



Alternatives to Truck Engine Idling

“It is impossible to enjoy idling thoroughly unless one has plenty of work to do.”

Jerome K. Jerome





Who, What, Where, When, Why, and How?

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Who?

- Applications and Vocations
 - Long Haul
 - Line Haul
 - P & D
 - Emergency Service
 - Power / Utility
 - Refuse / Recycling
 - Construction
 - Concrete Mixer
 - -----→



More “Who”...

- Drivers
- Motor Carriers
- Shippers / Receivers
- Travel Centers
- Governments



What?

- What is the motivation?
 - Safety
 - Cost
 - Productivity
- What are possible solutions?
 - What is available “now”
 - What the future might offer...



Where?

- Government owned / operated facilities
 - Weigh / Inspection areas
 - Public Rest Areas
 - Shipping / Receiving
- Travel Centers
 - Fuel Island
 - Parking
- Motor Carrier Terminal



When?

- 3 Minutes...
- 10 Minutes...
- 20 Minutes...
- 10 Hours...
- 34 Hours...
- Until the thaw...



Driver “technology”

Provide incentives through programs to encourage idle reduction where appropriate.

Positive:

- Low Cost
- Drivers have an option to participate
- Additional pay for drivers
- Reinforce correct behavior

Negative:

- Complex, difficult to manage
- Requires engine recording
- Negative driver perception
- Does not eliminate idling



Diesel Fired Cab Heaters



Small diesel fired furnace for heating cab when engine is off



Positives:

- Offers some cost payback
- Ease of operation
- Compact, don't take up a lot of room
- .07 Gallons/hour fuel use
- Provide more than enough heat in all winter temps

Negatives:

- Does not have full payback
- Drivers leave it on entire time truck is parked
- Some battery usage
- Risk of jump start below 10° F



Cab and Coolant Heaters



Heat engine coolant keeping engine and cab warm



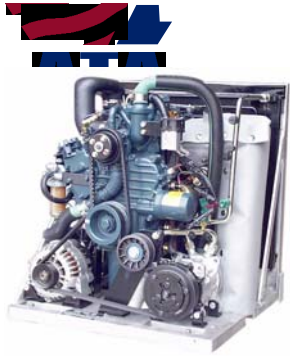
Positives:

- Heat both engine and cab
- Simple to use
- Compact, don't take up a lot of room

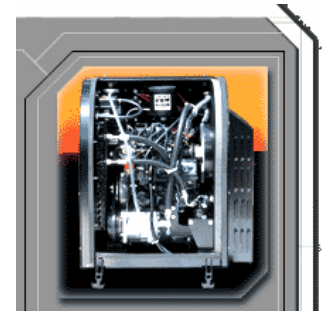
Negatives:

- Battery power requirements
- No cost payback
- Additional complexity, requires tie in to engine and heating systems

Gensets



Diesel powered generators provide cab heating, cooling, electrical, charging and engine heat



Positives:

- Gensets do it all
- Ease of operation for drivers

Negatives:

- Very high cost
- PM interval is half tractor interval
- No cost payback
- .2 gal/hr Vs .75 for engine
- Added maintenance costs
- Some soon to be “outlawed”

Remote Heating and Cooling Solutions



Off-board heating and cooling solutions.
Removable ductwork connects to tractor

Positives:

- Require no separate components on tractor
- Pay as you go
- Offer drivers internet and phone connectivity

Negatives:

- 80% of drivers park at or near customer locations, not truck stops or waysides
- No infrastructure exists or is likely to exist in near future
- Per hour cost is more than break even
- Risk of jump start below 10



110 Volt Systems

Uses a 110 volt RV Style A/C system to cool truck during engine off. Works off of a plug in or inverter and battery pack.

Positives:

- Provide adequate air conditioning in all temps
- Easy to use
- Experience in RV industry makes it a mature product
- Mobile Solution

Negatives:

- Cost
- No 110 Volt infrastructure and none on horizon
- Battery pack with inverter needed, cost, weight



12 Volt Systems

Uses a 12 volt A/C compressor and battery pack / ultra capacitors for engine off A/C.

Positive:

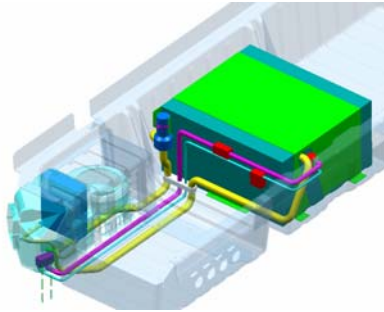
- Decent capacity for cooling
- Battery life looks good
- Potential to displace sleeper A/C unit
- Mobile Solution

Negative:

- Cost
- Requires additional battery pack
- Limited capacity
- Unknown durability
- Cooling only



Phase Change Storage Systems



Utilizes existing tractor air conditioning to charge a storage system. Discharged during breaks

Positives:

- Lowest cost A/C approach
- Can be integrated with bunk A/C
- Mobile solution
- Very low noise

Negatives:

- Capacity, weak performance over 90° F ambient
- Poor tractor insulation capabilities
- Requires cocooning for maximum performance
- High driver interface



*There are no solutions that offer a
payback for heating and cooling!*



How do we move forward?

Government Support:

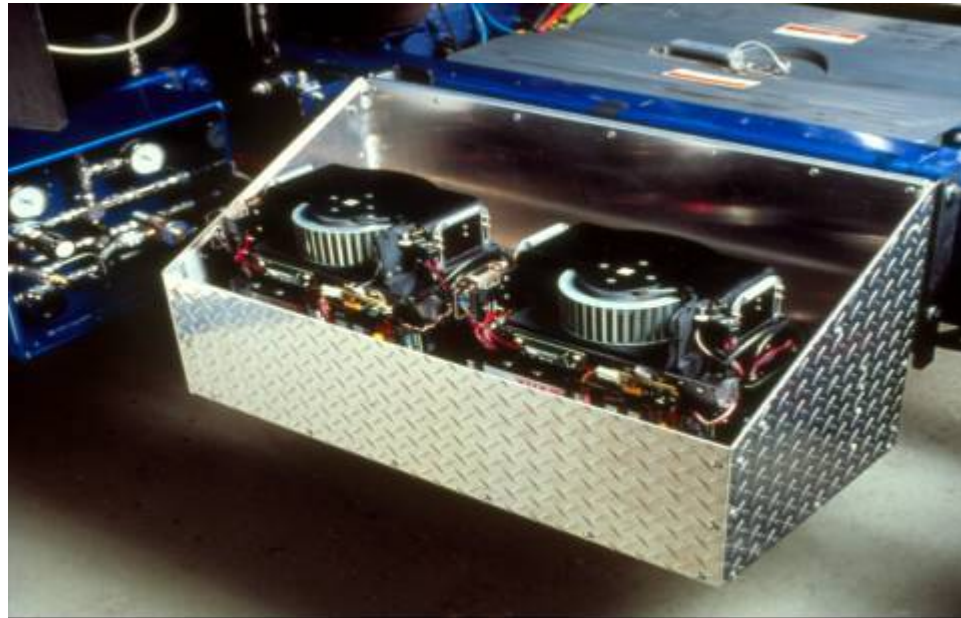
- Focus on solutions and not tickets
- Support for legitimate development
- Incentives for more in depth cooperative evaluations
- Weight offsets for idle technologies

Industry Support:

- Lead-Tractor manufacturers
- Cost effective, integrated solutions
- More effort on work to find a solution
- Stronger partnerships with motor carriers and service providers



Future?





Let Sleeping Drivers Sleep!





Thank You

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or

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