you will see later when we show you round the plant."

All three agree that, apart from price, reliability and especially punctuality are essential for a transporter. Herr Wachter, "It is true that Mammoet Ferry Transport is slightly more expensive compared to others, but then I must say that your punctuality towards our major buyers tips the balance in your favour. Frau Konigs adds, "We must be able to rely upon the trailer actually being there at the agreed moment. And with Mammoet Ferry Transport that is indeed the case, that is their plus."

Royalite Plastics Limited

Cumbernauld — On April 16, Rolf de Ruijter de Wildt, Managing Director of Mammoet Transport, officially opened the new Mammoet Ferry Transport depot in Cumbernauld near Glasgow in Scotland.

The move to a new office building is a direct result of the successful growth of Mammoet Ferry Transport in Scotland. The new facility is sited in the "Golden Triangle" which is a prime site in the heart of Scottish industry. The new facilities comprise prestigious offices, warehousing, loading bays and easy access to the motorways. They will enable Mammoet Ferry Transport to develop further in Scotland with respect to more frequent departures and value added services.

Mammoet Mail took the opportunity to visit a Mammoet Ferry Transport customer from the word go: Royalite Plastics Ltd. Some 40 years ago the company started producing its unique materials. Royalite has the experience and knowledge to make the company one of the world's leading suppliers of thermoplastic sheets for every kind of engineering application. We met Frank Burns, Commercial Manager of Royalite, at the Newbridge manufacturing site just outside Edinburgh. "Royalite is part of the largest plastic sheet extrusion company in Europe: the British Vita Group which owns similar companies all over Europe. We have sister companies in Wrexham and in Vittuone in Italy. The Vita Group also have interests in the United States. They started off mainly as a foam-producing company. Then, about ten years ago, they decided to branch out into thermoplastics. And now they have become the largest group producing thermo-plastics." Mr Burns tells us that the plastic sheets that are being produced at Royalite are of different textures, colours and quantities. They are produced to certain specifications and in defined quantities. The degree of trouble that Royalite takes to ensure colour match and quality is extensive. Matching colour throughout the run is most important, and Royalite checks the colour at the start, during and at the end of the run, to ensure that the colour is correct and consistent throughout the production cycle. Over the years, more and more products from Royalite have been developed in association with the transportation industry, much of it for cars but also for trains, vans, lorries, coaches and ambulances. A good example is the interiors of the famous London black taxis which are made of Royalite thermoplastic sheet. Frank Burns cannot resist to remark: "it's obvious that we like black." According to Mr Burns, the building industry is nowadays another major customer. Therefore, research and development is an important department within Royalite. "We are constantly developing new products and anticipating the requirements of the market.

Since Mammoet Ferry Transport started in Scotland, Royalite trusted their business with them. Mammoet Ferry Transport offered both an every day and custom made service, speed of delivery is important. One of Royalite's largest clients in Belgium receives their deliveries overnight. Mr Burns states, "When Mammoet started in Scotland, we gave them every chance. And I must say I'm very happy that we took that decision then. We get the service we require and commercially it has also been a good deal for us. I can be quite honest about that."

Rozenburg — For every three trailers shipped on the North Sea one is handled by Mammoet Ferry Transport Zeebrugge office and the other two via Europoort. The shipments to the U.K. are equally divided between our offices in Hull and Felixstowe, as both Europoort and Zeebrugge have the option of shipping to these destinations. We expect to ship something in excess of 25,000 units via P&O North Sea Ferries in 1997. Included in this figure are the "reefers" belonging to Nedlloyd Moerdijk (ex Fransen) whose U.K. business we have handled for the past ten years.

Every year ferry operator P&O North Sea Ferries carries one million passengers and 350,000 transport units. For the last eighteen months North Sea Ferries also has been offering a nightly crossing from Europoort and Zeebrugge to Middlesborough (Teesport). According to P&O-North Sea Ferries director Peter van den Brandhof in an interview with "Uit Europoort Kringen", the speed factor in the transportation of goods is vitally important. "Ro-ro ferries can offer that speed. Everything that comes in on its own wheels can be loaded and discharged within a few hours."

Last year, Nedlloyd and P&O, the two shareholders of North Sea Ferries, agreed that P&O would take over all shares of the ferry company. North Sea Ferries is now completely in British hands. Mr Van den Brandhof: "This gives us even more opportunity to improve on the efficiency of the product and allows our customers to ship their cargoes to destinations in the North and in the South of the U.K. The larger clients will soon be offered the opportunity to book their freight directly through a computer link."

The practical use of crawler cranes

Breda — The crawler crane has its very own field of operation. This type of crane can be put to use in a wide range of situations. Mammoet Stoof avails over crawler cranes with lifting capacities of 50, 80, 90, 140, 500/800 and 600/1000 tonnes. An inventory.

"Crawler cranes can be used in almost every situation, for instance on sites with a weak subsurface or fields that are hard to reach. Moving a crawler crane around on site is extremely simple and relatively quick." Peter Verhoef, sales manager of Mammoet Stoof in Breda speaks fast and enthusiastically about a versatile piece of building equipment, which is given ever more applications in the construction market. "The possibilities to use crawler cranes in concrete or steel construction and the petro-chemical industry are countless. One can for example travel with the load in the crane. Other advantages of the crawler crane are the relatively low rental costs, the high lifting capacity - even at a large outreach - and the fact that foundations or a rail track are not necessary, as they are with a lattice crane, and last but not least a larger available mast length compared to mobile hydraulic cranes.

According to Peter Verhoef the crawler crane with luffing jib is unique in the world. "The major advantage of the luffing jib is that the crane can be positioned very close to the building. Lifting over the roof will then give little or no problems. This configuration is also interesting when looking at costs: since the required air span is smaller, a lighter crane type can be used. Besides, it often happens that approach roads run along the building site and with the use of crawler cranes with jib the supply of building materials is no problem whatsoever. Furthermore, it turns out that a crawler crane with luffing jib is less sensitive to wind than a crawler crane with just a main mast."

An extensive information brochure in the Dutch language about crawler cranes with jib can be obtained by contacting fax +31-76-5712164

The smallest town on earth

One of the best places to visit the Netherlands in a nutshell is the miniature city of Madurodam in The Hague. Holland's smallest town gives an historic overview of a Dutch city and its surroundings on a scale of 1:25. And don't be surprised to see a Mammoet crane amongst the windmills and the tulips; Mammoet is one of the participants who sponsor the good-cause objectives of Madurodam. Mammoet Mail visits the site.

"It's a crusade to find a good, new house style. Since 1952, the year Madurodam opened, we changed the logo three times and finally this is the result." Hans Steijn, Director Operations of Madurodam, shows the new logo sporting the colours yellow, blue and red. "It is made in the shape of a brush stroke with the name Madurodam in a handwritten font. It is more dynamic and livelier than the old logo. Apart from a face it also more or less shows the map of the Netherlands and the smile is the moon which was already there in the old logo. In that way there is still a link to the past; many people find that important."

Madurodam keeps a high quality standard in all respects. Mr Steijn: "Over the years we have gained a wealth of experience in building good models. Once every five or six years we take them inside where they are all stripped and given a fresh coat of paint. For that job we employ eight full time painters. If we receive a request to change colours and the request coincides with general maintenance we don't make a fuss."

Sponsoring

Madurodam is a charity. The Mammoet crane is part of a sponsor programme for youngsters between 14 and 24. "We demand that the investment is made for a

long time; examples are Jantje Beton and SOS Children's villages. We also have a Madurodam riding school for handicapped children."

During a tour through the workshop, where the models are being restored and painted, Hans Steijn explains that Madurodam was re-opened after a six months closure. "We spent 36 million guilders for a complete face-lift of Madurodam in which the miniature city was expanded with 7000 m². This expansion now holds the so-called winter dike and summer dike, the golf hall and the light house all tuning to the theme: the truth behind the dikes. It symbolises the Dutch fight against water. The setting is a typically Dutch ideal picture, whereby the winter dike accommodates offices, the restaurant, the shop, the workshop and two extra meeting rooms. The summer dike houses the administration and the cash desks. A nice aspect of the design is the fact that we have real grass roofs with an angle of 48°. For the miniature city itself we developed a number of new themes. We built the city of the future with modern architecture and small scale housing. That city is never finished and we target to replace buildings now and then. A new development in the Netherlands is the modern architecture of high-rises in the ports. We have already found a location for this feature. Another speciality, the Amsterdam School — a world famous style of architecture — was not present in our miniature city until now and we set up a area, although it is not quite finished yet."

Innovation in model building

According to Mr Steijn, making the models and scale replicas is very expensive, among other things because they are so labour intensive. "We have discovered that we must extend the dynamic elements much more. We plan to have cars and busses move without it being obvious what makes them tick. With computers and electronics we can make an exiting display; having the cars stop before a bridge, open the bridge and close it again, cars pulling up. We develop these mechanics ourselves. Madurodam is close to the sea with the consequential salt deposits, and out of doors in all weather, with leaves and birds; in short they must be totally reliable."

To finalize the interview Hans Steijn memorises the founder of Madurodam, Mrs Boon - Van der Starp. "She took the initiative to create a dream town and she knew how to trigger people's enthusiasm. Apart from some large companies, she also interested Mr and Mrs Maduro who were looking for a monument to remember their son by. He was a soldier near Leyden at the start of World War II. After the Dutch capitulation he was captured and because of his Jewish background he was deported to concentration camp Dachau. He died there. The miniature city has been named after George Maduro."

"A little town where people would feel happy, where everything would be happy, where everything was beautiful, in short, a dream time where people just enjoy things with a smile, where they can feel like children again, and can see the world through a child's eyes."

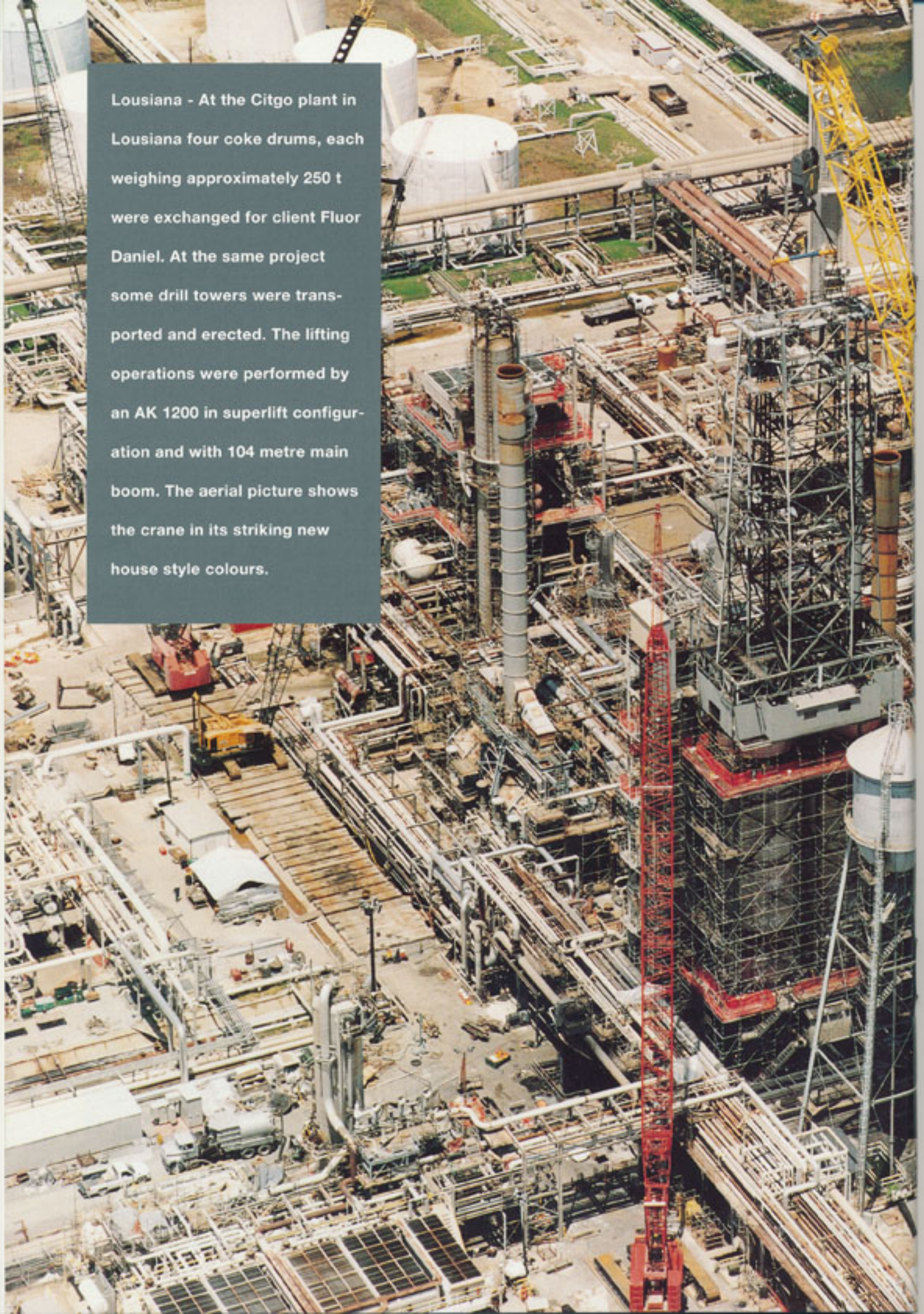
Mrs B. Boon-Van der Starp, 1884 - 1950.

"Industrial maintenance" on scale

Mammoet has attended the exhibition "Industrial Maintenance" for the fourth time in a row and has exhibited their heavy lift services for the petrochemical industry in a modest stand of twenty square metres. The stand's eye-catcher is a scale model of a petrochemical plant with miniature Mammoet equipment in the right colours. Builder of the model is Jan Dorst, who earns his living in the professional army at the signal units.

"I came into contact with Mammoet through the captain of a floating crane of Goedkoop and through him I acquired a copy of an equipment book of Mammoet. Since then, Mammoet and models are synonymous to me", according to Jan Dorst who limits his hobby to building models from crane rental companies such as Van Seumeren, Saan, Breuer and Schmidtbauer. "The idea to build a complete plant in miniature was born as a way to have a place where the cranes and trailers could be displayed. At such a plant site, all facets of heavy transport can be seen. The complete model measures 2.70 by 2.70 metres and is built up of modules of 90 by 90 cm. They can be changed individually, so that other combinations are possible. All in all it took me about two and a half years to build."

Jan Dorst exhibited the plant model earlier at the public opening last year of Mammoet Stoof's new offices in Breda. "From the professionals I received a lot of positive reactions. People found it very illustrative: both the ones who work with a transport company as those who work on a plant reacted with comments on how it all works in reality. Such a model is very practical for explaining matters. And that is mainly what it is used for."

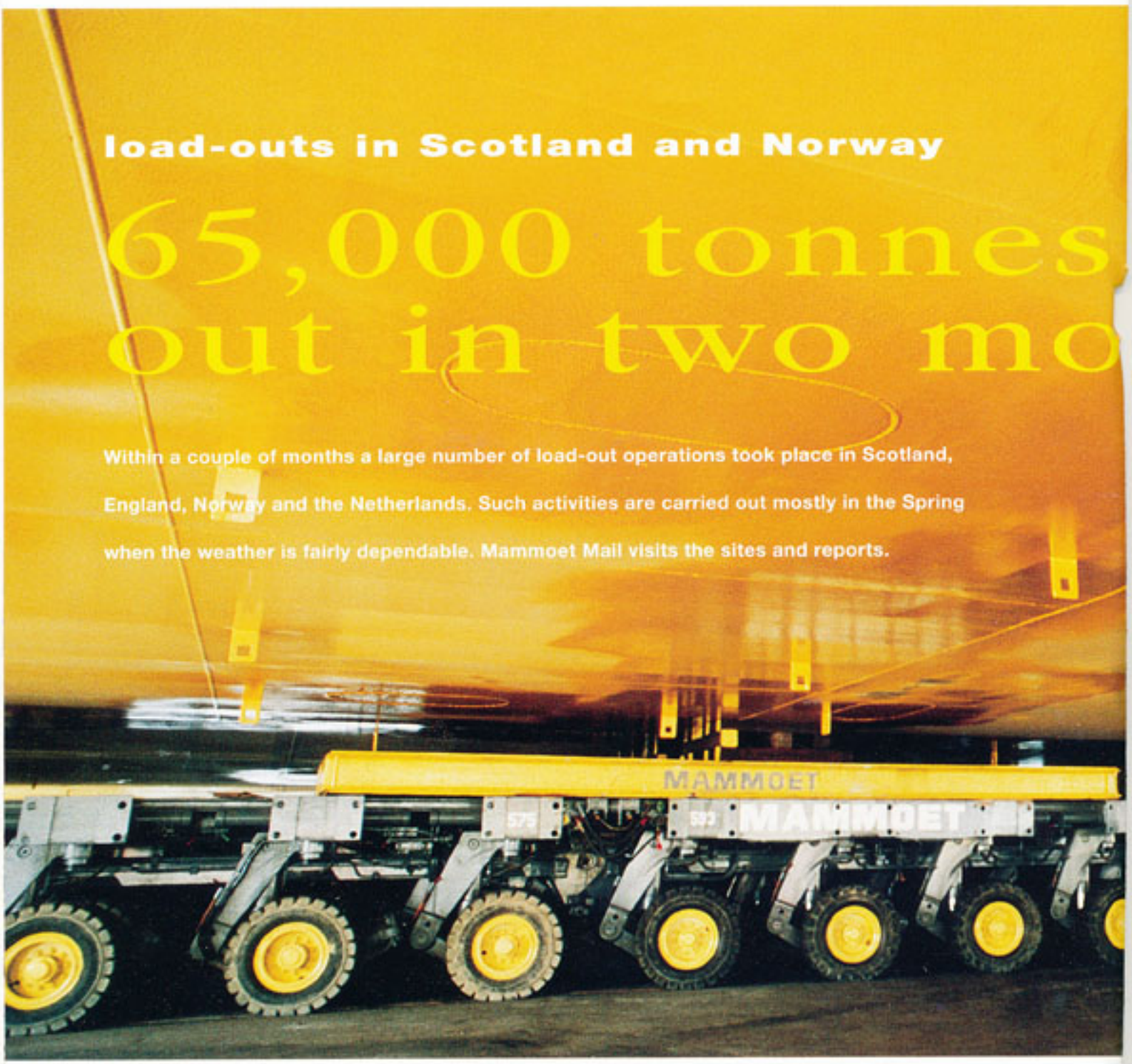


Lousiana - At the Citgo plant in Lousiana four coke drums, each weighing approximately 250 t were exchanged for client Fluor Daniel. At the same project some drill towers were transported and erected. The lifting operations were performed by an AK 1200 in superlift configuration and with 104 metre main boom. The aerial picture shows the crane in its striking new house style colours.

load-outs in Scotland and Norway

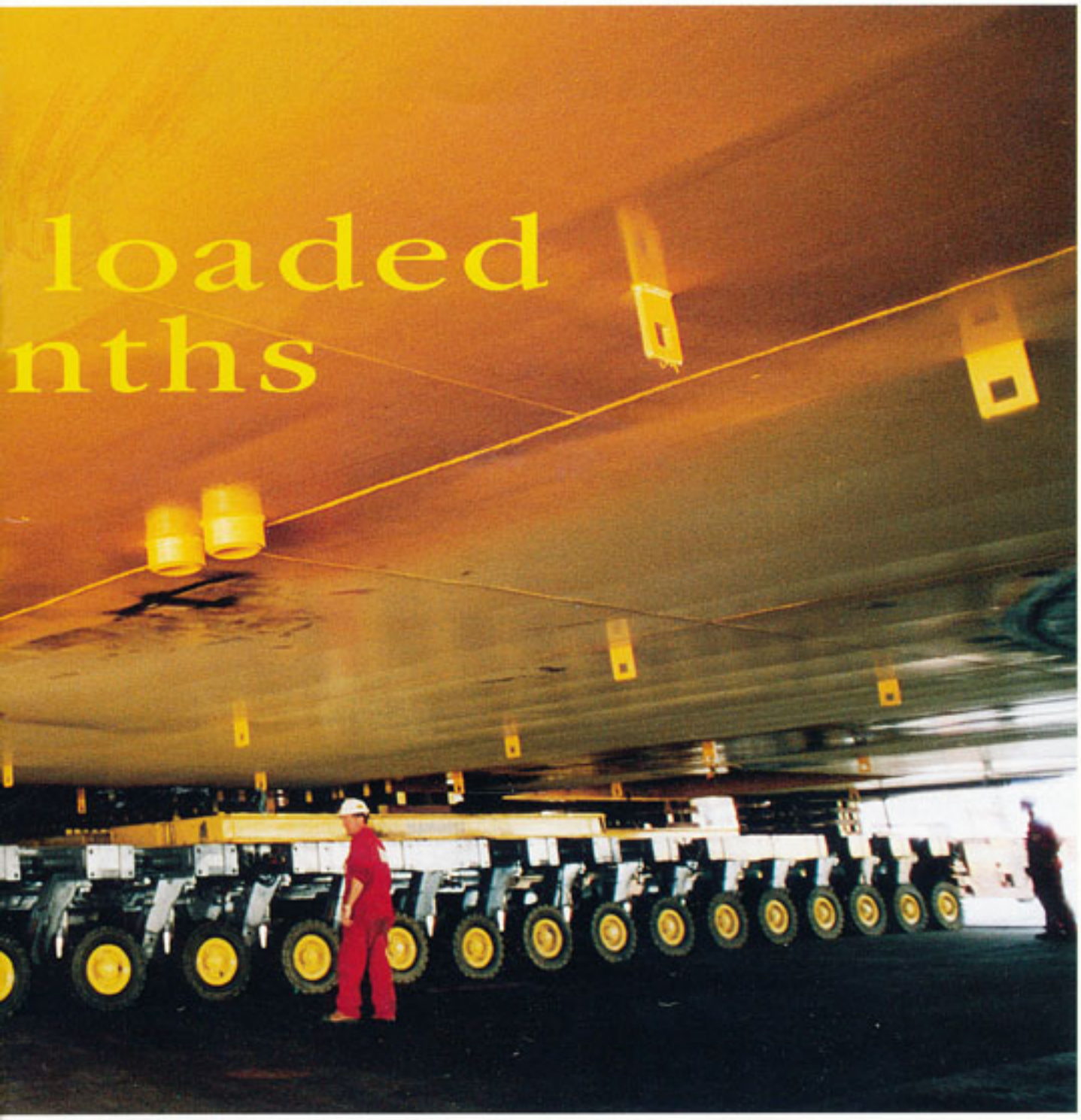
65,000 tonnes out in two mo

Within a couple of months a large number of load-out operations took place in Scotland, England, Norway and the Netherlands. Such activities are carried out mostly in the Spring when the weather is fairly dependable. Mammoet Mail visits the sites and reports.



When Mammoet introduced the self-propelled modular transporters in 1984, an entirely new chapter was written in the history of heavy transportation. Numerous adaptations have perfected the system and in 1994 a digitalised version of the well-known 4 and 6 line transporters came into being. Mammoet Mail meets Ludo Mous, project manager for the SPMT department of Mammoet Stoof at a load-out in Norway. He explains, amongst other things, the difference between the first and second generation of a heavy transport system that has meanwhile become legendary.

The SPMTs of the 1984 generation now contain the same electronics as the 1994 generation and they have also become digitalised. Ludo Mous explains, "A big advantage of the new system is that the degrees of steering can be typed in digitally, resulting in every trailer carrying out exactly the same steering manoeuvre. Furthermore, there are less connections and therefore less chances of disturbances. Digital switches are either 0 or 1, on or off, and therefore much more reliable and quicker. Before, we could run into trouble in rainy weather. When a contact became wet, the system would malfunction. This is now history because there is only one line of communication."
The trailers were adapted in Mammoet's own workshop in Breda by the people who actually work with the SPMTs. "That is very positive. They now know everything there is to know as they fitted the cabling themselves and installed the new equipment. They even assembled the hydraulic brakes. We observe a trend that maintenance is done more and more by our own people and that they solve problems themselves."



Electronic weighing system

Another major rejuvenation was carried out on the electronic weighing system with which Mammoet works to determine accurate weights and centres of gravity. Ludo Mous, "We used to have load cells that sent their individual signal through their own data cable to the computer. Now the load cell sends its information to the computer through a general communication link. This means that we need a lot less cable and therefore much less possible disturbances. And since the system is now digitalised, it is faster as well. Writing software for the system has become much easier so that the weighing system is now more adaptable. A good example is the fact that calibration has become a lot easier. Before the alteration we had to take the system in to the special weighing lab in Breda. On the whole, an offshore platform is weighed thrice. Mr Mous counts, "the first time when the platform's structure is finished, the second time to determine the place of the lifting eyes and the third time to determine the lifting capacity of the floating crane. In Norway it is obligatory to weigh such constructions, also in order to determine the total load of a platform."

"A job is always taken on rather rough outlines. Given a weight and a date of execution, the only thing you can do is roughly estimate a number of axle lines. When the performance date approaches the matter is looked into more closely and a structural combination of four and six liners becomes clear. Then strength and stability calculations are made which the customer must look at and assess."

UMOE Haugesund

Haugesund - In 1984, Haugesund in Norway was the place where a new platform trailer system was introduced. They were self-propelled and had computer steering which enabled the trailers to perform all kinds of special manoeuvres. Fabrication manager Ragnvald Pettersen memorises what happened.

"In the past, we were known by the name HMV (Haugesund Mekaniske Verkstedt), but our customers always referred to our yard in short as "Haugesund" as the name of the town. In 1992 we got a new owner and after some time the fact came up that it would be better to change the name for a clearer image. The new name became the family name of the owner, which is Ultveit Moe. Since his first initial is U, the name became Umoe Haugesund AS from then on. For the customers it was important to know that we are not only a fabrication yard but rather part of a larger company. Umoe also owns a shipbuilding company in Kristiansund, named Umoe Starkoder and another company which makes lifeboats. At the same time he has an important stake in a number of shuttle oil tankers on the North Sea."

Building in sections

Umoe Haugesund was awarded the contract by Norsk Hydro of the Umoe/GVA 8000 oil and gas production platform as a turn-key project. Earlier, on exactly the same day Mammoet had moved the last part for the integrated deck and put it on the assemblage foundations. It fitted perfectly. Mr Pettersen explains, "We have a department specially dedicated for interface work. They follow the fabrication very closely and make sure that the interface between the sections and the mating with the floater later on is secure. We have a procedure for that giving tolerances of measurements and everything. In addition to that we have several dimension control reviews, physically, on both the parts that will be connected. Nowadays it is easier to build things in sections. That's because design work is now done by computer. You bring everything into the model and the computer immediately tells you when it doesn't connect. That was different in the old days when everything was draughted manually. In fact, the most exiting part is the vertical dimension. When such a large weight is placed onto the foundation it is pressed together. One section is heavier than the other, so there may be a difference in the verticals."

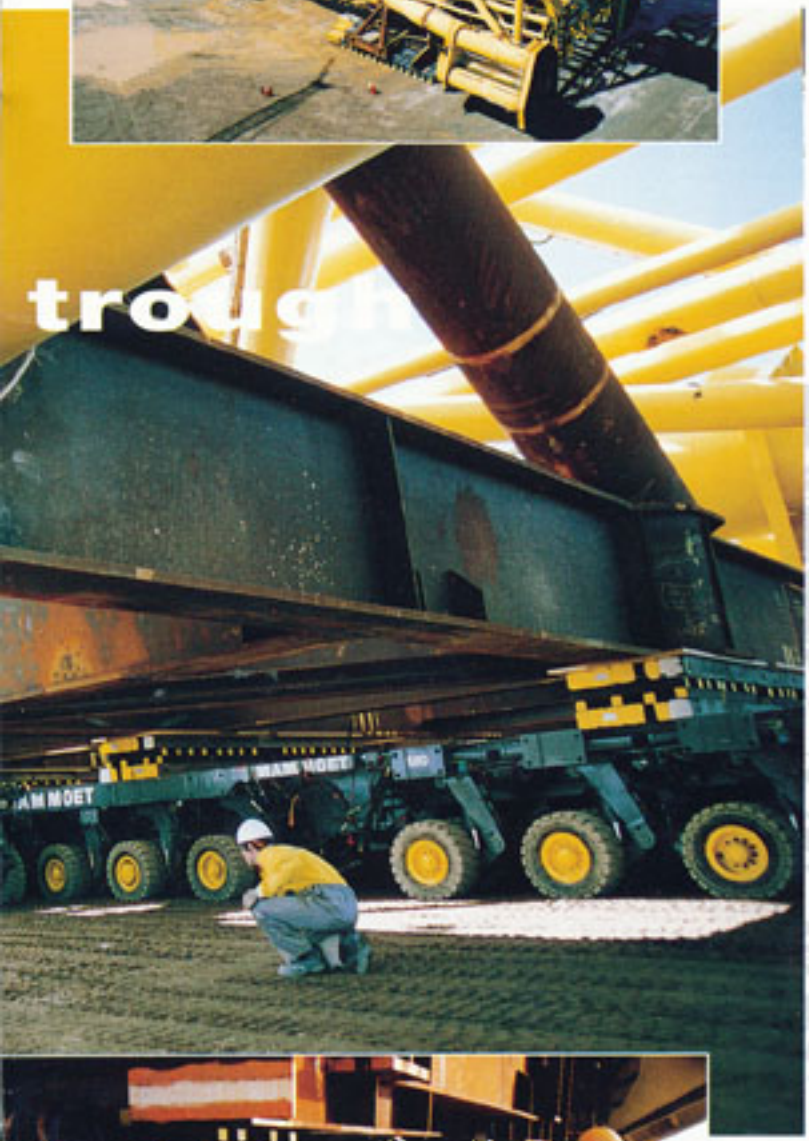
Mr Pettersen states that the complete deck weighs approximately 12,000 tonnes and that it consists of three major parts; the drilling section in the centre, a living quarters section and the process section. The drilling part or midsection and the process section were built in the North Sea hall at Umoe, the living quarters and the floater were subcontracted to other yards. "The floater will come here mid October and what we do then is anchor it out in the fiord here and submerge it until its top floats approx. two metres above the water level. A large barge will then be mobilised to collect the whole deck and mate it to the floater. The complete structure will then come back again alongside the quay for the final preparation."

World record

Construction time of the complete facility for Visund is according to Ragnvald Pettersen a world record. "The total working time from the moment we got the contract, including all the engineering, procurement and construction is 26 months. We started building these sections about a year ago. Normally, we start fabricating when the engineering is 60 to 70% complete. In the Visund project we already started fabricating when 20% of the engineering was complete. The risk in that is that sometimes you have to go back and revise the engineering and rebuild parts again. But it is the only way to meet such a short schedule. In the end, the benefit lies in the fact that the oil company can start producing oil at an earlier stage. On the other hand, a short building time will reflect in the price that will be given for the total project."

Ardersier - At the Barmac yard at Ardersier near Inverness, Scotland, Mammoet Transport U.K. loaded out a key jacket for the BP Exploration Eastern Trough Area Project (ETAP). Barmac, a member of the ETAP Facilities Alliance, had been awarded the fabrication contracts for the jacket for the Production/ Drilling/Riser Platform and for the piles for all three jackets for the ETAP development.

During the PdR jacket load-out a new ballast monitoring system was tested. Chris Hall, Technical Services Engineer of Morgan Moore Engineering tells about his findings. "With this system you get a fairly accurate representation of how the barge is shaping as the load is brought onto it. And you get it at a regular update time of one minute. In short, you have a lot more information at your finger tips available at a central point. It gives the ballast crew a good view of what is going on on the barge, including the status of the ballast tanks. You can have the information in hand in an instant in several different formats just by manipulating the mouse button.



Arthur Watt, Barmac Allliance Project Manager explains Barmac's approach. "The PdR jacket was around 9,000 tonnes load-out weight. The pile weight for the three jackets was 8,500 tonnes, so that we were awarded around 17,500 tonnes of fabrication. One of the benefits Barmac brought to the alliance was that we had just completed a jacket for BP for the Andrew field very similar to the PdR jacket. We were able to move the same team that built the Andrew jacket to ETAP; so the culture and the attitude were already there."

According to Arthur Watt one of the more significant differences between the Andrew jacket and the PdR jacket is the number of risers. "The PdR jacket supports the central processing facility and there are twenty risers on this unit, compared to say four risers on a normal platform. The difficulty we had to manage with so many risers was to get the design agreed early, because they take longer to design and procure.

Mr Watt continues to say, "We started on the jacket in April 1996. The design drawings were produced by our own people by sending a team of our draughtsmen to Brown & Root in London. What we tried to do was to minimise the number of drawings produced. Normal practice is that the design house produces a design drawing and then the fabricator produces his own detailed drawings for fabrication. So there are two sets of drawings. What we did was to send a team to the design house to produce one set of drawings with sufficient detail to issue direct to the shop floor."

Barmac proposed to load-out the jacket on trailers in stead of using skidding. Arthur Watt explained "This was one of the concepts we brought into the ETAP alliance having already carried this out successfully for the Andrew jacket. There was a significant saving by re-using the Andrew load-out/seafastening grillage for the structure. Further cost savings were made in jacket structure protection where the jacket was coated for 95% with sacrificial anodes for 5%."

Looking to the future, Barmac foresees a change in the offshore industry. In Arthur Watt's view "There are no more large jackets to be fabricated in the fifteen to twenty thousand tonnes range as a change is made to subsea structures. Barmac has taken the step already by renovating the dock at Nigg Bay to have the capability for floating production vessels."

Slow and boring

"I like to find these jobs slow and boring", John O'Brien, Area Manager C.P.F. makes the remark while coming in from the yard, where earlier that morning the 9,000 tonne PdR jacket was successfully loaded out by Mammoet Transport U.K. He continues, "and that means that there are no surprises."

Area Project Manager for the 97 Offshore Installation, Norman Cameron, described the ETAP development "ETAP means Eastern Trough Area Project, the Eastern Trough being a subsurface geological feature in Blocks 22 and 23 of the Central North Sea. ETAP is a collection of individual fields being developed by BP in a unique and integrated way, and using subsea facilities extensively. Indeed ETAP will have, at 36 km, the longest tie-back distance of any subsea field to date."

The Eastern Trough Area Project (ETAP) was sanctioned in December 1995 by BP, Shell, Esso, Agip, BHP (this interest was subsequently acquired by Total), Murphy and Moex. ETAP comprises an integrated development of initially seven oil and gas accumulations in the Central North Sea of the UKCS. The

project is unique in terms of the UKCS as companies holding different interests in each field have agreed to design and construct facilities shared from inception thereby accessing significant reductions in capital and operating costs. In addition, it represents further development of "Alliance" contracting in the UKCS. Construction work commenced in early 1996. Drilling commenced in August 1996 and in total some thirty wells will be drilled. Seabed pipelines and jackets will be installed in 1997, and all topsides modules will be installed in the spring of 1998, with first production scheduled for mid 1998.
Located within the Eastern Trough in the UK Central North Sea, the seven accumulations (Marnock, Mungo, Monan, Machar, Heron, Egret and Skua) lie between 130 and 145 miles east of Aberdeen in water depths of around 85 to 95 metres. In aggregate the fields can be considered to comprise a "pseudo field" of around 650 mmboe (million barrels of oil equivalent) which is geographically located within an area 35 km across its maximum dimension. On this basis ETAP is the largest oil "field" to be developed in the North Sea in the last 10 years.

The ETAP development is centred on a Central Processing Facility (CPF), located over the Marnock field. In addition to providing processing and power generation facilities the CPF will also act as the export hub for all the produced oil and gas. The central processing facilities are to be installed on two linked platforms, with the Process, drilling and Riser platform (PdR) connected to the Quarters and Utility platform (QU) by two bridges.

Marnock production wells will rise into a wellbay on the PdR platform. Mungo is developed via a Not Normally Manned Installation (NNMI) located above the field with electrical power, injection water and injection gas supplied from the CPF. Mungo produced fluids will flow back to the CPF from the NNMI through two separate flowlines; one delivering liquids (oil and water) direct to the CPF and the other wet gas including fluids picked up from a subsea development of Monan en route to the CPF. Machar will be developed as a subsea tie back to the CPF either under natural depletion or with water injection provided from the CPF. Heron, Egret and Skua are to be developed under natural depletion through subsea manifolds with production flowing back to the CPF via multi-phase flowlines.
Export of oil will be via the Forties Pipeline System with a new spur line being laid from the CPF to the unity platform for onward transmission to crude bay and by landline to Kineil and the Hound Point loading jetties. The gas export route will be via a spur line to an existing Tee on the CATS pipelines, and then via the CATS line to Teesside. Liquid petroleum gas and condensate liberated from the gas stream will be stored and exported through the Norsea Oil terminal and Tees Storage at Teesside respectively.

The overall ETAP development concept leads to safer operation through reducing the number of manned platforms. In addition, the CPF facilitiesare designed to be amongst the safest and provide the lowest environmental impact in the industry. Location of the living quarters on a separate platform from all hydrocarbon processing and risers facilities, extensive use of blast walls, passive fire protection, plus wellbay location away from pipeline risers and processing facilities and shielded stair towers all minimise risks for those working on the platforms. Environmental impact is minimised through disposal of contaminated produced water by re-injection, reduced fugitive emissions through high sealing specification valves, recovery of routine flar gas from high pressure sources, waste heat recovery and reduction in flaring during commissioning.

The ETAP Facilities Alliance

John O'Brien described another interesting feature of the ETAP project. "BP has formed an ETAP Facilities Alliance with the contractors Brown and Root, Barmac, Amec, Kvaerner Oil and Gas, Consafe, Heeremac and ECS (joint venture of EMC and CSOL) who are the alliance contractors responsible, with BP Exploration, for the design, procurement, fabrication, installation and commissioning for the facilities including jackets, topsides facilities, subsea systems and pipelines. All alliance members have agreed on a project cost target and have entered into a risk/reward agreement which means that the cost savings/overruns will be split amongst the participants. On the other hand, there is also a limited share of the risk, which is restricted to 10% of the agreed project target cost."

Mammoet has taken the lead in the 9,000 tonne PdR jacket load-out. Mr O'Brien, "There are some very heavy weights here and as a client it's very good to see that in order to accommodate our requirements, you are able to work closely with Barmac, Brown and Root and Heeremac."
Norman Cameron emphasises the importance of the PdR jacket load-out, "Installing the jacket ahead of schedule is key to maximising the installation work in 1997, eight months ahead of topsides installation. Right now in 1997, we're installing all jackets, pipelines, subsea structures and tie-ins so that we can concentrate on the lift of the topsides next March and commission the facilities. All the wells will have been pre-drilled in the meantime, that means we are able to start up in May 1998 and reach plateau production very quickly."

ETAP is a major project by any standard and it represents a significant proportion of BP Exploration's global capital expenditure. Mr Cameron states, "Adopting Alliance principles for ETAP means a more flexible way of working and has created the potential to make substantial savings in project costs by eliminating uncertainty costs. We have certainly saved money so far. For example, Barmac and Kvaerner Oil and Gas have not only fabricated the jackets without needing to access contingency money but have made savings in base costs by bettering existing bench marks."

TUAS Power station, the sequel

Singapore - Walter Wright Mammoet is involved in the construction of an additional power station to the existing Tuas Power Station in Singapore. With eight cranes ranging in lifting capacities from 25 to 450 tonnes, two lorry cranes and one lowbed trailer they support the day-to-day progress on site.

Mr Motohiro Abe of Taihei Dengyo Kaisha Ltd is construction manager for this project. He tells Mammoet Mail about their involvement. "Our main business is the installation and erection of power stations, nuclear plants, cement plants and petrochemical installations. Here at the Tuas Power Station we are sub-contractors and our part of the contract entails the installation and erection of the boiler room. This project was split in two stages. The first contains a 2 x 600 mW power plant, whereas the second phase, which is still in the tendering stage, includes an identical plant.

This expansion of the existing power plant is being built on reclaimed land due to scarcity of ground space in Singapore. Abe-san explains that cranage is an important part of the construction. "Upon first receiving this tender, we planned the cranage to the customer's specifications. Actually the heaviest piece in this project is a 350 tonne boiler drum. "We started working on this job in January 1996 and we have now 250 people working here fulll time. The complementary power station must be fully operational in December 1999."

Taihei Dengyo Kaisha Ltd is a long-standing client of Walter Wright Mammoet and they have partnered in other projects with Walter Wright Mammoet in Thailand and Hong Kong.

Mammoet rhapsody in yellow and grey

Breda - More than 50% of the land-based Mammoet equipment has now been provided with the new house-style colours "traffic" yellow and "mammoth" grey. In the beginning there was some amazement in the trade that Mammoet disposed of their colours of old, but after a while people did recognise the value of a strong, individual corporate image.
Even Mammoet's own employees, usually the most critical judges in this field, are now in favour of the new colours and they are proud to wear the newly designed overalls as representatives of the most experienced heavy lift company in the world.

MAMMOET NEWS

Mammoet Stoof in Breda and its subsidiaries were certified by Stichting Certificatie Kraanverhuurbedrijf and TÜv Nederland Q.A. in accordance with the norm NEN-EN-ISO 9000. They met the requirements of a quality system in their line of business. The certification will be evaluated every year.

Mammoet Ferry Transport in Scotland moved to new premises in Cumbernauld. The improved facilities, e.g. warehouses, loading bays and easy access to the motorways, will enable them to continue growing and offer more frequent departures and value added services.

Walter Wright Mammoet in Singapore introduced a TAG team, which is assigned to update inventory, monitor, identify and mark all equipment. Through this programme the company is to become more cost-conscious by improving operational control over the equipment. After Singapore other Walter Wright Mammoet branches will follow.

Mammoet Stoof could be seen on Dutch television in a documentary on extraordinary jobs. SPMT trailer operator Peter den Herder was filmed while attending a load-out operation at a Dutch offshore yard.

Buildings on wheels

Rotterdam — A spectacular house move was carried out by Mammoet Stoof in Rotterdam. A four story apartment building, weighing 600 tonnes, was moved on 24 axle-lines of SPMT over a distance of 80 metres. Mammoet Mail witnessed the move standing among the crowd and spoke with Herman Bresser about a succesful joint effort.

"The intention is to carry out such jobs together. Bresser/Van 't Wout does development and civil works and Mammoet takes care of transportation. This is not as straight forward as it seems, since we must bring the work to a good end together. Because of the complexity of the job it is good to work in a team. An example of such teamwork is that our making a marketing plan with Mammoet with a view to the HSL (High Speed rail Link) and the Betuwe Lijn — both major railway projects in the Netherlands — whereby a number of buildings must change place."

Bresser/Van 't Wout is a company focussing on the repair of foundations. Herman Bresser explains, "For clarity's sake: we don't make new foundations, but we repair them in the widest sense of the word. That means installing new piles in an existing foundation, lowering piles, adding piles, jacking up buildings and tanks to an even level and then of course transporting buildings. Our speciality is to solve all kinds of structural problems that can occur in the construction of a building, be it in the foundation or in the superstructure. This morning, for instance, I was on the tenth floor of an apartment building where a plate from a balcony had come down. We repair that too."

About the way a job is taken on Herman Bresser explains, "Some four years ago I got the question if we could move this little block of flats in Crooswijk, which we could. The next question usually is, 'what will it cost'. After looking into the matter a rough price is given. Then it is quiet for a long time and after a few years they came back for a specified quote. Which was given and that is how the removal of the apartment block in Rotterdam came about. One has developed, calculated and drawn the project and also carried it out."

Mr Bresser continues, "Our clients are very diverse: they are contractors, private people, foundations, building societies, councils, etcetera. An important argument to move a building is that that building must have sufficient intrinsic value to make the effort worthwhile. One must reckon that such a move will roughly cost half of building it again. In other words: reconstructing will be twice as expensive as relocating. Usually people think it is the other way around, that transport is twice as expensive as new building."

Mr Bresser thinks that the power of his company is picking up things that other don't tackle. "We address problems in our own manner. For instance, we came across a very large foundation problem two years ago, in which we became involved as researchers. We drew a conclusion and pointed out where the problem lay. Nobody agreed with us and the whole construction business was on its hind legs. However, last month an arbitration committee came to a verdict and it turned out that we were right. So we often come with solutions which may be quite interesting for the client.

For the combination Bresser/Van 't Wout - Mammoet the removal of the apartment building was the fifth joint project. Successively they moved a porter's lodge, a transformer building of the RET, three private houses in The Hague and a complete bungalow in Zeeland. When moving a building, it is of the utmost importance that the construction stays intact. Herman Bresser explains, "Even under extreme circumstances you must see to it that the superstructure does not move. That was proved again in Crooswijk and that is also the reason why I only work with SPMTs." Mr Bresser is hinting at the day's delay which the work in Rotterdam ran into, among other things through heavy downpours. "The place where drainage had to take the water off had not been chosen very conveniently. We should have had an extra dragline board placed, to prevent the SPMTs from subsiding. On top of that we had to stop again when a cable was caught behind a concrete post. Everyone noticed, however, how cool and composed the problems were solved by our team."

The day after the move, the building stood on its new foundation, jacked and ready. That same day Herman Bresser went inside with the occupants. A few hours later all mains had been connected and the flats could be used again. Mr Bresser closes with the remark, "Of course we must not forget our client "Patrimonium" in Rotterdam. Despite the problems at the start, they were excellent clients and I think they deserve a compliment for the trust they put in this well-run transport operation."

"Everyone noticed how cool and composed the problems were solved by our team"

Mammoet in Focus

Kleve — Th. Winkels GmbH & Co. KG is specialised in manufacturing columns and reactors for the petrochemical industry. They produce installations with very narrow tolerances. Eight columns were ordered for Exxon in Europoort where Foster Wheeler Energy Ltd was responsible for the engineering and construction. Trans Global Projects Mammoet and Van der Wees took care of the transportation by platform trailers and shipping by barge from Kleve to Rotterdam over the river Rhine. The fully dressed columns were transported in the night through the town of Kleve.

Dubai — Only 10 km from the yard of Mammoth Gulf a new power station is being built to cover the increasing power consumption during the Summer months. The heavy cargo, such as generators and turbines, were collected at Dubai's Port Rashid and transported on a 12-lines conventional platform trailer. Mammoth Gulf arranged all necessary police escorts and municipal permits required for the transport to site. A 200 tonne capacity gantry system on sliding beams was used to lift and install the equipment on to their foundations within 1 mm accuracy.

Antwerp — One of the last lifts performed at Phenol Chemie at Kallo near Antwerp in Belgium. This column measured approx. 36 metre by 2.5 metre diameter and weighed 60 tonnes. It was erected with a 400 tonne lattice boom crane, lifted over a 14 metre high structure and positioned on to a 9.5 metre pedestal.

Terneuzen — One of many windmills installed by Mammoet Stoof. It is one of the biggest units used to generate wind energy. It is located near a sea dike in the South of the Netherlands.

Rotterdam — This temporary lifting device was built by Huisman Itrec. The various parts were assembled in Rotterdam before shipment in order to check the system on teething problems. Thereafter the gantry was dismantled and made ready for shipment to the U.S.A. There it will be used in a lifting set-up with Mammoet's HydraJack lifting system for the exchange of steam generators in nuclear power plants.

Dordrecht — A 140 tonne furnace with accessories was transported for a major extension of a Dupont petrochemical plant in Dordrecht. Somewhere else on the site a 90 tonne reactor column was erected and positioned.

Mammoet in Focus

Port of Bethioua — Four columns with a maximum weight of 370 tonnes, a length of 50 metres and a diameter of 5.5 metres were received over the ship's side directly on to platform trailers. Inland transportation over a distance of about 8 km was carried out with two double six-axle hydraulic platform trailers with turntables and a heavy duty prime mover. Three existing flare lines had to be passed. Under one of the flare-line bridges the road had to be partly excavated to gain access. Installation work on the site was carried out with a 1200 tonne crawler crane in combination with a 180 tonne crawler crane for tailing.

Aalborg — In close cooperation Mammouth France and Mammoet Stoof carried out an interesting project at the Nordjylland power station in Denmark. For GEC Alsthom a 235 tonne generator was lifted and positioned with the HydraJack system together with a tailor-made gantry system.

Dunkirk — Two heavy columns of 521 and 562 tonne respectively, were transported by Mammouth France over a distance of 8 km from the factory to the Port of Dunkirk. In order to comply to the regulations of the French road administration, two units of 16 lines conventional hydraulic trailers with turntables were used. The oversized columns moved on 512 wheels to the ocean-going "Smitbarge 5" which took them to the Exxon Chemical RAP-X project in Rotterdam.

Mauritius — For various power stations on the beautiful island of Mauritius, Mammoth Gulf and partner Mechanical Transport carried out the shipping, transport, lifting and installation of transformers, diesel engines and generators and girders. Other Mammoet equipment will be occupied on the island for a period of 15 months for the construction of a 560 metre long quay at a container terminal.

Hardinxveld-Giessendam
After a successful trial run m.v. "Happy Rover" was handed over to Mammoet Shipping for immediate departure to Finland. The ship had been launched and christened end May by Mrs Tine Peterse.

Vlissingen — A 300 tonne pre-assembled wheelhouse/crew accommodation was moved by self-propelled transporters at the Schelde Schipyard for the building of Mammoet Shipping's heavy lift vessel "Happy Ranger". The construction was placed onto the ship the same day by the drydock's overhead gantry crane.

North Sea — M.v. "Thor Scan" passed the Dutch coast on her way to Singapore. She had loaded just over 11,000 cbm pulpmill equipment in Mantyluoto, Finland for Kerinci Riau on Sumatera. The main pieces were the fourteen vessels in which paper pulp is digested which had a piece weight of some 75 tonnes and measured 18.8 x 6.2 x 6.5 metres. These vessels were stored mainly on deck. Upon arrival at Singapore, the m.s. "Thor Scan" will tranship the cargo onto barges which will take the cargo to Indonesia.

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