

Welcome to the National Academies, TRB 92nd Annual Meeting
"Deploying Transportation Research - Doing Things Smarter, Better, Faster"

**The National Academies
Transportation Research Board
(TRB)
EMS Transport Safety ANB10(5)
January 2013 Subcommittee
Meeting**

**Thursday January 17th 8-12.30
at Keck Center Room 101**



TRB TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

Transportation Research Board 92nd Annual Meeting,
National Academies Washington, DC, January 17th, 2013
"Deploying Transportation Research - Doing Things Smarter, Better, Faster"

**Emergency Medical Services Transport Safety
Subcommittee ANB 10 (5)
2013 January Meeting:
ANB10(5) – EMS Transport Safety
and Technical Science, Guidelines
and Standards**

Nadine Levick, MD MPH
Chair Emergency Medical Services Subcommittee ANB10 (5), TRB
CEO, Research Director, EMS Safety Foundation
Eileen Frazer RN
Co-Chair ANB10(5) TRB
Executive Director of Commission on Accreditation of Medical
Transport Systems (CAMTS)



TRB TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

**Emergency Medical Services Safety
Subcommittee ANB10(5)
of the Transportation Research Board
Thursday January 17th, 2013
8.00 am – 12.30 pm
also via Webinar, Washington DC**

Chair – Nadine Levick MD, MPH
Co-Chair – Eileen Frazer RN

Sponsored by Transportation Safety
Management Committee (ANB10) –

TRB TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

**This years TRB theme -
"Deploying Transportation
Research - Doing Things
Smarter, Better, Faster"**



TRB TRANSPORTATION RESEARCH BOARD
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**Fleet management
approaches**

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Fleet Management technologies

- ACETech/Ferno
- FleetEyes – Intermedix
- Zoll rescuenet and roadsafety fleet management systems
- Marvlis
- Telematicus
- Optima
- Northrop Grumman




TRB TRANSPORTATION RESEARCH BOARD
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Data Collection & Driver Feedback System

- Onboard computer installed in each vehicle to assess driving performance
- Audible feedback puts drivers in control of performance



Onboard Computer




Audio Speaker

ZOLL

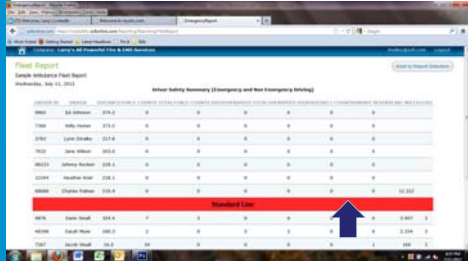
Data Upload and Reporting

Data collected onboard is transferred via wireless data hub to ZOLL online for reporting and analytics.



ZOLL

5% of Drivers Cause 95% of Problems





Identify safe, efficient drivers and provide additional incentives and rewards.

Identify and manage the exceptions.

ZOLL

ABC's of Safe Driving

- Driver grading system
- Average miles
- Between
- Counts (violations)

ZOLL

Other events and behaviors monitored

- Braking, acceleration and side/sway forces
- Emergency lights and sirens
- Engine RPM
- Engine idle time (indicates wasted fuel)
- Distance driven
- Turn signals
- Numerous others—what's important to you?

ZOLL

Are You Reactive or Proactive?

- Reactive
 - Review incidents days or weeks later
- Proactive
 - Identify and modify risky driving immediately
 - Arrive safely on scene serving community



Communications Central

- Road Safety is a Wi-Fi Hotspot!!
- Can connect all Wi-Fi devices in the vehicle:
 - Mobile Data Terminals
 - ePCR
 - Defibs
- GPS built into the Units
 - Ties Road Safety events to a location
 - Viewable on a map in the event detail report
 - GPS data can be sent to as many as 4 separate locations
- Provides Real-Time Alerts: Email and SMS
 - Diagnostic Trouble Codes can be provided to fleet
 - Safety Alerts provided to office in dangerous situations



ZOLL

Telematics

CABIS® Business Solutions



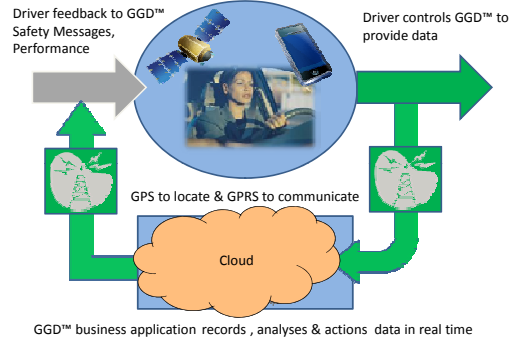
Global Green Drivers

“Low Cost Safe Driving Platform”

Software solutions for business process operations and management

Telematics

CABIS® Business Solutions



Software solutions for business process operations and management

Telematics

CABIS® Business Solutions

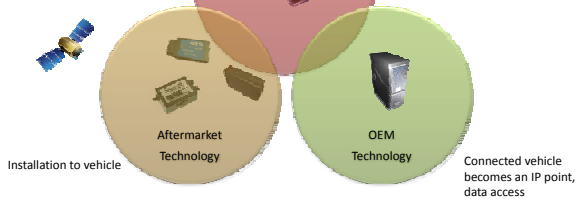
“Convergence?”

More information via Bluetooth OBDII, Black Boxes

- More refined braking
- Specific data e.g. Seat Belts
- Tracking of vehicle.

Handheld device collects and communicates key data

- Speed
- Braking & Acceleration
- Time & Location
- Pictures & Video



Software solutions for business process operations and management

Telematics

CABIS® Business Solutions

Safety Capability

- Driver Alarm
 - Instant SMS & Email location
- Driver Risks
 - Scorecards and Graphs
 - Automated Messages
 - Training
- Trip playback
 - Speed, Braking, Acceleration
- Incident Recording
 - Accident/Breakdown
 - Photographs



Software solutions for business process operations and management

Slide 17

AMD10 A core part of the OEM technology is Infotainment where there are opportunities for advertising and pay for media (music, video) services.

Given a lead in this area and openness (points of integration) for other categories of application including social media, travel, insurance/safety/risk management the Smart Phone becomes a useful platform for user interaction removing the costs of display in lower value marques. It will be resisted or dismissed by the more expensive marques e.g. Mercedes.

DoreA, 11/9/2011

AMD11 For safety simply adding OBDII with minimal cost of install provides "high resolution" acceleration analysis.

DoreA, 11/9/2011

Incident Reporting global green drivers

GGD Data Capture

- Real time
- Key details
- Photographs
- Details on application

Business System

- Individual records linked to drivers and vehicles
- Action planning and assignment
- Attachments e.g. photos

Reports

- Launch accident reporting process
- Export to Excel for manipulation
- Scorecard or crystal reporting

Telematics global green drivers

CABIS® Business Solutions

So What

- Capability
- Computing Power
- Convergence
- Costs

Software solutions for business process operations and management

Telematics

“Capabilities”

Licence Check

On line Passive Risk Assess

Duty of Care Low Resolution Accel/Braking GPS Alarm

Incl. Data Analysis Action Feedback Reports

Driver Safety Message Accident Report Training GPS

OBDII Fault Codes * With handheld device

Black Box High Resolution Accel/Braking GPS

CANbus Fleet Mgt Speed, Idling Seat Belts

On Line

Mobile/Driver Focus

Fixed/Vehicle Install

← per driver/vehicle per month from low to high cost →

Software solutions for business process operations and management

Integrated business system global green drivers

Outlook view on home page with GGD modules included

List of Drivers within the system with key details, easy access to sorting information.



Emergency Vehicle Intelligence

The Future Is Now with

The ACETECH System provides system wide, on-board intelligence that improves the efficiency and safety of your emergency vehicles and staff, while reducing your operating costs.

Inspired Safety Innovation

Slide 21

AMD12 ODBII is not really a fixed install. It's a bit of a hybrid but does give "high resolution" acceleration data.


I think the duty of care picture needs to show Smart Phone as well as handheld.. This leads to £5 + £2 (OBD11) giving £7 as good competitor for £13 black box. Otherwise the £13 black box seems to offer good value for money. Plus the accelormeter in the Smart Phone offers the potential for accident detection just like the black box. An area yet to be explored.

DoreA, 11/9/2011

FERNO

Four Modular Functions

1. Vehicle operations center
 - Driver & vehicle operations
2. Patient Compartment
 - Mobile trauma bay environment; passive support
 - Communication, temperature, lighting, securement & access, storage, & overall interiorly & exterior safety
3. Medic platform – work environment & safety
 - Seating, operating areas, reach & access
4. Patient platform – care & safety focused
 - Cot & restraint system, patient care accessories



Inspired Safety Innovation

FERNO

Vehicle operations center

- Driver & vehicle operations

What are the issues?

- Safety in and of the ambulance
- Vehicle idle time and associated fuel consumption expense
- Theft of ambulance
- Theft of drugs or equipment from vehicle
- Utilization of ambulance in a terrorism act.

- Additional Operational Issues
 - Downtime and turnaround time on electrical faults on vehicles
 - Multiple on-board systems which are not integrated (electric & communication)
 - Back-end data systems which are not integrated or require manual activation

Inspired Safety Innovation

FERNO

ACETECH Core Benefit


1. Integrated/Modular Solution
2. ROI
3. Vehicle Performance
4. User Power
5. Service
 - Affordability
 - Excellent warranty
 - Reliable
 - Modular design
 - Forward thinking
 - Product/OEM Support

Inspired Safety Innovation

FERNO

Electronic Control Unit (ECU)

- The ACETECH™ ECU monitors vehicles CAN bus messaging. CAN bus is a stable high speed in-vehicle communication system.
- CAN bus is running in vehicles today. We simply tap in, read it and put vehicle information at your fingertips.
- The ACETECH™ ECU monitors vehicles CAN bus messaging. CAN bus is a stable high speed in-vehicle communication system.
- The ECU controls many devices that otherwise would require many separate controllers.
- Controllers available in 4 sizes.



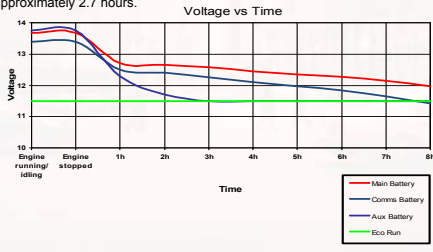
Inspired Safety Innovation

FERNO

ACETECH™ ECO-Run

This graph indicates battery drain when engine is off and on-scene lighting was active. Auxiliary battery dropped to 11.5 volts (pre-programmed ECO-RUN start) in approximately 2.7 hours.

Voltage vs Time



Time	Main Battery (V)	Comm Battery (V)	Aux Battery (V)	Eco Run (V)
Engine running/Idle	14.0	13.5	13.0	11.5
Engine stopped	13.8	13.2	12.8	11.5
1h	13.5	12.8	12.5	11.5
2h	13.2	12.5	12.2	11.5
2.7h	13.0	12.3	11.5	11.5
3h	12.8	12.2	11.5	11.5
4h	12.7	12.1	11.5	11.5
5h	12.6	12.0	11.5	11.5
6h	12.5	11.9	11.5	11.5
7h	12.4	11.8	11.5	11.5
8h	12.3	11.7	11.5	11.5

Inspired Safety Innovation

FERNO

Advanced Vehicle Informatics (AVI)

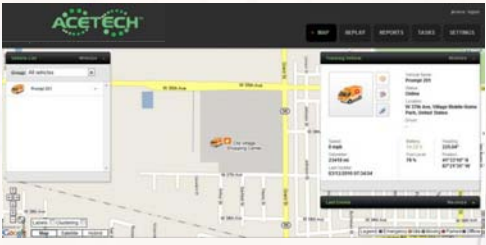
- This data feed system provides many

Vehicle Status • Stationary, • Ignition On/Off • Speed, Batteries	Tie to RFID system	Operational and Fleet Reports	Integrated Safety, Over speeding / XS G's
Lone Worker Capability/Panic Button	Remote Vehicle Diagnostics	Vehicle Tracking GPS GEO Fencing	Remote Alert Notification Texting/Email
Idle Monitoring, Carbon Monitoring	Real Time Odometer Readings	ECO Run Monitoring capability	

Inspired Safety Innovation

ACETECH™ Web


- Mapping, reports, alerts, hotspots, vehicle data



The screenshot shows a web-based interface for ACETECH. It features a central map with several orange vehicle icons. To the left is a sidebar with a search bar and a list of vehicles. To the right is a detailed information panel for a selected vehicle, including its name, status, and location. The top navigation bar includes options like 'HOME', 'DISPLAY', 'REPORTS', 'TRACKS', and 'SETTINGS'. The ACETECH logo is prominently displayed at the top left of the interface.

ACETECH™ Safety System Benefits ROI


- The following is a partial list of benefits that may be realized through a properly managed vehicle safety program.
 - Fewer collisions
 - Fewer collision/near collision related injuries
 - Reduced insurance premiums
 - Fewer lawsuits
 - Reduced repair costs
 - Fewer towing bills
 - Reduced light duty
 - Increased vehicle life
 - Less time spent investigating incidents- more time for beneficial activities
 - Improved image
 - Improved financial performance



The graphic features the words 'SAFETY FIRST' in large, bold, red capital letters. Below the text is a small illustration of a person in a white uniform holding a sign that says 'SAFETY'. The background of the graphic is white with a red border.

ACETECH™ Geo Fencing

- Set boundaries for vehicle travel and to receive automatic notification when a vehicle leaves this boundary
- Important in theft control.
- Maintain vehicles at expected locations thereby reducing response times, speeding events and fuel expense.



The image shows an aerial view of a road intersection. Green lines are overlaid on the roads, forming a boundary around the intersection. This represents the geo-fencing technology used to monitor vehicle movement.

ACETECH™ in the Future

- Advanced camera systems. Use of cameras to improve safety and security is not new. Camera systems include:
 - Rear view
 - Side View
 - Front view
- Cameras may also be used to provide real time consult with on-line medical control.



The illustration shows a car's interior dashboard. A camera view is displayed on the screen, showing the road ahead. Below the screen is a circular medical control interface with a green display and a red emergency button.

Any questions or comments?



The logo for the Transportation Research Board of the National Academies is located at the bottom of the slide. It features the acronym 'TRB' in a blue box, followed by the text 'TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES'.