

Volvo Group



Susan Alt

SVP, Public Affairs Volvo
Group North America

https://pvmi.wharton.upenn.edu/connected-truck-connected-car/truck-day-agenda/

Wharton UNIVERSITY OF PENNSYLVANIA

FACULTY & RESEARCH UNDERGRAD MBA EMBA PHD EXECUTIVE EDUCATION WHARTON ONLINE ALUMNI

PVMI PROGRAM on VEHICLE and MOBILITY INNOVATION

WELCOME TO PVMI CONNECTED TRUCK, CONNECTED CAR CONFERENCE

Introduction
Truck Day Agenda – June 1
Car Day Agenda – June 2
Speakers
RSVP
Information


Truck Day Agenda – June 1

8:00 a.m.–8:30 a.m. — Breakfast

8:30 a.m.–8:45 a.m. — Welcome: Connected Strategies in Mobility

John Paul MacDuffie
*Director, PVMI
Professor of Management, The Wharton School*

Nicolaj Siggelkow
*Co-director, Mack Institute for Innovation Management
David M. Knott Professor of Management, The Wharton School*



8:45 a.m.–10:00 a.m. — Panel 1: Will Trucking be a Lead Sector in Connected Vehicles?

Brad Bartkowski
President & Founder, Orion Fleet Intelligence

Jon DeGaynor
President, Chief Executive Officer and Director, Stoneridge

Dave Schaller
Industry Engagement Director, NACFE

8:44 AM 5/30/2017



@ 55 mph which gets better fuel efficiency?







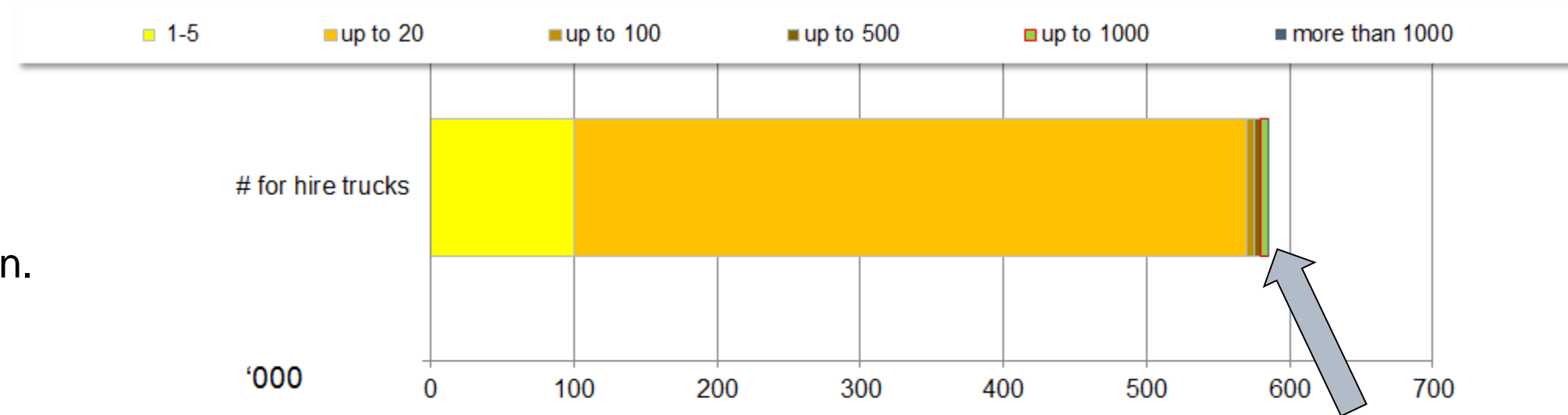
1.4 million carriers...who will be first to adopt platooning (or other automated technologies)?

As of May 2015:

- 747,781 Private Carriers
- 586,014 For Hire Carriers
- 144,170 "Other"

3.63 million Class 8 trucks in operation.

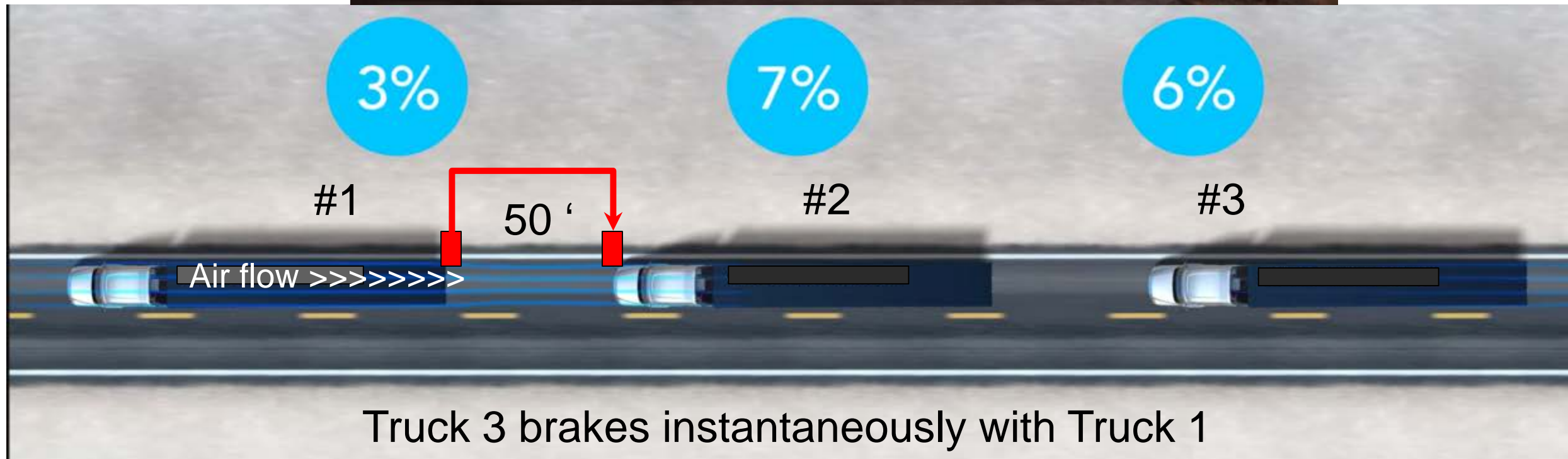
97.3% operate \leq 20 trucks



Top 50 buyers purchase ~40% of all trucks!

Source: ATA Trucking Trends 2016, Polk Registrations, TT News Top 100 - 2016

What if?



Issues beyond the technology

- Patchwork of state regulations:
 - What is a “driver”?
 - What is “control” of the vehicle?
 - How close can vehicles travel together?

- Liability

- Who is “at fault” in an accident???
 - The communication channel?
 - The “driver” or “controller”?
 - A 3rd party add-on ?
- What about cyber-security?

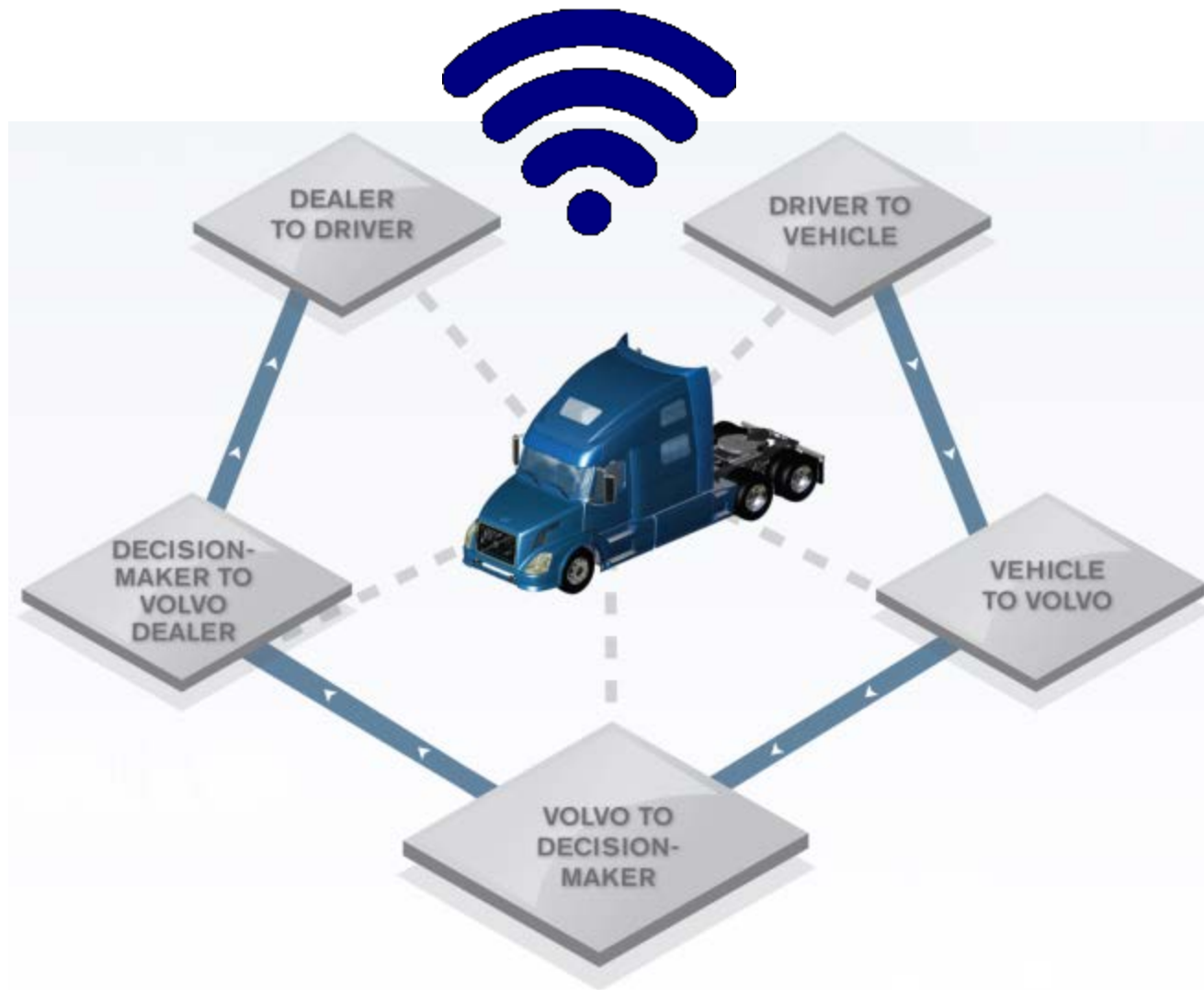
<https://www.youtube.com/watch?v=X7vziDnNXYEY>

Caltrans, Volvo Test Truck Platooning on Busy Los Angeles Freeway

RYAN ZUMMALLEN || MARCH 8, 2017 || TRUCKING TECHNOLOGY



Now add remote diagnostics



- Federal and state privacy
 - Who is allowed to access what data??
 - Who owns forensic data?
 - How will it be used?



We, the truck manufacturer, take our responsibility seriously....



Thanks ... Questions?

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Back up (only if needed in Q&A)

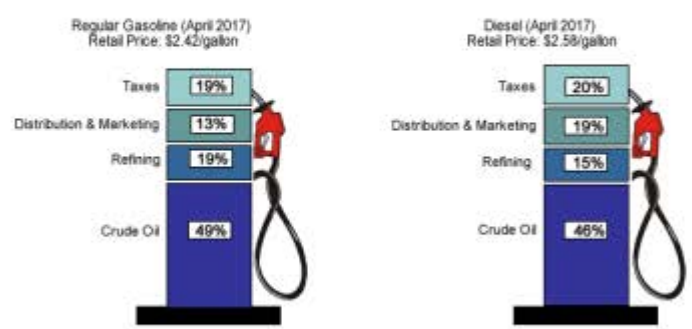
D.O.E. Diesel Prices

U.S. On-Highway Diesel Fuel Prices* (dollars per gallon) [full history](#)

| | 05/08/17 | 05/15/17 | 05/22/17 | Change from | |
|----------------------------|----------|----------|----------|-------------|----------|
| | | | | week ago | year ago |
| U.S. | 2.565 | 2.544 | 2.539 | ↓ -0.005 | ↑ 0.182 |
| East Coast (PADD1) | 2.612 | 2.595 | 2.588 | ↓ -0.007 | ↑ 0.209 |
| New England (PADD1A) | 2.642 | 2.628 | 2.628 | 0.000 | ↑ 0.215 |
| Central Atlantic (PADD1B) | 2.753 | 2.737 | 2.733 | ↓ -0.004 | ↑ 0.269 |
| Lower Atlantic (PADD1C) | 2.507 | 2.488 | 2.479 | ↓ -0.009 | ↑ 0.171 |
| Midwest (PADD2) | 2.497 | 2.479 | 2.468 | ↓ -0.011 | ↑ 0.143 |
| Gulf Coast (PADD3) | 2.410 | 2.382 | 2.384 | ↑ 0.002 | ↑ 0.151 |
| Rocky Mountain (PADD4) | 2.651 | 2.626 | 2.629 | ↑ 0.003 | ↑ 0.271 |
| West Coast (PADD5) | 2.846 | 2.824 | 2.828 | ↑ 0.004 | ↑ 0.231 |
| West Coast less California | 2.747 | 2.728 | 2.725 | ↓ -0.003 | ↑ 0.223 |
| California | 2.927 | 2.902 | 2.912 | ↑ 0.010 | ↑ 0.239 |

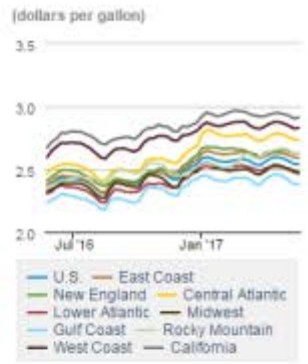
*prices include all taxes

What we pay for in a gallon of:



Source: Energy Information Administration

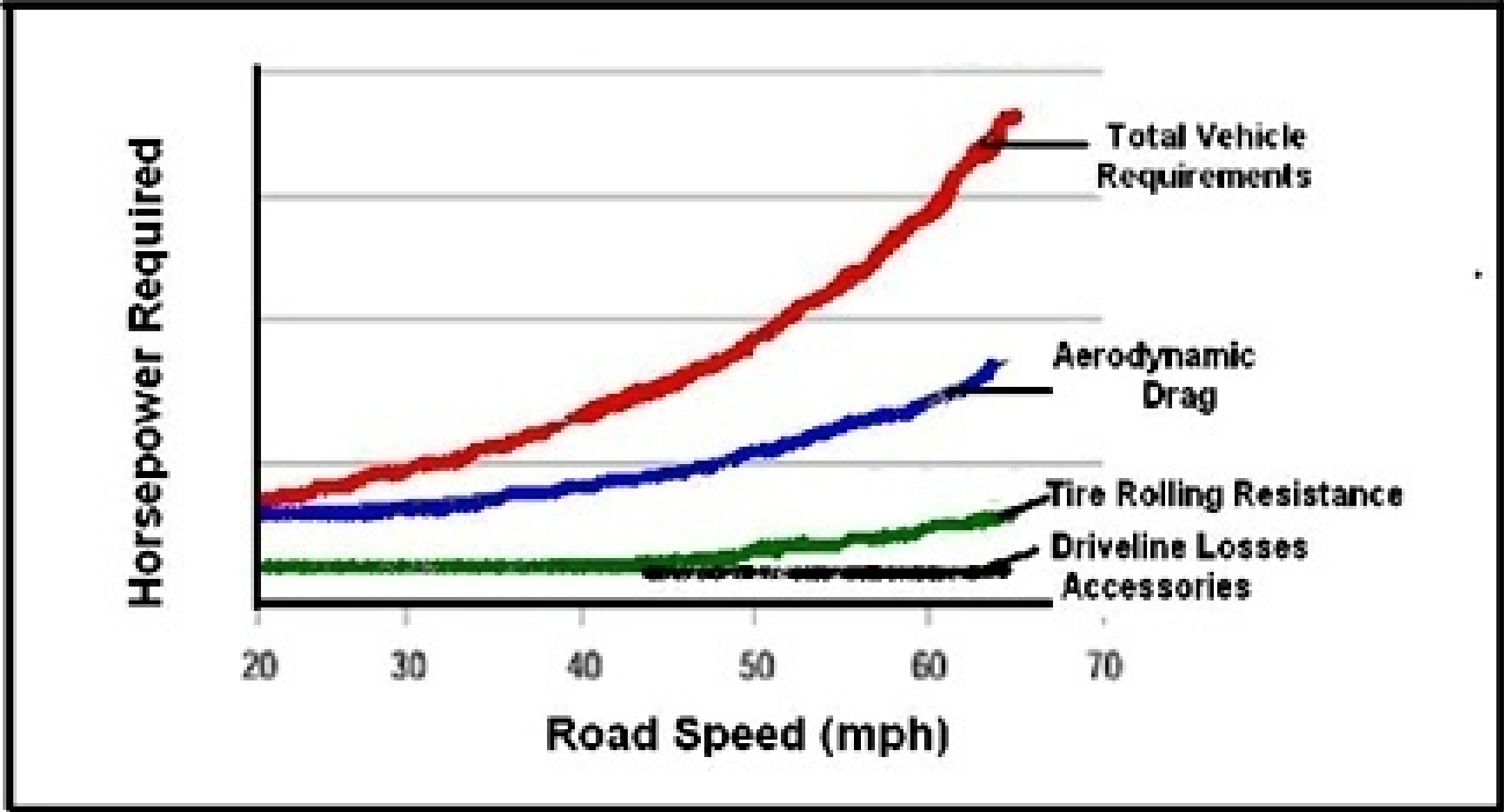
On-Highway Diesel Fuel Prices



Source: Energy Information Administration

| | miles | mpg | price/gall | | | | |
|-------|-------------|-------------|-------------|-------------|---------|---------|--|
| | 110000 | 8 | \$ 2.50 | \$ 3.00 | \$ 3.50 | \$ 4.00 | |
| | 110000 | 8.3 | \$ 2.50 | \$ 3.00 | \$ 3.50 | \$ 4.00 | |
| | | 1.0375 | | | | | |
| | @ 2.5 | @ \$3 | @ \$3.5 | @ \$4 | | | |
| @8 | \$34,375.00 | \$41,250.00 | \$48,125.00 | \$55,000.00 | | | |
| @ 8.3 | \$33,132.53 | \$39,759.04 | \$46,385.54 | \$53,012.05 | | | |
| diff | \$ 1,242.47 | \$ 1,490.96 | \$ 1,739.46 | \$ 1,987.95 | | | |

Details...
Procedures, Methodology & CV's
Gasoline
Diesel fuel
Geographical
Gasoline:
• Gasoline prices by region
• Reformulated gasoline map
• Map of states in each region
• Gasoline city definitions



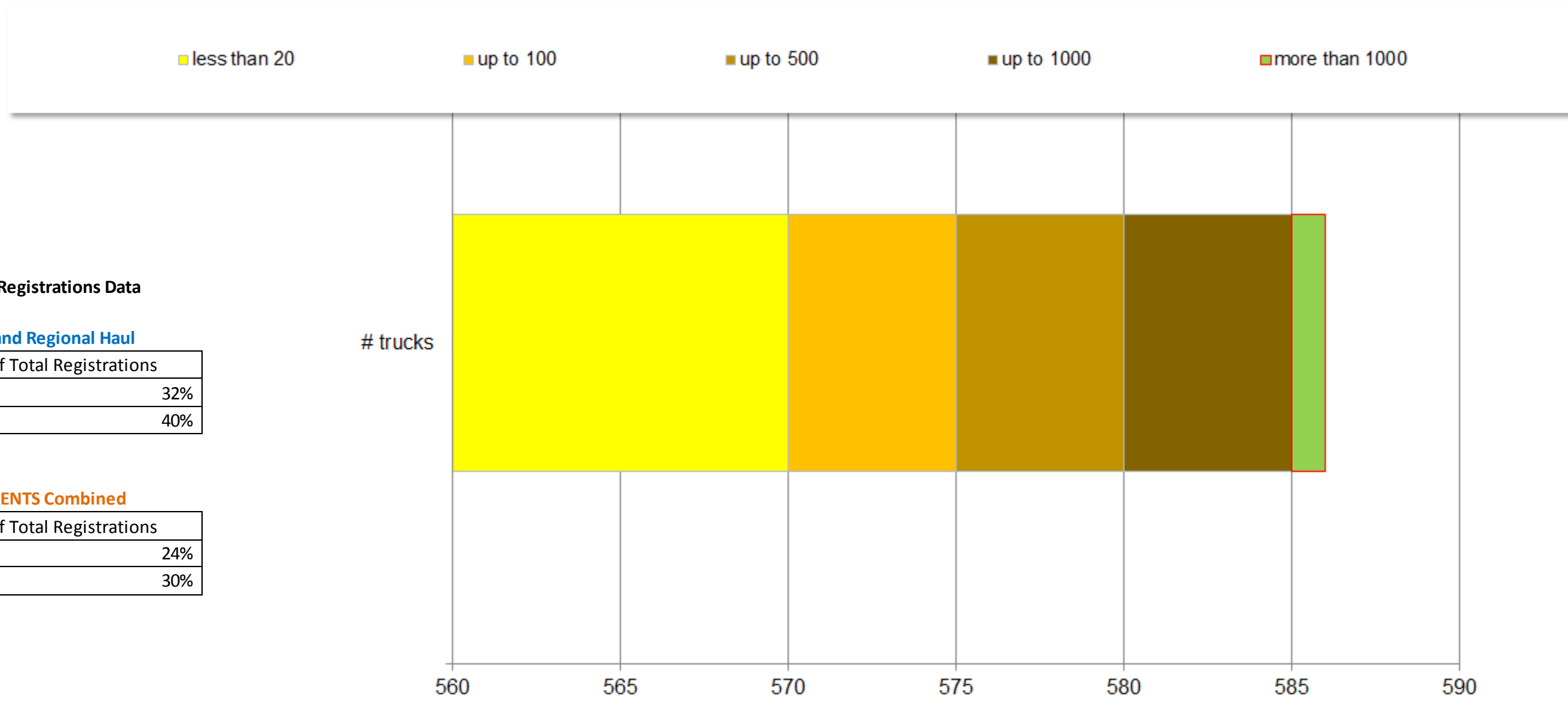
RANKINGS

| Rank 2016 | Rank 2015 | Company | Revenue (000) | Net Income (000) | Employees | Tractors | Trailers |
|-----------|-----------|-----------------------------------|---------------|------------------|-----------|----------|----------|
| 1 | 1 | UPS Inc. | 58,400,000 | 4,800,000 | 444,000 | 109,423 | |
| 2 | 2 | FedEx Corp. | 49,600,000 | 2,866,000 | 340,000 | 27,282 | 102,014 |
| 3 | 14 | XPO Logistics | 7,623,200 | -245,900 | 87,000 | 18,051 | 27,501 |
| 4 | 3 | J.B. Hunt Transport Services Inc. | 6,187,646 | 427,235 | 21,455 | 14,002 | 29,276 |
| 5 | 5 | YRC Worldwide | 4,832,400 | 700 | 32,000 | 15,100 | 45,000 |
| 6 | 6 | Swift Transportation | 4,229,322 | 197,577 | 21,000 | 19,864 | 65,233 |
| 7 | 7 | Schneider | 4,000,000 | | 18,132 | 13,020 | 33,830 |
| 8 | 8 | Hub Group | 3,525,595 | 70,949 | 2,605 | 2,844 | 452 |
| 9 | 10 | Landstar System | 3,321,091 | 147,689 | 1,223 | 9,237 | 14,761 |
| 10 | 9 | TFI International | 3,154,018 | 127,915 | 15,496 | 5,938 | 17,706 |

| Rank 2016 | Rank 2015 | Company | Revenue (000) | Net Income (000) | Employees | Tractors | Trailers |
|-----------|-----------|-------------------------------|---------------|------------------|-----------|----------|----------|
| 90 | 93 | Brown Integrated Logistics | 216,236 | | 1,150 | 1,110 | 5,100 |
| 91 | 89 | Transport Investments Inc. | 215,408 | | | 773 | 1,000 |
| 92 | 95 | A&R Logistics | 211,000 | | 1,100 | 850 | 1,200 |
| 93 | 100 | Wheaton World Wide Moving | 209,140 | 6,926 | 180 | 717 | 1,075 |
| 94 | 101 | National Carriers | 205,000 | | 590 | 650 | 1,200 |
| 94 | 99 | Central Freight Lines Inc. | 205,000 | | | 1,250 | 2,848 |
| 96 | 102 | PGT Trucking Inc. | 204,000 | | 1,045 | 1,012 | 1,400 |
| 97 | 103 | Dupre Logistics | 201,803 | 1,308 | 1,247 | 592 | 1,018 |
| 98 | 102 | May Trucking | 200,619 | | 1,350 | 998 | 2,100 |
| 99 | 101 | Oak Harbor Freight Lines Inc. | 190,789 | | 1,450 | 656 | 1,905 |
| 100 | 94 | Fastfrate Group | 180,773 | | 830 | 621 | 965 |

About the Rankings...

Top For-hire Carriers Companies on this list are common and contract freight carriers operating in the United States and Canada. Firms are ranked on the basis of annual revenue. To be included in the Top 100 list, please send contact information to ttditor@ttnews.com. We will contact you via phone or e-mail to get information about your company prior to publication of the next Top 100 list.



2016 Truck Registrations Data

Long Haul and Regional Haul

| | % of Total Registrations |
|--------|--------------------------|
| Top 25 | 32% |
| Top 50 | 40% |

ALL SEGMENTS Combined

| | % of Total Registrations |
|--------|--------------------------|
| Top 25 | 24% |
| Top 50 | 30% |