Anadarko renewed its contract for Transocean’s Discoverer Spirit, a dual-activity, 10,000-ft drillship, in November at $520,000/day for three years. Transocean’s dual-activity system has provided operators enhanced value and may become “a de facto standard in worldwide deepwater drilling,” said Transocean senior vice president North & South America Rob Saltiel.

Out in this deep exploration frontier, the risks are big – but the rewards could be bigger.
THESE DAYS, you have to look much further out in the Gulf of Mexico – past the slowly thinning jackups on the shelf – to see the region’s brightest prospects. It’s no secret that deepwater is seen as the future of the Gulf of Mexico. Significant discoveries in the last couple of years have further delineated the Lower Tertiary trend and given operators much to thrill over. And with crude oil prices breaking the $100 mark and showing no signs of backing down, deepwater GOM has fully grown into a “must-get” market.

Just look at the March 2008 Gulf of Mexico lease sales, which roped in a record-setting $3.7 billion in high bids. Roughly a third of the tracts were located in 5,249 ft (1,600 m) of water or deeper, according to the US Minerals Management Service.

Or look at the renewal contract that Transocean announced later the same month for its ultra-deepwater semisubmersible Deepwater Nautilus. Shell has signed the rig for either three years at $535,000/day or four years at $520,000/day.

“The rate and sizes of discoveries in deepwater Gulf of Mexico has been very interesting to the operators, with the Lower Tertiary play bringing in a whole new opportunity to find and develop large reserves,” said Rob Saltiel, Transocean senior vice president North & South America. “While this involves deep and somewhat difficult drilling, the sizes of the reserves are making it worthwhile for operators.”

Specific to the GOM, he added, a stable licensing/royalty regime and favorable fiscal terms add to the region’s investment appeal to clients.

So, yes, deepwater Gulf of Mexico has proven its potential and optimism is running high. But challenges abound too, associated with costs, personnel, technology and more.
Undeniably, dayrates for deepwater (3,000 ft or greater) and ultra-deepwater (7,500 ft or greater) floaters have increased significantly over the past two to three years. According to ODS-Petrodata, as of late March 2008, fixtures for newbuild ultra-deepwater floaters averaged in the high $430s. And that number may not be fully representative because not all dayrates for contracted rigs are known yet, pointed out Tom Kellock, head of consulting & research – Houston.

In fact, dayrates do appear to be inching upwards again in recent months, said Larry Dickerson, president and chief operating officer for Diamond Offshore. “The industry spent about a year with rates stabilized between $480,000 and $500,000. Now we’re seeing a number of signings north of $500,000. Clearly, rates are beginning to move.”

Mr Saltiel agreed that rates are climbing again and pointed to three recent fixtures in the Gulf of Mexico as indicators. First, Transocean’s Discoverer Spirit, a dual-activity, 10,000-ft drillship, was renewed in November 2007 at $520,000/day for three years. Then in February 2008, the Deepwater Millennium, a 10,000-ft drillship that does not have the dual-activity system, was renewed at a higher rate — $535,000/day — for three years. A month later, the Deepwater Nautilus was renewed in the $535,000 to $520,000 range for three or four years. Compared with the first two rigs, which are dynamically positioned and can drill in water depths up to 10,000 ft, the Deepwater Nautilus is a moored unit capable of driling in deepwater with a pre-set mooring system.

“We’re seeing rates move up even as we renew the lower-spec rigs,” noted Mr Saltiel. When asked about operators’ cost concerns, he made no pretense that dayrates aren’t high or increasing operators’ drilling and completions costs. But he emphasized that high dayrates “are just moving in lock-step with the price of crude oil. It does cost more for operators to explore and develop, but at the same time, their potential revenues are increasing to compensate for that. I think that as long as the price of the commodity stays strong, dayrates will continue to stay strong.”

It’s anybody’s guess where rates may eventually top out before they start to dampen rig demand, but the current consensus — at least among drilling contractors in the deepwater Gulf of Mexico — appears to be that we’re not there yet.

Jeff Chastain, Pride International vice president – investor relations, pointed out that for newbuilds, one fact will clearly hold true: “As long as the cost to construct rigs continues to increase, so will the dayrates to support those investment decisions.” Pride is building three 12,000-ft water depth drillships, for delivery in 2010-2011. Construction costs per unit range from approximately $680 million to $730 million.

MARKET FRUSTRATIONS

In any case, demand for deepwater floaters will certainly continue to outstrip supply in the near-term. And it is this rig shortage — not climbing dayrates — that is really creating some frustration in the marketplace, Mr Saltiel said. “The worst thing for an operator is not a high dayrate but inability to develop existing reserves or to complete an exploration and development program.”

There’s no excess capacity in the short term, and most believe that newbuild deliveries are unlikely to reverse that trend. Fifty out of 73 – that’s nearly 70% — of deepwater newbuilds already have contracts in place, according to ODS-Petrodata. And negotiations are actively under way for the remaining units.

Two of the three ultra-deepwater drillships that Pride is building already have 5-year contracts (BP and Petrobras), and the company is “in active discussions with a client right now” for the third unit, Mr Chastain said. Pride currently has nine rigs that can operate in 3,000-ft water depth or greater, working in Angola, Egypt and Brazil. When the BP-contracted newbuild is delivered in 2010, the rig will provide Pride “an operating presence in the strategically significant deepwater Gulf of Mexico market sector, where new and effective technologies are expanding the offshore frontier and creating numerous long-term drilling opportunities,” said Pride president and CEO Louis A Raspino in announcing the contract in early 2008.
Another drilling contractor player joining the deepwater Gulf of Mexico is Seadrill. The Norway-based company has a total of 10 ultra-deepwater newbuilds still in the works, including two just delivered in late March 2008. One of these is the West Sirius, a 10,000-ft semi-submersible that is mobilizing to the Gulf of Mexico to work for Devon Energy under a four-year contract. It marks Seadrill’s first deepwater rig in the GOM.

Tim Juran, Seadrill senior vice president Americas, said that although the company is new to the GOM, its biggest challenge is no different from drilling contractors established in the region: finding skilled personnel.

The West Sirius, he emphasized, is already fully staffed, and attracting more talent has not been too difficult. “Seadrill is seen to be a new player with new equipment and with a very strong growth agenda, and a lot of people in the industry are finding that to be very interesting story,” he said.

Mr Juran acknowledged that “to a degree” there are concerns with Seadrill being new to the GOM, but “with the commitment given to us by Devon in 2006, coupled with the fact that we’ve been pretty much on schedule and on budget with our new rig deliveries, I think operators are rapidly putting more confidence in us.” All eight of Seadrill’s remaining deepwater newbuilds scheduled for delivery in 2008 are already contracted. The most recent announcement came in mid-April, with Petrobras signing the West Eminence and West Taurus semi-submersibles for six years each (as well as the West Orion semi, which won’t be delivered until Q2 2010).

Although there were no firm commitments yet, Mr Juran noted that there remains a strong possibility of additional Seadrill rigs being mobilized to the deepwater Gulf of Mexico due to “continued interest by operators.” Even if not this year, certainly in the foreseeable future, he strongly expects to put additional rigs in the GOM. “As we continue to establish ourselves as a deepwater player, clearly the Gulf of Mexico is a critical market.”

Pride is planning to enter the deepwater Gulf of Mexico market with a newbuild drillship scheduled for delivery in 2010. The company’s Pride Angola drillship is currently working offshore Angola for TOTAL.

THE PRICE OF CRUDE

So rig demand looks good as far as the industry can see for now, with Diamond Offshore’s Mr Dickerson adding that he has no concerns yet about the industry overbuilding deepwater units. “I suppose there will be enough supply to satisfy demand at some point, but we seem to be fairly far away from that right now.”

Deepwater rig utilization will stay around 100% at least through 2010-2011, predicted Mr Saltiel.

But what about the long term, post-2011? That’s harder to say, although optimism prevails among deepwater drilling contractors. They point to two factors that must be closely watched: the price of crude oil and exploration successes.

There is a lot uncertainty around what the oil price will do in the coming years – stay around $100? Drop below $60? Shoot to $200 a barrel? It’s a guessing game, no doubt. But on the whole, operators appear to believe that prices will eventually drop somewhat, though not to historic levels that make drilling programs unsustainable. Drilling contrac-
tors also remain confident that prices will remain solid enough to support strong rig demand.

“All the fundamentals are in place for high sustained oil prices,” Mr Saltiel said, citing an increasing demand for energy in Asia and the lack of a viable alternative for transportation fuel. “Demand for oil will continue to be strong, and that’s what’s ultimately underpinning the oil prices.”

On the supply side too, there are issues with declining production from mature reservoirs, making it more difficult each year for operators to replace reserves. The level of excess capacity in some major producing areas has dropped substantially over the years, Mr Chastain pointed out, adding to supply concerns.

Not only are drilling contractors confident about oil prices staying strong, but they’re optimistic that even if prices fell from current levels, it would have minimal – if any – impact on deepwater drilling activities and deepwater rig demand. Current price levels (above $100 per barrel) do seem to have given operators much more confidence in investing in expensive deepwater projects, but “it was just as exciting when the price was $80 barrel,” Mr Dickerson commented.

And as much as the price of oil gets talked about, some believe that exploration success is a much more important factor to future deepwater activity.

“We don’t need $100-per-barrel oil to make this business successful. Operators can meet their return criteria at lower levels of price per barrel. However, if they get into a phase where they’re drilling dry holes or substandard commercial quantities of oil, I think they might reassess their drilling plans,” said Mr Chastain.

NEWBUILD DELAYS POSSIBLE

Besides the success of operators’ exploration efforts, another X factor that could come into play is newbuild deliveries. There are 166 offshore rigs under construction, according to ODS-Petrodata, with eight already delivered in 2008 (as of March) and 50 more scheduled for delivery. In all, 15 ultra-deepwater units are expected to join the worldwide fleet this year.

Whether all of these remaining units will be completed on schedule is still an unknown, as construction continues at fever pitch around the world at a limited number of shipyards. Many of these rigs are high-spec, advanced-technology machines pushing the industry’s limits, and shipyards are under significant pressure to deliver them not only on time but also within budget.

“A lot of newbuilds could be delayed coming out of the shipyard,” Mr Saltiel said. “If they’re delayed in any way, that will increase the pent-up demand for drilling programs that operators want to carry out, and increase the pressure on dayrates to go higher because the existing rigs will be that much scarcer.”
2007 WASN’T EXACTLY a banner year for shelf drilling in the Gulf of Mexico. It “ended with quite a bit of excess (jackup) capacity, and we saw rates fall through the year,” said Larry Dickerson, Diamond Offshore president and chief operating officer. Drilling contractors continued to relocate jackups in search of better markets – and a net total of 17 left the GOM in 2007, according to ODS-Petrodata.

Coming into 2008, however, natural gas prices have strengthened to nearly $10 per mcf, which is “very helpful,” Mr Dickerson said, and has led to a pickup in shelf activities. Idle rigs are getting back to work, and rates are seeing small bumps upward. “A combination of strong prices and rigs having left the Gulf of Mexico are all balancing out to a stronger market,” he said.

As of late March, a total of 79 jackups remained in the US Gulf of Mexico, including 67 actively marketed units, according to ODS-Petrodata. Earned rates now hover just under $79,000/day, compared with a worldwide average of about $134,000/day.

Demand for ultra-deep gas drilling in the Gulf of Mexico appeared to be picking up, another good sign. In February, Rowan Companies announced a multi-well contract with McMoRan Oil & Gas that includes re-entering the Blackbeard Prospect. The Gorilla IV has been committed for at least 90 days, with work on Blackbeard priced in the mid-$190s/day. The initial Blackbeard well was drilled to a depth of just over 30,000 ft during 2005-2006 by Rowan’s Scooter Yeagain jackup.

By early April, the Gorilla IV was drilling through cement plugs in existing casing set by the previous operator at 26,650 ft. According to McMoRan, the company plans to deepen the wellbore from its previous depth of 30,067 ft to 31,267 ft to evaluate deeper Miocene targets.

Additionally, Rowan’s Bob Palmer jackup is getting ready for its initial assignment on BP’s Eldorado Prospect. The rig will be drilling one or more wells targeting a depth of at least 28,000 ft.

Seadrill, which is expanding into the Gulf of Mexico deepwater, currently doesn’t have any jackups on the GOM shelf or any plans to mobilize its jackups there. Tim Juran, Seadrill senior vice president Americas, noted that deep gas potential on the shelf could possibly attract jackups back to the Gulf, but said opportunities remain more compelling in areas like the Middle East.

On the storm front, 2007 was fairly quiet for the GOM drilling industry, though concerns remain. Increased mooring standards also have led to some uncertainty, which “is the single biggest problem,” Mr Dickerson said. “There is a lack of clarity among operators on getting permits, and uncertainty over what conditions are necessary for a well being approved. More widely understood standards from the MMS would be very helpful.”
Transocean, whose merger with GlobalSantaFe last year boosted its fleet from 80 to 138, is building eight ultra-deepwater rigs, including two under a joint venture, to be delivered in 2009 or later. So far, contracts have been announced for seven of the eight, including four expected to mobilize to the Gulf of Mexico.

Mr Saltiel said he’s noticed some delays on competitor newbuild rig deliveries, though most early projects are being completed near their original target date. “I think a lot of the early projects are based on existing designs. The brand-new designs, however, will see more pressure, and we’re starting to hear possible delays of three to six months or more,” he said.

He noted that Transocean’s newbuilds are mostly enhanced versions of existing designs, such as the enhanced Seadrill’s West Sirius rig was delivered in late March from the Jurong Shipyard in Singapore. The unit is already contracted to Devon Energy to drill in the deepwater Gulf of Mexico, marking Seadrill’s entrance to the market.
Enterprise-class rigs being built in South Korea. “Our Enterprise rigs have been in operation since the turn of the century, so we have great experience with them. When we build an enhanced version, the technical challenge of designing it and constructing it is much less,” he said, adding that turnkey contracts with Daewoo Shipbuilding and Marine Engineering should incentivize on-time deliveries.

**Improving Efficiencies**

Rising spread costs – never cheap to begin with in deepwater – has been a concern for operators, but technology advances are increasingly allowing for drilling efficiencies that help assuage cost concerns.

For example, seismic technology has improved significantly to help operators see deepwater reservoirs much more.

Recent news of significant subsalt discoveries offshore Brazil have again boosted operator interest in deepwater exploration around the world. The Pride Portland is operating offshore Brazil for Petrobras and already contracted through 2016.
clearly, including subsalt geology, Mr Chastain said, which gives them more confidence to explore.

Transocean’s dual-activity system offers parallel drilling operations to save time and money and has been “seen by our customers as a very valuable enhancement to deepwater drilling,” Mr Saltiel said. The technology has been licensed to several other drilling contractors “because it’s under such demand by operators. I think it’s going to become a de facto standard in worldwide deepwater drilling.”

The company also continues to work on its continuous annular pressure management (CAPM) initiative. The managed pressure drilling-driven technology aims to improve the driller’s ability to control the downhole pressure environment more accurately, which can be valuable when drilling wells with narrow margins between the frac and pore pressures.

Sheer capacity – deckload, hoisting, circulating, etc – on deepwater rigs also continue to evolve to accommodate demands by complex, ultra-deep wells, said Mr Juran. For example, whereas fourth-generation rigs built in the 1980s had about 5,000 tons of variable deck load (VDL), modern deepwater semi-submersibles have VDLs in the range of 8,000 tons and drillships have almost 20,000 tons. Load capacities of derricks now routinely run close to 2 million lbs, another step-change in capabilities.

“Operators are now routinely targeting 30,000 ft, which to me is a very strong indication that the technologies associated with rig capability, in addition to some downhole capabilities some service companies are bringing, are increasing their confidence about getting these wells down successfully and within reasonable costs,” Mr Juran said.

New opportunities may arise as well if Petrobras is successful bringing in the first floating, production, storage and offloading (FPSO) vessel to the Gulf of Mexico. The Brazilian national oil company plans to use the FPSO for production from the Cascade and Chinook fields, scheduled for 2009.

“FPSOs have been highly successful in other parts of the world, and there’s no reason to believe they won’t be highly successful in the Gulf of Mexico as well,” Mr Juran said. “The open question is whether FPSOs become the production tool of choice for operators.”

Mr Chastain with Pride noted that floating production can be a plus for the deepwater market by enhancing the potential for “finds that have been well beyond offshore producing infrastructure.”

And on top of the technological improvements, contractors noted that drilling efficiencies have increased simply as contractors gained more deepwater experience.

“Advances in experience have been just as important as advances in technology,” Mr Dickerson said. “Contractors didn’t at first have extensive experience with drilling deep in deepwater. It was only as the industry gained experience that we found out what worked, what the pitfalls were and how to design around those pitfalls, so we could deploy the new technologies in a more efficient manner.”

Although the industry has “a ways to go” before deepwater wells become routine, he continued, deepwater knowledge base is increasing across the board for the industry. For example, crews who have tackled one or two 32,000-ft wells in deepwater are rolling over their learnings into the next 32,000-ft deepwater well they drill.
Mr Saltiel noted that Anadarko Petroleum has used Transocean’s Deepwater Millennium drillship to set several records with the Independence Hub project in nearly 9,000 ft of water. According to a paper Anadarko presented at the 2007 SPE Annual Technical Conference & Exhibition, 17 zones were completed in less than 279 total completion days, even though 428 AFE days were allocated for the campaign, resulting in “dramatic” cost savings.

“The more deepwater work that gets done, the more efficient the operators, contractors and service companies construct wells in deepwater. There is a learning curve effect built into the exploration and development of deepwater that is helping to counteract rising rig costs,” Mr Saltiel said.

Increasing efficiencies, which can lower a project’s break-even point, also has opened the deepwater world to more than the supermajor E&P companies, he continued. “Seven or eight years ago, supermajors were the primary players in deepwater. Today, you see major independents, national oil companies and even some small players in deepwater because the technology is becoming more widespread, and confidence in being able to drill deepwater wells is growing,” he said. “The ability to complete these wells using the rig as a major platform has been a big drive to making deepwater available to everyone.”

DEEPWATER MARKETS AROUND THE WORLD

Though one of the biggest, the Gulf of Mexico is certainly not the only active deepwater drilling market in the world. Huge subsalt discoveries at Tupi, Jupiter and Carioca have sparked tremendous interest in Brazil, Mr Saltiel remarked. That province “has become an extremely exciting new play because it’s a subsalt play that has the potential for 30 billion or more barrels of oil equivalent. That’s created a new frenzy for rigs to serve that market. It will require additional newbuild capacity, and we’re already seeing demand from Petrobras.”

The Mexican Gulf of Mexico also is “an exciting future market for deepwater,” he said, noting that the geology could be similar to the US GOM, and Mexico is only starting to make its first real foray into deepwater this year.

There are emerging exploratory markets in South America as well, he continued: The Transocean Marianas drilled the first deepwater well offshore Colombia in 2007, and the Sovereign Explorer working for Repsol will drill Suriname’s first offshore well in 35 years.

India, too, offers significant deepwater potential, with Transocean announcing in early April that the Dhirubhai Deepwater KG2 has been awarded a five-year contract from India’s Reliance Industries. Additionally, Reliance extended its contract on the Dhirubhai Deepwater KG1 from four to five years. Both are ultra-deepwater drillships with deliveries expected in 2009-2010.

“Southeast Asia is another area that’s exciting, with Malaysia, Indonesia and the Northwest Shelf of Australia looking to have deepwater opportunities, some of which are coming into clearer view and will create additional deepwater demands,” Mr Saltiel said. “Outside of Angola and Nigeria, the west coast and east coast of Africa have deepwater opportunities as well, in the early stages of discovery.”

“These markets are all interesting and exciting,” he continued. “From a historical perspective, these are still early days for deepwater. Our understanding of where deepwater opportunities lie is still developing.”

In the short term, there is no excess capacity of deepwater rigs, and nearly 70% of newbuild deepwater rigs already have contracts in place as well. Diamond Offshore’s Ocean Endeavor semi is contracted to Devon Energy in the Gulf of Mexico and won’t become available until at least 2011.