

INSIDE

FORESIGHT IN OFFSHORE

APRIL
2007
9

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**CONVERSION OF THE CAESAR -
REINFORCEMENT OF HELIX ESG
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**ALLSEAS — AUDACIA BASIC
ENGINEERING**

GustoMSC

Member of the SBM Offshore Group



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PREFACE FROM THE MANAGEMENT

BUSINESS AS USUAL?

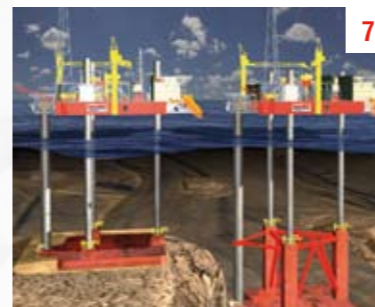
In recent editions of GustoMSC Inside, we reported to you the large numbers of projects that GustoMSC is currently involved in. In reference to these one of our clients queried how we were able to successfully handle such a high workload. With an explanation of our organization and how we had expanded in accordance with demand, he simply said “I’m impressed”! It is therefore the perfect opportunity to further elaborate to you all on what we as an organization are and what we are currently involved in - to become as strong a competitor as any other offshore engineering company on the market.

GustoMSC is an alliance between Gusto, Gusto Projects and MSC in Schiedam (Netherlands), and GustoMSC in Houston. Our total staff is presently 550, which increased more than 50% over the last five years. With our core business being engineering, the majority of our staff are engineers, designers and associated project control staff. But, as we are increasingly becoming more involved in “hardware” projects, where we take on turn-key delivery of special engineered equipment, then in turn also our procurement activities, QA/HSE and construction supervision and various other customer services and spare part activities are being substantiated and further developed (see previous Insides on our services and spare part activities). Combine this with the fact that group companies are able to combine individual expertise and experience to effectively execute greater numbers of larger and more complex projects to the standards our Clients have come to expect.

The result of this is that at present a large number of our designs are actually being built. Currently, the count is 13 jack-ups (for which we, for a number of units, supply the jacking systems, fixation systems and X-Y cantilever systems), 12 semi-submersibles, a MOPUstor system, a gang-way, a large compressor-skid, etc. Besides these contracts, a number of our clients are discussing new-builds based on our designs with yards, and we are discussing more “hardware” projects with clients, so the numbers are likely to increase in the coming months.

All in all a fair number of projects where our engineering efforts will result in a future addition to the world-wide fleet of offshore units. It once again shows our capabilities to design, engineer (and build) the most complex offshore constructions.

As mentioned, we do work on a substantial number of projects, of which we present just a few in this edition of Inside. It is without doubt a busy and productive period for GustoMSC as our growth and foreseen expansion in the coming year is testimony to, however, we look forward to working with you on your future projects, both for design and engineering as well as for any special (turnkey) equipment. Being busy for us is now very much considered “business as usual” for all those that dedicate their skills and experience to making GustoMSC the success that it is and will continue to be!



Wim Janse
Managing Director – Gusto B.V.





BASIC DESIGN FOR NG-2500X

ON MARCH 5TH GustoMSC SIGNED A CONTRACT WITH LAMPRELL DUBAI LCC FOR DELIVERY OF A BASIC DESIGN PACKAGE AND LICENSE FOR TWO NG-2500X SELF-PROPELLED JACK-UP VESSELS. THE CONTRACT INCLUDES OPTIONS ON THREE ADDITIONAL UNITS. THE JACK-UPS WILL BE BUILT AT LAMPRELL'S JEBEL ALI FACILITY FOR SEAJACKS INTERNATIONAL LTD. FIRST UNIT DELIVERY IS SCHEDULED FIRST QUARTER 2009 WITH THE SECOND UNIT FOLLOWING FOUR MONTHS LATER.

NG-2500X DESIGN

The NG-2500X is part of the GustoMSC 'NG-series' of multi-purpose jack-up vessels. The NG-2500X is designed to perform field-moves and jacking operations without tug assistance. The four legs and the possibility to preload diagonally allow for easy and fast installation. The current design is intended for well services, repair and maintenance, installation and decommissioning projects in the southern part of the North Sea in water depths up to 50 meters. The unit will be built in compliance with the MODU rules and regulations of ABS as a Self Elevating Unit and with UK, Danish and Dutch regulations.

The unit has main dimensions of:

Length hull	63 m
Breadth hull	36 m
Depth hull	6 m
Leg length	85 m (including spudcans)

The design consists of a rectangular hull with a bow-shaped forward end, four 85 meter truss legs with spudcans, four electric rack and pinion GustoMSC jacking systems and four azimuthing thrusters (two at front and two at back). The unit will be equipped with a DP-2 class positioning system for approach to Offshore Platforms. The four azimuthing thrusters will allow the unit to reach a speed of 8 knots.

The GustoMSC jacking system is a so-called floating jacking system that consists of six jacking

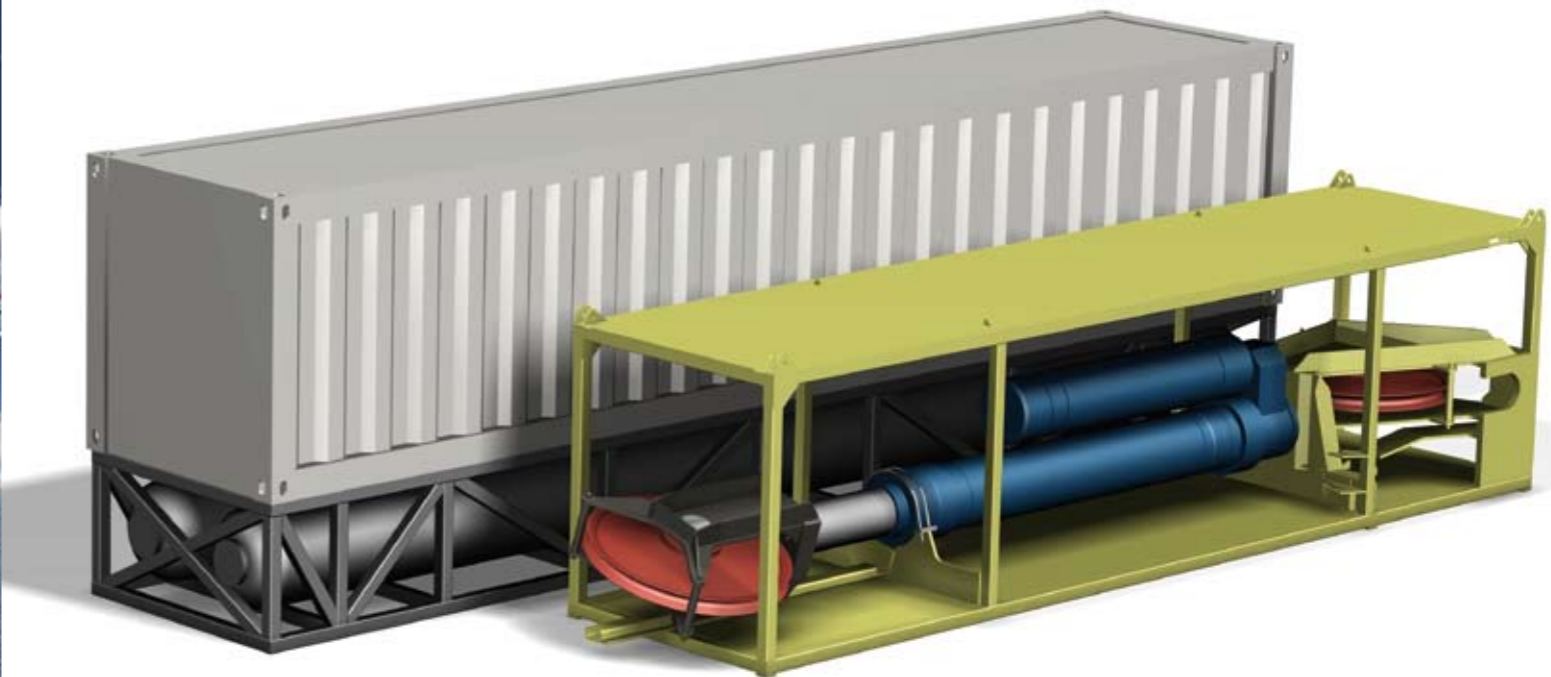
units assembled in a frame at each chord of the unit resulting in a total of 72 units. The electromotors of the rack and pinion system are driven by individual variable speed drives offering benefits such as stepless speed control between zero and maximum lifting speed. The jacking systems have a preload capacity of 2,700 tons per leg.

A large accommodation deckhouse is situated at the forward end of the unit providing accommodation for 90 persons. All cabins have daylight. Facilities have been designed for 120 persons to handle possible increase of accommodation at later date. The facilities include changing rooms, galley, mess-room, offices, hospital and recreational areas. On the fourth level of the deckhouse all marine, jacking and emergency control-systems have been concentrated. The top level provides helicopter reception and departure services. A cantilevered heli-deck for reception of a S92 helicopter is at the forward end of the unit.

Aft of the deckhouse a large working deck is provided, total free deck space is some 900 square meters. The main pedestal crane has a capacity of 300 tons at 16 m and a 45 m boom, it is located on the port side aft. The 50 ton auxiliary crane is situated on the starboard side between the legs.

Safety equipment is provided according to SOLAS and the IMO MODU Code. Lifeboats with a capacity of 90 persons are arranged on both port and starboard.

Containerized modular active heave compensator including power pack and vessel rack



SAIPEM S3000 HEAVE COMPENSATOR

HALFWAY 2006 A CONSORTIUM OF GustoMSC AND BOSCH REXROTH BV WAS AWARDED THE ORDER TO MAKE TURNKEY DELIVERY OF AN ACTIVE HEAVE COMPENSATOR TO CLIENT SAIPEM. THIS SOPHISTICATED SYSTEM WILL BE INSTALLED ONBOARD THE SAIPEM S3000 AND WILL SERVE TO OPTIMIZE CONTROL IN LOWERING AND INSTALLING STRUCTURES OFFSHORE.

ACTIVE HEAVE COMPENSATION

The heave compensator will be located on the vessel deck and be used in combination with a deck winch. The wire will be reeved from the winch over the AHC sheaves to the dedicated sheave over the vessel side. A motion reference unit, forming part of the AHC system, will detect vessel motion where the wire leaves the vessel, this being the motion to be compensated.

The motion signal will be interpreted by the control system, which will then activate the cylinder such that it pays out wire as the vessel rises and hauls in wire as the vessel falls. So will the lift point remain steady with respect to the fixed world.

The active heave compensator will mean the prevention of such problems as dynamic load amplification during lowering, uncontrolled situations as the load arrives at the bottom and needs exact positioning on the sea-bed, and cumbersome ROV assistance operations on a moving load.

PROJECT BACKGROUND

Most essential characteristics of the heave compensator built by GustoMSC and Bosch Rexroth are the capacity of 700 ton and a velocity specifically studied for the West African environment.

The motion to be compensated equals approximately +/- 2 meter with a maximum operating depth of 3,000 m.

The GustoMSC scope of supply includes the design and fabrication of the heave compensator skid, air vessel racks and rope sheaves. Engineering related to the GustoMSC work is complete and the resulting structures are presently being built. After testing of the system, the AHC will be placed onboard the Saipem vessel.

PREVIOUS EXPERIENCE

The system supplied to Saipem has synergies with a modular active heave compensation system supplied in 2003 to SBM for installation on the Normand Progress. This system has been successfully used for the deployment of the suction anchors and subsea manifolds. Nowadays the modular system is installed on the Normand Installer and has seen subsequent use for the offline installation of subsea xmastrees. The modular system has enabled improved uptime for the vessel.



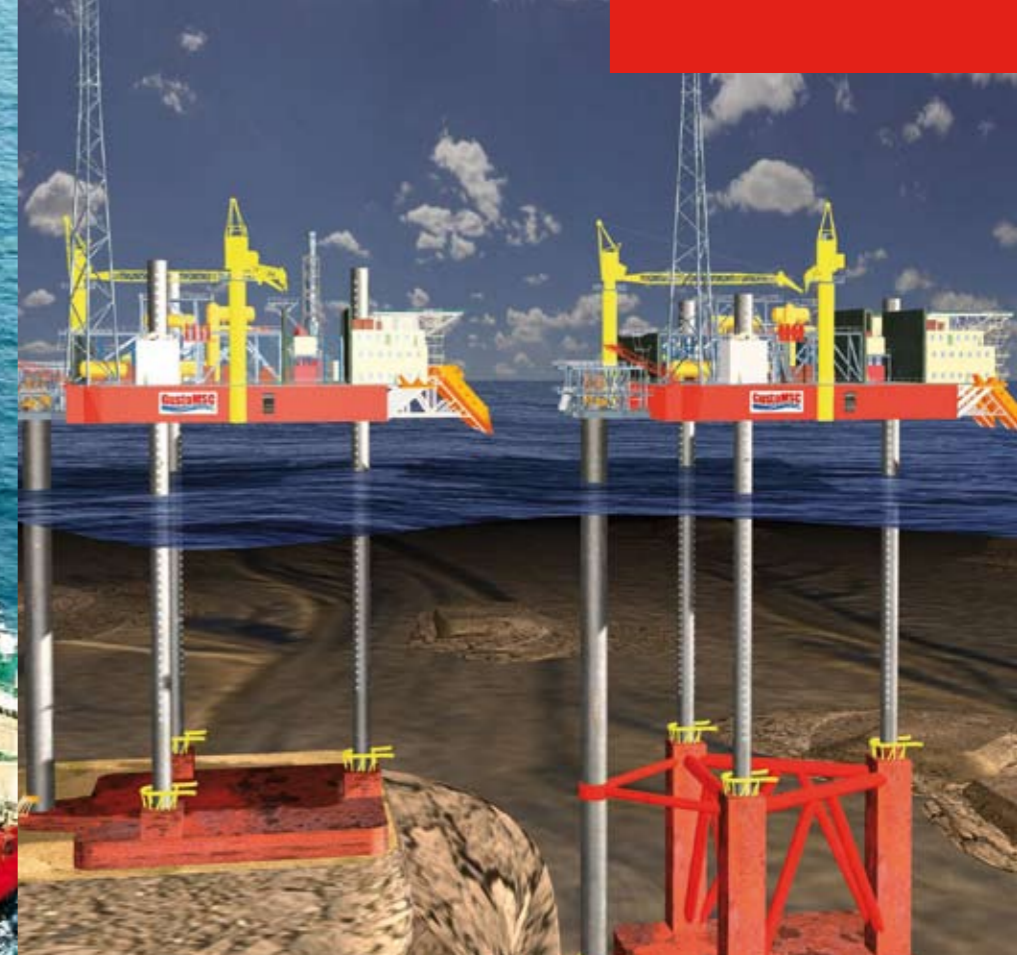
by Paul Groote Woortmann



by Jelle van Dam



Principle of the system



MOBILE OFFSHORE PRODUCTION UNITS JACK-UP TYPE

INTRODUCTION

GustoMSC HAS BEEN ACTIVE IN THE FIELD OF MOBILE OFFSHORE UNITS, MAINLY FOR THE OFFSHORE OIL AND GAS INDUSTRY, SINCE 1960.

FOR THE PRODUCTION MARKET, GustoMSC HAS DEVELOPED CONCEPTS FOR SELF-INSTALLING AND RE-USABLE PRODUCTION JACK-UPS OR MOPUS, ALL BASED ON FIELD-PROVEN DESIGNS. THE CONCEPTS USE THE TRIED AND TESTED JACK-UP AND TOPSIDES DESIGN TECHNOLOGIES AVAILABLE WITHIN GustoMSC.

THE MARKET – MARGINAL FIELDS

For many years, but especially in more recent years, mobile production units have proven to be capable of providing flexible and cost effective solutions for the development of oil and gas fields around the world.

In more shallow waters, converted older jack-ups have been used to provide fast track and cost-effective mobile production units (MOPUs).

The cost effectiveness of these solutions was partly the result of the low cost for an existing aging jack-up drilling unit, but the main economic advantage was created through its potential for fast track development, financial and operational leasing and the fact that it could be installed and removed without the need for expensive installation vessels.

More recently access to low-cost drilling jack-ups has diminished, especially for units suitable for medium and harsh environments.

The success of floating or seabed supported but still essentially mobile solutions for field development has led to newbuild MOPUs specifically designed for the production function using jack-up technology proven in jack-ups for the drilling industry.

More importantly, the development of marginal fields becomes economically and technically feasible with this technology.

Moreover oil and/or gas wells requiring regular

maintenance and intervention benefit from the possibility to have dry tree completions worked over without the requirement to mobilize a jack-up or semi-submersible drilling unit.

THE DESIGN CONCEPTS

The MOPUs developed by GustoMSC provide a solution for short life oil and gas fields, with or without direct access to pipeline infrastructure, in water depths and environments not suitable for an FPSO. The MOPU design concepts range from units directly supported on the seabed to units supported on a steel mat or steel storage tank (which are supported directly on the sea bed), with three or four tubular legs, firmly connected to the mat or storage tank. The barge type platform deck can be jacked along the legs by the associated jacking systems.

Various MOPU design concepts have been developed, each suited to address a particular field development scenario.

A number of GustoMSC designed MOPU concepts have meanwhile been realized and deployed in an actual field development. Examples are the MOPUstor on the SIRI field offshore Denmark and MOPU Saparmyrat Turkmenbashi offshore Turkmenistan in the Caspian Sea. Most recently GustoMSC was contracted to design the MOPUstor for the Yme field offshore Norway.

MOPUstor ON SIRI

The MOPUstor provides a solution for marginal field development of an oil field which has no direct access to a pipeline infrastructure. The SIRI platform consists of a steel storage tank supported directly on the sea bed, and a barge type platform supported by three tubular legs, that can be jacked along the legs by its own jacking systems. The legs are firmly connected to the storage tank.

The storage tank is a steel plated structure constructed much like a section of an oil tanker. The oil is stored in the tank using a water displacement system such that the tank is effectively pressureless.

Oil is exported through an offloading buoy and shuttle tanker system.

A large flat deck is available to install the production equipment and accommodation.

The integrated well caisson contains slots for twelve wells and all risers and J-tubes.

All piping is protected by the caisson.

The jacking system is the GustoMSC hydraulic cylinder type using a pin/hole system. This is a field proven system, currently used on more than a dozen jack-ups; it provides the capability to raise the platform out of the water to the operational air gap, and lock the platform to the hull during the lifetime of the field. Furthermore it provides the capability to remobilize, lower the platform to the water and raise the storage tank, ready to move to the next location.

The first MOPUstor was built for Statoil and is currently operating for DONG on the Danish shelf in the North Sea.

PARTICULARS SIRI

Water depth	65 m
Deck size	57 x 50 x 6.7 m
Deck weight at installation	9,300 t
Leg diameter	3.5 m
Twelve slot well caisson dia.	5.25 m
Net storage capacity	50,000 m ³ (300,000 boe)

MOPUstor ON YME

Based on the success of the MOPUstor on SIRI, a contract has recently been awarded to design and build a MOPUstor for the re-development of the Yme field offshore Norway. Talisman Energy Norge AS is the operator and will lease the unit from SBM.

The installation is scheduled for 2008 and the unit will be installed and operated in a water depth of 92 meters. Oil will be exported through a subsea tanker loading system.

MOPU SAPARMYRAT TURKMENBASHI

The MOPU is a cruciform shaped jack-up, assembled from 2 barges, with 3 circular legs and GustoMSC jacking systems which have a holding capacity of 3,000 t each.

The MOPU supports a single surface tree at the aft end. Processing facilities consist of HP & LP separators, chemical injection, crude oil heaters, electrostatic treater and an HP/LP flare. As there are no gas export facilities, all unused produced gas is flared.

Power is generated by two main engines (2 x 1,000 kW), dual fuel, to take maximum advantage of the produced gas.

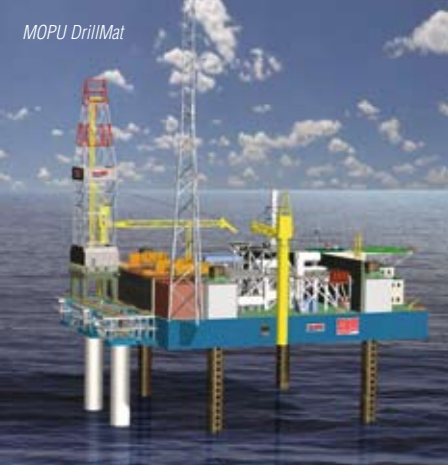
The MOPU is owned and operated by SBM and leased to Petronas Carigali (Turkmenistan) Sdn. Bhd.

PARTICULARS MOPU SAPARMYRAT TURKMENBASHI

Water depth	54 m
Dimensions (L x W)	100 m x 60 m
Air gap	14 m
Oil production	15,000 bopd
Produced water treatment	4,000 bpd
Produced gas	36 MMscfd
Accommodation capacity	20 persons
Helideck	Sikorsky 76



by Han Tiebout



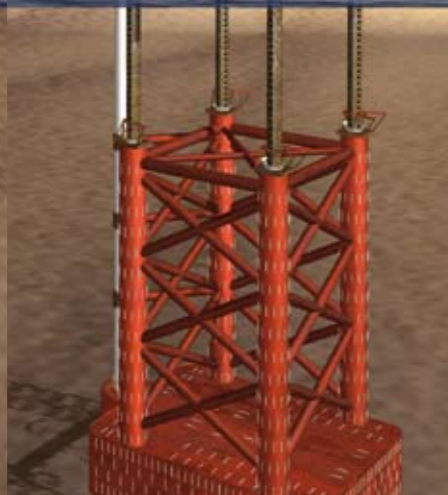
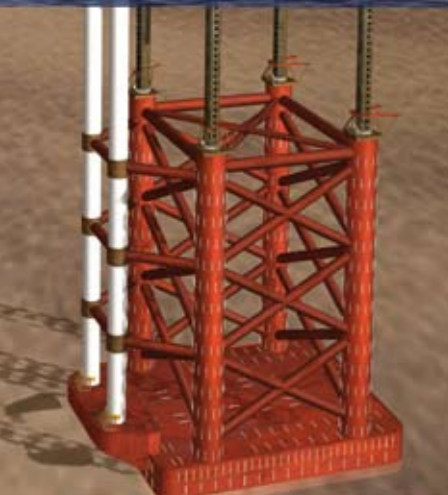
MOPU DrillMat



MOPU DrillStor



Dry-lay of storage tank



Installation of storage tank



Pre-drilling



Drilling and Producing

MOPU 3000

The MOPU 3000 has been developed to operate in medium and harsh environments. It is particularly suitable for marginal field developments where a number of wells produce through subsea tiebacks to a central processing hub. The MOPU functions as the latter and has all topsides installed to facilitate the processing of produced and incoming well fluids. The export of oil and gas is effected either to an FSO or through a pipeline to shore.

The MOPU is completely built and commissioned at the inshore yard location prior to tow-out to the field. Fast installation is accomplished through the integrated 4-legged self elevating platform system.

The leg footing system is versatile in that it can accommodate a range of soil conditions in the field. The tieback flowlines and umbilicals connecting to the subsea wells are inherently safe, being protected in a side-mounted protective caisson. At the end of field life the unit can be redeployed to another field location using its own jacking systems.

PARTICULARS MOPU 3000

Water depth range	20 – 60 m
Deck size	Max. 50 x 60 m
Deck weight limit	10,000 t
Leg diameter	3.5 m
Max. gas production capacity	8.5 Mm ³ /d
Max. oil production capacity	40,000 bopd

MOPUmat

The MOPUmat has been developed for areas which require marginal field development in a range of water depths or where soft soil conditions prohibit the use of the traditional spudcan footings. The MOPUmat is of a unitized design. In soft soil conditions the mat provides ample support for the total jack-up weight, including the wells which are completed with dry trees through the well caisson. The system also allows for the subsea tieback of satellite wells.

The platform wells are drilled and completed using a cantilever jack-up drilling rig. This can be started once the substructure mat is installed, prior to the installation of the MOPU production deck. With the production deck in place, drilling of additional wells is feasible while producing from the pre-drilled wells. Once in production the MOPUmat is self supporting, allowing the drilling jack-up to leave the field. Workover of platform wells can be accomplished using a mobile workover mast.

A work deck and lay-down area is provided for the use of 3rd party well service equipment. Wells with ESP's, which require periodical retrieval and re-installation, benefit from this feature.

The low substructure mat enables field developments in harsh environment water depths up to 65 m or in medium environments up to 75 m. The high substructure mat expands the water depth range to 100 m or 110 m respectively. Two substructure frames allow for staggered field drilling and production operations using only one MOPU production deck. Using the combination of low and high substructure mats, field development in a water depth range of 20 – 100 m becomes feasible.

Oil and/or gas export is to a FSO or pipe line. Optionally a seabed oil storage tank can be provided.

PARTICULARS MOPUmat

Water depth range	20 – 100 m
Deck size	Max. 50 x 60 m
Deck weight limit	11,000 t
Leg diameter	3.5 m
Max. gas production capacity	8.5 Mm ³ /d
Max. oil production capacity	50,000 bopd

MOPU DrillMat

The MOPU DrillMat is particularly suited for field developments where the cost and/or availability of a MODU drilling unit is prohibitive. The unit is a fully integrated, stand-alone drilling and production platform. As with all other MOPU concepts, it is self-installing and self-relocating. The Drilling Equipment Set enables full drilling and well completion activities. With the DES permanently installed on the unit, future workover and infill drilling of wells is possible without mobilizing a third party MODU or workover mast. This becomes especially advantageous for wells with ESP's which require periodic retrieval and re-installation. Two well caissons allow for a complement of 20-30 wells, either with dry trees and/or through subsea tieback wells.

The export of oil and gas is achieved to either an FSO or through a pipeline to shore.

PARTICULARS MOPU DrillMat

Water depth range	50 - 150 m
Deck size	Max. 60 x 80 m
Deck weight limit	15,000 t
Leg diameter	3.5 m
Max. gas production capacity	10 Mm ³ /d
Max. oil production capacity	60,000 bopd

MOPU DrillStor

The MOPU DrillStor is a variation on the MOPU DrillMat concept in that it offers oil storage and offloading capabilities. This makes the unit suitable for field developments that have no direct access to a pipeline infrastructure. The unit is a fully integrated, stand-alone drilling, production and storage platform. As with all other MOPU concepts, it is self-installing and self-relocating. All functionality is the same as found in the MOPU DrillMat concept; however, the oil in the subsea tank is exported through a shuttle tanker and seabed tanker loading system.

PARTICULARS MOPU DrillStor

Water depth range	50 - 150 m
Deck size	Max. 60 x 80 m
Deck weight limit	15,000 t
Leg diameter	3.5 m
Max. gas production capacity	10 Mm ³ /d
Max. oil production capacity	60,000 bopd
Oil storage capacity	Up to 600,000 boe

MOPU JACKING SYSTEMS

GustoMSC's experience with the design, construction and operation of hydraulic jacking systems kicked off in 1960 with the SeaShell jack-up.

Since then several dozen self-elevating platforms and jack-ups have been equipped with such systems. The latest generation system is patented and was developed with an emphasis on performance, reliability and low cost. This is found in the combination of a smooth tubular leg with a hydraulic positive engagement jacking system to suit a range of medium to harsh environment jack-up platforms. The tubular legs are guided in large circular shaped leg guides which are spaced well apart. The legs have no internal or external stiffening. Three series of holes are provided for engagement with the pins of the jacking system.

The system is totally encapsulated in a jack-house to provide environmental protection. The upper part of the jack-house also contains the upper leg guide. Once the production deck is at elevated height the system is mechanically locked in position and the hydraulic system is de-activated. Both the SIRI MOPUstor and the MOPU Saparmyrat Turkmenbashi are equipped with these jacking systems.





CONVERSION OF THE CAESAR - REINFORCEMENT OF HELIX ESG PIPELAY CAPABILITIES

IN FEBRUARY 2006 GustoMSC WAS APPROACHED BY HELIX ESG, VIA THEIR NEW ROTTERDAM OFFICE, TO OFFER ASSISTANCE FOR THE DESIGN AND ENGINEERING OF A VESSEL CONVERSION.

HELIX ESG (AT THAT POINT IN TIME STILL NAMED CALDIVE INC.) HAD ACQUIRED A CABLE LAY VESSEL, BUILT IN 2002 BY HYUNDAI MIPO DOCKYARD UNDER THE NAME "BARON". THE CLIENT'S PROJECT TEAM HAD DRAFTED A CONVERSION ARRANGEMENT FOR THE VESSEL TO BECOME A MODERN FULL DP DEEPWATER PIPELAY VESSEL.

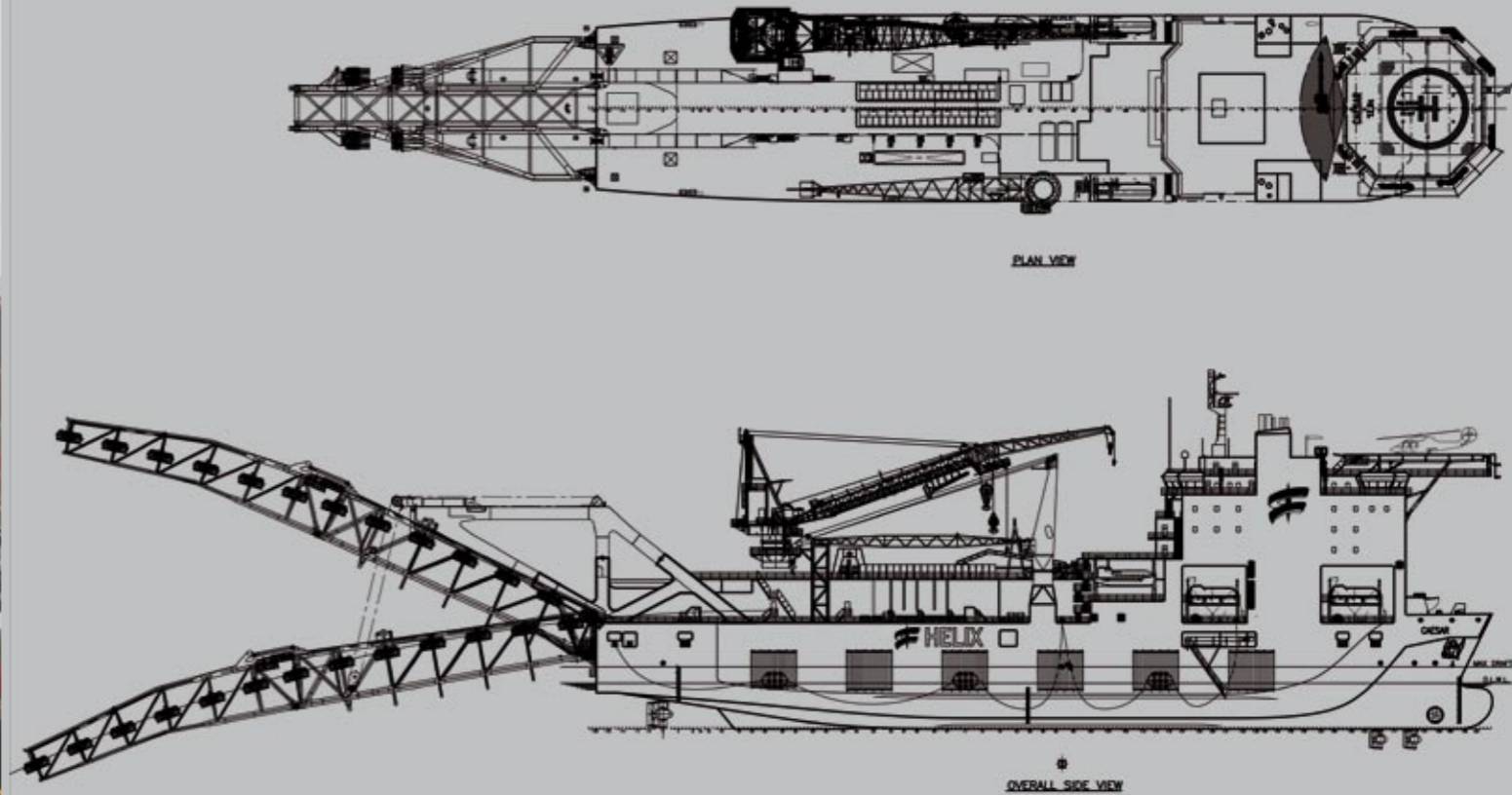


by Wim de Boom

After discussing and fine-tuning conceptual issues with the Client, GustoMSC started Basic Design in March 2006. A design package suitable for tendering the conversion with shipyards was delivered in July 2006, after which the bulk of basic design and engineering work was finalized in October 2006.

The scope of the conversion is comprehensive. The 145 m long vessel will be widened by sponsons to a total of 30 m, in order to increase its deadweight capacity. The cable tanks inside the hull will be removed to create an open hold for four stacks of pipe joints. The pipes will be taken onboard by a pipe transfer crane at SB and loaded through deck-openings into the hold, where they will be stored. Overhead cranes and a conveyor at the side of the hold will continuously feed a pipe elevator, which will supply the pipe joints to the covered pipe factory at the production deck, the former vessel's top deck. The vessel will get a central firing line with nine stations, before the pipe is run onto the stinger.

The two-section, hydraulically adjustable 90 m long stinger, suspended from a stinger handling frame protruding from the stern of the vessel (designed by others), will enable pipe-laying in deep water.



A new aft section will be inserted to prepare the aft ship of the vessel for receipt of the stinger hinges and stinger hang-off frame.

The top deck and cable deck, which after conversion will become production deck and winch deck, will be reinforced to carry three 135 ton tensioners capable of handling 42" OD pipe (production deck) and a 450 ton capstan A&R winch with two driven spooling drums for wire storage of two different diameters (winch deck).

The existing accommodation on the vessel will be removed and replaced by a new accommodation block for 220 persons, equipped with a helideck on top.

The accommodation block will be installed elevated above the production deck, so that the pipe factory and the forward part of the firing line can be accommodated underneath.

The original "Baron" was already a full DP vessel. The thruster arrangement will be retained for the vessel's new role as deepwater pipelay vessel. The vessel conversion design provides for future addition of additional power on the forward winch deck.

At PS, aft, a 300 ton construction crane with a sliding hang-off table over the side, will be installed to support construction work. A 450 ton A-frame over the hang-off table will provide additional hoisting capacity. The A-frame will make use of the A&R wire rope, which will be re-routed for that purpose.

The full Basic Design as conducted by GustoMSC was reviewed by Lloyd's Register in order to obtain LR Classification as a pipelay ship and to ensure compliance with NMD.

The work, which benefited from GustoMSC's extensive track record in pipelay vessel design, was executed in close cooperation with the Client's representatives in order to accommodate the operational preferences of Helix as far as practicably possible. In the same spirit of cooperation, Client and GustoMSC worked with the stinger and stinger hang-off frame designer to manage the extensive interface between hull and stinger.

From the fourth quarter of 2006 the Basic Design package was further detailed by Helix detailed design contractor, in preparation of yard construction.

On 9 March 2007 the "CAESAR" arrived in the Nantong COSCO yard in China to undergo the conversion.



ALLSEAS — AUDACIA BASIC ENGINEERING

AUDACIA TO BECOME PIPELAYER

THE YEAR 2006 AND EARLY 2007 SAW GustoMSC WORKING ON DESIGN WORK FOR THE CONVERSION OF A BULK CARRIER INTO ALLSEAS' NEW DYNAMICALLY POSITIONED PIPELAY VESSEL 'AUDACIA'. THIS BASIC WORK IS FOCUSING ON THE STRUCTURAL, MECHANICAL AND MARINE SYSTEMS ENGINEERING OF THE CONVERSION. AT AN EARLIER DATE, GustoMSC HAS BEEN INVOLVED IN THE CONCEPTUAL DESIGN OF THE VESSEL.

The vessel conversion is ongoing at the Keppel Verolme yard. The 'Audacia' will retain the original dimensions of length 225 meters and beam 32 meters, and will be able to handle the installation of pipelines to a diameter of 56 inches, and is intended for operation in all water depths. Owner Allseas intends to put the 'Audacia' into service in the course of 2007.

GustoMSC's ENGINEERING WORK

GustoMSC's concept and basic design work scope of work included:

- Naval engineering such as vessel arrangement and motion analysis work;
- Structural engineering related to the bow ramp modification using the finite element method, the new accommodation (for over 200 people), engine rooms and superstructure including the firing line shelter located on the centreline;
- Mechanical design: the stinger hinges, stinger handling frame including overhead trolley crane and stinger hoist system;
- New marine systems such as bilge system, sea water and fresh water cooling systems.

This article looks at the mechanical and structural design work related to the Stinger Handling Frame, an important part of this assignment.

STINGER HANDLING FRAME

A key component was the concept and basic design of the so-called stinger handling frame (SHF) that suspends the 100 meter stinger over the bow. With the stinger at the bow the aft ship is left intact which maintains the old bulk carrier transit speed.

The stinger handling frame is a structure integrated in the vessel supporting the stinger with a wire system. The frame consists of four compression members (2 legs and 2 struts), four tension members (2 tie down members and 2 horizontal girders) and two transverse girders. Overall dimensions of the SHF above main deck are approx 57 meters long, 13 meters wide, and 27 meters high. The frame is integrated in the vessel bow structure with inclined firing line ramp and integrated in the new firing line shelter.

Two crane tracks supporting an overhead trolley are on the inner side of the horizontal girders. Winches are located on foundations connected to the outer sides of both legs. Two so-called flippers were designed to counteract possible uplift-events and prevent slack-wire conditions.

ENGINEERING

Engineering work on the SHF included concept design, where different concepts were compared and the overall layout selected. During basic design, structural analysis of the stinger handling frame was carried out with the help of the finite element method in accordance with applicable Lloyds Register regulations as part of the overall FE model of the vessel. The analyses included design of the frame itself and overall analysis of the complete system of frame and vessel structure. The latter was based on full dynamic loads from wave motion analysis including stinger and pipelay loads.

CONSTRUCTION AND INSTALLATION

The stinger handling frame was constructed in the second half of 2006 and installed onboard year-end. The pictures shown were taken early March 2007 and give an impression of dimensions.

GustoMSC supported Allseas with engineering services from start of concept design to the end of basic design for the 'Audacia'. GustoMSC is proud to have been involved in the creation of yet another pipelay vessel to serve the offshore oil and gas sector over the coming energy-thirsty years.



by Jelle van Dam]

OFFSHORE ASIA 2007

THE SBM OFFSHORE GROUP, OF WHICH GustoMSC IS A MEMBER, PARTICIPATED WITH A BOOTH AT THE 2007 EDITION OF OFFSHORE ASIA, WHICH WAS HELD IN KUALA LUMPUR, MALAYSIA, FROM JANUARY 16 – 18.

THE CONFERENCE THEME “MANAGING E&P GROWTH WITH LIMITED RESOURCES” EXAMINED THE LATEST ADVANCES IN DEEPWATER EXPLORATION AND PRODUCTION THAT APPLY ESPECIALLY TO THIS EVER-EXPANDING, DYNAMIC REGION.



EXHIBITIONS 2007



by Han Tiebout

It was a unique opportunity to introduce our new sister company SBM Malaysia Sdn Bhd to the local market. HR Manager Syed Ishad attracted a number of young new-graduate engineers.

On display were the nicely detailed scale models of the FPSO Kikeh and the MOPU Saparmyrat Turkmenbashi. Both received a lot of attention since they offer mobile production solutions for both shallow and deepwater fields. GustoMSC played a major role in both projects.

Mr. Jean-Loup Isnard, Engineering Manager for SBM Malaysia, presented a paper entitled: 'Deepwater Full Field Development Contractors – How they can add value to projects'.

SPE/IADC 2007 DRILLING CONFERENCE & EXHIBITION

This well-organised event was held in Amsterdam from 20 – 22 February and had a record attendance with over 2,000 delegates. It was the first time that GustoMSC has had a booth in Amsterdam, and we had an ideal location (next to the coffee bar).

Main focus of course is the conference which includes 18 technical sessions and three plenary sessions. During the latter the audience is invited to answer some fundamental questions with the aid of voting pads. This enables an interaction with the forum speakers and leads to a lively discussion. The technical sessions were also well attended. Since all seats had been taken there were even people queuing outside the conference room during the deepwater drilling session.

Our own Mr. Govert Zijdeveld was co-author on a paper that was presented in the Rig Technology session by Mr. Dominique Dupuis of Pride International; it was entitled 'Deepwater Drill Ship Operations and Upgrade'.

On display in our booth was the scale model of the CJ50-X100MC drilling jack-up. Four of those real size units are currently under construction at KeppelFels in Singapore for Maersk Contractors. The model serves to explain the advantages of our patented X-Y cantilever system and the wrap-around accommodation block.

The next SPE/IADC Drilling Conference & Exhibition will be held from 4 – 6 March 2008 in the U.S.A.

COSL SIGNS CONTRACT WITH GustoMSC FOR NEW JACK-UPS

On 13 February 2007 a contract for the delivery of the basic design package of the GustoMSC CJ46-X100-D drilling jack-up was signed between Marine Structure Consultants (MSC) B.V. and China Oilfield Services Limited (COSL) in Shenzhen, China. At the same time, a letter of intent was signed for delivery of the GustoMSC fixation system and X-Y cantilever skidding system. The order involves two jack-ups, with options for a further two. GustoMSC will also provide assistance to COSL during the yard tendering process.



by Remco van der List

RECENT PROJECTS

EXPLORATION MARKET

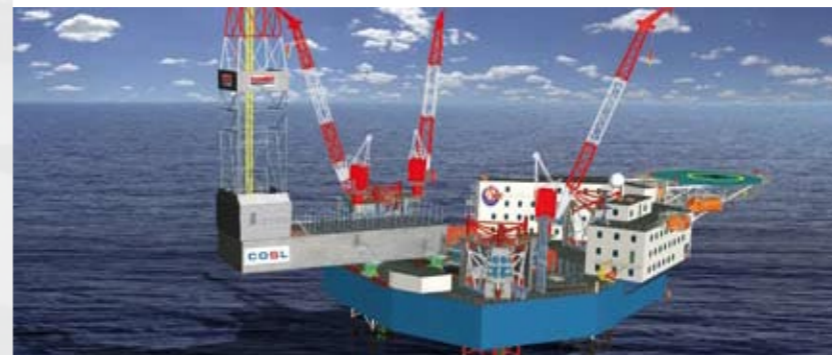
- Refurbishment of two H&P platform drilling rigs for Anadarko / Norske Hydro for the Chinook field development offshore Brazil.
- New-build pipe barn for Parker Drilling for BP's Liberty field development off the North Slope of Alaska.
- Basic design and fixation and XY-skidding equipment for two CJ46-X100 D cantilever drilling jack-ups, for COSL.

CONSTRUCTION MARKET

- Active heave compensation system for ERS (Saipem).
- Basic design and jacking systems for two multi-purpose self-propelled jack-ups NG2500X, to be built by Lamprell for SeaJacks.
- Order for Saudi Aramco construction jack-up at Jurong Shipyard.

PRODUCTION MARKET

- FEED for production jack-up for undisclosed Client.
- Design and jacking systems for YME MOPUstor, for SBM/Talisman.



IMPORTANT DATES

30 April – 3 May 2007
OTC, Houston

13 – 14 June 2007
IADC World Drilling, Paris

4 – 7 September 2007
Offshore Europe Oil & Gas Conference & Exhibition, Aberdeen

11 – 12 September 2007
The 11th Jack-up Platform Conference - Design, Construction & Operation, London

10 – 12 October 2007
Deep Offshore Technology, International Conference & Exhibition, Stavanger

6 – 8 November 2007
Deepwater Operations, Conference & Exhibition, Galveston

5 – 7 December 2007
Offshore Wind International Conference & Exhibition, Copenhagen

COLOFON

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