

**MAMMOET**

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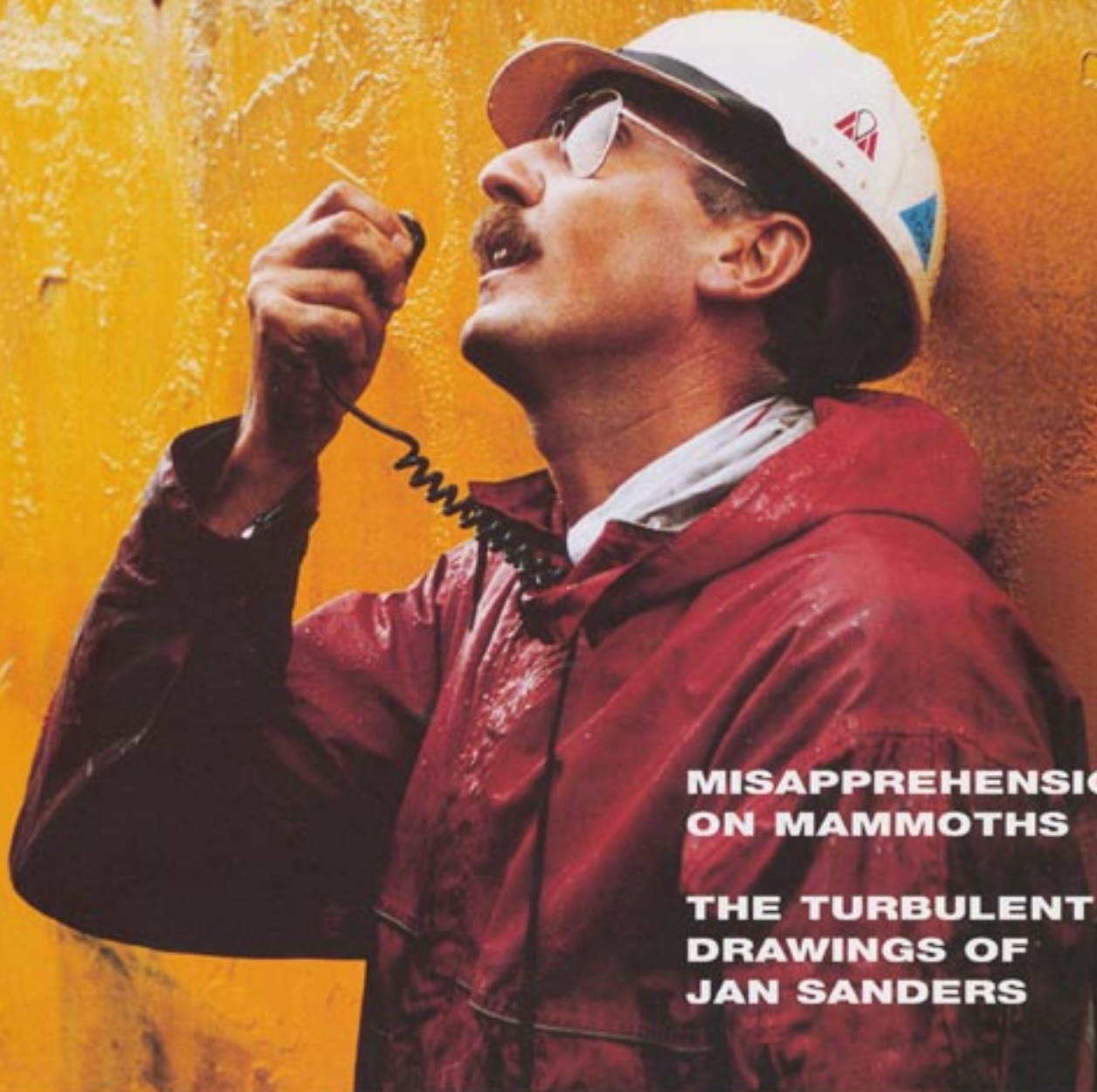
**MAM**

House magazine  
of Mammoet  
Transport B.V.

**MAMMOET MOVES  
GIANT VESSELS**

**LAST FLIGHT OF  
CHINA AIRLINES 605**

3F/3A



**MISAPPREHENSION  
ON MAMMOTHS**

**THE TURBULENT  
DRAWINGS OF  
JAN SANDERS**



## From the Editor



*More news in this publication of Mammoet Mail about the genuine mammoet (pronounce ('mæmu:t) which is the Dutch spelling for "mammoth") the near mythological animal of ancient times, which symbolises strength and power.*

*Amateur paleontologist Dick Mol is interviewed about the general misapprehension of mammoth sizes and shapes. Yes, it was a tremendously strong animal, but no, it was not much larger than its present descendant the African elephant. This same misunderstanding sometimes leads to the thought that the Mammoet company is a huge undertaking, performing only super heavy transports of 10,000 tonnes or more! Of course most people know better. Mammoet is good in transporting any kind of (project) cargo that does not fit in a container and requires special attention in terms of volume or weight.*

*Another article with a lighter touch is the result of the call we made upon Dutch artist Jan Sanders, who is world-famous for his detailed and humorous drawings on life at sea. Mammoet was lucky to obtain a specially designed drawing from his hand for the yearly Mammoet planning calendar. Clients reacted so positively that we ran out of stock in a very short period. We advise you to secure your 1995 calendar with your regular Mammoet contact person in time!*

*To return to the really heavy stuff (yes, Mammoet can do that too) we feature in this issue an integrated factory to foundation transport for the Fina refinery in Belgium. A number of heavy process vessels were transported by sea and land, whereafter Mammoet also took care of lifting, erecting and positioning on the site. Mr J. Brogniez, Project Director of the Fuel Oil Upgrading Project tells us about this project which must make the Fina refinery one of the most modern in the world.*

*In Hong Kong Mammoet assisted with the salvage of a Jumbo 747 plane (what's in a name?), which resulted in some excellent photographs. Furthermore, job reports from South East Asia prove that the market for the Mammoet organisation can still be expanded, provided we maintain the existing good contacts with our clients.*

*Hopefully, Mammoet Mail can contribute to that!*

AvL



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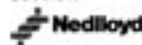
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# MAMMOET INTRO

## MAMMOET MOVES GIANT VESSELS

Mammoet Mail visited the Fina refinery in Antwerp during the Fuel Upgrading Project. Mammoet Shipping and Mammoet Transport (België) took on the transport of the heavy items. In an interview with Mr J. Brogniez of Fina, the backgrounds of this major operation are explained.



## THE BIG LIFT

Another integrated heavy transport. A complete shiplift installation was transported from California to Malaysia. Mammoet Western, Mammoet Shipping and Walter Wright Mammoet in Malaysia all took part in this interesting transport.

## LAST FLIGHT OF CHINA AIRLINES 605

A Boeing 747 was airborne for the last time when salvaged by the mutual hooks of a floating derrick and a Walter Wright Mammoet crane. A sad event at the Kai Tak Airport in Hong Kong lay at the root of this spectacular salvage operation.



## MISAPPREHENSION ON MAMMOTHS

The roots of Mammoet Transport are exposed in an interview with Dick Mol, an expert in the field of mammoths and enthusiast amateur paleontologist.

## RECORD LOAD-OUT IN HAUGESUND

One of the topics in the interview with HMV is the introduction of a new generation SPMTs. These trailers will perform their maiden trip in an 11,000 tonnes record load-out in Norway. Haugesund Mekaniske Verksted A/S is specialized in building structures for the offshore industry.



## CLOSE ENCOUNTERS

Walter Wright Mammoet's Project Manager Jos Vogelzang was involved in the construction of a new ammonia and urea factory in Indonesia. He wrote down his impressions, which resulted in an interesting article for Mammoet Mail.

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Transport from factory onto foundation

## Mammoet moves giant vessels for Fina refinery



Mr J. Brogniez

In an office next door to the refinery of Fina in Antwerp, Mr J. Brogniez shows a model of the future plant at the Scheldelaan. Brogniez is Project Director of the Fuel Oil Upgrading Project that must make the Fina Refinery in Antwerp one of the most modern in the world. "Some years ago, Fina asked itself what the market would look like in the future. Strategic decisions for expansion and modernisation of the complex were derived from that question. Of the initial fifteen possibilities the Fuel Oil Upgrading Project prevailed."

4 Fina will invest 26 billion Belgian francs in the project which will make it possible to derive more light and desulphurised fuels from crude oil. The company therefore caters for a change in demand and higher environmental requirements. Brogniez: "Nowadays the environment plays a very important role in the decisions to realize a project." ▶



*In the past year Mammoet Transport has seen to the transportation from factory onto foundation of six major reactor vessels for the*

*Fuel Oil Upgrading Project of*

*the Fina refinery in*

*Antwerp. The thousand*

*tonne reactors form the heart of the*

*largest investment project that has*

*ever been carried out in any Belgian*

*company. The basis of a project*

*worth billions.*



Petrofina is the mother company of an international oil and chemicals group with a range of connecting activities: exploration, production, transport, refinery, processing crude oil and selling oil and petrochemical products. Some group activities, such as exploration, are exercised worldwide, in Europe (North Sea, Italy), the United States (Gulf of Mexico and Alaska), Vietnam and Libya. The crude oil and natural gas production, which provides 20% of the refining requirements of the Group, is concentrated especially in the North Sea, the Gulf of Mexico and South-West Africa.

The Group contains six refineries. The two most important ones, the refineries in Antwerp and Port Arthur (Texas), are the object of an extensive modernisation programme. Petrofina sells, under the brand name "Fina", oil products in nine European countries, the United States and Africa. The Group's petrochemical companies in Belgium (Antwerp and Feluy) and the United States make products from crude oil - polymers and resins. Petrofina manages the Sigma Coatings Group, which has a number of factories in Europe and merchandises paints worldwide. In addition the Group can avail itself of a number of research centres. Their main task is to improve production techniques of refining and petrochemistry, to introduce new, ever more competitive products and the technical and commercial support of their clients. For Europe the research centre is in Feluy, for the United States in La Porte.

Petrofina is the major industrial Group in Belgium with almost 5,000 employees. Worldwide some 15,000 people work with the Group. The annual investments amount to some Bfr. 40 billion. The most important financial decisions are made in Antwerp where Bfr 26 billion has been invested in order that the plant will be suitable for all types of crude oil, to turn them into a maximum quantity of light products and to drastically desulphurise the products and the process. It is Petrofina's ambition to become the most efficient processors of hydrocarbons in Europe.







The four heaviest reactors were constructed in Japan. They are 21 meters high and their walls are 30 centimetres thick. To move the heavyweights from the quay to the refinery, Mammoet utilized their SPMTs.

#### Importance

To substantiate the importance of the investment, Brogniez points to the problems that refiners are confronted with worldwide. "On the one hand the quality of the crude oil subsides. On the other, demand increases for light and high-quality fuels such as gasoline, diesel and domestic fuel oil." He explains, however, that the demand for fuel oils, which are used for instance in power stations, is declining. Because of this, light fuels become relatively more expensive, heavy fuels relatively cheaper. Also the world demand increases for desulphurised fuels and in the heavy fuels. The demand is escalated up by the ever more stringent environmental laws. Some components of sulphur cause acidity.

Petrofina's investment anticipates for these trends. In a regular refinery the crude oil is at first atmospherically distilled. The light fractions are separated through heating. What remains - about half the volume - is then distilled under vacuum, so that further light fractions are separated. What remains serves as heavy fuel oil.



Mammoet's Hydra-Jack system: a professional and reliable lifting solution in a confined area. It was the right lifting system for this project.





The Fuel Oil Upgrading Project makes it possible to distill this residue again for more light fuels. At the same time the remaining fuel oil is being desulphurised. To make this possible, the oil is put in the reactor together with pure hydrogen and a catalyst. Through the reaction metal traces are removed, sulphur turns in to the gas hydrosulphate (H<sub>2</sub>S) and heavy oil fractions are transformed into light fractions. This takes place at a temperature of 400 degrees Centigrades by a pressure of 200 bar, which immediately explains why the reactor walls are so solid. Afterwards the hydrosulphate is turned in to elementary sulphur in two sulphur retrieving units and sold to other companies.

Being the Project Director, Brogniez is responsible for all the work that is carried out for the Fuel Oil Upgrading Project. He is a very experienced engineer who has been involved in the building and expansion works of the refinery for over 35 years. Brogniez thinks this most recent project is certainly not the easiest. "The refinery was built on a island, so we have no extra space to move around. This complicated the delivery of modules and material. Furthermore, we had to work within a refinery that could not stop production."

With his office close to the site, Mr I. McVittie confirms the words of Brogniez. McVittie is Senior Construction Manager of the Fuel Oil Upgrading Project and in charge of the logistics of the modernising project. "The complete logistic process has been made to measure. There was only little space available on the site for storage of materials. That resulted in a consistent, gradual flow of materials." ▶



The Fina refinery at the Scheldelaan is the fourth largest refinery in Europe. Every second 500 litres of crude oil are being refined. The annual production adds up to 15 million tons, which corresponds with the total fuel consumption for Belgium. About half of the fuel sold in Belgium actually originates from the Fina refinery. The rest of the Fina output is exported.





During the FOUP project Mammoet executed a heavy lift contract on the Sulphur plant which is also situated on the grounds of the Fina refinery. This contract was for the discharge and positioning of 52 pieces of equipment, with piece weights ranging between 50 and 120 tonnes. The majority of these items had been transported by Mammoet to Fina from the various suppliers in France, the Netherlands and Belgium, temporarily stored, and later on loaded and brought to the site.

The good co-ordination between the various departments within Mammoet, engineering, projects, transport and cranes and the construction manager of Fluor Daniel, Mr M. Simpson, brought an excellent result to this very tightly planned contract.

During the project McVittie worked closely together with Mammoet Transport. This company moved four 1000 tonne vessels for Fina from Japan. Subsequently the reactors were conveyed with the Self-Propelled Modular Transporters over the road to the refinery. There the vessels were finally lifted onto their foundations with the Hydra-Jack system. According to McVittie the use of the hydraulic lifting system was the most economical method to put the vessels onto their foundations in this confined space. "With the Hydra-Jack system it was possible to start certain projects well before the reactors had been placed. That would not have been possible if a crane tandem-lift had been used."

Meanwhile, the six reactors of the Fuel Oil Upgrading Project sit on their foundations. Charles Self, Commercial Technical Adviser of Mammoet Transport Belgium, who started and maintained the contacts with Fina, looks back on the project with satisfaction. "We have been able to give the client clear-cut logistic support. We became engaged in a very early phase of the project. In that phase the idea was born for instance to use the Hydra-Jack system. That saved the client considerable time." Apart from the heavy transport of the vessels, Mammoet Transport Belgium supplied much of the road transportation. Self: "A good example to show that Mammoet is not only synonymous with big and heavy. We have demonstrated that we can act as a logistic partner in all kinds of fields." ☛

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# THE BIG LIFT

*Imagine: Dismantle a ship-lift system in Los Angeles, California, load the separate parts on oceangoing heavy lift vessels, unload them in Pasir Gudang Port, Malaysia and then transport them to an inland storage place.*

*It seems like a typical job for the Mammoet organisation!*





Malaysia Shipyard & Engineering Sdn. Bhd. (MSE), Malaysia's largest shipyard, acquired this shiplift system with the intention of expanding their ship repair and construction capabilities. It will be used together with their two large, existing graving docks, which are being reserved for VLCCs, ULCCs and other large capacity vessels. The shiplift system would give them the flexibility to handle ships of up to 48,000 tons deadweight.

The initial concern for MSE was not the purchasing nor the installation or utilisation of the shiplift but how to get this seemingly immovable mass of thirteen thousand tons of steel at the new location over a distance of 12,000 miles and in good condition.

In the early stage of the feasibility study both MSE and their Australian consultant for removal and relocation, Mr Neil Robertson realised that the Mammoet Group could provide an "all in" optimum transport/shipping package by incorporating Mammoet Shipping's heavy lift vessels m/v "HAPPY BUCCANEER" and m/v "ENCOURAGER" with the services of Mammoet Western Inc. of California for the dismantling operation, and on the Malaysian side, Walter Wright Mammoet and their special platform trailers to carry out the receiving ex ship's hook and the inland transportation to the temporary storage place.

Five sections of the structural steel transfer carriages each weighing 200 tonnes, measuring 33.5 x 20 x 2 m and twenty six 130 tonne steel platform beams had to be loaded on the heavy lift vessels. M/v "HAPPY BUCCANEER" moored adjacent the shiplift quay at Todd Shipyard and picked up every one of the 130 tonne platform beams within a 35 m radius, using her own gear.

The shiplift arrived in Malaysia in good condition, which was accomplished because those concerned realised that a Mammoet response was all they needed.





**LAST FLIGHT OF**

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**AIRLINES 605**



**10**





*After a Boeing 747-400 had crashed at the Kai Tak Airport in Hong Kong, Walter Wright Mammoet was asked to assist in the salvage operation.*



China Airlines flight CI 605 skidded off the end of the runway into Victoria Harbour in an attempt to land during a severe tropical storm. The 273 passengers were unharmed in the ill-fated landing operation, but the US\$ 150 million airplane became a complete write-off when it partly submerged in the harbour. The plane had to be removed from the water with the utmost care in order to prevent it from polluting the Hong Kong waters any more than it already had done.

On November 17 at 6.30 a.m. the Hong Kong Salvage & Towing Company started the recovery operation by positioning the largest floating crane in the territory, the "Proteus I", over the Boeing. Walter Wright Mammoet's Liebherr LG1180 crane with a 35 meter boom was placed and secured on a flattop barge and moored alongside the floating crane. A custom-made spreader on the "Proteus I" held slings which were connected through the wings to the Boeing's landing gear, while Walter Wright Mammoet's LG1180 held tight the previously installed specially made nylon slings slung around the plane's nose section.

Because of the plane's slippery aluminum surface the nylon slings moved slightly in the first lifting attempt. The plane was lowered to re-adjust the slings and the second attempt proved more successful. However, the wind was strong and the Boeing was imbalanced by the absence of the two portside engines. One had fallen off in the crash and the other had been removed for safety reasons. The wind and the imbalance caused the aircraft to sway and turn slightly.

Nevertheless, at 12.45 pm the wide body was completely free from the water. As soon as everything had been fixed and secured, four tugboats towed the two cranes and their cargo into the Kwung Tong typhoon shelter to the taxiway bridge. There the crippled airplane was landed on firm soil. At 4.00 p.m. this part of the salvage operation was completed and the Boeing's nose rested on Walter Wright Mammoet's platform trailers.

Through the combined expertise of the Hong Kong Salvage & Towing Company and Walter Wright Mammoet HK, who have been working together regularly in the last seven years, another delicate lifting job had been proved successful. ㊟



## MAMMOET IN FOCUS



### ◀ STORAGE VESSELS ON THE MOVE

For Colt Engineering Corporation nine heavy pieces were moved by Mammoet Canada from the Cessco fabrication yard in Edmonton to the Alberta National Gas (ANG) plant in Cochrane. The two largest CO<sub>2</sub> storage vessels measuring 100' long and 15' diameter, each weighing 155 ton, began their journey in Edmonton city during the night. The actual trip of 450 km took two days and at times the temperatures dropped to as low as -30°. A 96-wheel Scheuerle platform transporter was used for the move as it was the only hydraulic highway trailer in Western Canada to meet Alberta Transport regulations. Because Cochrane is situated in the foothills of the Rocky Mountains, Mammoet Canada had to negotiate 10% to 15% gradients for which a 525 horsepower Mack truck in front and a 600 horsepower Kenworth at the rear provided the required horsepower.



### ◀ SAFETY COURSE IN ROUND FIGURES

Project Manager Sjel Welten of Mammoet Stooif in Breda shows the award he won after a safety course for people operating in the chemical and petrochemical industry. Remarkably, Sjel Welten turned out to be number 3000 to obtain the certificate, which was reason enough for "Elseviers Opleidingen" who organized the course, to give special attention to this event.

On arrival at the natural gas extraction plant, the heavy pieces were placed onto 20" high pedestals by lowering the hydraulic trailer bed. For the final positioning onto foundation, Mammoet Canada used a 165 tonne hydraulic Demag crane and a 200 tonne Linkbelt truck-mounted crane. An engineering/lifting study as well as the shimming/bolting and steam cleaning of the vessels were part of this turnkey transport project.

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### ▶ TANDEM LIFTS IN INDONESIA

Three impressive tandem lifts were carried out in the Chandra Asri Petrochemical Centre (CAPC) in Cilegon on West Java, Indonesia. Client P.T. Sankyu Indonesia supplied the mechanical installation for Toyo Engineering Company, while Walter Wright Mammoet supplied two fully rigged Manitowoc 4600 ringer cranes for the erection and positioning of three heavy columns for an Ethylene unit, ranging in weight from 560 to 600 tonnes.





► NEREFECO UPGRADING

Mammoet Stroof undertook the majority of crange activities for the upgrading of the Nerefco refinery in Europoort, The Netherlands. Nerefco is a joint venture between BP and Texaco, which built a new MTBE processing plant and revamped another. To produce lighter oil products and to meet future environmental demands, many improvements were made.



◀ REMOVING LAMP POSTS

For quite some time now, Mammoet Stroof has been busy removing the giant lamp posts standing on a traffic circuit near the Van Brienoord-bridge in Rotterdam, The Netherlands. The lamp posts were taken away for energy saving purposes. With a telescopic crane the top section with the illumination is taken off. Thereafter the steel pole is lowered and transported elsewhere on an extendible lowbed trailer.





*On the center-spread of this magazine, you will find a drawing by the well-known Dutch artist Jan Sanders. At the request of Mammoet Transport he drew the new Mammoet planning calendar for 1994. Meeting this talented artist gave the editors of Mammoet Mail the idea to ask him for an interview.*

*A conversation with a man who draws without being pretentious.*



*Jan Sanders*



"From the beginning I felt that I had the duty towards my parents to carry out the art of drawing, which I had learned thanks to them, in a good and serious manner. It went without saying that I should be able to earn my living with it." The draughtsman Jan Sanders is seated behind his drawing board in his house in rural Z.O. Beemster. Pensively, he puts down his pen next to a drawing for the invitation for a 25th company anniversary.

"I always had to work hard for my living, especially in the early days, when a drawing which took a few days to make only fetched ten guilders. Thirty five years ago this line of work was badly paid". Jan Sanders dwells on his early days as an art teacher and the first assignment, a weekly drawing for the magazine of the Catholic Radio Broadcast company to illustrate the radio play "De Wadders". The then publicity man of Pieter Schoen, a varnish and paint factory at the River Zaan, was very enthusiastic about it. From this contact derives the well-known Jan Sanders "Sigma" calendar with the maritime angle, which was published for 34 years. "Contrary to what most people think, I have never been at sea and the high content of sailors in my work is purely

coincidental. They could just as easily have been steam locomotives or vintage cars. Despite all that, this calendar through which I have received the most acknowledgment, is but a small part of my work. I have made enormous amounts of illustrations for all kinds of magazines and large publishers, up to scientific work and teaching material." The essence of Jan Sanders' drawings is found in the people he draws. As he says himself, "They are not doodles, but people, everyone of them with their own identity. The starting point of the drawings in the Sigma Coatings calendar is a little captain with his crew. Based on typically human, often characteristic properties which can be retraced in society in all its divisions and of course also on board a ship.

The captain is the little dictator and his whole crew will leave no stone unturned to undermine his authority. With this Jan Sanders actually describes the basis of the success of his drawings, the relationships between people and the humour that can be found therein.

Sanders: "The ships I draw in these calendars are from a past era. They are very nice, friendly little ships with smoke bilging from the funnel and nice little masts. That draws itself and people very



much enjoy this romantic kind of nautical history. It tells people more than all these modern vessels, which are quite boring to look at." For many people it was quite a shock when it was announced that suddenly, after 34 years, Sigma Coatings had stopped this calendar. Fortunately, the IJmuiden pilot service stepped in and took over the calendar, so that the crew with the dictatorial little captain can continue their worldwide adventures.

Jan Sanders has held many exhibitions at home and abroad. Quite recently, he had an exposition in the Maritime Museum in Amsterdam with a number of the plates from the Sigma Coatings calendar. "Strange, that these exhibitions trigger off only few reactions and never result in assignments. I must rely more on word of mouth advertisement which by the way gives me more than enough work, nowadays."

For the last four years, the now 74 year old artist has been working with his son Marcus. Most of the drawings that now leave the house of Sanders are more or less a co-production, in which Marcus accounts for the "hardware" and his father for the figuration. So it was done in the Mammoet drawing, which has some very fine technical details. They are pictures one does not quickly get tired of. Coming back to the people he draws: "I still very much like to draw, but sculpturing or painting are really more in my line." He shows a few nude studies: "This is my preference, it is free work on which I spend some time now and then. I put a figure like this on paper in a few minutes and that gives me much satisfaction, but to earn a living I must draw in another fashion". With something of regret in his voice: "This does not sell at all". They are fascinating, almost abstract images of people which, despite the simple lines, come across as extremely natural.

In his spare time, Jan Sanders is very much involved in the local drama club. He designs the scenery and produces plays, for instance of Chekhov, Claus and Neil Simon. "An empty stage shows much likeness to an empty sheet of drawing paper. It is filled in with a group of people who plan to do something. You must bring it to life, as it were, and in such a way that they turn out to be people of flesh and blood, not doodles!"

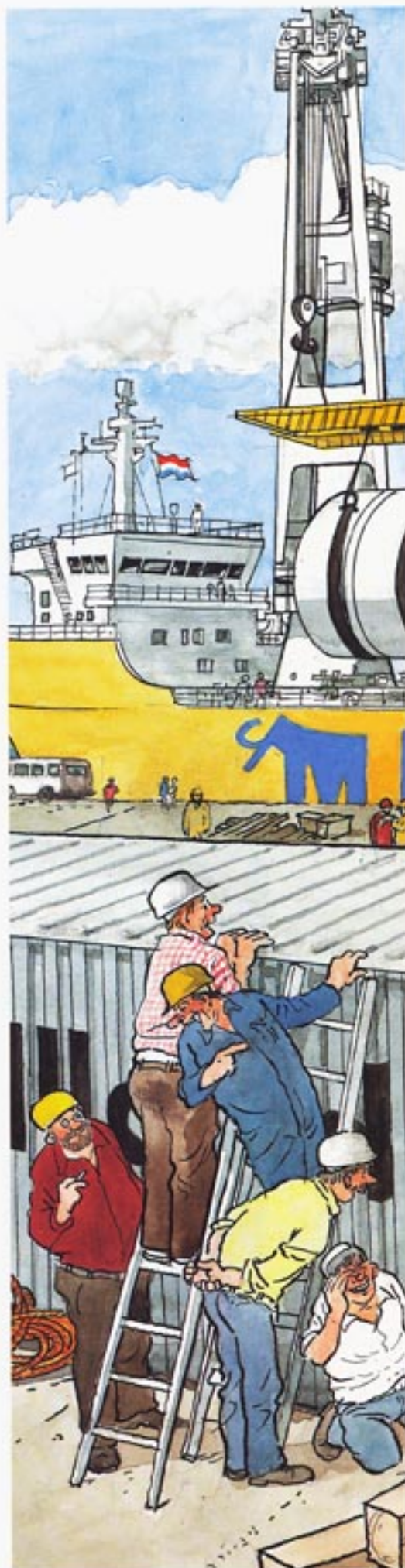
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#### THE TURBULENT WORLD OF JAN SANDERS

Last year, Mammoet Transport requested Dutch artist Jan Sanders to make an exclusive drawing for the 1994 Mammoet calendar.

His style may look like a comic strip, but when examining the details, one finds that everything has been worked out meticulously and that the expressions of his characters are much more life-like than in a cartoon. Mr Jan Sanders is well-known and highly appreciated in the Netherlands, but internationally he is also well-known for his special maritime drawings, which were published for many years on the so-called Jan Sanders calendar. This calendar was distributed for 34 years to even the most remote places of the world. Last summer, some of his work was exhibited at the Maritime Museum in Amsterdam and a book was published containing most of the drawings selected for the occasion.

The starting point for these drawings is always an old-fashioned aspect of shipping in which the captain and his crew end up in the most hilarious situations. Mr Sanders has a type of humour that can be understood everywhere and he has the gift to put it on paper creatively, making his work a never ending pleasure for the eye.













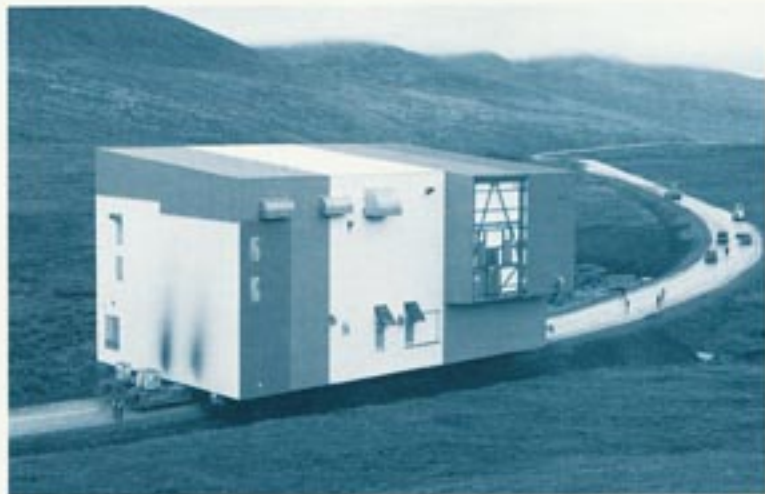
## MISAPPREHENSION ON MAMMOTHS

*The image of the mammoth as a mammal of enormous dimensions is incorrect. It is based on faulty reconstructions and wrongly interpreted cave drawings. The image of Mammoet Transport suffers from the same misunderstanding. "Mammoet not only exists for heavy transport although we are very good at it"*



Dick Mol explaining the misapprehension

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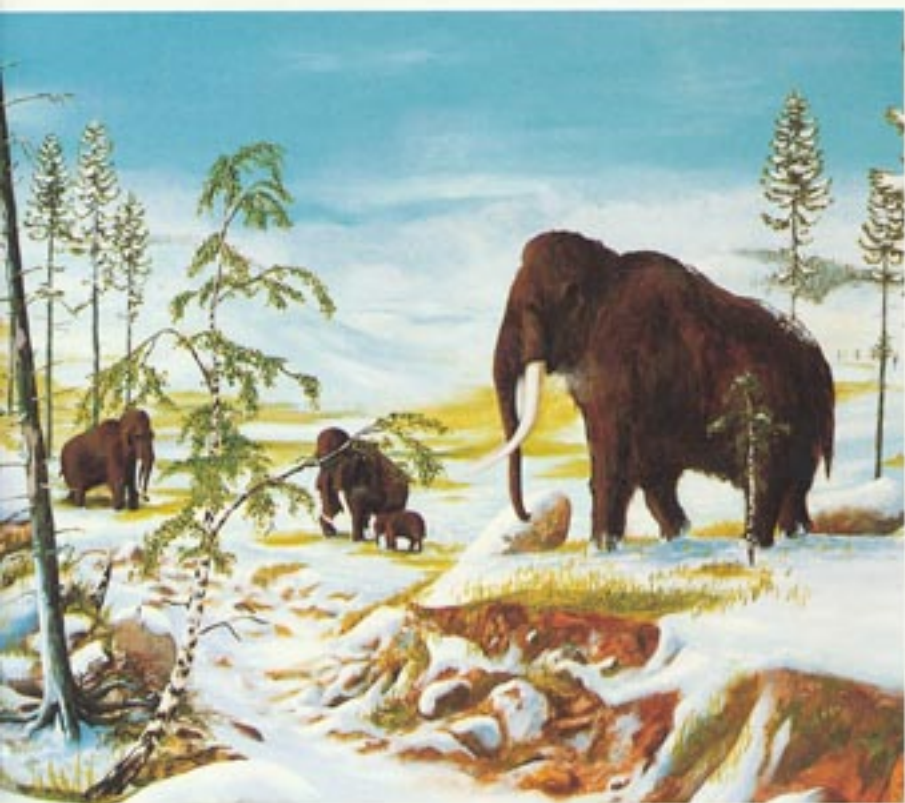
Mammoet is very good in heavy transport







Mammoet does not focus solely on extremely heavy cargoes



The house of Dick Mol in Hoofddorp is filled to the roof with bones, molars and skulls of mammoths. Upstairs in the attic numerous archive boxes are accommodated holding bones and teeth of the species. Downstairs, there is a painting of mammoths on a tundra and in the living room one finds bones of lower and upper legs and a skull. Mol, who works as a customs agent at Schiphol airport, is an amateur

paleontologist and member of the study group Pleistocene Mammals. He fills his spare time with the study of ancient life through the study of bones and fossils and specializes in the woolly-haired mammoth.

#### **Mammoth thighbone on the train.**

When he was a schoolboy, his interest for prehistoric animals was roused by a teacher who showed him some fossils.

Thirty years later Mol travels through The Netherlands and Europe in his free hours. He even went to the United States for research and comparison of his collection and to find out even more about the animal and the era in which it lived. "In The Netherlands I always travel by public transport and sometimes I take the train carrying a mammoth thighbone. People hardly react, if at all. Sometimes a child asks 'what is it you have there, sir'."

Dick Mol's knowledge of the mammoth is impressive, especially when taking into consideration that he is a non-professional. He wrote various publications and by the end of 1992 a book was published by his hand in cooperation with colleague paleontologist Hans van Essen. The Dutch book called "De Mammoet" gives ample information about the mammoths dredged up and excavated in The Netherlands and it provides an overview of the most important collections in and outside Europe.

#### **Faulty picture**

The word mammoth is used in numerous languages almost without exception to indicate something of enormous size. In phrases such as 'mammoth tanker', 'mammoth tree' and 'mammoth project' the first words indicate that we speak of something huge. According to Dick Mol, the image of the mammoth as a mammal of enormous sizes is based on a misapprehension. "We must abandon the notion that mammoths were such gigantic animals. They were big, but not that enormous. The shoulder height of the animals reached at the most 2.5 to 3 meters. That is no more than a large African elephant."

Through this link with the extinct animal, Mammoet Transport too is confronted in its activities with the faulty image of the mammoth as a giant animal. Hans van den Bovenkamp, Managing Director of Mammoet Stoof in Breda: "That is a problem we have faced from the start. In our commercial and public relations activities we keep explaining to our clients that we do not focus solely on heavy cargoes. Mammoet is not working only in heavy transport, although we are very good at it." ▶





#### MAMMOTH COUNTRY IN ROTTERDAM ZOO

Many of Mammoet Stooif's business relations were pleasantly surprised when they received an invitation to visit the exhibition Mammoth Country in zoological garden Blijdorp in Rotterdam, which was held last year.

Mammoths became extinct some 10,000 years ago. But in this exhibition the prehistoric giants, who lend their name to the heavy transport company, were revived by the American company Dinamation. This company is specialised in making very convincing robot models that can move and sound quite authentically. The models are powered by airpressure and steered by computers. They were housed in the Riviera hall, which had been transformed to look like an open forest area and a tundra landscape from the last ice-age complete with gletcher, drifting ice and a bubbling tar pit.

Characteristic for the tundra landscape was the small herd of mammoths, containing two babies, two adult females and a giant mammoth bull, who had been made especially for Blijdorp. The trunk of this unique mammoth robot could move a meter either side and had a moveable sensitive feeler. In the same landscape one could spot a woolly-haired rhinoceros and two fearful saber tooth tigers, one of which was on the brink of drowning in a tar pit while the other tried to move South over a symbolic land bridge. A separate educative discovery grotto showed all kinds of interesting facts about the way the prehistoric giants lived and how they became extinct. Furthermore, a mammoth hunters' fireplace and cave paintings were exhibited.

Over the last summer the public showed lively interest in Mammoth Country and for Mammoet Stooif it was an excellent chance to show their clients that the mammoth still holds the centre of attention.

Mammoet Shipping knows about the awkward symptoms of the 'mammoth-syndrome' too. Managing Director Arie Peterse: "Although in the first instance we aim for the difficult heavy lift market, a combination with extra cargoes from the lighter segments is necessary to keep a sound operation going. That can be the general cargo belonging to a certain project or individual break-bulk. Often clients do not immediately think of us when they want to move this kind of cargo." Finally, Giel Koevoets, who is in charge of special road transport in the office of Mammoet in Antwerp: "People are sometimes surprised when we say that we also can and will transport less heavy loads. "But aren't you only in large and heavy lifts?" they then ask. But for us it does not have to be enormous; we are just as interested in a boiler of 3 tonnes as a large transformer of 80 tonnes."

#### Cave drawings

What started this erroneous image of mammoths being huge animals roaming the vast tundras? Mol gives two important sources for the misunderstanding: a misinterpretation of pictures and faulty reconstructions of models. "In many ancient cave drawings mammoths are depicted in combination with trees. However, trees in the ice-age were much smaller than they are now. Therefore, the size of the animals has become inflated. The other reason for the wrong image can be retraced to inaccurate reconstructions". Mol recalls as an example the picture taken in the State Museum for Physics in Stuttgart: "It is true that this picture shows the model

of a very large mammoth, but the animal was stuck together in the wrong way. If the legs are placed closer together, the skeleton automatically becomes taller. Moreover, the man in the Stuttgart picture is very small and the animal is placed on a platform. This distorts the proportions. Mounted mammoths were often photographed in this way. But, of course," Mol adds, "the image of a very large animal is much more fun."

#### Habitat

Mammoet Transport does not only share its name with the prehistoric animal. The animal's old habitat shows many areas that accord with the world-wide settlements and the working area of the company. Mol: "Woolly-haired mammoths lived in the northern hemisphere; in Europe, but also in North Eastern Siberia, Asia, Alaska and North-America. In The Netherlands, Mammoet Transport's home base, thousands of molars and bones have been found in the soil. Pieces of mammoths are also hauled up by dragnet fishing. What is now the North Sea was once a vast tundra on which mammoths lived."

In addition to the recounted similarities, the mammoth and Mammoet have one important difference. The woolly-haired mammal is now extinct, while the company is going strong. According to Mol a complex set of factors was responsible for the species to die out. "Changes in the climate played an important part. Towards the end of the ice age temperatures raised considerably. The weather became milder so that pine forests extended. This led to a drastic reduction in habitat for the mammoth and a major change in the vegetation. No doubt they were also hunted down by man, but the theory that overkill by prehistoric man caused the mammoth to die out seems unrealistic. At most it can be said that hunters could easier catch mammoths through the animal's lack of adaptability to changed living circumstances." For the Mammoet group of companies this is clearly not the case. They adapt excellently to changing economic environments. CR



## ROOF PLACED ON PACHYDERM ACCOMMODATION

*With the fitting of a steel frame construction the highest point was reached of the new pachyderm accommodation*

*"Taman Indah" in zoological garden Blijdorp in Rotterdam.*

*The roof spans some 2000 m<sup>2</sup> and is one of the largest in its kind in The Netherlands.*

*Mammoet Stoof placed the structure with a 500 tonne telescopic crane.*



"Taman Indah", is Malay for "beautiful natural park". It will be the home for elephants, rhinoceroses, tapirs and a number of smaller Asian species of animals such as marsh tortoises, tiger pythons and hornbills. The visitors are expected to get a feel of the real tropical forest. The animals' day and night accommodations are built to blend in completely with the setting. The walls look like overgrown rocks, while all visible pillars are transformed into trees. The main route for the public runs through an artificial dry riverbed and an ingenious background prompts the illusion that one can see far away in the distance. All this makes it look like a real biotope, in which the architectural aspect is not drawn out.

The roof, which spans the total space, is made invisible by decorating the inside with light and air permeable screens. Against these a camouflaged roof of foliage is attached. The steel frame construction has a glass warehouse roof, in which ventilation valves and a sunblind and climate conditioning system are incorporated. Saving energy is a major issue in the design of the roof. Therefore it is constructed in such a way to allow the light in and retain warmth, which is very favourable for the trees and plants and provides a climate as close to the tropical forest as is possible. Even monsoons and the tropical humidity can be imitated with the assistance of a rain installation and vaporizers.

"Taman Indah" will be open to the public from this spring. It is the second phase in the representation of the Continent Asia in Blijdorp. The first part was opened in 1991 and contains Asian swamps, monkey



islands, a free-flight aviary and a Mongolian tundra. According to the master plan, zoological garden Blijdorp will drastically change in the forthcoming 10 years to become an ecological zoo showing various continents. Visitors will see the animals in their natural habitat.

AvL



*In close cooperation with a project team of the Norwegian yard, Haugesund Mekaniske Verksted (HMV) A.S., Mammoet Transport prepares a giant load-out operation. It concerns a process module with a total load-out weight of 11,000 tonnes. This job is extra special as a new generation Self-Propelled Modular Transporters will be used for the first time.*



Kjell Gabrielsen, Olav Krokedal and Arne Rossebo





## load-out at HMV yard



In the third week of September the project team of the Norwegian HMV yard paid a working visit to the office of Mammoet Stöof in Breda. In the team were Purchasing Manager, Kjell M. Gabrielsen, Senior Engineer Marine Operations, Olav A. Krokedal and Dept. Manager Arne Rossebo. The

first a certainty that this company would be the one to take on the Heidrun process module load-out job. For every new project we enter the market in an early phase to see where we can get the most valuable tenders. We thereby examine various load-out contractors. We evaluate their skills and techniques and



visit was arranged to discuss the preparations for the giant load-out operation that Mammoet Transport will perform at HMV's in Haugesund next July. According to spokesman Kjell M. Gabrielsen, the Norwegian wharf is at this very moment constructing a process module, destined for the Heidrun offshore project of oil company Conoco. Including the 1500 tonne grillage the total load-out weight will be a record breaking 11,000 tonnes.

The relationship between the Dutch-based load-out specialist and the Norwegian yard dates back to 1984. Gabrielsen comments, "We first relied on Mammoet when we started building larger units in Haugesund for the offshore industry. We had to find a way to move these units from the yard and since Mammoet indicated at that time to be in the market for this kind of job, the contact was soon made. Since then, this company takes care of load-out operations on our wharf at least once a year. Although we have been working very close with Mammoet over quite a number of years, it was not at

watch for quality and efficiency. Then we judge the proposals of the three or four selected contractors, whereby we look into every detail. After we have unearthed what is the very best for our client and for us, we make our choice. Up till now it has been Mammoet". HMV's Purchasing Manager adds that it is not always the price that tips the scale.

When compared with the large Norwegian offshore construction yards, HMV is a medium size company. Gabrielsen: "We work in a tough international market. We have to lean on other contractors that supply specialized experience and performance. We need the best proposals and a total package. To survive we want to give our clients the best. So that is also what we ask from our subcontractors. Because of the narrow passages on our yard we always need innovative technical transport solutions. Mammoet have been able to give us these solutions because they have their SPMTs. Our clients also agree that this is the right choice. ▶





#### HMV PROFILE

Haugesund Mekaniske Verksted (HMV) A/S was founded in 1900. In the beginning the wharf only was active in ship repair but after 1951 also in ship building. In their peak time an average of four vessels per year were launched. In the meantime, HMV have also built up a very good reputation in repair and conversion of drilling rigs. In Norway they are the market leader in this area. Since 1975, over 100 drilling rigs were serviced at HMV's shipyard. To be able to carry out the aforementioned work, the yard is fitted with numerous modern facilities such as drydocks, deep-water quays, machine shops, steel fabrication shops, and piping fabrication shops. To its advantage the yard sits only two nautical miles from the open sea. The wharf employs some 1250 people plus quite a number of employees of subcontractors. HMV is also active offshore with a major work force in hooking-up and modifying platforms. In this field too the Norwegian yard has built up a fair reputation.

In Haugesund today, hard work is put into the building of the process module for Conoco's Heidrun project. This is the heaviest structure that HMV have built for the offshore industry to date. A special assignment to which Mammoet Transport will also contribute their might. Technically it is possible for the HMV yard to build modules up to 12,500 tonnes.

Mammoet was first with the modular transporters. We were glad that we could use them. When building the offshore structures we calculate that we can use these transporters. A good example was the 7,400 tonne weighing Brage production module that was loaded out in 1993 with the the SPMTs".

Another member of the Norwegian project team adds, "We have only limited space on our yard to build offshore structures. To use this space to the ultimate the offshore structures under construction quite often need to be moved. Mammoet Transport also take on site moves and determine the weight in different stages during the construction. Another performance is the ballasting during the load-out of the oceangoing barge. An outstanding feature is that Mammoet always are very accurate in their calculations, especially the ballast calculations. We can always completely trust them."

The HMV yard has been active in the oil and gas industry from 1977. In the first years they worked closely together with a Dutch wharf. More recently the yard has built offshore structures for Phillips, Mobil, Statoil, Conoco and Norsk Hydro. These structures, among which modules and decks, were destined for projects in the Norwegian sector of the North Sea. The yard has also delivered a module for a project in the British sector. HMV would very much like to build structures for the Dutch sector, but this market, as well as the British, is very well protected so that the company is hardly given a chance to enter it.

#### New generation.

"For the load-out of the Heidrun process module", Frans Segeren, Head of the SPMT department of Mammoet Transport, says, "We will use the new generation SPMTs for the first time. The building of these transporters has only recently been ordered. These new trailers have many accessories, such as a double drive, hydraulic brakes instead of air brakes and many micro-electronic features. The new transporters are stronger and work also better in cold conditions. They will be fitted with a new computer system and will be

steered by one man only. After a thorough trial period the new transporters will be used for their first load-out operation on the HMV yard" according to Frans Segeren, who has major expectations of the new transporter. Henk Beesems, who has been the project manager for these kinds of projects worldwide for years, the Scandinavian market being one of them, adds, "With a larger number of axle lines, planning in the so-called load-out season becomes easier. In a usually relatively short period of time a large number of offshore modules must be relocated and every client of course wants his project to have priority. On the other side we will have to come up with additional transport work in the low season. We have found this market partly in the Far East where heavy transport techniques meet with higher demands and old and outdated material will no longer suffice."

For Mammoet Transport, investing in a new generation of transporters is a logical step in the direction that the company took years ago. Harold Hvide, Managing Director of Mammoet Transport Norge A/S in Bergen and the man who actually introduced Mammoet on the Norwegian market in the late seventies: "Our company was the first to perform load-outs on rubber tyres. However, at that time a load-out operation was a completely different ball game. The conventional platform trailers required much more labour, while heavy duty prime movers and huge winches were used for the propulsion." The introduction of SPMTs in 1984 caused a revolution in this field. In later years Mammoet Transport set world records and broke them with massive load-outs. With the SPMT's ability to accurately move large constructions, modules and ship sections, the transporters made a name for themselves in the chemical, petrochemical and shipbuilding industries. Mammoet Transport have gained a leading position with them. The development and purchase of the new generation SPMTs must help strengthen this position further. HMV's Purchasing Manager Kjell M. Gabrielsen finally comments, "If you are the best, you will succeed. That is why we at HMV always pick out the very best. That is, for us too, the only way to survive." ❧



The introduction of the new Manitowoc M1200R has proved quite successful. Last year, Mammoet organised a demonstration of the crane's capacities in co-operation with Manitowoc Engineering during the testlift period at the Manitowoc factory in Wisconsin. The event was witnessed by many construction engineers and other interested parties. Surprisingly, during the tests it turned out that the nominal lifting capacity exceeded the expectations and a rating of 1300 tonnes was established. However, it was decided to maintain the series' name M1200R, as the cranes had already been announced as such in brochures and press releases.

## "The missing link"

Exactly 100 years ago, Dutch scientist Eugene Dubois found mankind's missing link on the island of Java; a major breakthrough in the science of evolution. Today, Mammoet proudly presents a new supercrane with the vast lifting capacity of 1300 metric tons; a major breakthrough in plant construction. It enables mankind to erect plants in a much faster and safer way.

**Some scientific facts:**

- single lift operation for ultra heavy components
- ability to travel fully rigged with rigger attachment
- modular concept
- 1300 metric ton at 17 m radius
- 800 metric ton at 23 m radius

**Homo erectus**                      **Mammoet erectus**

When you plan your next "erectus" job, do contact the innovators in worldwide lifting and transport engineering; it would be a pity to miss this link!

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**MAMMOET**

MAMMOET: COMPLETE HEAVY TRANSPORT, FROM FACTORY TO FOUNDATION



Mammoet Shipping collected the cranes in Milwaukee at the end of last year. Meanwhile they have delivered them in the Middle East and the Far East. As the construction market recognised the potential and capabilities of the cranes, a number of major contracts had been concluded in the Middle East and the Far East even before the cranes were delivered.

The first project is now in full swing at Jebel Ali (Dubai) in the United Arab Emirates. It concerns the construction of an MTBE plant.

AvL



## TRANSPORT CAR PRESS LINES FOR NEDCAR



*For the motorcar manufacturer Nedcar in Born, Mammoet Stoof and her Nedlloyd sister-company Damco Maritime moved two gigantic press lines that will form the heart of a ultra-modern production hall. The first press was delivered at the end of 1993 and its identical twin arrived in Born this January. From 1995 onwards some 100.000 Mitsubishi cars will be produced every year.*

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A small nightly gathering in the port and a traffic jam on the A2 motorway at a quarter past five on Saturday morning. The little village of Born in the South of the Netherlands was for a short while under the spell of the mammoth transport of machine parts for the local factory of car producer Nedcar.

A small crowd had assembled in the dead of the night at the port of Born to follow the transportation of the two heaviest parts of a transfer press with Mammoet Stoof's special platform transporters.

The two main pieces with their respective weights of 185 and 200 tonnes were too heavy to cross the A2 over the flyover near the Born exit. To avoid this problem, the transporters were directed over the A2 motorway to the factory site three kilometres on. In the early hours of the morning, the heavy convoy moved along under the guidance of police motorists. Over the Western exit they turned up the motorway, crossed the central reservation and vacated the road by the Eastern exit. The Department of Public Works had removed the crash barrier from the central reservation over a distance of 40 meters.

Once the press line is assembled, it will measure 18 x 13 x 33 meters. The presses had been built in Japan and the whole cargo had been discharged from a seagoing vessel at the ECT-terminal in the Rotterdam Beatrix-harbour. A floating crane had loaded the twelve heaviest parts on to a barge which was then towed to Born over the rivers Maas and Waal. The remaining pieces were brought to Born by road and for this, main contractor Damco Maritime brought in her sister-company Mammoet Stoof from Breda. Mammoet Stoof also arranged for discharge of the barge in the port of Born with a 400 ton lattice-boom crane as well as the above-mentioned final transportation to the Nedcar factory.

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The two press lines that were shipped from Japan to The Netherlands in two voyages will form the heart of the ultra modern press plant of motorcar manufacturer Nedcar in Born in the South of The Netherlands. From 1995 the new factory will produce between 80.000 to 100.000 Volvo cars as well as the same amount of Mitsubishi's. This Japanese car manufacturer has been 1/3 owner of Nedcar since 1991. The other 2/3 of the shares are in the hands of Volvo Sweden and the State of The Netherlands. The installation of the press lines forms an important part of the about f 3 billion Nedcar investment programme that will be realised in the next few years.

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## CLOSE ENCOUNTERS

*In a previous publication of Mammoet Mail attention was given to Walter Wright Mammoet's involvement in the construction of a new ammonia and urea factory in Gresik, a small industrial town some 15 km north of Surabaya on East Java, Indonesia. One of Walter Wright Mammoet's supervisors, Jos Vogelzang, has sent in a report about this project. An interesting story describing tight manoeuvres.*





Together with Indonesian partner P.T. Kelsri, Walter Wright Mammoet positioned a total of 450 cargo items for a new ammonia and urea factory. Main contractor P.T. Inti Kraya Persada Teknik (P.T. IKPT) has built this plant for P.T. Petrokenya to upgrade the production capacity of their existing facilities. Walter Wright Mammoet's scope of work entailed receiving the heavy lifts at Surabaya anchorage on barges, towage via a specially dredged channel to a construction jetty, off-loading and inland transport to a temporary storage place and final positioning onto foundation.

To handle this kind of cargo WWM mobilized from their home base in Singapore a 230' barge loaded with 24 axle-lines of Cometto Hydraulic Platformtrailers, as well as two heavy duty prime movers, a Manitowoc crane type M4600 S4 with ringer attachment for the main lifting and a Manitowoc crane type M4100 S2 for tailing. For general assistance four rough terrain cranes with various lifting capacities were mobilized. In close co-operation with the logistic department of P.T. IKPT and the various shipping contractors, barge layout plans were produced with the weights and dimensions of all cargo items. In this way a maximum of heavy lift cargo could be stowed on every run from the anchorage to the ro/ro jetty. Seven barge trips were necessary to receive all the project cargo delivered in four different heavy lift shipments. At the anchorage the cargo was transferred by ship's lifting gear directly on the platform trailers and on one meter high steel support frames. These supports made it possible to pick up the cargo at a later stage with the built-in hydraulic jacking system of the platform trailers.

At the jetty the cargo was unloaded in a roll-off operation using the multi-axle hydraulic platform trailers in various configurations. To keep the barge level with the jetty during the unloading operation a ballast pump system was used. As a rule, all cargo items were transported to the site for immediate installation, but sometimes installation sequences demanded a temporary storage at the lay-down area. The inland transportation route from the jetty to the site was approximately 6 km and ran almost completely over P.T. Petrokenya's existing plant sites. In order to avoid obstruction of the traffic flow during the outsized transports, special attention had

been given to the road survey. Special detours were created for fire engines and ambulances in case of emergency. Road turns were cleared by removing light poles and other obstacles. All road crossing culverts and bridges were checked on strength and where necessary, protected with steel plates.

The main problem for this new ammonia and urea plant was the lack of space. Surrounded by existing production facilities and warehouses the actual square meters at hand measured only about 70% of a desirable situation. However, the designers, Kellogg and Toyo, managed to squeeze the plant into an area smaller than a soccerfield, leaving very little room to manoeuvre for cranes and transportation equipment.

The choice for the Manitowoc M4600 ringer crane was therefore well-considered. This crane concept combines excellent lifting capacities with surprisingly small operational dimensions. Only three crane positions were needed at the outer skirt of the plant to reach the whole area. For every crane relocation the maximum width of the ringer was reduced to a mere 8.5 meter by taking out the ringer side parts and beams, allowing it to travel through passages of no more than 9 meters wide. Except for some pipe bridges for boom clearance the client did not need to leave out any foundations or structural steel. This reduced the overall construction time substantially.

A boom length of 97.4 m was used to install the largest heavy item, a 210 tonne CO<sub>2</sub> stripper with a length of 67 m and a 4.6 m diameter on a radius of 25.9 m. With the same boom length the Manitowoc M4600 ringer crane installed a 100 tonne vessel at a radius of 69 meters, clearly demonstrating its capacity to serve wide areas from one location. Not all equipment was installed with cranes. The 474 tonne ammonia converter was positioned horizontally over its two foundations with platform trailers. It was jacked down using four 200 tonne climbing jacks. In another operation a roller track system and hydraulic jacks were used to install a pair of heat exchangers underneath an already installed machine.

The joint venture team finished one month ahead of the overall schedule. The plant is expected to become operational early this year. ☺





## MAMMOET IN FOCUS



### ▲ SKIDS FOR "THOR SCAN"

For a floating production storage and offloading facility Mammoet Shipping's heavy lift vessel "THOR SCAN" loaded 10 process skids in Brisbane, Australia. The skids were constructed by Evans Deakin Industries and booked via Mammoet Shipping agent Nedlloyd Swire Pty Ltd in Brisbane. The skids were delivered to the Tanker construction yard in Korea where they were assembled.

### ► KAFCO PROJECT BANGLADESH

Scope of work: Heavy lift shipping, customs' clearance, transfer of all cargo from ship's hook onto barges, river transport to site, off loading cargo partly by crane and partly by roll-off method, transportation to site by hydraulic platform trailers. Final erection and positioning by AH1320 crane with skyhorse and guy-derrick attachments. A factory to foundation transport project executed by Mammoet Shipping and Walter Wright Mammoet.



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### ► REELS FOR AUSTRALIA

M/v "PROJECT EUROPA" collected a full load of 30 reels, varying in weight from 80 - 240 tonnes. The 8.60 metre diameter reels were loaded with ship's own gear in Le Trait, Newcastle and Panama City and were shipped to Exmouth Gulf in North Western Australia.







► **GOLDEN MEDAL FOR  
"HAPPY BUCCANEER"**

At the world championships for ship models in Wendlingen am Neckar, Germany, S.M.S. "Rotterdam" (Modelship Society "Rotterdam") won a gold medal for the best performance in the category port activities. In a 15-minute show with several models of Smit Internationale vessels and Mammoet Shipping's m/v "HAPPY BUCCANEER" elaborate ship movements were performed under remote control. One of the highlights of the show was the transfer of a refinery column from the miniature Mammoet vessel onto a pontoon moored alongside. Out of 100 points S.M.S. "Rotterdam" were awarded 98, which was more than sufficient to win a gold medal.



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**Davenport Mammoet Heavy Transport Inc.**  
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**Navigation Mammoth Gulf**  
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**Pecon Transport Division**  
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