

MUSINGS FROM THE OIL PATCH

June 14, 2005

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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

OPEC: What To Do When There is Little You Can Do?

OPEC is scheduled to meet in Vienna on June 15 to discuss the global oil market. Media reports suggest that OPEC members will agree to raise the production quota ceiling by 500,000 b/d to 28 million b/d. However, since all its members are producing at or above their quotas there will be no additional OPEC oil added to the market, suggesting that current high oil prices may be sustained for a while.

The problem confronting OPEC in its deliberations is its inability to do anything about current prices

The International Energy Agency (IEA) and the U.S. Energy Information Administration (EIA) have both released slightly revised 2005 oil demand forecasts. Both agencies made adjustments to their quarterly demand totals, while maintaining, or only slightly lowering, full-year forecasts. The IEA forecast lowered Chinese oil demand growth, but assumes U.S. growth will make up the shortfall. The EIA forecast calls for about 100,000 b/d lower consumption due to reduced U.S. demand. Both forecasts call for strong demand growth in the fourth quarter of 2005 leaving little slack in the global system and supporting current high futures prices.

Despite growing U.S. petroleum inventories and normal OECD inventories, crude oil prices remain high. Asian inventories appear to be lower than expected. The problem confronting OPEC in its deliberations is its inability to do anything about current prices. Only Saudi Arabia has surplus oil productive capacity that could supply the market. The problem with this supply is that the oil is heavy and contains substantial sulfur content making it unattractive for refiners. The dilemma for Saudi Arabia is whether to increase production and then have to discount the price in order to sell the oil, or worse, to have this new oil supply merely go straight into local storage tanks.

For most of this year Saudi Arabia has been waging a public relations battle focusing on two issues impacting the oil market and oil prices.

Saudi recently upped its cost estimate by 20% to \$15 billion – \$18 billion to get its production to the targeted 12.6 million b/d

First, Saudi has been claiming that the world is well supplied with oil and that high prices really reflect a shortage of global refining capacity. There is substantial truth to this claim, as the world does appear short of heavy oil and high sulfur oil refining capacity, as exemplified by the lack of interest in Saudi’s heavy oil. This shortage is likely to grow as the trend in worldwide oil production suggests future oil supplies are tending to be heavier and contain more sulfur.

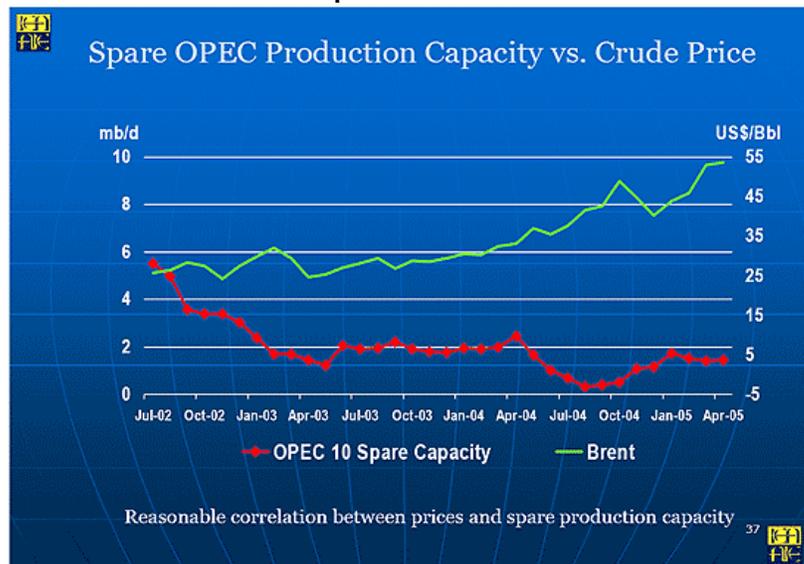
The second issue Saudi Arabia has been confronting is a question about the volume of the country’s oil reserves and its capacity to produce more oil on a sustained basis. With the recent publication of Matt Simmons’ book challenging the world’s complacency about Saudi Arabia’s oil reserve health, the Kingdom sent forth one of its official media spokesmen to dispute the argument once again. The spokesman asserted that the Kingdom had all the oil the world needs and there is no truth to Mr. Simmons’ contentions.

What has also surfaced within the past week is a new estimate of the cost to boost Saudi’s oil production capacity. Earlier this year, Saudi Arabia said it would spend \$12 billion - \$15 billion to add 1.6 million b/d of productive capacity by early 2009. Recently, Saudi upped that cost estimate to \$15 billion – \$18 billion to get its production to the targeted 12.6 million b/d.

The funding for this expansion will come from the Saudi Arabian Ministry of Finance and is outside the annual budget of the state-owned oil company, Saudi Arabian Oil Company. At the present time, Saudi Arabia is producing 9.5 million b/d and contends it has 11 million b/d of productive capacity. In contrast to the past when Saudi maintained between 1.5 million – 2 million b/d of capacity, it has trimmed that surplus back to 1 million – 1.5 million b/d due to the high cost of maintaining the extra capacity. Notice the impact on prices.

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Exhibit 1. Oil Price vs. Surplus Production



Source: OPEC

The official explanation for the higher cost estimate is that it is proving more difficult to extract oil from the Khoreis and Khursaniyah fields

The official explanation for the higher cost estimate is that it is proving more difficult to extract oil from the Khoreis and Khursaniyah fields, two of the four new fields targeted to supply the incremental capacity. These fields are proving more challenging and require the use of more costly drilling technology.

Saudi Arabia is also seeking foreign partners to build four or five refineries at an estimated cost of \$2 billion each

To help achieve its production goal, Saudi has stepped up its drilling effort. Last fall, the Kingdom went on a drilling rig contracting spree. Even before all these rigs are active, it appears from industry reports that the country is seeking to add more rigs. Based on data from Nabors Industries (NBR-NYSE), in May 2004, there were 44 total drilling rigs working in Saudi Arabia. When all the rigs contracted last fall are on line by the end of the second quarter of 2005, the Kingdom will have 78 rigs working, or a gain of 34 rigs for a 77% increase. There are reports that another 10 to 20 rigs may be contracted by Saudi Arabia, potentially taking the total number of rigs close to 100, a number recently suggested by the head of a major rig builder. If true, we conclude that Saudi Arabia is serious about building its productive capacity, but it also may confirm that suspicions about problems with the Kingdom's sustained production capacity may also be correct.

Saudi Arabia is also seeking foreign partners to build four or five refineries at an estimated cost of \$2 billion each. The strategy behind this move is to try to lock in customers for Saudi Arabia's heavy and high sulfur crude oil, which is harder and more costly to refine into light petroleum products such as gasoline and jet fuel, and thus harder to sell. During the 1970s, Saudi Arabia also built refineries and petrochemical plants in partnership with major oil companies as the Kingdom was determined to participate in the profit opportunity from upgrading its basic export of crude oil. Whether this new strategy will prove successful remains to be seen. The lack of new global refinery construction may signal that Saudi Arabia's money, coupled with the refining technology and market outlets of oil industry partners, might prove to be a winning strategy.

Arlene Misses Her Cue

Arlene's early arrival has highlighted the potential risk of Gulf of Mexico storm damage and/or oil and gas operational interruptions

By the time you read this, Tropical Storm Arlene will be history, except for some inland wet weather. The first tropical depression of the 2005 missed the official start of the hurricane season by eight days. The storm's early arrival has highlighted the potential risk Gulf of Mexico storm damage and/or oil and gas operational interruptions could have on our tight energy supply/demand balance.

Arlene formed in the eastern Gulf of Mexico, off the western coast of Cuba, in the late afternoon of Wednesday, June 8. The storm continued organizing and intensifying during the balance of the week as it moved north and west. After attaining sustained winds of 70 mph late Saturday morning, almost reaching the 74 mph threshold to become a hurricane, Arlene weakened as it came onshore near Gulf Shores, Alabama. Although not a hurricane, Arlene still disrupted Gulf of Mexico oil and gas operations. As of 11:30 am Friday

morning, as reported by the Minerals Management Service (MMS), 36 platforms and 16 mobile drilling rigs had been evacuated. These evacuations shut in 25,474 b/d of oil and 353.9 mmcf/d of gas.

Exhibit 2. T.S. Arlene Storm Track



As Arlene formed, the stock and commodity markets reacted in their normal fear mode – bidding energy higher

Source: Weather Channel

As Arlene formed, the stock and commodity markets reacted in their normal fear mode bidding crude oil futures up by \$1.74, or 3.3%, on Thursday and pushing up energy stock prices. The Philadelphia Oilfield Service Index (OSX) climbed 3.4% on Thursday as investors feared Arlene would retrace the storm track of Hurricane Ivan that nine months earlier had devastated the Gulf of Mexico’s oil and natural gas producing infrastructure. Ivan destroyed seven platforms, severely damaged 24 and tore up 17 pipelines. The last of the repairs to the Ivan-related damage is only now being completed. According to the MMS, Ivan caused the loss of 45 million barrels of oil and 175 Bcf of gas production.

Exhibit 3. Hurricane Ivan Storm Track



Source: NOAA

2005 will be another “very active” hurricane season with more storms, hurricanes and intense hurricanes

The day before the official start of the hurricane season, Professor William Gray of Colorado State University, and his associate, Philip Klotzbach, updated their 2005 storm forecast. The updated forecast calls for this to be another “very active” hurricane season and predicts more storms, hurricanes and intense hurricanes than in their prior April forecast. This forecast, if achieved, would continue the past decade of above-average hurricane seasons.

The revised forecast is based on newly devised extended range statistical forecast procedures utilizing 55 years of past global reanalysis data. The increased storm forecast reflects the continued Atlantic Ocean warming and decreased likelihood of the development of an El Niño this summer. Conditions in the Atlantic Ocean are very favorable for another active hurricane season contends Dr. Gray.

Exhibit 4. Prof. Gray's Revised Forecast vs. History

Forecast Parameter	12/3/2004	4/1/2005	5/31/2005	1950-2000
Named Storms	11	13	15	9.6
Named Storm Days	55	65	75	49.1
Hurricanes	6	7	8	5.9
Hurricane Days	25	35	45	24.5
Intense Hurricanes	3	3	4	2.3
Intense Hurricane Days	6	7	11	5.0
Net Tropical Cyclone Activity	115%	135%	170%	100%

Source: Colorado State University, PPHB

The media is very focused on the total number of storms and hurricanes, because that translates more easily into sensational sound-bites

Lately, *The Wall Street Journal* has discovered the weather forecasting business and is playing the second-guessing game. Weather forecasters are little different from securities analysts in that both look at historical data and current information and make a prognostication about the future. Based on one WSJ article, the reporter said that Professor Gray's forecast was no better than the reporter's technique of using the average number of storms in the prior five years to project the next year. What this confirms is that tropical storm activity tends to follow trends. What the reporter may have missed is that his trend analysis forecasting technique will fail to anticipate changes in trend – something that the analysis of climate data should be able to catch. The media is very focused on the total number of storms and hurricanes, because that translates more easily into sensational sound-bites.

Storm forecasters are focusing more intently on estimating the probability of landfall on the U.S. coast and the number of associated storm days

The storm forecasters, however, are focusing more intently on estimating the probability of landfall on the U.S. coast and the number of associated storm days that might impact shipping and oil and gas operations. The better we can forecast these variables the greater the value the storm forecasts will have for the insurance, shipping and energy industries. The jury is still out on the ability of these storm forecasts to help these industries. Long-term forecasts don't provide enough specificity to help these industries the way short term, or three-to-five day, weather forecasts do. Maybe in the future that will change.

Exhibit 5. Prof. Gray's 2005 Landfall Forecast**Probabilities for at least one major (Category 3-4-5) hurricane landfall****Arlene was a wake-up call**

Entire U.S. coastline	77%	(avg last century 55%)
U.S. East Coast w/ Florida Peninsula	59%	(avg last century 31%)
Gulf Coast (Florida Panhandle to Brownsv	44%	(avg last century 30%)

Source: Colorado State University; PPHB

Arlene was a wake-up call. For investors it highlighted that the tight oil and gas supply/demand balance can easily be upset with devastating results such as happened last year. For the oil and gas industry, dealing with storms is a normal part of operating in the Gulf of Mexico, but unexpected conditions can play havoc with production for an extended time such as the devastation to the pipeline network caused by the churning waters associated with Ivan proved. For everyone else, this time of the year is a period to be on high alert.

Bolivia On The Boil; Who's Next?**Rodriquez is known as someone wanting to do things for the long term, but the problems of the country demand short-term actions**

Little did we anticipate that our analysis of the political and economic situation in Bolivia in our last issue of the *Musings From the Oil Patch* would prove so timely. Since that analysis was published, Bolivia President Carlos Mesa resigned his office because he was unable to resolve the dispute that had spurred the riots and protests. The military was forced to move in to try to quell the disturbances so the government could meet and act to resolve the issue. Initially, the Congress favored candidates from the eastern provinces, but they were perceived as too divisive. Last Thursday, the Congress elected as the country's new president, Eduardo Rodriquez, the former president of the Supreme Court.

Mr. Rodriquez, a Harvard-educated administrator with no political affiliation, was third in line for the presidency at the time Mesa resigned. Rodriquez is known as someone wanting to do things for the long term, but the problems of the country demand short-term actions. Whether he will be up for the task remains to be seen. The leaders of the protests seem split over whether to reduce the pressure, but calm has become more prevalent.

How Rodriquez can devise a plan to deal with a country divided between Indians in the western highlands, who want a greater say on economic policy, and a ruling elite in the eastern lowlands, who want more autonomy, is a question. A key ingredient to a solution will depend upon Rodriquez's ability to get the Congress to agree to elections in which many of its members may likely lose their seats. At the same time, the new president will be under pressure to convene a citizen assembly leading to the drafting of a new constitution and a referendum that would give Bolivia's eastern region more autonomy. He also must placate the demands of the Indians who make up the largest proportion of the population for a greater share of the value of the country's energy resources. Already the recently enacted legislation boosting energy production taxes to 50% has been met

The interesting question now is speculating on what country may be next

with statements of re-evaluation of potential investment by the western oil companies that ultimately could prove costly to the country and its economy.

Our initial analysis of the Bolivian political situation was based on the long-term struggle over who should share, and by how much, in the exploitation of a country's natural resources. The interesting question now is speculating on what country may be next. In Latin America, the corruption scandal in Brazil and the weakening economy there could make that government the next to feel the wrath of the citizens.

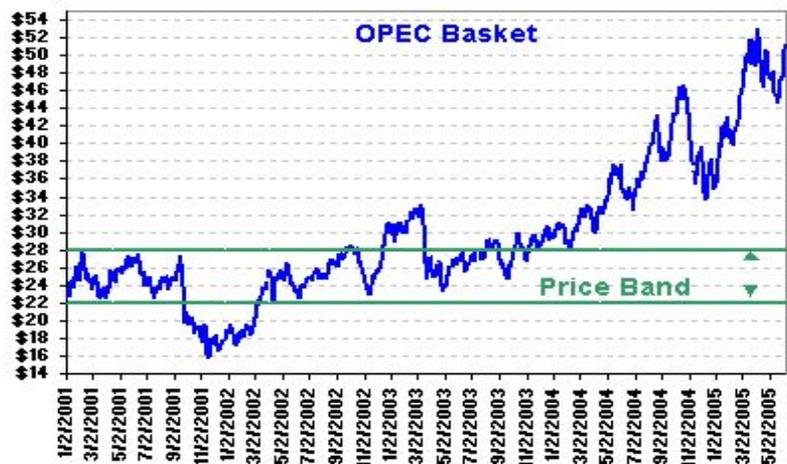
The next most interesting country in the political spotlight might be Turkey. Following rejection of the European Union constitution by France and the Netherlands, the EU membership is less likely to want to approve Turkey's joining that body. As a result, Turkey may be starting to focus on other relationships, especially with the U.S. that could lead to further restructuring of Middle East alignments. Turkey's key location, both geographically and politically, might prove particularly important for the long-term future of the global energy business.

OPEC Wants Lower Oil Prices

Officials with OPEC have expressed frustration at their inability to lower global energy prices. The news media focuses on the futures prices for either West Texas Intermediate or U.K. Brent, which are high quality crude oils that produce the maximum amount of light refined products such as gasoline and jet fuel – products in very strong demand globally. These high quality crude oils are easier to refine, helping to increase oil company profit margins.

Exhibit 6. OPEC Oil Basket

OPEC Basket Prices, January 2, 2001 - June 6, 2005



source: EIA/OPEC News Agency (official OPEC news source)

Source: EIA

The average barrel of oil consumed in the world is becoming heavier and contains more sulfur

Following the collapse in the global oil market in 1986, OPEC initiated an oil pricing scheme based on the average of seven crude oils that were thought to approximate the market value of the average barrel of crude oil traded. The seven crude oils reflect a blend of light and heavy API grades and a range of sulfur content. However, over time, the average barrel of oil consumed in the world has become heavier and contains more sulfur. Moreover, the quality of the crude oils being discovered or developed today is generally continuing this trend toward lower quality oil than contained in the original OPEC basket blend.

By swapping these lower quality crude oils for lighter quality ones, the OPEC basket price can be reduced

For fun, we looked at the seven crude oils making up the OPEC basket along with some alternative crude oils of lower quality. By swapping these lower quality crude oils for lighter ones, the OPEC basket price can be reduced. For example, if OPEC elected to use Canada's Lloyd Blend, a growing source of supply, instead of Saudi Arabian Arab Light, the OPEC basket price as of June 3 would be reduced by almost 5%. On the other hand, a mere switching of Mexican crude oils in favor of Mayan rather than Isthmus could bring the basket price down by 2.2%. While these switches would still leave OPEC with a crude oil basket still well above its target price band, OPEC has temporarily abandoned trying to defend the band. Speculating on which crude oils to include in a modified basket would give OPEC officials something else to talk about rather than their ineffective quota system.

Exhibit 7. OPEC Basket Price and Adjusted Prices

Country	Crude Oil	API Quality	6/3/2005
			Price
Algeria	Saharan Blend	44°	\$50.07
Indonesia	Minas	34°	50.81
Nigeria	Bonney Light	37°	51.61
Saudi Arabia	Arab Light	34°	45.96
Dubai	Fateh	32°	47.32
Venezuela	Tia Juana Light	31°	47.69
Mexico	Isthmus	33°	\$47.58
	OPEC Basket		\$48.72
Mexico	Maya	22°	\$40.24
	Swap for Isthmus		\$47.67
Saudi Arabia	Arab Heavy	27°	\$41.16
	Swap for Arab Light		\$48.03
Canada	Lloyd Blend	22°	\$29.73
	Swap for Arab Light		\$46.40

Source: OPEC; EIA; PPHB

Russian Oil Production Stagnates

Growing Russian petroleum consumption will leave smaller volumes of this annual crude output for export

A month ago, we reported on the latest quarterly report of Russia's Ministry of Economic Development after it lowered its forecast for Russian oil production. Their new forecast calls for production to grow 2.4% this year to 9.42 million b/d, some 300,000 b/d below other official forecasts. In a recent interview, Vagit Alekperov, president of the largest Russian oil producer, OAO Lukoil (LUKOF.PK-NYSE), said he expects industry production to stabilize between 9.2 million b/d and 9.4 million b/d a year after a slight increase this year. For the global oil market, growing Russian petroleum consumption will leave smaller volumes of this annual crude output for export.

Weaker Russian energy demand could help expand the global oil production surplus margin taking pressure off global oil prices

While this outlook is not encouraging for the global oil market, one must consider two things. First, the Russian economy's performance is closely tied to the growth of its petroleum industry. This reflects the importance of energy and other natural resources to the health of Russia's economic performance. If oil production stagnates, then we might assume that eventually the Russian economy will slow, reducing domestic petroleum consumption and freeing up additional oil for export. There is likely a lag between the time domestic production flattens and a softening economy leads to reduced consumption. Watch out for this lag as a fall in demand might surprise energy forecasters. Weaker Russian energy demand could help expand the global oil production surplus margin, taking pressure off high global oil prices.

Exhibit 8. Importance of Oil to Russia **Oil-Powered**

Russia's gross domestic product has moved in the same direction as its production of oil.



Source: Harvard University (Davis Center for Russian and Eurasian Studies)

Source: The New York Times

European Economy Hurt By Weaker Euro

The European Central Bank recently reduced its forecast of EU growth to 1.4% compared to the 1.8% advance achieved in 2004

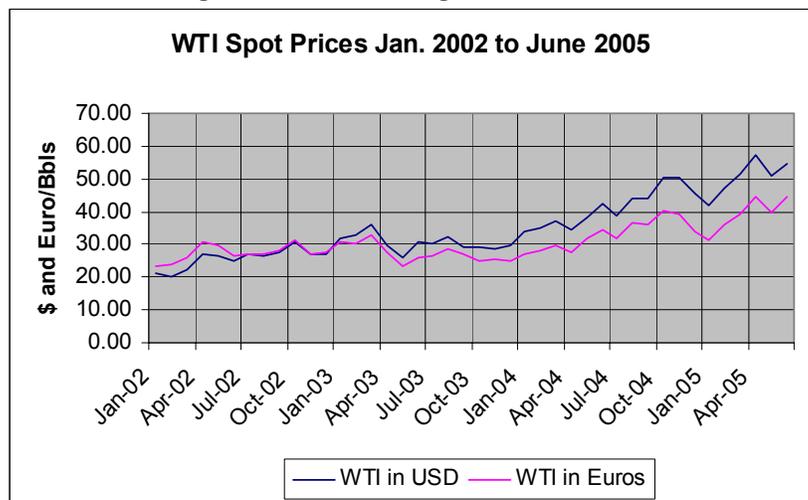
In France and the Netherlands, voters rejected the proposed new European Union constitution, largely due to their unhappiness over domestic economic conditions. The European Central Bank recently reduced its 2005 forecast of EU growth to 1.4% compared to the 1.8% advance achieved in 2004. The Bank sees little improvement in 2006 that would result in the seventh successive year of sub-2% growth. This record has established the EU as the worst performing economic block in the industrialized world in recent years. The EU's sustained economic growth rate is estimated at 1% – 1.5%, or half that of the U.S. and the U.K., and well below the 9% rate of China.

Unemployment is a major problem in most EU countries. The Eurozone unemployment rate is averaging about 9%, or 19.3 million people, an increase of 1.6 million people since 2001. In contrast, the United States has about 7.6 million unemployed people, down about 600,000 since the end of 2001, for a 5.1% unemployment rate. The unemployment rate in France is averaging 10%, while it is 11.8% in Germany. In the Netherlands, the unemployment rate has doubled over the past year to 6%, but the country also has the highest rate of part-time employment on the continent and the highest level of disability cases.

European consumers are starting to feel the high cost of fuel and heating oil

The weak European economy has been helped in recent years by the strength of the Euro, its unified currency, compared to the U.S. dollar. That strength mitigated the economic pain from the climb in global oil prices. For the past nine months, however, the dollar has strengthened against the Euro signaling that European consumers are, or soon will be, starting to feel the high cost of fuel and heating oil.

Exhibit 9. Strong Euro Offset Rising Oil Price



Source: x-rates.com; EIA; PPHB

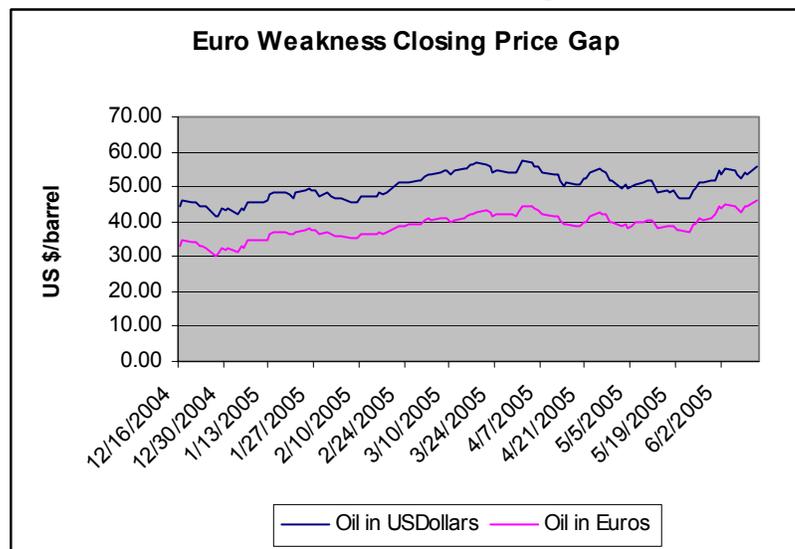
As shown in Exhibit 9, the price of a barrel of oil in either U.S. dollars

or Euros was essentially the same during the last half of 2002 and into early 2003. From that point forward, the value of dollar-denominated oil began to climb as the weaker Euro exchange rate dampened the higher oil prices. That gap widened considerably throughout all of 2004, but then has been closing since late 2004 and throughout all of 2005 until the past few days.

In Euro terms, that same barrel has increased by \$13.31, or 40.4%

Since mid December, the price of a barrel of oil in U.S. dollars has climbed by \$11.43, or 25.9%. In Euro terms, that same barrel has increased by \$13.31, or 40.4%. While high consumer taxes on petroleum products in Europe dampens the impact for consumers of changes in the underlying oil price, there can be little doubt that certain economic sectors are being hurt by the rise in oil prices and the weakness of the Euro. Look for this impact to further slow economic activity in Europe in coming months, which may also dampen energy demand at the margin. Any demand weakness could hurt current high crude oil prices and expectations for a strong fourth quarter.

Exhibit 10. Recent Euro Weakness Boosting Oil Price Cost



Source: x-rates.com; EIA; PPHB

Oil Service Stocks On the Launch Pad?

The index had given what is called a Bearish Signal Reversal on June 1 when the OSX traded at 136

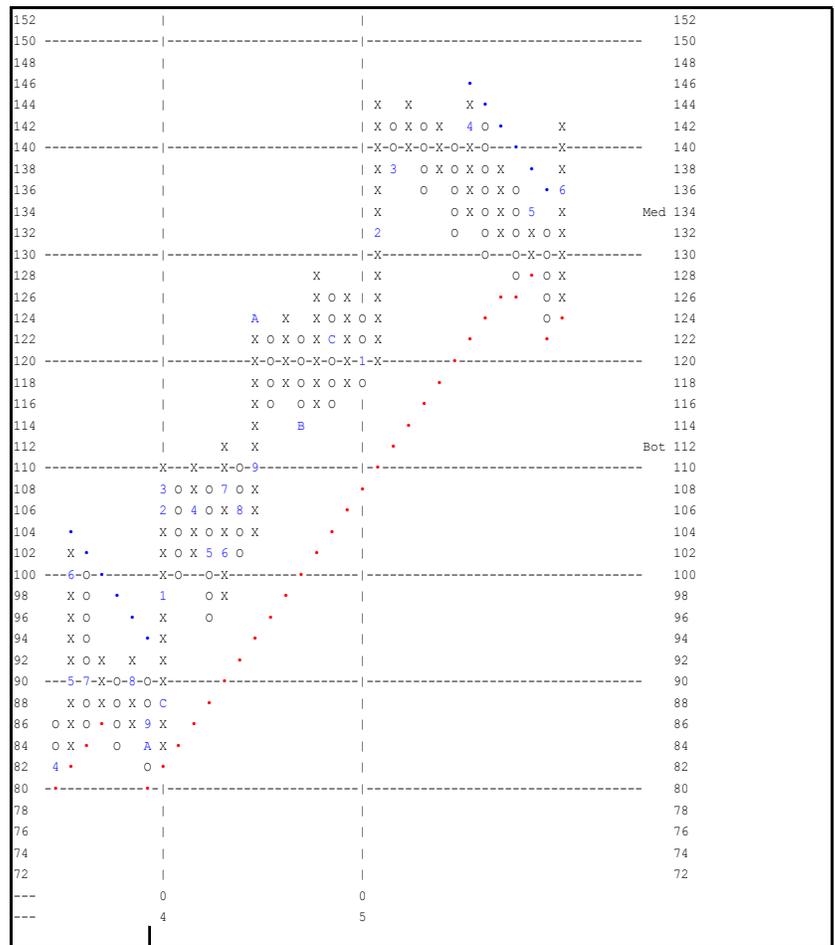
The upward jump in crude oil last Thursday helped drive oilfield service stock prices higher, also. Crude climbed by 3.1% while the OSX index advanced 3.4% to close at 142.14. We had been intrigued the prior weekend when we looked at a point and figure chart of the OSX available on the web site of the Philadelphia Stock Exchange that trades the index. (See Exhibit 11.)

We noticed on the chart that the index had given what is called a Bearish Signal Reversal on June 1 when the OSX traded at 136. (To see this trend, look at the last row of X's on the far right side of the

An upward move of that magnitude would take the OSX index well above its all time high of 147 attained in 1997

chart. The number 6 represents the start of June, and it is in a box equating to 136.) We understand that this trend reversal can become a powerful impetus for the index to rise, and of course for higher prices of the underlying stocks in the index. Based on research done by the Dorsey Wright & Associates firm, 92% of the time, a stock or index exhibiting this pattern will climb 24% from its prior low. In this case, that could mean an OSX move from 124 (the bottom of the row of O's immediately preceding the row of X's) to 154. An upward move of that magnitude would take the OSX index well above its all time high of 147 attained in 1997.

Exhibit 11. OSX Index Showing Bearish Trend Reversal



Source: Use courtesy of Dorsey Wright & Associates

While many investors discount technical analysis, we found it a help, especially when combined with sound fundamental analysis. In today's environment, it is not hard to imagine how earnings growth prospects for oilfield service companies could propel the OSX to these lofty heights. Knowing when it might happen is almost impossible to predict, but based on the technical pattern, it looks like this move may be underway. However, invest at your own risk!

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