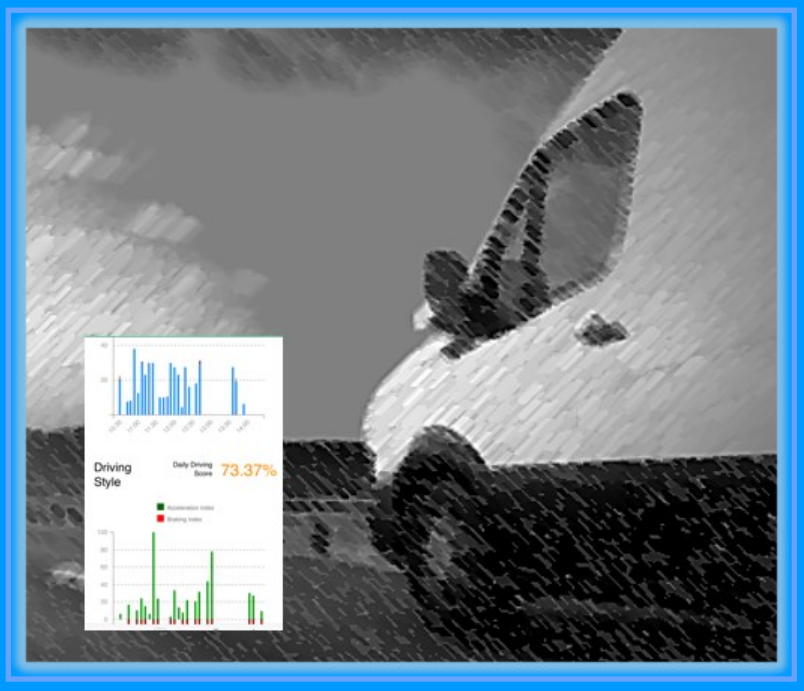
Driver Behaviour Telematics:

How will it help my business?
How does it work?
What are the benefits?

Safe Drivers, Safe Vehicles, Safe Roads



Telematics Consultancy Services
nigel.porter@telematicsconsultancyservices.co.uk | telematicsconsultancyservices.co.uk
020 3859 4705

TelematicsConsultancyServices

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INTRODUCTION

Driver behaviour has been viewed as one of the toughest areas to manage within a vehicle fleet. In recent years the focus has moved from not only improving the efficiency of the fleet and reducing costs but also to improving driver behavior and risk management and reduction.

Safe Drivers, Safe Vehicles, Safe Roads

Recently the topic of conversation with our customers, and also new enquiries, has been Driver Behaviour solutions and what is the difference between the solutions of offer: Driver Behaviour ABCS. Connected DashCams and Driver Behaviour Artificial Behaviour (AI)

How does it work? Will it benefit my business? What's the difference between them all? Is it too expensive for a small fleet? Will I need dedicated staff to manage it?

This guide will help you understand the solutions on offer, especially the terminology used, the key things you need to know to manage driver behaviour and risk and reduce the costs associated with poor driving.

Typically, once your vehicles are out on the road the only way you hope that the vehicles are being driven responsibly is if you don't receive speeding fines, have no complaints from members of the public or have no accident reports.

In all other areas of your business, say for example invoicing customers and getting paid, you have systems in place to help.

With today's sophisticated vehicle tracking systems valuable driver behaviour and driving style information can be captured for monitoring and analysis.

The benefits of this are that business can understand driver behaviour and risks and take positive steps to improve poor driving whilst reducing costs associated with poor driving habits.

Drivers, companies and other road users all benefit from improved driving.

Driver Behaviour Solutions

Why is it important to understand the various solutions available and the terms used to describe driver behaviour monitoring solutions? Surely they all give the same results?

Well, firstly it's important to know what you're investing in and if the solution used will give you the results you need for your business.

Driver Behaviour Solutions

There are several levels of driver behaviour monitoring, each providing greater levels of information. It is not the aim of this eBook to give an in-depth technical explanation but give the reader an understanding of the various solutions offered by Telematics Service Providers,

- **Driver Behaviour ABCS**
  - Monitoring and recording of vehicle's Acceleration, Braking, Cornering and Speed — ABCS. The starting point for identifying how a vehicle is driven. Included in all but the most basic track & trace vehicle tracking solutions.

  - Data is in either measurement of X,Y,Z values from sensors which measure, in simple terms, forward / backward movement (acceleration & deacceleration) up and down motion (bumps & shock) and sideways movements (cornering). These measurements can be translated into G Force measurements. Speed is taken from GPS readings and compared with road speed databases.

  - ABCS data is typically translated into reports giving each driver a score based on the number of events, the severity of each event and the distance travelled. Driver league tables can be created highlighting driver performance against a company target, driver improvements and those drivers that need coaching to improve.

  - ABCS monitoring is normally reactive in that the data is collected during a vehicle journey but reviewed after the event. Some solutions do provide real-time alerts when a critical driving event happens, either via on-screen alerts, text or email but without additional data for context, these alerts may not help fleet operational needs.

- **4G Connected DashCams**
  - By adding a video of the view to the front of the vehicle, and sometimes to the rear, the driver behaviour event can be put into context. i.e. a harsh braking event was caused by another vehicle pulling out of a junction.

  - Key is to have rules deciding which events capture a video clip or image and how these are presented to the fleet manager. For example, receiving a real-time alert of a vehicle exceeding the speed limit is not something that can be turned into an action that requires an immediate response, whereas a real-time alert of a collision with video gives the fleet manager an understanding of actions that need to be taken now.

  - Video clips of poor driving should form part of driver debriefing and coaching sessions allowing discussion of what happened, the reason for the critical driving event and how to prevent similar situations in the future.

- **Driver Behaviour Artificial Intelligence (AI)**
  - The addition of AI allows the camera to also continuously monitor the behaviour of the driver against a set of defined rules. The AI camera only records an event if one of the rules is breached. For example, the driver uses a mobile phone, looks fatigued, is distracted or smokes. In addition, in the event of a critical driving event, severe harsh braking as an example, the AI camera can record video of the driver's actions.

  - The combination of ABCS, video of the driving event and a recording of the driver's actions at the time form the complete driver behaviour picture. You now know what happened, when, where and why.

Connected Dashcam and AI solutions are both designed to upload video clips where there has been a critical driving event. Or a breach of your driving policy, e.g. mobile phone usage or smoking. And with the reports showing when these happened, the vehicle involved and the type of event you only need to look at those that are necessary to reduce risk, prove liability, protect your company from unwarranted claims and coach your drivers.

You can concentrate on running your business knowing that if there is an issue that needs your attention you'll be informed of it.

Driver Behaviour Monitoring

Driver Behaviour Monitoring

Driven by the knowledge that if driver behaviour improves then fuel expenditure drops, carbon emissions are lowered and maintenance costs are reduced, improved driving leads to fewer accidents and therefore a reduced insurance risk.

In-vehicle units can capture harsh driving events and speeding data and also act as accident “black box” recorders. Harsh driving and speeding data including a record of the number of speeding incidents by road type can be produced in management reports, generate driver league tables and driver and departmental comparisons to support driver training programs.

In the event of an accident, the “black box” data can be used to support insurance claims.

How does driver monitoring work?

Driver monitoring systems work by collecting essential driver information and using intelligent metrics to report effectively.

Driver Behaviour Telematics utilises GPS data, sensor data on a vehicle’s acceleration, braking, cornering and speed, plus video, to collect accurate and essential data forming driving trends for businesses to monitor. This allows businesses to identify risk, meet corporate responsibility under HSE guidelines, implement changes that aim to improve driving performance and continuously review operations.

This data is collected and translated into driving ‘scores’ that allow fleet managers to understand exactly where money may be being lost, where driving is deemed as dangerous, company policies are being broken and which drivers may benefit from additional training and/or support.

Firstly, let's look at the problems we're trying to solve and some typical poor or illegal driving habits.

- Harsh Acceleration
- Harsh Braking
- Harsh Cornering
- Speeding
- Mobile phone use
- Smoking
- Fatigue
- Distraction
- No Seatbelt

Most fleet managers and business owners know that poor driving styles such as harsh acceleration, harsh braking and harsh cornering increase the running costs of vehicles. Poor driving increases fuel cost, tyre wear, vehicle maintenance and repairs and also increases the risk of collisions.

As the majority of crashes are a result of human error it seems obvious to try and eliminate the driving habits that can increase the risk of a crash.

You can't manage what you can't measure.

Several studies calculate the potential savings from reducing the bad habits of the worst 10% of drivers to the better habits of the best 50%.

In cash benefits, this level of improvement can give a potential saving of £360 per vehicle per year. An ROI from a basic tracking solution with just Driver Behaviour ABCS monitoring of over 3 times.

Speeding needs to be addressed as a separate issue.

Firstly speeding is illegal but what is the impact on your drivers? The obvious one is points on their licence and the cost of fines or costs of attending speed awareness courses.

But many are not aware that their jobs are also at risk if they get too many points on their licence. Pretty obvious to many but the message is not getting through.

Effects on your Business

There are several areas where your drivers flouting the speed limits will impact your business.

Let's look at vehicle branding first. There are now many 20 mph zones surrounding schools and expanding to cover most Cities and Towns. Images of your branded vehicles speeding past the school gates are not the greatest advertisement for your business.

What about the costs to you? In addition to vehicle running costs, two main areas are increased insurance costs if you have drivers with over 6 points and the cost of recruiting new drivers if they are banned due to points accumulation on their licence.

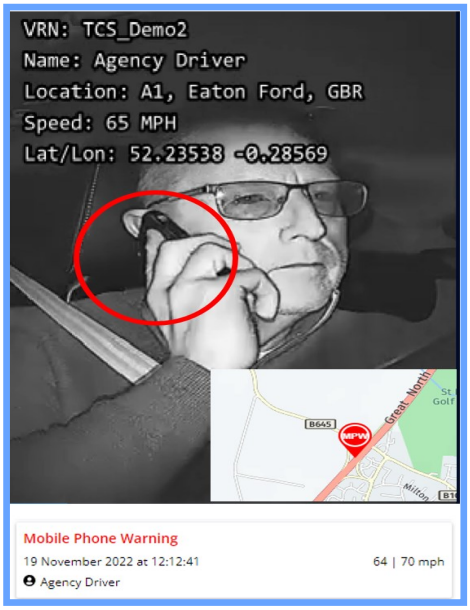
Some important statistics

The Smoking Problem: Smoking isn't allowed in any work vehicle that more than one person uses. It is classed as a place of work.

Drivers can be fined up to £200 and businesses can be fined up to £2,500.

The Seatbelt Problem: UK Department of Transport shows that not wearing a seatbelt contributed to 30% of road deaths in 2021.

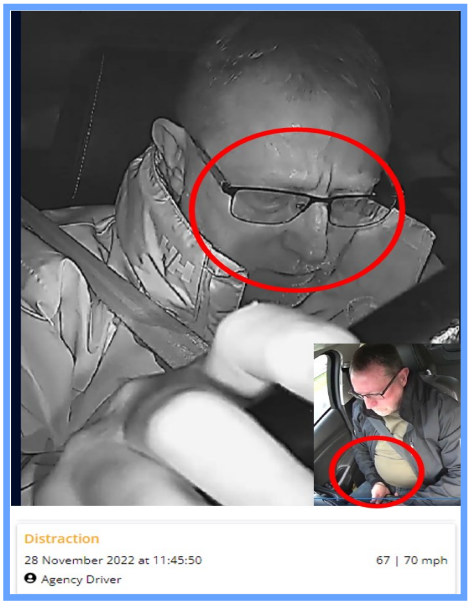
The driver may also be fined up to £500.



The Mobile Phone Problem: It's illegal to hold or use a phone, or any device that can send or receive data while driving. No text, calls, photos, video, or browsing the web. The law still applies if the vehicle is stopped at traffic lights or queuing in traffic.

Drivers can get 6 penalty points and a £200 fine plus the possibility of being banned from driving or getting a maximum fine of £1,000 (£2,500 if you're driving a lorry or bus)

The Fatigue Problem: Statistics suggest that fatigue contributes to about 4% of fatal road crashes and 20% of all collisions in the UK.



The Distraction Problem: Driver distraction is estimated to be a factor in between 10% and 30% of collisions (European Commission Study). The UK DoT state that over 50 fatalities and over 2,000 serious injuries resulting from driver distraction were recorded in 2020.

Where does this impact your business in cash terms?

- **Fuel consumption:** Between 15% and 20% difference between the mpg of the best and worst drivers in your fleet.

- **Accident costs:** Less “own fault” accidents equalling lower costs for minor repairs. Reduced 3rd party claims, reduced policy excess charges and reduces claims over time leading to lower premiums.

- **Safety and Compliance:** More fines and jail sentences are being handed out to business owners and directors concerning driver safety, compliance and Duty of Care.

- **Wear and Tear Costs:** Reducing harsh driving leads to lower maintenance costs due to reduced engine, clutch, gearbox and tyre wear.

- **Staffing Costs:** If drivers are banned from driving due to points on their licence then the cost of agency drivers and recruitment needs to be considered.

Safe Drivers, Safe Vehicles, Safe Roads
- Prevent incidents
- Protect drivers
- Improve company image
- Reduce speeding fines

Driver Behaviour Improvement Process

The process of improving driver behaviour encompasses more than just the implementation of the right telematics solution. It requires a clear plan and process to get from where you are to where you want to be.

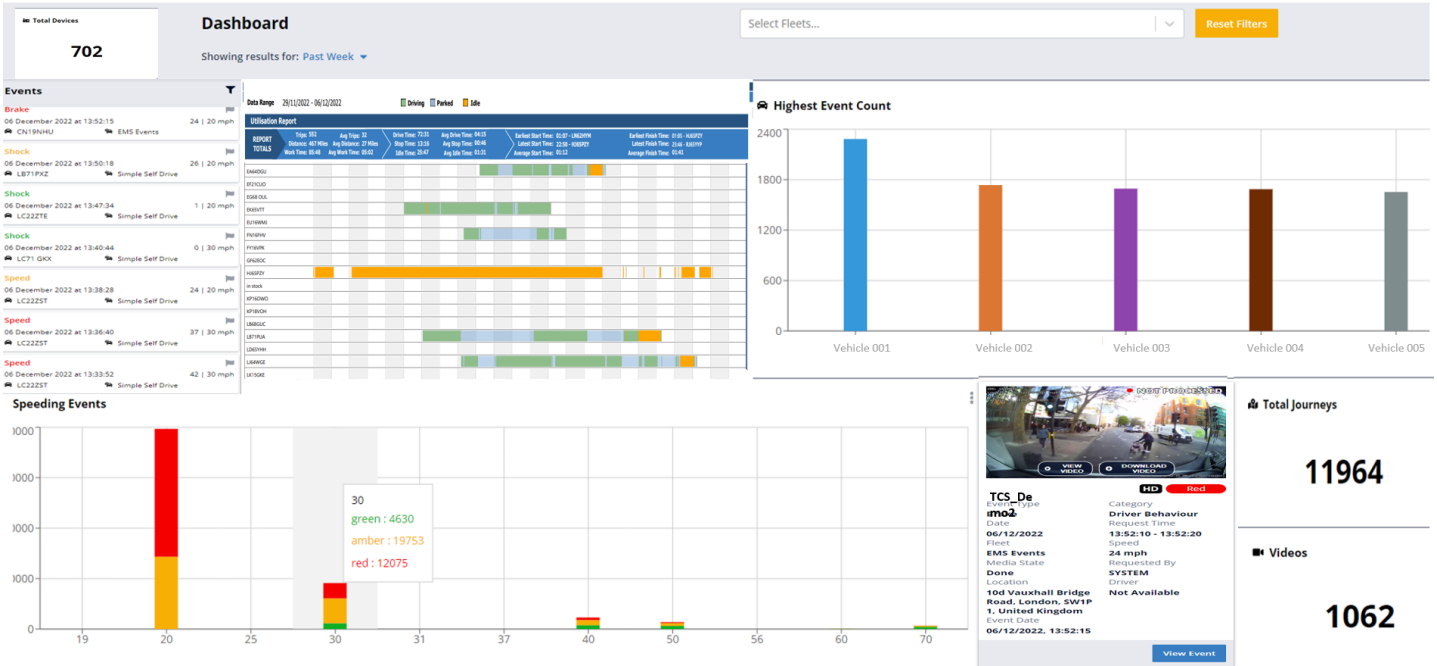
- Set clear objectives: What do you want to achieve? Do you have policies in place?
- Record a starting benchmark: What are the current issues and which drivers perform worst?
- Culture: Aim to win “hearts and minds” to ensure lasting change.
- Reporting and Analysis: Identify the right information to report on and ensure delivery to the right people.
- Feedback and Communications: Ensure that data on driver behaviour, and ongoing improvement, is passed back to the drivers and both up and down the management chain.
- Recognition: Inspire, empower and reward drivers for improvement in driver behaviour.
- Assessment, Coaching and Training: The key to achieving ongoing performance goals.

Management Information

Simple, informative and flexible information is the key to identifying what the driver behaviour issues are. Of equal importance is to be able to do comparisons between the starting point, initial benchmarks and current performance, compare drivers with their peers, compare Operational Centres/depots against each other and comparisons of vehicle types.

The starting point is key data presented in Dashboard views from telematics solutions with options for the key data to be displayed, which vehicles, or groups of vehicles, to include and the selection of dates. As more and more information becomes available it becomes harder to see the data that is valuable and accessible. Forward-thinking telematics providers can display a customer's key data in simple-to-read charts known as dashboards.

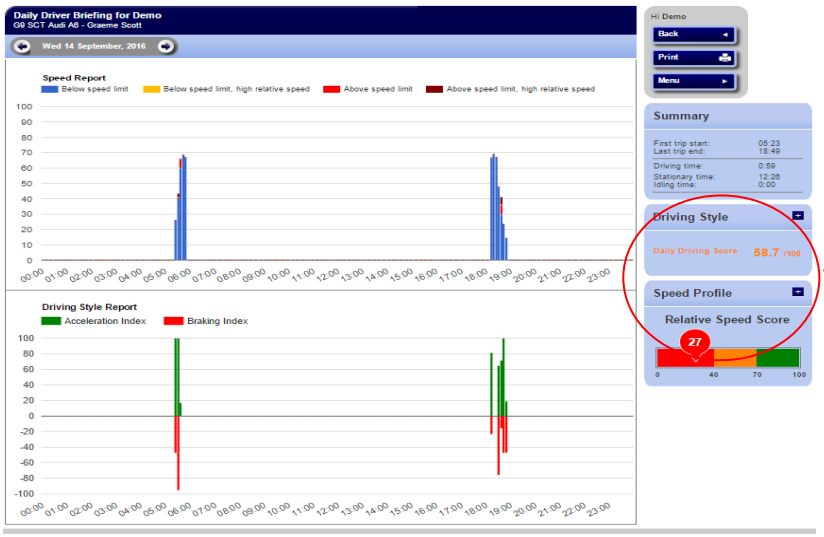
The dashboards display driver safety events, vehicle utilisation, video clips and critical driving events that need reviewing, among other key data, allowing users to focus attention on what needs action, spot trends and benchmark vehicle and driver performance.



For the distribution of data to drivers and front-line management, as with Dashboards, simple informative reports are essential. Reports should cover driver behaviour and driving styles in such a manner that drivers, line managers and company owners/directors, can see what the driver behaviour issues are and be able to use the reports for both self-improvement and coaching.

Reports should cover, at a minimum:

- Individual driving profiles
- League tables
- Speeding reports
- Critical driving safety events



Sample Driver Briefing Report

Highlights performance against targets. i.e. less that required % target for driving style

Driver League Tables

Vehicles or drivers' performance is shown in a league table with scores grouped by colour codes to highlight drivers underperforming

Driving Style League Table for Demo

Report Period: Sun 11 September, 2016 - Sat 17 September, 2016

	Vehicle	Driving Time	Distance (Miles)	Acceleration Index	Braking Index	Driving Style Score
1	QX50 SCO - BMW 535D	0:00	0.0	0.0	0.0	100.0
2	QX10 SEB - Mercedes Atego	20:48	721.1	1.6	3.0	97.7
3	QX62 JKH - Ford Transit LWB	27:27	1012.1	3.9	4.0	96.1
4	QX50 PPW - Renault Trafic	17:52	877.2	5.5	5.3	94.6
5	QX12 KPU - Citroen Berlingo	23:28	788.5	9.1	8.9	92.0
6	QX11 YRT - Citroen C5	17:07	536.9	13.4	9.9	88.3
7	QX50 QWR - Renault Trafic	23:11	702.1	14.8	12.4	86.4
8	QX62 BKS - Ford Transit LWB	19:57	868.5	18.9	17.7	81.7
11	QX62 NHW - Ford Transit LWB	29:13	790.9	23.7	18.7	78.8
9	QX61 QYP - Peugeot Partner	14:45	572.7	19.0	20.6	80.2
12	QX61 JFT - Peugeot Partner	23:35	1058.0	22.7	21.1	78.1
10	QX61 TTK - Volkswagen Transporter	1:19	44.1	17.2	23.5	79.6
13	QX10 SNW - Fiat Ducato	24:46	721.0	20.7	23.7	77.8
14	G9 SCT - Audi A6 - Graeme Scott	11:43	600.7	26.4	24.8	74.4
16	QX50 JJW - Renault Trafic	24:33	716.5	26.6	25.8	73.8
15	QX11 LWP - BMW 350	5:53	216.3	25.6	26.5	73.9
21	QX12 STY - Citroen Berlingo	19:15	342.6	50.5	29.6	59.9
18	QX61 PKM - Peugeot Partner	14:45	581.1	27.6	32.3	70.0
19	QX12 BNB - Citroen Berlingo	2:53	66.3	34.2	33.3	66.3
20	QX61 INR - Vauxhall Astravan	3:06	84.3	39.8	39.6	60.3
17	QX11 QQE - Citroen C5	8:50	290.2	18.9	40.5	70.3

Speed Reports

Identification of high speed events help reduce risky driving and reduce fuel costs

Monthly Speed Report for Demo

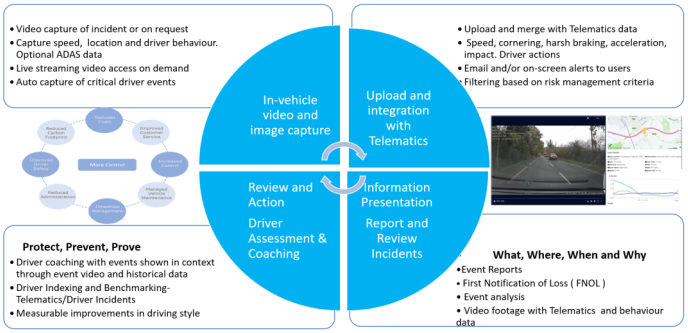
Report Period: 01/09/2016 - 30/09/2016

Reg No. & Description	Max Speed (mph)	Date	Time	Mins in day above 70 mph
G9 SCT - Audi A6 - Graeme Scott	75.8	09/09/2016	10:20	10 mins
G9 SCT - Audi A6 - Graeme Scott	83.3	15/09/2016	16:17	142 mins
G9 SCT - Audi A6 - Graeme Scott	83.9	16/09/2016	16:16	111 mins
QX10 SNW - Fiat Ducato	74.6	08/09/2016	19:02	4 mins
QX10 SNW - Fiat Ducato	75.8	09/09/2016	23:07	3 mins
QX10 SNW - Fiat Ducato	70.9	10/09/2016	19:13	2 mins
QX10 SNW - Fiat Ducato	71.5	15/09/2016	23:07	1 mins
QX10 SNW - Fiat Ducato	70.2	16/09/2016	20:24	1 mins

Assessment, Coaching and Training

We all know that driver coaching and in particular driver training is an essential part of improving your business. Good driver training will bring about several efficiencies including a reduced accident rate, less wear and tear on vehicles and improved fuel economy all of which contribute to improving the overall operational effectiveness.

Drivers are a key element of the highest risks that are faced by many businesses today and it is important to recognise that risk and have in place policies and strategies to help reduce that risk, including driver training for light vehicles, heavy vehicles, passenger cars and buses.



The focus in training needs to be on two key areas, one with a company's internal trainers, if they are in place, ensuring they consistently meet the required standards and the second part is on behavioural science and driver training.

Benefits of Driver Training

- Enhance and develop defensive driving skills
- Reduction of fuel consumption
- Improve driver behaviour and safety
- Reduce driver risk and driver incidents
- Identify a drivers skill profile and additional coaching requirements as part of continual driver development

Driver training needs to be specific to the vehicle types used i.e. passenger cars, light commercial vehicles, large goods vehicles, electric vehicles or buses, as each requires differing skills.

Driver Coaching and Driver Development – Modular Approach

Not all drivers are the same; different skill sets and driving aptitudes, driver confidence together with driving experience. These areas can further challenge drivers and increase or reduce their risk at any one time whilst driving.

A lack of vehicle familiarisation or the types of roads driven can further challenge a driver.

Driver behaviours are a crucial area to consider and will affect the person's driving decisions and confidence.

Working with data provided by telematics solutions, using a range of risk indexes including behavioural analysis, a modular approach that both supports the development of drivers affords a reduction in driver risk and a reduction in bent metal costs.

Therefore a modular approach allows the development and reduction of a specific driver's risk and can be delivered in line with the recognition and understanding of a driver's behaviour following analysis of the output of data linked to telematics solutions.

Modular Driver Educational Programmes can cover the following; - Cars - Light Commercial Vehicles - Large Commercial Vehicles - Bus - Electric Vehicles- Defensive Driving - Eco driving - Speed Awareness - Fatigue - Distractions - Drink and Drugs - Vehicle Familiarisation

Courses need to be delivered at a time to suit the driver and the company, in line with worktime responsibilities and work-related driving time. This supports efficiency in client/driver time management and the associated costs, together with corporate responsibilities under the Management of Health & Safety at Work Regulations.

CONCLUSION

A Driver Improvement Process, including assessment, coaching and training, supported by driving style information from a Driver Behaviour Telematics System has been proven to improve, and maintain, improvements in driver behaviour.

The return on investment case is clear in the reductions in fuel cost, fewer accidents, lower vehicle maintenance and repairs and lower insurance premiums.

We hope this guide has provided insight into how monitoring and reporting on driver behaviour will help you plan a telematics-based Driver Improvement Process for your own business.

If you want to discuss how telematics linked to driver training can help driver behaviour management in your business please let us know.

See Driver Behaviour Telematics in Action

Nigel Porter has over 30 years of experience in telematics and mobile data with roles in development, sales and operations. Ranging from the early days of GPS tracking over the analogue mobile phone and Private Mobile Radio networks to current GSM GPRS and satellite communications he has seen telematics evolve into an essential management tool for companies with mobile assets.

His telematics experience is with both start-ups and large international public companies covering all aspects of product development, sales, technical and customer management for both commercial telematics and high-level security applications. Telematics Consultancy Services provide products and services to companies seeking to implement telematics, improve driver behaviour and manage mobile phone use in company vehicles.

Written by: Nigel Porter | Telematics Consultancy Services
nigel.porter@telematicsconsultancyservices.co.uk telematicsconsultancyservices.co.uk
020 3859 4705