

Case Study Fourteen

Permabond

a National Starch & Chemical Company (ICI)

COMPANY OVERVIEW

Permabond is a small scale company under National Starch and Chemical (NSC) in the United States, part of the ICI group. The Permabond office is located in Eastleigh, Southampton, employing 63 staff in the UK, three in France, two in Germany, and one in Belgium. The overall nature of business is the manufacture of structural adhesives and hi-tech engineering solutions.

NATURE OF OPERATION AND DRIVING ACTIVITIES

In the UK, driving operations consist of:

- Sales engineers making visits to customers
- Managers and staff attending meetings

There are 17-20 cars in the Permabond fleet.

ORGANISATIONAL STRUCTURE

DriveSafe

In 1993, Permabond developed a programme called DriveSafe in response to two car crashes, identifying driving as one of the highest risk activities carried out by staff. DriveSafe now operates as a team of 7 people and reports road safety issues across the company.

Team members of DriveSafe are drawn from the varying divisions within Permabond: Operations, Technical, Marketing, and Sales. Health and safety issues at Permabond are the responsibility of the Safety, Health, and Environmental (HSE) Manager. The HSE Manager reports to the General Manager of Permabond, who in turn reports to the Global General Manager at NSC, currently based in the US. The DriveSafe team develops and distributes occupational road safety guidance. The departmental managers report to the HSE Manager on road safety issues.

Occupational road safety guidance is available for comment by all employees. The current guidance, '*Permabond Company Car Policy Guidance Notes*' is distributed to all employees, and kept with company vehicles.

A fleet manager at NSC in Slough manages the fleet of cars, but not road safety policy.

OCCUPATIONAL ROAD RISK GUIDANCE

The first steps taken in developing the guidance were to set up a focus group which became DriveSafe. Some advice was sought from external organisations, including the Hampshire constabulary. The DriveSafe team researched several driver training companies with good training records.

It was recognised that the policy should cover behavioural aspects as well as traditional safety issues if it was to have an impact. The initial hurdle in setting up DriveSafe was overcoming drivers attitudes. People tend to believe they are good drivers, and the main obstacle to any guidance is the mindset where people are not willing to accept criticism on their driving. One of the initial tasks in setting up DriveSafe was to identify the most at-risk drivers, developing a training package with the help of external specialists. Company car drivers were trained and necessary equipment obtained. Once company car drivers were trained, the scheme was expanded to include all Permabond staff. Staff are also encouraged to take the Royal Society for Prevention of Accidents (RoSPA) advanced driving test.

The DriveSafe programme has been accredited by various organisations as being one of the best examples anywhere in Europe by BRAKE (the UK charity organisation to promote driving accident prevention). BRAKE has adopted the Permabond risk management and driving policy as an example of ‘Best Practice’ for other companies to use.

Permabond has been recognised by the parent companies, NSC and ICI, as well as with external organisations as having the safest fleet of company cars in the UK, with the current crash rate (no blame) running at 0 per 2.6 million miles, or over 5 years without a blameworthy crash.

From a safety viewpoint, it is felt that good practice guidance would have been useful to help in the initial stages of the improvement plan. Currently, it is felt there is nothing solid to look at in terms of occupational road risk.

What the guidance covers

The organisation’s comprehensive management of occupational road risk covers:

- Best practice for the vehicle and on the road
- Breakdown
- Training
- Driver responsibilities
- Carriage of chemicals
- Travelling alone
- Minimising stress and fatigue
- Pre-journey checks
- Safety equipment
- Replacement and new cars

The policy is distributed as a colour handout entitled *Permabond Company Car Policy Guidance Notes* to all staff. Other reference documents available to staff include:

- *DriveSafe newsletter* – published 6 times a year (see attachment 1)
- *Presentation on Risk Analysis and Risk Assessment*
- *Effects of Talking on the Mobile Phone Whilst Driving*

ROAD SAFETY PROCEDURES

The following procedures are included in the programme:

Risk assessment	The HSE Manger / DriveSafe team member carries out a risk assessment for each driver upon induction into the company. The
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	<p>risk assessment is carried out by completing a form for each driver with the following subcategories: nature of work, journey (miles), car, health, and training. These are carried out annually (see attachment 2). A scoring protocol was established so that each driver's risk potential could be determined.</p>
Driver training	<p>A one day Driver Awareness training course is mandatory for all Permabond drivers who wish to drive a company car. A current RoSPA pass is required for all Permabond drivers who wish to drive a company car. Company car drivers are given 6 months to pass the RoSPA test. Occasional users can only drive on company business once they have passed their RoSPA test. All company car drivers are to undertake a basic first aid course and carry a first aid kit in their vehicle. There is also subsidised driver training for partners and family of Permabond employees. The RoSPA advanced driving test requires retesting every three years for the pass to remain valid.</p> <p>The following types of training are available to Permabond employees:</p> <ul style="list-style-type: none"> • Defensive driving • Accident prioritisation • Use of media • Cycling appreciation and safety • Skid avoidance • High speed lane changing • Use of ABS brakes • Effect of mobile phones • Truck appreciation • First Aid • Use of fire extinguishers • Incident prioritisation • Breakdown procedures • Fire procedures • Planning and time management • Avoiding rear end crashes • New car handover • Ergonomics • Changing wheels
Driver assessments / permit to drive	<p>Similar to the risk assessment, driver assessments are carried out by a member of the DriveSafe team and given a risk ranking.</p>
Alternative means of transport	<p>Alternative means of transport is encouraged, and there is no limitation on overnights or plane/train travel. In addition, there is a growing use of video and tele-conferencing facilities in order to reduce travel to external meetings. The amount of miles is restricted to 400, with no longer than 8 hours driving.</p>
Guidance on mobile phone use/hands free sets etc	<p>This is covered in the guidance document as no using of hand-held mobiles nor hands-free mobiles while driving. A driving study of mobile phone use was carried out by Permabond and detailed under the examples below.</p>
Vehicle maintenance procedures	<p>The fleet is managed by PHH who are in charge of vehicle servicing and maintenance regimes. Individual drivers are responsible for carrying out a 'mini risk assessment' before they take on a journey, including a visual check of the vehicle, tyre conditions, windows, and light glasses. In addition, drivers are to</p>

	<p>periodically check light bulbs, wiper blades, water jets, and the level of essential fluids.</p> <p>A formal scheme of car auditing is also carried out. A car audit will cover the condition and roadworthiness of the car as well as a check of safety equipment (see attachment 3).</p>
Vehicle Loading	The guidance outlines the logistics of large or heavy vehicle loads, capacity of the driver, and minimising injury.
Journey scheduling	The guidance discusses personal responsibility. Necessity of travel is a significant issue especially if meetings can be conducted via video or tele-conferencing facilities. Adverse weather is also a consideration in journey planning. More recognition of journey planning started when a staff member caught for speeding was interviewed by the DriveSafe team and found that he was criss-crossing the country trying to make several meetings in one day. More planning by managers has reduced this sort of schedule. A cost-benefit and risk assessment is done on the journey planned to assess transport options.
Breakdown assistance and Emergency Planning	<p>Each vehicle details breakdown assistance in the company car guidance which is kept with the vehicle at all times. A list of items is outlined in the guidance document which are recommended to be kept with the vehicle at all times, including:</p> <ul style="list-style-type: none"> • Laminated Windscreen • Roadworthy Tyres (minimum tread depth of 3mm) • Airbags • Antilock brakes • High mounted brake lights • Fire extinguisher • First aid kits • Warning triangle • Extendable wheel brace • High visibility jackets (1 in front & 3 in the boot for passengers) • Life hammer • Tyre pressure and depth gauge • Multi torch
Incident reporting	Accident reporting is detailed in the guidance document. Drivers have a responsibility to report incidents first to the police, and then to their line manager. Staff are also encouraged to report 'near-misses'. There is also a Permabond reward of £50 for reporting a significant near miss. A recent example is one where an employee suggested checking the wheel nuts after servicing to prevent losing wheels, following a near-miss after his last service.
Tiredness/Fatigue	Detailed outline of how to avoid falling asleep while driving including route planning, rest breaks, avoidance of driving long journeys if alternative transport is available.
Personal Security	Policy outlines the hazards of travelling alone and what to do to minimise the risks, including staying on main roads, keeping the fuel tank about ¼, parking in well lit areas, and look confident.
Medical/Eyesight tests	Eye tests are done annually.
Vehicle Ergonomics	The guidance stresses the importance of ergonomics as the lack of correct comfort while driving can lead to poor posture, tiredness, irritability, and lack of concentration. The correct shoes

	are stressed as an important part of driving ergonomics. In addition, vehicle information on crash ranking (EuroNCAP), safety features, and performance are reviewed and considered when ordering company vehicles.
Vehicle Safety Features	Drivers must choose company vehicles with ABS brakes, 4 doors, and airbags. These features also apply to any hire cars. The above safety kit mentioned in Breakdown Assistance must also be kept with the vehicle, and a kit is available for users of hire cars.
Incentive schemes	Following on from a Times and Leaseplan car driving competition, Permabond sometimes organises a company car driver competition which has been adopted by the parent companies and other external organisations. The competition consists of an on the road driving assessment, accident prioritisation, manoeuvring exercises, parking, emergency lane changing, and wheel changing. Drivers can win awards and are recognised for their contributions to road safety.

SPECIFIC EXAMPLES OF PROCEDURES

Permabond Company Car Policy Guidance Notes

The policy is distributed to all staff. The document covers in detail all of the information discussed in the table above. Copies of the guidance are kept with the company vehicles.

DriveSafe

As discussed above, a proactive team made up of members of staff across the company raises awareness of road safety issues throughout the company. This group publishes a bi-monthly newsletter and involves staff in incentive schemes and training. DriveSafe is the longest running cross-functional team in existence in Permabond and the parent companies. In particular, DriveSafe has the support of senior management, which has led to the success of many of the group's initiatives. One of the most important successes of DriveSafe was to change to attitude and culture of everyone across the company towards a mindset of safe driving. For example, everyone at the company now automatically reverses into parking spaces.

Risk Assessments and Risk Analysis

As outlined above, upon starting employment at Permabond, drivers go on an assessment with the Health and Safety manager / DriveSafe team member, and are ranked according to their risk potential. This assessment is carried out for each driver annually, and will be done regardless of any training completed by the driver.

In addition, quite a bit of research has been carried out identifying hazards and distracting driving behaviours. A psychologist was brought into to speak to Permabond about driver attitudes, such as the psychology of 'getting away with it'. The more a person takes chances and gets away with it, the more he thinks it is safe to do so. In fact, the reverse appears to be true. Statistically, according to Permabond, the more chances a person takes, the more likely he is to be involved in a crash. Distractions, fatigue, and poor observation were also discussed.

Risk management is a key aspect related to the road safety policies adopted by Permabond. Available to staff is a presentation on the risk management of road safety issues. The following risk analysis is carried out on existing control measure to see if they are adequate, including:

- Is the vehicle design suitable?
- Are there adequate safety features?
- Is training sufficient?

- Are the hazards understood?
- Is the procedure correct?
- Is the procedure being followed?
- Is a hierarchy of controls in place:
 - Elimination – Is the journey necessary?
 - Substitution – Is there a safer means of transport?
 - Reduction – How can we minimise this risk of harm?

Mobile Phone Use

All Permabond's company car drivers took part in training on driving while using mobile phones to demonstrate the risks. The objective was to provide practical evidence to dispel the belief that driving whilst talking on the phone does not affect a person's driving performance.

A course was laid out on a disused airfield consisting of one straight line of cones evenly spaced with a roundabout at each end. Participants were challenged to weave around the line cones before using each roundabout in a figure of eight. After three circuits, each participant received a phone call (hands free) that required them to answer a series of questions, such as:

- Recite the last five letters of the alphabet in reverse order
- Name the fifth planet from the sun
- Who are your top five key accounts
- What's the difference between a risk and a hazard

The questions were designed to simulate an intense conversation, one that required some mental thought process rather than just a chat. The average speed of drivers was measured before and during the questioning, the ability to answer the questions was noted and any unusual driver behaviour was also noted, as seen in Attachment 4.

All drivers recorded a significant drop in average speed when answering the questions. In addition, common behaviour included hitting cones, not answering questions, or driving completely off the course, and often the questions were not answered at all and the driving standards still suffered.

It was the conclusion of all participants that a person can concentrate on driving and a person can concentrate on an intense conversation, but a person cannot do both at the same time effectively.

AUDITING AND REVIEW

The guidance notes are reviewed annually by the DriveSafe team. Internal cost and incident reports are issued with a list of drivers, their age, vehicle registration, amount paid by insurance, and details of the incident.

A formal system of car audits periodically checks company vehicles for condition and safety. This is carried out by the DriveSafe team. In addition, vehicles are selected according to :

- NCAP crash rating
- safety features
- stopping distance
- performance/handling
- problem history

PERFORMANCE MEASURES

Performance measures for the road safety policy are as follows:

- Zero accidents
- Annual car policy review
- Survey suppliers/contractors driving safety records
- 100% company car drivers RoSPA advanced
- New drivers RoSPA standard within 6 months
- All non-company car drivers on company business to hold RoSPA pass
- Road Safety Awareness safety training
- Enter and win company car competitions
- Continual improvement
- Monthly measurements

Performance measures on specific aspects of driving include monitoring:

- Tyre life
- Petrol consumption
- Crashes
- Service costs
- Brake pads

COST AND BENEFITS

The cost of running the DriveSafe programme is \$4-5K per annum (figures in dollars as NSC is based in the US). The cost of one serious crash is \$25K direct costs and \$125 indirect costs, so saving just one serious crash every 3 years gives a cost saving of \$435K. It is estimated by UK standards to cost Permabond about £180-200 per driver per annum.

The overall cost of implementing the Permabond occupational road risk guidance is not considered to be significant, apart from the time of the HSE / DriveSafe team.

The policy has been existence now for 8 years, but as a continuous improvement programme, is consistently being modified and updated.

The main benefits of implementing the programme are seen as employee protection, as well as getting staff to think about road risk.

LESSONS LEARNED

There is an emphasis on gaining commitment to the procedures by raising awareness and understanding of the benefits rather than imposing rules. This approach has resulted in much quicker compliance with policies. One important aspect of implementing the safe driving scheme was to have senior management participation, and then develop a team to implement the policy throughout the business. Management training is also an important aspect of the road safety policy as managers are responsible for encouraging staff compliance with the safe driving practices. Advice for other organisations contemplating the introduction of a safe driving policy includes using existing guidance or other organisational policies and build on it to suit culture.

CURRENT AND FUTURE DEVELOPMENTS

Currently, Permabond is hoping to implement driving issues into a company Intranet system to be accessible at all times to everyone. It is also felt that driver training for the different sectors of the business would be helpful. In addition, it would be beneficial to have more input from NSC, and to be included in their auditing system.



Drive Safe Newsletter

Issue No. 33

ON THE ROAD

Bonnet flies up

"There was a bang and then I couldn't see ..."



OK. It's good that you checked your oil, water and battery, but make sure your bonnet is properly closed. If you notice that your bonnet looks

loose as you drive along, stop in a safe place and check it... Don't wait until you get home, you might not!

Car fires



"I got out to check the smoke... The next thing I remember I was waking up in hospital"

Car fires are rare, even at accidents. The main cause is faulty wiring, it is not wise to fit electrical accessories to your vehicle unless you are absolutely sure what you are doing. The cost of an auto-electrician will be far less than the pain and misery that comes with a car fire.

Always, always, always, get yourself and your passengers out of the car before doing anything else if you suspect fire.

Summer Hazards



To reduce the risk of an accident and get you through the hay fever season in comfort, here are some tips:

- Check the pollen count before starting a journey - if it is high, could someone else drive who doesn't suffer from hay fever?
- If you are taking hay fever medication, check that it doesn't cause drowsiness.
- If you feel a sneeze coming on, drop back from the car in front. To delay or neutralise a sneeze, press on your upper lip under your nose.



Drinking and driving doesn't only wreck cars

After one drink, we take much longer between seeing a problem and reacting to it. With vehicles travelling around town at around 60 feet per second, fractions of a second can make all the difference. Alcohol impairment could be the difference between stopping before the school crossing - or on it...

How must it feel to lose a loved one either because they have been drinking and driving, or because they fell victim to a driver who just had 'one-for-the-road'?

RoSPA Advanced Driving Awards

Congratulations



Chris Hollands - Gold

PermaBond Attachment 2

Risk Assessment				Scoring Protocol	
Location					
Driver Name					
Assessor					
Date					
Risk		High	Medium	Low	High >25, Medium 15 – 25, Low < 15.
Nature of work					
Sales	Tick				
Technical	Tick				
Occasional	Tick				
Journey					
Miles driven per year				Miles	<10,000 = 1, 10-15,000 = 2, 15-25,000 = 4, >25,000 = 8
Miles driven per month				Miles	
Types of journey	M/way	City	Country		M/ way = 1, City = 2, Country = 3
Area					
Car					
Stopping distance	Good	Medium	Poor	G = 1, M = 2, P = 4	
ABS	Y/N			N = 4	
Front air bags	Y/N			N = 2	
Side air bags	Y/N			N = 2	
NCAP score	5	3	2	5 = 0, 3 = 2, 2 = 4	
Phone used	Y/N			Yes = 8	
Safety accessories provided	Y/N			No = 2	
Health					
Eye sight test					
Back issues					
Medication					
Training					
First language				Not for Country = 4	
RoSPA	Gold	Silver	Bronze	G = 0, S = 2, B = 4	
Breakdown procedure				N = 2	
Skid avoidance				N = 2	
Avoiding rear end crashes				N = 2	
Truck appreciation				N = 2	
Defensive Driver	Y/N			N = 4	
Other					
Other					
Other					

A risk assessment form was developed, which aimed to record information from our drivers on the following subjects:

- Nature of work
- Journey
- Car
- Health
- Training

A scoring protocol was established, so that each driver's risk potential could be determined.

PermaBond Attachment 3

TRB

Car Audit check List

- Life Hammer ✓
 - Fire Extinguisher ✓
 - 1 x reflective jacket in passenger compartment ✓
 - 3 x reflective jackets ✓
 - Hands Free kit fitted N/A.
 - Internal cleanliness EXCELLENT.
 - Extendible wheel brace ✓
 - Warning triangle ✓
 - 1st Aid kit ✓
 - Multi-torch ✓
 - Bulb kit ✓
 - Fuse kit ✓
 - Tyre pressure / tread depth gauges ✓
 - External cleanliness ✓
 - External condition ✓
 - Operation of lights ALL OK.
 - Under bonnet fluid levels / battery terminals ✓ ALL OK.
 - Wiper blades OK.
 - Taxed ✓
- | Tyre condition: | Tread
Actual | Spec | Actual
Tread Depth |
|-----------------|-----------------|------|-----------------------|
| O/S Front | 6.0 | 30 | 30 |
| N/S Front | 5.5/6.0 | 30 | 30 |
| O/S Rear | 5.0 | 33 | 32 |
| N/S Rear | 5.0 | 33 | 32 |

Spare.

PermaBond Attachment 4

An Investigation into the Effects of Talking on a Mobile Phone Whilst Driving

Objective:

To provide practical evidence aimed to dispel the belief that driving whilst talking on the phone does not effect a persons driving performance.

Commentary:

A course was laid out on a disused air airfield consisting of one straight line of cones evenly spaced with a roundabout at each end. Participants were challenged to weave around the line cones before using each roundabout in a figure of eight.

After three circuits each participant received a phone call (hands free) that required them to answer a series of demanding questions, an example can be seen below:

- Recite the last five letters of the alphabet in reverse order
- Name the fifth planet from the sun
- Who are your top five key accounts
- What's the difference a risk and a hazard

The questions were designed to simulate an intense conversation, one that required some mental thought process rather than just a chat.

The average speed of the driver was measured before and during the questioning, the ability to answer the questions was noted and any unusual driver behavior was also noted, the results can be seen on the table below:

Driver	Ave. speed no phone	Ave. speed on phone	Reduction in speed(%)	Ability to answer questions on phone	Comments (Whilst on phone)
Chris	30	22	27	Few answered	
Dick	25	15	40	All answered	
Terry	25	18	28	All answered	
John	28	25	11	Some answered	Nearly hit cone
Martin	25	19	24	Some answered	Took roundabout wrong way
Richard	28	25	11	Some answered	
Mark	32	20	38	Few answered	Used handheld phone
Andy	32	25	22	Some answered	
Nick	37	24	35	Few answered	
Randolph	30	22	27	Some answered	Wide on roundabout
Rod	30	25	17	Few answered	
Russel	32	28	13	All answered	Hit tyre and cone
Neolle	18	15	17	All answered	Drove into roundabout
Pierre	28	20	29	Some answered	
Griff	30	30	0	None answered	Hit 2 cones
Yves	25	30	-20	None answered	Hit 2 cones, intentionally slow
Craig	26	20	23	All answered	
Jan	22	15	32	All answered	
Ludger	30	20	33	Few answered	
Total	533	418			