

## MUSINGS FROM THE OIL PATCH

August 23, 2005

Allen Brooks  
Managing Director

---

**Note:** *Musings from the Oil Patch* reflects an eclectic collection of stories and analyses dealing with issues and developments within the energy industry that I feel have potentially significant implications for executives operating oilfield service companies. The newsletter currently anticipates a semi-monthly publishing schedule, but periodically the event and news flow may dictate a more frequent schedule. As always, I welcome your comments and observations. Allen Brooks

---

## Is NIMBY Changing In New England?

Energy issues are boiling to the surface in New England as LNG terminal and wind farm projects are moving forward in the regulatory approval process. The not-in-my-backyard (NIMBY) attitude continues to reign supreme in the region. Two LNG receiving terminals have been proposed for the southern New England region – one in Fall River, Massachusetts and the second in Providence, Rhode Island. Citizens and politicians of the two host states have opposed the planned projects, even though one is an expansion of an existing LNG storage facility. The Federal Energy Regulatory Commission (FERC) approved the Fall River facility, but rejected the Providence facility. The owner of the Providence LNG storage tank and proponent of the expanded terminal facility, KeySpan LNG announced it would make the required modifications to the plan and appeal the FERC ruling.

**Citizens in Rhode Island are mobilizing to fight both the Providence and Fall River plants**

Citizens in Rhode Island are mobilizing to fight both the Providence and Fall River plants. Stopping the projects is their primary goal due to concern about the facilities being located too close to population centers, becoming terrorist targets and upsetting the environment and disrupting tourism. One of the alternatives proposed is to locate the LNG receiving terminals offshore. However, that still does not solve the issue of storage since pipelines would need to be constructed from an offshore facility to storage tanks onshore.

In 38 square miles of the waters of Nantucket Sound, bounded by the islands of Martha's Vineyard and Nantucket and Cape Cod, Cape Wind Associates LLC has proposed erecting 130 wind-driven turbines, each about 413 feet high. These turbines would generate 420-megawatts of power, supplying as much as 75% of the Cape's electricity needs. The battle over this plan has divided the local citizenry, as a May telephone survey showed. The survey, done by the University of Massachusetts Dartmouth's Center for Policy

---

Analysis, found 39% opposed the project while 37% were supportive, with a margin of error of 3.9 percentage points. One in four respondents was noncommittal.

#### Exhibit 1. Location For Cape Wind Farm



Source: Alliance to Protect Nantucket Sound

***The Providence Journal*, in an editorial, takes to task New England's hypocritical attitude toward the development of new energy supplies**

We were dumbfounded last week when we opened *The Providence Journal*, the principle newspaper in the area, and read an editorial taking to task the region's hypocritical attitude toward the development of new energy supplies. This liberal newspaper, in the heart of a liberal state, despite the fact that the state has a Republican Senator, Lincoln Chafee, previously seemed to challenge any and every new energy development scheme. Below we have reproduced the editorial so our readers can see for themselves the official stance of the paper.

**"Neither inshore nor off**

**"We certainly don't like the idea of oil and gas exploration on Georges Bank. But nestled among the pork chops in the recently enacted federal energy bill is a provision calling on the federal government to look into possible oil and gas drilling along the entire U.S. coastline -- including storied, if overfished, Georges Bank, where there has been a ban on drilling since**

Hypocrisy reigns among many politicians and so called environmentalists

1982. Indeed, the moratorium is supposed to run through 2012!

“Needless to say, many New Englanders were surprised and dismayed to discover this provision.

“Georges Bank is a vastly important fishing ground: a protein factory crucial to New England's remaining offshore-fisheries industry, based in such places as Gloucester, New Bedford, and Point Judith. We'd hate to see this rich ecology -- and historic part of New England culture -- jeopardized.

“Nevertheless, we're amused at some of the opposition to exploratory drilling there. For instance, there is Sen. Edward Kennedy, the longtime Massachusetts Democrat. "We'll strongly resist any attempt to turn Georges Bank into a forest of oil and gas wells," the statesman says.

“But Mr. Kennedy and some other powerful politicians, as well as many rich summer people (and others) living on Nantucket Sound, also strongly oppose Cape Wind's proposed wind farm in the sound: a clean-energy project that would meet about 75 percent of the electricity needs of Cape Cod and the Islands. Foes have said the windmills would be an ugly "forest of poles." Maybe they're right. Yet Senator Kennedy and other key politicians also oppose proposals to bring liquefied natural gas -- the cleanest of the fossil fuels -- into the port (such as it is) of Fall River. Also heavily in opposition are wealthy yachtsmen, who say that the LNG tankers would interfere with their summer boating.

“We might note that many of the biggest foes of new energy facilities, especially near summer resorts, are disproportionately big users of energy. That includes the rich folks on the warm-water south side of the Cape, as well as on Nantucket and Martha's Vineyard.

“The rich folks, also not coincidentally, include some state and federal politicians. But then, politics is increasingly composed of rich people (they can afford the TV election-campaign ads), who often have vacation homes on such places as, well, Nantucket Sound. Massachusetts Sen. John Kerry is far from the only big-name politician whose family favors gasoline-chugging SUVs and huge houses with massive heating, air-conditioning and other energy bills -- even while he touts energy conservation.

“Anyway, Senator Kennedy and his friends *don't want* the windmills, *don't want* oil and gas drilling on Georges Bank, *don't want* LNG plants, and *don't want* nuclear energy. And whale oil, while quaint, no longer seems a plausible source of illumination.

“We realize that opposing any public project that might inconvenience or discomfit a group of voters can be good politics (at least until the lights go out), but we’d love to know where our statesmen see energy for New England coming from. For instance, given their record of kowtowing to pressure groups opposing the construction of any energy facility near them, would the politicians be willing to impose draconian conservation laws (in lieu of new energy facilities), which might make most voters really mad? Many of the politicians presenting themselves as proponents of energy conservation leap to defend American motorists’ right to cheap gasoline.

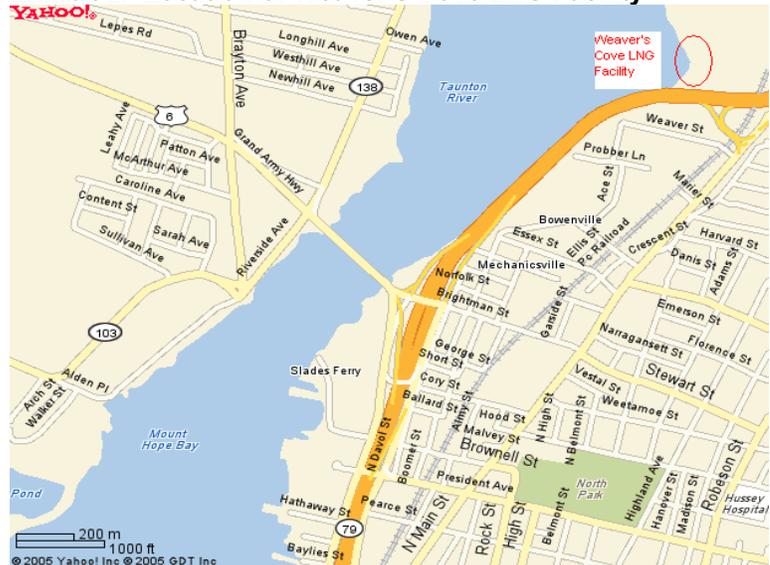
“We’re all hypocrites in something, but some New England politicians are at Olympian levels when it comes to energy. Oh, by the way, the price of oil yesterday hit \$66 a barrel.”

Source: The Providence Journal editorial August 13, 2005

**NIMBY is reflected in the recent decision not to grant a rate increase for the New England ISO**

We hope *The Providence Journal* stance is embraced by more than the editorial staff of the paper. We don’t hold out much hope based on our conversations with locals and recent developments. The NIMBY attitude is pervasive and has colored attitudes that there is no need for additional energy supplies for the region. That view is reinforced by the recent decision by the regulators to hold up until late in 2006 a rate increase proposed for the New England ISO. The ISO is the electric power transmission network that distributes power around New England and is owned by the power plant owners in the region. Because not all the power plant generating capacity is being utilized, there is skepticism about the need for any rate increase. This condition further fuels the belief that since there is more generating capacity than the region’s current electricity consumption, then there can’t possibly be an energy supply problem.

**Exhibit 2. Location of Weaver’s Cove LNG Facility**



Source: Yahoo Maps, PPHB

**In the dead of night while the transportation bill was being negotiated, the language preventing the use of any federal money to dismantle the Brightman Street Bridge over the Taunton River was inserted**

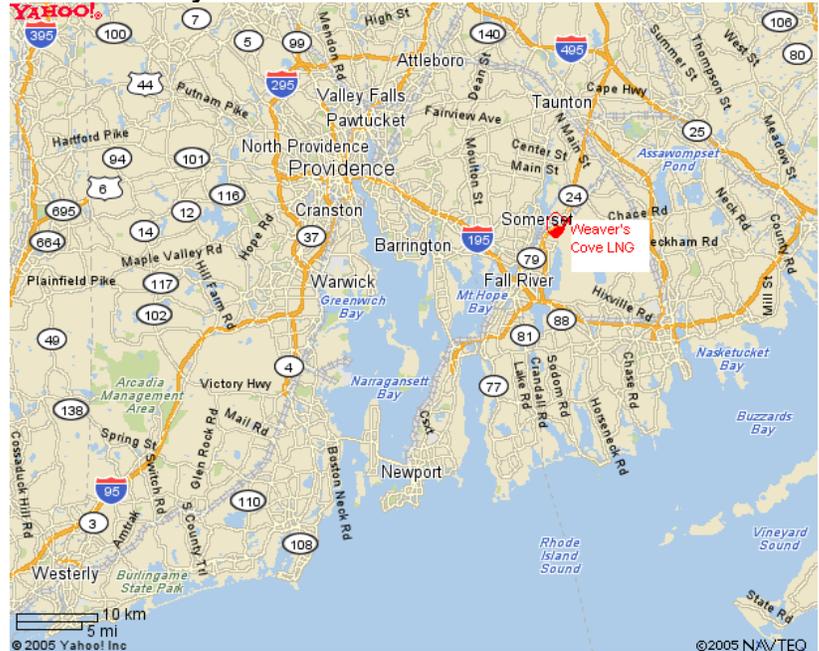
The next sign that the NIMBY attitude hasn't changed was the effort by Congressman James McGovern (D-Worcester, MA) to insert language in the massive 2005 Transportation Bill signed by President Bush that may derail the possible construction of Fall River's Weaver's Cove LNG terminal. In the dead of night while the transportation bill was being negotiated, the language preventing the use of any federal money to dismantle the Brightman Street Bridge over the Taunton River was inserted. Since the late 1990s, federal money has been used to build a replacement to the drawbridge. The language restricts the use of federal money for removing the bridge (80% of the \$5.2 million cost was to come from federal money), and it provided \$500,000 for preservation and rehabilitation of the bridge to maintain it as a pedestrian and bicycle bridge, with the capability also to carry emergency vehicles. Without the removal of the old bridge LNG tankers will be unable to maneuver to the proposed terminal. This navigational restriction likely would force FERC to reject the LNG terminal due to safety reasons. Weaver's Cove lawyers are examining the legislation and there will be hearings before FERC, as yet unscheduled.

Moreover, the Navel Undersea Warfare Center in Newport has announced it wants FERC to reconsider its approval of the Fall River LNG terminal since LNG tanker traffic might interfere with its work. The center, with 4,300 employees, performs research, design and testing on submarines, sonar systems and torpedoes. The Navy weighed in with its request on August 12. It said in its filing that the center was never invited to participate in meetings dealing with the terminal. They also said that neither the environmental impact statement nor the June 30 FERC decision mentioned the Navy's presence or its activities. The Navy claims it was not aware of the LNG proposal and its impact on its activities until alerted by Rhode Island Attorney General Patrick C. Lynch on July 15. Both Weaver's Cove owner, Hess LNG, and KeySpan officials have described briefings with the Navy and attendance by Navy officers at official LNG meetings. A spokesman for the Warfare Center says the Navy is a big organization.

**How officials sitting in Newport, Rhode Island can claim ignorance about the proposed LNG terminal, the FERC environmental study and its ruling is beyond credulity**

How officials sitting in Newport, Rhode Island can claim ignorance about the proposed LNG terminal, the FERC environmental study and its ruling is beyond credulity. The argument that the Navy is a big organization is spurious. This move by the Warfare Center smacks of one more example of the hypocritical attitude of Rhode Islanders and its political leaders. Where have these Newport-based Navy officials been for the past nine months? Does the Navy's statement reflect its 'mad scientist' focus on its research responsibility to the exclusion of everything else? Or does it reflect the quality of the Navy's intelligence effort? Either response reflects poorly on the Navy.

**Exhibit 3. Navy Worried About LNG Tanker Traffic to Terminal**



Source: Yahoo Maps, PPHB

**Planning ahead and investing early appears to be an alien concept in regions such as New England**

It is these short-sighted actions that reflect the NIMBY attitude that grips this region. The NIMBY attitude has discouraged energy infrastructure investment that has contributed to our current energy problems. Planning ahead and investing early appears to be an alien concept in regions such as New England. Maybe their view merely reflects their embrace of the magic of 'just-in-time' delivery of everything.

**Airline Food and Energy Consumption**

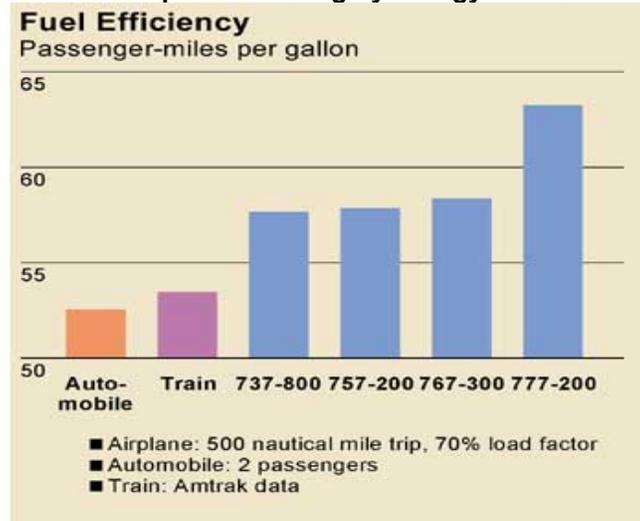
**The 24-hour strike caused British Airways to cancel almost 700 flights, grounding 110,000 travelers and disrupting the arrival of 30,000 pieces of luggage**

On August 10, Gate Gourmet, a food catering company owned by Ft. Worth, Texas-based private equity firm, Texas Pacific Group, fired about 667 of its workers in London. In sympathy, some 1,000 British Airways Plc (BAB-NYSE) baggage handlers and other service employees, members of the same labor union as the caterers, went out on strike. Within hours, the strike brought the entire global British Airways network to its knees, and impacted the operations of a number of other airlines operating at Heathrow Airport. The 24-hour strike caused the airline to cancel almost 700 flights, grounding 110,000 travelers and disrupting the arrival of 30,000 pieces of luggage. Estimates are that British Airways lost about \$72 million dollars of revenues, and with the added costs of taking care of stranded travelers, the total cost to the airline may have been greater.

We got to thinking that with all these flights grounded, there might be a one week blip in jet fuel consumption. Due to the lag in inventory reporting, the demand impact, if noticeable, would not show up until this week. In trying to answer the question of what the potential

impact might be, we discovered how little we knew about the fuel consumption of airplanes. Like any other hydrocarbon powered vehicle, factors such as weight, speed and acceleration impact actual fuel consumption.

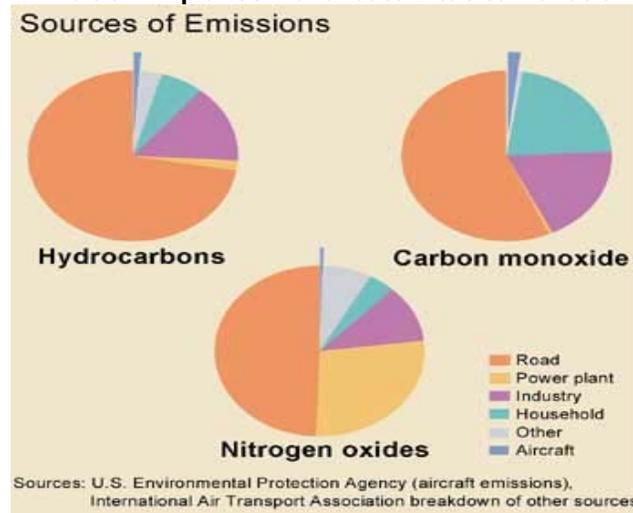
**Exhibit 4. Airplanes Are Highly Energy Efficient**



Source: Boeing

Airplanes do not appear to have miles per gallon ratings as new cars and trucks do in the United States. What we do know, however, is that just like automobiles, newer generation planes are more fuel-efficient than older planes. According to Boeing (BA-NYSE), the jet engines on planes today are two-times more efficient than those on planes built 30 years ago. For planes built 50 years ago, the reduction in fuel consumption is 70%. Also encouraging is the fact that these new engines emit fewer than 85% of the emissions per pound of fuel burned compared to planes built in the 1970s.

**Exhibit 5. Airplanes Contribute Little to Pollution**



Source: Boeing

**Airlines are working hard to reduce their fuel consumption**

Based on improvements in air traffic management systems – more efficient routes and less time in holding patterns – the global fleet's fuel burn rates per trip can be improved by an additional 6% to 12%. Likewise, the International Air Transportation Association says that improved operational procedures can have a positive fuel consumption impact. If planes carry more passengers and freight, optimize their air speed, limit the use of auxiliary power and modify taxi procedures, there could be a further reduction in the fuel burn and emissions rates of between 2% and 6%. I may be wrong, but it seems that whenever I fly now, the planes are full, they are quicker to load and unload, and faster to get off the ground, except when weather interferes. So the airlines are working hard to reduce their fuel consumption. The problem is that jet fuel prices have doubled over the past year and airline managements are reluctant to raise fares too quickly for fear of pricking the flying public's demand for air travel. According to industry reports, air traffic is up 8% this year.

While all these operating procedures can improve fuel burn rates for planes, most of the fuel is consumed during the takeoff when about 25% is burned achieving lift off. The most efficient distance is about 4,300 kilometers, or roughly the distance from Europe to the East Coast of the United States. However, when one thinks about it, the vast majority of airline flights are of shorter distances, thus they are less fuel-efficient. When we realize that British Airways flies about 200 short-haul and 75 long-haul flights from Heathrow each day, the fuel consumption patterns suggest that there might be some noticeable demand impact this week.

## Gasoline Prices Becoming A Greater Concern

**64% of consumers say gasoline prices will cause money problems for them within the next six months**

A poll conducted August 9-11 by the Associated Press and America Online News found that 64% of consumers say gasoline prices will cause money problems for them within the next six months. Thirty-five percent did not think there would be an impact. In April, 51% of those surveyed expressed concern about gasoline prices.

This past week, a front page story in *The New York Times* focused on the strains on the economy from high oil prices. The article followed by one day Wal-Mart's (WMT-NYSE ) latest quarterly earnings report. They reported that their earnings grew at the slowest rate in four years, which they attributed to the impact from the climb in gasoline prices. So far this year, the majority of the year-over-year increase in U.S. inflation has come as a result of higher energy prices.

What is interesting is to contrast the gasoline situation in the United States with that in China. The Chinese government has been very concerned this year about the impact of rising consumer prices due to escalating global commodity prices on inflation. Of course, Chinese commodity purchasing policies have largely driven prices up. To control inflation, Chinese government officials have put price

controls on gasoline and diesel fuel. The result has been physical shortages that are conjuring up images of the 1970s gasoline lines in the United States.

#### Exhibit 6. Chinese Gasoline Shortages



Source: NY Times, China Newsphoto Reuters

**The government has been slow to raise retail prices in line with the rise in crude oil prices in hopes of controlling inflation**

China allows retail price changes once a month. However, the government has been slow to raise retail prices in line with the rise in crude oil prices in hopes of controlling inflation in the country. This strategy has destroyed the profit margins of refiners. An explanation for the resulting shortages of gasoline and diesel is that Chinese people, with greater access to global price information due to the internet, may be stockpiling fuel in anticipation of higher retail prices in the future. This explanation reminds us of the impact that gasoline shortages had on consumer buying patterns in the 1970s.

**Due to the impact of shortage mentality thinking, the United States dramatically expanded its secondary fuel inventory**

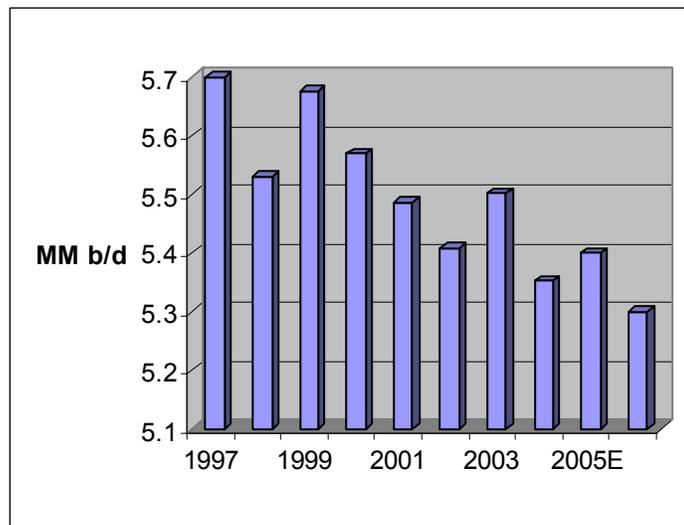
We found when gasoline lines began to form that drivers began filling their car's fuel tanks at higher levels than before. Where consumers used to wait until their car's fuel gauge showed a quarter tank reading before filling up, the shortage mentality caused them to start filling up when their tank was 75% full. In addition, estimates are that gasoline buyers burned up 150,000 barrels per day of fuel idling their engines waiting in lines to buy fuel. Due to the impact of shortage mentality thinking, the United States dramatically expanded its secondary fuel inventory. As that inventory grew, the refining industry struggled to maintain primary inventory levels consistent with past levels. When the shortage disappeared, gasoline consumption fell as people reverted to their historical pattern of buying fuel and worked off their intermediate inventory. The bottom line was that price regulation and other restrictions sent distorted signals to consumers. It seems similar events are now happening in China. As a result of the distorted price signals being sent by the government, we may find that the reported Chinese consumption figures are actually misrepresenting true oil demand.

## Japan May Boost Energy Demand

**This was the third consecutive quarter of growth after 15 years of economic malaise**

On August 12, the Japanese Cabinet announced that the country's economy has grown at a 1.1% annual rate. This was the third consecutive quarter of growth after 15 years of economic malaise. The growth was driven by consumer and business spending that are at the strongest levels since the 1980s. The fact the economy grew may be more significant than the rate. There are a number of economic forecasters who believe that Japan's economic growth is approaching its maximum sustained rate given the challenges of an aging population, the government's deficit and its political problems. However, after the second quarter results were announced, Morgan Stanley raised its growth forecasts for 2005 and 2006 by eight-tenths of a percentage point.

### Exhibit 7. Does Japan's Oil Demand Need to be Raised?



Source: EIA, PPHB

**With Japan's economy showing stronger growth than previously anticipated, it would seem logical that oil demand may need to be revised up**

Earlier this year the International Monetary Fund revised its growth forecasts to 0.8% in 2005 and 1.9% for 2006. OPEC has boosted its forecasts, also, to 1.6% and 1.8%, respectively, for this year and next. While we are not sure about the ability of Japan to grow faster in 2006 than this year, the interesting thing is that oil demand projections by the Energy Information Administration (EIA) in their short-term outlook looks for flat demand in 2005, with a slight decline in 2006. Because the forecast number is not carried out beyond one decimal point, we cannot be sure of exactly how much of a decline in demand the EIA is projecting. Regardless, with Japan's economy showing stronger growth than previously anticipated, it would seem logical that oil demand may need to be revised up. We'll wait to see whether, and by how much, oil demand forecasts may be hiked given the latest Japanese economic results.

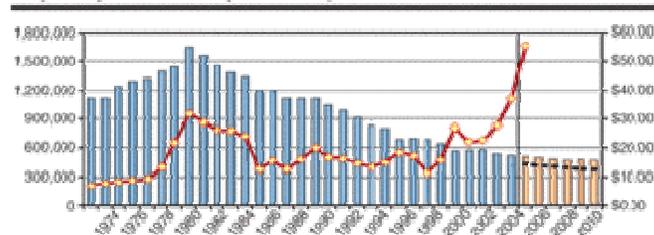
## Employee Challenges Confronting Managements

**In the latest quarter, we heard from several managements of the new challenge of retaining workers**

For the past few quarters on earnings conference calls, oilfield service company managements have been discussing the problems of hiring field workers to support the resurgence in drilling and field development activity. In the latest quarter, we heard from several managements of the new challenge of retaining workers. Skilled staff are being raided by competitors who are desperate to hire experienced employees to help grow the new employer's business. Lately, skilled oilfield service employees are being pirated by oil company clients desperate for the specialized help, but this trend creates new and complex challenges for management. Exactly how do you compete against what may be an extraordinarily high compensation package from your client that could skew wage levels across your company? Also, what does employee pirating do to the client/vendor relationship?

### Exhibit 8. Declining Oil Industry Headcount

Oil prices (nominal dollars) and JSH Top 25 headcount 1974-2004



Source: Company 10-Ks, JSH Analysis

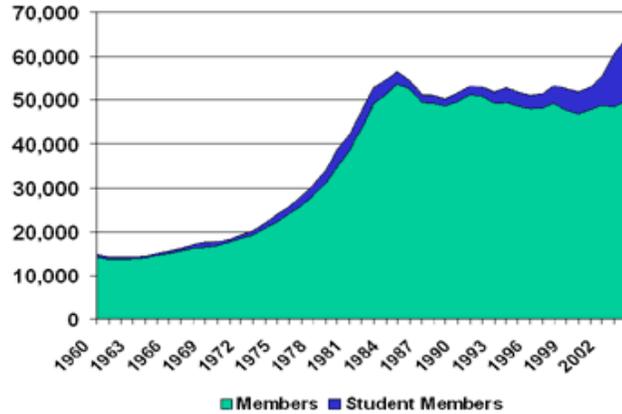
Source: John S. Herold

**Hiring bonuses, employee salaries and benefit programs, and even retention bonuses are becoming much more important in today's business plans**

As a result of today's new oilfield labor market, managements must re-examine all aspects of how it secures, develops and retains employees. Hiring bonuses, employee salaries and benefit programs, and even retention bonuses are becoming much more important in today's business plans. These issues are gaining in importance due to the current labor situation, which largely reflects the fallout from the industry depression in the mid 1980s and the highly cyclical nature of the business since then. These industry conditions have made energy jobs less attractive as a career for youths and college-bound students. The Society of Petroleum Engineers (SPE) provides on its web site several analyses of its membership (growing) and its age profile (getting older). What we see for the SPE in Exhibits 9 and 10 is also true for other technical specialties in the oil patch.

**Exhibit 9. SPE Membership Growth Reflects Healthier Industry**

**2004 SPE Membership Reaches New Peak**  
*Membership Approaches 65,000, Including More Than 14,000 Students*



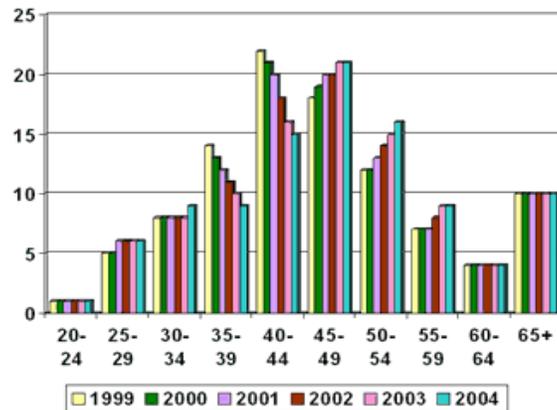
Source: SPE web site

**The cyclical industry pattern has not prepared management for handling the staffing needs of an extended industry upturn**

Since 1982, oilfield service company managements have focused on learning how to quickly downsize their companies whenever oilfield activity contracted. Mastering that skill is more difficult than learning how to expand. In that case, every time activity picked up – you merely had to go out and offer higher wages. Over the past 15 years, due to the cyclical nature of oilfield activity, companies found they were doubling their labor force and then cutting it in half about every three years. While this cyclical pattern enabled management to perfect their hiring and firing skills, it has not prepared them for handling the staffing needs of an extended industry upturn. Remember, this type of industry expansion has not happened since the 1970s. Unfortunately, there are very few senior management today who were in senior management roles back 25-30 years ago.

**Exhibit 10. Aging SPE Membership Reflects History of Industry**

**Despite Slight Increase in Young Members in 2004, Average Age Remains Over 45**  
*SPE Membership, Excluding Student Members*



Source: SPE web site

**Creating the right compensation and benefits programs is important, but training and development programs are also critical factors**

In order to successfully manage the human element of a company's growth, careful planning is essential. That planning starts with developing an understanding of the company labor force needed to achieve corporate objectives, while taking into account the current workforce demographics. Creating the right compensation and benefits programs is important, but training and development programs are also critical factors. To better understand the present state of labor force development, benefits and compensation for the oilfield service industry, we discussed these issues with Brett Haugh, Principal at Employee Benefit Solutions, Inc. (EBS) and Ed McGaughey, Managing Director of Pearl Myer & Partners (PMP). EBS is involved in developing, delivering, communicating and managing employee benefit programs. PMP, a subsidiary of Clark Inc. (CLK-NYSE), is an executive and employee compensation consulting firm. Both firms focus on the energy industry.

**One of the more interesting changes underway is the growing interest in benchmarking benefit plans by companies in the contract drilling and oilfield service sectors**

One of the more interesting changes underway is the growing interest in benchmarking benefit plans by companies in the contract drilling and oilfield service sectors. Previously, benchmarking had only been conducted by the E&P sector. This is an important development, and due to the legal considerations of sharing information, must be done with care. What is important is that benchmarking provides an initial reference point from which management can evaluate and measure the impact of future or contemplated plan changes.

**Many of the historical differences in pay norms between the E&P and oilfield service companies are starting to disappear**

Wage movement is the most visible and measurable component of employee compensation. Cash compensation is monitored through surveys of going wage rates and by monitoring merit plans for wage and promotional increases. The oilfield service sector, along with offshore drilling and some E&P independents, have for the first time granted off-cycle increases to catch up with market wage movements. These wage grants have been made to better compete in the current labor market, and to compete against increased competition across the industry sectors for technical jobs such as drilling and integrated services engineers and subsea engineers, to name a few specialties. Because of the greater competition, many of the historical differences in pay norms between the E&P and oilfield service companies are starting to disappear.

Another key cash compensation issue is that of the entry level wage. For many lower level field positions, the hourly wage of \$10-\$12 per hour, or even the next level up of \$14-\$20 per hour, puts the drilling and oilfield service companies in competition with the Wal-Marts and other retail labor positions. Given the labor conditions and safety issues of working in the oilfield, often times the ability to earn a relatively comparable wage plus work regular hours and in-doors in the retail sector becomes a fierce competitor.

Energy companies are increasingly granting hire and sign-on bonuses as a recruiting incentive. Many of these incentives are being granted to scientific software development and support personnel, geoscientists, subsea and drilling engineers and even

**Retention bonuses can work, but they often times represent only a stopgap attempt to stem losing skilled employees in a hot labor market**

admiralty/maritime architects and engineers given the increase in shipyard activity. Sometimes these bonuses are paid to field workers within a particular geographic area of activity intensity such as experienced in Canada, Alaska or the Green River Gorge. Whether these bonus will become more widespread is an interesting issue to contemplate as the entire labor market tightens.

Retention bonuses, while relatively new and isolated in application, represent another tool for companies to compete against employee poaching. These bonuses can work, but they often times represent only a stopgap attempt to stem losing skilled employees in a hot labor market. But long-term incentives need to be developed, especially if this industry activity upturn lasts for another three to ten years, if labor forces are to be stabilized. The use of stock options, for publicly traded companies, has lost its allure due to the stock market collapse in the early part of this decade and the new rules for accounting for stock options. Companies are shifting employees to restricted stock awards (RSAs), which represent real wealth creation rather than a promise of potential income. Of course, RSAs have a higher economic cost. In addition, because of the cost of RSAs, these can not really be used for hourly workers. RSAs do have a long-term value so they are more appropriate for executive and highly skilled employees.

Given the current industry environment, Brett Haugh and Ed McGaughey opined, "The times are a challenge and the solutions for the industry will involve integrated approaches that involve more than just singular compensation or benefits 'tweakings' whose effectiveness and costs are often lost without good strategy and effective communications."

## Refining Capacity Potentially A Major Problem

A recent study by ICF Consulting Group Inc. suggests that the lack of refinery capacity may become a greater fuel supply problem than the availability of crude oil over the next 5-10 years. Does this sound like the message Saudi Arabian oil officials were trying to deliver earlier this year? Saudi Oil Minister Naimi used to make the point that the global oil market was 'well supplied' and the problem was a lack of refining capacity. Many people scoffed at his message as crude oil futures climbed past \$60 per barrel.

**In 2004, global refinery capacity was 103% of demand**

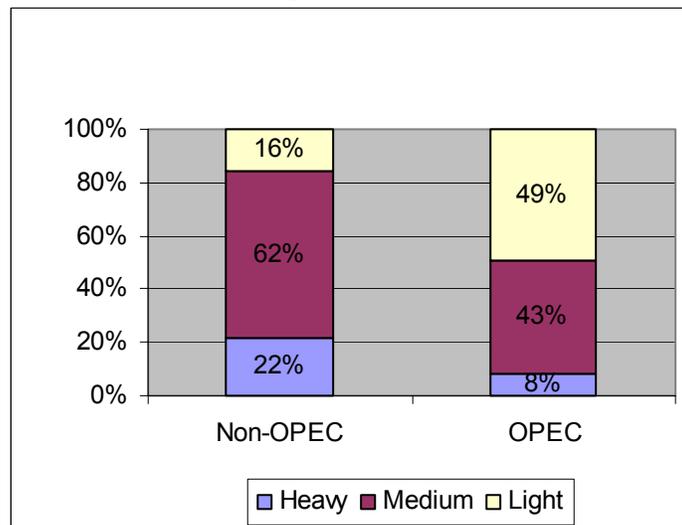
According to Zeta Rosenberg, senior vice president of ICF, refinery margins have stayed strong since mid-2004 and are likely to remain strong for the foreseeable future. In 2004, global refinery capacity was 103% of demand. That is down from 109% in 1990 and 107% in 2000. Every year the refining industry is able to squeeze out some small increase in capacity, which is referred to a 'creep.' The shift to more environmentally-friendly fuels (those with lower sulfur levels) is making it tougher to creep capacity higher.

The tightness in the refining industry capacity is reflected by the increase in the number of industrial accidents. The over-investment

**With the IEA projecting about 5 million b/d in global oil consumption growth, the question of where increased refinery capacity will come from needs to be answered**

in new refineries in the 1970s and early 1980s produced a glut of capacity. The industry depression of the mid 1980s curtailed virtually all refinery spending. Since then we have been wringing the surplus capacity out of the system. Today, we have old refineries that are being run at very high levels of utilization to try to meet demand. With the International Energy Agency (IEA), along with other forecasters, projecting about 5 million b/d in global oil consumption growth, the question of where the increased refinery capacity will come from needs to be answered? In the past few days we may have learned the answer. Venezuelan President Hugo Chavez announced that his country will build three new refineries – two small ones and one world scale plant – over the next few years. Unfortunately, on the same day Chavez made his announcement, we learned that a major refinery in the country was hit by a fire cutting its output from 460,000 b/d to 150,000 b/d.

**Exhibit 11. 2006 Quality of non-OPEC and OPEC Production**



Source: OPEC, PPHB

**If you can secure lighter crude oils to refine, the output, at current petroleum prices, often will reward the refiner to pay up for that crude oil**

It is our belief that tight global refining capacity, coupled with the diminishing quality of crude oil production, is what has been driving oil prices higher. One must remember that crude oil futures contracts traded are based on West Texas Intermediate (WTI) and Brent crude. Both of these futures are representative of the most desirable oils for a refinery. Light, sweet crude oil is the easiest oil to refine, i.e., the least costly to transform into petroleum products. This oil produces the greatest amount of light fuels – gasoline, diesel, jet fuel and kerosene – that earn the highest retail prices. If you can secure lighter crude oils to refine, the output, at current petroleum prices, often will reward the refiner to pay up for that crude oil.

On the other hand, if you can only secure heavy, sour crude oil, and your refinery is configured to refine these types of oils, the price of the crude is much lower than WTI or Brent, even though the value of the refined product output is less, also. Usually, the profit spread is

comparable regardless of what type of crude oil is used in a refinery. However, with strong gasoline, jet fuel and diesel demand, current product prices are making it rewarding to pay up for the lighter crude oils, thus boosting the value of crude oil futures. Until energy demand growth slows, or even falls, the pressure on crude oil prices will be upward.

## Peter Maass – The Beginning of the End of Oil?

**The article begins with the premise that both the United States and China are counting on Saudi Arabia to supply all their needs, but critics are saying that may be impossible**

*The New York Times Magazine* on Sunday, August 21, carried an article by contributor and author Peter Maass on the issue of oil. Maass, according to the author information, is also working on a book on the subject. Maass' article, [The Breaking Point](#), examines the issue of whether the world is facing a peak in oil output with all its social and economic crippling repercussions. Maass' article begins with the premise that both the United States and China are counting on Saudi Arabia to supply all their needs, but critics are saying that may be impossible. He believes that the critics may be right.

While Maass really added little new factually to the ongoing debate about a peak in global oil production and Saudi Arabia's ability to sustain, or grow, its oil production as virtually all forecasters are assuming, he did provide a few insights. One was that when Maass went to Saudi Arabia, no senior oil ministry official would meet with him. He did have a meeting with a reluctant oil ministry spokesman who would not shed any light on the kingdom's production or reserves. Maass was given a tour of the oil export facility at Ras Tanura. He was also offered a tour of the Saudi Aramco oil museum at Dhahran, something Maass pointed out any Saudi schoolchild could do on a field trip. It seems that the government does not want to respond to the ongoing reserves and production debate with factual information.

**Al-Husseini believes that Saudi oil production is neither peaking nor in danger of falling soon**

Maass had been tipped off before going to Saudi Arabia that he should try to meet with Sadad al-Husseini, the recently retired head of Saudi Aramco's E&P business. Maass was successful in this effort, and al-Husseini provided an interesting perspective. He believes that Saudi oil production is neither peaking nor in danger of falling soon. However, he does not believe that Saudi production can be doubled as projected in a number of long-term energy forecasts. He is sure that the kingdom can reach its stated goal of producing 15 million b/d by 2010, but questions whether that level can be sustained for the 30-50 years that Saudi Oil Minister Ali al-Naimi has said is possible.

Al-Husseini invoked the concept of depletion in his discussion of the future of the global oil market. According to his analysis, with global demand rising about 2 million b/d and depletion producing a loss of 4 million b/d in productive capacity, then you need to develop another Saudi Arabia every two years. He questions where in the world these types of new fields are. While he acknowledges that West Africa and the Caspian have new large fields coming on

stream, he does not see these fields as having sufficient production to offset the global depletion and oil demand growth needs.

al-Husseini made the point, "Capacity is not just a function of reserves. It is a function of reserves plus know-how plus a commercial economic system that is designed to increase the resource exploitation. For example, in the U.S. you have infrastructure – there must be tens of thousands of miles of pipelines. If we, in Saudi Arabia, evolve to that level of commercial maturity, we could probably produce a heck of lot more oil. But to get there is a very tedious, slow process."

**Al-Husseini said, "The expectations are beyond what is achievable"**

In response to Maass' questions about the long-term growth in Saudi Arabia's oil production capability, al-Husseini said, "The expectations are beyond what is achievable. This is a global problem ... that is not going to be solved by tinkering with the Saudi industry." In essence, al-Husseini is more concerned about the smug attitudes of politicians and consumers that Saudi Arabia will be able to easily meet future world oil needs. Implicit in al-Husseini's comments are that Saudi Arabia has a major, long-term global oil supply role to play for the foreseeable future, but finding and development costs will be higher than in the past. Therefore, prepare for high oil prices for a long time.

**Contact PPHB:  
1900 St. James Place, Suite 125  
Houston, Texas 77056  
Main Tel: (713) 621-8100  
Main Fax: (713) 621-8166  
[www.pphb.com](http://www.pphb.com)**