In-Vehicle Monitoring Systems – An Implementation Strategy

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IVMS Implementation – Key Issues

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Chart 1. Fatal occupational injuries, by major event, 2013*

- Transportation incident: 40%
- Roadway incidents: 22%
- Violence and other injuries by persons or animals: 17%
- Contact with objects and equipment: 16%
- Falls, slips, trips: 16%
- Fire and explosions: 3%
- Exposure to harmful substances or environments: 7%
- Other: 5%
- Homicides: 9%
- Other: 8%
- Struck by object or equipment: 11%
- Falls to lower level: 13%
- Other: 3%

Total = 4,405

*Data for 2013 are preliminary.

Note: Transportation counts presented in this release are expected to rise when updated 2013 data are released in spring 2015 because key source documentation detailing specific transportation-related incidents has not yet been received. Percentages may not add to 100 due to rounding.

Traffic Fatalities Still on the Rise in West Texas as Drilling Surges

April 22, 2014 | 11:23 AM

By Tom Michael, KXWT

From KXWT West Texas Public Radio:

If you follow local headlines in Midland-Odessa, it seems like there's a fatal car crash every couple of days.

According to the Texas Department of Transportation, the oil-booming Permian Basin saw a 13 percent increase in roadside deaths from 2012-2013. Last week, a victims' rights coalition in Midland held a panel discussion on how to deal with the region's increasingly dangerous roads.

Organizers of the event say most of those wrecks stem from the "3 D's" – drugs, drinking and distracted driving. But the oil and gas boom in the Basin is compounding those dangers: simply put, there's just more traffic and bigger trucks on the road than before.

Journey Management

- Management champion / safety committee
- Goals / Metrics
- Risk Assessment / Driving JSA
- Vehicle Specifications
- Driver Record Review
- Policy on use of Phone / Radios / GPS
- Standards for New Driver
- Guideline for Fatigue Management
- Driver Training
- Inspect/Maint Program
- Foul Weather Travel Restrictions
- Journey Management Plans
- Project Transportation Plans
- Transportation Safety Specialists

• In-Vehicle Monitoring System
History of IVMS

10+ Years Ago
• Big, expensive, high maintenance, & basic data

5 Years Ago
• Much smaller, cheaper, easier to install, gathering more data required to assess risk

2006: Cartasite’s innovative system adding accelerometer information

2010 to date: Cartasite’s ROVR
Case Study

ConocoPhillips Fleet

All of COP – 1503 vehicles being monitored
- Lower 48 – 1297
  - GCBU – 570
  - MCBU – 460
  - Rockies – 267
- Canada – 206

Total Distance Driven – 17,426,101 miles
- Lower 48 – 16,691,710 mi.
  - GCBU – 7,271,617 mi.
  - MCBU – 6,426,583 mi.
  - Rockies – 2,993,510 mi.
- Canada – 734,391 mi.
ConocoPhillips Lower48
Performance since Implementation

Overall Safety Score

<table>
<thead>
<tr>
<th>Month</th>
<th>Score</th>
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<tr>
<td>Aug-13</td>
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<tr>
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ConocoPhillips Lower48
Driving Behavior

The graph shows the average events per hour driven over time for different behaviors:
- Red line indicates speeding.
- Blue dotted line indicates hard braking.
- Green dots indicate rapid starts.

The data spans from August 2013 to August 2014.
ConocoPhillips Lower48
Outlier Drivers
To Ensure Successful Implementation You Need a Well Thought-out Strategy?
Align the organization around program objectives.

- Identify a Management Champion
- Commitment to building better driving skills and reinforcing safe drivers
- Commitment to teach supervisors and drivers how the system works
- Your goal is not to “catch” drivers doing something wrong
- Ensure that the proper resources are made available to administer the program.
Develop a clear Communications Plan

- Develop/distribute written information to all employees
- Schedule face-to-face sessions to explain to drivers what is about to happen and program objectives
- Establish clear roles and responsibilities and make sure drivers know where to go if they have questions
- Prepare FAQ response so that the message is consistent
Start with a Pilot Program

- Use data developed during your pilot in the broader rollout.
- Run your pilot for a minimum of 3 months.
- Use the pilot to build confidence in the accuracy and reliability of the device.
- Use the pilot to test key messages and your communication plan.
Case Studies & Lessons Learned

1. What is the impact of having (and not having) a well thought IVMS strategy?

2. What is the impact of enforcing it (or reinforcing) it?

3. Can an IVMS implementation strategy impact results?
   • Who & where to start? (AKA “pilot”)
   • What about idling?
Question 1
What happens with no IVMS Strategy?

Company A had “1-800 Bad Driver” program in place. Central IVMS Administrator monitored extreme events and communicated to supervisors, who occasionally talked to drivers.

- No direct feedback to drivers
- Inconsistent supervisor intervention
- No clear expectations & consequences
Company A

Lots of investment of time & resources with no positive impact on risk.
Question 2
What happens if I don’t continually support my IVMS strategy?

Bad news:  It will delay the realization of benefits.

Good News: Improvement can be gained at any time.
Company B: Worldwide Oil & Gas Services Provider

- Created & communicated IVMS policy.
- Initially consistent upper level & field level management support until 6 months after implementation.
Question 3

Can an IVMS implementation strategy impact results?

Who & where to start? (AKA “pilot”)

Approach 1: Traditional

• Pick a geographical location with supportive management
• Execute and communicate thoughtful IVMS strategy at implementation
• Rollout to all drivers – leadership and rank & file
Company C: Worldwide Oil & Gas Producer

- Began with a 3-month traditional pilot in one geographic area.
- Sustained improvement over several months.
- Regression to bad behavior.
- Improvements return with consistent management support.

Driving Behavior

18 months post implementation

"Honeymoon Effect"
Question 3

Can an IVMS implementation strategy impact results?

Who & where to start? (AKA “pilot”)

Approach 2: Management sets example

- Start with leadership in all locations
- Team learns with and through management’s experience
Company D: Worldwide Oil & Gas Producer

- Implemented with Leadership for 3 months.
- Immediate and sustained results.
- Accelerated driver buy-in.
Question 3

Can an IVMS implementation strategy impact results?

What about idling?

• Management loves reducing fuel bill.
• Field workers hate talking about idling.
• Reduction in idling is often used to cost justify the initiative.
• No strong correlation between Idling & Temperature (except Jan to March)
• Idling is generally a habit.
• Measure, monitor, and decide on policy
Case Studies & Lessons Learned- Summary

1. Prepare, execute, and reinforce a thoughtful IVMS strategy that is appropriate for your company culture and safety needs.

2. As part of that plan, determine an implementation strategy that is appropriate for your organization.

3. Consider just measuring and monitoring idling initially to determine best approach for idling information.
When you’re ready to roll…

- Use those that were part of your pilot in the rollout
- Keep technical support available as drivers begin to use the device
- Be ready and available to support as people get started
- Keep administrative support available as drivers and supervisors begin to receive reports
- Focus reporting on good drivers and reinforce and reward
Driving – Leading Indicator

Your IVMS data is providing you with the data you need to build a leading indicator related to driving performance.

Speeding events per hours driven x 50%  
+ Braking events per hours driven x 30%  
+ Acceleration events per hours driven x 20%

= Safety Score
BE SAFE. DRIVE SMART.

Give Trucks Space. Trucks need more space to stop or turn. Whether you're in front, beside, or behind a truck, leave plenty of room.

Pass Carefully. Pass carefully only if it's legal and safe. Don't take unnecessary risks. On two-lane roads, never pass when the solid yellow line is on your side of the lane.

Save Now, Text Later. Distracted driving crashes in Texas involves driver distraction. Give driving your full attention.

Drive to Conditions. Unwise speed is the leading cause of crashes on Texas highways. Adjust your speed to allow for heavy traffic, bad weather, and construction.