

# OFFSHORE FRONTIERS

A Transocean Inc. Publication

May 2003

India: Depths of Opportunity



Robert L. Long  
President and CEO

# Welcome

India is one of the most fascinating countries I have ever visited. The complexity and richness of the culture, the tremendous natural resources and the vast pool of talented and highly educated people give India unlimited potential.

Transocean is fortunate to be playing a role in the development of India's energy infrastructure. Thanks to the outstanding efforts from India District Manager Deepak Munganahalli and his team, we expanded our activity from one to six rigs during the 18 months through April. In the process, we have made a very significant gas discovery — the Dhirubhai find in the Krishna-Godavari basin — for Reliance Industries, which is emerging as a major, new E&P player. Also, it should be noted that the *Discoverer 534* set a water depth record in India drilling in 5,773 feet of water before leaving for Malaysia in April.

We are excited about the future prospects in India. Under the dynamic leadership of Chairman Subir Raha, the Oil and Natural Gas Corporation Ltd of India (ONGC) is significantly increasing drilling activity and, of particular interest to Transocean, is making a concerted effort to explore India's deepwater potential. As we go to press with this issue of *Offshore Frontiers*, we are preparing to respond to two ONGC tenders for five additional jackups and at least two, and possibly four, additional deepwater rigs. In addition, Reliance will be contracting a deepwater rig to develop the Dhirubhai discovery. If all this activity proceeds, India could become a very significant deepwater drilling province and a key player in Transocean's future growth strategy.

Deepak and his management team have done an excellent job managing through the problems created by rapid growth to establish Transocean as the largest international contract driller in India. Our rig crews have done an exceptional job for our customers and are working hard to achieve our vision of an incident-free workplace, all the time — everywhere. Two of the rigs in India, the *J.T. Angel* and the *Trident 2*, have achieved Zero TRIR year-to-date through April — a terrific accomplishment for which we should all congratulate them.

I look forward to my next visit to this exciting country and to the continuing growth of India as an important player in the international oil and gas business.

A handwritten signature in white ink, appearing to read "Rob Long". The signature is fluid and cursive, with a large initial "R" and a long, sweeping underline.

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**Mission Statement:**  
To be the premier offshore drilling company providing worldwide, rig-based well-construction services to our customers through the integration of motivated people, quality equipment and innovative technology, with a particular focus on technically demanding environments.

**Core Values:**  
Financial Discipline  
Integrity and Honesty  
Respect for Employees, Customers and Suppliers  
Safety  
Technical Leadership

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**On the Cover:**  
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# India: Depths of Opportunity

MUMBAI – Southeast Asia’s economy is often portrayed as a tiger. But it’s the strong and steady elephant that characterizes India, where surging energy demand has helped sustain higher utilization of shallow and deep-water drilling rigs.

“The elephant,” says Transocean India District Manager Deepak Munganahalli, “illustrates India and our clients’ broad success in finding and developing large offshore fields beneath the three oceans off our coasts.”

On the day that Transocean India opened its new Mumbai offices earlier this year, Munganahalli supported his analogy with several trends.

To begin with, early this year 26 mobile offshore drilling units were operating here, a record for recent years and up from 18 rigs in 2000. The rig fleet growth has resulted from a string of recent discoveries made by virtually every operator in India, plus the exploration commitments that operators have to satisfy against the blocks awarded in the NELP (New Exploration Licensing Policy). The state-run Oil and Natural Gas Corporation Ltd (ONGC) has made significant discoveries offshore, as have independent operators, including Reliance Industries, Cairn and Niko Resources.

With the largest fleet in India run by an offshore contract driller, Transocean has worked for virtually every major client in the country. Today, four Transocean rigs — the *J.T. Angel*, *Trident 2*, *C.E. Thornton* and *E.G. McClintock* — operate for ONGC. The *Transocean Nordic* is under contract with Reliance.

Until recently, Reliance also used the *Discoverer 534* ultra-deepwater drillship, which helped Reliance enter the offshore exploration business with India’s largest natural gas discovery in more than 30 years. Reliance employed the *Discoverer 534* to make the Dhirubhai discovery in the Krishna-Godavari basin of approximately 10 trillion cubic feet and also set India’s deepwater

drilling record in the “K-G” basin at almost 6,000 feet of water. The *534* drilled eight consecutive and successful exploration “K-G” wells before leaving for Malaysia in April.

Besides discoveries, India has an extensive offshore production base, reinforced by the shallow-water Mumbai (formerly Bombay) High redevelopment program of ONGC. So, reserves and production are growing along with optimism about the future of offshore drilling in India.

“Even if no more





Top, left: Discoverer 534  
Bottom, right: Transocean Nordic

than all of the European Union in a year," U.S. columnist George Will said in March in Washington, D.C., at the annual meeting of the U.S. offshore trade organization — the National Ocean Industries Association.

Since many of India's offshore discoveries here have been natural gas fields, this cleanest-burning fossil fuel is expected to play an increasingly prominent role. More economical than nuclear power, gas already is used by Indian industries, including power, fertilizer and transportation.

New Delhi has converted its entire public transportation system to compressed natural gas, supported by a regional pipeline network.

"How much can natural gas demand grow? The real answer is people don't know," Munganahalli says. "But year after year, petroleum demand has been outstripping supply, and it is expected to continue to grow. The impact from more cities converting to CNG like New Delhi and the additional demand for gas-based power plants would be substantial."

Where will the additional petroleum reserves be found to meet the burgeoning demand? In large part, from the three oceans surrounding the west, south and east of this continent-country — the Arabian Sea, the Indian Ocean and Bay of Bengal. With huge offshore blocks, each of which can exceed 1 million acres, most of the country's offshore basins are unexplored or little explored.

Only 16% of India's basins are moderately to well

discoveries are made in the next year, which is highly improbable given our clients' success rates, Transocean has all our rigs under contract for that entire period," Munganahalli says.

While Transocean rigs have a significant amount of work, Munganahalli is quick to add that "we are only as good as our people and our results. We still have room for improvement, and our most important tasks are to get all our rigs to achieve safety and operational excellence by meeting our goals in those areas."

Another Transocean objective is to leverage drilling successes into contracts that bring more company rigs to India. In all, clients have announced that they require eight to 10 additional shallow and deepwater rigs here this year and four more in 2004.

The water-depth capabilities of these rigs range from 100 feet (30 meters) to 10,000 feet (3,000 meters). Efficient and safe offshore drilling is vital to further meeting India's burgeoning energy needs. Consider that India imports 70% of its petroleum products. Consequently, any additional domestic production will further reduce the country's reliance on imports.

Also, take into account that the country's population of 1 billion includes a middle class of 300 million consumers, by itself larger than the population of the United States. India's per-capita consumption is expected to continue to grow, driving additional demand for oil and natural gas.

"The population of India grows faster in one week





Top, left: C.E.Thornton  
Bottom, right: J.T.Angel

Page 5, top: Mumbai: Chhatrapati Shivaji Terminus, train station. Reflecting one segment of India's energy demand, transportation is vital to India's population of one billion and middle class of 300 million.

“The population of India grows faster in one week than all of the European Union in a year.”

Sagar Samrat that made the Mumbai High discovery.

But it wasn't until 2001-2002 that Transocean began to grow so quickly — from one to six rigs. In just a matter of months, dozens of personnel were added, laying the groundwork to bring in four jackups and the *Discoverer 534*, bidding adieu to the jackup *Trident 12* and helping Reliance make its entry into the offshore petroleum business.

Raj Louis, Transocean India's Human Resources Manager, has 12 years' experience in industries from finance to training. Yet, he has never before experienced anything like Transocean's growing operations in India.

“Rigs seemed like they were showered on us,” Louis recalls. “It was stressful, but rewarding, especially

explored, some 17% are poorly explored, 27% have just begun exploration and 40% have never been explored.

While shallow water fields, including Mumbai High, have been proven producers, they are mature areas and account for only six of India's 26 large and medium-sized sedimentary basins.

Deepwater is the opposite case. It represents 43% of the total offshore basin area of 94 million acres, and it is here that Transocean's technical expertise is most required. ONGC alone expects that deepwater discoveries will drive two-thirds of its targeted doubling of reserves.

Supporting the deepwater outlook in India is the Directorate General of Hydrocarbons, which has secured Western Atlas Inc. to acquire, process and interpret seismic data of deepwater basins. Also, private oil companies here are not compelled to form alliances with national oil companies and pipelines are being considered to transport gas from offshore to markets.

“India is moving on several fronts to further tap the tremendous E&P potential offshore,” says Bob MacChesney, a former India Country Manager and current Region Manager for the Middle East, Mediterranean, Caspian Sea and India. “Transocean is well positioned to continue to play a leading role, here.”

For more than 15 years, Transocean has maintained a continuous presence in India, and its roots go back to the first successful offshore drilling program. A Transocean predecessor company contributed to India's first offshore discovery in 1974 on the Mumbai High field, having helped ONGC to construct the jackup





when you consider that we also launched a 10-year nationalization plan in 2002. Within our plan is the Accelerated Rig Training (ART) program to increase our rig-based leadership, including people we expect to become OIMs, drillers, assistant drillers, chief electricians and barge supervisors.”

India’s per-capita consumption is expected to continue to grow, driving additional demand for oil and natural gas.

Since 2001, Transocean India has expanded from 15 people in the shorebase office and 10 expatriates offshore to 50 people onshore and 155 expatriates. The total headcount of 715 people includes more than 20 Indian department heads, most of whom returned to their home country from other parts of the world to support Transocean’s growing Indian presence.

Coming home from Dubai to serve as India District Materials Manager was a dream come true for Monojit Chaliha. “Transocean’s growth here while expanding our use of fixed-price agreements in purchasing and also reducing customs-clearance days has been a source of pride for me as an Indian,” Chaliha says. “The challenge of managing the procurement for a growing district is huge, and I am quite motivated to achieve it.”

Munganahalli, also from India, has spent his oilpatch career working in 10 countries. However, it wasn’t until 2001 that he worked here. As with everyone who moves to India, the biggest adaptation for the former Director of Training, who was based in Pau, France, has been building patience.

“Rig contracts, customs and other

issues involving bureaucracy mean that business doesn’t happen overnight, here,” he says. “You have to make sure that you have patience and that you don’t bypass the system.”

Undoubtedly, “the system” contributed to author Gurcharan Das’ observation in his book *India Unbound* that this country “will never be a tiger” like China.

Instead, he wrote, India “is an elephant that has begun to lumber and move ahead. It will never have speed, but it will always have stamina.”

And strength: India has never been as strong — both in shallow and deepwater offshore drilling — as it is today.





Delhi  
New Delhi

Ahmadabad

GULF OF KUTCH

ARABIAN SEA

Surat

Trident 2  
Transocean Nordic  
F.G. McClintock  
J.T. Angel  
C.E. Thornton

Mumbai (Bombay)

Visakhapatnam

Hyderabad

BAY OF BENGAL

- Transocean Office
- Yards
- Client Offices
- Cities

Bangalore

Chennai (Madras)



Bob MacChesney  
Region Manager



Terry Jewitt  
Rig Manager  
Transocean Nordic



Mike Hubele  
OIM  
Discoverer 534



Johanna Fernandes  
Executive Assistant

INDIAN OCEAN





*J.T. Angel*



*C.E. Thornton*



*F.G. McClintock*



*Transocean Nordic*



*Trident 2*

# Transocean **FIRSTS** in India

## First jackup

Transocean predecessor Sonat Offshore helped ONGC construct the first jackup in India, the four-legged *Sagar Samrat*.

## First drillship capable of working in 2,000 feet (610 meters) of water in India

*Discoverer 511* in 1983.

## First dynamically positioned drillship

The *Deepwater Navigator*, formerly the *Sedco 445*, became the first DP drillship in India in 1984.

## First exploration well offshore for Reliance

The *Discoverer 534* drilled the first exploration well for Reliance in April 2002.

## Water-depth drilling record

The *Discoverer 534* set India's water-depth drilling record for Reliance Industries in 5,773 feet (1,760 meters) of water off India's southeastern coast.

## Largest offshore drilling contractor

Transocean operates five jackups offshore India, the largest fleet of mobile offshore drilling units provided by a contract offshore driller.

Deepak Munganahalli  
India District Manager



Chijioke Akwukwuma  
Rig Manager  
*Trident 2*



Ramprasad Kewat  
Welder  
*Discoverer 534*



Chris Menezes  
Ops Engineer —  
Reliance



Shamika Kubal  
Accountant



Monojit Chaliha  
District Materials  
Manager



Ranjana Naidu  
Logistics Executive



Peter Fernandes  
Medic  
*Discoverer 534*



Mushtaq Obaray  
Radio Operator  
*Discoverer 534*



Greg Loomis  
Driller  
*Discoverer 534*





Opposite page: C.E. Thornton and F.G. McClintock.  
This page, left to right: Nordic Roustabout Trio: Anil Sabadeo Mudras,  
Javed Salim Usman and Trevor D'Souza



# Making Big Moves: Shallow Water

**OFFSHORE GUJARAT STATE – Rapidly growing from one to five jackups over the past year and a half alone has made Transocean the largest contract offshore driller in India. The expansion also reflects the resurgent importance placed on shallow water by clients, who are expected to contract for additional jackups.**

**T**ransocean is no newcomer to India, having helped the Oil and Natural Gas Corporation Ltd (ONGC) to launch its first jackup, the *Sagar Samrat*. That rig promptly made the huge Mumbai (formerly Bombay) High discovery in 1974.

In addition, Transocean has worked in India for 15 continuous years. The steady service laid the foundation to help meet increased rig demand during the recent revival of shallow-water exploration and development drilling activity by several clients.

## Jackups in Demand

Since October 2001, Transocean India has grown from one shallow-water rig — the *Trident 2* to five jackups. Among the arrivals was the *J.T. Angel* from Qatar, while

the *C.E. Thornton* and *F.G. McClintock* mobilized from the U.S. Gulf of Mexico, where rig demand was depressed, on speculation of securing future contracts. The *Transocean Nordic*, laid up in the North Sea, was the most recent Transocean jackup to enter Indian waters.

The timing of the moves was spot-on target.

Currently, the *Trident 2* is working under a three-year contract for ONGC, which also has term contracts each with the *J.T. Angel*, *C.E. Thornton* and *F.G. McClintock*. The *Transocean Nordic*'s contract with Reliance extends to May 2004. The four latest arrivals have also worked in India under previous contracts involving ONGC, Reliance, BG, Cairn, Petrom and Niko.

## Success Factors

Several factors contributed to Transocean's success in penetrating the Indian shallow-water market segment ahead of the competition. Chief among them were market intelligence, operational experience, client relationships and flexibility in a dynamic and deregulating business environment.

"Now that we have become established as India's largest offshore contract driller and have term contracts on all our jackups, we are focusing on ways to better achieve our goals, including those for safety and operational excellence," says India District Manager Deepak Munganahalli.

## Warm Welcome for the Nordic

As the company's latest India arrival, the *Transocean Nordic* reflects the tremendous tasks required when a rig mobilizes to a new location, not the least of which is replacing most of the previous crews with local personnel.

Top to bottom: From the *Transocean Nordic* — Welder Vincent Rogers; Roughneck Adrian Pledger; OIM Ashley Webb; RSTC Billy Connelly and Toolpusher Graham Hay.



Although the *Nordic* has moved around Northwest Europe — and even became the first Transocean rig to drill offshore Russia — her move to India marked a major change in hemispheres and cultures.

“Considering that she was stacked in the U.K. for six months with only five people onboard, before we came here, she’s running fairly well,” OIM Ashley Webb said just 20 days into operations off the Northwestern state of Gujarat.

### Big-Time Learning

Terry Jewitt, the *Transocean Nordic*’s Rig Manager, reports that local crews — who comprise most of the workers on the rig — have taken up Transocean’s safety induction and training modules “big time,” eager to advance beyond their FIRST Step induction sessions.

While waiting for a shift-change helicopter to shuttle them to shore, several personnel were doing just that, using On-the-Job Training modules on computers in the office of RSTC Billy Connelly and in a nearby waiting room.

“The Indian personnel are learning Transocean and our core values and management systems, and we are learning more about them and their culture,” Webb notes. “They are a very friendly, courteous and willing people, which makes everyone’s job that much more satisfying.”

Also helping ensure a good operational start, the *Nordic*’s first exploratory location was a low-pressure well that resulted in a natural gas discovery.

Fitted with horizontal and vertical pipe-handling equipment, the heavy-duty *Nordic* can drill in water depths up to 300 feet (91 meters) and can work over



platforms. The rig also can construct high-pressure, high-temperature wells, so overall she is a good fit for virtually all shallow-water drilling requirements in India.

### Crews Zero In on Safety

Safety is of paramount importance to successful offshore drilling, and India is no exception. As part of the company’s drive for Zero incidents of any kind, the rigs leading the way in India are the *J.T. Angel* — with a Zero Total Recordable Incident Rate year-to-date April 2003 — and the *Trident 2*, which also has exceeded company goals for safety (Zero TRIR through April) and downtime.

For their 2002 performance, the *Trident 2* and *J.T. Angel* crews were recognized with the MCR region Operations Excellence Award. The MCR region is comprised of 14 Transocean rigs working in an area that includes the Middle East, Caspian Sea, Mediterranean Sea, Italy and India. The *Trident 2* crews’ achievement was made more significant by the large influx of third-party personnel onboard when more than 160 metric tons of steel was replaced from April 2002 to April 2003 — all during operations for ONGC.

“The challenge,” Rig Manager Chijioke Akwukwuma says, “was well handled by the rig and her crews.”

With 90% of the crews comprised of Indian personnel, the *Trident 2* has the highest percentage of nationalized workers in the India District.

“The supervisors know their people and they lead by example,

*As part of the company's drive for Zero incidents of any kind, the rigs leading the way in India are the J.T. Angel...and the Trident 2...*

telling, showing and motivating the crews," Akwukwuma says. "Along with this hands-on leadership approach is the crews' collective sense of pride and desire to see the *Trident 2* excel in safety and operational excellence, house-keeping and morale."

#### Monsoons Can't Dampen Future

The motivation to excel seems to pervade the Transocean India fleet, buoyed by a sense of optimism about the future.

While the future, indeed, is bright, it also contains challenges that involve one constant — change. The dynamics of the weather, currents and downhole conditions push offshore operational capacities to the limits at times.

But for every challenge, there's a solution. For example, Transocean's jackups work around the monsoon season in India, moving into sheltered locations to mitigate the effects of the annual deluge from storms between June and mid-September.

"ONGC works to position all the rigs on locations for the monsoon months, so that they will be operational for the entire monsoon season," explains Andrey Andreev, Rig Manager of the *C.E. Thornton*. "We want to be on one platform drilling multiple wells, doing a lot of workovers, so that we don't have to move the rig during that time."

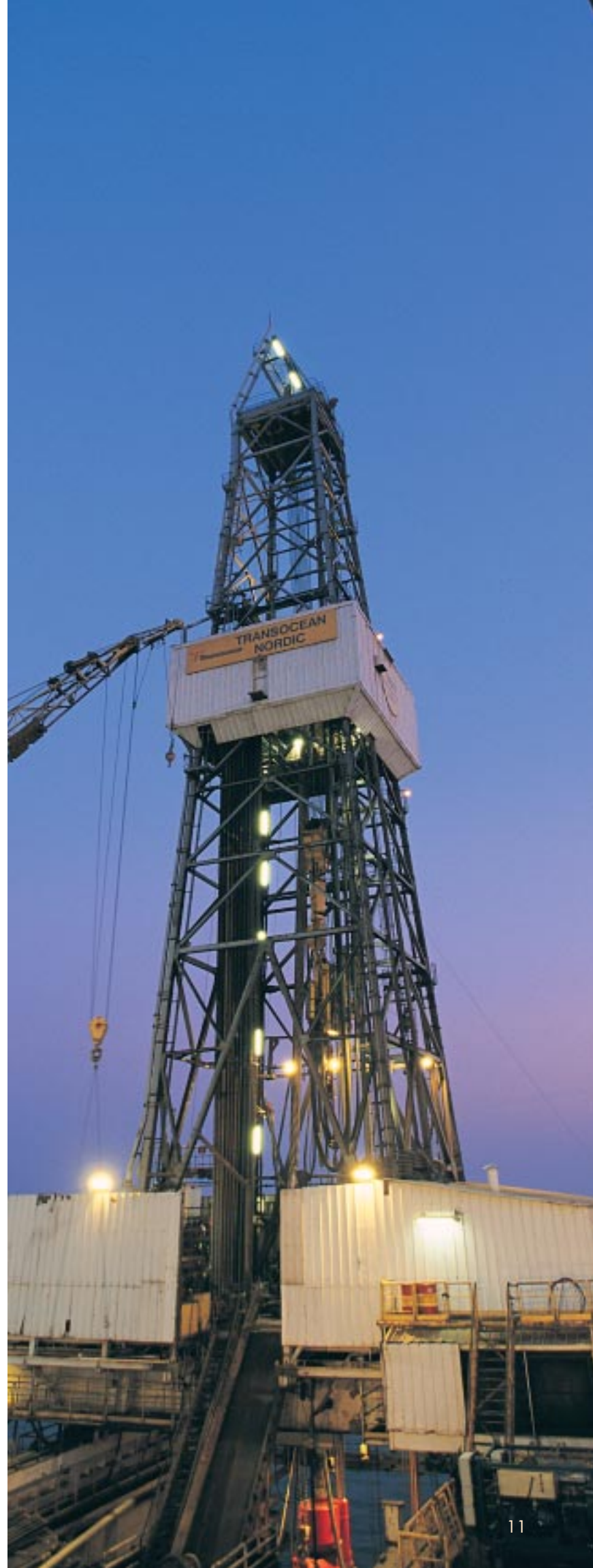
#### Faith and the Future

Whatever the location, shallow-water personnel in India say they are glad to be in a growing market segment and want the company to provide the best contract drilling services, enabling Transocean to operate here for another 15 years.

"We just want to be a part of the future, here," says *Transocean Nordic* OIM Webb. "Our future, like India's energy future, will be driven by performance and efficiency, supported by safe operations."

Andreev, agrees, adding: "Our personnel have huge faith in our company. They want to work for the biggest — and the best — offshore drilling contractor."

When it comes to fleet size and commitment to safety and operational excellence, Transocean is definitely on the move in India's shallow waters.



# 20-20 Vision:

## Subir Raha Directs ONGC

**NEW DELHI – As Chairman and Managing Director of India's Oil and Natural Gas Corporation Ltd (ONGC), Subir Raha is looking ahead as ONGC seeks to double its hydrocarbon reserves over 20 years. And offshore India, a frontier full of challenges, will be the theatre where ONGC's future success will be determined.**

**T**o appreciate ONGC's chances for achieving its ambitious goal, industry watchers say, first understand Mr. Raha. For starters, he knows the Indian oil and gas scene as well as anyone. In addition, he is helping make the state-owned ONGC a more results-oriented enterprise at a time when India is liberalizing business sectors, including petroleum.

### **Almost 50 Years Offshore**

While ONGC today ranks Number 1 in India in market capitalization at \$10 billion and profitability at \$1.27 billion, it was far from the country's largest company when it was founded in 1956 in the Himalayas.

Mr. Raha's voice reaches a softer, deeper tone of reflection when he discusses ONGC's early days and its initial foray into offshore drilling in 1960.

Collaborating with the Russians on that first offshore project, ONGC designed and fabricated a fixed drilling platform amid sky-high expectations. When barges pushed the structure on location and workers set the platform and a drilling system on top, it was time to drill India's first offshore well.

"After all that," Mr. Raha says, flatly, "we drilled a dry hole."



"In terms of efficiency and utilization, Transocean

Fortunately, the setback was only temporary.

Fast forward to 1974. That year, ONGC launched India's first jackup, having worked with Transocean predecessor company Sonat Offshore to design and construct the four-legged *Sagar Samrat*.

Only eight of the world's four-legged jackups (three of which are the same design as *Sagar Samrat*) are reportedly still operational. And of the 700-plus exploratory wells drilled offshore India, the *Sagar Samrat* has drilled 128 wells. When the new rig began drilling with an Indo-Japanese crew, the results were quite different from 1960. The *Sagar Samrat* struck oil on the Mumbai High field on February 18, 1974, overnight propelling ONGC into the shallow-water business that is still thriving.

"We're still finding new pools of hydrocarbons on Mumbai High, some reasonably large, and we will bring them into production," Mr. Raha reports.

In fact, the current \$1.6 billion Mumbai High redevelopment project calls for over 150 wells, mostly for sidetrack and workover drilling.

Already, early investment is paying off. By February 2003, Mumbai High crude oil production was up 13% and gas production had risen 11%, contributing to ONGC's 20-year goal of boosting its recovery rate from 28% to 40%.

Overall in shallow water, ONGC expects to work 30 jackups and seven survey vessels from September 2003 to May 2004, including four Transocean jackups, three for the full period.

### **Going Deeper**

While the planned jackup utilization will be a record high for India, ONGC's offshore experience goes deeper.

The year 1996 saw the company upgrade the *Sagar Vijay* drillship, which was managed by Transocean predecessor companies Sedco Forex and Transocean Sedco Forex until 2001. The upgrade enabled the rig to work in up to 2,900 feet (900 meters) of water, and today, ONGC is getting into deepwater in an even bigger way.

The *Sagar Vijay* will work in up to 3,300-foot (1,000-meter) water depths, and plans call for another drillship to operate in up to 6,000 feet (1,800 meters) of water with a third drillship in up to 10,000 feet (3,000 meters) of water. All in all, ONGC expects to drill 37 deepwater wells off the East as well as West



sets a benchmark for ONGC's own operations.”

Coast of India, beginning soon after monsoon season ends in mid-September.

While rig activity is important, it's the long-term results offshore that draw most of Mr. Raha's attention.

“In the first 47 years of our history, we have established a portfolio of approximately six billion tons of crude oil and oil-equivalent gas. The next goal is to double that in 20 years,” Mr. Raha says. “Two-thirds of that amount we expect to get from offshore, the deep-water. That's four billion tons, a very ambitious target, a very tough target that represents a lot of work, a lot of money and a lot of risk.”

ONGC also plans to source 20 million tons of oil and oil-equivalent gas from equity assets abroad.

### **Drilling for Results**

How well the company achieves its goals will reflect a great deal on the leadership of Mr. Raha, who is a major force behind ONGC's reorganization to focus employees on results over activities.

“Mr. Raha's tremendous efforts and his vision have helped transform ONGC into a results-oriented company,” says Bob MacChesney, Transocean Region Manager for the Middle East, Mediterranean Sea, Caspian Sea and India, and a former India Country Manager for Sedco Forex.

An extensive educational and professional background sheds insight into Mr. Raha's penchant for success.

As a 1969 graduate from Jadavpur University, Kolkata, Mr. Raha had electronics and telecommunications engineering electives and won the Rector's Medal for best all-around graduate. The next year, he joined state-owned refiner-marketer Indian Oil Corp. (IOC) as a management trainee. After field and staff assignments, he headed the Indian government's Oil Coordination Committee in the Ministry of Petroleum and Natural Gas. Later, he joined the IOC board as Director-Human Resources and was responsible for IOC's business development, information technology and corporate communications. He also created and chaired several IOC joint ventures with other firms and earned an MBA from the University of Leeds.

Notes Transocean India District Manager Deepak Munganahalli: “Mr. Raha's deep educational and industry experiences have culminated in a strong mindset to turn

offshore challenges into business opportunities. His service as ONGC Chairman and Managing Director since May 2001 has been quite productive already, and the plans are in place for even greater offshore production.”

For example, deepwater presents India with the need for technical expertise in drilling and related oil services. And with 40% of India's offshore areas unexplored, the potential for additional discoveries by ONGC and independent companies such as Reliance is significant.

“ONGC alone has 21 deepwater exploration blocks, today, with more to come, so it's a massive program,” explains Mr. Raha.

In addition to commitment, massive programs require financing, efficiency of scale and experience.

In financing, ONGC, with virtually no debt, is well positioned to fund deepwater development programs while exploration investments are being further secured.

“In terms of efficiency and utilization, Transocean sets a benchmark for ONGC's own operations,” Mr. Raha says. And regarding experience, he adds: “ONGC and Transocean have worked together for 15 continuous years. My crew, your crew — they know each other very well.”

### **For the Good of the Country**

There are a billion more reasons for advancing the strong relationship between ONGC and Transocean — one billion people seeking to improve their quality of life, driving India's tremendous potential for energy demand growth.

Considering that India imports 70% of its petroleum products, offshore E&P is vitally important to the country's future. Energy to run vehicles, power industrial plants and heat and cool homes and hotels is being counted on to propel India further onto the worldwide economic stage along with its Asian neighbors.

“Demand is unlimited,” says Mr. Raha, noting that India's growing population consumes one-fourth the energy used in the United States, and Indians require more energy to realize their quest for the quality of life of a developed country.

So India's future, while subject to seemingly incessant global and internal volatility, depends on expanding oil and gas E&P programs offshore to help meet growing energy demand.

And at the heart of the action is Mr. Raha, as always, looking ahead.

“We're looking forward to our deepwater drilling schedule and our redevelopment in the shallow water,” he says. “Let's look forward to more profits for ONGC and Transocean.”

Forward-looking, indeed.

A blue-tinted photograph of two workers in hard hats and safety gear working on a rig floor. They are positioned in the lower half of the frame, with one worker in the foreground and another slightly behind him. The background shows the complex machinery and structure of the rig, including a large vertical pipe and various cables. The overall scene is industrial and focused on the workers' activity.

# Reliance: Success Story in the Making

MUMBAI – At Reliance Industries Limited, Drilling General Manager Jim Hulme is part of a success story within a success story. In just 25 years, Reliance has become India's largest private-sector conglomerate. But it has only been in the last few years that the company has emerged as India's largest private-sector E&P company by making discovery after discovery.

### **Drilling for Quality Results**

Highlighted by the Dhirubhai find in the Krishna-Godavari basin, India's largest natural gas find in 30 years, Reliance is focused on quality results. Since that discovery in May 2002 using the *Discoverer 534* deepwater drillship, Reliance and its partners, have proven more reserves in the Krishna-Godavari basin approaching 10 trillion cubic feet (TCF) or 255 billion cubic meters. Those reserves are equal to approximately 1.5 billion barrels of crude oil.

On the Mumbai High block, Reliance has under contract the *Transocean Nordic* jackup. The rig previously was working in the Gulf of Kutch area, where it made a gas find on its first well.

All the recent discoveries are welcomed, as India produces just 2.3 billion cubic feet a day (bcf/d) of gas (65 million cubic meters), or less than half the country's demand of 5.3 bcf (151 mmcm/d).

But no India find has received as much worldwide attention as Dhirubhai. Located in the 3,300 feet of water (1,000 meters) off Southeast India's Andhra Pradesh state, Dhirubhai has been the scene of eight wells constructed by Reliance, using the *Discoverer 534*. All are natural gas-bearing wells.

### **Clearing Obstacles for Success**

Originally, India's Directorate General of Hydrocarbons estimated the Dhirubhai find's output at 900 mmcf/d (25 mmcm/d) for eight years, but those figures have been raised to 1.44 bcf/d (40 mmcf/d). Reliance expects to begin production from the field as early as mid-2005.

With so much early success, it might be easy to overlook the extensive teamwork between Reliance and Transocean toward overcoming logistical, cultural and procedural obstacles.

Adding to the challenge, Mr. Hulme says, are the many offshore safety and operational procedures and management systems that Reliance is establishing for the first time, some with Transocean's help.

*Work on the Discoverer 534 rig floor.*



Varying geologic conditions below the seabed and weather patterns above the ocean surface, including monsoons, add to the mosaic of issues that must be considered when constructing many different types of wells offshore India.

As with any job worth doing, going the extra mile is rewarding. Not only has Reliance raced to the position as India's largest non-government E&P company, it holds the country's water-depth drilling record, using the *Discoverer 534* in almost 6,000 feet (1,755 meters) of water.

"Supplying quality equipment, quality people to operate it and quality management to bring it all together is a tremendous experience," Mr. Hulme says at Transocean's Mumbai office where he helped with Reliance's initial meeting in January on an offshore safety-management system.

### **From Textiles to Corporate Giant**

Quality at Reliance seems to flow from vision and dedicated persistence straight into growth — profitable growth. Founded by Dhirubhai Ambani, the third son of a school teacher, Reliance has grown from a textile trading business by "integrating backwards." That term means the company added petrochemicals production, fiber-related businesses, financial services, refining and marketing, power, insurance and telecom and infocom initiatives. Reliance's downstream and upstream operations were born of Mr. Ambani's dream of owning a petroleum business when he worked as a Shell service station attendant.

Years of engineering and construction experience are helping the Mumbai-based Reliance as it forges its industrial path offshore. In many ways, its established focus on quality and safety in other industries fits naturally with Transocean's THINK, START and FOCUS processes.

"Reliance brings many areas of expertise and experienced people to offshore exploration and development," notes Transocean India District Manager Deepak Munganahalli. "Jim Hulme is a good example, having worked in Europe, Southeast Asia, Australia, South America, Africa and now for a second time, India. He knows how to take the best from Reliance and Transocean to create a workable business plan."

Mr. Hulme appreciates the efficiencies of scale that Transocean brings as the world's largest offshore driller and the largest in India, which is another fit, as Reliance has a wide offshore vision. During 2002, Reliance held the largest exploration area of any private company with over 280,000 million square kilometers off the country's East and West coasts.



*Reliance Industries Limited Drilling  
General Manager Jim Hulme*

He also values Transocean's safety culture. Safety, he notes, is paramount, because: "there's an unsafe dimension in everyone's culture."

With so much startup work to tackle, Mr. Hulme has not yet taken the Transocean colors personality test. "I'd love to give it a go, though," he says. "Everybody wants to see what color they are."

### **The Emerging Future**

Mr. Hulme expects that as rig crews and onshore support continue to deliver safety and operational results, Transocean likely will remain part of Reliance's offshore exploration and production plans.

"Transocean is a company that we all know has a huge percentage of the offshore rig fleet and an even larger percentage of the fifth-generation deepwater fleet," adds Mr. Hulme. "Transocean is likely to be involved in our offshore work in some way or another."

How many more rigs Reliance will work will depend on how fast India's natural gas markets grow and how fast a gas-distribution network will expand to serve markets.

India's opening up to the oil and gas sector is expected to help promote infrastructure development. For example, India's investor-friendly policies enable Reliance and other companies to acquire 100% rights to offshore blocks, unlike China, where the controlling interest is always held by the China National Offshore Oil Corp. (CNOOC) at 51% ownership.

### **In Search of the Next Big Find**

Also, in one of many other government efforts to stimulate E&P activity, the Directorate General of Hydrocarbons is involved in a block-by-block study of potential oil and gas areas to help companies find and develop those resources.

But Mr. Hulme and others at Reliance know that the next Dhirubhai find will not just fall into their lap. So, Reliance is continuing its exploration drilling off both coasts of India.

And while there has been significant success in finding gas, Mr. Hulme looks to the country's gas demand growth, as well as the addition of new pipelines, as other key drivers of offshore drilling activity.

"The number of wells that will be drilled in the future will be based on the amount of gas that can be sold," Mr. Hulme says. "We don't go from a little to a lot in one day."

It just seems that way, when it comes to Reliance's exponential offshore E&P business growth.

# Transocean:



# A World of Experience



*Transocean's diversity of people and markets is matched only by its diversity of assets. From inland barges in 10 feet of water to drillships in 10,000 feet of water, we're never out of our depth.®*

*Left to right, this page:*

*First Row: Sedco Energy, Sedco 710, Paul B. Loyd Jr.*

*Second Row: Shelf Explorer, Discoverer Enterprise*

*Third Row: Deepwater Pathfinder, Peregrine 1*

*Fourth Row: Discoverer Seven Seas, George H. Galloway, Jack Bates*

*Fifth Row: Transocean Driller, Transocean Legend, Transocean Winner*



# TRANSOCEAN FLEET

TYPE AND NAME	YR. ENTERED SERVICE/UPGRADED	WATER DEPTH CAPACITY (IN FEET)	DRILLING DEPTH CAPACITY (IN FEET)	LOCATION	DESIGN	BOP RATING
<b>5th Generation Fleet - 8 drillships, 5 semisubmersibles</b>						
Discoverer Deep Seas (DP Ship)	2001	10,000	35,000	US GOM	Discoverer Enterprise	18 3/4 in., 15,000 psi
Discoverer Enterprise (DP Ship)	1999	10,000	35,000	US GOM	Discoverer Enterprise	18 3/4 in., 15,000 psi
Discoverer Spirit (DP Ship)	2000	10,000	35,000	US GOM	Discoverer Enterprise	18 3/4 in., 15,000 psi
Deepwater Discovery (DP Ship)	2000	10,000	30,000	Ghana	RBF/Samsung	18 3/4 in., 15,000 psi
Deepwater Frontier (DP Ship)	1999	10,000	30,000	Brazil	Conoco/Reading & Bates	18 3/4 in., 15,000 psi
Deepwater Millennium (DP Ship)	1999	10,000	30,000	US GOM	Conoco/Reading & Bates	18 3/4 in., 15,000 psi
Deepwater Pathfinder (DP Ship)	1998	10,000	30,000	US GOM	Conoco/Reading & Bates	18 3/4 in., 15,000 psi
Deepwater Expedition (DP Ship)	1999	10,000	30,000	Brazil	Rauma Repola Arctic	18 3/4 in., 10,000 psi
Deepwater Horizon (DP Semi)	2001	10,000	30,000	US GOM	RBS-8D	18 3/4 in., 15,000 psi
Cajun Express (DP Semi)	2001	8,500	35,000	US GOM	SFXpress 2000	18 3/4 in., 15,000 psi
Deepwater Nautilus (DP Semi)	2000	8,000	30,000	US GOM	RBS-8M	18 3/4 in., 15,000 psi
Sedco Energy (DP Semi)	2001	25,000	35,000	Nigeria	SFXpress 2000	18 3/4 in., 15,000 psi
Sedco Express (DP Semi)	2001	25,000	35,000	Brazil	SFXpress 2000	18 3/4 in., 10,000 psi
<b>Other Deepwater Fleet - 4 Drillships, 11 Semisubmersibles</b>						
Deepwater Navigator (DP Ship)	2000	7,200	25,000	Brazil	Earl & Wright Sedco 400	18 3/4 in., 15,000 psi
Peregrine I (DP Ship)	1982/1996	7,200	25,000	Brazil	Gusto Pelican	16 3/4 in., 10,000 psi
Discoverer 534 (DP Ship)	1975/1991	7,000	25,000	Malaysia	Sonat Discoverer	18 3/4 in., 10,000 psi
Discoverer Seven Seas (DP Ship)	1976/1997	7,000	25,000	Brazil	Sonat Discoverer	18 3/4 in., 15,000 psi
Transocean Marianas (Semi)	1998	7,000	25,000	US GOM	Sedco 700	18 3/4 in., 15,000 psi
Sedco 707 (DP Semi)	1976/1997	6,500	25,000	Brazil	Sedco 700	18 3/4 in., 15,000 psi
Jack Bates (Semi)	1986/1997	5,400	30,000	UK N. Sea	F&G L1020 Trendsetter	18 3/4 in., 15,000 psi
Sedco 709 (DP Semi)	1977/1999	5,000	25,000	Nigeria	Sedco 700	18 3/4 in., 15,000 psi
M.G. Hulme, Jr. (Semi)	1983/1996	5,000	25,000	Nigeria	F&G 9500 E. Pacesetter	18 3/4 in., 15,000 psi
Transocean Richardson (Semi)	1988	5,000	25,000	US GOM	GVA 4500	18 3/4 in., 15,000 psi
Jim Cunningham (Semi)	1982/1995	4,600	25,000	Egypt	F&G 9500 E. Pacesetter	18 3/4 in., 15,000 psi
Sedco 710 (DP Semi)	1983	4,500	25,000	Brazil	Sedco 700	18 3/4 in., 10,000 psi
Transocean Rather (Semi)	1988	4,500	25,000	Angola	GVA 4500	18 3/4 in., 15,000 psi
Transocean Leader (Semi)	1987/1997	4,500	25,000	UK N. Sea	Aker H-4.2	18 3/4 in., 15,000 psi
Sovereign Explorer (Semi)	1984	4,500	25,000	Ivory Coast	GVA 4000	18 3/4 in., 15,000 psi
<b>Mid-Water Fleet - 1 Drillship, 30 Semisubmersibles</b>						
Peregrine III (DP Ship)	1976	4,200	25,000	US GOM	Gusto Pelican	16 3/4 in., 10,000 psi
Sedco 700 (Semi)	1973/1997	3,600	25,000	Equatorial Guinea	Sedco 700	18 3/4 in., 10,000 psi
Transocean Legend (Semi)	1983	3,500	25,000	Brazil	Trosvik Bingo 3000	18 3/4 in., 10,000 psi
Transocean Amirante (Semi)	1978/1997	3,500	25,000	US GOM	Aker H-3	18 3/4 in., 10,000 psi
C. Kirk Rhein, Jr. (Semi)	1976/1997	3,300	25,000	US GOM	Aker H-3	18 3/4 in., 10,000 psi
Transocean Driller (Semi)	1991	3,000	25,000	Brazil	F&G L-1033 E. Pacesetter	18 3/4 in., 15,000 psi
Falcon 100 (Semi)	1974/1999	2,400	25,000	US GOM	F&G L 900 Pacesetter	18 3/4 in., 15,000 psi
Henry B. Goodrich (Semi)	1985	2,000	30,000	E. Canada	Sonat/Mitsui SES-5000	18 3/4 in., 15,000 psi
Paul B. Loyd, Jr. (DP Semi)	1987	2,000	25,000	UK N. Sea	Aker H-4.2	18 3/4 in., 15,000 psi
Sedco 703 (Semi)	1973/1995	2,000	25,000	Australia	Sedco 700	18 3/4 in., 10,000 psi
Sedco 711 (Semi)	1982	1,800	25,000	UK N. Sea	Sedco 711	18 3/4 in., 15,000 psi
Transocean John Shaw (Semi)	1982	1,800	25,000	UK N. Sea	F&G 9500 E. Pacesetter	18 3/4 in., 10,000 psi
Transocean Arctic (Semi)	1986	1,650	25,000	Nor. N. Sea	Marosso 56	18 3/4 in., 15,000 psi
Sedco 712 (Semi)	1983	1,600	25,000	UK N. Sea	Sedco 711	18 3/4 in., 15,000 psi
Sedco 714 (Semi)	1983/1997	1,600	25,000	UK N. Sea	Sedco 711	18 3/4 in., 15,000 psi
Actinia (Semi)	1982	1,500	25,000	Spain	F&G L-1033 E. Pacesetter	18 3/4 in., 10,000 psi
Polar Pioneer (Semi)	1985	1,500	25,000	Nor. N. Sea	Sonat/Hitachi	18 3/4 in., 15,000 psi
Sedco 600 (Semi)	1983	1,500	25,000	Singapore	Sedco 600	18 3/4 in., 10,000 psi
Sedco 601 (Semi)	1983	1,500	25,000	Singapore	Sedco 600	18 3/4 in., 10,000 psi
Sedco 602 (Semi)	1983	1,500	25,000	Singapore	Sedco 600	18 3/4 in., 10,000 psi
Sedneth 701 (Semi)	1972/1993	1,500	25,000	Angola	Sedco 700	18 3/4 in., 10,000 psi
Sedco 702 (Semi)	1973/1992	1,500	25,000	Australia	Sedco 700	18 3/4 in., 10,000 psi
Sedco 708 (Semi)	1976	1,500	25,000	Congo	Sedco 700	18 3/4 in., 10,000 psi
Transocean Winner (Semi)	1983	1,500	25,000	Nor. N. Sea	GVA 4000	18 3/4 in., 15,000 psi
Transocean Searcher (Semi)	1983/1988	1,500	25,000	Nor. N. Sea	Trosvik Bingo 3000	18 3/4 in., 15,000 psi
Transocean Prospect (Semi)	1983/1992	1,500	25,000	UK N. Sea	Trosvik Bingo 3000	18 3/4 in., 15,000 psi
Transocean Wildcat (Semi)	1977/1985	1,300	25,000	UK N. Sea	Aker H-3	18 3/4 in., 10,000 psi
Transocean Explorer (Semi)	1976	1,250	25,000	UK N. Sea	Aker H-3	18 3/4 in., 10,000 psi
J.W. McLean (Semi)	1974/1996	1,250	25,000	UK N. Sea	Zapata SS-3000	18 3/4 in., 10,000 psi
Sedco 704 (Semi)	1974/1993	1,000	25,000	UK N. Sea	Sedco 700	18 3/4 in., 15,000 psi
Sedco 706 (Semi)	1976/1994	1,000	25,000	UK N. Sea	Sedco 700	18 3/4 in., 10,000 psi
<b>Non-US Jackups - 28</b>						
Interocean III	1978/1993	300	25,000	Egypt	Sonat Orion-Cantilever	13 5/8 in., 10,000 psi
Shelf Explorer	1982	300	20,000	Equatorial Guinea	CFEM T2005-C	13 5/8 in., 10,000 psi
Transocean Comet	1980	250	20,000	Egypt	Sonat Cantilever	13 5/8 in., 10,000 psi
Transocean Mercury	1969/1998	250	20,000	Egypt	Sonat Cantilever	13 5/8 in., 10,000 psi
Transocean Nordic	1984	300	25,000	India	CFEM T2600-1	13 5/8 in., 15,000 psi
Trident 2	1977/1985	300	25,000	India	Marathon IT 116-C	13 5/8 in., 10,000 psi
Trident 4	1980/1999	300	25,000	Angola	Marathon IT 116-C	13 5/8 in., 10,000 psi
Trident 6	1981	220	21,000	Nigeria	Modec 300-C-35	13 5/8 in., 10,000 psi
Trident 8	1982	300	21,000	Nigeria	Modec 300-C-35	13 5/8 in., 10,000 psi
Trident 9	1982	400	20,000	Vietnam	Modec 400-C-35	13 5/8 in., 10,000 psi
Trident 12	1982/1992	300	25,000	Vietnam	BMC 300-1C	13 5/8 in., 15,000 psi
Trident 14	1982/1994	300	20,000	Angola	BMC 300-C	13 5/8 in., 10,000 psi
Trident 15	1982	300	25,000	Thailand	Modec 300-C-38	13 5/8 in., 10,000 psi
Trident 16	1982	300	25,000	Vietnam	Modec 300-C-38	13 5/8 in., 10,000 psi
Trident 17	1983	355	25,000	Singapore	Modec 300-C-38	13 5/8 in., 10,000 psi
Trident 20	2000	350	20,000	Caspian Sea	Keppel Fels CS Mod.V	18 3/4 in., 15,000 psi
Ron Tappmeyer	1978	300	25,000	Indonesia	Marathon IT 116-C	13 5/8 in., 10,000 psi
Randolph Yost	1979	300	25,000	Equatorial Guinea	Marathon IT 116-C	13 5/8 in., 10,000 psi
D.R. Stewart	1980	300	25,000	Italy	Marathon IT 116-C	13 5/8 in., 15,000 psi
George H. Galloway	1984	300	25,000	Italy	F&G L780 Mod II	13 5/8 in., 10,000 psi
Harvey H. Ward	1981	300	25,000	Malaysia	F&G L780 Model II	13 5/8 in., 10,000 psi
Roger W. Mowell	1982	300	25,000	Singapore	F&G L780 Model II	13 5/8 in., 10,000 psi
J.T. Angel	1982	300	25,000	India	F&G L780 Model II	13 5/8 in., 10,000 psi
F.G. McClintock	1975	300	25,000	India	Marathon IT 53-C	13 5/8 in., 10,000 psi
C.E. Thornton	1974	300	25,000	India	Marathon IT 53-C	13 5/8 in., 10,000 psi
Transocean Jupiter	1981/1997	170	16,000	UAE	Marathon IT 53-C	18 5/8 in., 10,000 psi
RBF 110	1982	110	25,000	Trinidad	Bethlehem JU-100-MC	13 5/8 in., 10,000 psi
RBF 208	1981	160	25,000	Trinidad	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi

TYPE AND NAME	YR. ENTERED SERVICE/UPGRADED	WATER DEPTH CAPACITY (IN FEET)	DRILLING DEPTH CAPACITY (IN FEET)	LOCATION	DESIGN	BOP RATING
<b>Jackups - US Gulf of Mexico - 27</b>						
RBF 250	1974	250	20,000	US GOM	Bethlehem JU-250-MS	13 5/8 in., 10,000 psi
RBF 251	1978	250	20,000	US GOM	Bethlehem JU-250-MS	13 5/8 in., 10,000 psi
RBF 252	1978	250	20,000	US GOM	Bethlehem JU-250-MS	13 5/8 in., 10,000 psi
RBF 253	1982	250	20,000	US GOM	Bethlehem JU-250-MS	13 5/8 in., 10,000 psi
RBF 254	1976	250	20,000	US GOM	Bethlehem JU-250-MS	13 5/8 in., 10,000 psi
RBF 255	1976	250	20,000	US GOM	Bethlehem JU-250-MS	13 5/8 in., 10,000 psi
RBF 256	1976	250	20,000	US GOM	Bethlehem JU-250-MS	13 5/8 in., 10,000 psi
RBF 192	1981	250	20,000	US GOM	BMC 250-MS	13 5/8 in., 10,000 psi
RBF 190	1978	160	20,000	US GOM	BMC 200-MS	13 5/8 in., 10,000 psi
RBF 200	1979	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 201	1981	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 202	1982	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 203	1981	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 204	1981	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 205	1979	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 206	1980	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 207	1981	200	20,000	US GOM	Bethlehem JU-200-MC	13 5/8 in., 10,000 psi
RBF 191	1978	160	20,000	US GOM	BMC 200-MS	13 5/8 in., 10,000 psi
RBF 150	1979	150	20,000	US GOM	Marathon IT 150-44-C	13 5/8 in., 10,000 psi
RBF 151	1981	150	20,000	US GOM	BMC 150-H	13 5/8 in., 10,000 psi
RBF 152	1980	150	20,000	US GOM	Bethlehem JU-150-MC	13 5/8 in., 10,000 psi
RBF 153	1980	150	20,000	US GOM	Bethlehem JU-150-MC	13 5/8 in., 10,000 psi
RBF 154	1979	150	16,000	US GOM	Marathon IT 150-44-C	13 5/8 in., 10,000 psi
RBF 155	1980	150	20,000	US GOM	L011C	13 5/8 in., 10,000 psi
RBF 156	1983	150	20,000	US GOM	BMC 150-IC	13 5/8 in., 10,000 psi
RBF 185	1983	120	20,000	US GOM	DMI 150	13 5/8 in., 10,000 psi
RBF 100	1982	100	20,000	US GOM	Bethlehem JU-100-MC	13 5/8 in., 10,000 psi
<b>U.S. Submersibles - 3</b>						
RBF 75	1983	82.5	30,000	US GOM	PM 85-MS C	13 5/8 in., 10,000 psi
RBF 77	1982	85	30,000	US GOM	CBI 85-MS C	13 5/8 in., 10,000 psi
RBF 78	1983	85	30,000	US GOM	CBI 85-MS C	13 5/8 in., 10,000 psi
<b>Non-U.S. Drilling Barges - 4</b>						
Searex 4	1981/1989	21	25,000	Nigeria	Swamp Barge	13 5/8 in., 5,000 psi
Searex 6	1981/1991	25	25,000	Nigeria	Swamp Barge	13 5/8 in., 10,000 psi
Searex 12	1982/1992	25	25,000	Nigeria	Swamp Barge	13 5/8 in., 10,000 psi
Hibiscus	1979/1993	25	16,000	Indonesia	Heavy Swamp Barge	13 5/8 in., 10,000 psi
<b>U.S. Drilling Barges - 31</b>						
Rig 1	1980	13	20,000	US GOM	Inland 190 x 50	11 in., 10,000 psi
Rig 11	1982	13	30,000	US GOM	Inland 200 x 54	13 5/8 in., 10,000 psi
Rig 15	1981	13	25,000	US GOM	Inland 200 x 54	13 5/8 in., 10,000 psi
Rig 19	1996	12	14,000	US GOM	Inland 165 x 54	11 in., 5,000 psi
Rig 20	1998	12	14,000	US GOM	Inland 175 x 54	11 in., 5,000 psi
Rig 21	1982	11	15,000	US GOM	Inland 200 x 50	11 in., 10,000 psi
Rig 23	1995	11	14,000	US GOM	Inland 160 x 48	11 in., 5,000 psi
Rig 28	1979	13	30,000	US GOM	Inland 220 x 50	13 5/8 in., 10,000 psi
Rig 29	1980	13	30,000	US GOM	Inland 220 x 50	13 5/8 in., 10,000 psi
Rig 30	1981	13	30,000	US GOM	Inland 220 x 50	13 5/8 in., 10,000 psi
Rig 31	1981	13	30,000	US GOM	Inland 220 x 50	13 5/8 in., 10,000 psi
Rig 32	1982	13	30,000	US GOM	Inland 220 x 50	13 5/8 in., 10,000 psi
Rig 7	1978	15	25,000	US GOM	Posted 200 x 54	13 5/8 in., 10,000 psi
Rig 9	1981	17	25,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 10	1981	17	25,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 17	1981	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 27	1978	21	30,000	US GOM	Posted 230 x 60	13 5/8 in., 10,000 psi
Rig 41	1981	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 46	1981	20	30,000	US GOM	Posted 198 x 54	13 5/8 in., 10,000 psi
Rig 47	1982	17	30,000	US GOM	Posted 210 x 55	13 5/8 in., 10,000 psi
Rig 48	1982	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 49	1980	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 52	1981	20	25,000	US GOM	Posted 212 x 70	13 5/8 in., 10,000 psi
Rig 55	1981	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 56	1973	20	25,000	US GOM	Posted 200 x 70	13 5/8 in., 10,000 psi
Rig 57	1975	17	25,000	US GOM	Posted 200 x 70	13 5/8 in., 10,000 psi
Rig 61	1978	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 62	1978	20	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 64	1979	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 74	1981	17	25,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
Rig 75	1979	17	30,000	US GOM	Posted 210 x 54	13 5/8 in., 10,000 psi
<b>Self-Erecting Tenders - 4</b>						
Searex 9	1981	400	20,000	Congo	Self-Erecting Tender	16 3/4 in., 5,000 psi
Searex 10	1983/1994	450	21,000	Congo	Self-Erecting Tender	13 5/8 in., 10,000 psi
Charley Graves	1975	500	20,000	Malaysia	Self-Erecting Tender	13 5/8 in., 10,000 psi
W.D. Kent	1977	400	20,000	Malaysia	Self-Erecting Tender	13 5/8 in., 10,000 psi
<b>Platform Rigs - 2</b>						
Cliffs #1	1988/1998		18,000	China		
Cliffs #3	1993/1998		25,000	Trinidad		
<b>Other - 2</b>						
Joides Resolution (Research Ship)	1978	27,000	30,000	Caribbean	Earl & Wright Sedco 400	N/A
Sedco 135D	1966/2001	600	Dewatering	Brazil	Earl & Wright Sedco 135	

As of March 31, 2003, for most units, whether wholly, or partially owned, managed, chartered or under joint venture.



*Left to right, this page:*  
*First Row:* Charley Graves,  
 Deepwater Millennium  
*Second Row:* Falcon 100, Sedco 707,  
 M.G. Hulme, Jr.  
*Third Row:* Trident 15, Discoverer 534,  
 Deepwater Horizon  
*Fourth Row:* Transocean Nordic,  
 Rig 30, Deepwater Nautilus  
*Fifth Row:* Transocean John Shaw,  
 Transocean Amirante, C. Kirk Rhein



More Than



# Discoverer 534

BAY OF BENGAL – Setting India’s deepwater drilling record and making one of the world’s largest natural gas

## a Lucky Rig

finds would be remarkable enough for a rig that had worked in India for years. But the *Discoverer 534* achieved both milestones for Reliance Industries Limited just two months after reaching Indian waters from the U.S. Gulf of Mexico.

In April 2003, one year after her arrival, the ultra-deepwater drillship departed India for Malaysia, but her achievements in the Bay of Bengal 24 miles off India’s East Coast will not be soon forgotten.

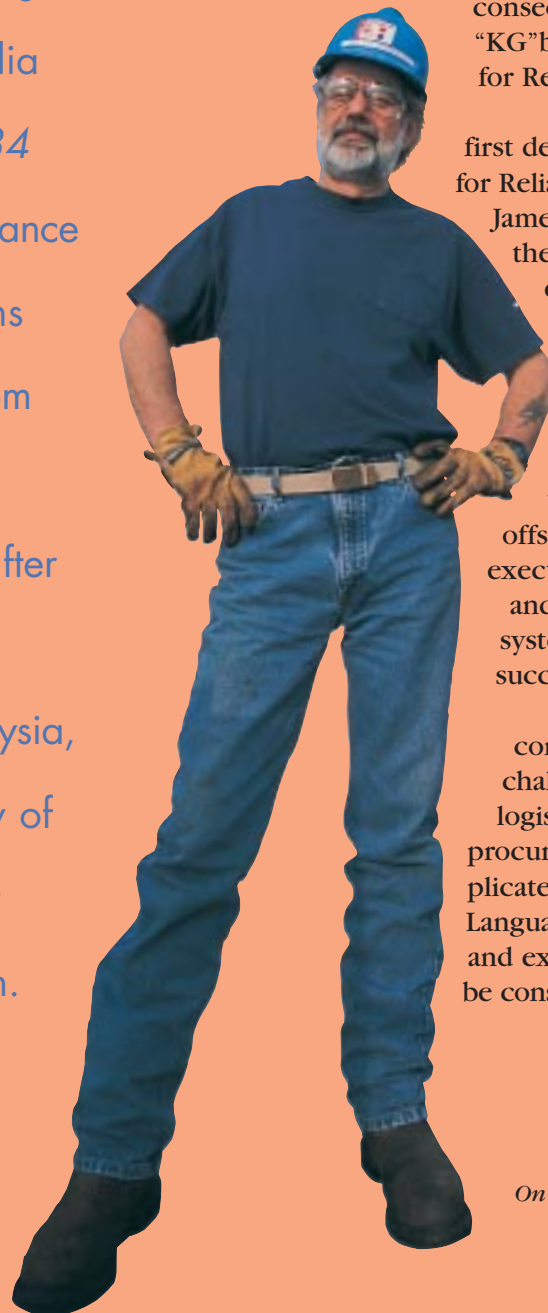
“Six days after arriving on location in India, we went to work on the first well and we operated very efficiently against all odds the entire time we worked in India,” recalls Captain Wolf Krusemark.

The *Discoverer 534* was the only rig in India capable of operating in water depths greater than 3,000 feet (915 meters). The drillship not only set the Indian water-depth drilling record at 5,773 feet of water (1,760 meters), but made the Dhirubhai find in the Krishna-Godavari basin of approximately 10 trillion cubic feet (TCF), the largest Indian gas find in 30 years.

The *Discoverer 534* constructed eight, consecutive wells in the “KG” basin. All found gas for Reliance.

“Our rig was the very first deepwater drillship to work for Reliance,” recalls Rig Manager James McLeroy. “Besides the newness of Reliance entering deepwater exploration, there were many logistical challenges associated with being in a remote location. Fortunately, teamwork onshore and offshore and everyone’s execution of our operational and safety management systems made for a more successful experience.”

At times, harsh-sea conditions were part of the challenge. At others, remote logistical and materials-procurement issues were complicated by last-minute changes. Language barriers for local crews and expatriate workers had to be constantly overcome. Despite



On deck: Captain, Wolf Krusemark

The *Discoverer 534* constructed eight, consecutive wells on the “KG” field. All found gas for Reliance.



George Jacob, Derrickband



S.V.D. Prasad, Roustabout

these obstacles and many more, the results for Reliance and Transocean proved to be worth it.

### The Story Behind the Headlines

The Dhirubhai discovery — one of the largest-ever natural gas finds — drew interest from the news media in India and around the world.

And rightfully so. The rig’s discoveries for India’s largest privately owned oil and natural gas company means a great deal for a country that imports 70% of its petroleum supply. It means greater economic power and less dependence on imports.

Not mentioned in the newspapers, though, was the story of how the *Discoverer 534* crews managed to keep drilling through harsh conditions.

During August of 2002, surface currents reached almost five knots — the equivalent of at least 60 knots of wind — making operations difficult enough to manage. Tying work boats up to the rig was virtually impossible, and 35-knot winds jammed the stern.

“We were between a rock and a hard place,” Captain Krusemark recalls. “Our operations in India were often dictated by the force of the current. It presented a new challenge for us, as surface currents

in the Gulf of Mexico are not that strong and they don’t tend to last for days on end.”

Long swells eight to 10 feet high and twilight skies with clumpy-cotton clouds added a surreal tone to life on the 534-foot-long drillship.

“Still, we never stopped drilling,” adds OIM Mike Hubele. “It was a tense situation the whole hitch. Sometimes you could see the riser off center in the moon pool, but it was within our tolerances, and we got the well done. That’s what counts.”

### Safety Spoken Here

When crews were not overcoming harsh-sea conditions, they worked on logistics, planning, training and health, safety and environmental efforts. All take a special communications approach, since several languages were spoken on the rig.

In fact, more than 33 language dialects are spoken in India, so as new recruits joined local crews, they often needed translation help.

Enter Electrician Shaji Xavier from Cochin Keraca state in the Southwest tip of India to translate four languages on the rig — Hindi, Tamil, Malayalam and English.

“Shaji taught me the basics of the Malayalam dialect,” says Chief Electrician John Broussard of

Water-depth records are logged in one chapter of the industry's history books, but up front in the most featured chapter are world-class discoveries. The *Discoverer 534* appears in both.



Asbok Kumar Singh, Welder



Shaji Xavier, Electrician

Lafayette, Louisiana, U.S. “It took a month, but I learned to talk with our Indian crewmembers.”

For Shaji, making time to help with translations on top of normal work duties and completing On-the-Job Training modules provided a rewarding experience.

“It made for good understanding between everyone,” he says. “That’s how people need to be treated. The personality colors process also helped us to understand each other.”

Adds Captain Krusemark: “The language barrier was not completely resolved, but we received documentation in Hindi, which helped.”

### Setting Trends and Records

The *Discoverer 534* has been a trendsetter since the beginning of deepwater drilling. Built in 1975 and upgraded three times since, she has set numerous deepwater records, including a 1996 world water-depth record for drilling in 7,612 feet (2,320 meters) of water in the U.S. Gulf of Mexico, Alaminos Canyon Block 600.

Water-depth records are logged in one chapter of the industry's history books, but up front in the most featured chapter are world-class discoveries. The *Discoverer 534* appears in both.

In recent years, the rig drilled the discovery

well on BP's Thunder Horse field, the largest crude oil find in the history of the U.S. Gulf of Mexico, and then, of course, came Dhirubhai.

Not surprisingly, Reliance considered the *Discoverer 534* a “lucky” rig. But everyone, including the client, knows that far more than luck was involved in pioneering the many complexities of deepwater drilling. Transocean's core values, especially technical expertise, played a major role.

### Old-Fashioned Care

That's part of the reason why there may be more Dhirubhais in the *Discoverer 534*'s future as she transits the globe. Another reason is good old-fashioned care and treatment of the rig's iron and equipment.

“With the proper care and maintenance, the *Discoverer 534* has a lot of life left — at least another 10 years,” Captain Krusemark notes. “Structurally, this thing is fine.”

So is the reservoir connected by the eight wells that the rig constructed in deepwater India — full and fine.



# Treasures of Two Cities

When employees moved into the new Transocean office in Mumbai, a ribbon was cut, champagne uncorked and *diyas* lit.

The holy, earthen lamps are most often associated with the nationwide celebration of Diwali — Festival of Lights. Festivals are plentiful in India during non-monsoon season (September to May) to celebrate cultures, thank the gods for blessings and treasures, and hope for future success. They also provide an opportunity for discovery. Mumbai and Delhi and their surrounding areas are virtual treasure troves of history, architecture, art, entertainment and cuisine. *Offshore Frontiers* presents an Indian festival of treasures.



The Gateway to India monument was started at the harbor front to commemorate the visit of King George V and Queen Mary to Bombay in 1911. Made of yellow Kharodi basalt and reinforced concrete, construction was finally completed in 1924.

North of Colaba is Fort, which marks the city's central business district. A church gate is all that remains of the British fort that once stood here. Nearby is the elaborate Flora Fountain made of stone in 1864. Farther north is Chhatrapati Shivaji Terminus, the Gothic Italian train station built in 1888 and originally named Victoria Terminus in honor of Queen Victoria's jubilee. Two stone lions guard the station. Other animal figures include peacocks, snakes, monkeys and rats — symbols of progress and wealth. Two million commuters pass through the station each day.

### MUMBAI: SEVEN ISLAND CITY

If Mumbai doesn't ring a bell when thinking of Indian cities, that's because it used to be known as Bombay. The change occurred in 1996 and actually it wasn't a change, it was a reinstatement of the city's original name in honor of the Kolie goddess Mumba Devi. Her reconstructed temple after a 1737 fire still stands. Portuguese fishermen, predecessors of the British, thought the area looked like Bom Baim, the Good Bay.

*Amchi Mumbai*, meaning "Our Mumbai," is heard often here. "One says it from the heart because there are a hundred thousand plus people coming into the city every day and they say that no one sleeps on an empty stomach," says Prasanna Gaokar, IT and Administration Manager for the India District. "For three cents, the poorest of the poor can grab a *Vada Pav* (potato pattice). Of course, the rich and famous like it too."

Mumbai, the capital of Maharashtra, lies off the West Coast of India on the Arabian Sea. It was originally made up of seven islands. Three centuries of reclamation joined the islands together in one landmass connected to the mainland by several bridges. Facing Africa and East Asia, Mumbai has always been a natural shipping and trading center and today handles 40% of all of India's maritime trade.

Transocean personnel reporting for work fly straight into the Mumbai Airport, the biggest and busiest in the nation. All major airlines operating in India are based in Mumbai. The airport is located an hour's drive from Colaba, the southernmost peninsula. Tourists love this part of Mumbai with its nice selection of hotels and restaurants and famous landmarks — the Gateway to India and the Taj Mahal Hotel.

Prasanna shares this story about the Taj Mahal Hotel, built in 1903. "The story goes that Mr. Tata was denied entry to one of the hotels in Bombay because he was an Indian. He vowed that he would build a better hotel. He got engineers from abroad who briefed the builders here. The engineers were surprised on their return to see that the whole hotel was built front side backwards. The entrance of the hotel, which was supposed to be from the seaside was built with the back to the sea. It still is one of the best five-star hotels in town."

### GEM OF A SUNSET

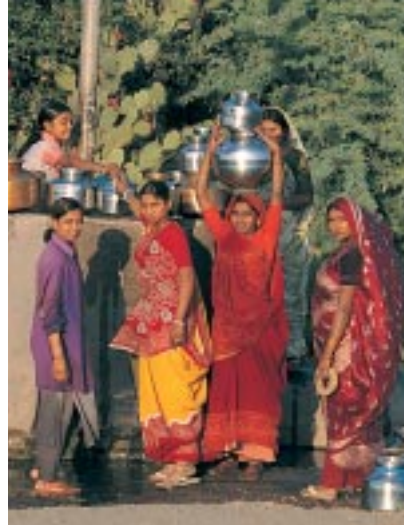
Marine Drive, built on land reclaimed from Back Bay in 1920, connects the high-rise business center to Chowpatty Beach and on to the foot of Malabar Hill. The sea wall is a great place to catch a sunset. Chowpatty Beach is where you want to be at sunset as the near deserted shore by day transforms into a magical atmosphere in the evening. Beach entertainers, along with food and souvenir vendors bring a festive mood to an evening stroll. The dish to try at one of the beachside stalls is *bhelpuri*, a tasty snack of crisp noodles, puffed rice, spiced vegetables, crushed puri, chutney and chilies. An invigorating massage from a *malish-wallah* should cap off a perfect evening.

The beach becomes even more festive during the annual Ganesh Chaturthi Festival held in August/September. The highlight of the 11-day Hindu celebration comes when large images of the elephant-headed god, Ganesh, are immersed in the murky sea. The festival marks the birth anniversary of Lord Ganesh, son of Lord Shiva and Goddess Parvati. Prasanna tells the tale. "The *puranas* (Ancient religious texts) have it that one time Lord Shiva was away and Goddess Parvati had to go for a bath. There was no one to guard the entrance so she made a boy from clay and brought him to life. She asked him to guard the entrance and not let anyone in. When

New Mumbai Powai District







*A day at the bay in Mumbai. Scenes from Rajkot: Surrey cycle; Water gathering; Marketplace*

Lord Shiva arrived he was stopped. In a fit of anger, Lord Shiva beheaded the boy. Just then Goddess Parvati returned and asked Lord Shiva to bring the boy back to life as he was her son. Lord Shiva asked his followers to go forth and bring back the head of any living being that was sleeping with its head to the south. The followers came back with the head of an elephant.”

#### BANDRA FESTIVAL

Another festive occasion held in September takes place at Mount Mary Church. It is an old church situated in Bandra, a suburb of Mumbai. Popularly known as the Bandra Fair, the week-long event celebrates the Mother Mary’s birthday. Throngs of people of all faiths visit this place to seek the blessings of Mother Mary. Local people strongly believe that wishes are fulfilled, if prayers are made earnestly and faithfully. From the site of the church, one gets a breathtaking view of the Arabian Sea, and the sunsets can be spectacular.

#### THE MAGIC OF FILM

It’s hard to imagine that this business and financial hub of India, home to the country’s stock exchange, is also the country’s center of the huge Hindi film industry. You’ve heard of Hollywood, California? Welcome to Mumbai’s Bollywood. More than 120 feature films are produced here each year. Many of the films follow a formula for melodramatic fantasy with a touch of everything — action, violence, music, dance, romance and morals to the story. Exaggerated acting and heroines who burst into song every five minutes are just two of the endearing qualities that fans love.

Prasanna says the excitement of movie making doesn’t touch Transocean employees’ everyday lives. “We don’t come across stars every day,” he says. The last Bollywood movie he saw was “Hyderabad Blues” on TV and the last Hollywood offering — “Catch Me if You Can.” He says he prefers watching the movies in the movie halls, and, yes, popcorn is the snack of choice.

Another film industry tribute can be found in the city’s Art Deco theaters or cinema houses. Regal Cinema, opened in 1933, was Bombay’s first Art Deco cinema. Done in reinforced concrete cement, the interior

features lots of mirrors and a motif of sun rays in pale orange and jade green. The Eros Cinema, built in 1938, has a foyer of white and black marble with touches of gold. Murals depict Indian architecture. Also in 1938, Metro Goldwyn Mayer acquired land on a 999-year lease at the ground rent of 1 Rupee per year (that’s about U.S. 2 cents at today’s rate)!

#### SHOPPING IS SPORT FOR SOME

The bazaars of Mumbai promise memorable shopping experiences. Chor Bazaar features antiques, jewelry, wood and leather. Crawford Market is famous for flowers, fruits, meat and dishes, and is a great place to take photos. Jewelry is king at Zaveri Bazaar.

Cricket is the most popular sport in Mumbai, home to India’s national cricket team. Horse racing and harbor sailing are also favorite pastimes. Prasanna also reports that go-kart racing has gained popularity as a fun hobby among the young throughout India.

#### ANCIENT HISTORY LESSON

Side trips worth making from Mumbai include the Elephanta Caves and Rajkot. The caves are on an island about a one-hour boat ride from the Gateway. The caves date back to at least the 7th century AD, possibly a few centuries earlier. Tourist publications describe the caves as Hindu architecture at its best. “The beautiful sculptured cave temple is a feat of surprising skill and strength carved into basalt rock.” You reach the temple by climbing a flight of more than 100 steps. Nine sculptured panels are set like tableaux on the walls. The main attraction is the six-meter-high, three-headed bust of Lord Shiva.

Rajkot is famous for its jewelry market and crafts such as Bandhani Sarees, mirror-work, patch work, bead work and silk embroidery. Mahatma (Great Soul) Gandhi attended high school in the area and Kaba Gandhi no Delo, Gandhi’s ancestral home, now houses the Gandhi Smriti, a permanent exhibition. Also near Rajkot is Dwarka, the birthplace of Lord Krishna, one of the most commonly worshipped deities of the Hindu faith. Usually depicted playing a flute, he is known for his bravery in destroying evil powers and spreading the medley of love to people.



Top, left: Delhi street scene. Top, right: Delhi is famous for Mughlai cuisine which features tandoori entrees and liberal use of spices.

Not far from Rajkot are important destinations for Transocean staffers. “The Port of Pipavav is where we have a supply base for our rigs operating for Cairn Energy. Bhavnagar is another supply base with great historical background as well. Porbandar is a small port at the mouth of the Gulf of Kutch. In the deep end of the Gulf is Port Kandla, which is famous for its free-trade zone,” reports Prasanna.

#### DELHI: CELEBRATING THE OLD AND THE NEW

Located in Northern India, historians figure Delhi has been settled for around 2,500 years and has seen the rise and fall of seven major powers since the 12th century. Named the capital of India in 1911, Delhi is actually two cities in one — Old Delhi and New Delhi.

Old Delhi, which was the capital of Muslim India between the mid-17th and late 19th centuries, is filled with mosques, monuments and forts. Its narrow streets and colorful bazaars contrast with New Delhi, the imperial city created by the British Raj. Spacious, tree-lined avenues and imposing government buildings provide a sense of order.

“*Mera dil dilli me*,” says Monojit Chaliha, Materials Manager for the India District, who grew up in Delhi. “In Hindi, that means my heart is in Delhi. What can I say? It’s my favorite city so whenever I meet my old friends I always say, ‘*Mera dil dilli me*.’”

#### A DAY AND NIGHT IN DELHI

Monojit says he would start a day in Delhi with a round of golf at the Delhi Golf Club. Then lunch at one of the many restaurants at the Connaught Place, a sprawling, circular market built in the 1930s. Named after a member of the royal family, the British thought a market in the shape of a horseshoe would bring luck for both shoppers and shopkeepers.

Monojit recommends the Mughlai food at the Volga or Delhi Darbar restaurants. Inspired by the Mughal rulers of the 16th century, the Delhi region is known best for this cuisine. *Tandoors*, or clay ovens, are used to make *rotis* and *kababs*. Famous dishes include *tandoori chicken*, *seekh* (made with mince meat), *boti kabab*

(mutton) and *tandoori fish*. Flavoring spices such as cardamom, cinnamon, cloves and nutmeg are used liberally. Sauces like *Mughlai Aloo* and *shorbas* (soups) like *Palak Shorba* are very rich with curd, cream and crushed nuts like cashews. *Biryani* is a spicy rice dish cooked with *ghee* (butter that has had the milk solids and water removed).

Connaught Place also has many shops, emporia and cinema halls. The Karol Bagh is another great shopping hub. For souvenirs and artifacts, Monojit points to the Central Cottage Industries Emporium at Janpath, a multi-story shopping complex selling cotton clothes, curios and jewelry studded with semi-precious stones. For “classy” shopping, Monojit says check out the Santushti Complex near the prime minister’s home and Delhi Horse Race Course.

With most of your day spent in New Delhi, our Transocean tour guide recommends an evening in Old Delhi at the Red Fort. Designed to keep out invaders, the red sandstone walls of the fort, built in 1638, rise 108 feet (33 meters). Today, the fort, its gardens and pavilions provide a peaceful haven from the chaotic city noise outside. The fort’s main gate is a symbol of the modern Indian nation and attracts major crowds on Independence Day (August 15). Chatta Chowk, an impressive covered bazaar leads into the fort compound. Inside are building treasures including the Drum House, the Hall of Public Audiences, the white marble Hall of Private Audiences, the Pearl Mosque, Royal Baths and Palace of Colour. Monojit says the evening sound and light show that recreates events in India’s history is well worth seeing.

Dinner should be at the best Indian restaurant, which Monojit insists is the world-famous Bukhara at the Maurya Sheraton Hotel. And if you still have the energy to check out the nightlife, the Djinns at the Hyatt Regency is the place to be seen. Live music, exotic cuisine and drinks, as well as pool and darts are offered in an eclectic decor that draws inspiration from a 1930s pub and 1950 American icons.

*With the treasures of these two cities filling all of your senses, you no doubt would leave India a richer person.*





People  
FIRST



*Classroom activities, computer lab, school administrators with Transocean visitors*

## Transocean Helps Support Special School's Learning Quest

**W**hen Transocean India's Human Resources Manager Raj Louis heard that the Rochiram T. Thadhani School for the Hearing Handicapped needed help with funding last year, he knew a financial contribution would help children to gain an education that might otherwise not be obtained.

"Hearing-impaired children cannot produce intelligible speech. They are often the most neglected among the handicapped, as society is unable to fully comprehend their special needs. If we can support them by finding the means to overcome this handicap, it will be a step in the right direction," Louis said. "The trustees of the school are very committed, and the teachers are both highly qualified and caring."

### **Donation Supports Computer-based Learning**

The school in Mumbai is government-aided with most students belonging to lower-income segments. However, in April 2002, the government discontinued a major portion of its grant, leaving the school with no choice but to look for corporate support. Transocean's contribution helped 206 students from kindergarten to the 10th grade who benefit from a technology-aided educational program called the K-10 Program.

The school's primary mission is to enable hearing-impaired students to be independent and confident and thus enable them to integrate back into society. Some of the children have even made the transition from here to mainstream, public schools.

The school is proud of the classrooms filled with teaching aids and group hearing systems, a well-maintained computer lab, an impressive soundproof auditorium and a lab for the maintenance of hearing aids.

A recent visit to the school elicited friendly smiles from the administrators, teachers and students. In one classroom, a teacher asked a kindergarten student to repeat the number she had just uttered. He answered by tapping the correct answer on a tambourine, giving a delighted smile when the teacher acknowledged his effort.

Because hearing-impaired students learn faster with visual and auditory clues, the school uses television, VCRs, tape-recorders, slide projectors and overhead projectors to aid their learning process. Transocean has helped support the school's initiative of integrating technology into the regular education process. With guidance from teachers, students use computers to further upgrade their knowledge as well as reading and communication skills.

In addition to their normal curriculum, which includes math, science, language, reading and writing, students are also encouraged to learn various vocational skills, such as making cards and oil lamps. One award-winning painting is proudly displayed in the school's reception area. The embroidery, stitching, knitting, clay molding and painting are exceptionally well executed and students use these skills to earn some money from time to time. Students have also won prizes in many extracurricular activities, like dance, drama, drawing and sports.

"The school has been a great inspiration to me," Louis says. "Imagine what it would be like to be born into the world, not being able to hear and speak, and yet with the right kind of guidance along with love and care of dedicated teachers, you can integrate into mainstream again. That's really amazing."

# Connecting with Customers

## **Sedco 712**

*Sedco 712 Team:*

Thank you for the excellent job you have done either on the planning or the execution (or both) of the recent Pierce well which came to an end on March 16th. The well engineering objectives were achieved: we had to stay within 110% of the budgeted cost and complete the project without getting anyone hurt. Looks like we completed the project for circa 90% of the planned cost, no one got hurt and a considerable number of Near Misses and Potential Incidents were raised, which led the pack!

We could not have achieved this without the superb detailed planning that went into the project, the excellent teamwork between all of us (Shell, contractors, well and petroleum engineers, and all the support services, such as logistics), the tremendous HSE improvements the rig has made over the last 16 months, and your enthusiasm! As I read today "Success is not the result of spontaneous combustion. You must set yourself on fire." (Reggie Leach).

Thanks for bringing the S712 contract to a successful end. I am sorry that we can no longer work together as the FIRST team which has set a whole bunch of records and has been a joy for those who have been associated with it. I wish you all a lot of success in the future and hope you keep a lot of good memories of the S712! For those still on the rig or still associated with the rig: keep the rig rock & rolling!

*Guido Gaeffke*

*Principal Well Engineer S712*

*Shell U.K. Exploration & Production*

Adrian & Don:

This weekend will be the end of an era when the S712 rig, which was contracted by Shell in 1994, will complete its long serving contact and move to Talisman. During this period many memorable highlights were achieved whilst developing the majority of Shell's Northern subsea well assets and some Central ones of late. Some of the more recent highlights have included a reduction in TRCF from nearly 10 to 4.3 per million man-hours and working many months without getting anyone hurt.

Operational achievements have included record-breaking performances on subsea well delivery, drilling 4,000 feet per day in a 24-hour period with oil-based mud fully contained, drilling a total of 377,000 feet without a twist off, as well as tackling some very complicated completions and interventions. The most recent one being Pierce, another challenging project completed well below budget and without getting anyone hurt!

Thank you for the excellent achievements during the contract and especially for not taking the eye off the ball during the uncertain period of the last few months and completing the contract in a professional manner. We hope that the standard of the S712 will remain high should it ever return to Shell and that the *Jack Bates* will match it!

*John Barwis*

*Well Engineering Manager,*

*Graham Robinson*

*Well Engineering Manager Designate,*  
*Mike Waller*

*Operations Superintendent,*

*Simon Richards*

*S712 Contract Owner,*

*Guido Gaeffke*

*S712 Principal Well Engineer*

*Shell U.K. Exploration & Production*

## **Transocean Leader**

*Performance breakdown for well 204/20-C19 (Slot CW17).*

Schiehallion central high angle water injector targeting segment 1 portion of the 'snake channel' in the T31a sands. The well, drilled by the *Transocean Leader*, was spudded August 11, 2002 and completed April 28, 2003.

### *Performance Summary Against Original AFE Timings*

The original AFE was sanctioned on a summer drill and winter completion schedule.

Planned well depth: 4,551 MDBRT;  
Actual: 4,598 MDBRT  
Planned days: 74.49; Actual: 55.46 days (19.03 days ahead)  
Planned days/10k: 23.64;  
Actual: 19.08 days/10k (Best in Class Water Injector)  
Planned dry hole days: 32.32; Actual: 26.39  
Planned days per completion: 38.50;  
Actual: 27.43

### *Performance Summary against Updated Summer Completion Timings*

The AFE was not altered in respect of the change of season, but the timings were changed for accurate completion and performance planning. The change of season for the completion execution for the well from winter to summer reduced the planned number of days and planned completion days by 5.4 days.

Updated planned days: 67.14;  
Actual: 55.46 days (11.68 days ahead)  
Updated planned days per completion: 33.10; Actual: 27.43

The completion was planned to be batched in conjunction with PS23. The plan was altered a number of times and some of the original planned time savings were not realized. The completion time is still well ahead of the original and updated planned times.

### **Performance Metrics**

Planned well cost: £14.87mm;  
Actual: £11.5mm (Preliminary estimated cost)  
Planned development cost \$/bbl: 2.48 \$/bbl;  
Actual: 2.04 \$/bbl  
Planned DH \$/ft: 723.11 \$/ft;  
Actual: 591.04 \$/ft

### **Important Achievements**

No accidents or incidents. Best in class drilling performance for water injector (19.08 days/10k). First deployment of a Drill Through Horizontal Tree in West of Shetland. First Higher TOC to aid abandonment/sidetracking in West of Shetland. First use of Litecrete in West of Shetland.

*Lawrence Ritchie*

*BP Drilling Engineer, Northern Business Unit*

### **Sedco 704**

Gents:

Good job again with the casing floatation on B15. Another great outcome from a Well Operations team that's rapidly developing a solid reputation for safety and operational excellence.

*My thanks to all,*

*Alan Leiper*

*CTUE Drilling and Subsea Manager*

### **Deepwater Discovery**

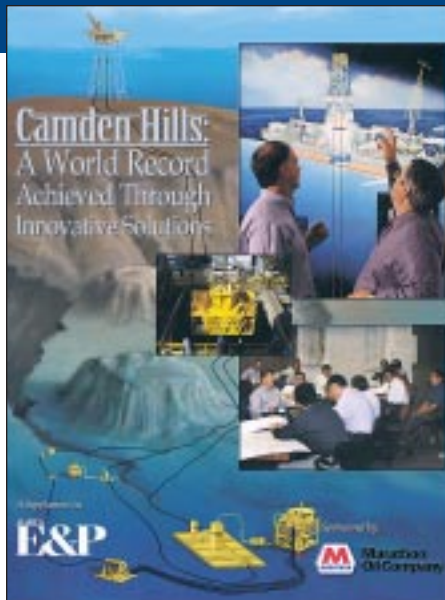
Hey, Serge:

I regret I was not able to travel back to Benin before the rig release. KMG has had an extremely tight travel policy and I was not approved to return to help close out the campaign. I enjoyed working with you, Eddie, and your team and the Drillship teams. I know we did not see eye to eye on everything on this campaign but I think both sides kept it on a professional basis and we got the job done on much tougher geology than I believe has been drilled by this rig over the last two years. Hope to work with you again. Please share this with Eddie and your team.

*John W. Meek*

*Kerr-McGee*

*Deepwater Drilling Engineer*



*Discoverer Spirit Rig Manager Logan Puckett (r) and OIM John Redington appear on the cover of Hart's E&P Magazine's special supplement on the Marathon Camden Hills project, which set the world deepwater production record.*

### **Sedco 703**

To All in the Team on the *Sedco 703* and in Town:

Thanks for your contribution to the excellent performance on these two wells. Both have come in ahead of budget despite the challenges of mooring and running the subsea BOP in such shallow water. The campaign for Woodside will continue with further wells, please maintain this level of performance and commitment to safety. We have to maintain an injury-free environment out on the rig and we are eager to deliver technical limit drilling performance.

It is pleasing to note that the rig team has worked through both of these wells without anyone getting hurt, however, we did sustain a serious injury to the second mate on the *Lady Valisia* and we have had wake-up calls. You, the team on the *703*, are central to Woodside Drilling Department Safety focus this year, we need your continued commitment to assessing every hazard and every change that you come up against and to ensuring that supervisors are coaching, checking and chasing all the time (remember "CCC" !!)

Look forward to seeing you all next time I visit. We can do it

with Nobody Getting Hurt. Let's ALL make sure we do.

*Doug Hodson*

*Well Engineering Manager  
Woodside Energy Ltd*

### **Roger W. Mowell**

Fellow Colleagues, Bunga Seroja-A Wells:

My congratulations to all personnel involved in the successful and safe execution of the simultaneous operations that are now complete. Through your efforts I am very pleased to advise that Talisman Malaysia Limited have moved a step closer to meet the deadline of first gas in October this year. I am sure that the 5-12-inch gas wells you completed will be world-class gas producers!

I am particularly pleased with the progress that the *Roger W. Mowell* has made since starting operations with us in November last year. The performance exhibited recently on the BSA platform clearly demonstrates her excellent performance capability — and we look forward to seeing more!

We now look forward to getting back on to the Bunga Raya-C platform where we will do even greater things. Your hard work and effort is much appreciated.

*Jonas Lindvall*

*Drilling Manager*

*Talisman Malaysia Limited*

### **Transocean Marianas and Deepwater Nautilus**

Congratulations! We compiled the numbers from the in-field testing we did in February and March, and Transocean's in-house well control program came out on top.

Below are the numbers:

Level No. Tested Average Score  
Transocean Introductory 49 — 88.1%  
In-House Program Fundamental 27 — 90.7%  
Supervisory 16 — 92.5%

Composite Average of all tests = 89.62%

*Jeff W. Campbell*

*Sr. Staff Training Specialist*

*Shell E&P Company*

*Robert Training Center*

# Corporate Report

## New Horizons

John Rouse,  
Vice President  
of Engineering  
& Construction,  
launches the  
first column in



*Offshore Frontiers* covering offshore drilling technology and the people at Transocean who are engineering the future of our dynamic industry. The company's innovations that stem from Transocean's engineering and construction team include the first jackup, the first turret-moored drillship, the first drillship capable of drilling in up to 10,000 feet of water, the *Deepwater Pathfinder*, the dual-activity *Enterprise-class* drillships and the integrated well-construction center of the *Express-class* semisubmersibles. This initial article introduces the Engineering & Construction function and will be followed by more in-depth stories about specific, emerging offshore drilling technologies.

What is the purpose of this column?

J.R.: To update employees about what is happening in the industry as new technologies develop and to introduce the technologies we are evaluating to remain the technical leader. Transocean is a leader in Surface Stack and Dual-Activity Drilling, but new technologies are constantly on the horizon and often are developed very quickly.

New technologies, such as expandable casing and casing drilling, are just two developments receiving a lot of attention by the industry.

J.R.: Transocean must be proactive and knowledgeable about this new technology to remain a technical leader. It has the potential to impact the industry and the rigs or equipment to drill wells in the future. It is important that we always position ourselves to take full advantage of this technology.

The *New Horizons* column will discuss these and other new technologies and what they mean for the industry and Transocean.

Who is involved with Engineering & Construction?

J.R.: The E&C group consists of four major departments: Engineering, Construction, Core Expertise and Technology Development. This group consists of about 90 people, whose technical expertise in the offshore industry totals more than 900 years. More than two-thirds of these people are degreed engineers or technical specialists covering all major technical disciplines including structural, naval architecture, electrical and electrical control systems, as well as mechanical and subsea systems.

We also have an experienced group of CAD (computer-aided

designer) employees, who translate the technical solutions onto drawings.

How are Transocean engineers viewed by clients and others?

J.R.: I have a lot of contact with consultants, vendors, customers, and competitors. My feeling from that experience is we have the best engineers with the most practical experience in the industry. The feedback we often get from our customers reinforces this statement.

In addition, you will find one of our engineers involved as a presenter or in an advisory position for most the deepwater conferences and seminars. We are often asked to conduct training seminars for some of our most important customers in highly technical areas. The Naval/Structural group has taught courses on "Mooring Operations" three times this year and last year at the Chevron/Texaco/BP drilling school. The Controls group taught a course to this same group on "Dynamic Positioning." We also presented at Shell/BP learning lunches on "Surface Stack Reliability."

The E&C group typically writes two to three technical papers each year for presentation at the OTC (Offshore Technology Conference), SPE/IADC (Society of Petroleum Engineers/International Association of Drilling Contractors) and other major conferences.

How much time does an engineer spend on various projects?

J.R.: About 50-60% of our Engineering Department's time is spent dealing with technical issues or problems that have developed on operating rigs. The remaining time is spent providing technical solutions and cost estimates to support our marketing efforts of

## E&C Mission Statement

To provide quality engineering solutions and technical support on a timely basis for fleet-wide rig Operations and Marketing groups • To evaluate and explore new technology through value engineering to maximize investment value to the company • To provide project management expertise to plan, budget, engineer, and execute new rig construction projects, rig upgrades, and major rig repairs to meet project objectives • To maintain technical leadership and expertise in deepwater, harsh environment, offshore drilling activities.

the rig fleet and being assigned to rig projects.

As you would expect, the majority of the construction group's time is spent on projects in far away places.

### What is "Core Expertise?"

J.R.: Part of the reason why I believe we have the best engineers in the world is that we focus on what we do best — making our business of offshore drilling more efficient and reliable for clients. Several of our engineers are truly experts within our industry. We decided several years ago that in order to fully utilize these talents and expertise it was necessary to separate these individuals from the day-to-day

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### E&C Department START Motto: START to Engineer the Future

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technical issues, so they could focus their energy on technical issues that have the potential to impact the company in a big way.

This group is typically involved in issues that affect numerous rigs. For example, subsea downtime is the major contributor to our fleet's overall downtime. Downtime not only affects revenues, it also has an impact on our reputation.

Several members of this group, with assistance from other engineering and operations staff, have worked for most of the past year developing new solutions to enhance the reliability of our subsea equipment. These people are a major reason why downtime,

especially on our newbuild rigs, has decreased and we continue to work on further reductions.

Without the focus of the Core Expertise group, we would constantly be disrupted fighting the daily fires that inevitably develop.

### What does Technology Development mean?

J.R.: It starts with being aware of what the customer and the industry are moving towards. Technology Development Director Earl Shanks coordinates this area. He meets regularly with customers, attends major conferences and is a member of several technology focus groups. He essentially keeps his "ear to the ground" to help identify where technology is headed. One of his primary roles is to help the company evaluate the potential of specific technologies.

### What are you most proud of?

J.R.: Simple answer: our people. They deliver solutions to complex drilling problems that stand up to the test of time, and they do it under pressure.

I am also proud that one of our Core Values as a company is Technical Leadership, which starts and ends with people. I cannot say enough about the quality and dedication of the E&C staff. They are proud of their contributions and there have been many. Just check the "firsts" by this company on the company Web site at <http://www.deepwater.com/FactsandFirsts.cfm>.

### Meet John Rouse – Vice President, Engineering and Construction

**1975** - Started with the company as a structural design engineer. A few years later, was assigned to first construction project as Project Engineer for the conversion of an old cargo vessel into a turret-moored drillship, the *Discoverer 511*.

**1980** - Promoted to Project Manager for the design and construction of the jackup *Transocean Comet* in Singapore. Later projects included the newbuild semisubmersible *John Shaw* and numerous retrofits and upgrades.

**Mid-1980s** - Became Manager of Construction when the *Rather/Richardson* rigs were built in Korea and the *Henry Goodrich* was launched in Japan.

**1988** - Promoted to Manager of Engineering and Construction group for the corporate headquarters.

**1996** - Promoted to Director and Assistant Vice President, corporate Engineering and Construction departments.

**2002** - Promoted to Vice President

**Professional Notes:** Traveled and spent extensive time in Southeast Asia, the Middle East, Brazil, Venezuela, Japan, Canada and the North Sea. Spent two years as United States Coast Guard technical representative to the International Maritime Organization in London. Active in American Petroleum Institute, International Association of Drilling Contractors, DNV, and ABS committees for mobile offshore drilling units.

**Personal Notes:** Married 25 years with three grown children.

# Measuring Our Success

Transocean Safety Performance First Quarter 2003	
By Region	TRIR*
Africa	1.62
Asia & Australia	1.17
Brazil	1.21
Middle East, Mediterranean, Caspian & India	2.07
North America	1.33
North Europe	.86
Trinidad	0.00
U.S. Shallow Water Division	2.30
U.S. Inland Water Division	2.07
Venezuela Land Rigs	1.77
Administration, Total	0.00
<b>Total Company-wide</b>	<b>1.41</b>

\* Total Recordable Incident Rate per 200,000 hours worked.

## Meeting the Expectation — ZERO

The following rigs have achieved Zero TRIR\* year to date through March 2003.

**Africa:** Searex 9, Searex 12, Sedco 700, Sedneth 701, Sedco Energy, Shelf Explorer, Transocean Rather, Trident 4, Trident 8

**Asia & Australia:** Charley Graves, Harvey H. Ward, Hibiscus, Sedco 600, Sedco 602, Sedco 702, Trident 9, Trident 12, Trident 15, Trident 16, W.D. Kent

**Brazil:** Deepwater Expedition, Deepwater Frontier, Deepwater Navigator, Sedco 135D, Sedco 710, Sedco Express, Transocean Driller

**Middle East, Mediterranean, Caspian & India:** Actinia, D.R. Stewart, George H. Galloway, Interocean III, J.T. Angel, Transocean Comet, Transocean Mercury, Trident 2, Trident 20

**North America:** Deepwater Millennium, Deepwater Nautilus, Discoverer Deep Seas, Discoverer Enterprise, Falcon 100, JOIDES Resolution, Transocean Amirante, Transocean Marianas

**North Europe:** J.W. McLean, Jack Bates, John Shaw, Paul B. Loyd, Jr., Polar Pioneer, Sedco 706, Sedco 711, Sedco 712, Sedco 714, Transocean Leader

**Trinidad:** Rig 3, RBF 100, RBF 208

**U.S. Shallow Water Division:** RBF 75, RBF 150, RBF 152, RBF 154, RBF 191, RBF 200, RBF 203, RBF 204, RBF 205, RBF 206, RBF 207, RBF 250, RBF 251

**U.S. Inland Water Division:** Rig 1, Rig 7, Rig 9, Rig 15, Rig 17, Rig 19, Rig 20, Rig 27, Rig 28, Rig 29, Rig 38, Rig 41, Rig 46, Rig 48, Rig 52, Rig 57, Rig 62, Rig 64

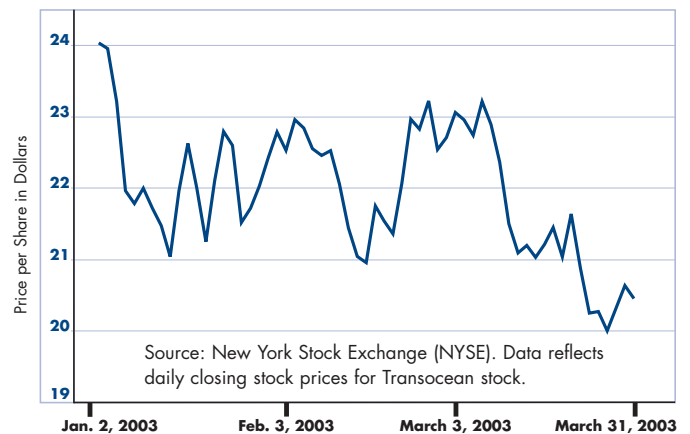
**Venezuela Land Rigs:** Rig 26, Rig 27, Rig 37, Rig 40, Rig 42, Rig 43, Rig 54, Rig 55

\* Total Recordable Incident Rate per 200,000 hours worked.

Transocean Fleet Utilization by Quarter	
By Rig Type	Utilization
International & U.S. Floater Contract Drilling Services Segment:	Three months ended March 31, 2003
Deepwater:	
5th Generation	97%
Other Deepwater	76%
Total Deepwater	85%
Mid-Water	53%
Jackups Non-U.S.	87%
Other Rigs	36%
Segment Total	69%
Gulf of Mexico & Inland Water Segment:	
Jackups & Semisubmersibles	32%
Inland Barges	47%
Other Rigs	32%
Segment Total:	38%
<b>Total Mobile Offshore Drilling Fleet</b>	<b>55%</b>

## Transocean Stock Price Performance

January 2, 2003 to March 31, 2003



The price of Transocean common stock closed at \$20.45 on March 31, 2003, compared with \$24.08 on January 2, 2003. The company's stock trades under the symbol RIG on the New York Stock Exchange.



Transocean Inc. President and CEO Robert L. Long (fifth from left) rang the New York Stock Exchange (NYSE) closing bell May 28, 2003, celebrating the 10th anniversary of Transocean's common stock trading on the NYSE. Also participating were (l-r): Guy Cantwell, Corp. Communications Manager; Stanley Solomon, VP, Spear, Leeds & Kellogg; Jean P. Cabuzac, EVP, COO; Richard A. Grasso, NYSE Chairman and CEO; Mr. Long; Catherine R. Kinney, NYSE President and Co-COO; Gregory L. Cauthen, Sr. VP, CFO and Treasurer; Jeffrey L. Chastain, VP, Investor Relations/Corp. Communications; and B. "Chip" Keener, Deepwater Marketing Director.

# Take a Closer Look



Take a closer look at Transocean and you'll see there is more to us than meets the eye. For instance:

We're the deepwater leaders, with the current world water depth drilling record of 9,727 feet of water and the largest fleet of drillships and semisubmersibles to address our customers' deepwater drilling programs around the world.

We're technology driven, with unique advances like the dual-activity drilling of our *Enterprise-class* drillships and the integrated well-construction center of our *Express-class* semisubmersibles. These rigs, like all our newbuild drillships and semisubmersibles, are demonstrating time savings for our customers.

We're experienced, having drilled in most offshore oil and gas areas worldwide from deepwater and harsh-environment theatres to shallow water.

We've got the assets, with the world's largest offshore drilling fleet operated by an internationally diverse employee base dedicated to safe and efficient operations.

Take a closer look at Transocean. If what you're looking for is value, you'll see it.

Transocean: We're never out of our depth.





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