Video Based Safety Technologies in Trucking

*Industry focus on video based driver management*
Agenda

- Video-based safety overview
- Technology trends and innovations
- Analytics: identifying drivers and behaviors to coach
- Driver Coaching Program overview
- Results and best practices
- Examples: insights from the program in practice
Safety Foundation
Change Driver Behavior Before causing a Major Collision

By modifying driver behavior before they get into a major accident

Change risky behaviors here

Prevent this collision


Source: FMCSA 2011 Large Truck Crash Facts

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Power of Video
Knowing the Truth

‘Black Box’ Data

- Data Shows Maneuver
- Why / What Triggered?
- How to Improve Behavior?
Is All Video the Same?

More video is not always better

Considerations

1. **Legal** – Capturing more video content can create significant exposure from a liability perspective as any/all of the information is discoverable in the course of litigation.

2. **Operational Burden** - More video means more resources to effectively analyze the information. Lots of "noise".

3. **Driver Acceptance** – Unlike surveillance, which raises distrust in drivers as it implies "big brother", exception-based video to focus the coaching sessions to both life saving correction and positive driver recognition.
Client Video Event Examples

Do you know what’s really going on?

Distracted Driving

Exoneration

Cell Phone Use

Defensive Driving - Great Save
Video Coaching Program
Built on Exception Based Video Foundation
Benefits of a Video Coaching Program

- Video is the most **effective way** to **improve driver behavior**
- Studies show that video coaching is 2.5x as effective as telematics
- Watching your own behavior drives immediate change
- Unlike telematics data, pinpoints the specific root cause behavior
- **Know the truth**: exonerate or settle quickly and cost effectively
Technology Trends and Innovations
Video-based Driver Safety
Continuous Innovation

INNOVATION

- Exception-Based Video
- Root Cause Behavior Focus
- Managed Services Offering
- Cellular (CDMA)
- Risk Predict™
- Program Reviews
- DriveCam Online
- Industry Benchmarking
- Fuel Management
- Neural Network
- Posted Speed
- Weather Sense
- Passive Driver ID
- DC Highway™

Newly Introduced Technologies
Leverage investments in collision mitigation technology and more

**Advanced Driver Assistance System (ADAS)**
- Connects to vehicle bus J-1939, accessing signals.
- Use ADAS triggers to capture risky events (LDW, FCW and HWW)
- Integrated analysis and reporting

**Posted Speed Triggering**
- Event are captured when excessive speeding occurs
- Video capture based on posted speed or company policy
- Reduces exposure to violations (CSA)
- Reduces the severity of collisions

**Remote Coaching**
- Coach anywhere, anytime
- Stay connected with OTR drivers
- Engage drivers while out on the road
Advanced Technologies
Intersection Awareness Concept

Stop Sign Detection

Vehicle trail from GPS → Intersection found in Map → Still image scan looking for Stop Sign → Capture video if driver didn’t stop

Stop Sign that was NOT in map data
Analytics
Exception-Based Risk Management

Behavior / Collision Correlation

**Interpretation:**

Of collision drivers, Driver Condition behaviors are most correlated with a collision. Drivers that have a Driver Condition behavior are approximately 8 times greater odds to be involved in a collision within six months.
Behavior Analysis

Focusing on top behaviors (i.e. safety meetings, bulletins, newsletters, etc.):

- **Report:**
- **Behavior Analysis by Group**

Online Widget: Top Repeated Behaviors & Behavior Tracking

![Behavior Tracking Table]

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following Too Close</td>
<td>659</td>
</tr>
<tr>
<td>Speed Violation</td>
<td>315</td>
</tr>
<tr>
<td>Not Looking Far Ahead</td>
<td>147</td>
</tr>
<tr>
<td>Other Distraction</td>
<td>70</td>
</tr>
<tr>
<td>Electronic Device</td>
<td>66</td>
</tr>
<tr>
<td>Driver Unbelted</td>
<td>65</td>
</tr>
<tr>
<td>Near Collision - Unavoidable</td>
<td>45</td>
</tr>
<tr>
<td>Cell Phone</td>
<td>44</td>
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<tr>
<td>Judgment Error</td>
<td>38</td>
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<tr>
<td>Passenger Unbelted</td>
<td>32</td>
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<tr>
<td>Near Collision - Avoidable</td>
<td>24</td>
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<tr>
<td>Food / Drink</td>
<td>23</td>
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<tr>
<td>Collision</td>
<td>14</td>
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<tr>
<td>Red Light</td>
<td>13</td>
</tr>
<tr>
<td>Failed to Keep an Out</td>
<td>12</td>
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</table>
Safety Scores and Driver Trends
Assessing Driver Performance

Driving behavioral patterns are evaluated and compared to drivers with one or more collisions.
Driver Coaching Program
Coaching Success Model
3 Phases to Engaging Drivers in Skill Improvement

1. Expose Risk
   Capture data and evidence of poor/risky driving behavior.

2. Identify & Prioritize
   Use data to identify riskiest drivers and develop & prioritize a coaching plan.

3. Coach & Improve
   Coach and train the riskiest drivers. Reward safe drivers.
Changing Driver Behavior
Simple, Consistent Coaching Drives Sustainable Change

Event Analysis
These are the scoring selections made by the analyst while reviewing the event.

Analyst Comments
This is the analyst’s explanation regarding why the scoring selections were made and suggestions for improvement.

The driver was exceeding the maximum speed limit and the force exceeded the video event recorders threshold.
Coach Dashboard

How is the group performing against the rest of the company?

Consider having a plan to help drivers move to yellow and then to green ranking.

Focusing on these behaviors (i.e. safety meetings, bulletins, newsletters, etc.)

<table>
<thead>
<tr>
<th>Rank Number</th>
<th>Driver</th>
<th>Home Group</th>
<th>Rank</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>David Huffman</td>
<td>WASK</td>
<td>Red</td>
</tr>
<tr>
<td>2</td>
<td>Bill Kingery</td>
<td>SHEA</td>
<td>Red</td>
</tr>
<tr>
<td>3</td>
<td>Toni Martinez</td>
<td>DHEG</td>
<td>Red</td>
</tr>
<tr>
<td>4</td>
<td>Corey Sumers</td>
<td>SHECR</td>
<td>Red</td>
</tr>
<tr>
<td>5</td>
<td>Cory Ramseur</td>
<td>SHEA</td>
<td>Red</td>
</tr>
<tr>
<td>6</td>
<td>Shannon Detter</td>
<td>OWFP</td>
<td>Red</td>
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Lytx
Coaching Best Practices

- Allocate 5 to 10 minutes per session
- Stick to the facts and don’t be nitpicky
- Focus on what needs to change to improve safety
- Listen to their viewpoint
- Respect privacy. Don’t send clips around, “You’ve got to see this one!”
- Periodically sit in on coaching sessions
Coaching Results
Distracted Driving & Trucking

Key Insights:

- Drivers involved in one or more collisions are:
  - 1.9 times more likely to be regularly distracted by any type of identified distraction
  - 2.2 times more likely to be regularly distracted by food and/or drinks.
  - 2.4 times more likely to be regularly distracted by a handheld cell phone.
  - 3.1 times more likely to be regularly distracted by a hands-free cell device.

Analysis of over 5,000 drivers in the trucking industry who were active between June 2009 and December 2010
Distracted Driving

What we see through in-cab video: Distracted driving observed in about 20% of the risky events we capture.

Distraction as % of All Risky Events

- Handheld Cell Phone: 4.3%
- Hands Free Device: 0.4%
- Food/Drink: 0.9%
- Other Communication Device: 0.3%
- Passengers: 0.1%
- Other Distraction: 13.1%
- Other Electronic Devices: 0.2%
Measuring Impact – Distracted Driving

- You can’t manage what you can’t measure
- Once captured on video and coached, behavior change is dramatic … and is easily measured

11 trucking companies showing decline in distracted driving over the last 14 months using video-based solution.
Trucking fleets see a decrease in severity and frequency of accidents which reduce vehicle claims expense within 1 year of service.

Above chart is based on Lytx client data, for fleets equipped with DriveCam® devices, realize a >1x correlation between Improvement & claim expenses ($) within 1st year of service.
Key Takeaways

Video-based technology, along with a driver development program, provides an opportunity to uniquely improve retention to keep drivers in seats.

Rather than terminate...
- Have the visibility to improve drivers with focused coaching and training rather than terminate them for risky driving behaviors.
- Know when a driver wasn’t at-fault.

Recognize your good drivers...
- Identify good drivers for positive recognition and reward.

Get new drivers in the seats quickly...
- Train new drivers more efficiently and effectively.
The Lytx Difference:
Insight, Expertise, Commitment & Support
200,000+ Vehicles Traversing the Roads Every Day
Thank you