

insights

TELEMATICS
AND FLEET RISK
MANAGEMENT
ISSUE 2010



Zoom in to your **fleet risks**

Revealing the fleet risk revolution

Also in this issue:

- From data to information to insight to action
- Being green can save you green
- Insurers on telematics and fleet operators that use the technology
- Delivering tangible benefits

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In this issue

- 3 Welcome
- 4 An introduction to telematics
- 8 Time to revolutionize methods for identifying and managing at risk drivers
- 12 Steering through regulations
- 18 Promoting certainty
- 20 Delivering tangible benefits
- 22 Beware – safety culture can be contagious
- 25 Top ten positive approaches to fleet risk management
- 28 From data to information to insight to action
- 30 Beyond technology
- 34 Being green can save you green
- 36 Insurers on telematics and fleet operators that use the technology

Welcome

Welcome to this edition of insights on telematics and fleet risk management.

Managing a fleet is a critical responsibility. Continued uncertainty in world economies makes reductions in operating expenses an increasingly urgent imperative. At the same time, increasing pressure from legislators, regulators and interest groups require that fleet operators take proactive steps to improve safety while also reducing their impact on the environment.

Recognizing these challenges, Zurich has pulled together a team of experts to explore new developments in fleet management, with a particular focus on how telematics-based systems can be used in conjunction with driver development programs to improve driver behavior, reduce vehicle operating expenses and lessen environmental impact.

We hope you find this publication useful in your fleet risk management strategy, and we would welcome your thoughts and observations.

Kind regards



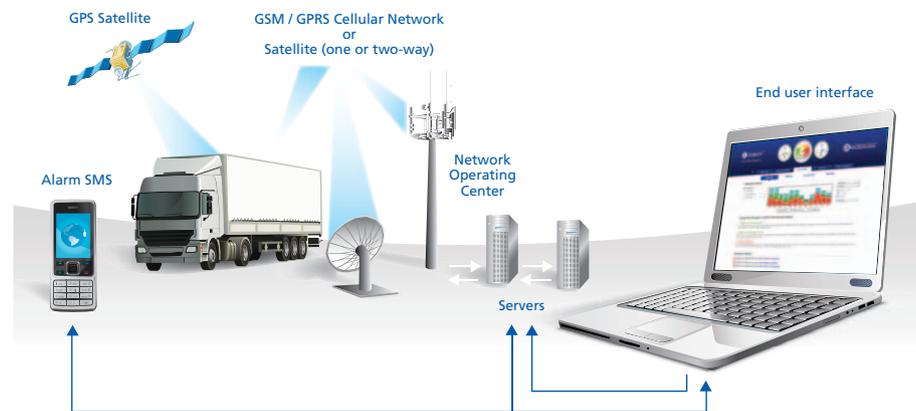

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For the sake of simplicity and consistency we use the terms 'telematics' or 'telematics systems' throughout this publication to refer to the broad range of systems and technologies available from different providers for collecting and transmitting data about driver behavior, vehicle location and use, etc.

An introduction to



The term 'telematics' commonly refers to vehicle-based systems that integrate GPS sensors with wireless communication and computer capabilities. These systems can provide fleet owners and operators with extensive information and intelligence on vehicle location and performance, driver behavior and a wide range of other parameters. Using this data, fleet managers can improve the productivity of mobile workers, reduce collision risks for drivers and other road users, improve fleet performance and ensure compliance with relevant regulations.

telematics

System elements

In a typical installation, telematics devices are fitted into the company's vehicles, data captured by the device is transmitted to a central server, and the end user(s) – fleet managers, depot managers, dispatchers, drivers etc. – access the data via an internet portal.

The data captured by the devices commonly include the vehicle's location, speed, driver behavior and vehicle diagnostics data as determined by the telematics system. In more comprehensive solutions, it can also include data from on-vehicle sensors that detect a wide variety of vehicle events and conditions. At the office, a dispatcher or fleet manager can view the data on maps or reports in real time via a secure link to the data center.

Some telematics providers supply individual components; others offer complete, end-to-end systems or platforms. When choosing a telematics provider, the fleet manager should be sure that all components are truly interoperable and that the system is easily scalable – in the event future needs include a larger fleet, more varied or complex operations or additional capabilities.

System options

A range of system options are available depending on the size and characteristics of the fleet and the company's needs. Many fleets start with a basic fleet safety solution, or basic fleet management capabilities. After gaining experience in one area, they tend to expand the system to other types of fleets, and incorporate fleet management or more comprehensive, fully integrated mobile resource management capabilities.

Fleet Safety Solutions

Globally, approximately 6% of all fleet vehicles are involved in a collision each year.¹ Many of these collisions could be prevented by monitoring and improving driver performance. According to the US Federal Motor Carrier Safety Administration, the most common causes for fleet vehicle collisions are inadequate driver surveillance, driving too fast for the conditions, and speeding around curves and turns.² Aggressive and unsafe driving costs companies billions of dollars due to employee injuries, lost productivity, fines, asset damage, litigation and poor fuel economy while also contributing to excessive CO₂ emissions.

Virtually any fleet operation can benefit from the adoption of a fleet safety telematics solution. These solutions enable drivers and companies to proactively reduce costs, improve fleet safety and increase productivity.

Typically, a fleet safety telematics solution will:

- monitor vehicle speed
- measure the forces exerted on the vehicle during various driving maneuvers such as turns, starts and stops; some advanced systems go further to automatically recognize risky driving activities
- factor in the vehicle's loaded or unloaded status in evaluating the maneuvers, and calculate a score for each maneuver
- provide in-vehicle visual and/or audible feedback to alert the driver of unsafe maneuvers and provide a general indication of driving performance
- report scores for individual drivers as well as a composite score for the fleet based on company-set parameters
- compare individual driver scores to the average scores for the fleet.

Some fleet safety solutions also involve installation of an in-vehicle video camera to capture evidence of collisions and other important driving events.

The data obtained can be combined with other in-depth analytics to help identify root-cause driving behaviors.

¹ <http://www-nrd.nhtsa.dot.gov/Pubs/811059.PDF> Report Name: National Motor Vehicle Crash Causation Survey

² <http://www.chalatlaw.com/Tractor-Trailer-Accidents.html>



The fleet safety reports, viewed over an extended period of time, are excellent tools for supervisors to use in conducting targeted driver training and counseling programs.

Fleet safety solutions offer many benefits beyond driver safety as driver behavior can have a significant impact on fuel economy and vehicle wear-and-tear. Taken together, improvements in safety and operating efficiency can help reduce insurance rates, reduce vehicle operating and maintenance expenses and improve customer service and profitability.

Fleet Management Solutions

Fleet management solutions typically provide many of the elements of fleet safety solutions, while offering additional features to further increase fleet productivity. These can include tracking vehicles in real-time, managing work flow and helping drivers navigate to jobs. The dispatcher or fleet manager can: remotely determine the closest vehicle to a new work location by viewing all vehicles on a map; see when a vehicle enters and leaves a work site; and retrieve on-demand reports to determine who is en route, and who is on a break.

The 360-degree view of the mobile worker and the work being performed can greatly improve business efficiency. Coupled with fuel management tools, a complete fleet management solution can also increase the company's ability to manage sustainability, identify safety issues and improve productivity.

To find out more about how leading telematics solutions could help you, visit www.zurichfleetintelligence.com

Mobile Resource Management Solution

A comprehensive Mobile Resource Management (MRM) telematics solution builds on the capabilities of fleet safety and fleet management solutions and adds a wide range of advanced features, including: advanced safety, fleet and mobile worker management, vehicle diagnostics, hours-of-service logging, driver alerting, driver-centric applications, two-way communication and more. This gives managers the additional tools and capabilities needed to manage and optimize a variety of fleet and mobile workforce operations, including:

- Driver performance and compliance
 - Compute driver hours of service.
 - Provide driver fatigue management.
 - Report pre-and post-trip inspections.
 - Software as a Service (SaaS) data archives in case of retroactive government audits.
- Mobile worker and workshift productivity
 - Schedule and optimize jobs and routes.
 - Real-time work status alerts and notifications to fleet managers.
 - Manage miles driven and work performed in the field.
 - Integrate with time-keeping application and track hours worked.
- Asset management and utilization
 - Optimize the use of vehicles and equipment needed to complete work efficiently.
 - Automate vehicle maintenance tracking and notification for the entire fleet.
 - Increase the amount of time vehicles are in productive use.
 - Automate mileage and asset use reporting.
 - Monitor loads and assets in a vehicle.

Fleet managers may also consider integrating the MRM solution with their current back-office software to increase productivity while using the software they already know.

Conclusion

Businesses are investing globally in vehicle telematics solutions to improve safety and productivity, cut operating costs and enhance their customers' experience. These solutions range from safety-focused solutions to those that address virtually every aspect of fleet and mobile workforce operations. Whichever telematics solution is selected, remember that data on its own is of little value – how that data is actually delivered, interpreted and put to use is the key to improving safety for fleet personnel, increasing the fleet's operating profitability and reducing its environmental impact.



Joyce Tam

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Time to **revolutionize** methods
for identifying and managing 'at risk' drivers

During the past five years, we have witnessed a revolution in the nature and extent of 'in-cab' technology that is available to the drivers of personal and commercial motor vehicles.



Today, such technology as on-board navigation systems, personal entertainment devices and wireless communication gear – once ‘seldom seen’ among most vehicles – is now common place. These devices, while viewed by most drivers as beneficial, also present an ‘order of magnitude’ increase in the level of driver distraction.

This in-cab technology revolution and associated increase in ‘distracted driver’ requires a similar revolutionary response by professional fleet managers in their methods of identifying and managing ‘at risk’ driver behavior. On initial evaluation, this statement may seem extreme, so let’s take a few moments to better examine the situation.

Zurich’s internal analyses consistently reveal that the most severe and costly vehicle crashes are attributable to three incident types. These ‘Big Three’ incident types, which include rear-end collisions, intersection crashes and lane change/merge collisions, generally comprise 50-70% of total fleet crash costs.

The American Transportation Research Institute¹ indicates that a significant portion of collisions are triggered by ‘at risk’ driver behavior, which includes such actions as:

- following too closely
- driving too fast for conditions
- failing to obey traffic signals or other ‘traffic warning’ devices.

Next, researchers have confirmed that drivers with repeated patterns of risky behavior are more likely to be involved in a collision than those without such behavior infractions.

For example, American Transportation Research Institute (ATRI) published a landmark 2005 report, which identified a quantitative model for using past driver safety performance information to predict future crash involvement¹.

¹Predicting Truck Crash Involvement: Developing A Commercial Driver Behavior-Based Model and Recommended Countermeasures, by The American Transportation Research Institute, October 2005



This analytical model found that drivers convicted of an improper or erratic lane change violation within the previous 12 months were 100% more likely to be involved in a crash in the next 12 months compared to drivers without a similar conviction.

With such research findings in hand, professional fleet managers have made some great strides in reducing crashes by implementing programs which help front line supervisors identify and manage 'at risk' driver behavior.

For example, Zurich teamed up with many of its commercial fleet customers to develop a 'driver indexing' program, which applied a comprehensive driver history algorithm to identify those drivers with the most problematic safety history. This algorithm was coupled to a driver coaching and mentoring tracking mechanism and then deployed to front-line supervisors, who were charged with intervening with identified 'at risk' drivers.

In Zurich's experience, fleets that thoroughly deploy such programs typically see a 25-40% reduction in preventable crash costs.

Finally, risk management methods for identifying and managing 'at risk' driver behavior – developed in response to such research findings – may be deficient in identifying risky behavior, which arises from in-cab technology-related driver distraction(s).

- Recently published research by the Virginia Tech Transportation Institute revealed that drivers who were conducting such distracting activities as dialing cell phones, text messaging or reaching for and/or using an electronic communication device were as much as 23 times more at risk of a crash or 'near crash' event than a non-distracted driver².
- Many otherwise risk averse drivers may perceive that interacting with these new distraction producing technologies is perfectly acceptable behavior.

Recently, a Zurich Risk Engineer accompanied a proven safe driver on a road trip to the western United States.

²Dr. Rich Hanowski, Director of the Center for Truck and Bus Safety at VTTI, Driver Distraction In Commercial Vehicle Operations, Federal Motor Carrier Safety Administration, September, 2009. Report available at: <http://www.fmcsa.dot.gov/facts-research/research-technology/report/FMCSA-RRR-09-042.pdf>

The driver had recently purchased a vehicle equipped with a GPS navigation system, satellite radio and a 'Blue Tooth' interface with his 'SmartPhone' wireless communication device.

During their travels, the Risk Engineer watched in dismay as this individual frequently interacted with this technology by:

- querying the GPS device as to the precise location, estimated arrival time, or roadside services that might be available at a nearby highway interchange;
- reading emails or text messages, which arrived with a distinct tone on his SmartPhone wireless device; and

- conducting lengthy telephone conversations.

More than once, the driver had to make sudden vehicle maneuvers (such as hard braking or swerve steering), when he realized he was following too close, approaching a dangerous intersection, or nearing the centerline of a two-lane highway.

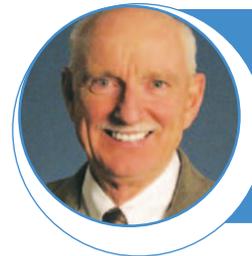
Quite alarmingly, it would take just one 'failure to correct' instance for this otherwise safe driver to have a serious or fatal car crash.

Given these findings, we urge you to re-evaluate your current fleet risks.



First, consider the nature and extent of in-cab distractions. Next, consider implementing programs that limit, or even prohibit, driver interactions with certain technologies while the vehicle is in motion.

Finally, evaluate your existing 'at risk' driver identification and management program. Determine if your program is capable of identifying those otherwise safe drivers who might be at risk of having a crash because of the distractions created from the interactions with in-cab technologies.



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Steering

“In tort law, a duty of care is a legal obligation imposed on an individual requiring that they adhere to a standard of reasonable care while performing any acts that could foreseeably harm others.”

Although originally referring to the actions¹ of individuals, the notion that companies also have duty of care obligations was clearly established in the US in 1916 in the Supreme Court’s ruling in the landmark case *MacPherson v. Buick Motor Co.* This same principle was later established in UK law in 1932 via another landmark case, *Donoghue v. Stevenson*. Duty of care obligations are now common in virtually all countries around the world.

For companies operating commercial vehicle fleets, the duty of care obligations have particular force. In this article, we survey the regulatory environment in different countries concerning companies’ duty of care obligations as they relate to vehicle fleets.

¹<http://www.merriam-webster.com/medical/duty%20of%20care>

through regulations



The view from North America – preparing for Comprehensive Safety Analysis (CSA) 2010

In North America, commercial trucking and bus fleets are bracing for the arrival of Comprehensive Safety Analysis 2010 (CSA 2010), a new regulatory program being implemented by the Federal Motor Carrier Safety Administration (FMCSA). This initiative promises to bring tougher safety regulations to fleets. CSA 2010 shines a bright spotlight on drivers' impact on safety and makes fleet operators accountable even more for their drivers' safety performance.

With the new CSA 2010 Safety Measurement System, more detailed information about a fleet's safety performance will now be visible to the public. Fleets will be scored relative to

their peer group in each of seven Behavioral Analysis and Safety Improvement Categories (BASICS) covering: unsafe driving, fatigued driving (hours of service), driver fitness, controlled substances/alcohol, vehicle maintenance, cargo-related and crash indicator (crash patterns/history).

Drivers' safety violations will have a more central impact on companies CSA 2010 scores, raising the urgency for management to provide effective guidance and coaching to their drivers and compelling the fleet operator to be even more diligent in hiring and selection of drivers. Drivers now face the reality that their safety performance history will follow them between multiple employers, much like a credit history.

According to report by Transport Topics "Safety accountability falls heavily on truck drivers under the Comprehensive Safety Analysis. By identifying drivers' frequent or serious violations of safety regulations, the Federal Motor Carrier Safety Administration seeks to crack down on fleet operators that employ the worst offenders and dramatically reduce the number and severity of truck-involved crashes. There is concern, however, that the new safety regimen and stricter

enforcement will push a significant number of drivers out of a job if fleet operators see them as a risk.²"

Business owners, managers and drivers are scrambling to ensure they are prepared for the new system. For management, a bad rating could mean lost business, higher insurance rates, fines, criminal penalties, or even shutdown of their operation. For drivers, there is concern that fleets could start imposing stronger disciplinary measures for safety violations. Drivers' records will be available (with the consent of the driver) to prospective employers through the new Pre-employment Screening Program mandated by the US Congress. Those drivers who are unwilling to authorize prospective employers to view their scores will have a harder time finding employment in the future. Although the new BASICS cover a wide variety of violations, most US Department of Transportation inspections (more than 81% of inspections, according to FleetOwner³) are triggered by driver behaviors behind the wheel like speeding and other moving violations. These roadside inspections tend to expose other, often unrelated violations in different categories.

²Transport Topics Supplement 'Comprehensive Safety Analysis CSA 2010', page 14

³<http://fleetowner.com/management/news/csa-2010-fleet-data-surprises-0709/>



The view from Europe

In July 2010 the European Commission announced that it had adopted challenging plans to halve the number of road deaths throughout its member states by 2020. While the specific legal requirements will vary by member state, they are expected to include vehicle and country-specific legislation, and may also involve complying with Health & Safety legislation when the vehicle is considered an extension of the workplace.

Different member states have different initiatives, and there is a trend for the European Union (EU) to take examples of best practice that have been proven effective in one member state and roll these out everywhere else. In terms of managing work-related road risks, the UK is leading the way in Europe.

If UK best practice is rolled out in Europe then existing Health & Safety legislation will apply to everyone making work-related journeys, and the vehicle (regardless of ownership) will be seen as an extension of the workplace. Consequently, employers' duty of care obligations will clearly extend to employees when they are driving.

The UK also has other legislation that fleet operators need to be aware of, especially the Corporate Manslaughter and Homicide Act 2007. This Act established a new offense – 'corporate manslaughter' – which applies "... *if the way in which an organization's activities are managed or organized causes a person's death; amounts to a gross breach of a relevant duty of care owed*



by the organization to the deceased; and the way in which its activities are managed or organized by its senior management is a substantial element in the breach.”, according to Personnel Today⁴.

This has understandably heightened concerns among fleet managers about the possibility of an organization being prosecuted following a serious collision involving one of its employees. In reality, however, this risk has always been there under existing legislation, primarily the Health & Safety at Work Act 1974, and its associated legislation. Nonetheless, the Corporate Manslaughter and Homicide Act 2007 is likely to become the preferred mechanism for the police and the Health & Safety Executive in the wake of a serious crash to prosecute companies viewed as having breached their duty of care obligations in the event of a serious crash.

Fleet operators in the UK also need to be aware of the guidelines produced by the Association of Chief Police Officers (ACPO). The 'Road Death Investigation Manual' is a set of guidelines for investigating road collisions that result in a fatality. Under these guidelines, the police essentially treat such fatalities as unexplained deaths, and the collision sites as crime scenes, until they have gathered enough evidence to either proceed with prosecution or determine that no other road user was wholly or partially culpable. These guidelines are also used by the police in collisions involving fleets. Per the guidelines, areas the police are expected to investigate in such collisions include vehicle maintenance, fatigue management and the use of mobile telephones.

While the chances are quite low that an organization will be investigated or prosecuted under these laws or from following these guidelines, the consequences can be quite serious if they are.

Consequently, fleet operators should ensure that a robust set of policies and procedures are in place to screen drivers before hiring them, establish proven approaches for promoting safe driving, carefully investigate any episodes of unsafe driving they become aware of, and provide drivers with driver development tools to improve their driving behavior. Equally important is a robust audit trail that shows how the organization is applying these policies and procedures.

One way to effectively provide such an audit trail is via a comprehensive fleet management program centered on telematics devices that provide detailed data on driver behavior and are supported by development programs designed to improve driving skills. When such comprehensive systems are in place, fleet managers can not only provide their drivers with the feedback and tools they need to become safer drivers, but also have an audit trail clearly showing how the company is fulfilling its duty of care obligations.



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⁴<http://www.personneltoday.com/articles/2010/02/18/54149/corporate-manslaughter-new-guidelines-for-sentencing.html>



The legislative view from Australia

In Australia, legislation governing fleet operations are currently administered by both Federal and State law. Federal legislation addresses vehicle safety, design, and road laws. Individual states are responsible for safety, and transport operators licensing. The latter causes much confusion and angst, as many trucking companies operate interstate, and therefore face the challenge of complying with differing legislation that exists from state to state. Currently, an interstate truck driver must comply with all the regulations that apply in each of the jurisdictions they drive through. Even small differences can create extra costs, red tape and confusion for the trucking industry.

National Heavy Vehicle Regulator

All this is to change following the decision in 2009 by the Council of Australian Governments (COAG) to develop the National Heavy Vehicle Regulator (NHVR) to act as single regulator for all road, rail and maritime transport. The aim of this new body is to remove the inefficiencies arising from inconsistent jurisdictional requirements and streamline regulatory arrangements. This should lead to improved safety and productivity, while reducing costs and the regulatory burden on Australian transport companies.

Once set up, the NHVR will be responsible for putting in place nationwide rules and regulations for all vehicles over 4.5 tonnes, including inspection standards, safe driving hours, mass limits and registration.

This is an important step towards reforming how Australia regulates its transport sector.

The proposed reforms should be fully implemented by 2013. The following list of model legislation will be consolidated into one national law:

- heavy vehicle registration
- vehicle standards
- heavy vehicle charges
- mass and loading
- oversize and over mass vehicles
- restricted access vehicles
- higher mass limits
- compliance and enforcement
- heavy vehicle driver fatigue
- heavy vehicle speeding compliance
- intelligent access program
- alternative compliance.

... all sectors of the transport industry, including transport operators, logistics companies and drivers should benefit from the IAP.

Intelligent Access Program

A milestone for Australia's transport industry is the Intelligent Access Program (IAP), which is a voluntary program providing heavy vehicles with improved access to Australia's road network in return for monitoring compliance via vehicle telematics solutions. The IAP is an innovation enabling increased productivity of road freight transport, while improving road safety, asset management and environmental outcomes. All sectors of the transport industry, including transport operators, logistics companies and drivers, should benefit from the IAP. For road authorities the IAP provides a brand new approach to road management

Under the IAP, participating heavy vehicles are monitored using in vehicle telematics solutions. The telematics device is supplied and operated by an IAP Service Provider – a company that may already provide telematics services to transport operators. The IAP monitors three parameters – route, time and speed.

This means that the IAP Service Provider is capable of determining whether the vehicle has:

- been somewhere other than the permitted route
- traveled on a permitted route but at a prohibited time
- exceeded the speed condition stipulated by the road authority.

Although monitoring of vehicle route compliance is required under all IAP Applications, monitoring other parameters is optional. While a vehicle operating in the IAP is monitored continually, road authorities are only interested in data that demonstrates the vehicle's compliance with its conditions of access.

Transport operators who participate in the IAP are granted enhanced access to the road network by a road authority, allowing their heavy vehicles to travel on routes they would not otherwise be allowed to access.

This access provides transport operators with the potential to:

- improve productivity
- improve turnaround times
- increase profits
- gain an advantage over a competitor
- deliver a better service and price to customers.

Joining and reaping the benefits of the IAP is simple and easy, with participation open to all transport operators regardless of their fleet size. Transport operators need to make a commercial decision regarding the benefits the IAP can provide their business.

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Promoting certainty

Telematics data complements claims investigations as an unbiased witness.

If ignorance is no case for defense, and powerful vehicle telematics technology is at our fingertips, then the case for its use has never been stronger. The successful use of vehicle telematics empowers an organization with a level of transparency. When a crash occurs, telematics can help identify root causes as well as opportunities for avoiding such collisions in the future. Moreover, vehicle telematics systems offer a strong defense against fraudulent claims of liability or negligence. In short, a telematics system not only promotes more sophisticated fleet risk management, it can also be a powerful ally in today's increasingly litigious environment.

Taking the 'I would rather not know attitude to what my drivers are doing' will not keep you and your company out of court. Telematics technology empowers you to take a proactive approach to protecting your company's brand image by lowering risk exposures and adding an unbiased witness every time your company's vehicle is on the road.

- Have you ever had an incident where the 'innocent' victim claims your company's vehicle rear ended them causing significant damage and injuries, when there is barely a scratch on the front bumper of your vehicle?

- Have you ever invested considerable time and money contesting a claim when, in the end, it was clear your driver was at fault?
- Have you ever had one your vehicles stolen?
- Have you experienced recurring problems with employees using company vehicles for private use?

Telematics data can help resolve these challenges. In the event of a crash, telematics data can detect the severity of the impact and provide important evidence to fight off fraudulent claims... or to quickly confirm liability. Telematics systems also can assist in the speedy recovery of stolen vehicles as well as provide a means for eliminating unauthorized use.

Enabling more efficient and effective claims handling

When a crash occurs, there are numerous issues that might complicate or slow down the settlement process. Most of these issues ultimately relate back to the challenge of determining exactly what happened. However, with a telematics system in place, reconstructing exactly what happened can be done with much greater certainty and confidence. As a result, a wide variety of claim questions can reliably and accurately be addressed based on the data received from the telematics device deployed in your company's vehicles. This, in turn, means that claims can be more accurately reserved, resolved, or defended. For example, when a crash occurs, telematics data can be especially useful in:

- Determining the change of velocity (Delta V) of a collision for crash severity and injury causation.
- Identifying questionable or fraudulent injury claims as the result of a collision, e.g., telematics data can be an excellent complement to determining low impact and low severity collision claims.
- Identifying if there was a failure to stop or yield at an intersection and if a driver had the last clear chance to avoid a collision in a variety of collision scenarios.
- Aiding in determining the collision sequence where multiple vehicles are involved.
- Validating if, in certain cases, a collision occurred within the policy coverage period.
- Determining the use or lack of use of seat belts or other restraint systems.
- Evaluating potential mechanical failures, e.g., brakes, airbags, seatbelts, steering, tires, etc., as causing or contributing to the collision.
- Determining driver negligence in a wide variety of collision scenarios.
- Establishing and building subrogation and recovery possibilities.
- Locating and recovering stolen vehicles.
- Monitoring vehicle use by employees outside normal work periods.

Since telematics data acts as an 'unbiased witness,' it can help resolve conflicting reports and quickly expose fraudulent representations. The benefits of quickly and objectively addressing these issues are numerous. And even when the data is not favorable to an insurer, significant investigation, indemnity, and legal costs can be mitigated.

Also, since telematics data can be obtained economically, its use for crash reconstruction purposes doesn't have to be reserved just for serious collisions; it can also be used in minor impact, non-casualty claims to expedite the claims process and reduce overall crash investigation and defense costs.

Advancing risk mitigation

There is no doubt that a sophisticated fleet risk management solution built around telematics devices and supported by the latest driver development tools can significantly improve safety, reduce fleet operating expenses and lessen environmental impacts. As claims professionals, we believe that such solutions will also have significant benefits when it comes to making the claim settlement process fairer and faster, which in turn, should reduce overall settlement expenses.



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Delivering tangible benefits

In-vehicle technology can generate valuable insights for improving driver behavior, which can lead to improvements to road safety and reduce operational costs by making vehicle performance and routing more efficient.

In this article, we look at real examples of how telematics systems are being used to enable improvements in driving behavior and help fleet operators demonstrate the steps they are taking to meet their corporate, social and environmental responsibilities.



The scale of the economic downturn in 2007 took much of the logistics industry by surprise. Faced with reduced turnover and a large excess capacity of empty trailers, DFDS entered the lucrative transportation market of high value consumer goods.

By implementing Novacom's telematics system, DFDS were able to ensure quality trailer security, ensuring complete end-to-end security for consumers.

Following a successful pilot, DFDS implemented the solution in 100 trailers. Commenting on the success, Mervyn McIntyre, Group Equipment Manager, DFDS said "Despite a downturn across many of our competitors, the complete solution we are now offering has enabled us to secure major new business. To date this represents in excess of 10% of the total continental revenue generated by the company as a whole and continues to provide us with a strong growth potential going forward."



A UK transit agency convinced the local authority to make safety improvements to an unsafe roundabout. The transit agency used data supplied by GreenRoad to show the nature and extent of the risks faced by drivers entering the roundabout, which is located on a hill at the end of a local street. They provided the local authority the evidence required to compel the government to change the lane markings and increase signage, thus helping to reduce the risks posed by the roundabout.

Telematics data confirmed to a home-to-school service provider in the UK that the traffic configuration for exiting the depot was unsafe and should be changed. The route included a right turn out of a blind junction, but company managers' pleas to change the route were initially ignored by the school due to parents' objections to any change to the route or schedule. While drivers had been noting this situation for some time, safety heat mapping based on telematics data confirmed this problem by demonstrating a concentration of risky maneuvers at this spot. Using the GreenRoad reports, the company was able to obtain permission from the school for their drivers to turn left out of the depot and create a safer environment for all involved.



The fleet loss prevention manager for a security system company saw an 80% reduction in speeding incidents across the fleet after the implementation of a mobile resource management system.

In addition to enforcing a safer driving culture by implementing a telematics solution, a telecommunications company also benefited from:

- 5% overall MPG improvement across the entire fleet
- 5% decrease in vehicle repair costs
- 30% reduction of trip miles per day
- Up to 90 minutes of engine idle time reduction per day.

Telematics provides the tools and opportunities to help you make necessary changes to the way your fleet operates.



Commenting on Qualcomm's mobile resource management solution, Alan Mass, Operations Manager, Mid Atlantic Tree Harvesters said:

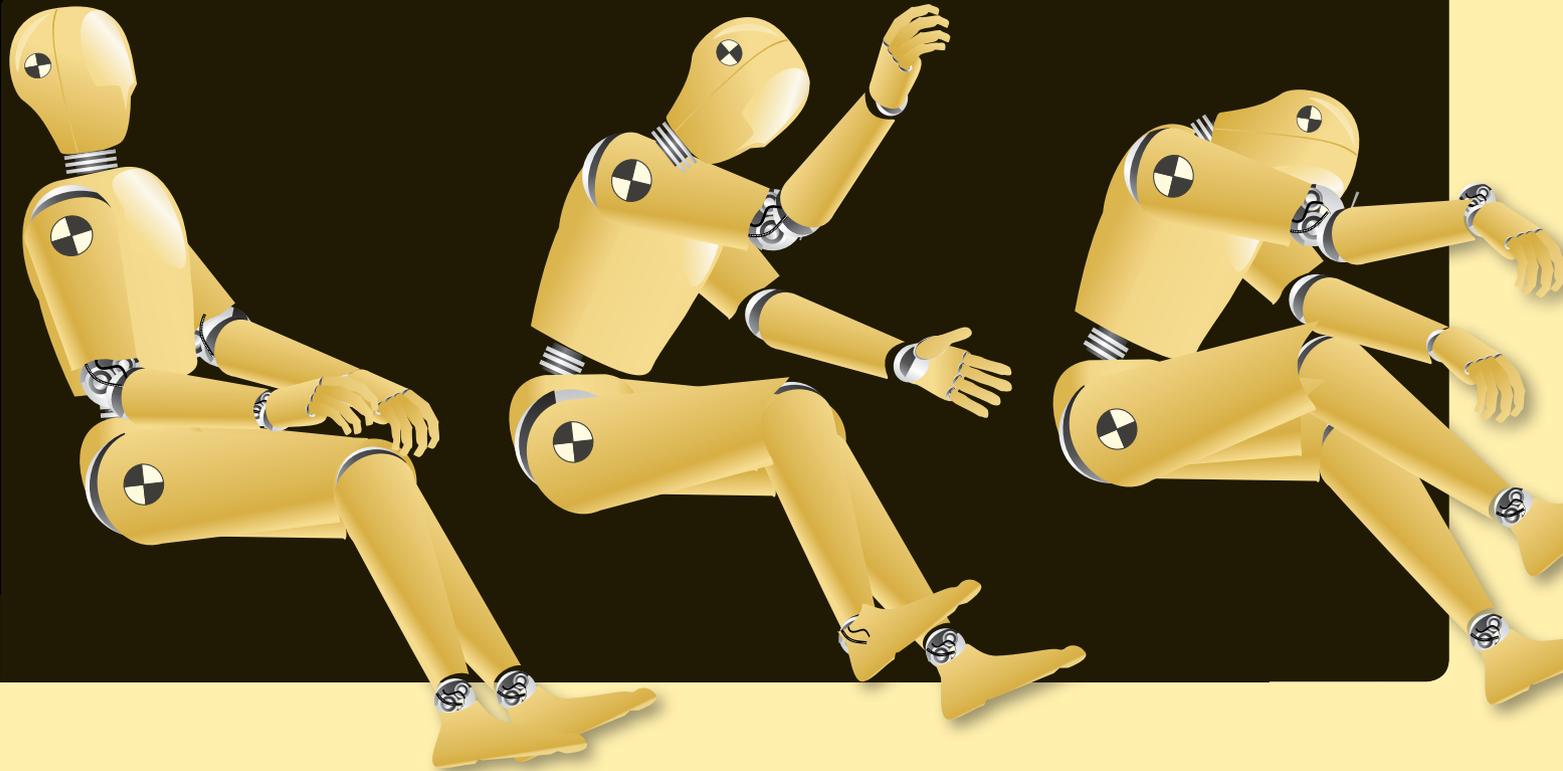
"Service Fleet Manager has improved our bottom line by USD 250,000 by helping us lower fuel expenses, improve productivity and reduce odd hour usage."

There are many more examples of how fleet operators in different industry sectors have benefited from insightful data made available by telematics based solutions. However, one has to keep in mind that data on driver behavior and vehicle performance is just the first step. Telematics provides the tools and opportunities to help you make necessary changes to the way your fleet operates. Taking a long-term view to improve your fleet risk management processes and procedures is vital so that safety becomes business as usual, and tangible benefits in terms of fewer claims, lower fuels costs and reduced emissions are achieved.



Tom Richardson
Head of Customer
Relationship Management,
Zurich Global Corporate UK

Beware – safety culture can be contagious



While billions of dollars have been spent on vehicle safety technology, fleet managers are finding one of the most effective safety investments is to create a safety ‘ethos’.

Historically, improving road safety has been seen as the purview of:

- vehicle manufacturers who seek to design vehicles with ever more sophisticated life saving features
- civil engineers who seek to design ever safer roadways
- policy makers who seek to impose safer driving via laws and regulations.

While these are all enormously beneficial — no one can dispute the significantly positive impact that has been achieved by requiring seat-belts in all vehicles, to cite just one example—driving still remains one of the riskiest aspects of modern living. In the US alone close to 40,000 people die each year in collisions.¹ Three million end up in hospital.² And 75% of work related deaths result from vehicle crashes.³

However, recent evidence suggests that these myriad efforts might be trumped by a simple idea: inculcating a safety ‘ethos’.

Merriam-Webster defines ‘ethos’ as *“the distinguishing character, sentiment, moral nature, or guiding beliefs of a person, group, or institution.”*⁴

... ever more fleet risk managers are learning that real improvements in safety can be achieved by addressing the factors that most impact the driving culture: attitude and awareness.

While establishing a safety ethos in each and every driver is a worthy aspiration, achieving that in reality seems like an insurmountable challenge – although Zurich, other insurers, and many others will continue to take steps to achieve this ideal.

But within a commercial enterprise where everyone shares a set of common objectives, and mechanisms are available for influencing the organizational culture, can an ethos centered on safety be created? And if so, what are the implications?

There is increasing evidence supporting the idea that instilling a safety ethos is actually good business – saving thousands of dollars per year per driver. This is a clear case of where an ounce of prevention can save lives and money.

Earlier this year, a groundbreaking study by the Highway Loss Data Institute (HLDI) and the Insurance Institute for Highway Safety found that states that had banned the use of hand-held cell phones saw no reduction in collisions.

While the results of this study rattled the conventionally accepted wisdom, the underlying theme was probably not a surprise to most fleet managers: mandating driver behavior rarely works.

Instead, many fleet managers are learning that real improvements in safety can be achieved by addressing the factors that most

impact the driving culture: attitude and awareness. These are the cornerstones for ethos-shared safety principles that guide and inspire permanent changes in safety performance.

So how exactly are fleets creating a safety ethos and what are the benefits?

Attitude

It starts by changing how safety is valued. The default response is often to be most concerned about safety after something goes wrong. Instead, what if safety was a daily, hourly or even constant occupation? Companies that routinely and consistently provide modest incentives and regularly reward drivers for high safety scores elevate its importance.

When a US petroleum transporter implemented a telematics-based system to complement its existing safety programs, managers wanted to instill a cultural change across the company. The company decided to focus on the positive. For the first several months, the company recognized the safest, and greenest drivers in a variety of ways, including praising them at monthly driver meetings and distributing gift cards to thank them for their safe driving. Managers received weekly emails recognizing significant milestones, such as a driver obtaining a green score for the first time or an entire depot consistently driving green.

The fleet also tapped into the power of peer influence by asking their safest drivers to compile a 'cheat sheet' of ways to address common driving safety issues.

Within about six months, the majority of the company's drivers were green. Today, almost two years after the effort was implemented, the company has continued to incorporate incentives for safe driving into the way they do business. Drivers who maintain safe, green driving levels receive a monthly safety bonus and recognition in front of their peers. For those drivers who do not maintain green levels, the company provides counseling and gives them the opportunity to change their own driving behavior before considering progressive disciplinary actions.

¹ WHO Global Status Report on Road Safety, 2009. p. 228. http://whqlibdoc.who.int/publications/2009/9789241563840_eng.pdf. Accessed September 20, 2010

²WHO Global Status Report on Road Safety, 2009. p. 228. http://whqlibdoc.who.int/publications/2009/9789241563840_eng.pdf. Accessed September 20, 2010

³'Road Safety Minister Applauds Driving for Better Business.' Excerpt from Jim Fitzpatrick MP Speaking at the Fleet Business Show, Wednesday 30th April 2008. <http://www.roadsafe.com/news/article.aspx?article=674>. Accessed September 20, 2010

⁴ Ethos. (2010). In Merriam-Webster. Retrieved 15 September 2010, from <http://www.merriam-webster.com/dictionary/ethos>.



Awareness

It has long been observed that poor performers tend to grossly overestimate their abilities. According to the Dunning-Kruger effect “a cognitive bias exists in which an unskilled person makes poor decisions and reaches erroneous conclusions, but their incompetence denies them the metacognitive ability to realize their mistakes.¹”

Importantly, however, while Dunning and Kruger propose that, “for a given skill, incompetent people will tend to overestimate their own level of skill,” they will also “recognize and acknowledge their own previous lack of skill, if they can be trained to substantially improve.”

Telematics-based systems are not employed to expose the ‘incompetent’ – no company will knowingly put a demonstrably incompetent driver behind the wheel of one of its vehicles. However, the specific, objective data telematics systems generate can significantly heighten awareness of unsafe driving habits, and provide impetus and direction for taking actions to improve.

For example, Ryder Trucks found that many of its drivers were unaware of the high

risk maneuvers they were making – because without comprehensive visibility into driving behavior it was impossible to detect.

Kent Wiles, a driver trainer at Ryder notes: “A lot of us never realized what kind of G-force we were putting on the vehicle with curves and lane changes. Once we introduced GreenRoad’s solutions to drivers and get it out there, it opens their eyes. It helps you become more aware of your surroundings and the effect you’re having on traffic around you.”

Best Practices

But awareness alone, of course, is not enough to permanently change performance; it must also be shared. Fleets that develop channels and forums to share and exchange best practices note that it can have a contagious effect.

IDM Trucking, a transportation company that serves small to large sized businesses in the Mid-Atlantic region, has been experimenting with encouraging its employees who receive green safety scores to share tips for safe and efficient driving with their peers. The result is a constant dialogue among employees,

motivating the staff to always think about what they can improve.

This leads not only to fewer crashes and lower fuel costs, but also permeates into non-driving aspects of the job. For example, many fleet operators report that after implementing safety programs they experience a reduction in workers’ compensation claims. A leading specialty contractor for communications companies, utilities and governments throughout the United States, saw higher customer satisfaction ratings among customers served by drivers who were driving safely. The safety culture instilled while in their vehicles had spilled over into other areas of their jobs. Indeed, improvements in the quality of installation work were associated with improvements in driving safety for these drivers.



Dan Steere, CEO
GreenRoad



Ed Dubens, CEO
Interactive Driving Systems®

¹Unskilled and Unaware of It: How Difficulties in Recognizing One’s Own Incompetence Lead to Inflated Self-Assessments, Journal of Personality and Social Psychology, 1999, by Justin Kruger and David Dunning



Top 10 positive approaches to fleet risk management

According to US Department of Transportation and US Department of Energy, driver behavior contributes to more than 90% of vehicle crashes and up to 33% of fuel consumption.

Consequently, motivating your drivers and providing them with effective ongoing coaching to help them drive safely is key to reducing your fleet risk.

Unfortunately, many fleets that have in-vehicle technology intended to monitor driving performance have shown mixed success, largely due to lack of driver acceptance of the system as well as insufficient management commitment to leveraging the full benefits of these systems. Without the buy-in of drivers (and their union, if there is one), in-vehicle

technology is often met with resistance and will be unlikely to deliver the full benefits they offer. At the same time, fleet managers need to appreciate that installing telematics devices into vehicles is only the first step in the process. Following are some proven approaches you and your drivers can take when embarking on the telematics 'journey' to create a climate where all parties enthusiastically embrace the safety and performance oriented organizational culture that can be achieved via a comprehensive telematics-enabled fleet risk management solution.



- 1 Focus on saving lives – of your drivers and the public.** Driving is consistently among the top three most dangerous professions and is the number one cause of workplace death in the United States, according to the Bureau of Labor Statistics. Cutting your fleet's risks with in-vehicle technology that helps drivers eliminate dangerous maneuvers can have a real impact, helping avoid injuries and fatalities. Take an approach that goes beyond managing your vehicle assets and focuses on drivers – and keeping them and the public safe.
- 2 Work together to cut costs by reducing fleet risk.** In a time of economic uncertainty, helping the company save money by reducing crash costs and improving fuel efficiency should lead to less pressure to cut labor costs through layoffs or pay cuts.

- 3 Avoid 'Big Brother' or surveillance-based approaches.** Be wary of in-vehicle technologies that are primarily about surveillance of your drivers. Instead, empower your drivers with proactive coaching tools and transparent reporting to help them achieve measurable safety and fuel-efficiency goals.
- 4 Treat drivers with respect.** Driving is like any profession... doctors, accountants and drivers benefit from continued education. Give drivers immediate and objective feedback, helping them recognize and self-correct risky and inefficient driving behaviors as they occur.
- 5 Employ a driver-centric model.** The best driver safety improvement programs and technologies employ approaches that are attuned to the way people learn and incorporate transparent feedback, along with fully supported training and development.

6 Tap into the union's influence with your drivers. Improving employee safety, protecting other road users and improving the environment are shared goals between any union and management. Drivers' unions have seen the benefits of introducing in-vehicle technology that improves drivers' working environments while ensuring that driving performance is evaluated fairly and accurately. At FirstGroup UK Bus, the Unite union (the UK's largest Trade Union) has been vocal in its support of the driver decision system in place in its buses. (www.greenroad.com/news/category/videos/).

7 Provide meaningful and transparent feedback. Drivers need and appreciate transparent and open feedback that will help them recognize and self-correct risky and inefficient driving behaviors and sustain driving improvements. Research shows that drivers will most often change their behavior on their own without requiring management intervention, freeing managers to focus on other business issues.

8 Being positive requires objectivity. Avoid methods that require subjective manual approaches to evaluating driving behavior. Combining objective feedback based on statistically sound quantitative analysis coupled with detailed reporting, coaching and risk analysis increases drivers' trust in the system and their willingness to self-improve.

9 Taking a positive approach applies to all levels in the organization. Provide tools to coach positively for managers in every part of the organization – safety, fuel, insurance/risk, etc. Even if technology has identified a safety concern within your fleet, use constructive messages to encourage change. Find positive news or highlight a driver's improvements, and use contests or other incentives to foster an environment of friendly competition among drivers. Posting the driving safety scores of the fleet in a break room, for example, puts gentle pressure on a professional driver who falls below his or her peers. For occasional disciplinary measures, take a progressive approach so that drivers have the opportunity to improve.

10 Managing risk is not about claims and blames. Monitoring your drivers' behavior in order to obtain 'evidence' puts drivers on the defensive rather than motivating them. It's far more effective to provide tools to help your drivers proactively avoid risky behavior and crashes.



Mark Hampson
Change Management Consultant
GreenRoad Technology



From **data**, to **information**, to **insight**, to **action**

“Information is a source of learning. But unless it is organized, processed, and available to the right people in a format for decision making, it is a burden, not a benefit.” William Grosvenor Pollard

Today’s vehicle telematics technology is capable of delivering almost infinite amounts of data every second of every day – literally terabytes of information. This information can be used to ‘influence’ a broad array of strategic, operational and safety objectives associated with running a modern day fleet, but only if managers know how to organize and process the information and then put it to appropriate use.

When implementing a telematics solution, here are some of the things that you should consider.

Consistent and timely recording and reporting of data is crucial

Incomplete and ‘old’ data can make it difficult to spot trends and patterns, and often results in drivers and

management spending inordinate time and energy debating the data instead of focusing on improvements. It also makes it difficult to evaluate the impact of any fleet risk management programs that have been put into place. Added to this, poor data increases the problems managers are likely to have when defending insurance or personal injury claims, which can prove very costly to their business.

When choosing a telematics solution, opt for one that captures and transmits key performance data relating to all areas of vehicle use and driver behavior, enabling managers to easily track the ‘real time’ performance of their drivers. Importantly, you should strongly consider a telematics providers whose hardware can be integrated with proven fleet risk management solutions. When the two are seamlessly combined, you can benefit from immediate access to a range of operational reporting and management tools designed to help drive continuous improvements in safety and operational performance.

Raw data must be presented in a way that enables analysis and interpretation

Today's telematics devices commonly provide real time data on driver behavior including speeding, braking and acceleration, as well as vehicle use including distance traveled, engine idling, miles per gallon and carbon dioxide emissions. However, this data is of little value unless fleet managers are able to use it to identify trends, such as the increased frequency of incidents at certain times during the day, as well as anomalies, like why particular drivers are involved in a high number of incidents.

Select a solution that provides meaningful insight and not just raw data, and includes analytical tools that help managers and drivers identify relevant information about driver behavior and vehicle usage. You need a simple and intuitive framework for analyzing driver behavior and vehicle use from a number of different perspectives. By looking at different data elements in combination, or at different subsets of the data, fleet managers can easily spot trends and anomalies.

Targeting improvement actions where the impact will be greatest

"It is not always what we know or analyzed before we make a decision that makes it a great decision. It is what we do after we make the decision to implement and execute it that makes it a good decision." William Grosvenor Pollard

Once particular trends and anomalies have been identified, fleet managers will have a better understanding about where and why their fleet risks are most significant, and be in a position to implement the specific improvement actions that will most improve driver safety and vehicle operating efficiency.

Well thought out solutions come fully integrated with a library of best practice guides and training tools (for both managers and their drivers). By instituting an ongoing driver development and training program customized to each driver's unique requirements, fleet

managers can demonstrate their commitment to road safety and lead the organization towards the creation of a 'crash free culture' where road safety is recognized as business as usual.

Research by Interactive Driving Systems® found that "Human error is a factor in over 90% of road collisions. The actions of managers and drivers are expressions of their attitude, behavior, personal choices and the organizational systems and culture in which they work. Best practice initiatives must ensure that policies and processes support and encourage the creation of a 'crash free culture'. This approach will provide every opportunity for people 'driving for work purposes' to demonstrate the correct attitude, make the right personal choices and behave in the safest way."

Ongoing monitoring drives the creation of a 'crash free culture'

Taking action based on the information obtained through telematics systems is not a complete solution. Managers must continue to monitor their key performance indicators down to the individual driver level. Telematics systems offer managers a real time in-vehicle 'coach'. Without telematics systems, everyone hopes the training has stuck and the safety policies are being followed. With telematics systems, managers can know instantly and in real time how safety and operational initiatives are specifically impacting driver behavior.



Ed Dubens
CEO
Interactive Driving Systems®

A futuristic space scene. In the foreground, the curved horizon of a planet is visible, showing a dark, textured surface with some lighter patches. A bright, glowing blue energy beam or laser line extends from the right side of the frame towards the center. In the upper left corner, a bright yellow star or sun is visible. The background is a deep black space with some faint, distant stars.

Beyond technology



The technology behind Zurich Fleet Intelligence can be likened to 'Star Wars'. Today's vehicle telematics solutions are absolutely cutting edge – making use of satellite communication and telemetry, 'Doppler effect' calculations and tri-axial accelerometers derived from missile guidance systems.

Data can also be pulled from the vehicle's own on-board computer to gather additional information on use, maintenance and economy. All of this data is fed into a state of the art SQL (Structured Query Language) language database where it is smoothed and translated.

Pretty technical stuff; and it is easy to think of telematics as a 'silver bullet' that will instantly solve fleet safety issues. The irony is, after installing telematics equipment in vehicles, we typically see an immediate reduction in collision frequency. Recognizing that 'Big Brother is watching', most employees will drive with a greater sense of care and awareness. As an employer, it is easy to relax and assume 'the system is working'. However, without a robust management system that complements the technology, the improvements will be short-lived and old habits will return.

One of Zurich's telematics service providers has seen many examples of successful implementation of telematics technology, and they all have a common component – an ongoing management commitment to a cultural change.



A leading beverage bottler combined a large-scale outreach approach with targeted coaching when it implemented a telematics solution in order to improve safety, reduce fuel consumption and reduce crash costs. In addition to the telematics equipment, the bottler was provided with best practices and a step-by-step roadmap to help implement the service. Employee training sessions explained telematics and its effect on driver safety. This was followed by one-on-one coaching sessions with at-risk drivers, focusing on speeding, harsh braking, lane

handling and aggressive turning. The bottler also offered ride-alongs for drivers to ask questions about the technology and obtain suggestions as to how to avoid specific risky maneuvers. The approach allowed the bottler to realize significant improvements in safety and a corresponding reduction in costs. In the year following implementation, the company realized an 8.8% savings in fuel and estimated that its crash costs amounted to a combined annual savings of USD1,250 per vehicle.



At a leading US logistics company, management realized the limitations of approaches that only look at violations, crashes or near crashes after the event, and instead wanted a comprehensive driver-centric approach to assessing over 120 maneuvers. Leveraging the driver-centric focus, they developed a strategy to empower employees to proactively make a dramatic improvement in driving safety, before a crash occurred. Managers zeroed in on a particular unnamed driver with the highest number of risky maneuvers, and came up with a hypothesis: that the driver's behavior changed depending on whether her truck was full or empty. Her manager scheduled a ride-along to counsel her on the risky driving behaviors and noticed that her driving did in fact change markedly based on her load – driving with a truck full of combustible fuel made

her very aware of the potential danger posed by a collision. The manager advised her to drive as though the truck was full all the time, regardless of whether it was empty or full, and the in-vehicle feedback served to coach her about the safety of her maneuvers. Within a week, her safety score dropped from 52 (red) to 16 (green), and her safety score remains consistently in the safe driving zone below 20. In this example we see how a focus on the driver, rather than a vehicle, can address the key factor contributing to over 90% of all vehicle crashes and up to 33% of fuel consumption – driving behavior. With an unbiased evaluation of every maneuver of every driver, fleets can engage in a proactive and preventative safety program, and not just look at violations, crashes or near crashes after the fact.

Management commitment, cultural change and employee buy-in are all key elements to successful implementation of a telematics solution. Empowering employees by making information and self-improvement tools available is also critical for success, but the buy-in by employees will not happen unless they see strong commitment and support from management.

First and foremost, employees must see that the monitoring can specifically benefit them, and it not intended to be a trigger for punitive action. They must believe that the primary reason for this approach is to improve the safety of the drivers, and the safety of those with whom they share the road.

The secondary benefits – lower collision costs, fuel and maintenance costs – all make for a healthier bottom line for the company. Particularly in today's difficult economic times, the financial health of the company resonates with employees at all levels, and can be a strong motivating force.

The desired cultural shift does not happen overnight. In fact, Zurich Risk Engineering recommends a three-phase approach that can take up to three years to fully realize. The first phase is a focus on road safety, accompanying the implementation of telematics equipment. Driver data is collected, analyzed, and used to develop risk reduction plans – overall and with specific drivers. Phase two is the start of the cultural

Management commitment, cultural change and employee buy-in are all key elements to successful implementation of a telematics solution.

shift, employing tools like the Driver Pledge and Risk Foundation. Phase three is where road safety becomes 'business as usual', but not a time to relax. Instead, management focuses on periodic reviews of safety policies and procedures, high-risk driver response strategies and enhancements to Safe Driver Recognition programs.



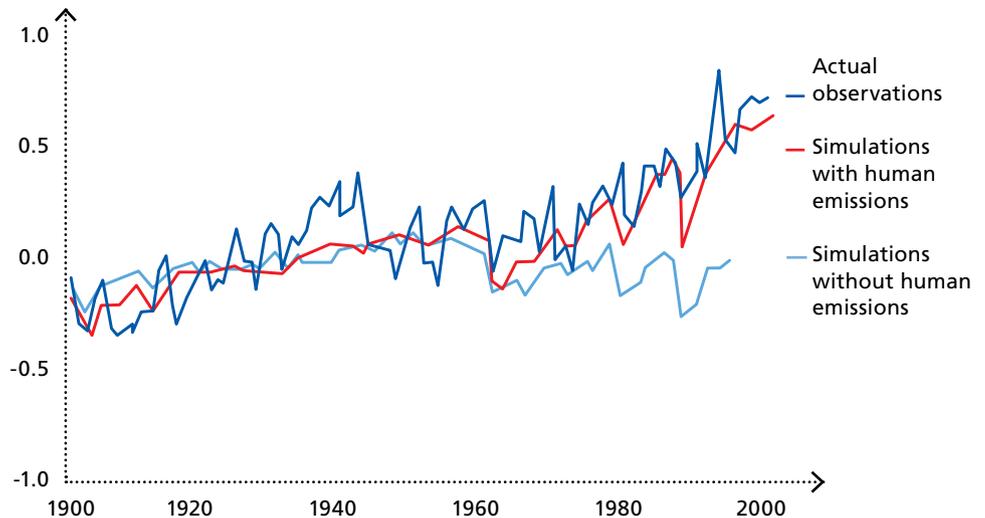
James Breitzkreitz
VP Corporate Client Services
Zurich Services Corporation,
Risk Engineering

Being green can save you green

With worsening scientific findings, the pressure to act increases.

Observations and simulations of global surface temperature

Global mean surface temperature anomaly (°C)



Source: Intergovernmental Panel on Climate Change (IPCC)



22 mpg consumes more than 850 gallons of gasoline and dispatches 8.3 tons of CO₂ into the atmosphere per day. By applying proven approaches for promoting safer driving, fleet managers can expect to see fuel savings from 8-11%. Assuming an improvement of just 7%, this same fleet will see daily fuel consumption reduced by 55 gallons and CO₂ emissions reduced by 0.5 tons. Over the course of a year, assuming 200 workdays per year, this fleet would use 11,150 fewer gallons of gasoline and reduce its CO₂ emissions by close to 110 tons.

Moreover, an investment in a telematics-based fleet management system can create new opportunities to differentiate a business, leading to more revenue from new customers and more profitable relationships with existing ones. First UK Bus, Britain's largest bus operator, has been recognized for innovation surrounding its DriveGreen initiative, which helped the operator improve environmental efficiency and passenger comfort. The program is a public affirmation of First UK Bus's commitment to providing tools to help drivers achieve environmental goals and ultimately reduce First UK Bus's CO₂ emissions by 132,000 tons over the next three years. Ryder and New York student bus company Atlantic Express have also publicized their use of similar systems as a competitive differentiator.

*<http://www.epa.gov/oms/climate/420f05001.htm>

And since fuels used for transportation account for 14% of annual greenhouse gas emissions, improving fuel efficiency is a high priority for policy makers around the world.

However, while new engine technologies can deliver significant improvements in fuel efficiency, the costs of converting an existing fleet to new hybrid-powered vehicles, for example, requires a large upfront investment that in most cases will require years to pay back. Fortunately, fleet managers have other options that are perhaps more appropriate in today's economic climate. Namely, relatively small investments in telematics-based fleet management systems can save money immediately, while also improving the environment.

Using a comprehensive telematics-based fleet management system to promote safer driving has been shown to improve fuel efficiency which in turn leads to a reduction in CO₂ emissions. Safer driving goes hand-in-hand with improved fuel economy since safer drivers read the road more effectively, are smoother in acceleration and braking, and exhibit fewer sudden or aggressive driving actions that waste fuel.

According to the US Environmental Protection Agency*, 19.4 pounds of CO₂ are released into the atmosphere for every gallon of gasoline used in a vehicle. For diesel fuel, the figure is 22.2 pounds of CO₂ per gallon.

So a 250-vehicle fleet averaging 75 miles per day with an average fuel efficiency of





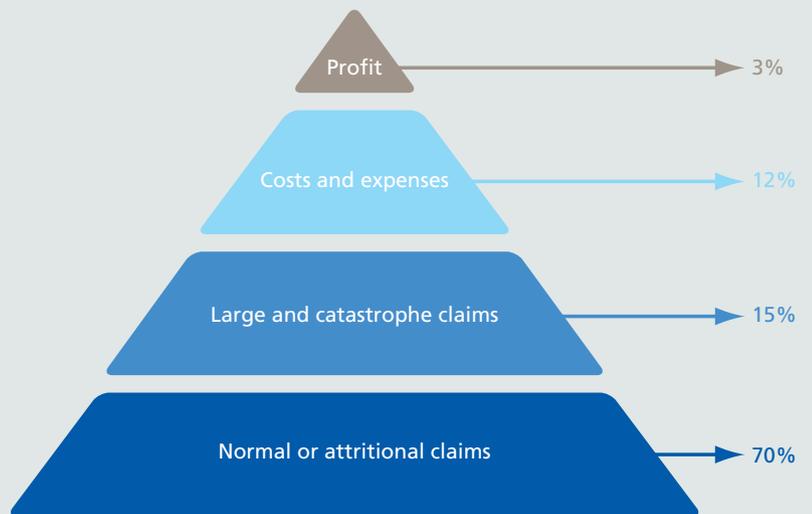
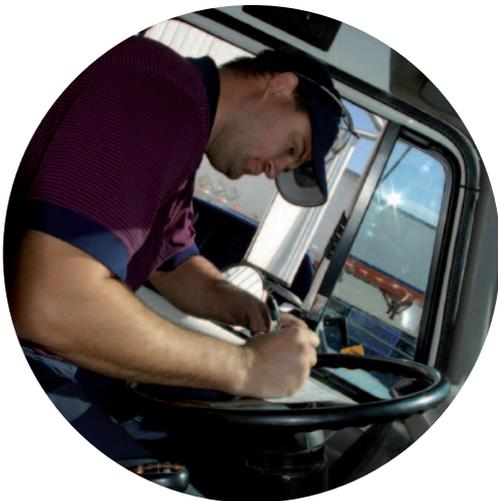
Insurers on telematics and fleet operators that use the technology

Underwriters are often asked if the process of setting a fleet premium rate is a science or an art. In many ways, the answer is a bit of both.

In calculating expected claim frequency and severity, an underwriter will take into account both 'hard facts' – the material, tangible features of a risk – and 'soft features' – those less tangible, but nonetheless important aspects of a risk. Regardless of whether we are considering 'hard facts' or 'soft risk features,' two things are clear:

1. The better understanding the underwriter has of a risk, accompanied by insight into all features of the risk, the more accurate and appropriate the premiums.
2. The insured can have significant influence over the premiums that they pay.

To help illustrate this, perhaps somewhat surprising, latter statement, let's look (diagram opposite) at a sample premium construction.



This is a very simplified model and within any fleet insurance portfolio the premium breakdown will certainly vary by geography, risk type, fleet size, etc. Nonetheless, it does demonstrate a key point – that is, a significant proportion of the premium is for the expected costs from both attritional (normal) and large or catastrophic claims. Consequently, investments that fleet operators and drivers make in reducing the frequency and severity of claims should have a corresponding impact on the premium charged.

By identifying key risk exposures, a fleet manager can focus his/her time and resources on the exposures that are most significant, and initiate improvement actions that will produce the greatest impact.

When deployed consistently, traditional fleet risk management tools and processes, especially those related to driver screening and ongoing driver development, can have a positive impact on claims frequency and severity. However, driving is a dynamic activity and pinpointing the specific circumstances when the risk of a crash is sharply elevated is like searching for the proverbial needle in a haystack. With today's vehicle telematics systems and the wealth of data that the technology can provide, fleet managers now have the tools to dramatically improve safety as well as operating efficiency.

By identifying key risk exposures, a fleet manager can focus his/her time and resources on the exposures that are most significant, and initiate improvement actions that will produce the greatest impact.

From an insurer's perspective, customers that demonstrate a commitment to applying advanced technology in managing their vehicle fleets naturally will be viewed more favorably than those that don't. From an underwriter's perspective, the implementation of a telematics-based solution offers two major advantages:

- It enables the underwriter to better understand the insured's unique exposures, and assign premiums according to specific characteristics of the risk.
- The use of telematics solutions, supported by effective risk improvement measures, will drive down loss rates, which benefits both the insured and the insurer.

It's also clear that fleet operators investing in tools and processes to drive down loss rates expect insurers to understand and recognize these commitments:

- Insurers should consider the steps that their customers are taking to improve risk quality in the rating process. This results in a more pro-active approach than insurers have shown previously.
- Insurers must invest in risk engineering services and capabilities to help their policy holders interpret and optimize the value that can be obtained from telematics data.

Historic competition for business, upward inflationary pressure on claims settlement costs and increasing regulation (and the costs associated with them) means that fleet insurance often is a challenging line of business for many insurers – achieving consistent profitability has proved to be elusive.

As a result, insurers are striving to improve the granularity and accuracy of their rate setting and to improve their risk assessment processes to identify the best quality business.

Fleet operators that take action to manage their loss patterns and are willing to provide enhanced understanding of their risk to insurers, will benefit from more favorable and sustainable premium rates in the future.

Conversely, customers that accept vehicle collisions as an inevitability of vehicles being on the road and consider this as something that cannot be managed will doubtless face ever increasing premiums and potentially reductions in coverage down the road.



Inga Beale
Global Chief
Underwriting Officer
Zurich

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