September 2015

Scott Corporation

Technology and safety: Making it work for you and your drivers

CASE STUDY

No. of Staff: 400+
Fleet: 268 Prime Movers, 610 Trailer Units

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NATIONAL ROAD SAFETY
PARTNERSHIP
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Key Outcomes:

- Technological advances introduced to improve safety also make it easier for truck drivers to do their jobs
- Explaining why safety initiatives, particularly technology-based programs, are being introduced and outlining the benefits to the company and the driver increases acceptance by the workforce
- Drivers appreciate management 'walking the talk' and regularly riding with them to see how safety and other measures translate practically in the real world
- Technology-based safety programs must be monitored, with driver input, to ensure they work as intended and necessary practical improvements made
- Showing drivers the data collected by in vehicle monitoring systems and how it is used to improve safety dispels the 'Big Brother' myth
- Safety improvements translate to bottom line benefits through increased productivity, such as higher allowable payloads

Synopsis:

When you transport dangerous goods, quality safety procedures are mandatory – both for the company and for drivers. Scott Corporation uses cutting-edge technology to fulfil that obligation. Most importantly, drivers have accepted safety programs because they have been consulted before programs are introduced and understand the benefits to them and their employer.

Introduction

The importance Scott Corporation places on safety is reflected in a simple statement by its National Training and Compliance Manager: "Drivers spend most of their time on the road so you can't run a road transport business without being focused on road safety. We consider that safety is our licence to operate."

That unambiguous focus is further reflected in the company's motto – safety, performance, peace of mind – and reinforced by the fact that truck driver safety was a key reason company founder Allan Scott was awarded the Order of Australia.

For Scott Corporation, safety is not an optional extra. Working with dangerous goods means risk is a constant companion and safety is a mandatory consideration at all times.

Technology is a major component in how the company ensures fatigue, speed and other safety related risks are managed and minimised across all its operations.

The key to driving acceptance of technology among drivers is consultation before programs are put in place, explaining the reasons for the introduction and allowing drivers to raise concerns.

Implementation is followed up to ensure the system is working as intended in practice and required updates made, based on driver feedback and first-hand insights gained from company management regularly joining drivers on the road.

Company Overview

Scott Corporation Limited (Scott), which employs more than 400 staff and runs a fleet of nearly 900 prime movers and trailers, has its origins in three of Australia's most successful transport businesses: Heggies Transport, Bulkhaul and Chemtrans.

Its three operating divisions cater for a diverse range of transport and logistics needs.

Chemtrans provides national transport and logistics for dangerous and hazardous chemicals, liquids and explosives as well as gas, cement and liquid food.

Bulktrans has specialised in bulk solid logistics for 50 years, operating in every category of dry bulk product, transporting coal, minerals, scrap metal, excavated material, waste products and construction supplies as well as such agricultural products as grain and fertiliser.

Scott's Hyde Park Tank Depot is a one-stop-shop for tanker cleaning, repairs and modifications for the ISO tank container and road tanker industries.

Making Technology Work

Technology-based systems are the cornerstone of Scott's approach to road safety.

In vehicle monitoring systems (IVMS) track speed and location of vehicles to drive compliance with fatigue and other industry regulations, as well as feeding into automated work flows to promote efficient operations. Monitoring, in particular in the areas of speed and mass, are specific to the vehicle.

The company also embraces cutting-edge solutions, introducing 'Seeing Eye Machines' for example in its long-distance fleet to prevent drivers falling into a 'microsleep'.

Critically, technology-based programs designed to increase safety also make drivers' jobs easier, such as electronic work diaries that automatically calculate when rest breaks are due so the driver no longer has to manually work it out.

And Scott's safety standards are uniform across the board, with contractors treated the same as company drivers. Regular contractors have the IVMS fitted to their vehicle and other contractors are expected to have some kind of IVMS installed. In short, if you don't have an IVMS in your truck, you don't work for Scotts.

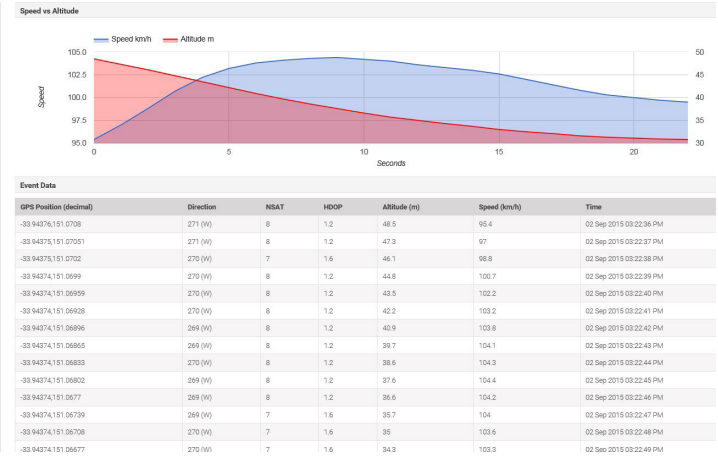
Other electronic safety programs the company utilises include automatic load covers on its bulk tipping fleet, which help to reduce fall injuries.

Safe Speeds

To ensure vehicles are operating at safe and legal speeds, each Scott truck is fitted with an in-cab audible alarm that alerts the driver as they are approach a change in speed restriction zones.

The system allows for the specific legal speed limit for that type of vehicle – a lower speed limit applies to general road trains, for example – with the system 'knowing' the vehicle configuration and the legal speed limit it is allowed to travel at.

Managers are informed with detailed speed analyses for speed breaches which shows the altitude and speed at each point. The managers can then determine the validly of breach and cause in this case you can see the altitude going down (red Line) while the speed is going up (blue line).



Event Data

GPS Position (decimal)	Direction	NSAT	HDOP	Altitude (m)	Speed (km/h)	Time
-33.94376,151.0708	271 (W)	8	1.2	48.5	95.4	02 Sep 2015 03:22:36 PM
-33.94375,151.07051	271 (W)	8	1.2	47.3	97	02 Sep 2015 03:22:37 PM
-33.94375,151.0702	270 (W)	7	1.6	46.1	98.8	02 Sep 2015 03:22:38 PM
-33.94374,151.0699	270 (W)	8	1.2	44.8	100.7	02 Sep 2015 03:22:39 PM
-33.94374,151.06959	270 (W)	8	1.2	43.5	102.2	02 Sep 2015 03:22:40 PM
-33.94374,151.06928	270 (W)	8	1.2	42.2	103.2	02 Sep 2015 03:22:41 PM
-33.94374,151.06896	269 (W)	8	1.2	40.9	103.8	02 Sep 2015 03:22:42 PM
-33.94374,151.06865	269 (W)	8	1.2	39.7	104.1	02 Sep 2015 03:22:43 PM
-33.94374,151.06833	270 (W)	8	1.2	38.6	104.3	02 Sep 2015 03:22:44 PM
-33.94374,151.06802	269 (W)	8	1.2	37.6	104.4	02 Sep 2015 03:22:45 PM
-33.94374,151.0677	269 (W)	8	1.2	36.6	104.2	02 Sep 2015 03:22:46 PM
-33.94374,151.06739	269 (W)	7	1.6	35.7	104	02 Sep 2015 03:22:47 PM
-33.94374,151.06708	270 (W)	7	1.6	35	103.6	02 Sep 2015 03:22:48 PM
-33.94374,151.06677	270 (W)	7	1.6	34.3	103.3	02 Sep 2015 03:22:49 PM

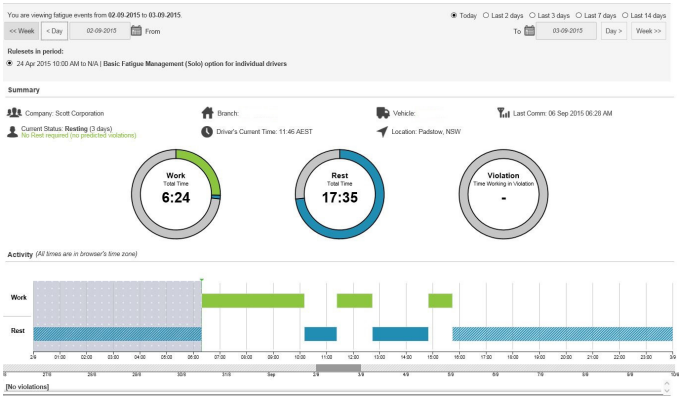
Real time notifications are sent via email and SMS where there is a variation to allowed thresholds. That notification is sent to the relevant branch, rather than head office, and dealt with locally.

Any action taken is proportionate with the severity of the breach with each incident discussed with the driver either immediately or when they return, depending on the seriousness of the breach.

Addressing Fatigue

Fatigue is a significant safety risk for any transport operation. Scott Corporation has installed a real-time electronic fatigue management system across its fleet to help drivers manage their hours and comply with fatigue regulations.

Electronic work diaries record drivers' start and rest times over a 14-day working period and drivers are proactively advised via an alerts and warning system when they need to have rest breaks and what type of rest break is required.



While the system allows the company to better manage fatigue hours, it also assists drivers to calculate when rest breaks are due by doing away with the traditional manual log book system. That system was prone to human error and made it much more difficult for drivers to monitor their hours.

Drivers must log in to the fatigue management system before moving a vehicle. If a driver is not logged in to a particular truck and that truck moves, email and SMS notifications will be immediately sent to the company that the truck is moving and no driver is logged into it.

Similarly, if a driver is at rest and the vehicle starts moving, the company is notified and the driver will be contacted immediately.

The company is also installing Seeing Eye Machine technology in its long-distance fleet to combat fatigue and increase safety (see breakout box).

If you just manage fatigue to be compliant you aren't actually managing the risk, if you manage fatigue properly you will be naturally compliant.

Seeing Eye Machines

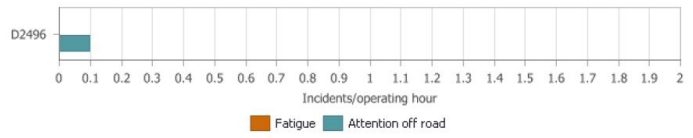
In mid-2014, Scott Corporation began installing Seeing Eye Machines in its long-distance fleet.

The system uses infrared sensors to map the facial features and head movements of drivers to indicate the potential for a 'microsleep'.

If the driver's facial or head movements indicate he is likely to fall into a 'microsleep', the driver's seat will vibrate and a loud in-vehicle alarm will sound. Alerts will be raised through the automated workflow system and sent via SMS and email to supervisors.

The driver will be immediately contacted by telephone and operational staff will work through a specific fatigue checklist with the driver. Depending on the driver's answers, he will be categorised as green, amber or red, which will determine what action follows, ranging from allowing the driver to continue or requiring the driver to take a short or long rest. The drivers themselves can also draw on a fatigue checklist themselves to identify the risk and actions they should undertake.

Incidents per hour by vehicle



Fatigue events

None.

Attention off-road incidents

Time	Travel time	Distance (km)	Duration	Speed (km/h)	Location	Confirmation	Travel (metres)	Course
D2496								
11:40:23 AM+10:00	01:40:35	147.35	6.50s	101 km/h	36.8468 S, 145.3454 E	Glance away	181.74	66°

Field of view exception

None.

Acceleration events

None.

Overspeed events

None.

The fatigue checklist was created by a fatigue expert, with input from the company's long-distance drivers, specifically to address fatigue issues.

The sensors are also able to capture images from the time the alarm sounded.

Showing these images to drivers, combined with being involved in developing the checklist, has increased acceptance of the system and promoted understanding that the Seeing Eye Machines are there to assist drivers by preventing crashes.

Going Further

As well as reflecting its commitment to its employees, Scott's focus on safety also helps the company comply with transport industry regulations and qualify for industry accreditations which, in turn, can drive productivity benefits.

For example, it is accredited under the National Heavy Vehicle Accreditation Scheme (NHVAS) for mass, maintenance and fatigue management as well as Plastics and Chemicals Association, Truck Safe and the Basic Fatigue Management scheme accreditations.

On-board automated scales on many vehicles in the fleet, which monitor the weight on the axles, allows Scotts to meet accreditation standards and comply with various regulations on defined routes based of the length on the vehicle. The NHVAS also outlines the required audits and inspections signatories are required to perform.

Having such technology in place also allows Scotts to participate in such initiatives as the national Intelligent Access Program (IAP), which gives it access to permits that allow additional payloads on defined routes, which translates into productivity benefits.

Scott's safety and compliance team also conduct regular roadside audits and inspections of vehicles. All safety, health and environmental issues are proactively managed by the company's national Safety Council, National SH&E Manager and state-based Compliance Officers.

Riding Together

The natural reaction to technology-based monitoring systems is often one of suspicion, driven by the perception that 'Big Brother' is watching you.

Scotts overcome such attitudes by involving drivers and other affected employees in consultation before programs are introduced and explaining why the system is being introduced.

While that doesn't mean the company bows to every concern drivers have, it does mean drivers have a voice in the process, increasing acceptance of the program when it is introduced and understanding of the need for it.

The next step is to audit the system to ensure it does what it was expected to do. Again, driver feedback is encouraged and considered with programs refined to ensure they work well in practice. This ability to adapt programs also holds Scott in good stead for meeting often-changing industry regulations.

The company will often implement updates in one pocket or one location of the business and incorporate feedback from those drivers before implementing initiatives across the company.

As well as involving drivers in developing the Seeing Eye Machine fatigue test questionnaire, for example, Scotts is prepared to bring drivers into the office to show them how safety systems work, reports that can be generated and footage from the machine and other data if an incident is recorded.

This works to dispel the 'Big Brother' myth and demonstrates to drivers that the company is not spying on them but rather is motivated to provide drivers with tools to efficiently manage their working day while staying safe.

Walk the Talk

One initiative that clearly demonstrates Scott's 'collaboration not confrontation' approach to safety is its Walk the Talk program.

As part of the scheme, senior managers are required to regularly spend a shift in the cab with drivers so they can receive first-hand feedback on programs and get practical experience of how programs operate in the real world.

Members of the senior executive team are expected to spend one day every two months with drivers as part of the program. Branch managers, supervisors and other levels of management must go out on the road with drivers at least one day every month. The company has adapted safety and other programs based on comments from drivers.

Scotts has found the Walk the Talk process useful in helping develop effective programs that are well accepted by the workforce, and that drivers appreciate seeing management in their workplace.

Up to Speed

Training for new drivers, based on a buddy system, and refresher training for existing drivers is another key element of Scott's focus on road safety.

New drivers undergo a training program, led by full-time driver trainers, of up to six weeks depending on the type of job they are doing. A buddy system is used to train the drivers before they are signed off by a qualified assessor.

The company's generic induction process also includes online training that covers several industry topics, such as chain of responsibility and fatigue management, as well as defensive driving.

Refresher training is either held annually for existing drivers or, because Scott's has its own full-time trainers, can be delivered on an ongoing basis if drivers are having issues with a particular topic or need further training in a specific area.

Drivers also undergo medical, psychometric and drug and alcohol testing.

Communication and the Bigger Picture

The key tenet of every technology-based program Scott Corporation has introduced has been consultation and communication with the workforce.

The company believes there has been an 'upside' to every initiative it has introduced and encourages other companies to identify the positive in what they want to implement and to communicate and demonstrate it to the workforce.

For example, administrative staff who no longer need to key in hours of data because automated systems have been introduced now put more effort into assisting drivers to comply with regulations and avoid fines.

Scott's safety leadership also recommends being open with your objectives, suggesting there is nothing wrong with telling drivers that the company will save money by implementing an efficiency measure that will also improve road safety.

Drivers are happy for their employer to make money because that gives them a secure job and a stable income.

The key is to identify and demonstrate the bigger picture and how the introduction of particular measures will bring benefits to each part of the business, driver included.

For more information and case studies please go to www.nrspp.org.au