



SPRING 2006 – NEWSLETTER

Update and Latest News Aberdeen Office

Inside this issue:

Aberdeen Office
Riser Hang-off Sheave
Pipe Spool Lifting
Deep Blue Analysis
Seafastening Design
Rolls Royce Lift Argv

Special points of interest:

- New Aberdeen Office
- Design and Fabrication of Riser Hang-off Sheave
- Spool Lift Analysis and verification by FEA

We are now well into 2006 and already it looks to be a busy year.

The issue of this newsletter has been delayed somewhat as we have been very busy in the background putting in place resources with a view to opening a new office in Aberdeen. Plans are at a stage now that we can officially announce that our **Aberdeen branch will open during April this year.**

This will be manned full time and managed by our new Branch Manager, **Mr Dan Whittaker.**

We have had much excellent feedback from our contacts in the city and

with this in mind, our Aberdeen Branch will serve our existing client base in Aberdeen and provide a direct, technical, point of contact in the city as well as making other potential clients aware of our capabilities and the services we offer.

We are committed to providing an excellent service to the offshore industry and feel this is the logical next step in demonstrating this.

In the meantime please direct all enquiries about this exciting development to our Glasgow office and we will issue a short flyer in

April/May with our new contact details in Aberdeen.

As always, we appreciate your feedback and if you have any queries or would like more information, please do not hesitate to contact us:

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Expansion at Glasgow

Following on from a busy year during 2005 MMC have expanded our technical base in Glasgow and now have 7 Engineers/Naval Architects working full time in Glasgow.

As well as this commitment to increasing our

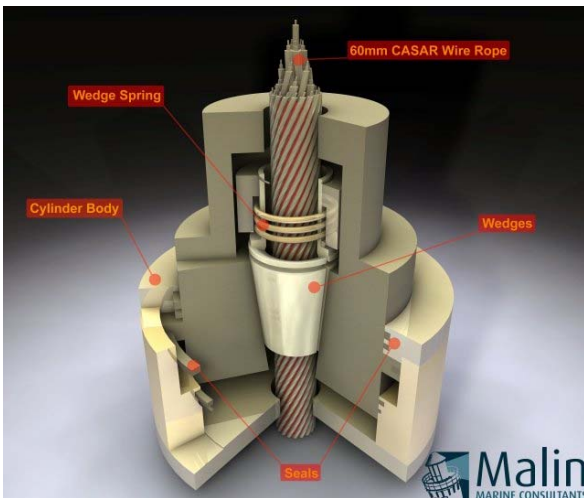
resources in Glasgow we are funding the expansion in Aberdeen thereby ensuring that clients, both new and existing, continue to enjoy the high level of professionalism and service they have come to expect from us.

Subsea7- Riser Hang-off Sheave and Strand Jack

Malin Marine were contracted by Subsea7 to deliver a custom solution for the non-destructive clamping of a 60mm DIA wire rope under a 150Te hang-off load. During the riser pull-in phase of their project, a 150Te winch was used to draw in each riser attached to approx. 120m of 60mm DIA CASAR powerplast wire rope. If, during an emergency, the FPSO were to go off-station and there was insufficient time to lower the wire back to the seabed, the wire was to be clamped at the turret and then cut free of the winch mounted to the fwd deck. Thereafter the vessel would be

free to weather vane. Once back on station the wire could then be re-spoiled to the winch and the pull in operation completed. Malin Marine worked closely with the rope manufacturer and the worlds leading supplier in strand clamping technology to come up with the first ever application of strand wedges in the holding of large diameter, multi core wire rope. This system was verified by load testing which was witnessed by both our client and MMC. A specialised sheave assembly was also required that would both support the bespoke

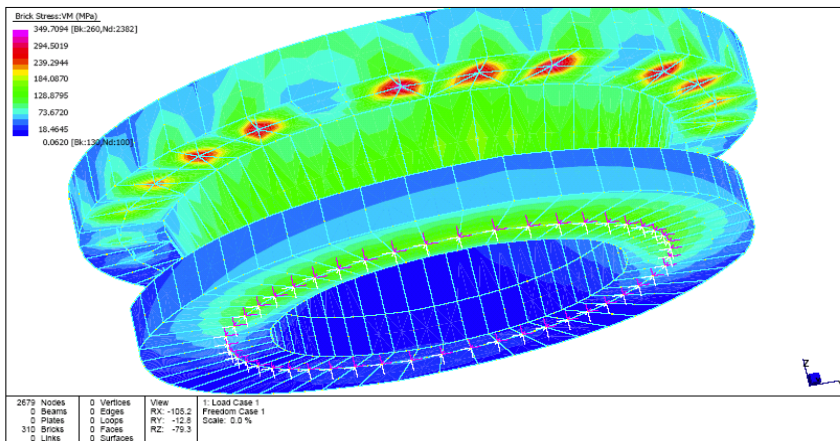
clamping device and re-direct the wire through 96° down the riser tubes. This fabrication was further complicated by limited headroom, which meant that it needed to be capable of being installed in two sections. The design and fabrication of this with verification by FEA and production of full fabrication drawings, appointing fabricator and site supervision was also managed and executed by Malin Marine.



Product Visualisation rendering by MMC at tender stage



Effect of system gripping on wire under 180Te test load



Simple FE Model created to assess bolt loads during hang off condition



Completed Structure

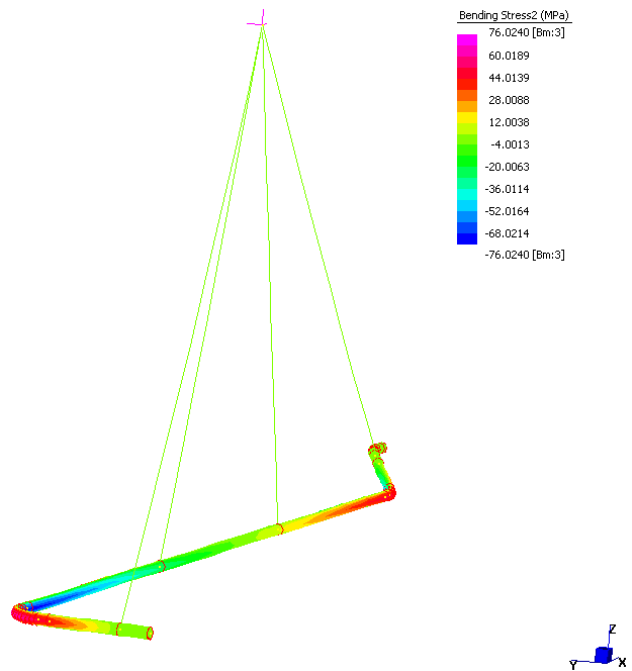
Stolt Offshore - Spool Lifting Analysis and Seafastening

Malin Marine Consultants were contracted by Stolt Offshore (now Acergy) to analyse and provide lifting arrangements for the lifting and installation of a number of subsea spools. In addition to this a seafastening package was required to secure a number of subsea covers and concrete blocks to the deck of the mobilisation vessel during transit to the field.

MMC took delivery of a complete work package and delivered all drawings and technical manuals on time and to specification.

The analysis for the lifting of the

spools was verified by non-linear FEA which gave the bending and axial stress in the spools during a dynamic lift and also served to verify the lift orientation and sling loads during the operation.



FEA of Pipe Spool During Lifting

Technip - Deep Blue Spectral Reconstruction

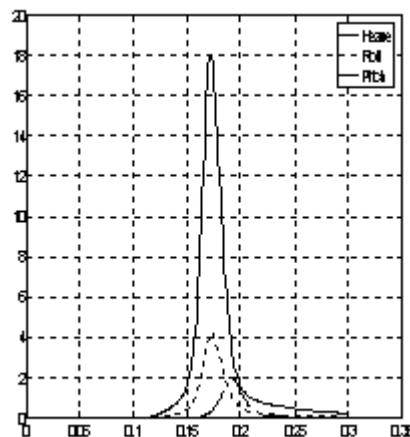
Malin Marine Consultants Ltd were tasked by Technip Offshore to carry out a spectral reconstruction for their vessel Deep Blue following deepwater pipelaying operations.

Our client had detailed motion records following an operation and required the corresponding wave spectrum which generated the recorded motions.

We have close ties with the local research community in Glasgow and drawing on these we were able to come up with a solution which met the clients end needs and turned the report round on time and within

budget.

The frequency domain results threw up interesting anomalies and we were able to isolate some unusual low frequency behaviour in the vessel which we identified as potentially the transverse movement of spool lengths across the deck as they were unwound from the storage reel. With this level of detail evident in the post processed results, it gave us great confidence in the analysis and the client was then able to proceed with further detailed post processing on the operation.



Sample Reconstructed Wave Spectra

Canyon Offshore - Seafastening Design and Site Supervision

Malin Marine were contracted by Canyon Offshore to carry out a number of seafastening studies on a vessel they had under charter.

Our services were employed over a period covering three visits to ports around the UK with support in areas such as deck strength calculations, seafastening design and fabrication procurement. Design covered winch

foundation design, eye plate and A-Frame modifications, bend shoe design and general securing of concrete mats.

All work was turned around over extremely tight deadlines with attendances arranged to suit



A-Frame Eyeplate



MMC Bend Shoe

Rolls Royce - Lifting Arrangement

Malin Marine Consultants were approached by Rolls-Royce to assist with emergency development of an acceptable lifting arrangement for 2 No. Type 45 Gas Turbine Enclosures being assembled at Renfrew.

Scope of work included:

- Assessment of problems with existing (sub-contractor designed) beam arrangement
- Development of an alternative lifting arrangement
- Sourcing and provision (hire) of lifting equipment.

- Supervision and assistance during assembly of lifting rig and trial lift.
- Attendance during installation of Enclosure into vessel hull unit at BAE Govan

Malin visited the site on Tuesday and had a working replacement engineered and assembled for a trial lift the following Saturday.



Set Down to temporary support blocks prior to road haulage



Lift Arrangement Using Modular Lifting Beams

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**NAVAL
ARCHITECTS
AND HEAVY
LIFT
SPECIALISTS**

Malin Marine Consultants comprise a core team of professional, multi-disciplinary engineers providing an extremely diverse and flexible set of specialised skills which in turn are built upon a wealth of practical experience in visiting and working with ships and their crew. It is this unique combination of a deep rooted, practical approach to our way of working combined with an openness to new technology and techniques which places us in a strong position to tackle the many unusual and diverse challenges which come our way.

At our core is a work philosophy of professionalism and excellent time management skills allowing us to quickly turn around a client's contract requirements wherever necessary.

Please feel free to contact us with any technical enquiry you may have and be assured of a prompt and professional response.

Next Issue...

In the next issue we hope to be able to report on a number of exciting projects presently underway including:

- Deep Blue Mooring Study
- Type 45 Superstructure Transportation
- Loadout Engineering for 1500 Te Patrol Vessel

In the meantime, if you want any further information on the projects identified in this newsletter or wish to discuss your specific project needs, please feel free to contact us on the address above.