

#### Fall 2006

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A publication for the people, customers, suppliers and friends of **Diamond Offshore Drilling Inc.** 



## 2 Diamonds of the Far East PART ONE

Envision huge hydrocarbon potential and vast territory encompassing roughly one-third of the globe. Envision nearly two-thirds of the world's population living in this area, many clamoring for an increased share of the global pie, but possessing only about 20 percent of the worlds petroleum reserves and lacking sufficient energy resources to meet their burgeoning needs. In that vision, paint approximately 20 percent of the world's active offshore drilling rigs and a strong demand for more equipment to help find the much needed oil and gas reserves. Now, couple that shortage of rigs and high demand with record-high dayrates. For Diamond Offshore's Asia Pacific office, this presents both huge opportunity and major cultural and logistical challenges.

Advancing in the Asia Pacific PART TWO 12 Two of Diamond Offshore's rigs show how hard work can make the best of any challenge from Java to the outback.

#### **Postcard from Singapore** PART THREE 16

The upgrade of the semisubmersible Ocean Endeavor to ultra-deepwater capability is 85 percent complete, and over 10 percent of the construction for the newbuild ultra-premium jack-up Ocean Shield has been accomplished. That means customers can expect on time delivery of this new equipment.

#### 26 **Holding Fast**

When hurricanes Ivan, Katrina, and Rita muscled through the Gulf of Mexico in 2004 and 2005, 19 of the industry's semisubmersible drilling rigs broke free from their moorings. No one was hurt, and, for the most part, these rigs quickly returned to service. Since then, a joint industry/government task force, of which Diamond Offshore is a part, has been working to come up with the answers. In the interim, Diamond Offshore is increasing, by up to 50 percent, the holding capacity of the Company's semisubmersible rigs in the Gulf.

#### 30 **Santos Spreads its Wings**

Brett Darley talks about Santos' growth and why Diamond Offshore fits into the Company's growing operational landscape.

#### **36 Drillers Get a "Kick" Out of Training**

"Blowouts" almost never happen today and haven't been commonplace for almost a century. But the same forces of nature that contributed to Spindletop in 1901 are still at work. That is why Diamond Offshore goes to great lengths to help ensure that our drilling crews are highly trained in well control techniques, including investing more than \$2 million in training simulators and other equipment over the last several years to make state-of-theart experiential learning a reality.

rigamarole is published for and about the people and customers of Diamond Offshore. For more information. write to us or call:

rigamarole **Diamond Offshore Drilling** PO Box 4558 Houston, Texas 77210 USA 281 492 5393 rigs@dodi.com

40 **Have Torch & Hammer—Will Travel** 

Downtime for an offshore drilling rig means lost dollars for both the customer and the drilling contractor. Diamond Offshore's elite welding and carpentry crews are on call at a moment's notice to help keep rigs turning to the right.

#### 46 **The Nationalities of Diamond Offshore** With worldwide operations, Diamond Offshore is rich in cultural diversity. Meet a few of the people who help the Company succeed.

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Les Van Dyke ABC Managing Editor

**Steve Woods Printing** Printing

**Jameson Simpson** Illustrations

**Rigsby Design** Design and Production Andy Dearwater Facets Illustrations

Photography

**Chris Shinn** 



A letter from Larry Dickerson President and Chief Operating Officer

*Stand on Zanzibar* is a Hugo award winning science fiction novel written in 1968 about the early 21st century. Even though I read the book in High School, several of the novel's quotes which headline various chapters have stayed with me. Many are from General Technics (thank you Google) a fictional IBM-like company. Their various mottos certainly are applicable to Diamond Offshore these days:

#### THE DIFFICULT WE DO AT ONCE. THE IMPOSSIBLE TAKES A LITTLE LONGER. –Base version of General Technics Motto

The challenge to Diamond Offshore and the energy industry is to deliver adequate oil and gas to power the world economy. You easily could argue that this is an impossible task. That's why the task may take a while to accomplish. Here are some of the difficult things we are doing now:

We have four rigs under construction. Our two heavy-duty jack-ups, Ocean Shield and Ocean Scepter, are just beginning to be assembled. On the semisubmersible side, the ultra-deepwater Ocean Endeavor is nearing shipyard departure in Singapore, while a sister unit, the Ocean Monarch is voyaging to the same shipyard to begin her conversion. Together, these four premium units will significantly expand Diamond Offshore's fleet.

But that is far from all of our shipyard activity. As of August, 2006 we have the Ocean Princess in Invergordon, Scotland, undergoing a survey, installing additional sponsons, replacing boat bumpers, and making a host of other improvements. Also in survey is the Ocean Saratoga in Brownsville. Preparing for contracts, the Ocean Whittington and Ocean Nugget are in Sabine Pass and the Ocean Lexington will soon begin to do preparatory work in Alabama for her Egyptian assignment. During the balance of the year, the Ocean Summit and Ocean Heritage will be in for surveys, as well. But like the television infomercials say, "Wait, there's more!" We also are in the process of installing our hurricane-mooring modifications on 10 semisubmerisibles in the U.S. Gulf of Mexico. The article beginning on page 26 describes this effort, which is no small task.

This summary only describes the large scale construction projects currently under way. Our offices and rigs also are preparing for our upcoming contracts in Egypt, Trinidad, Mexico, Vietnam and South Africa.

In the mean time, we have not one but two Gulf of Mexico rigs drilling below 32,000 feet! And the *Ocean Victory* is operating in more than 6,100 ft. of water. Rigs elsewhere are drilling highly deviated wells—the *Ocean Rover* just completed a 73 degree sixteen-thousand footer in Malaysia in 1.24 days per 1,000 ft. drilling from spud to TD!

While all of this is going on, we have been hiring new and replacement personnel at a rapid clip (480 new employees in the first half of 2006).

Our most impressive achievement, though, is that we have accomplished all of this while continuing to improve our safety achievements. For the first six months of 2006, our total recordable incident rate was .85, just half of what we experienced during the same period last year.

None of this just happened. Not only are these achievements a demonstration of our current capabilities, but they reflects years of honing our systems and planning for such times. I honestly can't see how any contractor can adequately respond to the demands of this market without having gained years of prior experience.

When you see how well we've handled the difficult, you'll understand why we feel confident about the impossible:

THE DIFFICULT WE DID YESTERDAY. THE IMPOSSIBLE WE'RE DOING RIGHT NOW. – Current version of General Technics Motto.



# Diamonds of the Far East



BY WILLIAM DYALN POWELL PHOTOGRAPHS BY CHRIS SHINN

Envision buge hydrocarbon potential and vast territory encompassing roughly one-third of the globe. Envision nearly two-thirds of the world's population living in this area, many clamoring for an increased share of the global pie, but possessing only about 20 percent of the world's petroleum reserves and lacking sufficient energy resources to meet their burgeoning needs. In that vision, paint approximately 20 percent of the world's active offshore drilling rigs and a strong demand for more equipment to belp find the much-needed oil and gas reserves. Now, couple that shortage of rigs and high demand with record-bigh dayrates. For Diamond Offshore's Asia Pacific office, this presents both buge opportunity and major cultural and logistical challenges.

OCEAN HERITAGE

OCEAN HERITAGE

OCEAN PATRIOT Moved from South Africa To New Zealand 2004

> OCEAN BARONESS Moved to gulf of Mexico in Late 2005

erth, a western Australian city known for remoteness even within remote Australia, serves as the hub of Diamond Offshore's Asia Pacific operations. The territory includes nearly a dozen countries spanning from Pakistan in the west to Japan in the east, then south down the rim of fire through Malaysia and Indonesia all the way to Australia and New Zealand. Six rigs currently operate out of the Perth regional office: the Ocean Bounty drilling Australian waters for Santos followed by Woodside; the Ocean Patriot, working for Nexus then Tap Oil and NZOP; the Ocean Epoch and Ocean Rover drilling for Shell and Murphy, respectively, off Malaysia; the Ocean General drilling for Premier in Vietnam; and the Ocean Sovereign working for Kodeco in Indonesia.

Each nation in the Asia Pacific region brings its own potential and challenges, although in general exploration and production activity is trending upward as oil companies work to replace

declining reserves. Most of Australia's exploration and development activity occurs on the Northwest Shelf and in the Bass Strait near Tasmania. A rarity these days, Australian natural gas production actually has been outpacing consumption each year since 1989. And with 93 trillion cubic feet (Tcf) of natural

gas reserves, a Liquified Natural Gas (LNG) courtship with China, Japan, South Korea and India is maintained through existing and new Australian terminals. Japan alone is expected to increase LNG imports by 20 million metric tons a year by 2020. Asia's top natural gas consumers want in on the ground floor; the Wall Street Journal reports that Australian LNG has more than doubled in price since China's National Offshore Oil Corp (CNOOC) signed a AU \$25 billion contract in 2002 for gas from Australia's Northwest Shelf.

LNG potential, vast unexplored territory and significant deepwater prospects all seem to indicate that Australia will hold enthusiastic attention from operators in coming years. This Aussie activity—combined with the rest of the Asia Pacific region—gives Diamond Offshore's regional office a lot to think about. And a lot of water to cover.

WITH THE SURGE IN DEMAND, RIGS HAVE COMMANDED A PREMIUM. "THE MARKET HAS SHOT UP TO MORE THAN \$400,000 PER DAY FOR SOME DEEPWATER RIGS AND EVEN MID-WATER EQUIPMENT IS EARNING DAYRATES IN THE \$350,000 TO \$390,000 RANGE," SAYS ATKINSON.



#### Going the Distance Down Under }

Cold-toed Aberdonians may feel little sympathy for crews near the beaches of Bali, but don't let the palm trees fool you: Asia Pacific's expanse means travel and logistics demand endurance. "The biggest difference here is the geographic distances involved in our operation," notes Diamond Offshore Contracts & Marketing executive John Atkinson. Because of the many islands and archipelagos in the region losing scale is easy, but Indonesia alone is almost three times the size of Texas; Australia would barely fit inside the Lower 48. "Just to go visit a customer, prospect or rig is a major event," Atkinson says. Most equipment and spares from the region come from Singapore or the United States, and long lead times put planning skills to the test.

Perth makes a logical hub. Operators in the region have made the city their unofficial headquarters, not in small part because of the wineries and golf courses (yes, the links have kangaroos on them). But one finds about as many wells in Perth as in downtown Houston. "The clients are here, but obviously no drilling rigs!" notes Asia Pacific Area Manager Ronnie James. As a consequence, James spends most of his time in the air.

"I try to make two visits to every area and two visits to each rig annually," he says. That's a tall order with rigs spread across a decent chunk of the planet: "To get to the *Ocean Rover*, currently operating in Malaysia, I fly five or six hours to Singapore, then three more hours to the rig," he says. "It's the same to visit a rig in Indonesia. Jakarta is five or six hours away, plus a few hours to the shore base in Surabaya—then out to the *Ocean Sovereign*," he adds. And with mobility comes constant change.

#### Many Countries, Many Cultures }

Asia Pacific operations demand focused flexibility. "Things are always changing here, and there are many cultural differences," notes James. "Yet we have to work to the same standard no matter where we are in the world. That is the key to keeping operators happy." Each rig has an experienced shore-based operations manager for support, as well as administrative help in each country of operation. Operations managers report status and issues to James during a weekly meeting—remote offices via videophone—or as needed. James mainly gives guidance when big-picture policy, safety and service issues arise. "People never call me and ask how I'm doing today," he says. "When people come into my office, they are there with an issue. Helping to solve problems is what I do."

OCEAN PATRIO

Diamond Offshore typically hires as many nationals as practicable from each country in which the Company operates. As contracts expire, rigs and shore bases move seamlessly from country to country—but not without a lot of work. "The rig never sees the shore," says James. "We want to minimize downtime, so the unit moves straight on to the new site. That takes a lot of planning and preparation." In a matter of hours, the team moves from one country to the next; a thunderstorm of opening and closing buildings, bank accounts and boxes. Even if the move is only a few miles, a new country means arranging labor on the fly, ensuring regulatory compliance and moving everything from capital equipment to coffee to the new shore base.

OCEAN PATRIOT

2004

Alex Moraitis heads up Information Technology (IT) in the Perth office. An ex-serviceman who speaks several languages, he helps keep Diamond Offshore Asia Pacific online: "Each time we move a rig, we need new local IT infrastructure with local support, service and systems." Moraitis has established Voice over Internet Protocol (VOIP) and a direct Wide Area Network (WAN) so the region can communicate cost effectively, and also back up Asia Pacific data locally in addition to the Company's standard backups.

Cultural differences also demand patience and flexibility. "For example, Indonesians are quite nonconfrontational," notes James. "They have an excellent work ethic, just a different mind-set. Indonesian supervisors sometimes shy from giving directives because they don't want to be overly aggressive." He also notes that operating in developing countries one must pay particular attention to local customs. "You can overcome cultural differences—it just takes a lot of patience."

Australia offers another challenge: a tight labor market. High rig counts, less than 3 percent unemployment and a narrow disparity between onshore and offshore worker compensation shrinks the labor pool. "We already had a limited field from which to choose before the market accelerated," explains Perth Human Resources Manager Teena Hoyne. In response, Hoyne manages an integrated recruiting effort that entails direct marketing, university recruitment and assimilation from other industries such as mining. This is good news for hands already on board. "There are a lot of promotion opportunities," notes Hoyne. "Two or three years ago, a rig hand might have been in a floorman or derrickman position for three or four years. Now they might spend only six months to a year in that role. If they work hard, safely, and do the right things they'll be our future managers," she says.

#### Marketing Australasian Style }

With today's high commodity prices and a fully utilized rig supply, every post around the world seems like paradise. And, like everywhere else, rig supply in Australia and the rest of the Asia Pacific region falls far short of demand. "Historically in Asia you're in the lower end of the market," notes marketing executive John Atkinson. "There wasn't a lot of deepwater work and the lowest dollar bid got the project, regardless, though Australia historically has commanded higher dayrates than Asia because of labor and rig shortages."

But with the last 24 months' surge in demand, rigs have commanded a premium. "The market has shot up for some deepwater rigs and even mid-water equipment is earning high dayrates" says Atkinson. Additional opportunities in both Asia and Australia are further driving semisubmersible prices.

Perth's three-person marketing team shares a single office so they can work as a team. They develop new business, respond to Request for Proposals (RFP's) and stay in touch with customers generally. Atkinson spends around a third of his time on the road.

Australia parallels the United States in terms of business protocols, but Asian clients demand tremendous persistence. "You've got to be aware of cultural differences," says Atkinson. "Most Asian clients are very interested in building relationships. They want to get to know you over a period of time before they'll do business with you—more than just lunch. You can't just breeze in somewhere and expect to get a job." As a result, much of Atkinson's time is spent on day-long flights, pursuing operators for critical relationships. "You have to attend to the process," he says.











Ocean Patriot, flaring gas during well-test for Santos at Casino Development project. Photograph by Robert Garvey







Pictured at top: Ben Devlin, Above: Henny Tjioe & Irma Harabap Upper Right: Ronnie James, Right: Tom O'Neill, Left: Steve Vacula,









#### *Rise of the NOCs* }

The good news from this effort comes in the form of closer relationships with Asian national oil companies (NOCs) at a time when the relationships are more important than ever. "We have close contact with many national oil companies including China's CNOOC, Malaysia's Petronas and others," notes Atkinson.

A recent Wood Mackenzie report notes that Asia's five most aggressive oil companies have made around \$13 billion in acquisitions between 2001 and 2005. Increased globalization paired with an Asian aversion to doing business with strangers could spell a huge competitive advantage in coming years given Diamond Offshore's social investment.

#### Not-so-Secret Agents }

A number of well-connected in-country agents help the Asian Pacific team with everything from safety and security to putting in a good word when new opportunities arise. "We have an agent in almost every country," says Area Manager Ronnie James. "They help get our local shore bases organized." They also play a critical role in helping Diamond Offshore comply with local regulatory policies.

From an environmental and safety aspect, Diamond Offshore's high standards normally meet or exceed local-country regulations. "When you're in a country, you go with the highest standard, be it Diamond Offshore's or the country of operation," says *Ocean Sovereign* (Indonesia) Operations Manager Steve Vacula. Australia's safety landscape mirrors the North Sea, defining safety in terms of achievable system goals and defending your practices against those goals. Environmentally, Australia maintains strict standards, while Asian countries in the region take a number of different positions. "But, regardless of the standard, we never compromise safety," says Vacula.

#### The Australasia of Tomorrow }

Diamond Offshore's Asia Pacific landscape could expand on the whims of China or India. But Australia, Indonesia and Malaysia will continue to share center stage in the immediate future. Australia's deepwater prospects remain strong, especially offshore Western Australia. In May 2006, in response to declining oil reserves, the government released 36 new exploration areas—20 of which were off Western Australia.

And for the other players? "Many investors are taking a wait and see attitude on Indonesia," notes Atkinson. "They're waiting

LNG POTENTIAL, VAST UNEXPLORED TERRITORY AND SIGNIFICANT DEEPWATER PROSPECTS ALL SEEM TO INDICATE THAT AUSTRALIA WILL HOLD ENTHUSIASTIC ATTENTION FROM OPERATORS IN COMING YEARS. THIS AUSSIE ACTIVITY—COMBINED WITH THE REST OF THE ASIA PACIFIC REGION—GIVES DIAMOND OFFSHORE'S ASIA PACIFIC OFFICE PLENTY TO THINK ABOUT. AND A LOT OF WATER TO COVER. to see if there's going to be a stable economy. I would call Indonesia another sleeping giant alongside China." Though reserves are declining, and questions of stability draw constant scrutiny, Indonesia remains one of the world's

largest exporters of LNG. And Indonesia shows tentative signs of fiscal strengthening, including IMF praise, an up-tick in GDP and an aggressive debt repayment plan.

Strong promise in Malaysia and a half-dozen other nations throughout the Asia Pacific region rounds out one of the most interesting places in the world to drill wells—if you have the patience.

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# Advancing in the Asia Pacific



Indonesia has long been a major oil province. In fact, the country holds Asia's only membership in the Organization of Petroleum Exporting Countries (OPEC) and pioneered production-sharing agreements between international oil companies and state governments back in 1968. Still, doing business in this developing nation isn't without challenges. But an economy on the rebound, and prospective government reforms, has many around the world following the country's progress closely. "ECONOMICALLY, INDONESIA HAS ITS HIGHS AND LOWS," NOTES VACULA, "BUT THERE'S GREAT POTENTIAL. THEY'RE GREAT PEOPLE." MANY OPERATORS AND OTHER SERVICE COMPANIES AGREE AND ARE INVESTING IN THE AREA. JUST WEEKS AGO, THE INDONESIAN GOVERNMENT ANNOUNCED THAT INDONESIAN CRUDE-OIL OUTPUT IS EXPECTED TO RISE 80,000 BARRELS A DAY BY THE END OF 2008; CURRENT PRODUCTION SITS AT AROUND 950,000 BARRELS A DAY.

akarta-based Operations Manager Steve Vacula supports the *Ocean Sovereign*, an ABS-class jack-up with 20,000 ft. of drilling capacity working for Amerada Hess in the Madura Strait. Crews flying to the rig can see Mount Merapi smoking on the horizon. The rig has a shore-base office in Surabaya and gets administrative support from Vacula's Jakarta office.

"Economically, Indonesia has its highs and lows," notes Vacula, "but there's great potential. They're great people." Many operators and other service companies agree and are investing in the area. Just weeks ago the Indonesian government announced that Indonesian crude-oil output is expected to rise 80,000 barrels a day by the end of 2008; current production sits at around 950,000 barrels a day. Exxon and the Indonesian state oil company Pertamina recently inked a deal for the joint operation of the Cepu oil field, one of Indonesia's 10 largest undeveloped finds, which will add an estimated 180,000 barrels daily. And the country's downstream regulatory body, BPH MIGAS, awarded development rights for an East Java to West Java concession this past March.

But more than the energy sector has potential. Indonesian mining remains strong. And the government just unveiled a policy package engineered to strengthen the financial sector by reducing the Indonesian state bank's bad-loan burdens and speeding up privatization. The trick for Diamond Offshore? Making the most of this promising business environment.

#### Complex Geology, Simple Relationships }

Volcanoes sit in plain sight of Ocean Sovereign, and drilling into all that tectonic activity adds challenges: "The wells make me more nervous than the volcanoes," notes Ocean Sovereign Offshore Installation Manager (OIM) Avery Littlefield. "These formations are very fractured and high-volume; you get to the bottom, clean out the hole and circulate for a while. The gas peaks out. Then it'll start dropping back downevery two or three meters! We have that problem everywhere here."

Several of the industry's rigs have been lost in the Madura Straits because of the area's challenging drilling environment. "You have to be on your toes 24 hours a day," he adds. And all that stress with some of the most beautiful beaches in the world within sight.

When a tour is complete, however, no stress exists between Diamond Offshore's expatriates and the crew of almost 90 percent Indonesian workers on the Sovereign. "The Indonesian culture is very different," says Sovereign safety man John Wade. "There is a lot more togetherness here. Group well-being is very important." And the Indonesian teams pull their weight: "This is as good a crew as I've worked with anywhere in the world," says OIM Littlefield, "Some of our crews have worked on this rig for more than 30 years; and there hasn't been a lost-time accident in close to seven years."

#### The Other Side of Dayrates }

Far away from Mount Merapi and Littlefield's crew, Ocean Bounty Operations Manager Tom O'Neill sits in Perth and explains his biggest challenge in drilling today: "You've got to safely maintain the work force and meet the expectation of the customer at today's high prices. These dayrates? Great news. But whether at \$30,000 a day or \$300,000 a day you still have to manage the contract and rig appropriately. With the job market now, 20 or 30 percent of our roustabout positions are manned by 'greenhands'."

O'Neill's rig, the Ocean Bounty, also works for Santos at the moment-an enhanced Victory-class floater drilling in the Indian Ocean out of Karratha, Australia. The Ocean Bounty crew has the opposite problem from the Indonesian team: simple geology and a difficult people situation. The difficulty? Finding them. "The industry

only has eight rigs in the whole of Australia," says O'Neill. force overnight."

OCEAN BOUNTY OPERATIONS MANAGER TOM O'NEILL SITS IN PERTH AND DESCRIBES HIS "You can't get a trained work BIGGEST CHALLENGE IN DRILLING TODAY: "YOU'VE GOT TO SAFELY MAINTAIN THE WORK FORCE AND MEET THE EXPECTATION OF THE CUSTOMER AT TODAY'S HIGH PRICES. THESE DAYRATES? GREAT NEWS. BUT WHETHER AT \$30,000 A DAY OR \$300,000 A DAY YOU STILL HAVE TO MANAGE THE CONTRACT AND RIG APPROPRIATELY.



But once he gets them aboard the Ocean Bounty for any length of time they tend to stay. "This rig has developed a fantastic reputation," he says, "and people like being associated with things that are going well. You don't tend to keep people for 12 or 13 years unless something is correct."

#### Overachieving Down Under }

Looking out over the Indian Ocean, understanding why people stay seems easy. They may not have volcanoes where the Bounty drills, but the water retains the color of the bluest West Texas sky. "Whale sightings come seasonally," notes O'Neill. "The Australian government requires offshore workers to identify and report any whale sightings." A whalespotting guide showing the different types of whales sits on his desk, along with a crew roster showing a diverse range of Aussies, Asians, Americans, Europeans and all points in between. How do so many different types of people stay on the same page?

"The key is hard work," notes OIM Robert Lindsey, who oversees the Ocean Bounty on occasion from his usual post on the Ocean Epoch. "Everybody's really the same here, regardless of job titles or what have you-we are all working for the same thing." Lindsey hails from Newcastle, England, and began working offshore at age 16. "With today's dayrates, the customer wants more from the rig. We all work together to give them that—and I think we can do it with a smile, too."





Pictured far left: Darren Reid, Left: Ocean Bounty, Bottom Left: Paul Daley Bottom: Denise Elks



![](_page_16_Picture_4.jpeg)

![](_page_16_Picture_5.jpeg)

![](_page_17_Picture_0.jpeg)

# Postcard from Singapore

# New Capacity on Schedule

![](_page_18_Picture_2.jpeg)

The upgrade of the semisubmersible Ocean Endeavor to ultra-deepwater capability is 85 percent complete, and more than 10 percent of the construction for the newbuild ultra-premium jack-up Ocean Shield has been accomplished. That means customers and crews can expect on-time delivery of these rigs.

![](_page_19_Picture_0.jpeg)

*CAN PUT THINGS ON MAYS OF THE* OCEAN ENDEAVOR. *"WE'RE TALKING ALMOST AN ACRE OF USABLE DECK SPACE, AND THAT'S SPACE YOU ACTUALLY CAN PUT THINGS ON—NOT JUST THE SQUARE FOOTAGE OF THE DECK.* 

*ingapore first earned its name "Singa Pura,*" meaning Lion City, when a 14th century visitor mistakenly thought he'd seen a lion. Today, only the country's zoos actually house lions, but the small island state on the Malay Peninsula certainly roars. A fierce rise in rig construction keeps companies like Keppel FELS and SembCorp Marine generating billions of new-rig-construction dollars annually. In fact, more than 80 percent of jack-up and 50 percent of semisubmersible rig orders in the world fall under the aegis of these two Singapore shipyard giants. The nation also serves as a major refining hub for the area, with a capacity that's nearly double the country's energy consumption.

> Diamond Offshore maintains two offices in Singapore: one in the Central Business District that supports the Asia Pacific region with procurement, accounting and logistical services, while another at the shipyards oversees the Company's ongoing rig work. Frank Chua runs the downtown office, serving as Diamond Offshore's Singapore purchasing manager: "A large amount of our buying in the region comes from Singapore," says Chua. "We keep getting more of our rigs in the region; and now we're even supporting our Middle East operations," he says. Chua worked on rigs for 18 years before his current position in Singapore. He says the pace of life stays more hectic than in surrounding nations: "Living and working in Singapore is stressful and competitive. If somebody takes one step, you have to take two. Lazy people suffer here."

![](_page_21_Picture_0.jpeg)

![](_page_21_Picture_1.jpeg)

Pictured Above: Glenn Gipson, Right: Frank Chua

![](_page_21_Picture_3.jpeg)

![](_page_21_Picture_4.jpeg)

![](_page_21_Picture_5.jpeg)

![](_page_22_Picture_0.jpeg)

Far top left: Ocean Endeavor under construction. From Center Image, clockwise: Ocean Endeavor Worker ID cards, Ocean Endeavor under construction, rig worker on Ocean Shield, Overview of Keppel FELS shipyard.

![](_page_22_Picture_2.jpeg)

![](_page_22_Picture_3.jpeg)

![](_page_22_Picture_4.jpeg)

At the Keppel FELS facility, no laziness is evident as workers begin appearing before daylight in flatbed trucks—commuting from all over the city and neighboring Malaysia. Keppel has 17 shipyards in nine countries, and their Singapore facility hums with scores of cranes, specialized production lines and the tapping of computer keyboards. More than 30 rigs burst the yard's capacity, with components and projects farmed out to supporting yards all over Asia.

The *Ocean Shield* and the *Ocean Endeavor* sit in Keppel FELS' Pioneer Yard II facility, which covers more than 30 acres. The yard provides construction, conversion packages, repair and other critical services employing workers from around the world. Rigs flow through the facility from fabrication, to block assembly, to floating docks and beyond, maintaining astonishing control amongst chaos, much like Singapore itself.

#### Ocean Endeavor Conversion Close }

In 1975, the mid-water semisubmersible *Ocean Endeavor* was christened in Fremantle, Australia—the same spot where the rig's namesake vessel *HMS Endeavour* landed when Captain James Cook charted Australian waters for the British over 200 years ago. The rig's launch 30 years ago was a glorious event. But last year, with the market for deepwater equipment accelerating, Diamond Offshore decided to upgrade the rig to ultra-deepwater capability.

Ocean Endeavor is the third in a series of 5th-generation Victoryclass upgrades the Company has performed. "The upgrade is about 85 percent complete," notes Diamond Offshore's Special Projects Director Glenn Gipson. "We took the unit down to bare bones about 90 percent of the cabling and 95 percent of the piping was removed. We basically just retained the shell, but in the end we will have a brand new rig."

When Gipson completes the approximately \$255 million all-in upgrade, the *Ocean Endeavor* will be capable of drilling to a total depth of 35,000 ft. and have the capability to drill in 10,000 ft. of water. The rig also will house 140 people and have 6,000 long tons of operating variable deck load. "She's a big rig," says Gipson, "we're talking in excess of an acre of usable deck space, and that's space you can actually put things on—not just the square footage of the deck." Right now, the deck is covered in scaffolding, and the *Ocean Endeavor* floats above you like a thunderstorm when you walk the piers below the massive hull.

"Each permutation of these upgrades gets more and more grand," says Gipson looking up at the rig. All of the *Endeavor*'s major pieces seem to be together, so the rig looks closer to complete than reality suggests; most of the project's remaining work involves outfitting, equipment installation and the like. "This will be a twophase completion," says Gipson. "We expect to get delivery from the shipyard in late October per the schedule, and then we anticipate completing our project in late December, giving us two months for testing, commissioning and training." His team should have much to celebrate as the New Year rolls around.

#### Ocean Shield Coming Together }

Project Manager David Brown has the ultimate do-it-yourself project. Walking around the shipyard, he holds a dozen different conversations with fabricators, managers, vendors and assemblers piecing together what soon will be the ultra-premium jack-up *Ocean Shield*.

"My job is to build the rig," he says, "and to man-up the unit toward the end of the project, as well as get all of the necessary supplies in place." He stops to review various pieces of the blocks that will make up the rig itself; the telephone operator continuously announces phone calls for him.

The Ocean Shield will account for half of an estimated \$310 million all-in total cost to build two new jack-up rigs, the Ocean Shield in Singapore and her sister unit, the Ocean Scepter, in the Keppel AmFELS facility in Brownsville, Texas. Competitiveness between the two projects hangs in the air; Brown gets reports from Keppel each week on the status of the Ocean Shield—as well as a more detailed monthly report complete with high-resolution photos. He also reads those from the Ocean Scepter. Brown has a Chinese yard building some blocks of the Ocean Shield's hull to help relieve a capacity crunch in Singapore.

Brown's rig will be a high-performance KFELS B-class jack-up, capable of operating in 350 ft. of water and of drilling to a total depth of 35,000 ft. The unit also will feature a hook-load capacity of two million pounds and a 70-ft. cantilever reach. Contract terms of delivery for the *Ocean Shield* stand at Q1 2008, and the schedule remains firm at over 10 percent completion right now. "We expect to finish the rig in the first quarter of 2008," says Brown.

#### Making it all Work }

As Brown and Gipson discuss their operations, three or four hundred workers climb in and around their two rigs, meeting one objective or another. "Every morning, they all have a safety meeting and get their directions from supervisors," notes Gipson. "Tools must be identified and arranged; there's so much structure in place here. This place is an amazing, giant machine." The workday starts at 7:30 a.m., and officially ends at 4:30 p.m., though everybody works at least two hours of overtime a day. And in Singapore, a standard workweek lasts until mid day Saturday.

"Picking the right shipyard is critical to the success of the projects," notes Brown; that and picking the right vendor to match the equipment—then monitoring each party to ensure performance. You are always on the lookout for things affecting your target date." But Diamond Offshore has a long and very successful history of on-time, on-budget performance with Keppel. That is why the Company is sending yet another semisubmersible upgrade to Keppel in Singapore: the \$300 million ultra-deepwater upgrade of the Victoryclass rig *Ocean Monarch* to 10,000-foot capability is scheduled for completion in Q4 2008.

WILLIAM DYALN POWELL IS A HOUSTON-BASED FREELANCE WRITER.

![](_page_24_Figure_0.jpeg)

AFT PROFILE

*"WE TOOK THE* ENDEAVOR *DOWN TO BARE BONES...BASICALLY JUST RETAINING THE SHELL. BUT IN THE* END WE WILL HAVE A BRAND NEW RIG." WHEN COMPLETE, THE OCEAN ENDEAVOR WILL BE CAPABLE OF DRILLING TO A TOTAL DEPTH OF 35,000 FT. AND HAVE THE CAPABILITY TO DRILL IN 10,000 FT. OF WATER. THE RIG ALSO WILL HOUSE 140 PEOPLE AND HAVE 6,000 LONG TONS OF OPERATING VARIABLE DECK LOAD.

![](_page_24_Picture_3.jpeg)

PLAY # A0178 2000

Pictured here: David Brown

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![](_page_25_Picture_0.jpeg)

# **Movie Star to Monarch**

Like many movie stars, the Ocean Monarch is going in for a major face-lift.

**he scene opens** on an extreme close-up of a golf ball, teed up on artificial turf. Rock music is playing, and as the camera shifts slightly, we see the golfer's shoes as he readies his feet for the shot. The camera angle shifts again so we see the golfer's profile, backlit by the sun, as he swings. There's water in the background, and, in the foreground, men wearing work clothes and hard hats walk past. This is a golf course?

The camera cuts to a close shot of the golfer's face: movie star Bruce Willis, playing Harry Stamper, soon to be the savior of the modern world in the disaster movie "Armageddon." An aerial shot reveals that he is practicing his swing on a helipad. On a drilling rig. Offshore. Wait a minute, is that the *Enserch Garden Banks*, now known as the *Ocean Monarch*, but renamed the *China Sea* for the movie? Yep.

And it doesn't take long to figure out that Bruce Willis' character, Harry Stamper, is, well, a character: smart aleck, angry, and smart as a whip. When he learns that his grown daughter is "under cover" in one of his rig hand's bunks, he reacts by giving chase with a shotgun.

Here we go again....Shotgun blasts glancing off the rig's superstructure. People running across the catwalks, sans hardhats.... and some sans clothes. A man and woman "sharing a bunk"? I told you this was a movie!

Of course, technically, the *Garden Banks* wasn't a Diamond Offshore rig at the time. In January 1997, when "Armageddon" was filmed, the *Garden Banks* belonged to Enserch Exploration and was managed by Global Marine. Diamond Offshore bought the unit from a group of owners in 2005 and changed the rig's name to *Ocean Monarch*. And, in reality, the shooting, as well as flying joints of pipe and other safety no-nos were filmed onshore at an abandoned refinery, says Bobby Boudreaux, who was a senior production foreman for Enserch at the time. "Touchstone, the production company, filmed on the rig for more than a week—for what ended up being only about five minutes in the movie," says Boudreaux, now a production superintendent for Island Operating Co.

"Having them here was very exciting. Although we let Touchstone use the rig at no charge, they bought every supervisor a TV and gave everyone else a CD player. One day they fed us lobster.

"All 46 of our rig hands stayed on the rig throughout the filming, and our production never stopped, although having them on board was sort of an interruption: Our crew probably took 10,000 pictures of the movie stars! But all the extras were our people, and Touchstone used three of our production hands as stand-ins on the drilling floor."

The filming of "Armageddon" brought movie crews to the oil patch—and a degree of fame to the *Garden Banks*. Today, the rig is being transported via heavy-lift vessel to Keppel-FELS shipyard in Singapore, where the unit will join the *Ocean Endeavor* in receiving an upgrade to full 5th generation ultra-deepwater capability. When complete in late 2008, the *Monarch* will be capable of drilling in up to 10,000 ft. of water to targets horizons as much as 35,000 ft. deep. The rig also will have a 6,000-long-ton operating variable deck load and an impressive 50,000 sq. ft. of free deck space, as well as accommodations for up to 140 personnel. **By Denise Allen Zwicker** 

![](_page_27_Figure_0.jpeg)

When hurricanes Ivan, Katrina, and Rita muscled through the Gulf of Mexico in 2004 and 2005, 19 of the industry's semisubmersible drilling rigs broke free from their moorings. No one was hurt, and for the most part these rigs quickly returned to service. But the lesson was clear: As then deployed, no rig was truly safe from these monster storms. A joint industry/government task force, of which Diamond Offshore is a part, has been working to come up with answers. In the interim, Diamond Offshore is working to increase, by up to 50 percent, the holding capacity of its semisubmersible rigs in the Gulf.

# Enhanced mooring systems will help with station keeping when hurricanes strike.

**BY DENISE ALLEN ZWICKER** 

![](_page_28_Picture_2.jpeg)

#### Within days of Hurricane Rita's departure, Diamond Offshore had joined a joint industry/government task force (JIP) to tackle the problem of station keeping in the throes of Gulf hurricanes. Although the work of the task force is in no way finished, the

Minerals Management Service (MMS) accepted the task force's initial findings May 19. The results were published by API as interim guidance for the 2006 hurricane season and can be found in API Recommended Practice 95F. Now, drillers in the Gulf are working to meet the new interim guidelines as the storm season bears down once again.

"Even before we came up with the guidelines, we had vowed to do what we could to keep our rigs from breaking loose,"

"Even before the task force came up with the guidelines, we had vowed to do what we could to keep our rigs from breaking loose," says Karl Sellers, who oversees the Project and Design engineering groups at Diamond Offshore.

"When we began our planning last fall, we didn't have the guidelines yet. So we had to develop our own design criteria and objectives. Our goal was to develop an effective and economical solution that would improve the chances of our rigs mooring systems surviving during a hurricane, and to implement the solution before the peak 2006 hurricane season with minimal disruption to drilling activity.

Engineering studies revealed that, by adding one line to each of the four columns on our semisubmersibles, we could gain as much as 50 percent more station-keeping capacity during hurricanes. Our studies also showed that we could accomplish this goal using a "pre-set" mooring system, which does not require the installation of additional mooring winches. This system is relatively quick and economical to install, allowing us to complete the work offshore on location with a minimum of downtime. Subsequent studies have revealed that with these upgrades the mooring systems meet the requirements of 95F, thereby enhancing the opportunity for our operators to secure the necessary drilling permits to operate during the hurricane season (June through October)."

Bud Danenberger, chief of offshore regulatory programs for the MMS, told the *Houston* Chronicle in June that the MMS expects only about half of the industry's targeted rigs will comply with the interim guidelines by the end of this storm season-Diamond Offshore expects to complete work on all 10 of its rigs being upgraded. Installation of the additional mooring equipment began last spring, with a goal of finishing in early August—the beginning of peak hurricane season. Meeting the target date was dependent upon myriad factors, including weather, sufficient bed space on the rigs to accommodate the additional work crews while the rig continued operations, minimal disruption to work due to well activities, and timely delivery of mooring chain and wire. As of this writing in mid-August, Diamond Offshore had completed work on eight of the 10 semisubmersibles that it is upgrading in the U.S. Gulf of Mexico. The Company expects to complete the ninth unit by the end of August and the 10th during September.

Past mooring failures by offshore drilling rigs in the Gulf have not led to major oil spills or casualties. But regulators are concerned that future failures could lead to bigger problems, such as damage to the infrastructure (mainly pipelines) on the seafloor and to some of the thousands of surface facilities dotting the Gulf. This is a particular concern because some forecasters believe the hurricane threat in the Gulf may be growing-and because the number of production facilities and subsea pipelines in the Gulf has increased. The intent of the current studies and interim guidelines is to reduce the likelihood of damage to these assets which could result in pollution and hydrocarbon supply disruptions.

In general, 95F provides more onerous requirements by which mooring systems are evaluated. "There are several key features to the interim guidelines for mobile offshore drilling units," says Sellers.

First, the design environment return period should not be less than 10 years. Prior to the establishment of the interim guidelines a 5-year return period storm could be used if the rig was not near other facilities.

Second, we either have to obtain sitespecific met-ocean data for each location, or use the "default" met-ocean criteria in 95F. The met-ocean data in 95F represents a 35-40 percent increase in mooring loads compared to the previous environments we typically used. Also, in addition to the traditional safety factor check, the guidelines recommend that a mooring strength assessment and post installation check be performed.

Third, we must design for a wind speed of at least 64 knots even if the site specific metocean studies indicate a lower value. That is basically a Category 1 hurricane.

Fourth, a current mooring equipment inspection log must be maintained. And fifth, a risk assessment for each drilling location must be completed. This assessment assigns a "risk rating" for each location. Factors that influence heavily in the final risk rating include the rigs proximity to seafloor architecture and surface facilities, anchor type and capacity, and risk mitigation measures taken.

Meanwhile, studies by the industry/ government group are continuing. "We are still evaluating mooring system performance during the past few storms," notes Sellers. "We hope to finish that analysis by next spring. Afterwards, there likely will be some changes in the guidelines, and the final solution may take several years to settle out. I really don't expect final regulations until 2008 or 2009."

DENISE ALLEN ZWICKER HAS BEEN A FREELANCE WRITER SINCE 1977, COVERING VIRTUALLY EVERY ASPECT OF THE ENERGY INDUSTRY.

#### How A Pre-Set Mooring System Works

A 200-400-ft. ("pigtail") of each of the four new mooring lines (heavy chain and wire) is attached to the rig.

![](_page_30_Picture_2.jpeg)

Another portion of the mooring line is attached to an anchor on an anchor-handling vessel. The anchor-handling vessel sets the anchor in the seabed and a buoy holds the end of this mooring line at the water's surface for retrieval.

![](_page_30_Picture_4.jpeg)

The rig crew repositions the rig after each new mooring leg is set to properly tension the new mooring line. The original eight mooring lines, which are tensioned by winches on the rig, are kept tight in normal seas. The new lines are kept relatively loose. When the rig is evacuated for a hurricane, all of the mooring lines will be loosened equally to allow the rig to ride with the storm without snapping the lines.

The anchor-handling vessel returns to the rig, picking up the "pigtail" and attaching the pigtail to a section of mooring line stowed on the anchor-handling vessel. This stowed section of the mooring line is played out as the vessel returns to the buoy. There, workers attach the

two sections of mooring line. They repeat the process for all four mooring lines. When the rig is moved to a new drill site, the anchor handling vessel conducts the process in reverse, since there are no winches to reel in the lines, as there are for the original eight mooring lines.

![](_page_31_Picture_0.jpeg)

# Santos Spreads its Wings

Brett Darley talks about Santos' growth and how Diamond Offshore fits into the company's expanding operational landscape.

We like to pick contractors who are experts. We don't come in and say that the contractor is just a labor force; we pick experts and then listen to them. We want a partner that has a good, robust management system. The beauty of GEMS is that the system is simple enough to actually be utilized. **Many management systems** I have seen are more comprehensive-but in reality, they are not being used. GEMS works where the rubber hits the road, and you can see that immediately when you go out onto the rigs.

BY WILLIAM DYLAN POWELL

Santos is a major Australian oil and gas exploration and production company with interests and operations in every major Australian petroleum province and in the United States, Indonesia, Papua New Guinea, Vietnam, Kyrgyzstan and Egypt.

#### **OPERATIONAL GROWTH**

"We are not a huge company," says Brett Darley, Manager, Drilling & Completions for Australian-based Santos Ltd. "We fit into the middle somewhere; not a BP and not a small operator. But traditionally we have been onshore focused, so for us offshore is a new sphere of working." Until five years ago, Santos had very little outside of Australia's Cooper Basin. But the company's vision is to spread its wings to other areas where opportunity exists, but which fall under the radar of the super-majors.

Santos has a number of exciting projects in the works, notes Darley: "Our next big plays include a big, but complex oilfield in Indonesia that we are excited about; we have a joint LNG venture with ConocoPhillips, and we are also excited about anything with oil." The company is reinforcing its shallow oil position, drilling 1,000 wells onshore during the next few years. But as Santos stretches across the region, the company brings the relationship with Diamond Offshore along for the ride. Offshore in this part of the world, much of Santos' drilling has been done by Diamond Offshore rigs.

![](_page_33_Picture_4.jpeg)

"Our next big plays include a big, but complex oilfield in Indonesia that we are excited about; we have a joint LNG venture with Conoco-Phillips, and we are also excited about anything with oil." Santos and Diamond Offshore have worked together since an initial, technically complex development project involving dual ESP submersible-pump completions with subsea wellheads using the Ocean Epoch.

![](_page_34_Picture_1.jpeg)

![](_page_34_Picture_2.jpeg)

![](_page_34_Picture_3.jpeg)

Last year, Santos had a market cap of \$7.9 billion, making it one of Australia's Top 40 companies. The company also is one of Diamond Offshore's best customers in the Asia Pacific region.

#### WHY DIAMOND OFFSHORE?

Santos and Diamond Offshore have worked together since an initial, technically complex development project involving dual ESP submersible-pump completions with subsea wellheads using the *Ocean Epoch*. "We like to pick contractors who are experts," says Darley. "We don't come in and say that the contractor is just a labor force; we pick experts and then listen to them. When we pick a drilling-fluids contractor, we don't tell them what mud to use. We tell them what we want the solution to be, and they design the mud system. We treat drilling the same way."

Diamond Offshore's GEMS management system also plays a role in Darley's preference for working with the Company. "We want a partner that has a good, robust management system. The beauty of GEMS is that the system is simple enough to actually be utilized. There are many management systems I have seen that are more comprehensive—but in reality, they are not being used. GEMS works where the rubber hits the road, and you can see that immediately when you go out onto the rigs."

On a personal level, Darley says a lot of the business between Santos and Diamond Offshore is a direct result of being able to trust the efforts of Diamond Offshore people like John Atkinson. "He can understand what we want in the future and come up with good solutions," Darley says. "Some of our work has been long-term development and some has been just one-off wells. But Atkinson has always taken the time to understand our business and see where Diamond Offshore can fit."

#### PRIDE AND PROFESSIONALISM

Maintaining a good relationship when nothing goes wrong is easy. As Darley notes, the trying times are when contractors can shine. "We always treat each other as professionals, and that is what matters," he says. "We are not always going to agree about everything, but when we actually do have a disagreement, there aren't any tantrums."

The same could be said for housekeeping on the rig; easy when there is not much work to be done but a good indicator of intention. "You notice when you have a Diamond Offshore rig that the Company has a good attitude about its equipment," notes Darley. "They are always investing. They are proud of their equipment. The housekeeping is very good and generally things don't get to a point where we have to jump in for anything to be done. Things are just done. I went out to the *Ocean Patriot* last year. The *Patriot* is an older rig and has been working hard; but as far as the pride the guys take, the rig is cleaner than most fifth-generation rigs I have ever been on. Everything was in place, and that is something you always get with Diamond Offshore."

"You notice when you have a Diamond Offshore rig that the Company has a good attitude about its equipment. They are always investing."

![](_page_37_Picture_0.jpeg)

# Drillers get a **IKICLE** Out of Training

BY SCOTT REDEPENNING

In 1901, when the Spindletop gusher put Beaumont, Texas, on the map, drilling crews knew little about controlling the forces of nature at work down the drill string and lacked most of the tools necessary for the task. Their primary course of action when the rig floor began to shake was simple—RUN! The resulting crude shower was good neither for the environment nor for business.

"Blowouts" almost never happen today and haven't been commonplace for almost a century. But the same forces of nature that contributed to Spindletop are still at work. That is why Diamond Offshore goes to great lengths to help ensure that its drilling crews are highly trained in well-control techniques, including investing more than \$2 million in training simulators and other equipment during the last several years to make state-of-the-art experiential learning a reality. "Some days you have a hard time telling whether this is another intense day on a floater operating in 4,000 ft. of water in the Gulf of Mexico or one of many simulations held at our Houston training center," says A.J. Guiteau, Manager-Training & Development. "Our teams get so immersed in the reality of their simulation exercises and training, they sometimes forget where they are. There is a ceiling above them. There are office walls around them. But they act like they are on a rig actually doing all the things drilling crews learn to do if a sudden surge of pressure ("kick") occurs. That is a huge testament to the quality of the training experience."

Fortunately, there are early warning signs that alert the driller to potential trouble downhole, and identifying signs of a kick and taking immediate action is where drilling teams at Diamond Offshore excel. During drilling activities, fluid (called "mud") is circulated downhole to provide lubrication, return cuttings and equally important to help, by the weight of the mud, to contain pressures in the formation. Sudden pressure increases in the well bore can occur when pressures that were trapped in the formation are released down hole as drilling progresses. Monitoring the return of the mud, the driller will notice this pressure release as an increase in mud returns. Drilling operations are then stopped, and the driller conducts a mud flow check on the well. If the well continues to circulate ("flow") with the mud pumps off, the driller knows he has a kick on his hands, and he closes the well before safely circulating out the kick. The drillers actions determine whether you "kill" the well or the well "comes to see you"-a blowout in layman's language.

#### Making the simulation real

During the past few years, emulating well control and stability processes and procedures has become the new focus of Diamond Offshore's Training Department. "We have evolved from the traditional lecture-only, linear learning we all grew up with to something much more experiential where theory and application are practiced," says Guiteau. "Today training isn't just about the amount of 'academic knowledge' you've accumulated. The new measure is successful application or performance. If our crews can see and touch the equipment, and manipulate the problem in simulation, their chances of learning to deal with the challenges and successfully performing in the real world are greatly increased."

Recognizing the increased value in this kind of learning approach, Diamond Offshore has invested more than \$2 million in the department during the last several years to make experiential learning more a reality. This investment includes: 1. Installing nine touch-screen activated well-control simulators in early 2006. 2. Fully modernizing our Stability Simulator, the first of its kind in the world (and only one of three in existence today). The unit can simulate potential hazards and emergency conditions common to semisubmersible rigs. 3. Bringing on line of state-of-the-art dynamic-positioning simulators, specific to actual Diamond Offshore systems in place in the fleet.

#### **Experiential Learning in Well-Control Training**

On the first day of supervisor-level well-control class, supervisors are randomly grouped into teams and immediately thrown into a kick problem with very little information. The ultimate goal is to "kill" the well, which means eliminating the potential of a blowout by bringing the well into balance so drilling can resume. Dozens of chemical, physical and hydrostatic factors can contribute to the problem and its resolution. As teams work through these variables, the trainer can remotely change well-kick conditions in real time to make the problem tougher—just the way the well may act in real life.

After all teams finish this first session, they have a debriefing to analyze the process and determine what worked and what did not. There could be several different approaches—all valid—to solving the same problem. From PCs loaded with electronic kill sheets to sourcing GEMS *Well Control Procedures*, government regulations and industry recommended practice, trainers can provide teams the same problemsolving resources that they would have to rely on in the real world.

"We don't hold their hands and tell them how to use the resources," says Brian Maness, Assistant Manager-Training & Development. "We help them grab their well-control knowledge and tools and apply them to the problem. So we reinforce their ability to develop themselves by strengthening their problem-solving skills. A kick can occur at any time. So the ability to solve the problem must be second nature to our drilling teams."

#### Extending the Experiential Model

Well control is just part of the training. Rig stability is the other partner in successful training, because if the rig isn't properly balanced, drilling operations can't progress. Stability parameters are set in the Company's GEMS management system for the drilling process to proceed safely on a properly balanced rig. Keeping the working margins within these safe parameters can be a challenge on a worksite afloat offshore where massive equipment, supplies and deck load are frequently changed. Not to mention those times when a sudden weather front blows through, the waves kick up, and you get hit with a 40 to 50 -knot wind.

Diamond Offshore's Comprehensive Stability & Ballast Control course employing dynamic simulations using a Victory-class ballast control room mounted on a hydraulic pedestal prepares operators for all types of situations, from standard operating activities to emergency scenarios. The simulator mimics the actual movement of the rig. Two operators work in tandem, balancing weight distribution by flooding or draining ballast tanks in the hulls or columns beneath the rig while adjusting mooring lines accordingly. The simulator shows the "bull'seye" identifying the acceptable drilling parameter where the rig is properly positioned for drilling. The activity is like pilots at a flight school practicing emergency landings in flight simulators.

On a working rig, the drilling team and ballast control operators have to work in harmony to keep the drill string in the bull's-eye. These teams normally are not at the same location on the rig, but their communication and coordination must work as though they are.

Stability training with challenging simulation for those on jackup rigs is also included for all operations personnel involved with moving onto location and the deck-load management on those rigs. Additional to this, is new simulation which monitors potential for a "punch through." (In a punch through, the spud can, or footing, of the independent jack-up leg can actually penetrate through soft soil layers on the ocean floor too quickly, possibly causing the rig to list and become out of balance).

Dynamic-positioning operators also attend training with simulations emulating problems with keeping the dynamically positioned rigs on location using powerful thrusters under the hulls. Once again, this simulation is focused on helping station the rig within the drilling bull's-eye. "This is how the real world works," says Guiteau. "You can't separate the two out on a drilling rig. So our courses are evolving into shared activities and simulations." Currently, Guiteau and his team are developing a new course that shares simulations in both areas. This is all part of the department's philosophy for experiential training—a philosophy developed in close collaboration with an institution that knows a thing or two about present-day training: The University of Oklahoma.

#### Learning to Train Effectively

Diamond Offshore has built a formal relationship with The University of Oklahoma's Training & Development Program, a program that educates professional trainers and gives them real college credit. Guiteau points out that his trainers typically are not formally trained teachers with education backgrounds, but usually employees who have degrees and/or solid experience from working on the rigs. Modern adult-learning theory has shaken up some traditionalists. "If you don't change the learning process, you will always get the same old result," he adds. "We wanted to employ modern learning theory, because people learn differently today. So we are training differently, employing many approaches that take understanding and retention to higher levels, more quickly and effectively than before."

The OU program places foundational emphasis on instructional design. Courses are detailed down to the smallest task on a rig. Trainers learn to provide an experience rather than simply a lecture. "Attention spans are a fraction of what they used to be," says Guiteau. "I can't lecture people and keep them interested. I want to see discussion, action, volatility, argument, struggle, even stress. Those are clear and visible signs that learning is taking place. Understanding basic theory deepens with involvement through activities that fully engage the learner."

Ongoing training for the trainers continues among Guiteau's team. Half of them have earned their Certificate of Training & Development from OU (see sidebar). The other half will have earned theirs by the first quarter of 2007.

"I would stack my training team against anyone in the business," Guiteau concludes. "I feel my team is the best, because few industry training providers or competitors insist their trainers participate in national training-certification programs from accredited universities which subscribe to modern instructional theories. Add this to years of field experience and subject-matter-related training, and your team develops strong trainer competencies."

SCOTT REDEPENNING IS AN INTERNATIONALLY EXPERIENCED FREELANCE WRITER, ENTHUSIASTIC SOCCER COACH TO 5-YEAR-OLDS, AND A HIGHLY QUALIFIED BEACH BUM.

#### NATIONAL CERTIFICATION FOR TRAINERS

The following Diamond Offshore trainers have earned their Certificate of Training and Development from the University of Oklahoma. This certification entails a rigorous regimen designed to immerse trainers in modern educational theory and experiential training. Earning this certificate also has provided our trainers degree-eligible college credit.

BRIAN MANESS Assistant Manager Training & Development

TED TRICHE *Senior Trainer* Well Control

WADE GANDY *Lead Trainer* Roustabout School JEFF MASHBURN *Senior Trainer* Nautical Science

KARL SHEARER *Trainer* Roustabout School

SUSAN BRADY Administrative Supervisor

# <section-header><text>

![](_page_42_Picture_0.jpeg)

# **DOWNTIME** FOR AN OFFSHORE DRILLING RIG MEANS LOST DOLLARS

for both the customer and the drilling contractor. For maintenance needs that involve welding or carpentry, Diamond Offshore keeps five elite crews on call, ready at a moment's notice to get the job done so the rig can keep turning to the right. These crews bring their own tools and supplies, find an out-of-the-way place to set up, and complete the job without interrupting drilling. When they are finished, they're gone—off to the next rig with a pressing repair need.

The 28 men who make up Diamond Offshore's four special welding teams are well trained for the task. Each welder is shipyard competent and certified or trained in pipe welding, pipe fitting, confined-space work, blueprint reading, rigging, and water survival. With an average of nearly 13 years on the job, they also hold one of the Company's best safety records, despite working with steel and fire daily. These crews have gone at least seven years without a lost-time accident.

"These are some of the most dedicated employees at Diamond Offshore," says Projects Director Ron Cunningham, who oversees their work. "We demand a lot from them, including a very irregular schedule. When the work load is high such as during the 2005 hurricane season, these crews rushed in after the storms to repair twisted wind walls, doors, and hatches; brackets or mounts for antennae; lights and their mounts; public-address speakers—even crane booms. The payoff was rigs quickly returned to service. Although we try to have the crews on a normal work schedule (14 days on the job, followed by 14 days off), they are really on call 24 hours a day, seven days a week. They have to be ready to leave for a job within 12 to 24 hours of the time we call them. And they have to be prepared to work until the job is complete—no matter how long that takes. For that, they get premium pay."

Although the welders say scheduling a family vacation can be tough, they also are compensated by a great deal of pride in their work. And all of them enjoy the variety of moving from rig to rig, meeting one new challenge after another.

"Today, we are working underneath the *Ocean Drake*," says Leo Dibble, foreman of one of the crews. "And we just finished installation of high-pressure equipment on the *Ocean Valiant*. We do everything: from 100 percent X-ray (high-specification welding

that requires X-ray verification) to working on a sewage line." Because each man takes his turn as rigger, welder, or helper—depending on the need—the crews are much more efficient than traditional welding crews.

On a Friday in late April, David Wedgeworth's crew of seven was at work on the *Ocean Nugget*. The rig had come into dry dock in Port Arthur, Texas, for a mandatory five-year inspection. At the same time, Leo Dibble's crew was offshore Mississippi on the *Ocean Drake*, repairing hull damage.

![](_page_43_Picture_8.jpeg)

"THESE WELDERS HAVE BEEN WORKING ON DRILLING RIGS FOR MANY, MANY YEARS. THEY UNDERSTAND THAT DIAMOND OFFSHORE'S MAIN PURPOSE IS TO PRODUCE REVENUE. SO THEY WORK HARD TO MINIMIZE THEIR IMPACT ON THE DRILLING OPERATION. THEY'RE ALSO VERY GOOD AT BLENDING INTO THE RIG CREW'S ROUTINE." PICTURED FROM LEFT TO RIGHT BELOW: DALE RAVENCRAFT, CHANCY NEFF, O.E. HAM, LEO DIBBLE, PERRY LOFTON, DAMON WESTBROOK, JIMMY FINLEY

![](_page_44_Picture_1.jpeg)

PICTURED ABOVE LEFT: MORGAN BYNUM BELOW LEFT: SCOTT WILLARD RIGHT: BYRON DAVIS AND SAM PARKER NEXT PAGE: DALE RAVENCRAFT

![](_page_44_Picture_3.jpeg)

![](_page_44_Picture_4.jpeg)

![](_page_44_Picture_5.jpeg)

Or at least that is what they thought they were going to be doing on each of those rigs. But, as so often happens, things changed. The *Nugget* was being moved that day, so scheduled work had to stop. Instead, Wedgeworth's crew began replacing handrails, a job that could be performed in transit. On the *Drake*, high winds

WHEN THE WORK LOAD IS HIGH LIKE IT WAS DURING THE 2005 HURRICANE SEASON, THESE CREWS RUSHED IN AFTER THE STORMS TO REPAIR TWISTED WIND WALLS, DOORS, AND HATCHES; BRACKETS OR MOUNTS FOR ANTENNAE; LIGHTS AND THEIR MOUNTS; PUBLIC-ADDRESS SPEAKERS—EVEN CRANE BOOMS. THE PAYOFF WAS RIGS QUICKLY RETURNED TO SERVICE.

made it too dangerous for the crane to lower sheets of metal to the welders'

station beneath the rig. So Dibble's crew switched to leg repairs instead.

"This is a daily occurrence for them: starting one job and having to switch to another in mid-stride," says Stephen Hamilton, safety representative on the *Ocean Drake*. "But they have made these switches for years without incident." In fact, one of the main job requirements for these welders is flexibility.

Normally, each crew of six or seven works as a unit. They travel together from rig to rig, work together for at least 14 days in a row, and spend almost every other waking hour together. "Like a family," they say, although not many families have that much togetherness!

But sometimes the crews split up or gang up—to take on certain challenges. For example, about 15 years ago, two crews and 20-plus days were required to move the *Ocean Spur* and the *Ocean Spartan* into place at Lake Maracaibo in Venezuela.

"We had to cut out a 100-foot section of each leg to get the rigs under a bridge, then weld the sections back together after we moved the rigs to the other side," says Dibble. "We had 14 welders on the job. A competitor needed 47 contract welders to do the same thing with their rig. That's because each one of us can rig steel, fit steel, and then do the welding. With the contract crews, each person can do just one of those jobs.

"The same sort of thing happened when we took a floating hotel and made the unit into the *Ocean Confidence*," Dibble continues. "All four crews worked nine months out of 12 for one and a half years to accomplish that job. The shipyard did a lot of the work, and we did, too. All the other Diamond rigs had to do without us during that time.

"We have been on the job for as long as eight weeks for some of these big projects, working long hours and doing hard work," he comments. "So it is tough for us when we go on some of the rigs, and we see that they don't want us there or that we are in the way. Of course, nobody's happy about having to repaint after we've finished our work! On the other hand, when we know the people on the rig, and when they know our work, they welcome us, which makes us feel really good. And we always enjoy seeing people again after a long absence."

"These welders have been working on drilling rigs for many, many years," says Cunningham. "They understand that Diamond Offshore's main purpose is to produce revenue. So they work hard to minimize their impact on the drilling operation. They're also very good at blending into the rig crew's routine. A lot of their work can be done only during rig moves, which means that they only have a day—or just a few days—to complete the job. They are used to working hard and fast."

In the early months of each year, the crews' schedules are pretty well set with routine maintenance work. "But, after hurricane season starts, the schedules often get thrown out the window as we work to repair storm damage," says John Hill, the senior project engineer overseeing Wedgeworth's crew.

The crews work worldwide, keeping their passports and visas up to date. "Africa, Brazil, Venezuela, the North Sea, Portugal. You name a place, odds are we have been there," notes Dibble.

Although each rig keeps a welder on staff to handle one-man jobs, Diamond Offshore has found the special welding crews very cost effective for larger jobs. "We are efficient because we all act as fitters, welders, and helpers," says Wedgeworth. "Here in the shipyard, you can really see the difference: Seven of us do the same job as 21 of the shipyard crew, with their seven fitters, seven welders, and seven helpers."

The company uses the same concept for a five-man carpentry crew, which is likewise at work on the *Nugget* on this day, remodeling the rig's living/working quarters, including ceilings, walls, and cabinets. "We bring our own tools and set up on the helipad if the rig is not working," says Byron Davis, the carpentry foreman. "If the rig is working, we set up wherever we can." The carpentry crew, despite working with saws, drills, knives, and power tools, has not had a lost-time accident in more than eight years.

"Other drillers use contract welders and carpenters, but we've seen this disrupt drilling. Our rigs are designed for drilling not for construction and modification," says Cunningham. "That is why our rig managers are pleased with the performance of these crews: They are fast, efficient, safe, and have very little impact on the drilling operation."

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![](_page_47_Picture_0.jpeg)

# The Nationalities of Diamond Offshore CELEBRATING STRENGTH IN DIVERSITY / PROFILES BY WILLIAM DYLAN POWELL

#### **CYRIL LEGGE** / DRILLER

#### IRELAND

Hard-working Irishman Cyril Legge may work in offshore Australia, but he's not as far from his kinsmen as you might think.

The Irish have a heritage of successful commercial, cultural and political relations with the Commonwealth of Australia. Six of the seven Prime Ministers in the 20 years from 1929 to 1949 claimed Irish ancestry; before 1949, Irish citizens could immigrate to Australia through a government program known as assisted passage.

Today over 70,000 Irish-born residents in Australia live down under, and up to 30 percent of Australian citizens claim some sort of Irish heritage. Around 1,000 people migrate from Ireland to Australia each year.

Cyril came to work Australian waters on Ocean Bounty much as his countrymen had before him: looking for adventure, prosperity and the chance to build something big. Today he builds a better future, not just for shareholders through his hard work but also through the energy his team will bring to markets around the world.

#### AVERY LITTLEFIELD / OFFSHORE INSTALLATION MANAGER USA

*Ocean Sovereign* OIM Avery Littlefield drills offshore Indonesia in the turquoise waters of the Madura Strait. Littlefield lives in Elgin, South Carolina. He got his start in the business doing barge overhaul work deep in the bayous of Louisiana. But his heart always will be part Indonesian.

During one of his tours, he and his wife Trudy adopted a beautiful Indonesian girl who plays a big part in his life back home and occupies a big piece of his mind during downtime. She's just turned eight. Littlefield has picked up some Indonesian and can use the language with his crew on the rig.

Littlefield began his offshore career in 1972, working his way toward Zapata in 1977 and what is now Diamond Offshore. The traveling involved in an Indonesian post can get a little tiring, he admits: "I leave on a Monday and get to work on Thursday—about a 37-hour flight." But he loves his post regardless.

Back home Littlefield is as hands-on as he is on the rig. He's got 12 acres of land about 25 miles from downtown Columbia, South Carolina. "I'm about 1:45 minutes from the beach and about 1:45 minutes from the mountains," he says. Littlefield has built a pond on his property and plans to build three more houses around the pond as he works to develop his slice of the American dream.

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#### **MARIE VU** / ADMINISTRATIVE ASSISTANT & PROCUREMENT

VIETNAM

Marie Vu immigrated to Singapore from Ho Chi Minh City, Vietnam where she worked as a real estate contracts administrator for a Taiwanese company. Intelligent and persistent, Vu chose Singapore as a place to follow her career aspirations and study business administration at a local college.

Since the British founded modern Singapore as a trading station in the 1820s, it has been a hub of trade between the East and the West. And in that respect, nothing has changed—the buzz of international commerce covers the island.

Vu quickly gained traction in this fast-paced metropolis after completing her education. Working at Diamond Offshore for three years as a temporary employee, she now has six years' experience with the company. Her procurement and administrative support remains vital to the rigs and operations in the Asia Pacific region.

"If the rigs shut down we lose a lot of money, so supporting them correctly is essential," she says. "The work is challenging; I love staying busy and keeping my mind working." When she's not working, Vu and her husband spend most of their time taking care of their five-year-old son, Keith.

"I'm very excited because I'm about to get my Singapore passport," she says. Getting a passport is a big step for those coming to Singapore seeking their fortune. Seeing her energy and interaction with the rest of the Singapore team, she obviously has found her place both in the business world and in the world at large.

![](_page_50_Picture_7.jpeg)

![](_page_51_Picture_0.jpeg)

#### NATALIE KENNEDY / HUMAN RESOURCES ASSISTANT AUSTRALIA

"I've only been with Diamond Offshore for eight months, but I love it," says Human Resources Assistant Natalie Kennedy, who works in the Perth office. Kennedy's primary job is to help ensure that crew members get the training required by Diamond Offshore's worldwide competency program and that training data stays current and correct.

![](_page_52_Picture_2.jpeg)

She enjoys meeting the crew and putting a name to a face. Many times, crew members get a pay raise when they've completed a certain amount of training, so they often are pleased to meet her as well.

But after work, don't look for her indoors in an office. "I really like to do outdoorsy, beachy kinds of stuff," says Kennedy. "I got my surfboard when I was 16. Three or four of us in the office have surfboards, and I'm taking my board to Bali in a few weeks. This is my fifth or sixth time to vacation out there."

**TRAVEL NOTE:** From the Diamond Offshore office in Perth, the beaches of Bali are only about three hours away by air.

![](_page_52_Picture_6.jpeg)

# Ocean Sovereign

Motivated and Experienced

The Oyong platform has been a challenge from the start, and without the motivation and experience of the Diamond Offshore personnel some of the wells would not have reached total depth. It has been a pleasure working on the Ocean Sovereign, and I look forward to again working with a professional crew dedicated to doing a good job.

# Bryan A. Houston Santos

### Ocean Heritage Outstanding Performance

As you know, we have just completed our two-well appraisal program with the *Ocean Heritage* for Qatargas 3&4. Of particular pride is the fact that the program was executed without an LTI and with no environmental incidents. Working together with our...team, the rig (crew) delivered the wells on time and under budget. Many challenges were faced during the planning and execution of this project, and I would like to acknowledge your support and the commitment and cooperation exhibited by your team to successfully completing the project. I look forward to working with Diamond Offshore again in the future.

Kindest regards, Kerr Allen Johnston OO - QG3 Venture

## Ocean Baroness Setting Records

The Ocean Baroness team set a new Company record, running 23,550-ft. of 13 5/8-in. casing with a hook-load of 1.8 million pounds, besting the previous record set a number of years ago by the Ocean Titan. The Baroness well also set a new Company drilling-depth record at 32,448 ft. In addition, a significant casing load was charted recently by the Ocean Confidence, which ran 15,140-ft. of 13 5/8" casing with a weight of 1,115,000 pounds (casing only). It had a total string weight at land out of 1,345,000 pounds.

![](_page_53_Picture_10.jpeg)

## **Doug Foster** Corporate Leadership Award

Doug Foster, Operations Manager, *Ocean King*, has received a Minerals Management Service (MMS) Corporate Leadership Award for 2005. Foster was selected for "providing outstanding assistance and support to help the MMS Lake Charles District achieve its strategic safety and pollution prevention goals"; for "working cooperatively with the MMS and the management of Diamond Offshore to ensure an optimal offshore working environment and compliance with federal regulations"; and for "actively and effectively promoting employee safety and environmental protection."

"My relationship with the MMS team is a direct result of the hard work, dedication and professionalism demonstrated by the OIMs and crews on the *Ocean Spur* and *Ocean King* in their working relationship with the MMS," Foster said (Foster also served as operations manager for the *Ocean Spur* when it was based in the Gulf Of Mexico). "Their diligence and rapport with the offshore inspectors has allowed me to establish contacts and share information and ideas with both the offshore inspectors and the shorebased MMS staff in the district. Safety, respect for the environment and a respect for compliance with the regulations which govern our endeavors are the cornerstones that have made working with the MMS a pleasure."

In 2000, the *Ocean Spur* was singled out as the Lake Charles MMS SAFE AWARD winner, and in 2006, the *Ocean King* won the Diamond Offshore Area and President's awards for our jack-up fleet.

## Ocean Rover Handling Challenging Directional Wells

It was not much more than one year ago when we were struggling through Kikeh Kecil #2, the first of our Kikeh appraisal/development wells. Stuck pipe, BOP issues and well control restrained our ability to get the well to TD.

Since that time, the *Ocean Rover* rig and Office teams have returned to Kikeh Kecil #2 and safely completed the well. In addition, the team has successfully completed the 23 well DTU batch, 8 well Kikeh East Batch set and the first 3 Kikeh East wells ahead of schedule and on budget.

The last well drilled at Kikeh East (WX06) is one of the field's most challenging directional wells at 73 degrees and over 16,000 ft. md. The well was drilled in record time for Diamond Offshore-Murphy in Malaysia at 1.24 days per 1,000-ft. drilled from spud to TD. Casing was also safely run and landed in adverse weather. I can not say enough to describe our appreciation and pride towards the *Ocean Rover* rig team for a truly incredible start to the Kikeh field development.

Let's keep focused on safety, and your outstanding performance will continue.

Thanks again for all you effort and support.

Mike K. McFayden Drilling Manager Murphy Sabah / SK/PM

![](_page_54_Picture_13.jpeg)

# Ocean Drake

#### Mystery Man

Offshore roughneck. Music promoter. Published novelist. Typically, these titles would apply to three very different people. But Larry Taylor of the *Ocean Drake* is anything but typical. In May, Taylor's first novel was published—a suspenseful murder mystery titled *My Best Days, Your Worst Nightmare*.

Taylor, who earned his BA in Psychology at The University of Southern Mississippi and now lives in Hattiesburg, Mississippi admits that much of the book is inspired by his own life, to a point. "It's about twisted thoughts, deceitful schemes and cold revenge," Taylor says. "But it really translates to what everyone faces: what is right and what is wrong."

Long before the notion of being published entered his mind, Taylor began the book as a kind of therapy, a way to "find a positive and constructive means to express my concerns about issues that were arising in my life. I wanted to figure out where I was and in what direction I should head."

"But I couldn't leave it at that," Taylor says through a chuckle. "My psychology degree came into play, so as you get into the book 'right and wrong' becomes more the struggle between good and evil."

There's no way Taylor will reveal the outcome of his thriller, but in his own life, "good" definitely has the upper hand. Taylor's main motivation for making his book a success isn't fame and fortune, but rather to further his other passion—promoting the music and fine-art endeavors of the youth in his Hattiesburg community. He has created an organization to "show the world what these kids have going on: gospel, jazz, hip hop, dance, really everything."

"I want my writing to open doors for these kids," Taylor adds. "I hope this book helps provide a platform so they can stand on it. So they can express themselves without having to deal so much with the expense of it. These kids have talent, but no outlet for it. They are working with almost nothing and are creating incredible art. I want to give them more options, a means to better

themselves and become successful individuals."

In his own life, Taylor credits Diamond Offshore for giving him that same kind of platform, quite literally. "Working on the *Ocean Drake* has been instrumental in fulfilling this dream," he says. "Getting published is very expensive and time consuming. The living I make with Diamond Offshore and the work schedule gave me what I needed to get this done. I'm thankful to everyone I work with. Those guys on the *Drake* are terrific."

There also has been another unexpected benefit

from working at Diamond Offshore. "I tell you what, working offshore definitely has inspired a book of its own," Taylor says. "It takes a mentally tough person to work offshore. I am in awe of what we do. I have already started that book."

When it's finished, it will be Taylor's third novel. His second, titled *Mississippi Dreams and the Last War* soon will be released. You can pick up *My Best Days, Your Worst Nightmare* now at Amazon.com or ask for it at your local bookstore, and you can read more of the book at www.mybestentertainment.com.

![](_page_55_Picture_14.jpeg)

"My psychology degree came into play, so as you get into the book right and wrong becomes more the struggle between good and evil."

## Ocean Rover "Can Do" Attitude

It has been a pleasure working with the Ocean Rover team. The team has a fine operation. They have been willing to meet Shell's needs in every way and always with a positive, "can do" attitude. The rig is well maintained, and housekeeping is excellent. The personnel are very knowledgeable and competent. They always put safety first. Shell Malaysia

![](_page_56_Picture_3.jpeg)

# Rigamarole

Top Design and Publication Awards

*Rigamarole Magazine* was honored recently at the Dallas Society of Visual Communications' (DSVC) annual award show. The DSVC Annual Exhibition is the top forum for graphic design in the southwest region of the U.S. Of more than 850 submissions, only 31 received a medal. The Spring 2006 issue of *Rigamarole*, which was designed by Rigsby Design, received one of only five Gold Medals awarded in the show.

In addition, the publication won two platinum and three gold awards in the annual MarCom Creative Awards show, which honors excellent in marketing and communications from across the U.S. The two platinum awards were in the Corporate Magazine and Employee Publication categories and the three gold awards were for Photography, Creative Design and Writing. As with the Dallas show, *Rigamarole* was among a small number of contestants that received top honors.

## **RIGS & LOCATIONS**

DIAMOND OFFSHORE RIGS BY TYPE AND LOCATION

![](_page_57_Figure_2.jpeg)

SEMISUBMERSIBLES			
OCEAN CONFIDENCE	7,500	DP; 15K; 4M	G 0 M – U S
OCEAN BARONESS	7,000+	VC; 15K; 4M	G O M – U S
OCEAN AMERICA	5,500	SP; 15K; 3M	G O M – U S
OCEAN STAR	5,500	VC; 15K; 3M	G O M – U S
OCEAN VALIANT	5,500	SP; 15K; 3M	G 0 M – U S
OCEAN VICTORY	5,500	VC; 15K; 3M	G O M – U S
OCEAN QUEST	3,500	VC; 15K; 3M	G O M – U S
OCEAN VOYAGER	3,200	VC	G O M – U S
OCEAN CONCORD	2,200	3 M	G O M – U S
OCEAN WHITTINGTON	1,500	3 M	G O M – U S
OCEAN SARATOGA	2,200	3 M	G O M – U S
OCEAN NEW ERA	1,500		G O M – U S
OCEAN WORKER	3,500	3 M	MEXICO
OCEAN YORKTOWN	2,850	3 M	MEXICO
OCEAN AMBASSADOR	1,100	3 M	MEXICO
OCEAN GUARDIAN	1,500	3 M	NORTH SEA-UK
OCEAN PRINCESS	1,500	3 M	NORTH SEA-UK
OCEAN VANGUARD	1,500	15K; 3M	NORTH SEA-NORWAY
OCEAN NOMAD	1,200	3 M	NORTH SEA-UK
OCEAN ROVER	7,000+	VC; 15K; 4M	MALAYSIA
OCEAN EPOCH	1,640	3 M	MALAYSIA
OCEAN GENERAL	1,640	3 M	VIETNAM
OCEAN BOUNTY	1,500	VC; 3M	AUSTRALIA
OCEAN PATRIOT	1,500	15K; 3M	AUSTRALIA
OCEAN ALLIANCE	5,000	DP; 15K; 3M	BRAZIL
OCEAN WINNER	4,000	3 M	BRAZIL
OCEAN YATZY	3,300	D P	BRAZIL
OCEAN LEXINGTON	2,200	3 M	EGYPT

JACK-UPS			
OCEAN TITAN	350	IC; 15K; 3	G O M – U S
OCEAN TOWER	350	IC; 3 M	G O M – U S
OCEAN KING	300	IC; 3 M	G O M – U S
OCEAN SPARTAN	300	IC	G O M – U S
OCEAN SUMMIT	300	IC	G O M – U S
OCEAN COLUMBIA	250	IC	G O M – U S
OCEAN CHAMPION	250	MS	G O M – U S
OCEAN CRUSADER	200	MC	G O M – U S
OCEAN DRAKE	200	MC	G O M – U S
OCEAN HERITAGE	300	IC	Q A T A R
OCEAN SOVEREIGN	300	IC	INDONESIA
OCEAN SPUR	300	IC	TUNISIA
OCEAN NUGGET	300	IC	MEXICO
INTERNATIONAL DRILLSHIP			
OCEAN CLIPPER	7,500	DP; 15K; 3M	BRAZIL
UPGRADING			
OCEAN ENDEAVOR	8,000+	VC; 15K; 4M	SINGAPORE
OCEAN MONARCH	8,000+	VC; 15K; 4M	SINGAPORE
UNDER CONSTRUCTION			
OCEAN SHIELD	350	IC; 3-4M	SINGAPORE
OCEAN SCEPTER	350	IC; 3-4M	G O M – U S

#### KEY

DP = DYNAMICALLY POSITIONED/SELF-PROPELLED IC = INDEPENDENT-LEG CANTILEVERED RIG

MC = MAT-SUPPORTED CANTILEVERED RIG

- MS = MAT-SUPPORTED SLOT RIG

WS = WAT-SUPPORTED SE VC = VICTORY-CLASS SP = SELF-PROPELLED 3M = THREE MUD PUMPS 4M = FOUR MUD PUMPS

15K = 15,000 PSI WELL-CONTROL SYSTEM

## RUMINATIONS

Often when one's mind heats up on the job it can't help but throw sparks in every direction hopefully along with the occasional smile. What's this welder thinking about as he takes a break aboard the *Ocean Baroness*?

Perhaps he's pondering the possibility of nearby gold on the floor of the Gulf: that gateway between the New and Old worlds by which European settlers transported fortunes in precious metals for melt-down upon arrival in Spain, England or Portugal.

Or maybe he smiles at the visualization of a metal sculpture that one day will stand in the Menil or MOMA, representing this most durable medium. Maybe he just wants to ask for a light—and appreciates the irony. Or could he stand enthralled by the physics of modern fusion welding—a coalescence of metals that has made life more productive since the first millennium?

Maybe he simply smiles at the prospect of an air-conditioned room and a cold drink on the rig to beat the heat of summer.

![](_page_59_Picture_0.jpeg)