

250/234, while Eni has work on OPL 244 and Devon Energy on OPL 256.

The *Deepwater Discovery*, available from mid-July, is likely to pick up one of these. Eni is likely to use the *Saipem 10,000* for its program, leaving the *Leiv Eirikson* as the first available ultra-deep unit and a candidate for outstanding work. The next available unit after that is the *Sedco Energy* from late-October. A number of operators could compete for the rig including Star Deepwater for its Agbami development program, Devon Energy Nigeria and Vanco Energy in the Ivory Coast.

Competition will also come from operators drilling in water depths between 3000ft and 5000ft. BP, CNR and Devon Energy have work off Angola, Repsol-YPF off the Canary Islands, Dana and Devon Energy potentially off Ghana, CNR off Côte D'Ivoire and Shell off Nigeria.

Deepwater rigs drilling on sublet dropped off dramatically in the last year. In March 2003, ten rigs were drilling on a sublet basis as operators unloaded excess rig time. This March only two units drilled on a sublet. Major reasons for this are the ending of the long-term contracts, and a modest rise in deepwater rig availability. Operators are now able to take the traditional route of chartering a rig directly from the owner rather than subletting it from another operator.

Independents are becoming more important as operators in deepwater. In March 2002, majors accounted for nearly half of all deepwater drilling. The figure has dropped to one-third today. During the same period, independents' share of the deepwater action climbed from less than 20% to more than 30%. In 2002, BP ran eight deepwater rigs and Total six. Now they have just three rigs each. Anadarko, Unocal, and W&T Offshore had no deepwater rigs in 2002, but now operate two apiece. The share of the state-owned companies in this period, almost all Petrobras, remained fairly constant.

However, majors continue to prefer the best rigs. They operate a disproportionately high number of the rigs constructed in the last building boom. While this is in part due to the water depths involved, the evidence is that they are willing to pay more than the independents.

### Future dayrates

We expect dayrates for jackups in the US Gulf to firm during the year and remain strong in the Middle East and Southeast Asia. Rates for intermediate floaters during the year will be poor throughout the world. Niche deepwater rig dayrates will be in the region of \$180,000 or more, while standard deepwater rates will range between \$80,000 and \$140,000. **CE**

Gavin Strachan, principal of ODS-Petrodata, is indebted to his colleagues for their contributions to this report.

## Learning on location

The evolution of oilfield training has run the gamut from standup classroom to videotapes and workbooks to computer-based and web-delivered training. In this article, **Peter Simon, René Malagón Alegría** and **Henry del Castillo** discuss a ground-breaking alternative now being employed in Venezuela.

**T**he Rig Tracer, developed by Chagent Systems, is an interactive, audio-visual, learning station designed to provide web-enabled tracking, security, and training to oilfield workers on location. These are ruggedized 'roughneck-resistant' units that use smart card technology combined with a learning station that incorporates a touch screen computer. Delivering this type of training on site lowers overall training cost and daily exposure to the training episodes improves retention and performance.

Rig Tracer learning stations deliver short, realistic and compelling video episodes to the field personnel right on the job site. These episodes are carefully produced full screen and motion videos that show realistic oilfield situations directly applicable to the work being performed by the field personnel. Individual video episodes are followed by a series of related questions to assess understanding. Workers experience a brief but powerful interactive lesson right on the job. Completed episodes are stored to the user's smart card, the Rig Tracer unit, and can be written to the web if the units are so connected. The smart cards contain all training records, licenses, certifications, and personal data for each user.

Among the benefits of the Rig Tracer system are that it stimulates safety discussions, delivers powerful and retentive safety lessons, reduces personnel incidents and improves personnel performance.

Chagent Systems recently deployed three Rig Tracer learning stations for Pride International Venezuela CA. Two units went to Maracaibo and the third to Barinas. Smart cards were prepared and issued to 170 field workers, as Pride International Venezuela became the first company in the world to adopt this system.

### Venezuelan pilot

Forty-three episodes were developed for Pride International Venezuela for the 90-day pilot program. The episodes ranged from Well Control Basics to Serious Incident Recreations to Hydrogen Sulfide Awareness. Joe Summers,

Pride International Venezuela operations manager, targeted specific subjects he felt needed immediate attention and would be of use to the field personnel. The chosen episodes were a combination of in-house material supplied by Pride and other material provided by Chagent. All the episodes were delivered to the workers in Spanish, their native language.

The units were deployed individually and introductory meetings were held with the rig personnel on location to instruct them in the use of the units and the smart cards. All personnel who would be training on these units were asked for their feedback and this started coming in almost immediately after deployment. Most workers on location, from the company man to individual roughnecks, were enthusiastic and highly complimentary about the system, to the extent many of the field workers exceeded the 'one or two episodes per day' that had been anticipated. In fact, 25 individuals completed the 90-day pilot program in less than three weeks by voluntarily taking multiple episodes per day.

Overall reaction of the field personnel to the Rig Tracer system was as follows:

- 95% of comments submitted were complimentary of the units and the system.
- 75% of the comments were to request more training episodes.
- A casing handling procedure was changed on location after the rig personnel saw one of the episodes presented.

Delivering training material to field personnel on location lowers the overall training cost and allows employers to buy back time by not having to remove their personnel from the job and/or use their off time for training.

Another preliminary conclusion from the implementation of the Venezuelan pilot project was that careful consideration should be given to the number and type of episodes selected for training. The driving factors for this would be: project duration, type of operation, number of workers on location, and company training objectives.

Rig Tracer learning stations are ruggedly built from 304 stainless steel and are totally weatherproof. Additionally, they have a daybrite touch screen and a powerful audio system. The units can run continuously on their on-board batteries for about 12 hours and/or be connected directly to the rig's electrical system.

● The authors acknowledge with thanks the assistance of Bruce Kain, QA/HSE director for Pride International, and Joe Summer, Pride International Venezuela CA operations manager, in the preparation of this report.

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