



Marco Polo Rig

# Marco Polo JIP generates

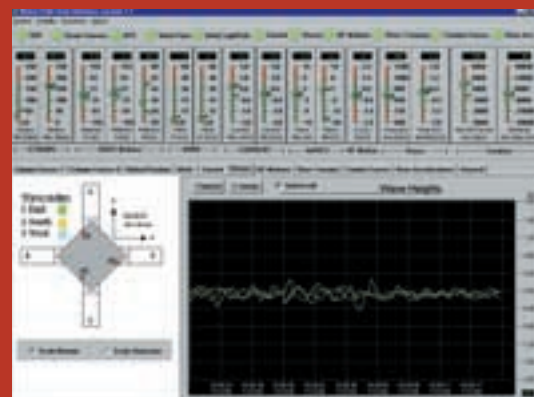
**As hurricanes take their toll, there is an increasing need for in-depth data. MARIN takes up the challenge.**

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With hurricane Ivan in 2004 and hurricanes Katrina and Rita in 2005, the Gulf of Mexico has suffered significant damage to its offshore structures. These experiences have shown that it is essential to have reliable high quality environmental and structural data and to have this data readily available to all stakeholders and technical experts.

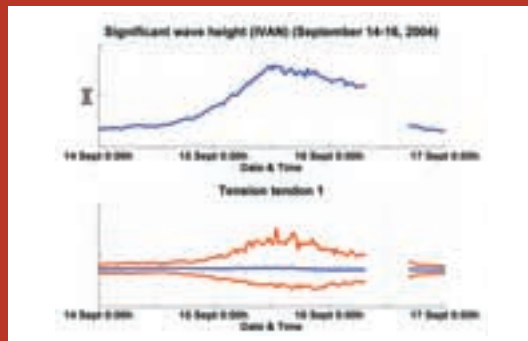
MARIN has initiated a Joint Industry Project (JIP) to measure and assess the environmental and structural loads on the Marco Polo TLP, located in the Gulf of Mexico. Furthermore, MARIN has partnered DataHorizon to provide all measured environmental and structural integrity data in real-time to its customers, to allow an assessment of what is happening with the platform during and after a hurricane – even when the platform is unmanned.

The Marco Polo TLP, operated by Anadarko Petroleum, is installed in the Gulf of Mexico, 180 miles south of New Orleans in 4,300 ft of water. In 2003, the owners GulfTerra and Cal Dive, (now Deepwater Gateway), awarded the instrumentation contract to MARIN Trials & Monitoring. The



Marco Polo GUI display.

instrumentation comprises tendon loads, riser loads, strains in the column-tendon supports, vibrations in the risers, high and low frequency motions of the platform, as well as waves, wind and currents. Since June 2004, the system has been in operation and in total, more than 170 signals are recorded and stored continuously for post-processing. These signals are also available on board of the TLP for quality control and decision support in real-time.



Hurricane Ivan.

### Unique opportunity

With the unique opportunity of having high quality full-scale data in the Gulf of Mexico a three-year JIP was initiated by MARIN. At present, eight different companies participate in the Marco Polo JIP: Amara Hess, Anadarko, BHPB, BP, Deepwater Gateway, Modec, MMS, and MARIN. The objective of the Marco Polo JIP is to derive the dynamic behaviour of TLPs in

providing valuable input to the participants of the JIP. The long-term statistics of all measured data is derived and presented in monthly reports, available to all of the participants. Selected events, such as hurricanes and loop current events, are considered for a more detailed short-term analysis report. Originally the data was stored on the platform for monthly post-processing but recent

# excellent hurricane data



operational and survival conditions and to verify design methods and numerical analysis. The measurements started in June 2004 and the JIP was formally started in January 2005, and will run until the end of 2007.

Over the last two years, the Marco Polo TLP has encountered three major hurricanes – Ivan, Katrina and Rita – without sustaining significant damage, even though the maximum recorded wave height during hurricane Rita was more than 28 m. The instrumentation on board the TLP has successfully recorded high quality data during all these events,

events led the platform operator to request real-time access to the data, which MARIN and DataHorizon worked together to provide. All data is now transmitted by DataHorizon to MARIN using a satellite link. Selected channels are presented by DataHorizon on a dedicated website, accessible by the platform operator and MARIN. Real-time access of all measured data has enhanced the confidence in and accessibility to the monitoring system. Based on this success, MARIN and DataHorizon decided to continue this partnership and combine their mutual expertise. This will provide the engineers' desk with full-scale environmental and structural integrity real-time data for the future.

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