



UNDERCURRENTS

Issue 4, January 2006

This, the 4th issue of our newsletter, has a decidedly Asian flavour, with details on ongoing projects in Azerbaijan, Kazakhstan and Russia. We also provide an update on our Yemen project, give some feedback from the Technical Awareness Seminar held in Cape Town in May of last year and look ahead to Oceanology 06. Don't forget to check our website for regular updates.

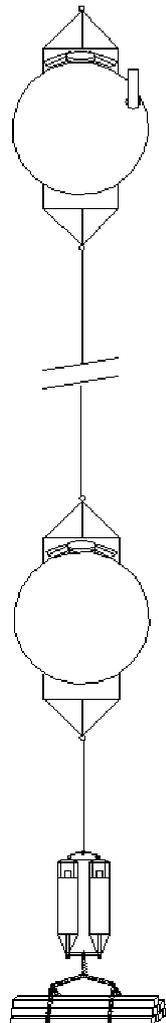
For more information on these articles or any other aspect of our business, please see our contact details at the base of each page. If you know of anyone else in your organisation who would like to receive our newsletter, please send an e-mail to info@metocean.co.za.

Caspian 1 – Long-term measurements in Azerbaijan

The Shah Deniz field off Baku in Azerbaijan was discovered in 1999. Three wells already drilled on this structure have confirmed the presence of potential recoverable reserves in excess of 400 bcm of gas.

BP, as the largest foreign investor in Azerbaijan, is operator of four oil and gas exploration and development contracts, including Shah Deniz.

MSI, in association with Muir Matheson of Aberdeen, is engaged in a 1 year contract to measure current profiles for BP in the field (see map below, courtesy of www.offshore-technology.com).



Although the mooring is in only 100m water depth and the entire water column could theoretically be profiled with a single instrument, previous experience has shown that biological activity can prevent the acoustic beams travelling to the surface. Therefore the mooring (schematic on left) is fitted with two upward-looking RD Instruments 300kHz ADCPs, one near the seabed and one at mid-water depth.

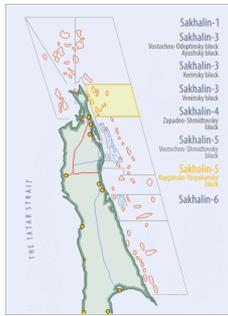
In addition to the ADCPs the mooring is fitted with an Argos locator beacon, designed to enable the mooring to be tracked should it surface accidentally (pictured below).



The mooring was originally deployed in February this year from the vessel Svetlomor-2 and thus far 3 service visits (scheduled every 3 months) have been successfully completed.

Return to Sakhalin

In the 3rd quarter of 2004 MSI provided real-time current measurements on the Transocean rig Sedco 600 at the Pela Lache well location in the Sakhalin V area off Russia (see map below, courtesy of Rosneft).



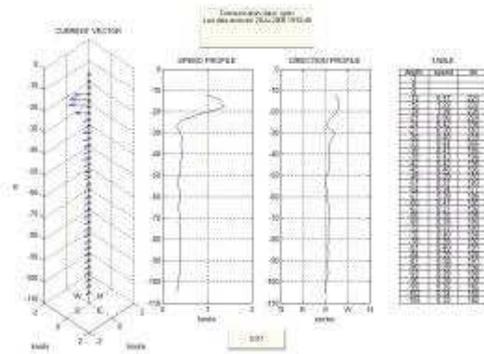
Due to the success of the previous measurement programme, MSI once again mobilised a real-time current measurement system, this time for the Udachnaya well, about 40km west of Pela Lache. The measurements were made for BP on behalf of Romona, using an RD Instruments 300kHz acoustic doppler current profiler (ADCP). In addition to the current measurements a Datawell 0.9m MkIII directional waverider was also installed near the rig to collect wave height, period and direction data during the drilling programme



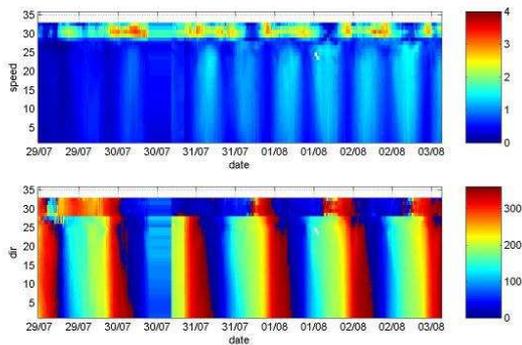
(pictured on right). All equipment was installed from the vessel MV Katun.



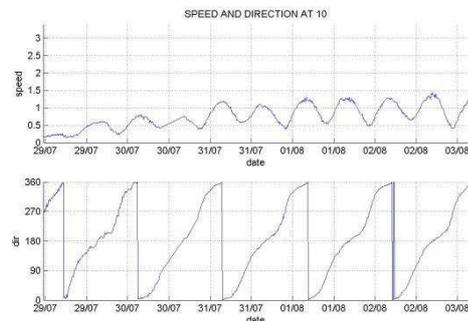
The data from the ADCP was transmitted in real-time via LinkQuest acoustic modem to the semi-submersible rig Sedco Transocean Legend (pictured left). MSI's Matlab-based real-time display software provided a range of data display products (examples below.). The measurement programme will continue during the winter with ice profiling and current measurement equipment recently having been deployed under the ice.



Profile of speed & direction



Time series contour



Time series for single depth

Feedback from TAS

The 2005 Technical Awareness Seminar was held in May last year, hosted by the Institute for Maritime Technology in Cape Town.

The event comprised a number of lectures from major international equipment suppliers, as well as afternoon equipment demonstrations in the South African naval dockyard.

MSI, as well as being part of the organising committee, was pleased to host representatives from Nortek, RBR Limited and Aerospace & Marine International (AMI), whose products and services our associate company Lwandle Technologies represents in South Africa.

Various meetings were also held during the course of the seminar – pictured on the left are Craig Matthysen (Lwandle Technologies), Marius Rossouw (Council for Scientific and Industrial Research), Sidney Bilski (MSI) and Ketil Horn (Nortek).

Pictured on the right is Dave Bennett from AMI presenting the latest developments on marine weather forecasting.



Update on Yemen

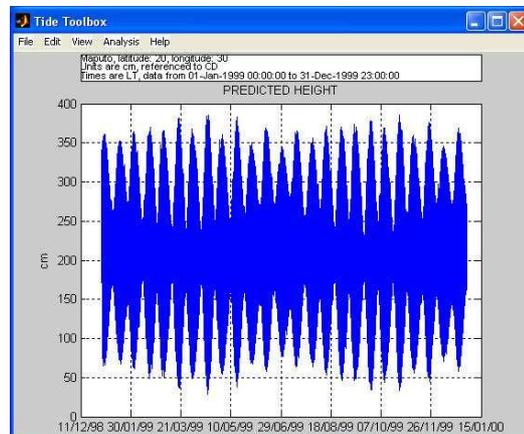
In the last issue of Undercurrents we reported on the service visit conducted on a current measurement mooring in Yemen. We are pleased to announce that this project, after 7 months, is now complete with 100% data return having been achieved.



Tide prediction software completed

In April 2005 we reported on a project involving tide prediction software for the Hydrographic and Navigation Agency for Mozambique (Inahina). We are pleased to announce that this package has been completed, and delivered and we have provided Inahina with training in its use.

The software offers a wide range of functions, including importing data from / exporting data to a number of formats, quality control, generating harmonic constituents and viewing predicted heights, residual heights and tide tables



The software can be customised to suit any particular requirement and feedback received so far has been very positive.

Looking forward



MSI is pleased to announce that we have already booked space, sharing with Muir Matheson of Aberdeen, at the Oceanology 2006 exhibition to be held in London in March.

Although MSI was represented at OI in 2004, this will be the 1st major international conference at which MSI will exhibit and reflects our commitment to providing services to a global market. More details on the conference and exhibition can be found at www.oi06.com.

Caspian 2 – Oceanographic measurements and project management in Kazakhstan

MSI is providing oceanographic and project management support for Muir Matheson in Atyrau, Kazakhstan, as part of a 3 year contract that they hold with Agip KCO. The contract includes the provision of weather forecasting, real-time data integration, display and archiving, conducting oceanographic programmes and maintaining a network of weather stations both onshore and offshore.



MSI have been providing personnel on a full time basis for office and fieldwork in Atyrau for over 12 months now and more recently also provides a dedicated project manager for the contract. Equipment used includes Nortek acoustic wave and current gauges (AWACs – see below), RD Instruments ADCPs, Valeport Midas current meters, Starmon temperature sensors and Campbell Scientific based weather stations.



The environment provides an interesting challenge as some of the oceanographic moorings have been deployed in as little as 1 metre of water. With a climate that results in the temperature ranging from +40°C in summer to -40°C in winter, this in itself provides a major challenge for both personnel and equipment.

As experienced recently, this can mean that offshore stations that are serviced in summer by vessel and are surrounded by 26°C water are serviced in winter by helicopters that land on the ice where the boats would have ordinarily tied up. It also significantly changes the amount of PPE that is required for the service visit!



In addition, MSI have recently prepared a contract specific training course for the local Muir Matheson and Agip KCO personnel, which includes a general introduction to oceanography of the Caspian (ocean properties, currents, waves, tides and meteorology), oceanographic and meteorological equipment and metocean data processing (quality control and data analysis). The course is planned to be conducted in the coming months.