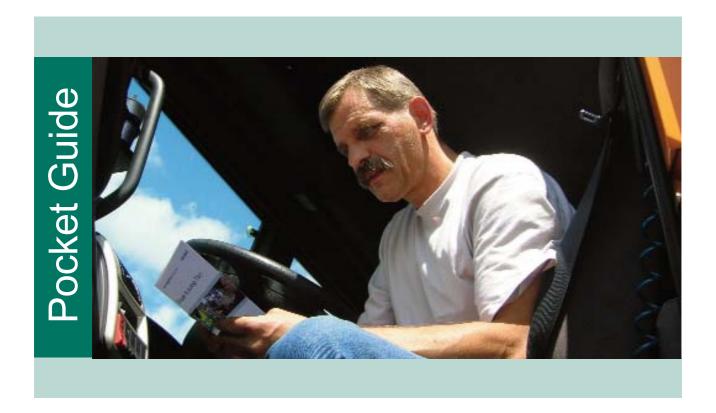




Truck Drivers' Handbook





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1 Introduction – Your Role in Fuel Efficiency

As a driver, you have a significant impact on fuel consumption. Alert, positive and professional drivers can reduce fuel use and hence vehicle emissions, operating costs and contribute to greater road safety.

Remember - You have the single biggest impact on both fuel consumption and safety.

These pages offer advice on:

- Your impact on operating costs
- Fuel consumption and reduction in emissions
- Safe and efficient driving
- Driver checklists, conversion tables and further information

Having the best advice will help you to understand and achieve the benefits of efficient driving. So keep this information handy and improve your efficiency.

2 Driving Down Costs – How Does It Affect You?

Many professional truck drivers can only guess at how much is spent on maintenance, tyres, insurance and, crucially, fuel. Whatever vehicle you drive, it is helpful to know how things add up.

In general fuel equates to about 30% of total operating costs so using less fuel makes good business sense and helps the environment by reducing emissions.

When you understand the operating costs then you can begin to do something about it. The stronger the business, the better the prospects for the workforce.

Take a look at the below example:

Table 1 Profits from Fuel Savings

Total fleet costs	£800,000
Fuel costs (30% of total)	£240,000
Profit	£40,000
5% saving in fuel costs	£12,000
Profit after fuel saving	£52,000

Table 1 shows the difference a 5% saving can make to the bottom line profit of a larger fleet company, increasing profit by 30%. This means better opportunities for those at the frontline, you the driver.

Remember - Once you are aware what the truck you drive costs to run, you'll be ready to start saving fuel and money.

Remember

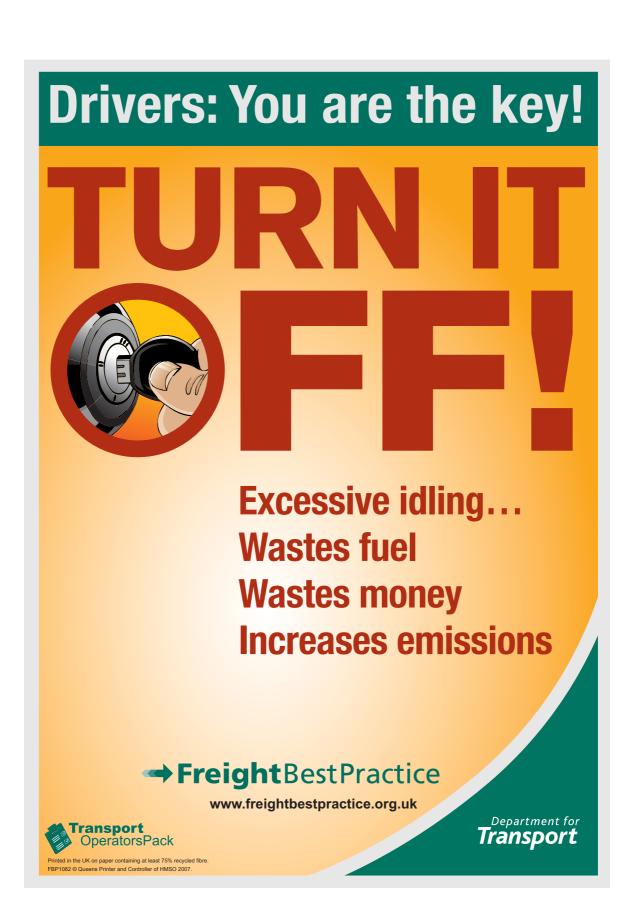
- A rise in profit could improve your job security. Your contribution counts!
- A small improvement in fuel usage can generate a large increase in profitability
- If you don't measure it, how can you manage it?

 Time spent gathering accurate information on fuel consumption by recording mileage and fuel use will help to pinpoint areas for improvement
- Maximise your benefits Understanding how you can influence current costs through efficient driving is vital in order to maximise potential benefits



If you require further information on how to manage and save fuel, detailed guidance is available in the FREE Safe Driving Tips, Engine Idling - Costs You Money and Gets You Nowhere! and many other Freight Best Practice publications.

These can be ordered via the Hotline **0845 877 0 877**, or you can download them from the website **www.freightbestpractice.org.uk**



3 Factors Affecting Your Fuel Consumption

Some factors affecting fuel consumption are outside your control but it is helpful to understand their effects so you can begin to measure your MPG effectively and set a benchmark for yourself.

Experienced and professional drivers can work hard to reduce the impact of these negative factors on fuel economy. There are simple steps you can take that will increase your vehicles' MPG no matter what vehicle you drive, how congested the roads are and regardless of the weather conditions.

The Vehicle

The vehicle you are given to drive has a significant influence on fuel performance in any operation including:

- Type and specification
- Age
- Condition
- Equipment and load

Traffic Conditions

Road type and traffic conditions have significant effects on fuel use. The more you have to change gear, brake or accelerate, the more fuel will be used. Variations in traffic congestion can also create differing performance results even though the route is the same.

Weather

Vehicle performance in the winter months can be as much as 10% poorer than in the summer months. Winter conditions can mean greater use of auxiliary equipment such as fog lights, screen de-misters, etc, the change from 'summer grade' diesel fuel to 'winter grade' can also contribute to a difference in consumption of around 3%.



4 How To Reduce Your Fuel Consumption

FACT! Tests show that by correctly sheeting an empty tipper body at 56mph you could see improvements of over 8% (BTAC / IRTE Technical Evaluation Event 2003).

FACT! A typical 420hp heavy-duty truck engine consumes fuel at the rate of around two litres an hour when left idling and stationary.

FACT! If tyre pressure falls below recommended figures, rolling resistance increases and fuel is wasted e.g. a 10lb psi fall in tyre pressure is likely to result in a 1% fall in fuel economy.

FACT! Slow and tortuous routes through hilly terrain will drag down the fuel performance of even the best vehicle.



If you require further information on how to manage and save fuel, detailed guidance is available in the FREE Save It! DVD, Fuel Saving Tips, SAFED for HGVs and many other Freight Best Practice publications.

These can be ordered via the Hotline **0845 877 0 877**, or you can download them from the website

www.freightbestpractice.org.uk

The following section outlines what you can do to improve safety and fuel economy:

LOOKING AHEAD

Every time you drop down a gear, fuel consumption increases. Forward planning helps to reduce excessive gear changes. Use your visibility advantage provided by the high seating position in a truck. Keeping a vehicle moving, even at walking pace, requires considerably less fuel use than moving a vehicle from a standstill.

FACT! By planning well ahead and keeping the vehicle moving, gear changes will be reduced and fuel will be saved.

HAZARDS

Awareness is essential to road safety. It also enables early selection of the gear and speed appropriate for the situation. The result is a safe and economical drive. Using the correct gear, engine speed and position for any given situation also results in a more environmentally friendly operation.

FACT! Use of information gained through observation gives more time to plan ahead and systematically avoid hazards.

SPEEDING

Speeding is dangerous. It puts your life and the lives of other road users at risk as well as jeopardising your driving licence. In addition, due to the importance of road speed in aerodynamic efficiency, speeding will have negative effects on fuel economy due to increased aerodynamic drag. Excessive speeding can also put extra stress on the engine and transmission system.

FACT! Fuel is directly proportional to the speed your truck is travelling. A 22% reduction in fuel consumption can be achieved simply by reducing your speed from 56 to 50 MPH

The Effects of Speed on Fuel Consumption of a Heavy Duty Truck Engine

Speed (MPH)	Distance (km)	Fuel Used (Litres)	Fuel Consumption (MPG)
0 (idling at 480 rpm)	0	1.9 per hour	
37	22.2	4.1	15.2
50	22.2	6.6	9.5
56	22.2	8.4	7.4

Source: BTAC/IRTE technical trials of June 2000



Drivers: You are the key!

ARE YOU MISSING



It's not necessary to use every gear...
Reducing gear changes improves fuel consumption while avoiding driver fatigue and stress.



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Transport

MOMENTUM

The speed gathered under power can be used to ascend and descend hills on undulating roads without the use of the accelerator. On modern, electronically controlled vehicles, when the foot is taken off the accelerator, fuel stops entering the combustion chamber. The vehicle is still moving, but using no fuel.

FACT! Using the momentum of the vehicle will save fuel.

CRUISE CONTROL

If you have cruise control, it will help to optimise the electronic control system's ability to deliver the appropriate amount of fuel for any given situation, thus improving fuel efficiency. Remember, cruise control doesn't have eyes!

FACT! To maximise fuel economy, cruise control should be used whenever safe and appropriate.

CLUTCH CONTROL

Engaging and disengaging the clutch twice will halve the life of friction surfaces. This technique is only necessary for crash gear boxes. Double-declutching will simply increase clutch wear.

FACT! Double-declutching is not necessary on synchromesh gearboxes. It increases clutch wear and wastes fuel.

SKIP GEARS OR USE BLOCK CHANGES

Even when a vehicle is fully laden, it is not normally necessary to use every gear. The quicker you move up the gearbox to top gear, the more fuel you will save. As a rough rule of thumb, every time you change up a gear you improve fuel consumption by somewhere between 10% and 30%. Reducing the number of gear changes saves time and energy.

FACT! The fewer the gear changes, the less the physical activity needed and the more fuel efficient the operation.

AVOID UNNECESSARY BRAKING

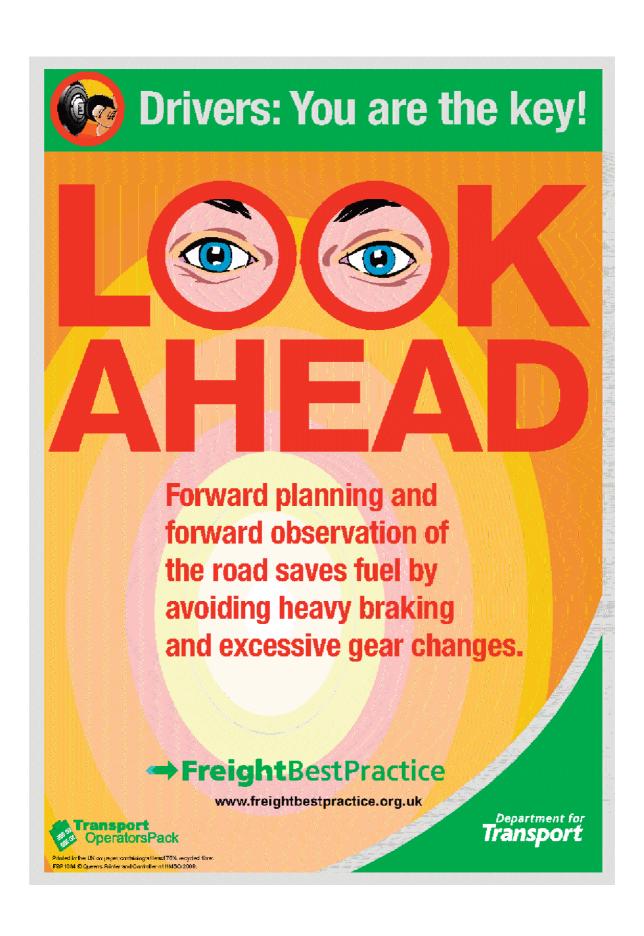
When the footbrake is used the road speed that has been lost has to be made up by using the accelerator, thereby burning fuel. If it becomes necessary to change down a gear or half gear then even more fuel is used. The load is also more likely to shift under heavy braking.

FACT! Harsh braking uses more fuel and requires an increase in the number of gear changes that you will subsequently have to make.

EXHAUST BRAKE

By using the exhaust brake system instead of the footbrake, brake lining life is extended. When the exhaust brake is applied, fuel delivery to the combustion chamber is halted. The vehicle is driven forward by its own momentum, so there is no need for fuel to be burnt.

FACT! Use of the exhaust brake will contribute to smoother decreases in speed, increase the lifespan of brake linings and save fuel.



MOTORWAYS AND DUAL CARRIAGEWAYS

Optimum use of motorways and dual carriageways will result in a safer, more consistent and more economical drive. Wear and tear on the engine and running gear will be reduced and the vehicle will be able to run at its most economical rate.

FACT! Use of constant speeds on motorways and dual carriageways will enable full use of cruise control, leading to less gear changes.

MANAGE YOUR IDLE TIME

Engine idling wastes fuel and money and increases emissions. Turn off your engine when you do not need it on or you have been stationary in traffic for any period of time. Also think before you turn on your engine to warm your cab.

FACT! A typical 420hp heavy-duty truck engine consumes fuel at the rate of around two litres an hour when left idling and stationary.

LOW REVS, LOW NOISE, LOW EMISSIONS

Lower revs give higher levels of fuel economy. The use of appropriate horsepower engines (to avoid engine strain) and computer controlled engine management systems reduces noise levels and assists in maximising fuel economy.

FACT! Quiet operations produce less air pollution.



Drivers: You are the key!



Keeping engine revs within the green band dramatically improves fuel consumption.

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Drivers: You are the key!



Correctly adjusted air deflectors will greatly improve fuel consumption.

→ FreightBestPractice

www.freightbestpractice.org.uk



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Department for **Transport**

ADJUSTABLE AERODYNAMICS

Many articulated tractor units have adjustable roof mounted air deflectors. The roof mounted air deflector should be adjusted to guide airflow over the highest point at the front of the trailer or load. As a rule of thumb, remember that for every ten centimetres of the front of the trailer exposed to airflow, the fuel consumption will worsen by 0.1 MPG.

FACT! Vehicles that travel at high speeds and have a large frontal area will use less fuel if fitted with correctly adjusted aerodynamic body styling equipment.

HEIGHT OF THE LOAD

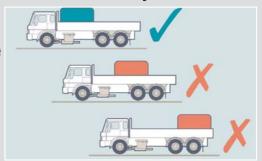
Minimising the height of the load will save fuel by reducing the drag of the vehicle. This is particularly relevant when using a flat-bodied vehicle or trailer. Knowing how to load your vehicle is central to your fuel performance. Sheeting a load or an empty tipper body can save fuel because it reduces aerodynamic drag.

FACT! The height of a trailer or load should be kept to a minimum to reduce aerodynamic drag.

POSITIONING THE LOAD

The load should be positioned to reduce aerodynamic

drag but care should be taken not to overload any axles on the vehicle or trailer. Varying the load on each axle can impact fuel consumption.



FACT! The positioning of a load, particularly on a flat trailer, can influence fuel consumption.

OVERFILLING OF THE FUEL TANK

Fuel expands when it is hot. It can be heated by both the sun and by fuel returned from the engine or fuel system. If you fill the fuel tank to the brim, then when the fuel expands, its only way of escape is via the breather vent. Diesel spillages are a hazard to other road users, in particular motorcyclists.

FACT! Overfilling the fuel tank allows fuel to leak through the breather.

TYRES

Under inflated tyres will reduce MPG and increase wear, thereby reducing tyre life and increasing running costs.

FACT! Correctly inflated tyres offer less resistance on the road, improve fuel economy, give greater stability and reduce the risk of accidents.

Drivers: You are the key!

An idling truck can waste up to 2 litres of fuel per hour.

→ Freight Best Practice

www.freightbestpractice.org.uk



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VEHICLE TECHNOLOGY

Vehicle technology advances rapidly. Read the vehicle's handbook to ensure you are fully up-to-date with the systems installed. Telematics can also be a useful tool to help improve operational efficiency.

FACT! Technology will only assist in fuel economy and safe and efficient operation if you are fully familiar with your vehicle's systems.

And finally...

- Be ready to learn, no matter how experienced you are
- Know your average MPG for the vehicle you drive
- Read your vehicle's handbook
- Park up in a way that will avoid early-morning manoeuvring with a cold engine this wastes fuel

5 Daily Vehicle Checks

By law the company and driver are both responsible for the roadworthiness of vehicles. As the driver, you must complete a walk-round check (see checklist on page 22) before leaving the site at the start of a shift and if appropriate, another check can be made again before booking off from your shift.

FACT! As a driver you should be aware of how the vehicle you drive functions and be able to spot any potential problems before you start a journey.

Any damage to your vehicle at the start of a shift or caused during the shift must be reported as soon as it is apparent / caused. The following daily check and defect report form may be used to record any problems you encounter and subsequently report.



If you require further information on how to manage and save fuel, detailed guidance is available in the FREE Fuel Saving Tips, Safe Driving Tips, Drive IT! DVD and many other Freight Best Practice publications.

These can be ordered via the Hotline **0845 877 0 877**, or you can download them from the website

www.freightbestpractice.org.uk

Daily Driver Vehicle and Trailer ort

soon as possible so	that the probler	n can be rectified.
Daily Vehicle Check	Serviceable/ Defect ✓ or x	Description of Defect(s)
Oil/Fuel (levels)		
Water/Screenwash		
_ights/Indicators		
Battery		
Number Plate		
Mirrors		
Reflectors		
Brakes		
Tyres (Inflation)		
Wheels (inc. nuts)		
Body (damage/dents)		
Load (secure)		Action Taken
Exhaust		
Breakdown Kit		
Horn		
Wipers		
Windscreen (damage)		
Tachograph		
Dashboard (warning)		
Speed Limiter		
Driver Cab/Seat Belts		
O Licence Disc/VED		
Under-run bars		
In-cab Height Indicator		Defect Corrected:
Trailer Coupling		Signature:
Tail-Lift		Print Name:
Demount/Trailer Legs		
Trailer Connections		Date:/
Loading Equipment		Position:
Vehicle Check Perform	ıed	
Signature of the Driver:		
Print Name:		



Think Safety Think Efficiency



Have you done your walk-round checks today?

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6 Driver Debrief and Efficient Operations

FACT! By implementing a fuel management programme, a fleet's fuel consumption can typically be reduced by at least 5%.

Unless you accurately measure the resources you use it is very difficult to identify areas that can be improved or assess the impact of any changes that are made.

Remember - If you don't measure performance effectively, how can you change it effectively?

Filling in the following forms and assisting in performance management can provide crucial information from which decisions and plans can be made. Keeping a log of performance will also allow you to pinpoint issues on your journey.

Remember - By providing your supervisor with accurate information, better decisions can be taken on vehicle specification and routing and scheduling.



If you require further information on how to manage and save fuel, detailed guidance is available in the FREE Fleet Performance

Management Tool incorporating CO₂

Calculator and many other Freight Best Practice publications.

These can be ordered via the Hotline **0845 877 0 877**, or you can download them from the website **www.freightbestpractice.org.uk**

Driver Debriefeet

Page 1/2

Expenses (please attach Start Time: Total Hours Worked: Odometer Start: Fuel On Site (litres):	receipts):		Finish Time:		
Start Time: Total Hours Worked: Odometer Start:			Finish Time:		
Total Hours Worked: Odometer Start:			Finish Time:		
Total Hours Worked: Odometer Start:			Tillion Tillie.		
Odometer Start:					
Start:					
Fuel On Site (litres):	Finish:		Appro	ox Empty Mileage:	
r dor on one (mroo).					
		_			
Fuel Off Site (litres):			Cost per litre (£):	
Delays:					
Details:					
Compliance and Mainto Overloads:	Yes	No	Further Details:	Overloads, Accidents, Prohibition	on
Accident:	Yes	No	-		
Prohibition:	Yes	No			
Maintenance Carried Ou	ıt:				
Details: Planned, Unplai	nned, Tyres, etc:				
			_		
			Day Summary:	11/2/2007	
			Number of Trips	Units Carried	
			No. Deliveries	No. Collections	
		L	ate Deliveries	Damages	
				_	
Transport Operators www.freightbes	t De els	C	Complaints	No. Vehicle Defects	



Driver Debriefeet

Page 2/2

Delivery/collection details (F=Fail, G=Good, C=Collection, D=Damages, S=Short Delivery) Please detail totals

Delivery	Customer	Arrival	Depart	Units Del.	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

If required, please continue on a new sheet



April 2007: Release 1



7 Why Not Sign Up for a SAFED Course?

The Safe And Fuel Efficient Driving (SAFED) course is a full day of off the job training, including practical assessments, theory based papers concerning accident prevention and reduction and fuel efficient driving. It is available for both HGV and Van drivers so if you are interested, tell your manager about the benefits and ask if this is possible.

FACT! SAFED training for 6,375 drivers resulted in the industry saving £10.5 million in fuel. That's a £1,640 saving of fuel per driver.

Benefits for You

As a driver you will develop skills that promote your own safety and the safety of your vehicle, load and other road users.

Personal benefits to you include:

- Reduced stress levels and enhanced satisfaction of driving
- Increased confidence in vehicle control and driving performance
- Improvements in own vehicle MPG
- A safe and fuel efficient organisation will reflect well upon you the driver

Benefits for Organisations and the Environment

Safe and fuel efficient driving contributes to:

- The development of a health and safety culture within an organisation
- Effective risk management
- Reducing CO₂ and other harmful vehicle emissions
- Reducing vehicle and personal injury accidents / incidents
- A safe and fuel efficient driver will reflect well upon the organisation

Remember - You have the single biggest impact on safety and fuel economy.

More information and a list of instructors in your area can be found at www.safed.org.uk



If you require further information on how to manage and save fuel, detailed guidance is available in the FREE SAFED for HGVs, Companies and Drivers Benefit from SAFED for HGVs and many other Freight Best Practice publications.

These can be ordered via the Hotline **0845 877 0 877**, or you can download them from the website

www.freightbestpractice.org.uk

8 Conversion Tables

FACT! For every 1 litre of diesel burnt 2.63 kg of CO_2 is released into the atmosphere. How can that be? A chemical reaction takes place during combustion which combines the carbon produced by the flame with oxygen in the air to give Carbon Dioxide.

To Convert	То	Multiply By
miles	kilometres	1.609344
kilometres	miles	0.621371
litres	gallons (UK)	0.21997
gallons (UK)	litres	4.54609
gallons (US)	gallons (UK)	0.83268
gallons (UK)	gallons (US)	1.20094
horsepower (James Watt) – abbreviated to hp	kilowatts (kW)	0.746
kilowatts	horsepower (hp)	1.341
horsepower (hp)	metric horsepower (PS)	1.0139
metric horsepower (PS)	horsepower (hp)	0.9863
tons (imperial)	tonnes (metric)	1.016
tonnes (metric)	tons (imperial)	0.984

Fuel performance is usually measured in MPG or litres per 100 kilometres, although kilometres per litre and miles per litre are also used.

Some Benchmark Values

Miles / Gallon	Litres / 100km
10 MPG	28.25 litres / 100km
9 MPG	31.4 litres / 100km
8 MPG	35.3 litres / 100km
Miles per hour	Km per hour
30 MPH	48 kph
40 MPH	64 kph
50 MPH	80 kph
56 MPH	90 kph
60 MPH	97 kph
Km per hour	Miles per hour
50 kph	31 MPH
70 kph	44 MPH
90 kph	56 MPH
100 kph	62 MPH
110 kph	68 MPH

9 Further Information

If you are interested in obtaining more detailed information on Fuel Management methods and systems, you may find the following guides useful:

- Drive It! DVD A 25 minute driver focussed DVD covering aspects of operational efficiency
- Save It! DVD An introduction to Freight Best Practice and the ways in which fuel can be saved
- Information Technology for Efficient Road freight Operations - Provides an overview of the available and relevant IT systems for road freight operations
- SAFED for HGVs: A Guide to Safe and Fuel
 Efficient Driving for HGVs Outlines the elements of
 the Safe and Fuel Efficient Driving scheme
- Fuel Management Guide The definitive guide to improving the fuel performance of your fleet
- Telematics for Efficient Road Freight Operations Provides information on the components of telematics
 systems and their implementation
- Highways Agency Truckstop Guide A detailed guide to 102 sites across the country

10 Useful Contacts

Department for Transport

Tel: 020 7944 8300

www.dft.gov.uk

Information relating to the provision of a reliable, safe and secure transport system that responds to the needs of individuals and business whilst safeguarding our environment

Driver and Vehicle Licensing Agency

Tel: 0870 240 0009 (Driver Enquiries)

Tel: 0879 240 0010 (Vehicle Enquiries)

www.dvla.gov.uk

The DVLA facilitate road safety and general law enforcement by maintaining registers of drivers, vehicles, and collecting vehicle excise duty

Driving Standards Agency

Tel: 0115 901 2500 www.dsa.gov.uk

The DSA's aim is to promote road safety through improving driving standards via tests; maintaining a register of instructors; and supervising training for learner motorcyclists

Health and Safety Executive

Tel: 08701 545500 www.hse.gov.uk

Responsible for the regulation of almost all the risks to heath and safety arising from work activity in England

Highways Agency Traffic Information

Tel: 08700 660 115

www.highways.gov.uk/traffic

A Highways Agency website providing real-time information on both traffic conditions and traffic forecasts across the country

MET Office (Weather Advice)

Tel: 0870 900 0100

www.met-office.gov.uk

The MET office provides environmental and weather-related services to the general public, government and almost every other industry sector

Skills for Logistics

Tel: 0870 6060440

www.skillsforlogistics.org

Skills for Logistics is the Sector Skills Council which works alongside companies involved in moving, handling or storing goods

Vehicle and Operator Services Agency (VOSA)

Tel: 0870 6060440 www.vosa.gov.uk

VOSA provides a range of licensing, testing and enforcement services with the aim of improving the roadworthiness standards of vehicles ensuring the compliance of operators and drivers with road traffic legislation

Work Contacts
Main Reception: Tel: Mobile:
Traffic Office: Tel: Mobile:
Warehouse: Tel: Mobile:
Service Bay: Tel: Mobile:
Name: Tel: Mobile:
Name: Tel: Mobile:
Name: Tel: Mobile:

11 Driver Personal Log

Fill in your daily hours and expenses and keep for your own personal records (please photocopy for repeated use)

Dat	6							
\mathbf{p}	•		 					

Day	Hours	Vehicle	Job Details	Expenses
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				
Total				

Freight Best Practice publications, including those listed below, can be obtained FREE of charge by calling the **Hotline** on **0845 877 0 877**. Alternatively, they can be downloaded from the website **www.freightbestpractice.org.uk**

Saving Fuel



Fuel Saving Tips

This handy pocket book is ideal for drivers and managers looking for simple ways to reduce fuel consumption.

Operational Efficiency



Transport Operators' Pack

This resource pack provides practical advice and material to enable operators to implement and run effective fleet efficiency measures, including fuel management programmes and driver training.

Developing Skills



Safe Driving Tips

Written especially for commercial vehicle drivers, this pocket-sized guide provides essential safety hints and tips on all aspects of driving safely.

Performance Management



Fleet Performance Management Tool Incorporating CO₂ Calculator

This tool has been designed to help fleet operators improve their operational efficiency using key performance indicators (KPIs) to measure and manage performance. KPIs include costs, operational, service, compliance, maintenance and environmental.

Equipment and Systems



Telematics for Efficient Road Freight Operations

This guide provides information on the basic ingredients of telematics systems, highlights how to use this technology, the information obtained from it and how to select the right system for your needs.

Public Sector



Efficient Public Sector Fleet Operations

This guide is aimed at fleet managers in the public sector to help them improve operational fleet efficiency.

April 2008.

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Saving Fuel

