Lessons Learned for Truck Freight

Dave Schaller
August 22, 2018
North American Council for Freight Efficiency (NACFE)

• Unbiased, non-profit
• Mission to double freight efficiency
• Fleets, manufacturers, shippers, software, governments, associations, etc.
• Scale available technologies
• Guide future change

www.NACFE.org
NACFE Website

- **Technology Overviews** (Benefits & Challenges)
- **Run On Less** Event & Results
- Reports (Guidance, Confidence, Collaboration & others)
- Videos
- Events
- Sponsors
- Workshops
- ROI Payback tools
- Contact Info
- Hire NACFE
- **Compatible with tablets, PC’s and smartphones**
Complete, unbiased review of available technologies for fleet confidence to adopt.

- Tire Pressure Systems
- 6x2 Axles
- Idle Reduction
- Transmissions
- Engine Parameters
- LRR Tires
- Lightweighting
- Downspeeding
- Maintenance for FE
- Trailer Aerodynamics
- Tractor Aerodynamics
- Lubricants
- Platooning
- Engine Accessories
- Solar
Annual Fleet Fuel Study

- 2018 Press release on August 28th at 11 AM EDT
- Report & Tools will be available on-line at no charge
- Includes fleet Specification Benchmarking spreadsheet
RUN ON LESS - SEPTEMBER 2017

A first-of-its-kind cross-country roadshow to showcase advancements in freight efficiency.

RESULTS

<table>
<thead>
<tr>
<th>Gallons Saved</th>
<th>$7,193</th>
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<tbody>
<tr>
<td>2,877</td>
<td></td>
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FLEETS

TODAY'S TECHNOLOGIES

FOLLOW THE FLEETS

- Remove Overlay
- Wind
- Temperature
- Precipitation

STORIES FROM THE ROAD

RUN ON LESS REVEALS FINAL RESULTS IN ATLANTA

STORY CHERRY ANNOUNCES MID RUN RESULTS

10.1 MPG
Run On Less 2.0: Final Mile

September 2017
• Long Haul Focused
• 10.1 MPG
• 6 Fleets + 1 Owner-Operator

Huge Visibility & New Benchmarks

September 2019
• FINAL MILE Focused
• New metrics (efficiency/productivity)
• Seeking participants & sponsors

Plan to educate as seasonal deliveries start

Run On Less 2.0 Your Town/Fleet

Next Turn 0.2 Miles
NACFE is fuel agnostic: use whichever fuel is best for you

More EFFICIENCY & Less ANXIETY!
SOLAR ON TRACTORS & TRAILERS

Report Package
News Bulletin June 28, 2018
Executive Summary
Two Technology Web Pages
Full Report
Video
Payback Calculator
Confidence Matrix
ACTNews Webinar 7/25
Findings

- Panels are flexible, thin, easily installed and reliable. Some use cases are an excellent application of the technology.

- Fuel savings are generally a very small part of the overall benefit.

- Solar panel installations need to be sized appropriately for their intended application.

- There is limited hard evidence at this point from fleets on payback. The biggest benefits coming from extending battery life and avoiding emergency roadside assistance for dead batteries.
GUIDING FUTURE CHANGE

NOW
- Build a Culture of Methodically Choosing Technologies
- Keep Equipment Well Maintained
- Adopt Appropriate Trailer Aerodynamics
- Provide Tools to Reduce Idle Time
- Embrace Low Rolling Resistance Tires

Evolve
- Educate and Incent Conscientious Drivers
- Implement the Right Axle Configuration
- Use Downsized Powertrains and AMTs
- Optimize Cruise Control and Vehicle Speed
- Buy All Available Tractor Aerodynamics

Revolution
- Truck Platooning
- Variable Engine Accessories
- Solar Panels
- Electric Trucks
- Self-Driving Trucks

SCALE AVAILABLE TECHNOLOGIES
PROMOTE EMERGING TECHNOLOGIES
GUIDE FUTURE CHANGE

NACFE
NORTH AMERICAN COUNCIL FOR FREIGHT EFFICIENCY
“Electric Trucks, Where They Make Sense”

Report Package
Executive Summary
10 Arguments Infographic
Technology Web Page
Video
MD & HD Parity Charts
Full Report
204 Source Bibliography &
31 New Graphics

Online at (https://nacfe.org/future-technology/)
COMMON THEMES

- Duty Cycles and Fleet Business Models Matter
- Weight
  - Cube vs. Gross Out
  - Significant engine related weight removed
- Charge Times
  - Time @ pump vs. Time @ charger
  - Large amount of fuel storage
  - Use of truck asset
- Cost
  - Complex calculations
• Medium duty greatest near term potential.
• CBEVs will happen under marketplace scrutiny.
  o Parity charts detail 22 attributes for decision making.
• Must be reliable, but new technology growing pains.
• Rapid improvement will continue with CBEVs while engines are more mature.
• Maintenance and service should decrease but needs to be understood.
• Total cost of ownership calculations are very complex.
• New business models emerging for infrastructure, finance, etc.
THANK YOU – See you in Durham!!

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Mike Roeth, 260.750.0106, mike.roeth@nacfe.org
Dave Schaller, 260.602.5713, david.schaller@nacfe.org