The Fleet DNA Project:

The Fleet DNA Project aims to accelerate the development of advanced vehicle technologies while supporting the strategic deployment of market-ready technologies that reduce costs, fuel consumption, and emissions.

Designed by the U.S. Department of Energy’s National Renewable Energy Laboratory in partnership with Oak Ridge National Laboratory, the data summaries contained within this report are designed to illustrate the broad operation range of many of today’s vehicle vocations and to provide insight into key observable statistical trends.
Within This Report:

Contained within this report are graphical data summaries based on real-world “genetics” of medium- and heavy-duty commercial fleet vehicles operating within a chosen vocation.

These graphical data summaries have been selected to highlight key statistical trends observed in past U.S. DOE fleet studies, and to provide insight into potential areas of interest for the continued development of technology to reduce costs, fuel consumption, and emissions.
Breakdown of Total Operational Days Collected by Deployment for Delivery Trucks

Number of days

Deployment ID

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553
Breakdown of Total Vehicles by Deployment for Delivery Trucks

Number of Vehicles

Deployment ID

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553

NATIONAL RENEWABLE ENERGY LABORATORY
Daily Average Driving Speed vs. Kinetic Intensity for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 549

Average Driving Speed (mph)

Kinetic Intensity (1/mile)
Daily Average vs. Maximum Driving Speed for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 549
Daily Average Driving Speed Distribution for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Average Driving Speed by Deployment for Delivery Trucks

Deployment ID

Average Driving Speed (mph)

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Mean Road Grade vs. Distance Traveled for Delivery Trucks

Distance Traveled (miles)
Mean Road Grade

Number of Days

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Mean Road Grade by Deployment for Delivery Trucks

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553

NATIONAL RENEWABLE ENERGY LABORATORY
Daily Mean Road Grade vs. # of Stops per Mile for Delivery Trucks

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 549
Road Grade and Distance Correlation Examined for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Average Driving Speed and Distance Correlation Examined for Delivery Trucks

Distance, Mile
- Maximum
- Minimum

Average Acceleration (ft/s²)

Average Driving Speed (mph)

# of Stops per Mile

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553
Detailed Average Driving Speed and Distance Correlation Examined for Delivery Trucks

- Number of Vehicles Reporting: 36
- Number of Days Included: 553
- Generated: Thu Aug 07, 2014
Stops per Mile and Distance Correlation Examined for Delivery Trucks

Average Acceleration (ft/s²)

Distance
Maximum
Minimum

Average Driving Speed (mph)

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Stops Per Mile Distribution for Delivery Trucks

# of Stops Per Mile

Frequency

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553
Daily Total Number of Stops vs. Distance Traveled for Delivery Trucks

# of Vehicles Reporting: 36

Generated: Thu Aug 07, 2014

# of Days Included: 551
Maximum Driving Speed Distribution for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Distance Traveled by Deployment for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Operating Distance Distribution for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Zero Speed Cycle Percentage Distribution for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Zero Speed Cycle Percentage by Deployment for Delivery Trucks

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553

Deployment ID

Zero Speed Time (% of Cycle)

29  40  41  43  47  56

20  40  60  80

0  20  40  60  80  100

NATIONAL RENEWABLE ENERGY LABORATORY
Captured Operating Time by Speed Bin (mph) for Delivery Trucks

- Driving Speed (mph):
  - 0+ to 5
  - 5+ to 10
  - 10+ to 15
  - 15+ to 20
  - 20+ to 25
  - 25+ to 30
  - 30+ to 35
  - 35+ to 40
  - 40+ to 45
  - 45+ to 50
  - 50+ to 55
  - 55+ to 60
  - 60+ to 65
  - 65+ to 70
  - 70+ to 75
  - 75+

- Quantity of Data Captured (hrs):
  - 10
  - 20
  - 30
  - 40
  - 50
  - 60
  - 70
  - 80

- # of Vehicles Reporting: 36
- Generated: Thu Aug 07, 2014
- # of Days Included: 553
Captured Operating Time by Speed Bin (mph) for Delivery Trucks

- Driving Speed (mph)
  - 0+ to 5
  - 5+ to 10
  - 10+ to 15
  - 15+ to 20
  - 20+ to 25
  - 25+ to 30
  - 30+ to 35
  - 35+ to 40
  - 40+ to 45
  - 45+ to 50
  - 50+ to 55
  - 55+ to 60
  - 60+ to 65
  - 65+ to 70
  - 70+ to 75
  - 75+

- # of Vehicles Reporting: 36
- Generated: Thu Aug 07, 2014
- # of Days Included: 553
Total Mileage Collected by Speed Bin (mph) for Delivery Trucks

Driving Speed (mph) | 0+ to 5 | 5+ to 10 | 10+ to 15 | 15+ to 20 | 20+ to 25 | 25+ to 30 | 30+ to 35 | 35+ to 40 | 40+ to 45 | 45+ to 50 | 50+ to 55 | 55+ to 60 | 60+ to 65 | 65+ to 70 | 70+ to 75 | 75+ |
---------------------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
Total Miles Collected | 0       | 1000    | 2000     | 3000      | 4000      | 5000      | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0     |

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553
Total Mileage Collected by Speed Bin (mph) for Delivery Trucks

- 0+ to 5
- 5+ to 10
- 10+ to 15
- 15+ to 20
- 20+ to 25
- 25+ to 30
- 30+ to 35
- 35+ to 40
- 40+ to 45
- 45+ to 50
- 50+ to 55
- 55+ to 60
- 60+ to 65
- 65+ to 70
- 70+ to 75
- 75+

Driving Speed (mph) % of Miles Collected

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553
Daily Average Acceleration Rate for Delivery Trucks

Average Acceleration (ft/s^2)

Frequency

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553
Daily Maximum Acceleration Rate for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Average Deceleration Rate for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Average Deceleration vs. Maximum Deceleration for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Maximum Deceleration Rate for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Operating Time vs. Distance Traveled for Delivery Trucks

Operating Time (hrs) vs. Distance Traveled (miles)

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Daily Operating Time vs. Average Driving Speed for Delivery Trucks

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 552
Daily Operating Time Distribution for Delivery Trucks

# of Vehicles Reporting: 36  Generated: Thu Aug 07, 2014  # of Days Included: 553
Operating Time by Deployment for Delivery Trucks

# of Vehicles Reporting: 36
Generated: Thu Aug 07, 2014
# of Days Included: 553
Interested in Participating?

The statistical summaries presented in this report were generated with the support of a variety of organizations. It is through the continued support of these partner organizations that Fleet DNA continues to grow.

For more information about the project or to discuss partnership opportunities including contribution of data to the database, please contact:

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