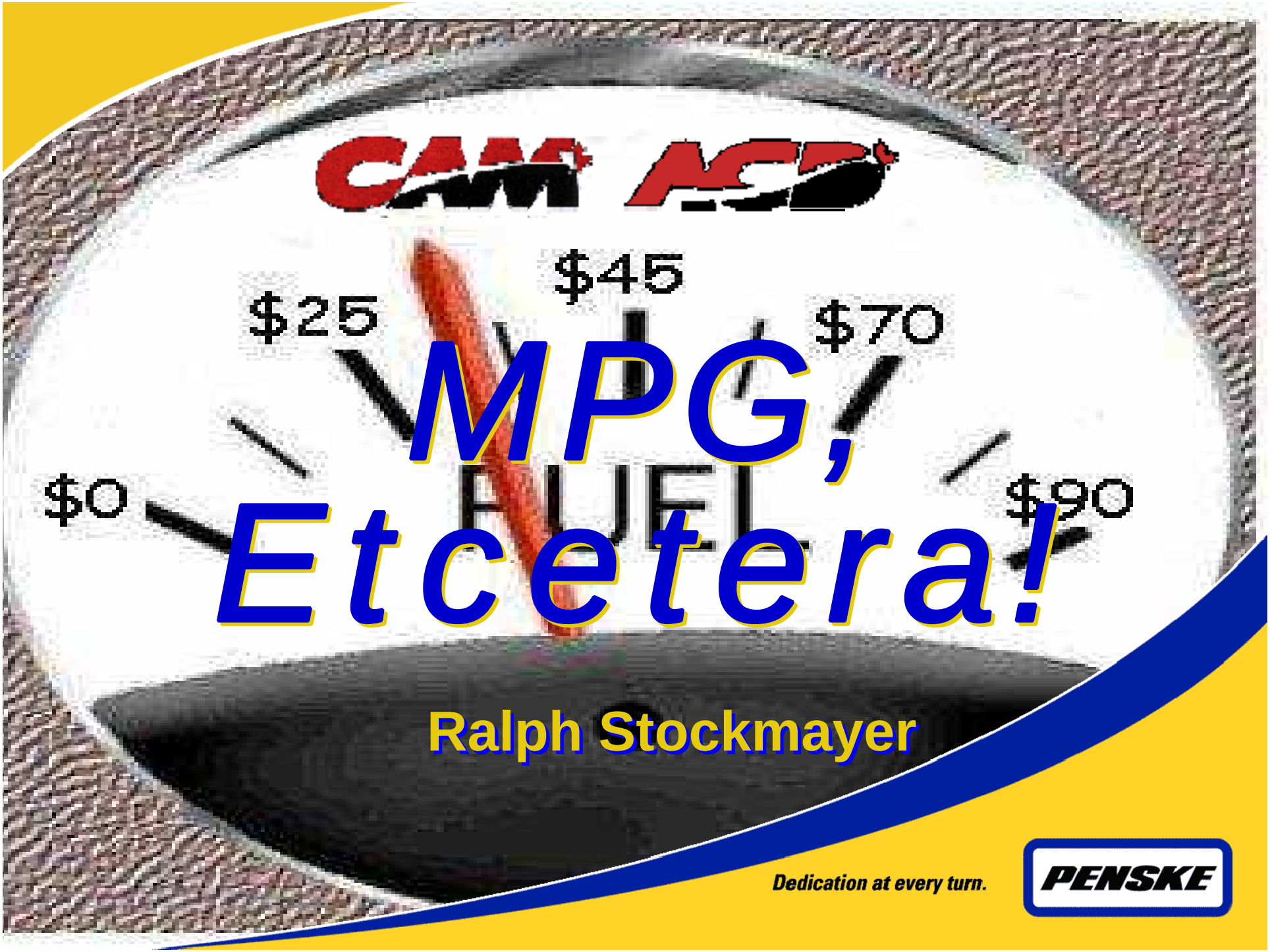

MPG, Etcetera!

Ralph Stockmayer

Dedication at every turn.

PENSKE

Before You Think About MPG,… In Light Of Increased Fuel Costs, Look To Eliminate Unnecessary Miles First!

- Review Individual Account/Delivery Profitability
- Justify Delivery/Service Frequency Commitments
- Improve Vehicle Capacity Opportunity: Cube/GVW
- Review Delivery and Pick-Up Method/Efficiency
- Consider Product Perishability/Out-of-Code Limits
- Consider Product Packaging and Container Size

…but, if you have to run……

…Look at the World of Fuel Economy

IT'S NOT JUST ONE THING!

The Basics…
They're Simple, But Never Easy!

1. Select the Right Truck for the Job.
2. Proactively Maintain the Truck.
3. Teach the Driver to Operate It Properly.
4. Monitor and Manage the Use of the Truck.
5. Know When It's Time to Replace/Rebuild It.
6. Purchase the Right Fuel at the Best Price.
7. Protect the Fuel You Purchase from Theft.
8. Leverage a Partnership with Penske!

1) Select the Right Truck for the Job

- Equipment Design & Specifications

Dedication at every turn.

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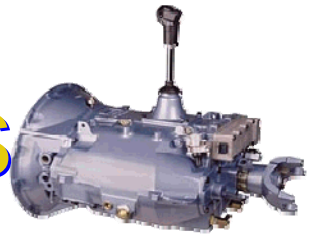
Equipment Design and Specifications

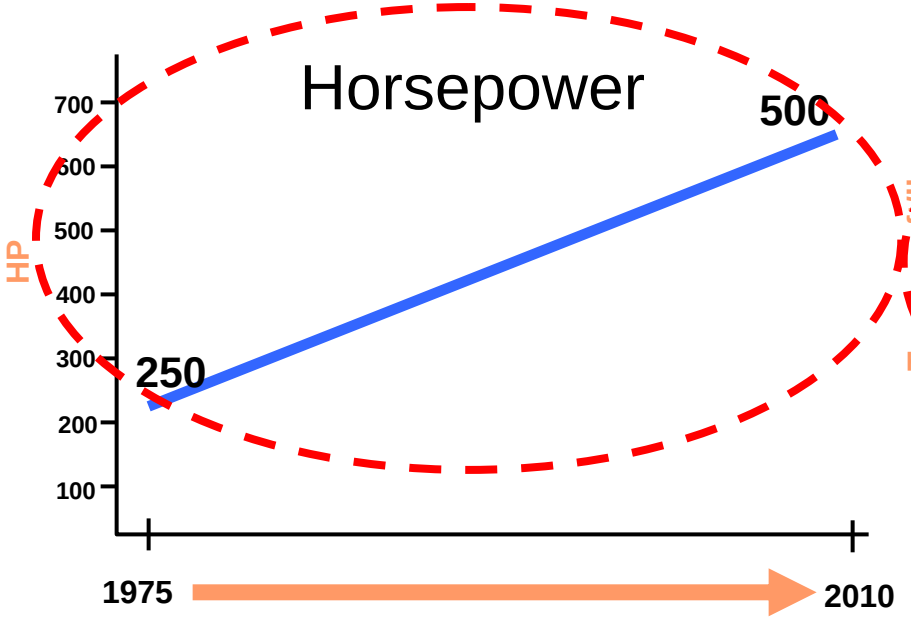
- Understand the Mission:
  - Payload and Gross Weight Limitations.
  - Payload Cubic Volume Dimension Limitations.
  - Loading and Unloading Processes/Equipment.
  - Time Sensitivity and Distance Considerations.
  - Terrain and Climate Conditions.
  - Grades to be Climbed.
  - Sleeper Bunk Required?

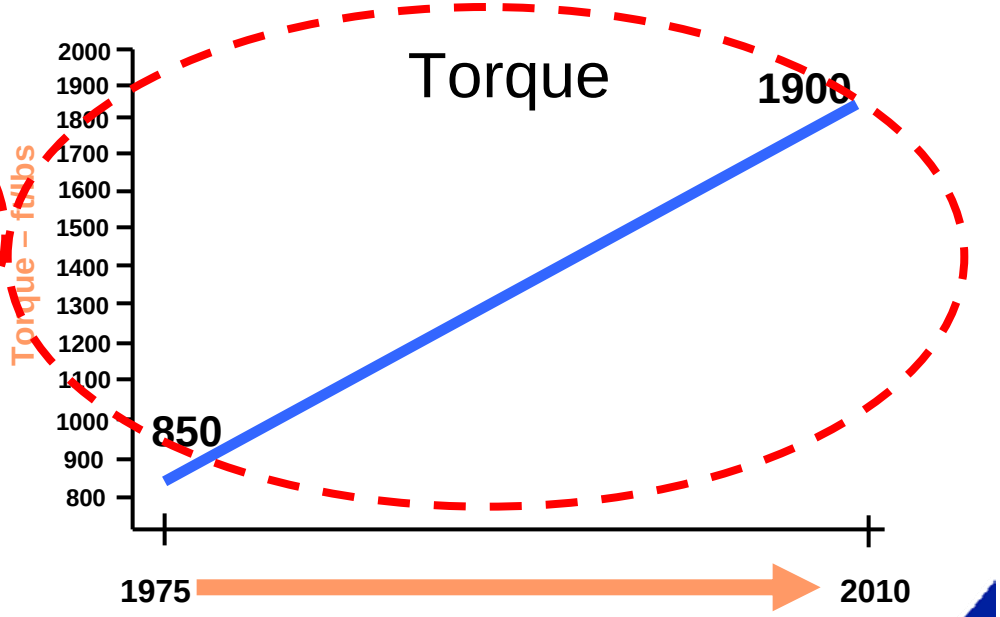
Drivetrain Specifications

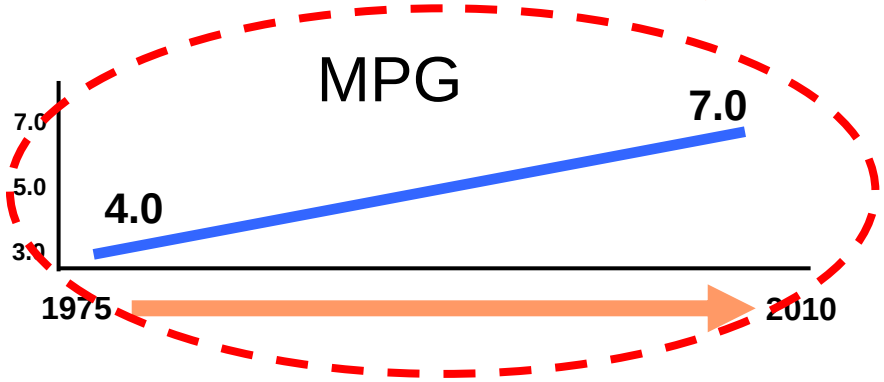


- **Select the Engine with the Power and Torque to <u>Move the Load as Necessary</u> in the <u>Most Economical Way.</u>**
- Integrate the Selection of Engine, Transmission, Driveline, Rear Axle and Tires
- Use Electronic Controls to “Gear Fast, Run Slow.” 1200-1400 RPM Lowest BSFC “Sweet Spot.”
- Set Idle Shutdown to be Active @ 3 Minutes (No more than 5 Minutes).
- Consider “Automated” Manual Transmissions!
- Consider Multi-Torque Rating
- Consider Resale Value

Historical Increases in Power, Torque and Fuel Consumption







Cab and Chassis Considerations

- Cab Design
  - Conventional Aero Designs Preferable.
  - Cab-to-Trailer Distance (CB) is Important.
  - Aerodynamic Devices.
  - Eliminate “Hang-On/Hang Out” Accessories.

Trailer/Truck Body Design Considerations

- Smooth Side Designs Preferable
- Spec Only the Height & Width You Need
- Aerodynamic Devices Make Sense, the Higher the Price of Fuel, and the Greater Number of Full-Speed Highway Miles.
- Air Deflectors for Mid-Range Trucks Makes Sense When Fuel is So Costly
- Single Trailer Vs. Pups (53’ Vs. 2 X 28’)
- Under-Frame Racks Create Drag

Weight Reduction/Payload Increase

- Since ’07 Emissions, vehicles are about 400 lbs. heavier. 3-400 lbs more weight expected in 2010.
- Reduce Total Vehicle Weight *OR* Increase Payload. +150 lbs. of weight translates to loss of 0.01% MPG.
- Unless your operation is restricted by cubic volume, a pound of vehicle weight can be translated to a pound of payload! What’s a pound worth to you?
- Aluminum Components:
  - Wheels/Tires/Hubs
  - Air Tanks
  - Cab Construction
  - Fifth Wheel

Some Other Fuel Saving Components

- Auxiliary Power Unit (APU) for High Mileage/Sleeper Units
- New Fuel-Saving Reefer Unit Designs
- Use of “New Generation” and “Green” Truck Stop Facilities
  - “IdleAire”
  - Shorepower

Factors Affecting Fuel Economy

Tractor-Trailer Aerodynamics

- Between 55 and 65 MPH, 50% of the fuel burned is used to overcome air resistance.
- Over 55 MPH, the % of fuel needed to overcome air resistance increases exponentially as vehicle speed increases
- Testing by a major OEM shows that for every 10” of trailer gap, the fuel mileage changes by 1%

2) Proactively Maintain the Tool

- Maintenance & Repair

Dedication at every turn.

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Maintenance Considerations

- Tire Pressure Maintenance:
  - Periodic Inspection (Cold Check).
  - On-Board Automated Pressure Monitoring/Regulation?
- Tire Balance.
- Dual Tire Diameter Matching.
- State of Wear/Tread Depth.
- Original Casing or Retreads?
- Super Singles?
  - Consider the entire system!

Maintenance Considerations-Cont'd

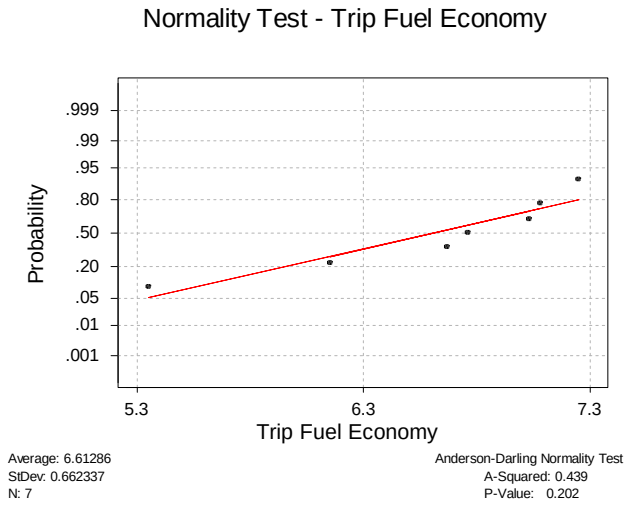
- Lube Types Used:
  - Synthetic, Blend or Conventional.
  - Engine, Transmission, Rear Axle, Wheel Ends.
- Engine Air & Fuel Filter Replacement.
- Brake Adjustment.
- Consideration of Air Disc Brake Systems
- Frame-Axle-Wheel Alignment.
- Thermostat and Engine Fan

3) Monitor and Manage Vehicle Use

- Monitor Vehicle Activity and Manage through Pro-Active Fleet Policies and Hands-On Management

Monitor and Manage the Use of the Vehicle

- Gather and accumulate data to see how the fleet is performing from Engine Data (Engine Control Module-ECM)
  - Fuel MPG-overall
  - Driving MPG - takes out idle time, tells you what the truck is doing on the highway
  - Panic Stops/Rapid Decelerations
  - Idle time % (Often there are 2 readir
  - Maximum MPH
  - Time/Distance in Top Gear
  - Time/Distance in Cruise

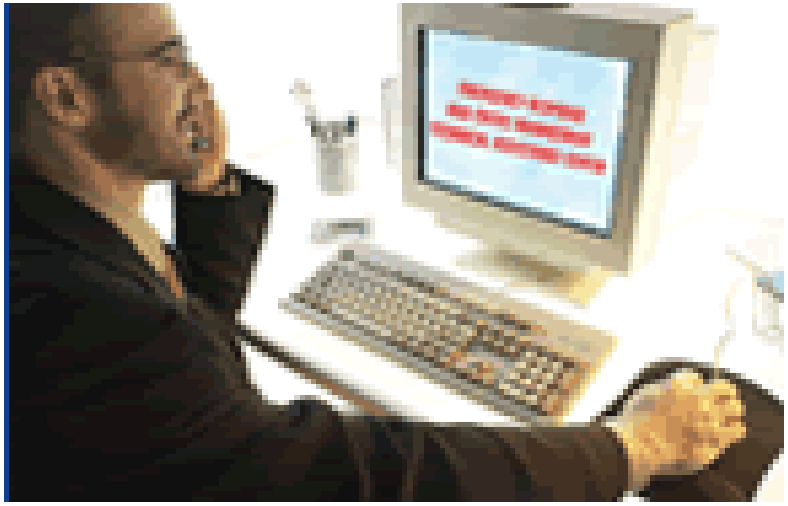


- Don’t trust anecdotal fuel economy numbers!

Monitor and Manage the Use of the Vehicle

(Continued…)

- Once you have an accurate baseline, you can begin to assess the cost/benefit of changes you might wish to make.
- Determine Achievable Operating Parameters/Goals for the fleet
- Review Performance Records with drivers:
  - How they are currently performing?
  - What standard do you expect them to achieve?
- Drivers can/do have parameters altered on the road



Monitor and Manage the Use of the Vehicle

(Continued…)

- Periodically download unit ECMs to monitor performance. Is improvement taking place? Is it sustained?
- Consider an MPG Improvement incentive program w/ possible gain-sharing formula.
  - Example: For every gallon saved, they get $0.50. (You save $4.00!!!)
- Avoid competition between dissimilar operations and vehicles.
- Use engine fuel burned from the ECM or other onboard system, not “fuel pumped/miles reported

4) Know When to Replace/Rebuild Your Vehicles

- A Firm Replacement Policy Is a Must !

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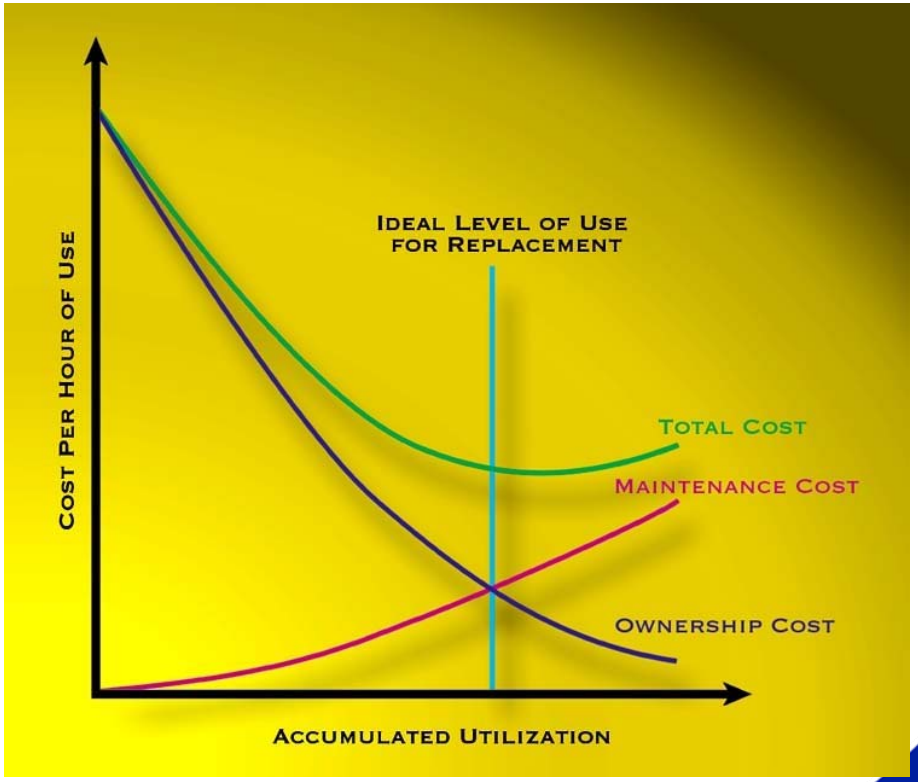
Plan the Vehicle Life-Cycle on the Day You Place it In-Service

- Worn out vehicles get poor Fuel Economy.
- Beyond a certain point, an old vehicle is more expensive to operate and less dependable.
- Maintenance and downtime expense will overcome the reduced acquisition cost.
- Old vehicles affect operations in other intangible ways:
  - Customer Service
  - Company Image
  - Driver Satisfaction/Retention
  - Liability Lawsuits.



5) Teach the Driver How to Use the Vehicle Properly

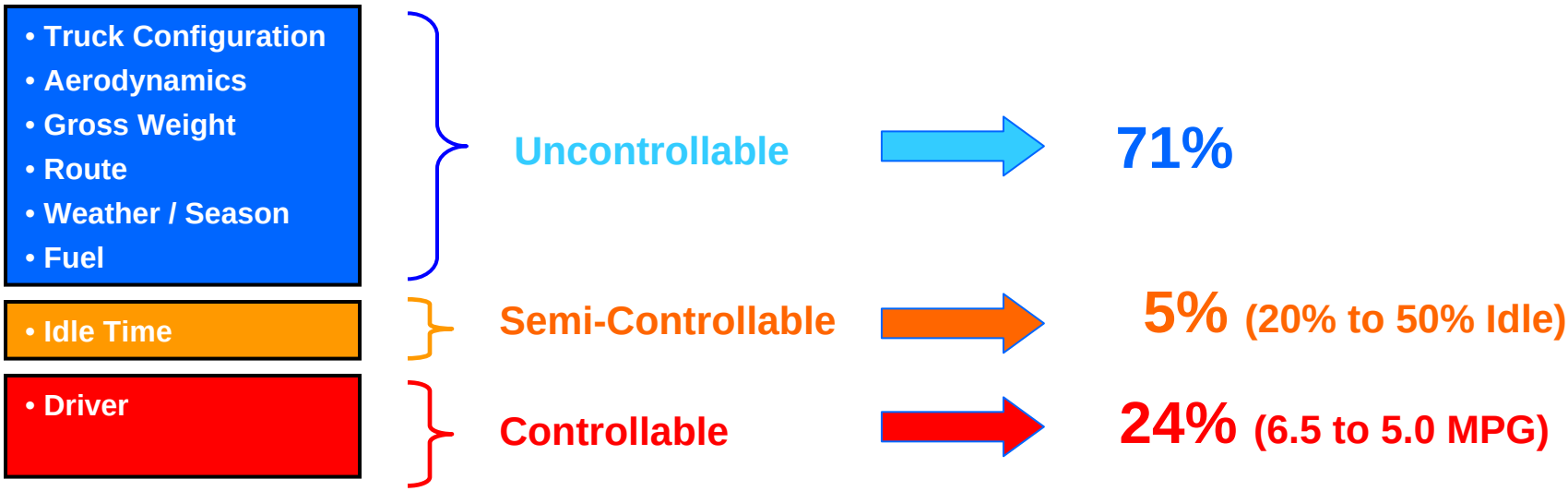
- The Best Tool in the Hands of an Untrained User Will Lead to Unfortunate Results.

The Driver and Fuel Economy

- The single most significant variable to fuel economy is the *driver*.
- The Driver controls some or all of…
  - Vehicle speed
  - Shifting Technique
  - Acceleration Rate
  - Idle Time
  - Tire Inflation Pressure
  - Trailer Gap Setting (If Equipped w/ Slider)

We Must Manage the Driver Variable!

Factors Influencing MPG



Set the engine control module to force the driver into the "sweet spot"

The Driver Affecting Fuel Economy
(Continued)

- Idle Time
  - 3-5 minutes of warm-up is generally adequate. Avoid fines too!
  - Idling for turbocharger “cool-down” is only necessary under extreme heat condition.
  - Idling consumes between 0.8 and 1.2 gallons of fuel per hour, depending on engine displacement and set idle speed.

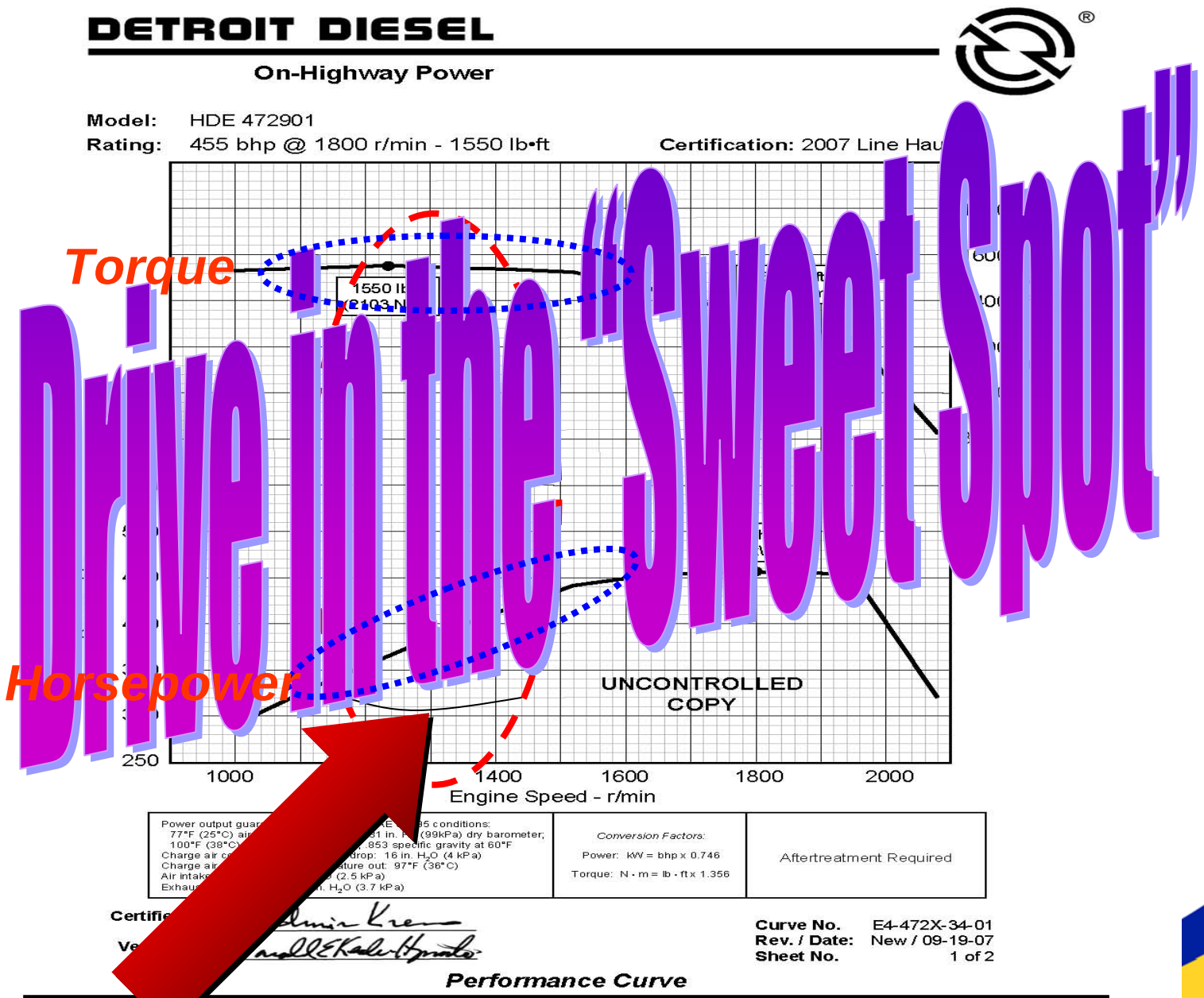
- Interstate vs. Congested Roads
  - 15% of the miles operated on congested roads translate into a 7% fuel economy penalty. 25% is equivalent to a 14% penalty.

Why Driver RE-Education is Critical:

- New Engines Operate Differently:
  - RPM band for economic operation is lower
  - RPM band is narrower
  - Fuel penalty for shifting improperly is severe

- Drivers need to drive by sight, not sound:
  - Use tachometer, not the sound of the engine.
  - Downshift at lower RPM's vs. older engines.
  - Consider "Automated" Manual Transmissions

It is not uncommon for fleets with units spec'd identically and driven in similar operations to see as much as a 25% variance in fuel economy between the least effective and most effective drivers.
(Example: 5.4 MPG vs. 6.7 MPG)


DETROIT DIESEL
On-Highway Power
Model: HDE 472901
Rating: 455 bhp @ 1800 r/min - 1550 lb•ft
Certification: 2007 Line Hau
Torque
Horsepower
Drive in the "Sweet Spot"
1550 lb
(2103 N
UNCONTROLLED
COPY
250
1000
1400
1600
1800
2000
Engine Speed - r/min
Conversion Factors:
Power: kW = bhp x 0.746
Torque: N • m = lb • ft x 1.356
Aftertreatment Required
Curve No. E4-472X-34-01
Rev. / Date: New / 09-19-07
Sheet No. 1 of 2
Performance Curve
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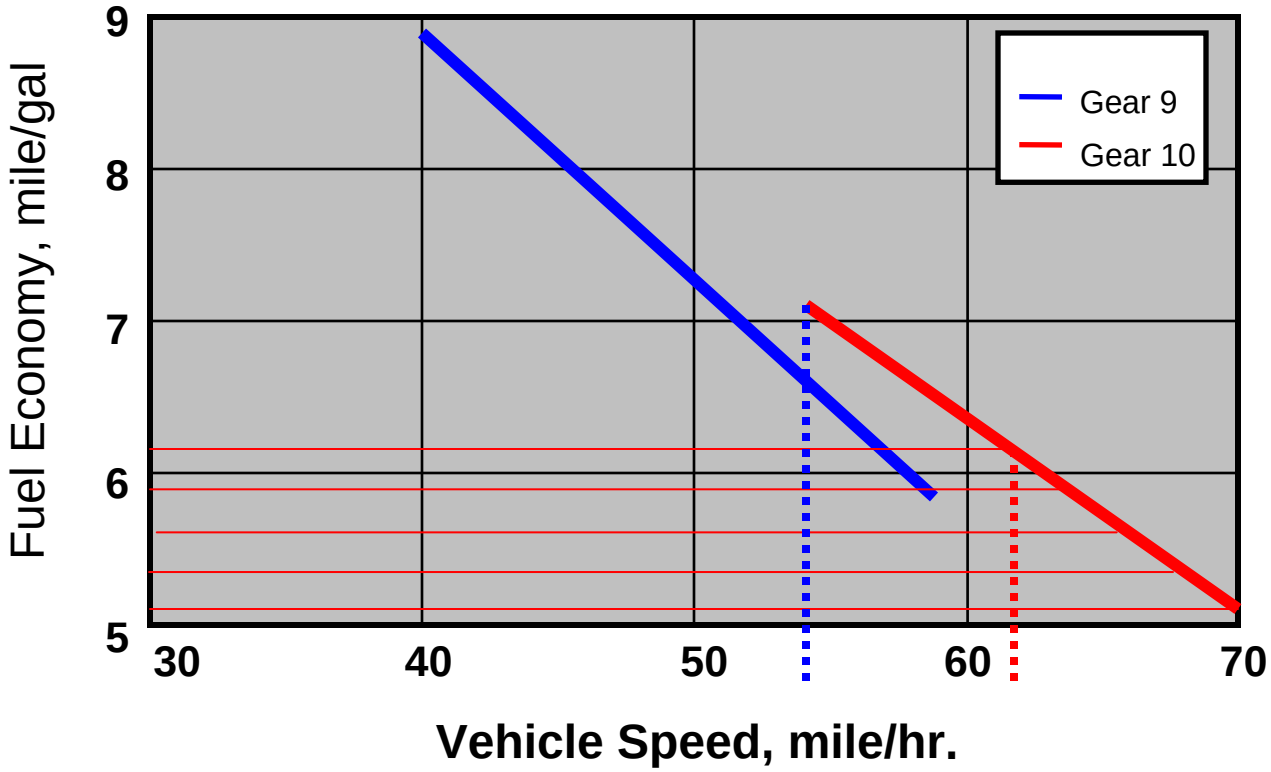
Constant Speed Fuel Economy by Gear Selection



If your vehicle is geared to run @ too high a speed,
It may actually lower MPG if you reduce speed too much!

Why Driver RE-Education is Critical:
(Continued…)

A Major Motivator for Driver Training is

Money!

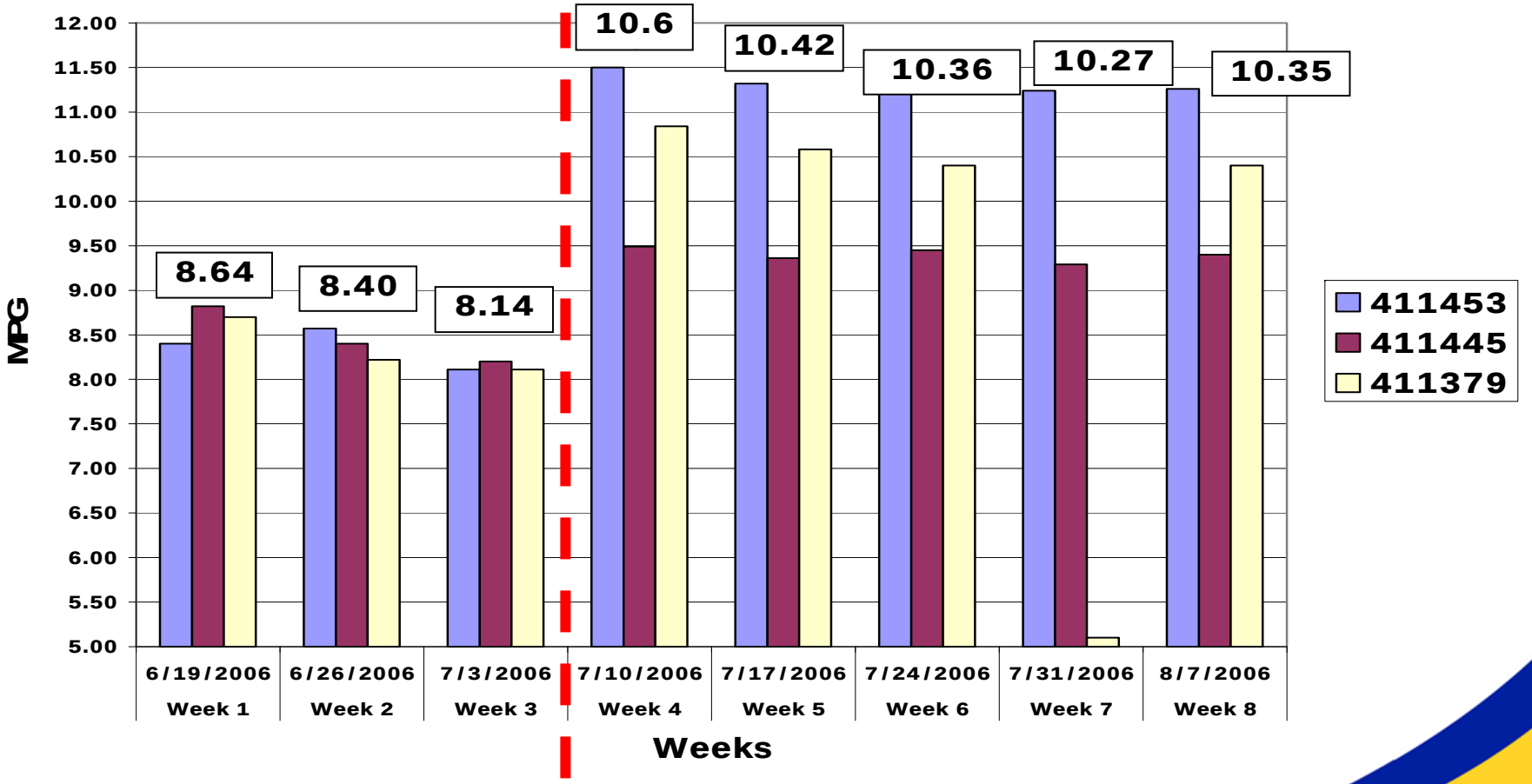
The Company's Money!

Your Money!

With Fuel at $4.50+ per gallon
an improvement of just 0.5 MPG (8%) is worth
approx. $5,700+ per Unit/Yr.

Based on 100,000 annual miles
@6.0 MPG Vs. 6.5 MPG

Actual Results of Class 4, 5 & 6 MPG Improvement (20%+) from a Major National Office Products Company



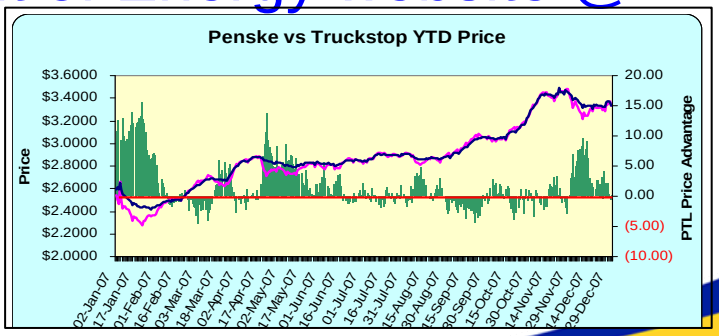
Reduced Top Speed from 66 to 60 MPG

6) Use the Right Fuel at the Best Price

- Spec the Right Product for Conditions
- Purchase *ONLY* from Reputable Suppliers.
- Provide Proper Tank Management (if you own).
- Don’t buy “Magic” solutions!

Purchasing Strategies

- With good equipment, good driving practices and good maintenance you will optimize the fuel consumption rates in your fleet. But what about the quality, availability and cost of the fuel you buy?
- If you are paying too much, you may not be able to "save" your way out of the hole you're in.
- You can help to optimize your savings and fuel security by using the Penske Fuel Services.
- Keep up your "Energy IQ" by periodically checking the US Department of Energy website @ eia.doe.gov.us



Beware of Magic Solutions!

When the price of fuel goes up, the “magic” solutions reappear from previous generations like zombies!

- Chemical Fuel or Oil Additives (“Mouse Milk”)
- Electrical and/or Magnetic Devices
- Intake alterations to “improve” combustion efficiency.
- Oxygen or Water injection

When such solutions/devices offer true savings vs. their cost, they will stand the scrutiny of professional analysis. So far, they haven’t!

7) Protect Your Fuel from Theft

The Theft of Your Fuel is the Same as Somebody Stealing Your Money!

Dedication at every turn.

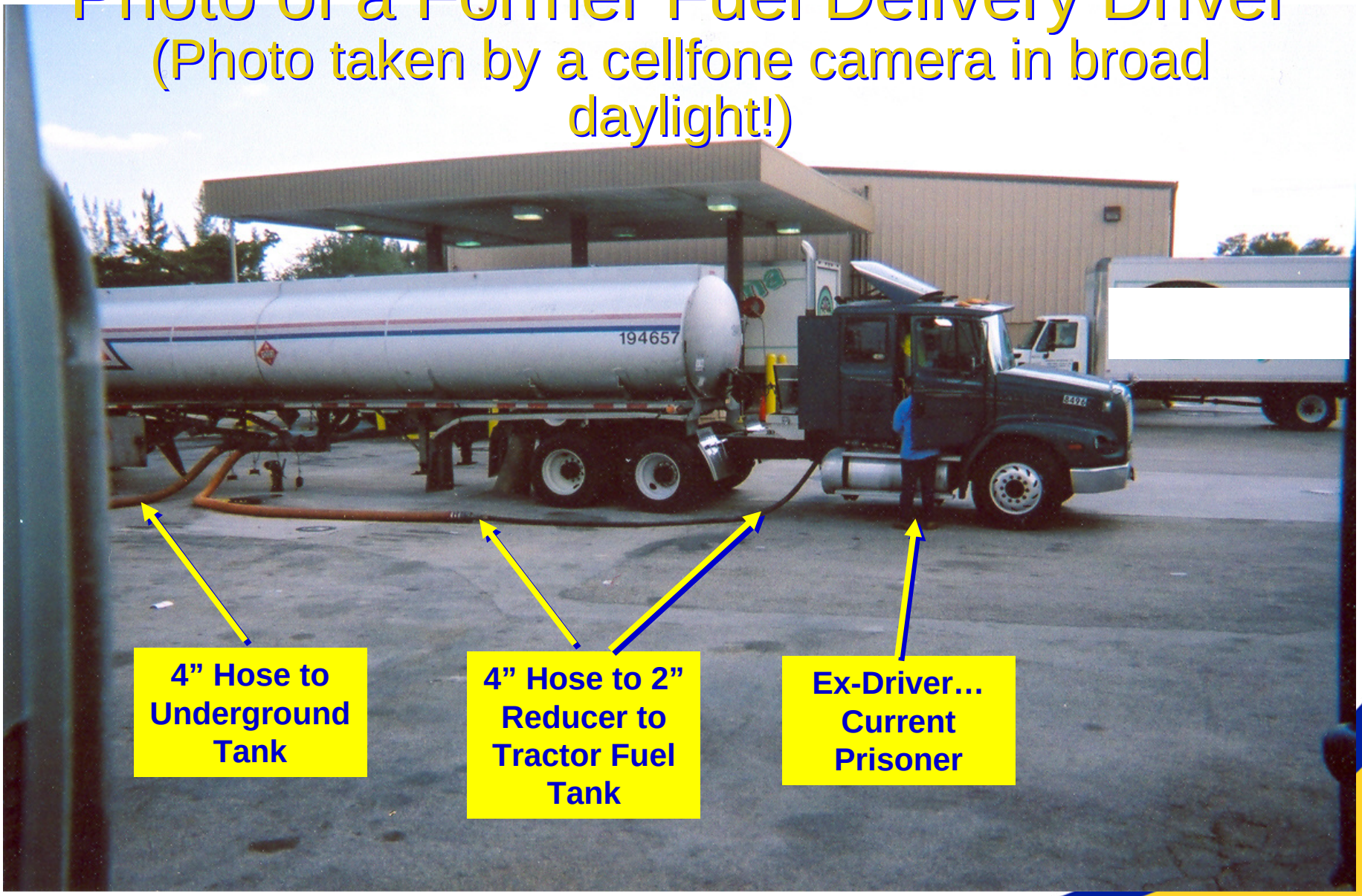
PENSKE

Fuel Security

- Fuel Theft is a Fact!
  - *Assume that Theft **IS** Happening!*
- Use "Smart Technology"
  - Install Anti-Siphon Devices/Locking Caps on Fuel Tank (s)
  - Manual Pumps are virtual giveaway
  - Unattended pumps are vulnerable
    - Small quantities in containers
    - Portable pumps or siphons

- Be vigilant and consistent:
  - Let the work force know that all methods to identify, terminate and prosecute fuel thieves will be used.

Photo of a Former Fuel Delivery Driver
(Photo taken by a cellfone camera in broad daylight!)



Some Recommended Methods to Eliminate/Reduce Theft

- Have fuel pump(s) calibrated periodically and use card-lock type systems.
- Take engine fuel throughput readings from the ECM and compare to records of pumped fuel. Compare fuel tickets and cumulative meter readings for reconciliation.
- Compare MPG performance by vehicle/driver.
- Protect your Fuel Cards from unauthorized use!
- Perform unannounced surveillance of fuel facilities- Bring a digital or video camera
- You can minimize exposure by using Penske's Fuel Program.

…Alternative Fuels

Could an Alternative Fuel be the Answer?

Don’t expect a “Magic Bullet,” but you should be aware of developments…

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What Are The Alternative Fuel Choices?

- Biodiesel Blends (B5, B11, B20)
- 100% Vegetable/Animal Oil
- Compressed Natural Gas (CNG)
- Ethanol
- Hydrogen
- Liquefied Natural Gas (LNG)
- Liquefied Propane Gas LPG)
- Methanol
- Pure Electric
- Hybrids

What Might the Benefits Be?

- Exhaust Emission Reduction?
- National Energy Independence?
- “Green” Public Relations?
- Cost Reductions?
  - What Are the Fuel Properties-Energy Content?
  - What will it take to use it in your fleet vehicles?
  - What fueling availability and infrastructure issues are there?

Be Sure to Perform a Detailed Performance Review and Total Cost Comparison!

8) Leverage a Partnership with Penske

We Can Help!

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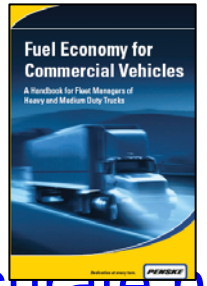
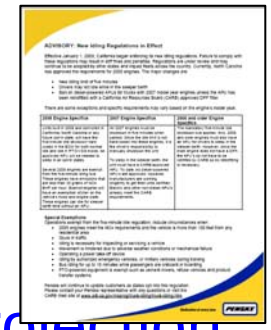
What Can Penske Do To Help You?

- Fuel Quality, Cost and Accountability
  - Ed Touma and the entire Penske Fuel Management group
- Vehicle Application and Design Engineering
  - Proven Fuel-Saving Designs
  - Joint Test & Evaluation of Future Equipment w/ OEM's
- Maintenance Programs
  - Preventive & Predictive Maintenanc
  - Low-Friction Lubricants
- Driver Training Sessions by Safety Specialists
  - Safe Driving is Economical Driving
  - The Smith System

How Can We Help-Continued?

- Communications
  - "Fuel Economy for Commercial Vehicles" Booklet
    - Includes new section about Alternative Fuels
  - Monthly Precision Point e-mails
  - Lunch N' Learn Online Seminars





- Six-Sigma Fuel MPG Analysis
  - Rigorous baseline analysis and accurate projection of potential results from planned changes
- Onboard Management & Control Systems
  - Fleet IQ
  - Fleet Insite
- Management Seminars like this

So…

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8. Leverage a Penske Partnership!

Please Let Us Know If We Can Help You…

Thank You for Your Attention, and Thank You for the Business You Have Entrusted Us With!

Ralph Stockmayer
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Ralph.stockmayer@penske.com

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Ralph K. F. Stockmayer, CTP

- Industry Development Manager, Penske Truck Leasing, Baking, Snack Foods, and Beverage Segments
- 11 Years w/ Penske
- Performs Various Training Duties
- 28 Years in Private Fleet Operations Management
  Private Businesses and Fortune 500 Companies
- Certified Transportation Professional w/ National Private Truck Council
- BS in Transportation, Syracuse University
- Former Professional Driver