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 Miles Collected by Deployment for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Daily Average Driving Speed vs. Kinetic Intensity for Class 8 Tractors

# of Vehicles Reporting: 70  # of Days Included: 1146  Generated: Thu Aug 07, 2014
Daily Average Driving Speed vs. Distance Traveled for Class 8 Tractors

Average Driving Speed (mph)

Distance Traveled (miles)

Number of Days

# of Vehicles Reporting: 70

Generated: Thu Aug 07, 2014

# of Days Included: 1150
Daily Average vs. Maximum Driving Speed for Class 8 Tractors

Maximum Driving Speed (mph)

Average Driving Speed (mph)

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1146
Daily Average Driving Speed Distribution for Class 8 Tractors

# of Vehicles Reporting: 70  Generated: Thu Aug 07, 2014  # of Days Included: 1150

Average Driving Speed (mph)

Frequency

0 10 20 30 40 50 60 70 80 90 100 110 120

0 10 20 30 40 50 60

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Average Driving Speed by Deployment for Class 8 Tractors

# of Vehicles Reporting: 70
# of Days Included: 1150
Generated: Thu Aug 07, 2014
Daily Mean Road Grade by Deployment for Class 8 Tractors

Mean Road Grade

Deployment ID

# of Vehicles Reporting: 70  Generated: Thu Aug 07, 2014  # of Days Included: 1147
Daily Mean Road Grade vs. Average Driving Speed (mph) for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Daily Mean Road Grade vs. # of Stops per Mile for Class 8 Tractors

# of Vehicles Reporting: 70
# of Days Included: 1146
Generated: Thu Aug 07, 2014
Road Grade and Distance Correlation Examined for Class 8 Tractors

Average Driving Speed (mph)

Average Positive Acceleration (ft/s^2)

Distance

Maximum

Minimum

Mean Daily Road Grade

# of Vehicles Reporting: 70

Generated: Thu Aug 07, 2014

# of Days Included: 1150
Average Driving Speed and Distance Correlation Examined for Class 8 Tractors

Average Acceleration (ft/s^2) vs. # of Stops per Mile

- Distance, Mile Maximum
- Minimum

Average Driving Speed (mph)

# of Vehicles Reporting: 70
# of Days Included: 1150
Generated: Thu Aug 07, 2014
Detailed Average Driving Speed and Distance Correlation Examined for Class 8 Tractors

# of Stops per Mile

Average Acceleration (ft/s^2)

Distance, Mile Maximum
Minimum

Average Driving Speed (mph)

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150

NATIONAL RENEWABLE ENERGY LABORATORY
Stops per Mile and Distance Correlation Examined for Class 8 Tractors

Average Driving Speed (mph)

Average Acceleration (ft/s^2)

Distance

Maximum

Minimum

Stops per Mile

# of Vehicles Reporting: 70
# of Days Included: 1150
Generated: Thu Aug 07, 2014
Stops Per Mile by Deployment for Class 8 Tractors

# of Vehicles Reporting: 70  Generated: Thu Aug 07, 2014  # of Days Included: 1150
Daily Stops Per Mile Distribution for Class 8 Tractors

# of Vehicles Reporting: 70  Generated: Thu Aug 07, 2014  # of Days Included: 1150
Daily Total Number of Stops vs. Operating Time for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1145
Daily Total Number of Stops vs. Distance Traveled for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1082
Daily Kinetic Intensity Distribution for Class 8 Tractors

# of Vehicles Reporting: 70
# of Days Included: 1150
Generated: Thu Aug 07, 2014
Daily Distance Traveled by Deployment for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Daily Operating Distance Distribution for Class 8 Tractors

# of Vehicles Reporting: 70  Generated: Thu Aug 07, 2014  # of Days Included: 1150
Daily Zero Speed Cycle Percentage Distribution for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Captured Operating Time by Speed Bin (mph) for Class 8 Tractors

Quantitative Data Captured (hrs):
- 100
- 200
- 300
- 400

Captured Operating Time by Driving Speed Bin (mph) for Class 8 Tractors:

- 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: 70
# of Days Included: 1150

Generated: Thu Aug 07, 2014
Total Miles Collected

Driving Speed (mph)

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Total Mileage Collected by Speed Bin (mph) for Class 8 Tractors

Driving Speed (mph) | % of Miles Collected
--- | ---
0+ to 5 | 0
5+ to 10 | 0
10+ to 15 | 0
15+ to 20 | 0
20+ to 25 | 0
25+ to 30 | 0
30+ to 35 | 0
35+ to 40 | 1
40+ to 45 | 1
45+ to 50 | 1
50+ to 55 | 20
55+ to 60 | 10
60+ to 65 | 1
65+ to 70 | 1
70+ to 75 | 1
75+ | 0

Driving Speed (mph) | % of Miles Collected
--- | ---
0+ to 5 | 0
5+ to 10 | 0
10+ to 15 | 0
15+ to 20 | 0
20+ to 25 | 0
25+ to 30 | 0
30+ to 35 | 0
35+ to 40 | 0
40+ to 45 | 0
45+ to 50 | 0
50+ to 55 | 18
55+ to 60 | 2
60+ to 65 | 0
65+ to 70 | 0
70+ to 75 | 0
75+ | 0

# of Vehicles Reporting: 70  # of Days Included: 1150
Generated: Thu Aug 07, 2014
Daily Average Acceleration Rate for Class 8 Tractors

- Frequency
- Average Acceleration Rate
- # of Vehicles Reporting: 70
- Generated: Thu Aug 07, 2014
- # of Days Included: 1150
Daily Average Acceleration vs. Maximum Acceleration for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Daily Maximum Acceleration Rate for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Daily Average Deceleration Rate for Class 8 Tractors

# of Vehicles Reporting: 70  Generated: Thu Aug 07, 2014  # of Days Included: 1150
Daily Average Deceleration vs. Maximum Deceleration for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Daily Maximum Deceleration Rate for Class 8 Tractors

Frequency

Maximum Deceleration (ft/s^2)

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Daily Operating Time Distribution for Class 8 Tractors

# of Vehicles Reporting: 70
Generated: Thu Aug 07, 2014
# of Days Included: 1150
Operating Time by Deployment for Class 8 Tractors

- # of Vehicles Reporting: 70
- Generated: Thu Aug 07, 2014
- # of Days Included: 1150
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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