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 Vehicles by Deployment for Refuse Trucks

Number of Vehicles

Deployment ID

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Breakdown of Total Miles Collected by Deployment for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Daily Average Driving Speed vs. Kinetic Intensity for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 384
# Daily Average Driving Speed vs. Distance Traveled for Refuse Trucks

Distance Traveled (miles) vs. Average Driving Speed (mph)

- # of Vehicles Reporting: 39
- Generated: Thu Aug 07, 2014
- # of Days Included: 387

Number of Days

- From 1.0 to 5.0

Data generated by:
- National Renewable Energy Laboratory
Average Driving Speed by Deployment for Refuse Trucks

Average Driving Speed (mph)

Deployment ID

# of Vehicles Reporting: 39
# of Days Included: 387

Generated: Thu Aug 07, 2014
Daily Mean Road Grade vs. Average Driving Speed (mph) for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Daily Mean Road Grade vs. # of Stops per Mile for Refuse Trucks

# of Vehicles Reporting: 39
# of Days Included: 383
Generated: Thu Aug 07, 2014
Road Grade and Distance Correlation Examined for Refuse Trucks

Average Driving Speed (mph)

Average Positive Acceleration (ft/s^2)

Road Grade and Distance Correlation Examined for Refuse Trucks

Mean Daily Road Grade

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 387
Average Driving Speed and Distance Correlation Examined for Refuse Trucks

# of Stops per Mile

Average Acceleration (ft/s²)

Average Driving Speed (mph)

Distance, Mile Maximum
Minimum

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Detailed Average Driving Speed and Distance Correlation Examined for Refuse Trucks

<table>
<thead>
<tr>
<th>Distance, Mile</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>20</td>
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<td>40</td>
</tr>
<tr>
<td>40</td>
<td>45</td>
<td>50</td>
</tr>
</tbody>
</table>

Average Acceleration (ft/s^2)

# of Vehicles Reporting: 39
# of Days Included: 387
Generated: Thu Aug 07, 2014
Stops per Mile and Distance Correlation Examined for Refuse Trucks

Average Driving Speed (mph)

Average Acceleration (ft/s^2)

Stops per Mile

# of Vehicles Reporting: 39
# of Days Included: 387
Generated: Thu Aug 07, 2014
Daily Stops per Mile vs. Average Driving Speed for Refuse Trucks

- # of Vehicles Reporting: 39
- Generated: Thu Aug 07, 2014
- # of Days Included: 384
Stops Per Mile by Deployment for Refuse Trucks

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 387

Deployment ID

# of Stops Per Mile

16 30 31 61 62

# of Stops Per Mile

16 30 31 61 62
Daily Stops Per Mile vs. Kinetic Intensity for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387

Kinetic Intensity (1/mile)

Number of Days

# of Stops Per Mile

Generated: Thu Aug 07, 2014
Daily Stops Per Mile Distribution for Refuse Trucks

# of Stops Per Mile

Frequency

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 342
Daily Total Number of Stops vs. Distance Traveled for Refuse Trucks

Distance Traveled (miles)

Total Number of Stops

# of Vehicles Reporting: 34
Generated: Thu Aug 07, 2014
# of Days Included: 196
Maximum Driving Speed Distribution for Refuse Trucks

# of Vehicles Reporting: 39  # of Days Included: 387  Generated: Thu Aug 07, 2014
Daily Operating Distance Distribution for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Daily Zero Speed Cycle Percentage Distribution for Refuse Trucks

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 387
Daily Zero Speed Cycle Percentage by Deployment for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387

Deployment ID

Zero Speed Time (% of Cycle)

0 20 40 60 80 100

16 30 31 61 62

Deployment ID

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387

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

- **Quantity of Data Captured (hrs)**
  - 50
  - 100
  - 150
  - 200
  - 250

- **Captured Operating Time by Speed Bin (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+

- **Driving Speed (mph)**
- **# of Vehicles Reporting:** 39
- **Generated:** Thu Aug 07, 2014
- **# of Days Included:** 387
Frequency

Average Acceleration Rate for Refuse Trucks

Average Acceleration (ft/s^2)

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Daily Average Acceleration vs. Maximum Acceleration for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Daily Maximum Acceleration Rate for Refuse Trucks

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 387

Maximum Acceleration Rate for Refuse Trucks

Frequency

Maximum Acceleration (ft/s^2)
Daily Average Deceleration Rate for Refuse Trucks

Average Deceleration (ft/s^2)

Frequency

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 387
Daily Average Deceleration vs. Maximum Deceleration for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Daily Maximum Deceleration Rate for Refuse Trucks

# of Vehicles Reporting: 39
Generated: Thu Aug 07, 2014
# of Days Included: 387
Daily Operating Time vs. Distance Traveled for Refuse Trucks

Distance Traveled (miles)

Operating Time (hrs)

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 387
Daily Operating Time vs. Average Driving Speed for Refuse Trucks

# of Vehicles Reporting: 39  Generated: Thu Aug 07, 2014  # of Days Included: 386
Daily Operating Time Distribution for Refuse Trucks

- # of Vehicles Reporting: 39
- Generated: Thu Aug 07, 2014
- # of Days Included: 387
Operating Time by Deployment for Refuse Trucks

# of Vehicles Reporting: 39
# of Days Included: 387
Generated: Thu Aug 07, 2014
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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