

# **2006 Heavy Duty Dialogue**

## **“It’s Time to Decide”**

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### **Luncheon Speech**

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Someone told me one time that there are only two types of people in the world –

- People who like Neil Diamond
- And people who don't

Now, I understand that I am getting older and there may be people in this very audience who are currently asking themselves – “Who’s Neil Diamond?” But suffice it to say he is one of the great performers and lyricists of our time.

Who could forget the chorus to his song titled *I Am I Said?*

"I am," I said  
To no one there  
And no one heard at all  
Not even the chair

Now that’s good stuff! That’s when music was music and cowboys were cowboys.

Well, today I’m going to ask you to declare for another camp – the camp you are in when it comes to the future of our industry. As you listen to the panel discussions today, as you talk about the aftermarket, as you think about the next five years in trucking, I’m going to ask you declare --

Are you an Innovationist? Or are you a Peak Oil Doomsayer?

Are you an Innovationist? –

Someone who says: Yeah, I know we’re using lots of oil and that China’s and India’s demand are now growing exponentially, but we’re not running out of oil. There is plenty in the ground – we just need to find new ways to get at it. And besides, hydrogen will come up alongside oil as our prime energy source and we’ll be able to tell the boys in OPEC to go pound sand – literally.

Are you an innovationist? Or are you a peak oil doomsayer?

The Doomsayers say – now wait a minute. The amount of oil produced per capita in the world peaked in 1979. Since that time we have produced less oil for each person on earth than in the past.

And if you say – well, that doesn’t matter, we don’t all consume at the same rate. We’ll say right - the US consumes 25% of the world’s oil today. Our demand is a little over 20 million barrels a day. We produce a little over 5 million barrels a day inside our country’s borders, so we import about 15 million barrels a day.

And China’s demand has doubled in the last five years alone to about 7 barrels a day.

And for all you innovationists out there –

We’ll tell you that no amount of innovation can work fast enough to head off all the boneheaded decisions our government has made in the last 20 years that now basically

position us to have to fight for control of the Middle Eastern oil supply. Just to cap it off, world production of oil in all forms will peak between now and 2010 – the result is a recasting of the world economy.

Now, I can definitely see both sides of this argument.

On the Innovationists' Side –you've got Amory Lovins and his Hydrogen Primer, in which we learn that a typical car is about 14 percent energy efficient when measured from the well head all the way to the drive wheels. A hybrid car is about 30%. A hydrogen fueled car using natural gas as its original source is about 42% -- three times that of today's gasoline car. He notes that carbon fiber and aluminized bladders can make containing hydrogen practical and that current technology already has the tank size down to about 3 to 5 times larger than a typical 15 gallon gas tank. He notes that Deutsche Shell has said they could be ready in a two-year period with hydrogen distribution in Germany. Amory says – don't let people kid you. Hydrogen is coming – faster than you think.

On the Peak Oil Doomsayer side, on the other hand, they have some other good points to make as well. The doomsayers say – it's not that there isn't oil – it's that we are about to peak in its production and the lack of past policies now positions us for a 10 to 20 year period where we can't ramp up new technologies fast enough to avoid basically fighting for oil in the short term.

They ask – why do you think we don't have an exit strategy in Iraq? – It's because we never intended to leave!

They point out that even interruptions in smaller oil players can now drive prices up drastically. Just last week, for example, armed men in speedboats took four Royal Dutch Shell oil workers hostage and interrupted oil production. Now, Nigeria produces only 2.6 million barrels a day but David Goldwyn, a former US Assistant energy secretary, was quoted as saying the disruptions in Nigeria alone could drive oil to \$85 to \$90 a barrel.

So let me declare, I've always been an innovationist – first because I'm educated as an engineer and second because I have seen the doomsayers squashed by technology before.

When I was in college – Paul Ehrlich and his Population Bomb was the rage – he was working hard to convince all those impressionable college sophomores that they should only have one child (preferably none) because the earth was running out to food. Of course, 30 years later that whole scenario looks a little silly.

At 53 I have lived through the Jupiter Scare – we didn't get hit.

- Y2K --- no need to can peas and bottle water.
- The cold war – all those drills of putting my head under a wooden school desk in case of nuclear attack were all for naught.
- The Great Depression of 1995? – Good book - didn't happen.

But I'm also here today to tell you that the Peak Oil Doomsayer guys are starting to pull me over. Not so much that we're running out of oil. Not so much that China and India are

combining forces to skew world demand. But rather than financial speculation, world politics and an increasingly difficult innovation learning curve will combine to drive fuel prices well beyond what we may be thinking today.

A little more perspective on the issue – from both sides.

Here's what the Plenty of Oil Innovationists say.

First a sense check – the total world produces about 84,150,000 barrels of oil a day.

It consumes about 82,900,000 a day.

The US consumes – about 20 million of that 82.9.

Chinese demand will grow to 7 million a day by the end of this year.

According to the International Energy Agency, the production of crude oil in the first half of 2005 was higher than anytime in history except 1998 when oil sold for \$20 a barrel. Furthermore, that same report shows that developed nations now hold oil inventories of 5.32 billion barrels.

Remember too – crude inventories are increasing at that 1.25 million barrels a day rate.

Now – you might be saying to yourself – hey – if we're producing more than we're using, why is the price going up? And the innovationist would tell you the price is going up because in many days of last year a typical trading day on the mercantile exchange in New York saw 320,000 futures contracts in crude traded – when only 170,000 contracts are actually necessary for normal conduct of the market. In other words – today's price is all about market manipulation rather than supply and demand.

There is plenty of oil out there. Rising prices now make it economical to get to it. Plus if this speculation or some disruption in the market would drive prices up over \$100 a barrel demand drops to bring things back in line.

Ask an innovationist for some trends for the next five years and you'll hear

- 1) Prices will remain in the \$55 to 70 range in 2006
- 2) Higher oil prices are actually good for the US – they put extra cash into oil producing countries' hands which is then invested in US based hedge funds that buy US assets such as mortgage backed securities – the result is we gain more access to attractive loans and those loans fuel the middle market consumer on whom the whole economy is based
- 3) And we'll actually see a decrease in the oil price – back to \$35 to \$45 a barrel.

This will happen over a 12 to 18 month period because oil production will actually increase to produce a 6 to 7 million barrel a day surplus in that time frame.

So party like it's 1999 baby – keep on truckin'!

The Peak Oil Gang says – not so fast.

Their primary point is simply this - We have always assumed the basic law of supply and demand applies in all markets – but it does not apply to oil. Since early 1999 oil prices have risen about 400%. Oil demand growth in 2004 at nearly 4% was the highest in 25 years. Each year since 1999 world oil demand grew an average of 2%. Then they'll read you a quote which says –

"By some estimates, there will be an average of 2 percent annual growth in global oil demand over the years ahead, along with, conservatively, a 3 percent natural decline in production from existing reserves. That means by 2010 we will need on the order of an additional 50 million barrels a day."

Who said that? – Dick Cheney in 1999.

Not 6 or 7 million barrels a day surplus – 50 million a day more demand.

Now in thinking about that demand – think also about the fact that in 2008 the balance of OPEC versus non-OPEC oil will shift. OPEC countries will control more than 50% of the total supply for the first time in history.

And then they lay on the final blow – the big statement – that between 2004 and 2010, overall world production of oil peaks and we begin "The Long Emergency" of a world redefining itself in an economic atmosphere of oil shortage and allocation.

If you ask the Doomsayers to list their trends they go something like this –

Trend 1 – The US Dollar will decline in value as it is manipulated by the Chinese. Foreign oil suppliers will increase prices to offset the declining value of the Dollar in which oil is currently priced.

Two quick notes on trend one here –

Gold has moved from \$280 to \$540 dollars an ounce in recent months indicating a real uneasiness about world market conditions. And in the first week of January, China announced that it would begin to diversify its foreign-exchange reserves away from US dollar.

Trend 2 – The Saudi royal family will be attacked from within the country – leading to further unrest in the area and resulting interruptions in oil supply.

Trend 3 – The use of Hydrogen as an oil alternative will be exposed for what it is – a 15 to 20 year technological mountain that substitutes one oil use – burning it for fuel and lubrication - for another – the production of hydrogen.

Trend 4 – Thomas Friedman's Flat World will be challenged mightily by the cost of fuel.

Trend 5 – we're headed for a derivatives crisis triggering global bankruptcies and soaring bond rates.

Trend 6 - (the Doomsayers have a lot more trends than the Innovationists)

"The International Energy Agency figures put the total spare capacity of all 11 countries in OPEC at just 330,000 bpd (down from 6 million bpd in 2002).

Conventional Saudi spare capacity is zero...

An IEA report from August 2004 indicates

Saudi Arabia needs up to 800,000 bpd of newly discovered oil each year just to offset declining fields and maintain its current production level."

This can't happen, so watch for the ensuing energy crisis.

Trend 7 –According to Matthew Simmons, an advisor on energy issues in Washington, the world's network of crude oil pipelines also is now operating at virtually 100% capacity.

For almost all of 2004, world's tanker system operated at full capacity too, which added up to \$5 to \$6 per barrel.

In 2004 it cost \$35,000 a day to move a tanker from the Middle East to Japan. Today that same trip costs \$135,000. And single hull tankers are being decommissioned faster than new double hull ones are being built. Why? Because the tanker companies are making a fortune and they know the end game is in sight – so don't make the investment.

Trend 8 -- China is already buying and hoarding 60% of the world's commodities: (Oil, Cement, Aluminum, Copper, Zinc, Manganese, Steel, Coal, Gold, Silver, etc.) Why? Because soon there won't be enough fuel for the globalized transport of such heavy things, nor, presumably, for their industrial exploitation. The world may also be at war shortly, further endangering international trade and transport.

Trend 9 -- Reuters has reported Venezuela intends to purchase advanced MiG 29s from Russia, capable of downing F16s. People are arming into oil protection camps.

So – who do you believe?

I'll say this – While I'm still an innovationist I also believe that the combination of Global Warming environmentalists, World Trade bashers, Terrorists, and of a fumbling US Congress brings some of the doomsayer arguments forward. Not all-just some. But some is enough.

I believe that, unfortunately, as Michael Ruppert says in his "From the Wilderness" writings – "Our politicians are more deadly than any weapon. They see their primary mission as building consensus to improve outward appearances.... The victim has been the future."

(And, we vote the incumbents back in at about a 95% rate.)

I now believe these things. And I believe the result will be a higher price for fuel than we have been planning on. And it's not about passing on a fuel surcharge any longer – because surcharges always assume a return to lower prices – there will be no permanent move downward.

So call me a pessimistic innovationist – but I really believe that this industry should be planning not for a decline in fuel prices but rather for 4, 5, 6 or even 7 dollar a gallon diesel prices in the next five years.

Put another way – whether you believe it will happen or you don't, we ought to get a whole lot more serious about conserving every drop of oil we possibly can in the years ahead. The worse thing that can happen is that we are totally wrong and prices come way down because demand flattens and then reduces.

So, on the wonderful thought of 6 dollar a gallon fuel prices, what are some trends for the next 5 years in trucking?

I have decided not to talk about the big ticket trends here. I want to talk about the smaller stuff – the tipping points in our industry – the smaller efforts that will cause really big changes in the way we conduct business everyday.

So – yes – we'll be burning propane and natural gas more. Bio diesel will take a hold. Hybrids might get closer to a decent ROI. Hydrogen will eventually show up. But I think these following trends will be the ones to keep an eye on – or add to your to-do list.

My first key trend is something I call Tactical Tribology.

This industry is built on trucking companies staying within engine warranty guidelines. Change your oil every X miles. Do an occasional oil analysis to make sure nothing terrible is happening and get on down the road. That's going to change.

Just as lean manufacturing took us from analyzing monthly reports to weekly schedules to daily reviews to hourly charts to scrutinized minutes to analyzed seconds, Tactical Tribology is going to take us from the lab to the dashboard, from quarterly snapshots of oil quality to real time trends of fuel economy conditions.

Tactical Tribology means that those friction reducing additives that have long resided in the margins of our industry – because they either simply didn't work or were just reformulations of carbon based chains - Those marginal additives are going to be replaced with higher tech solutions – not low ash, or Teflon – but Boron oxides which introduce the whole science of boundary platelets to the game.

Tactical Tribology means that not only will we provide time release additives to reestablish proper acid levels in EGR engines – we'll also measure soot content not as just an indicator of possible abrasive wear but more as an index in increasing viscosity which increases drag which decreases fuel economy.

Tactical Tribology will happen in engines – but it will also apply to transmissions, drive axles and wheel hubs – anything that involves rotating friction.

It will drive High tech additives from the margins to the mainstream. It will extend the decimal points we measure in fuel economy gain.

Tactical Tribology – get that thought going in your businesses ASAP.

Trend number two is moving from inventory exclusivity to inventory inclusivity. From restricted access distributed warehousing to open access wired inventory pools.

Here's the point – the Holy Grail. Six dollar fuel makes you rethink what has always been. Our approach to inventories has been focused on company turns. And we've done a great job moving from 2 turns a year to 50 or 75 turns a year or even more.

We've pushed our inventory problems upstream with vendor managed inventory – which, by the way, used to be called consignment – but that's another whole speech.

For most of our lives we produced service repair parts – shipped them to central distribution centers then either shipped them to jobbers or straight to dealers. The result – Dealer A needs part XYZ from your company –right now. He's got a truck down. Now – Dealer B sitting right next door has PART XYZ and Dealer C, 2 miles away, has Part XYZ but Dealer A places an emergency order with your plant and you Fed Ex the part overnight.

Not at 6 dollars a gallon fuel you don't – you might, but the price to do it is now more than the part itself.

Trend number two embeds RFID chips in every part shipped – and then goes further to connect the RF signal to a Wi-Max grid – which can be accessed by anyone in town over the Internet. It then opens up this inventory database to anyone who wants to buy the parts.

How do they access the inventory records?– They Google them just like anything else you want to find.

You know about Google Maps, Google Earth, Goggle Desktop? Now learn about Google B2B – it's Google for Business --- It's Boogle.

Now – I just made that up – but it's possible.

Any OEM who goes open source with their information plays on the system for free. Ad revenue foots the bill to maintain the system. You can put your inventory on the system and encrypt it for private use for your dealers only, but that comes at a cost.

To truly conserve oil, this industry needs to lead other industries – as a bunch of truckers burning a bunch of fuel – it's only right for us to do.

Look at it this way.

We've been playing defense on the whole global warming deal for a lot of years. It has cost us billions. And by itself – it's at least questionable science.

Read Michael Crichton's *State of Fear* – he'll show you a chart of multiple years of increasing CO2 where world temperature went constantly up and down. He'll make you question melting ice and rising oceans. He'll tell you that we have allowed lawyers and politicians and universities and the media to manipulate us with some constant level of fear about something - about everything. He'll ask the simple question – why is it illegal to falsely yell fire in a crowded theatre but it's not illegal to falsely yell cancer on the front page of the New York Times?

But that's another whole speech too.

The point is we need to go on offense. We should be the poster children of oil conservation.

Think inventory inclusivity can't work? – I've had the experience of one retailer going to another competitive retailer to get me a product they didn't have in stock. Know what? – I'll shop at the retailer forever because they went out of their way for me.

So get way out of the box.

Look at total industry turns instead of company turns of inventory.

Kill the unnecessary shipments and the emergency runs.

Struggle with the pricing issues to make sure people can make money in this process.

Inventory Inclusivity – It can happen.

Trend Three takes us to the shipping dock – the last bastion of raw inefficiency at most of our companies – except maybe for HR. I call it Dock-O-Rama. No time to have trucks sit and idle waiting for their spot at the dock any more. We've leaned out manufacturing, and coordinated our suppliers through pull systems – now it's time to run the dock like a NASCAR pit stop.

Packaging specialists will map out the flow of material to the dock and the sequencing of the dance. Computer algorithms maximize pre-packed containers very much the way Fed Ex and UPS load a cargo plane today. A 53 foot trailer is loaded in 3 minutes without the need of a fork truck driver.

A lot of companies will finally adopt drive through side loading to eliminate the inefficiency of dock spotting a trailer. Counting total dock time as part of your allowable driving hours will provide the final push to attend to this fuel waster.

Dock-O-Rama – A whole new emphasis on getting loaded.

Trend four brings nanotechnology to trucking.

We've figured out we can use nanotubes to make plastic feel like suede. But now we're getting a little more serious. Nano tube paint mixtures will actually provide more laminar flow across the surface of the tractor and trailer and a more slippery surface that sheds

wind catching dirt – of course it can also be digitally charged or lumen activated to provide more visibility at night.

Similar technology has recently been introduced for polarized aircraft windows – they tint at the push of a button and save space and weight in new aircraft designs – truck windshields might use that approach to provide sun protection.

We'll see nano tubes on turbo veins and air inlets to optimize air flow.

Think Nano Nano in the future.

And finally, for all you folks who have introduced 600 horsepower and above engines recently – there will be a special breakout session at the next HDMA conference entitled “Stuff we should not have done and how to learn from it”.

- Tactical Tribology
- Inventory Inclusivity
- Dock-O-Rama
- And Nano Tech

For our future at 6 bucks a gallon – think small.

I'll leave you with a final quote today.

It applies to the fact that many people don't believe in the Peak Oil scenario simply because it hasn't happened yet – and people disagree on exactly when it will happen.

The author of the Deconsumption Blog who writes under the pseudonym, Steve Lagavulin, captured that situation when he said, “When nothing happens for a long time people begin to assume that nothing ever happens. But, sooner or later, something always happens.”

### End ###

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