PIRINC

Heating Oil Outlook for the 1996-97 Season

A Presentation by

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Introduction and Summary

With stocks at record lows, distillate markets appear headed for a tight supply/demand balance for the Winter months. Although refinery operations have until recently provided supplies which exceeded historical volumes, demand has shown high year-on-year growth.

The central component in low stocks: The market signal is currently negative for a firm making a decision to store. A company will look for a price increase in the future high enough to cover the cost of capital for the purchase of the product, plus the cost of storage. The prices in the futures market contracts for November, December and January are lower than the October levels.

While we may make up some ground in the seasonal stockbuild, it is likely that we will have low stocks during this heating season. In the absence of traditional stock cover, the market will be unusually dependent on smooth refinery operations, unimpaired barge movements and a chain of uninterrupted imports. Prices are likely to move upward, perhaps significantly, in any supply disturbance or demand spike.

Record Low Inventories

Based on the latest preliminary data, inventories at the end of August were about 110 million barrels, about 12 million barrels below the low end of the 1991-94 range. During 1995 at this time, we were still solidly in the range.

It's not a particular problem that stocks are below the 1995 level (which was in the middle of the 1991-94 range). Current stocks, however, are below all meaningful historical measures in the Northeast, the nation's oil-heat region. In both New England and the MidAtlantic, mid-September stocks are about half of the 1995 level.

The implication: markets this Winter will be unusually dependent on "fresh" or current sources of supply -- refinery operations and imports especially, and unimpaired barge transport to bring those supplies to consuming markets. That dependency brings risks, because any interruption, any hiccup in the system will be rapidly felt in the market.

Figure 1

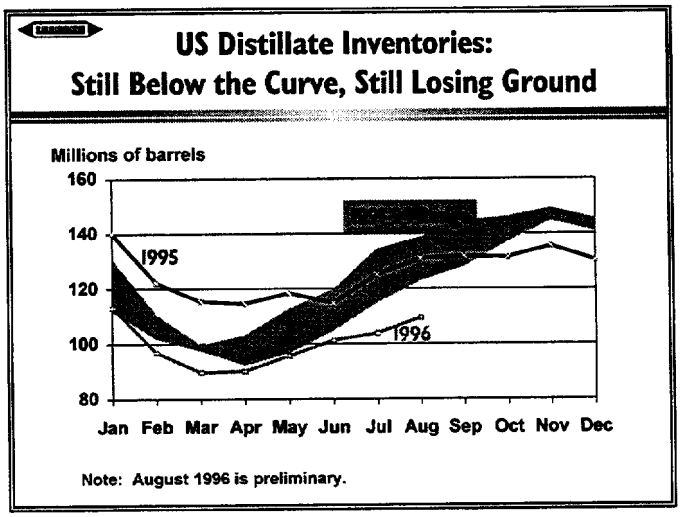
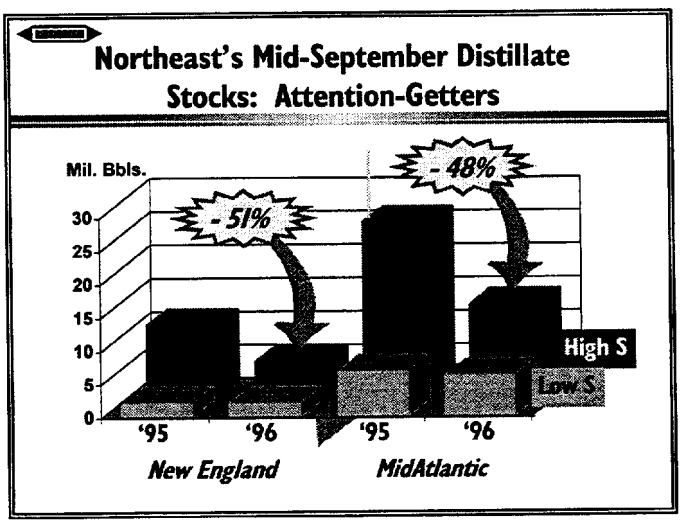


Figure 2



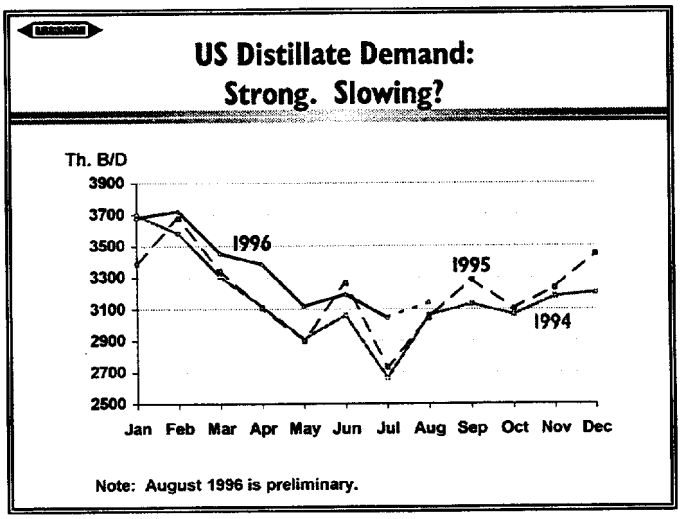
High Demand

Demand has been strong this year, starting with the cold Winter in the Northern Hemisphere, especially Europe. Global demand for distillate fuel oil may have been some 500-600 thousand B/D higher in the first quarter of 1996 than in the very warm first quarter of 1995.

In the US, the late season cold contributed to strong demand growth. In the January-July period for which we have monthly data, distillate demand grew by almost 6% year-on-year.

July showed an 11% increase in "demand" (as well as the data can measure it) over last July's level. That high demand marked a turn- around in distillate markets, as will be discussed shortly. August demand, based on preliminary estimates, shows a more modest year-on-year growth.

Figure 3



The latest weekly data, not shown on the chart, are showing another significant demand surge, likely coming from export demand from Europe, as discussed below.

Supply: Refinery Operations High

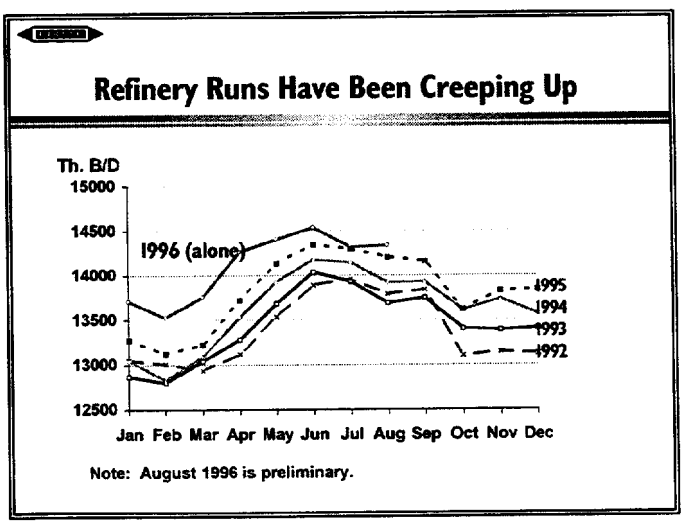
Turning to distillate supply, we can see that the components, especially refinery operations, have been on the high side.

Crude oil runs, for instance, have been consistently moving up in recent years, with 1996 showing growth again.

This slide illustrates the seasonal pattern in refinery runs: high in the warm months and low in the cold months. The distillate supply situation may require a counterseasonal run level this Winter.

The data shown are for the US as a whole. Crude oil runs in East Coast refineries have been lower this year than last. A major factor in the decline is the temporary shutdown of the Tosco refinery at Marcus Hook, PA. (The labor dispute which caused Tosco to shut the refinery, now called Trainer, when it purchased the facility from BP in January 1996 has reportedly been resolved. Trainer will not re-start in time for this heating season.)

Figure 4

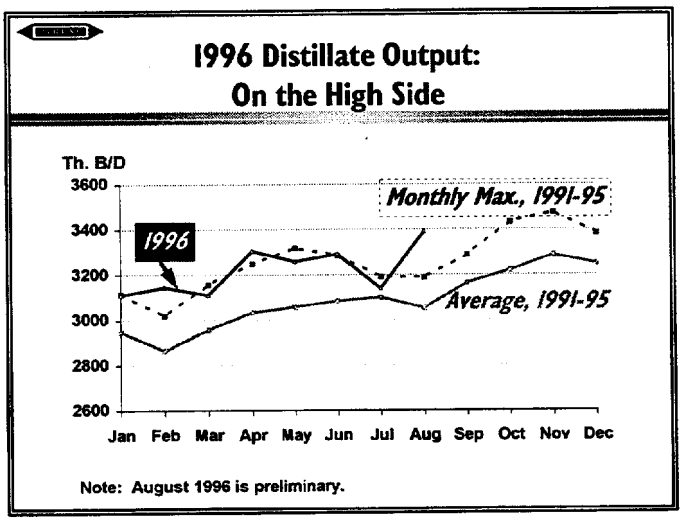


Distillate production in US refineries has also been on the high side. Through the period for which we have "final" monthly data (July), distillate output has been near the maximum recorded for each month during the 1991-95 period.

For August, distillate output, at about 3.4 million barrels per day was nearly as high as it gets.

Again, the East Coast is an exception. The lower output on the East Coast is especially important, because the region has become increasingly dependent on local output at the expense of imports. Working in a low-inventory environment, this emphasis on the next closest supply was a natural development. During the Winter, it helps to stabilize the chain of supply.

Figure 5



Supply: Imports and Exports

A look at other supply components finishes the picture.

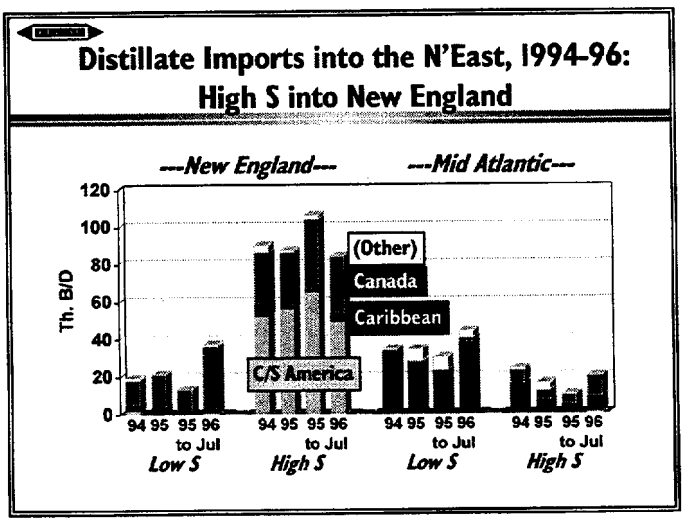
Imports of distillate are focused on the Northeast, really on high sulfur (heating oil) volumes into New England.

Imports in 1995 were generally low by historical standards. 1996 volumes have shown increases. The exception in both years was high sulfur imports into New England.

Imports from Canada have increased, particularly in low sulfur supplies, because of shipments from Vitol's Come-by-Chance refinery in Newfoundland. The Caribbean (for this purpose, the Virgin Islands) are not important in New England, but provide the lion's share of low sulfur product in the MidAtlantic region. Conversely, Central and South America sources (for 1995 and 1996, basically Venezuela) don't provide supplies in the MidAtlantic, but dominate the high sulfur imports to New England.

It is likely that imports will be a critical component of this Winter's distillate supply in the Northeast.

Figure 6



Exports are always a swing in the market: they flow with the economic opportunity. We focus here on exports from PADs 1-3, because West Coast exports are unlikely to provide supply relief this Winter.

We have to look at the price signals to store, as they are in fact the critical determinant. The next few slides look at the price signals from the futures market as we sit on the verge of the heating season and look at the months ahead.

As the heating season approaches, market participants ask, should I store No. 2 oil? And here comes the trouble.

When the market is in "backwardation," it expects prices to drop. Why spend money on a commodity whose price is falling? The value of your asset, the oil in the tank, will fall. Backwardation is a "red light" for storage.

When the market is in "contango," it expects prices to rise. You must have a contango market to give storage a green light -- to make storage an economic decision. First, a market participant looks for a big enough increase to pay for the cost of capital on the purchase of inventory and the cost of storage. Larger increases imply real price appreciation and hence profit.

Again, the minimum: a price increase large enough to pay for the cost of capital and the cost of storage.

In years past, the view from September told us that each of the Autumn months would show an increase of about one cent per gallon over the previous month's price, a great enough difference to encourage storage. In 1995, the difference was only 5/10th of a cent, about the minimum. (If a firm owned its own storage, for instance, it would be indifferent to storage if the next month's price were 0.5 cents higher than the current one.)

This year, the signal has been all wrong. During the summer, the futures market was showing a seasonal increase too small to justify storage. Since September, December futures have actually traded for *less* than October!

Where does this leave us? Without an incentive to store. Hence, given that the market is populated with economic actors making rational decisions, low inventory levels also become a given.

A central factor: price premiums for prompt supply, even while the market is ratcheting upward.

Figure 9

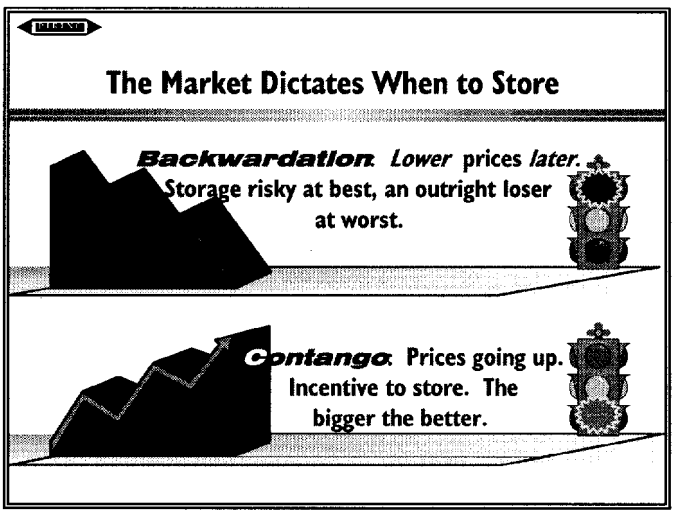
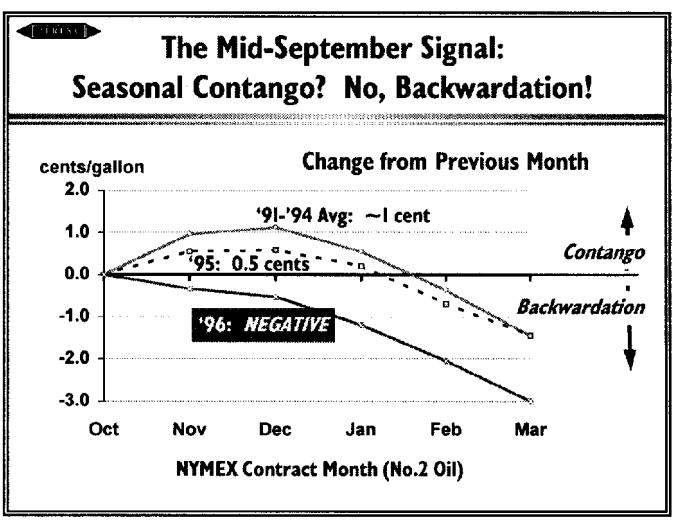
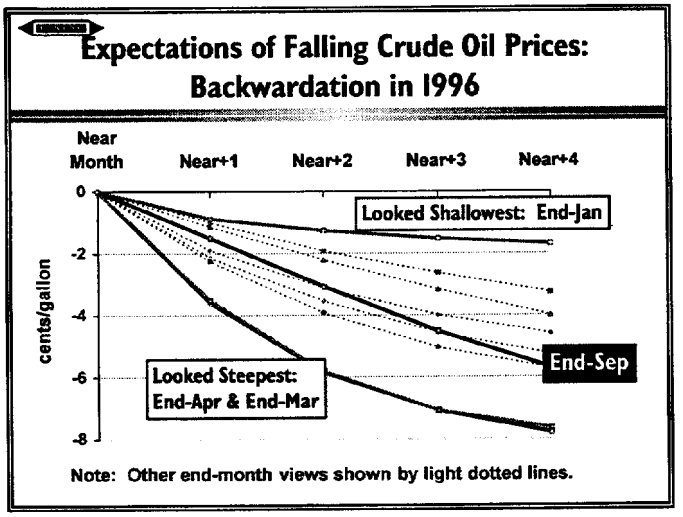


Figure 10



The backwardation in the crude oil market helps to illustrate the situation, and is part of the distillate market story as well. The idea that prices would fall when Iraqi supplies were back in the market, and that Iraq's return was just around the corner, was an important market driver throughout the first half of the year. It encouraged purchasers to hold out until the last moment before buying, hoping the price decline would begin. When those buyers finally went into the market, they had no choice but to bid premium prices to get now-desperately needed oil. This strength in the prompt market makes the backwardation worse. We can see it reflected in the lower line -- the way the next few months looked at the end of March and the end of April.

Figure II



During the summer, the backwardation eased, but did not disappear. Near-term prices had fallen from their Spring peaks; Iraq's supplies became "known."

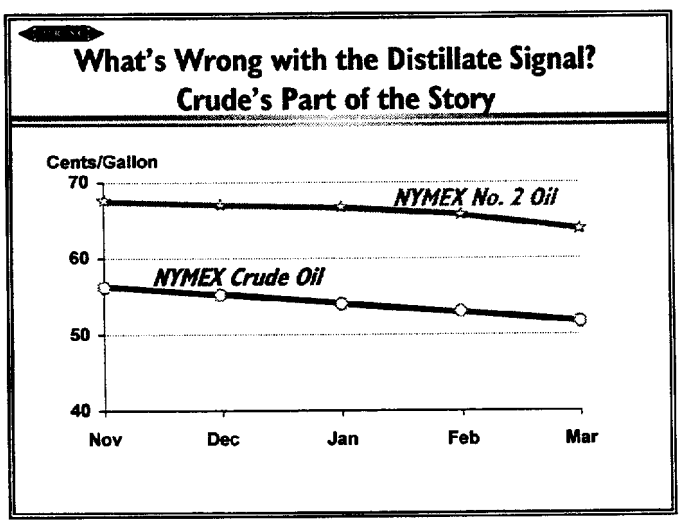
Saddam Hussein's moves in the north of Iraq and the US response in the south, combined with the indefinite suspension of the humanitarian oil sales, caused crude oil prices to run near post-Gulf War highs during September: they reached as high as $25/barrel, and averaged almost $24. The backwardation steepened again.

Last September, crude oil prices were about $18. That $6/barrel difference translates to 14 cents per gallon, even before we begin thinking about the heating oil market's own seasonal strength.

While the future difference between crude oil and heating oil prices looks fine and in fact encourages refiners to produce heating oil, the price drop in the crude oil base contributes to a price decline in distillate as well.

In any given market, however, the underlying cost of the raw material (in this instance, crude oil) can only provide a portion of the answer on product price moves. Distillate prices have not only ratcheted up with crude oil, they are suffering from the same problem that crude oil has: prompt market strength. The high demand has underpinned the near-term prices, making the distillate backwardation worse.

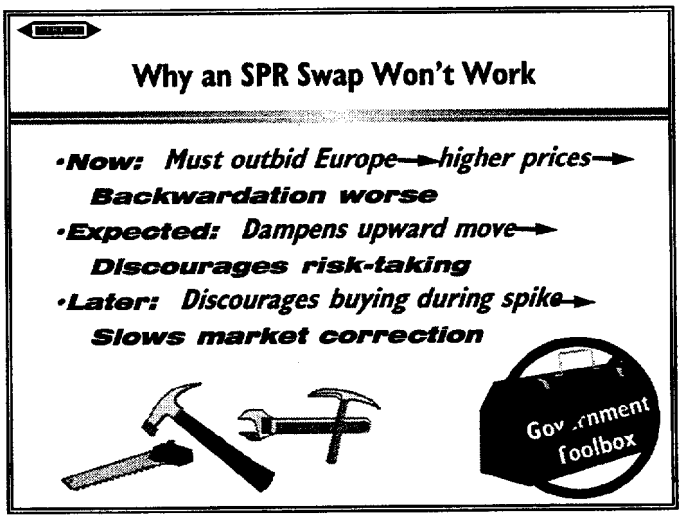
Figure I2



Since August, before the dust-up in the Middle East, crude oil prices have risen the equivalent of about 5 cents per gallon, while No. 2 oil prices have risen about 7 cents. For December, prices of No. 2 oil have risen 6 cents per gallon. Again, the current strength worsens the backwardation as we look into the months ahead.

There is a proposal floating around Washington to sell crude oil held in the Strategic Petroleum Reserve, buy distillate to store in the Northeast, sell the distillate to the market this Winter when there's a price spike, and take the proceeds to buy replacement crude oil next Spring.

Figure 13



What's wrong with this picture? Government tinkering won't solve the storage problem, it will make it worse. The market's backwardation is what makes rational people unwilling to build inventory, so the proposal will send all the wrong signals.

Near-term prices will rise as government purchasers compete with marketers in the US and Europe for scarce supplies. The result? The backwardation's worse. For anybody who *was* willing to take a flyer on storage, hoping that prices in December and January will be higher than the market now says, the sale of the SPR distillate during the Winter will take away the upside. Finally, during a price spike, you want people scrambling for supplies, not worrying that by the time a high-priced cargo lands, the government distillate sale will have made the oil a money-loser.

Another idea, from Larry Goldstein, PIRINC's President, calls for a contingent appropriation for LIHEAP, the "Low Income Heat Energy Assistance Program." Such an appropriation would only be used if needed, but would provide a safety net for truly needy individuals in the event of a price spike. It has the further advantage of using a mechanism that is already known, in place, and working.

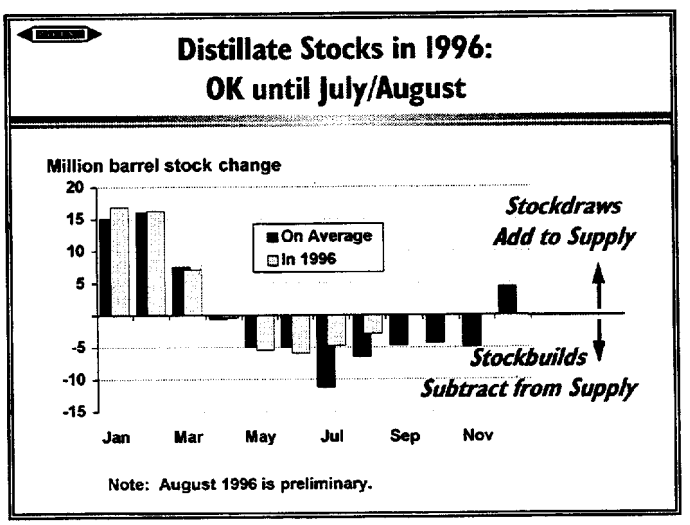
Stock and Supply Patterns for the Heating Season

Given current price disincentives, low stocks are likely a continuing phenomenon as we move into the heating season. What can we expect?

The pattern of stock change for distillate is generally a draw between December and March, reaching a low point in April, and a build between April and the high point in November.

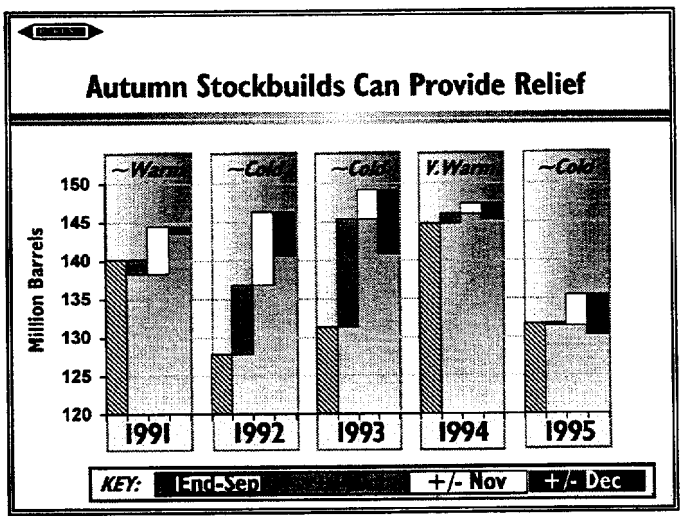
Until July, the stock change pattern during 1996 had been close to the average levels. July's indicated stockbuild, however, at only 4.7 million barrels, less than half of the 11

Figure 14



million norm, put us behind the eight-ball. August was also behind the average pace. The situation doesn't seem to have improved much in September; the inventory build didn't even hold to September's regular pace (at least through the most recent preliminary data), let alone make up for earlier deficits.

Figure 15



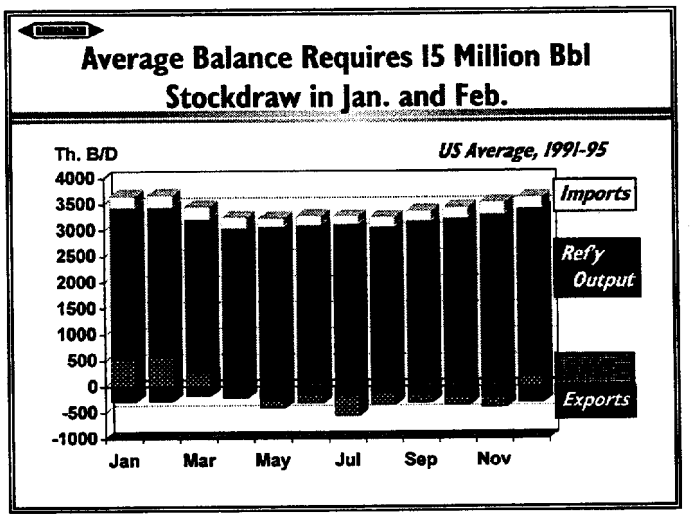
Because the overall level of inventories is low, missing these stockbuilds has made continuing low stocks a near-certainty.

We will have record low stocks at the end of September, possibly as much as 115, and unlikely as much as 120 million barrels. (Preliminary estimates won't be available until next week.)

What might happen in the Autumn?

In 1992 and in 1993, we had large Autumn stockbuilds, about 18 million barrels. If stocks built at that level, end-November stocks, as we go into the hard Winter, would be about last year's level of 135 million barrels. The 1995 volume was low, but as we know, we got through.

Figure 16



On average, we have required a 15 million barrel stockdraw in January and a 16 million one in February.

We drew stocks at just about those rates in January and February of 1996, so a match to last year's end-November inventory levels is not a disaster.

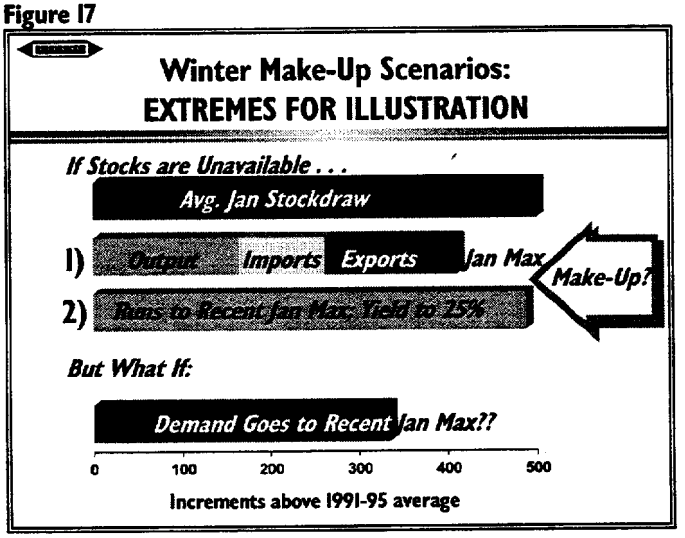
What if the Autumn stockbuild is lower, more like 1994 or 1995? We would enter December, the start of hard Winter, with stocks on the order of 120 million barrels, a level arguably too low to sustain business-as-usual seasonal stockdraws.

I've compared the average January stockdraw of about 500 thousand B/D with some supply alternatives. Please note that the development of these scenarios is an analytical tool, not a prediction.

How much supply would you add if you moved from business-as-usual levels for refinery output, imports and exports to the maximum shown for any January in the 1991-95 period? (For exports, we're actually comparing to the minimum level; lower exports will provide incremental supply.) These three items add just over 400 Th. B/D to supply, not quite enough to make up for a 500 Th. B/D loss. Since limited stock draw would be available, even if below par, the market would make up the loss.

How much supply might we get from higher runs or a higher yield? The next comparison moves crude oil runs to the highest January level in the 1991-95 period, and moves the distillate yield to the effective maximum, 25%. (November distillate yield is routinely highest). This combination results in just 500 thousand B/D of incremental output. Additional imports and lower exports could be added, as well as a limited stock draw.

Figure 17



These scenarios were making up for stocks while demand remained at average (i.e., "normal") levels. What if demand is also higher than the norm? The make-up measures described above fall somewhat short in the absence of any stockdraw. While at least modest supplies from inventory will likely be available, the market will react with sharply higher prices in this scenario, with the system stretched. Crude oil runs, if moved to a counterseasonally high level, will undermine gasoline markets, and thus will only come at a big penalty. Furthermore, other correctives, while providing still more supplies, will only come at a significantly higher price.

Summary

In summary, we have to remember that the market is dynamic, making constant adjustments to price signals. As cargoes arrive in Europe, prices there will ease, dampening the call for supply. Our prices will have responded upward, and we in turn will call forth additional supply. Refineries may continue to produce particularly high volumes of heating oil this season, providing those "fresh" volumes that are necessary to keep the market supplied when stocks are unavailable.

Low inventories have us on the edge of our chairs now, at the beginning of October, but the story is far from over. We'll be watching it unfold throughout the heating season. Even a big stockbuild this Autumn will not give us high inventories by historical standards, so the story won't be over in December, or even in January. Are any refineries having problems? Is there icing in the river/creek/ harbor? What's happening in Europe? How many cargoes are on their way?

With smooth operations and luck, this heating season will end up being memorable only for the oil market analysts; headline-writers and homeowners will have no drama to remember.