

SAFED for HGVs

A Guide to Safe and Fuel Efficient Driving for HGVs

Guide



**SAFE AND FUEL
EFFICIENT DRIVING**

Foreword

This guide is part of a series of publications produced for the Department for Transport (DfT) under the Freight Best Practice programme.

The aims of the guide are:

- ➡ To outline the elements of Safe and Fuel Efficient Driving (SAFED)
- ➡ To define the qualifications, skills and experience required by instructors intending to deliver the SAFED training programme to candidate drivers
- ➡ To explain the content, and assist in the delivery, of the one-day SAFED training course designed to improve the safe and fuel efficient driving techniques of existing HGV drivers

The Freight Best Practice programme provides authoritative, independent information and advice to help implement sustainable transport initiatives. It is a collaborative programme targeted towards energy users and decision makers in industry, covering both the commercial and public sectors.

To obtain copies of Freight Best Practice publications, including those mentioned in this guide, and for further information on transport-related issues, contact the Hotline on **0845 877 0 877**. All publications and the advice from the Hotline are free of charge.

Funded Training

SAFED training for drivers and for training instructors is available on a funded basis in England in the aggregates and van sectors. This training is sponsored by the Department for Transport until March 2010. To experience the benefits of SAFED training on a funded basis sign up as soon as possible by contacting:

SAFED in the Aggregates Sector

Website: www.safed-aggregates.org.uk
Email: enquiries@safed-aggregates.org.uk
Freephone: 0870 190 8440

SAFED in the Van Sector

Website: www.safed.org.uk and click on the SAFED for Vans logo
Email: vans@safed.org.uk
Hotline: 0870 190 8440

SAFED on a Commercial Basis

If you wish to subscribe to SAFED training and funding is not available, then training can be provided on a commercial basis by trained instructors principally based throughout England. To locate a commercial instructor, visit www.safed.org.uk

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- ➡ FleetMaster Ltd
- ➡ Freight Transport Association
- ➡ FuelMaster Logistics Ltd
- ➡ Pumping Station Ltd
- ➡ Road Haulage and Distribution Training Council
- ➡ Road Haulage Association
- ➡ The Royal Society for the Prevention of Accidents
- ➡ The Society of Motor Manufacturers and Traders Ltd
- ➡ Truck Magazine
- ➡ University of Huddersfield
- ➡ Vehicle and Operator Services Agency
- ➡ Volvo Truck Ltd

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1 Background

According to Government statistics, the UK's 422,000 Heavy Goods Vehicles (HGVs) travelled approximately 22.2 billion kilometres in 2001 (an average of 52,132 kms or 32,582 miles per vehicle)¹. Assuming an average fuel consumption figure of 8 miles per gallon, each vehicle used over 4,000 gallons (approx 18,160 litres) of fuel.

Monitoring and managing the fuel used by their vehicles is vital for a professional operator. By implementing a fuel management programme, a fleet's fuel consumption can typically be reduced by at least 5%, with an equivalent cost saving. Use of safe and fuel efficient driving techniques as part of a fuel management process will contribute to this fuel saving.

Reducing fuel consumption by 1,000 litres per year will:

- ➡ Save an operator £700 a year (assuming a price of 70 pence per litre, excluding VAT)
- ➡ Save 2.6 tonnes of carbon dioxide emissions a year

Using fuel more efficiently means:

- ➡ Lower costs
- ➡ Improved profit margins
- ➡ Reduced emissions
- ➡ Improved environmental performance

In 2001, there were 19,159 casualties in HGV road accidents. Of the 575 killed in accidents involving an HGV, just 54 were occupants of the HGV - a fifth of fatalities were cyclists and pedestrians².

Safer driving means:

- ➡ Less injuries and fatalities on our roads
- ➡ Less accident damage to vehicles
- ➡ Less unproductive downtime for vehicle repair
- ➡ Reduced insurance premiums

1.1 Introduction to SAFED for HGVs

Safe and Fuel Efficient Driving (SAFED) for HGVs has been designed to improve the safe and fuel efficient driving techniques of Heavy Goods Vehicle (HGV) drivers.

The SAFED training programme has been developed specifically to enable both vehicle operators and training providers to implement driver training within the road freight industry. It provides training and development for existing HGV drivers through instruction relating to vehicle craft and road craft.

Ideally, training should be performed in a candidate's own (or usual) vehicle. If this is not possible, the training provider will arrange for a similar vehicle to be available when a course is booked. Some candidates will benefit from training in a laden vehicle, but this is not essential.

The candidate's driving is initially assessed by a qualified instructor. Training on best practice in safe and fuel efficient driving techniques is then given. The candidate's driving is then reassessed to record improvements in driving performance and actual fuel consumption.

The final grade allocated to each candidate depends on performance in safety check and theory test exercises as well as the number of faults recorded during the day's practical driving sessions.

Successful candidates receive a certificate of achievement.

1.2 How Was SAFED for HGVs Developed?

The programme was developed for Freight Best Practice by a Steering Group of industry experts.

They reviewed the content of a range of existing safe and fuel efficient driver training programmes from across the country to determine common themes which would form the foundation of a single standard.

They then canvassed industry, through face-to-face interviews, telephone discussions and a questionnaire, for support in the development of a standard.

The proposed standard was finally piloted with a range of drivers using a variety of different vehicle types.

¹ Transport of Goods by Road in Great Britain 2001. Annual report of the continuing survey of road goods transport. (DTLR, London, May 2002).

² Road Accidents GB: 2001 (DfT, London, September 2002).

1.3 Who Is This Guide Aimed At?

This guide is written for training providers, operators, in-house driver trainers and candidates. It outlines the principles of SAFED and provides a step-by-step guide through the one-day SAFED training programme.

The SAFED programme should be considered as a baseline for the development of driver skills and knowledge, specifically in the areas of safety and fuel efficiency. Operators and training providers may choose to build upon the information, methodology and techniques contained in this document to develop their own more advanced programmes.

Adopting best practice in safe and fuel efficient driving leads to:

- ➡ Reduced vehicle accidents and incidents
- ➡ Improved road safety
- ➡ Improved driving standards
- ➡ Reduced vehicle operating costs

1.4 Who Should Deliver the SAFED Training Programme?

The Driving Standards Agency (DSA) administers a voluntary register of HGV driving instructors.

The process of voluntary DSA registration for instructors involves assessment in three areas of proficiency, namely:

- ➡ Theory test
- ➡ Driving ability
- ➡ Instructional ability

A prospective SAFED instructor must have successfully completed the DSA voluntary registration process prior to undertaking a separate and additional SAFED assessment.

Instructors wishing to deliver the SAFED programme must achieve a “Pass with Distinction” grade in this separate SAFED assessment.

1.5 How Should This Guide Be Used?

The SAFED programme is a supplementary driver development programme, consisting of instruction and assessment. It intends to improve the safe and fuel efficient

driving skills of drivers already in possession of a Heavy Goods Vehicle (HGV) driving licence.

This Guide is highly specific in its nature, focusing on safe and fuel efficient driver training. It should be considered as an integral component of a much broader programme of commercial vehicle fleet efficiency management.

Operators and training providers using this SAFED Guide should also be aware of related free publications produced by the Freight Best Practice programme. These are available from the Hotline on **0845 877 0 877** or for download at **www.freightbestpractice.org.uk** and include:

Fuel Management Guide - a comprehensive guide, covering many aspects of fuel efficiency including data collection and analysis, vehicle specification and driver training.

Fuel Saving Tips - a handy pocket guide, ideal for small-fleet operators and owner-drivers, including top tips on saving both fuel and money.

Fuel Efficiency through Improved Driver Training - describes how TDG McKelvie achieved fuel efficiency and safety improvements following implementation of a driver training programme (this case study is only available to download).

Expert Advice Helps Cut Fleet Costs - describes the savings achieved by Denholm Industrial Services Ltd as a result of the measures implemented as part of the site specific action plan developed with help from an independent fuel economy advisor.

This guide contains the basic information to enable both training providers and vehicle operators to deliver the SAFED programme. It will also be issued to candidates before training and will be used to record their personal performance throughout the day.

The essential core information on safe and fuel efficient driving techniques (Section 2) will underpin all classroom and practical instruction given by SAFED instructors to candidates throughout the training day. It is vital that SAFED instructors have a detailed knowledge of this core information. Documents required throughout the training day have also been included in this Guide. It is essential that SAFED instructors fully understand how, when and why each document is used within the programme.

SAFED instructors will, throughout the training day, complete the relevant documents in each candidate's guide.

1.6 Information and Material for Instructors

The basic information needed by instructors to deliver the SAFED programme is included within this Guide. Section 2 contains the core information and principles that underpin the whole training day. Section 3 contains the timetable, assessment guide and other relevant documentation.

General information about driving tuition is available from the DSA at www.dsa.gov.uk.

Essential Core Information (Section 2)

- ➡ The Benefits of Safe and Fuel Efficient Driving - highlighting the advantages of safe and fuel efficient driving to drivers, operators and the environment
- ➡ The Fundamentals of Safe and Fuel Efficient Driving - the core themes of the day's training programme
- ➡ Tips for Success on the SAFED programme - a quick reference guide for candidates

Training Programme and Assessment Material (Section 3)

- ➡ Overview of the Training Programme
- ➡ SAFED Programme Timetable (**Document 1**) - a timetable of the day's events
- ➡ Assessment Guide (**Document 2**) - guidance to be used primarily by instructors when assessing candidates
- ➡ Vehicle Safety Check Sheet (**Document 3**) - to be completed by candidates before their on road assessment
- ➡ Trailer Safety Check Sheet (**Document 4**) - if applicable, to be completed by candidates before their on road assessment

- ➡ On-Road Marking Sheet (**Document 5**) - to be completed by instructors during the practical drives
- ➡ Deferred Candidate Report Sheet (**Document 6**) - to be completed by instructors if the candidate's driving is of a dangerous standard and practical training is unable to continue on the grounds of safety
- ➡ Sample Theory Test Paper A - Safe Driving (**Document 7**) and Sample Theory Test Paper B - Fuel Efficient Driving (**Document 8**) - examples of the two theory exercises to be completed by candidates
- ➡ General Assessment Report (**Document 9**) - the master reporting document, used by the instructor to record all performance details and to determine the candidate's overall grade
- ➡ Evaluation Form (**Document 10**) - a feedback form to be completed by candidates

At the end of the training day, the candidate and instructor will agree a figure for future improvement in fuel consumption. This figure will broadly reflect any improvement evident between the candidate's first and second drives.

1.7 Information for Candidates

Before attending your SAFED training candidates will be asked to provide details on the type of vehicle they generally drive (tipper, artic, etc). This is done to make sure that the training vehicle (if not their own vehicle) is appropriate.

Tip - In order to monitor a candidate's performance after training, employers should record a candidate's fuel consumption (miles per gallon or kilometres per litre) for a given period (e.g. a week or a fortnight) prior to attendance at SAFED training. This pre-SAFED figure will provide the benchmark for future performance. Fuel consumption should then be monitored after SAFED training. This data will illustrate the benefits of the SAFED training programme to both employers and candidates.

Candidates should spend some time prior to the training day becoming familiar with the concepts within the guide. For example, by reading the Assessment Guide **(Document 2)** candidates will understand what is expected of them during the practical driving assessments. They should then enter their personal details in the appropriate sections.

On the training day candidates will need to bring:

- ➡ Their copy of this guide
- ➡ Driving licence
- ➡ Tachograph charts for the current fixed week and for the last day driven on the previous fixed week
- ➡ Normal working uniform
- ➡ Personal Protective Equipment (safety footwear and gloves etc)

2 Essential Core Information

The following three sections, benefits, fundamentals and tips for safe and fuel efficient driving, form the core principles of the SAFED programme.

Candidates' success on the SAFED programme will depend on both understanding the following information and putting it into practice.

It is vital that instructors who deliver the SAFED programme fully understand these elements and convey their importance to candidates throughout the training programme.

2.1 Benefits of Safe and Fuel Efficient Driving

For HGV Drivers

Drivers develop skills that promote their safety and that of their vehicle, load and other road users. Through fuel efficient driving, drivers raise their levels of professionalism and become more of an asset to their employer. Personal benefits include:

- ➡ Reduced stress levels and enhanced satisfaction of driving
- ➡ Increased confidence in vehicle control and driving performance

For Operators

By developing the skills of their HGV drivers, in line with SAFED, employers benefit due to:

- ➡ Reduced fuel spend
- ➡ Increased productivity and vehicle utilisation
- ➡ Improved resale value of fleet
- ➡ Reduced running costs (particularly relating to maintenance and tyres)
- ➡ Potential reductions in insurance premiums

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

2.2 Fundamentals of Safe and Fuel Efficient Driving

Safe and Fuel Efficient Driving involves many separate components and the following section outlines the key factors to be addressed to both ensure safety and optimise fuel economy. This is a comprehensive, alphabetical list intended for the use of instructors and candidates and provides a background to the issues likely to arise during candidate assessments.

Adjustable Aerodynamics

Fact - Correctly adjusted air deflectors will save fuel.

Many articulated tractor units have adjustable roof mounted air deflectors. This is because, over time, the unit will probably be coupled to trailers of varying heights. 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 mile per gallon (mpg). For more information on Aerodynamics, order the Freight Best Practice guide on Truck Aerodynamic Styling from the Hotline on **0845 877 0 877**.

Braking

Fact - Smooth and progressive braking will save fuel and reduce stress on the driver, vehicle and load.

In most cases, when the footbrake is used the road speed that has been lost has to be made up by using the accelerator pedal, thereby burning fuel. If it becomes necessary to change down a gear or half gear then even more fuel is used. By braking smoothly and progressively the amount of road speed that is lost can be minimised (and can help avoid having to stop completely). Harsh braking uses more fuel and requires an increase in the number of gear changes that the driver subsequently has to make. The load is also more likely to shift under heavy braking.

Clutch Control

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

Engaging and disengaging the clutch twice will halve the life of friction surfaces. This technique is only necessary for crash boxes. When changing down a gear, drivers usually 'blip' the throttle to get the shafts in the gearbox to rotate at the same speeds. Where a vehicle has a synchromesh gearbox this 'blipping' is merely wasting fuel. When changing up a gear, double-declutching simply increases clutch wear.

Cruise Control

Fact - To maximise fuel economy, cruise control should be used whenever safe and appropriate.

Cruise control 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!

Exhaust Brake

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

When the exhaust brake is activated, the vehicle engine acts as a compressor. This action will, through the transmission system, cause the vehicle's driven wheels to slow. The effective engine speed range over which the exhaust brake will work is usually indicated on the tachometer. By using this 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. In addition, by making the engine work as a compressor, the combustion chamber is hotter than it would be if the driver were simply to take his foot off the accelerator and depress the footbrake. As a result, when fuel is injected back into the combustion chamber it will atomise more efficiently than it would do in a cooler chamber.

Forward Planning

Fact - By planning well ahead and keeping the vehicle moving, gear changes will be reduced and fuel will be saved. Forward planning also helps to improve road safety.

Every time you drop down a gear, fuel consumption increases due to the effect of the gearing ratios. Forward planning helps to reduce excessive gear changes. This is especially important when approaching junctions and roundabouts. Use the visibility advantage provided by the high seating position in a truck. Moving a vehicle from standstill will require considerably more fuel than keeping a vehicle moving, even at walking pace. Good forward planning improves your safety and that of other road users.

Gear Selection

Fact - Keeping the engine speed within the green band and using the highest gear possible optimises fuel consumption.

'Gear High, Rev Low' is a key phrase. The green band indicates fuel economy. Remember, if you drive the vehicle keeping the needle at the high end of the green band, fuel consumption would be dramatically improved by changing up a gear, thus reducing the engine revs whilst still staying in the green band.

Hazards

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

Awareness is essential to road safety. It also enables early selection of the gear and speed appropriate for the situation, allowing good progress to be made. 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.

Height of the Load

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

Minimising the height of the load will save fuel by reducing the drag coefficient (Cd) of the vehicle. This is particularly relevant when using a flat-bodied vehicle or trailer. For more information on aerodynamics, order the Freight Best Practice guide on Truck Aerodynamic Styling from the Hotline on **0845 877 0 877**.

Low Revs, Low Noise, Low Emissions

Fact - Quiet operations produce less air pollution.

Lower revs give higher levels of fuel economy and are less stressful for the driver. 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.

Momentum

Fact - Using the momentum of the vehicle will save fuel.

Momentum allows the engine to run more efficiently and puts less strain on engine components. The speed gathered under power can be used to 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. At this point, on-board computers capable of showing instantaneous fuel consumption will indicate the highest possible reading. This is usually shown as 99.9 mpg.

Motorways and Dual Carriageways

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

This 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.

Overfilling of Fuel Tank

Fact - Overfilling the fuel tank allows fuel to leak through the breather.

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.

Plan Your Route

Fact - Effective route planning minimises the total amount of fuel used.

Be careful not to be misled by the use of miles per gallon (mpg) figures - look at the following table:

Table 1 Fuel consumption over distance

Route	Distance	Fuel used	Fuel consumption
A	100 miles	10 Gallons	10 mpg
B	89 miles	9.5 Gallons	9.4 mpg

Focusing on mpg figures alone, route A looks the more advantageous. However, route B is shorter and would actually save the most fuel.

For more information on routing and scheduling see the Freight Best Practice guide on Computerised Routing and Scheduling for Efficient Logistics. This free guide describes the different types of computerised vehicle routing and scheduling systems available and their benefits and is available from the Hotline on **0845 877 0 877**.

Positioning a Load

Fact - The positioning of a load, particularly on a flat trailer, can influence fuel consumption.

The load should be positioned to reduce aerodynamic drag whilst avoiding overloading any axles on the vehicle or trailer.

Skip Gears or Block Changes

Fact - The fewer the gear changes, the less the physical activity needed by the driver and the more fuel efficient the operation.

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 ten and thirty percent. Reducing the number of gear changes also means that the driver saves time and energy.

Speeding

Fact - Speeding is illegal, jeopardises road safety and reduces fuel efficiency

Speeding is dangerous. It puts your life and the lives of other road users at risk. 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, resulting in shorter component life.

Tyres

Fact - Correctly inflated tyres offer less resistance on the road, increase fuel economy, give greater stability and reduce the risk of accidents.

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

Vehicle Technology

Fact - Technology will only assist in fuel economy and safe and efficient operation if the driver is fully familiar with the vehicle's systems.

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. For more information, order the Freight Best Practice guide on Telematics from the Hotline on **0845 877 0 877**.

Weather Conditions

Fact - Diesel does not burn as efficiently in bad weather due to a poor fuel/air mix and adverse weather conditions make driving more hazardous.

Inclement weather reduces fuel economy, so the driver trained to adjust driving technique to suit conditions will be able to minimise reductions in fuel economy and will be safer.

Remember: The driver has the single biggest impact on both fuel consumption and safety.

An alert, positive and professional driver can reduce fuel use, vehicle operating costs and contribute to greater road safety.

2.3 Tips for Success on the SAFED Programme

The following can be used by candidates throughout the one-day training programme as a quick reference guide. Professional drivers, committed to safe and fuel efficient driving, will also wish to refer to these points post-training.

Tip - Always drive the truck with as low an engine speed as is practicable. This means using as high a gear as possible and monitoring the tachometer to ensure that the needle is always in the green band. Remember, the higher the gear, the lower the engine revs.

Result:

- ➡ Lower fuel consumption
- ➡ Better tractive effort
- ➡ Reduced engine and transmission wear
- ➡ Reduced environmental impact
- ➡ Less driver fatigue

Tip - Make full use of the engine exhaust brake or engine brake, if fitted.

Result:

- ➡ Lower fuel consumption
- ➡ Reduced wear on brake components
- ➡ Saving the main brakes for when they are really needed
- ➡ Less driver fatigue

Tip - Avoid double-declutching on a synchromesh gearbox.

Result:

- ➡ Lower fuel consumption
- ➡ Reduced gearbox wear
- ➡ Less driver fatigue

Tip - Do not use every single gear in the gearbox when shifting up or down. Make use of block changing/forward shift techniques where it is safe to do so, for example: 2-4-6-8. Where a splitter gearbox is fitted, use this facility to your best advantage. Again, do not use it automatically on each gear, but rather in the top range only as a $\frac{1}{2}$ gear step. It helps to keep optimum speed up and engine revs down.

Result:

- ➡ Lower fuel consumption
- ➡ Less driver fatigue
- ➡ Optimum speeds and journey time

Tip - Safety checks and prompt defect reporting should be carried out before, during and at the end of every shift.

Result:

- ➡ Safer vehicles on the road
- ➡ Fewer prohibition notices and driver convictions

Tip - Let the engine work for you and “lug” (i.e. work at the bottom end of the green band) on gradients. Remember, use maximum engine torque and thus pulling power. Use the engine’s “sweet spot”.

Result:

- ➡ Lower fuel consumption
- ➡ Less driver fatigue
- ➡ Better tractive effort
- ➡ Less environmental impact

Tip - Make sure tyre pressures are correct. Incorrect pressure accelerates tyre wear and may jeopardise safety.

Result:

- ➡ Lower fuel consumption
- ➡ Reduced tyre wear
- ➡ Less risk of accidents

Tip - Use cruise control, whenever safe and practicable.

Result:

- ➡ Lower fuel consumption
- ➡ Less engine and driveline wear
- ➡ Less driver fatigue

Tip - When filling fuel tanks, take care not to fill to the brim. Never leave a fuel nozzle unattended.

Result:

- ➡ Less fuel spillage (both in the depot and on the road)
- ➡ Reduced accident risk

3 Training Programme and Assessment Material

3.1 Overview of the One Day Training Programme

This section describes the content of the one-day SAFED training programme.

The programme, timetabled in more detail in **Document 1**, consists of one full day of off-the-job training and will be on a candidate:instructor ratio of 1:1 or 2:1. The programme, which includes practical assessments and theory papers, is based around the following main themes:

- ➡ Accident prevention and reduction
- ➡ Fuel efficient driving

SAFED instructors will use the guidance contained within the Assessment Guide (**Document 2**) when assessing candidates during the practical driving sessions. These assessments will be recorded on the marking sheets (**Documents 5 and 9**).

The grading system combines the scores from the practical driving assessments with those achieved in the safety check and theory test exercises. Minimum standards of competence must be achieved to pass the safety check and theory test exercises. In the practical driving assessments, the fewer the faults throughout the day, the higher a candidate's grade will be.

The days training is described in detail in the following sections:

Introduction/Preliminary Sessions - 1 hour

This initial session outlines the fundamental aims and objectives of the programme. Licences will be checked for valid entitlements and penalty points/restrictions. An eyesight check will be carried out, requiring the candidate to read, in good daylight (with glasses or contact lenses if worn), a vehicle registration mark at a distance of 20.5m.

Hazard perception will be discussed using the Driving Standards Agency's RoadSense training resource. Stills from the RoadSense video will be shown to highlight key concepts, following the guidelines given in the RoadSense trainer guide. (Additional copies of RoadSense packs can be obtained from the DSA on

0870 241 4523 or www.dsa.gov.uk).

If candidates are not using their own (or usual) vehicle, they will be informed of the characteristics of the vehicle to be used for training. A video presentation - "Check it Out - Truck Driver" (available from the Vehicle and Operator Services Agency at www.vosa.gov.uk) will be used to describe how to carry out vehicle safety checks.

During this session, SAFED instructors will ask candidates to complete the vehicle and trailer safety check sheets (**Documents 3 and 4**). Instructors will accompany the candidates on the walk round safety checks and will assess candidates performance, based on attitude, efficiency and thoroughness. Instructors will then complete the relevant safety check section of the General Assessment Report (**Document 9**) indicating if candidates have passed or failed the safety check exercise. If a candidate fails the safety check exercise, then they will not be able to successfully complete the course, and cannot receive a certificate of achievement, but they can still attend the remainder of the day.

First Drive - 2 hours (1 hour per candidate)

Candidates will undergo an initial assessment drive influenced by a variety of road and traffic conditions. The route will preferably contain flat sections, hills, stretches of single carriageway and dual carriageway, motorway (if practicable) and elements of open road and urban driving. SAFED instructors will record detailed information on performance along the route on the On-Road Marking sheet (**Document 5**). At the end of this first run, the time taken, distance travelled, number of gear changes, fuel used and mpg will be recorded directly on the General Assessment Report (**Document 9**).

NB - If a candidate is considered to be dangerous on this first drive, the SAFED instructor may decide to defer further practical training and will complete the Deferred Candidate Report sheet (**Document 6**). The instructor will then take control of the vehicle and return to base. A deferred candidate will fail the SAFED programme but can still attend the classroom-based instruction sessions.

Instructor's Feedback and Vehicle and Road Craft Instruction - 1 hour 30 minutes

Initial feedback takes place in the vehicle with the instructor highlighting any corrections. Areas for candidates to develop in relation to road craft and vehicle craft will also be discussed. Feedback, discussion and instruction then continue in the classroom, supported by the use of training

materials. Using overheads/PowerPoint instructors will expand on the points contained in Section 2.2, Fundamentals of Safe and Fuel Efficient Driving, and explain the 17 elements in the Assessment Guide (**Document 2**).

Candidates will be shown the Save It! - The Road to Fuel Efficiency and Save It! - Champions of Fuel DVDs. Extra copies are available from the Freight Best Practice Hotline on **0845 877 0 877**.

Areas for development will be noted and corrective action will be agreed. SAFED instructors will transfer the first drive performance details from **Document 5** to the General Assessment report (**Document 9**).

Instructor Drive (optional) - 1 hour

This is an option where instructors conduct a one hour demonstration drive, along the same route, with commentary, covering the key points of both vehicle and road craft. Time taken, distance travelled, gear changes (to be counted en route by candidates), fuel used and mpg for the instructor's drive will be recorded on **Document 9**. Candidates are encouraged to question the instructor throughout as to why the drive is carried out in a particular way.

NB - This option will take place immediately after candidates have completed the first drive. This means that the training programme will be one hour longer in duration. The remainder of the day's timetable will be altered, but not shortened, accordingly.

Second Drive - 2 hours (1 hour per candidate)

Candidates then undertake a second drive, taking the opportunity to demonstrate the new techniques learned. Instructor input and support is continuous throughout this second drive.

SAFED instructors will again use **Document 5** throughout this second drive to record detailed performance indicators.

Once the second drive has been completed, the new time taken, distance travelled, gear changes, fuel used and mpg figures will be recorded on **Document 9**. The performance indicators from **Document 5** will again be transferred to **Document 9**.

Underpinning Knowledge Exercise - 30 minutes

Candidates will undertake two theory test exercises covering safe and fuel efficient driving issues. A score of 60% is required to pass each test. Candidates must pass both of these theory tests to successfully complete the course and to receive a certificate of achievement. SAFED instructors will record the results from the theory tests in the relevant sections of **Document 9**.

Final Feedback / Discussion - 45 minutes

This session will include a summary of the day's events and an explanation of the theory papers, General Assessment report and final grade allocated. Candidates will be encouraged to compare their first drive result with that of the second drive, noting improvements and making observations on their own performance and the potential to change their driving techniques. Candidates should agree a figure for future improvement in fuel consumption with the instructor. This figure will reflect the percentage improvement evident between the candidates' first and second drives. This figure will be reported to each candidate's employer to enable future performance monitoring. The fuel consumption figure measured before SAFED training will be used as a benchmark.

Evaluation Forms (**Document 10**) will be issued for candidates to provide feedback on the day's programme.

Finally, SAFED instructors will issue the SAFED Certificate of Achievement to successful candidates and distribute copies of handouts for future reference.

3.2 Assessment Material

Document 1:	SAFED Programme Timetable	13
Document 2:	Assessment Guide	14
Document 3:	Vehicle Safety Check Sheet	18
Document 4:	Trailer Safety Check Sheet	19
Document 5:	On-Road Marking Sheet	20
Document 6:	Deferred Candidate Report Sheet	21
Document 7:	Sample Theory Test Paper A – Safe Driving	22
Document 8:	Sample Theory Test Paper B – Fuel Efficient Driving	24
Document 9:	General Assessment Report	26
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Document 1 SAFED Programme Timetable

TIME	SUMMARY	CONTENT	LOCATION
08:00 (15 mins)	INTRODUCTION	Introduction to the aims and objectives of the programme and its contents. Licence check for class of vehicle entitlement, penalty points and any other restrictions.	Classroom
08:15 (45 mins)	PRELIMINARY Candidate and vehicle checks	Candidates are informed of the training vehicle's characteristics including weight, height, width and length. They are also informed of their responsibilities throughout the training day and their obligations to obey rules and regulations covering that particular class of vehicle on the road. Candidates eyesight checked. Hazard perception discussed using DSA RoadSense material. Check It Out - Truck Driver video shown outlining the correct procedures to carry out vehicle and trailer safety checks. Safety checks completed by candidates using Documents 3 and 4. SAFED instructor to observe and record pass/fail directly onto Document 9.	Classroom and around the vehicle
09:00 (2 hrs)	FIRST RUN (one hour per candidate)	Candidates assessed on driving abilities. The route selected will include roundabouts, junctions, left and right turns, built-up areas and various types of roads including motorways (if possible). The SAFED instructor will make detailed notes along the route on Document 5 and record time taken, distance travelled, number of gear changes, fuel used and mpg directly onto Document 9 at the end of the first run.	In-cab
		Candidates change over.	
10:00	FIRST RUN CONTINUED	The second candidate takes over the vehicle and is assessed	In-cab
11:00	VEHICLE AND ROADCRAFT INSTRUCTION	Faults highlighted during the assessment drive are discussed in the classroom and best practice in safe and fuel efficient driving techniques is explained with the help of visual aids. The video Save It! - the Road to Fuel Efficiency is shown. Topics covered include benefits, fundamentals and tips. The SAFED instructor will transfer first drive performance indicators from Document 5 to Document 9.	Classroom
12:00 (45 mins)		LUNCH	
12:45 (30 mins)	FURTHER INSTRUCTION	The video Save It! - Champions of Fuel is shown to highlight and encourage discussion on safe and fuel efficient driving techniques.	Classroom
13:15 (2 hrs)	SECOND RUN (one hour per candidate)	Each candidate is given the opportunity to demonstrate the techniques learned, with ongoing input and guidance from the instructor. The SAFED instructor will again use Document 5 to record detailed performance along the route. At the end of the run, new time taken, distance travelled, gear change, fuel used and mpg figures will be inserted directly onto Document 9 and the performance details transferred from Document 5 to Document 9.	In-cab
		Candidates change over.	
14:15	SECOND RUN CONTINUED	The second candidate takes control of the vehicle and is reassessed.	In-cab
15:15 (30 mins)	UNDERPINNING KNOWLEDGE EXERCISES	Two theory exercises conducted, covering both safe and fuel efficient driving issues. Results from these theory tests will be recorded on Document 9	Classroom
15:45 (45 mins)	ASSESSMENT SUMMARY AND FEEDBACK REPORT	Summary of the day's events, highlighting the differences between the two runs. Discuss theory tests, knowledge gained and improvements in driving performance. Completed report returned to candidates. The final grade and instructor's and candidate's comments discussed. Target fuel consumption performance figure agreed. Candidates to provide feedback. Certificate issued to successful candidates. Candidates depart.	Classroom
16:30			

Document 2 Assessment Guide

This section is to be used by all SAFED instructors when completing the On-Road Marking sheet (**Document 5**) and the General Assessment report (**Document 9**). It provides the criteria for assessing candidates' performances over 17 separate elements of safe and fuel efficient driving techniques. It will enable appropriate grades to be allocated.

Fault Allocation

The grading system is based on a candidate's performance against 17 individual elements of safe and fuel efficient driving over the two drives. A candidate's performance in each element is rated as either good, fair or unsatisfactory.

If a candidate's performance on a particular element is deemed to be **Good (G)**, then **zero** faults are allocated. If performance on an element is deemed to be **Fair (F)**, then **one** fault is allocated. If performance on an individual element is **Unsatisfactory (U)**, then **three** faults are allocated.

The number of faults does not correspond to the actual number of errors or omissions observed during the drives.

Performance on each of the 17 SAFED elements will be assessed on both drives. The combined number of faults from both drives will give the total for the day's practical sessions. The fewer the faults, the higher a candidate's grade will be.

If, in the instructor's opinion, road safety has been jeopardised and the vehicle, driver, passengers or other road users have been put at unacceptable risk, Document 6 will be completed and the vehicle returned to base. The candidate will have failed the SAFED programme but will still be given the opportunity to attend the classroom based instruction sessions.

Grading

Pass with Distinction

This grade will be awarded to candidates who pass the safety check exercises, the two theory test papers and score no more than a combined total of 17 faults in the two practical driving assessments.

Pass

This grade will be awarded to candidates who pass the safety check exercises, the two theory test papers and score between 18 and 34 faults in total in the two practical driving assessments.

Fail

Candidates will fail the SAFED programme if they fail any of the safety check exercises, the theory test papers or score more than 34 faults in total in the practical driving assessments. Candidates will also fail if they have been deferred by their instructor on the grounds of safety during either drive. These candidates will not be issued with a certificate of achievement.

G	Good (zero faults)
F	Fair (one fault)
U	Unsatisfactory (three faults)

Figure 1 Example of grading

Drive 1:	Good	6 elements	$6 \times 0 = 0$
	Fair	10 elements	$10 \times 1 = 10$
	Unsatisfactory	1 element	$1 \times 3 = 3$
			<hr/>
			TOTAL 13
Drive 2:	Good	11 elements	$11 \times 0 = 0$
	Fair	6 elements	$6 \times 1 = 6$
			<hr/>
			TOTAL 6
OVERALL TOTAL (Drive 1 + Drive 2)			$13 + 6 = 19$

SAFED Elements

The following sections outline the assessment criteria for each of the 17 key elements of the SAFED programme.

Acceleration and Cruise Control

G - Applied steady and progressive acceleration whenever possible. Avoided speed peaks. Acceleration sense was well developed, resulting in a smooth, safe and efficient driving style. Cruise control was used where appropriate.

F - On occasions, the accelerator could have been used more smoothly and with greater control. Cruise control was not always used where appropriate

U - Erratic use of the accelerator resulted in a poorly controlled drive. The rev. counter entered the red band on a number of occasions. There was a lack of acceleration sense.

Braking (including engine/exhaust brake)

G - Braking was positive and smooth, tapering on and off. The exhaust/engine brake was used effectively whenever possible. Hand brake was applied when required.

F - Braking was occasionally harsh and rushed. More thought to braking would have avoided late and hurried applications.

U - Brakes were applied too frequently and unnecessarily. Incorrect use of or failure to apply the handbrake. Little use of the exhaust/engine brake.

Clutch Control

G - The clutch was used in a most efficient manner and was well controlled at all times.

F - Generally the use of the clutch was sound but occasional inappropriate operation resulted in some errors in control.

U -The clutch was disengaged too early causing the vehicle to coast. Observed riding the clutch on a number of occasions or holding the vehicle using the clutch on inclines at junctions etc.

Driving Position/Seat Belt

G - A business-like approach, the candidate sat alert in an upright position and maintained posture throughout the drive. The seat belt was used when fitted.

F - The candidate tended to be a little casual in the driving position or did not appear to be at ease in his/her driving position. The seat belt was used when fitted.

U -The candidate adopted a lazy seating

Road and Weather Conditions

G - A competent driver, skillful and aware of surrounding road and weather conditions. Braking distances and visibility were constantly considered when external changes occurred.

F - The candidate's driving style was a little casual considering the conditions but full control of the vehicle was maintained.

U - During the drive there was little evidence shown that the driver was aware of changes in road conditions or weather and driving style was not adapted accordingly. During heavy rain the candidate tended to drive in water filled troughs in the road.

Steering

G - Correct steering technique was clearly demonstrated.

F - Although there were no positional errors on the road, the steering method used tended to be unorthodox and minor errors were made. The vehicle was driven one-handed on a number of occasions.

U - There was a lack of discipline towards steering. Both hands were removed from the steering wheel at the same time.

Gear Selection and Use

G - The gearbox was used in a most efficient manner, with the vehicle kept moving whenever possible. Gear selection was accurate and block/skip changing was continually employed both up and down. The vehicle was always in the right gear for the conditions.

F - Generally correctly geared, with occasional minor incorrect selections made due to haste, inexperience and/or lapses in concentration. Block/skip changing was demonstrated at times.

U - The use of the gearbox was erratic and clumsy, lacking style and timing. There were occasions when gears were selected too late and vehicle speed and gear selection did not match, resulting in the candidate looking at the gear lever and not at the road.

Hazard Perception and Prioritisation

G - Good forward observation, resulting in a uniform, foresighted and safe style of driving.

F - Read the road well but room to improve observation, hazard perception and attention to finer detail.

U - There were clear examples of poor planning and observation resulting in an unprepared approach to hazards. Little appreciation of how to systematically anticipate and deal with a hazard.

Speed

G - Legal speed limits were strictly observed. Constantly matching the speed with visibility/road conditions and planning ahead for changes.

F - Speed limits were observed but better forward planning, taking into account imminent changes to speed limits, would have resulted in a smoother drive.

U -Speed limits were exceeded on occasions. Inappropriate speeds also evident on approaches to hazards, junctions, traffic lights etc.

Lane Discipline and Positioning

G - Adherence to lane markings was exemplary, with the vehicle positioned to maximise both visibility and safety and to facilitate progress. The correct braking distance was observed at all times.

F - Generally good lane discipline and positioning but at times markings were cut or straddled.

U - Consistently straddled lane markings. Positioning was inconsistent, resulting in poor space around the vehicle and reduced visibility.

Making Progress and Planning

G - Good safe progress was maintained. Taking advantage of gaps in traffic due to long forward planning without compromising safety. There was a constant smooth flowing rhythm throughout the drive.

F - The flow and progress of the drive were lost on infrequent occasions.

U - Little attempt was made to maintain safe progress, with lost opportunities throughout the drive. A lack of ability to link the elements of the drive together adversely affected flow. A distinct lack of planning was evident.

Use of Mirrors and Blind Spots

G - Mirrors were all used effectively and blind spots were checked when required.

F - Although often used, checking the mirrors was not always linked to the other features of vehicle control.

U - There was inconsistent, insufficient or delayed use of mirrors and blind spot checks were missed on occasions.

Use of Signals

G - Excellent information given to other road users during the drive. Signals were used correctly whenever needed.

F - Signals were overused/underused at times but road safety was never compromised.

U - Insufficient use made of signals and/or misleading signals given to other road users.

Overtaking

G - Overtaking was carried out in a safe and positive manner.

F - Overtaking manoeuvres were safe but lacked a degree of urgency. Greater attention to position, prior to and whilst overtaking, would have resulted in a better line.

U - Inadequate planning caused overtaking to be aborted.

Vehicle Sympathy

G - The candidate displayed obvious sympathy for the vehicle. Evidence of low engine speed where possible and high power when necessary. The vehicle was controlled smoothly throughout the drive.

F - Control of the vehicle was fairly smooth, only disrupted by occasional unevenness caused by hitting avoidable potholes etc. in the road. Greater attention would lead to improved vehicle sympathy.

U - There was a distinct lack of sympathy shown for the vehicle, with a noticeable disregard for changes in the condition of the road surface. The result was a roughly controlled almost abusive drive.

Driver's Attitude/Technique

G - A competent driver, skilful and well aware of other road users. Concentrated well and displayed a high level of consideration and courtesy for other road users. The candidate had command of the road, using size of vehicle to full advantage, without taking advantage. A positive attitude was evident.

F - The candidate was relaxed and aware of the presence of other road users making adjustments to the drive accordingly. Demonstrated acceptable levels of consideration, attitude and ability.

U - The candidate showed little interest during the assessment and generally displayed a negative attitude. The candidate displayed unacceptable forcefulness on at least one occasion and there was evidence of a lack of courtesy to other road users.

Reaction to Road Markings and Signs

G - Strictly observed all markings and signs and reacted accordingly in a safe and efficient manner.

F - Observed signs but at times failed to react accordingly. However, road safety was not compromised.

U - Missed several signs resulting in potentially hazardous situations.

Document 3 Vehicle Safety Check Sheet

To be completed by the candidate during the introduction session before driving commences. The instructor will observe and assess the candidate's attitude, efficiency and thoroughness during the safety check exercise and allocate a "Pass" or "Fail" accordingly.

Candidate's Name _____ Date ____/____/____

Instructor's Name _____

Tick if the item is in working order, add N/A if not applicable, or indicate a defect in the appropriate box.

Vehicle Registration:	[Redacted]	
1. On approach, look to see how the vehicle is sitting and check for obvious fluid leaks		
2. Engine oil/water/fuel/hydraulics - levels/leaks (Inc attachments)		
3. Cab glass and mirrors - condition and security		
4. Cab interior lights/warning devices (audible reversing alarm etc)		
5. Driving controls/seat/seat belt - condition and security		
6. Windscreen wipers and washers -operation and condition		
7. Tachograph - time displayed/calibration/inspection due date		
8. Tachograph/speedometer/speed limiter (check on road)		
9. VED disc/O licence disc/valid VTG 6 - check displayed		
10. In cab height indicator - check displayed		
11. Exhaust - condition and security (smoke check on road when warm)		
12. Number plates and markers - security and condition		
13. Brakes - warning devices/pressure/leaks - operation (check in yard)		
14. Vehicle body/wings/sideguards/underrun bars - security and condition		
15. Wheels and wheel nuts - security and condition		
16 Tyres - inflation/damage/tread depth - condition		
17. Load restraints and security of load (if applicable)		
18. Lights-head/side/marker/tail/stop/indicators/reverse - operation and condition,		
19. Fifth wheel-locking device/steps/cat walk - security and condition		
20. Air electrical/ABS/suzies - condition and security		
21. ADR kit and fire extinguishers - condition, security and test dates		
22. Demount twist locks and legs - security and condition		
23. Tail lift - security, condition and operation		

Candidate's signature (upon completion of safety check): _____

Instructor's signature (upon completion of safety check): _____

You must not use a vehicle unless you are completely satisfied that it is safe and fit to operate on, and off, public roads

REMEMBER: IF A SEAT BELT IS FITTED, IT MUST BE WORN

Document 4 Trailer Safety Check Sheet

To be completed, if applicable, by the candidate during the introduction session before driving commences. The instructor will observe and assess the candidate's attitude, efficiency and thoroughness during the safety check exercise and allocate a "Pass" or "Fail" accordingly.

Candidate's Name _____ Date ____ / ____ / ____

Instructor's Name _____

Tick if the item is in working order, add N/A if not applicable or indicate a defect in the appropriate box.
You must not use any trailer unless you are completely satisfied that it is safe and fit to operate on, and off, public roads.

Trailer Number:		
1. On approach, look to see how the trailer is sitting and check the trailer parking brake		
2. Fluids/Air - levels/leaks (Inc attachments)		
3. Trailer connections - security and condition		
4. Lights - stop/tail/marker/indicators/reverse - operation and condition		
5. Landing legs and handle - security and condition		
6. Tyres-inflation/damage/tread depth - condition		
7. Wheels and wheel nuts - security and condition		
8. Brakes - pressure/leaks/operation - (check in yard)		
9. ABS warning light - operation (be aware of type fitted)		
10. Body/sideguards/underrun bars - security and condition		
11. Number plates/marker plates - security and condition		
12. Load security and lashing points - security and condition (if applicable)		
13. MOT plate - valid and displayed		
14. Twist locks - secure and correctly engaged		
15. Fifth wheel pin - secure		
16. Rear amber warning lights - security and operation		
17. Trailer height indicator - displayed		

Candidate's signature (upon completion of safety check): _____

Instructor's signature (upon completion of safety check): _____

REMEMBER: ENSURE THE PARKING BRAKE IS APPLIED BEFORE COUPLING AND UNCOUPLING

Document 5 On-road Marking Sheet

This document is designed to assist the instructor during the candidate assessment drives. Performance details, in line with the criteria given in the Assessment Guide (**Document 2**) will initially be recorded on this sheet during the first and second runs and then subsequently transferred to the General Assessment Report (**Document 9**).

Candidate's Name _____ Date ____/____/____

Instructor's Name _____

SAFED Element		G, F or U	
		Run One	Run Two
1	Acceleration and Cruise Control		
2	Braking (including engine/exhaust brake)		
3	Clutch Control		
4	Driving Position/Seat Belt		
5	Road and Weather Conditions		
6	Steering		
7	Gear Selection and Use		
8	Hazard Perception and Prioritisation		
9	Speed		
10	Lane Discipline and Positioning		
11	Making Progress and Planning		
12	Use of Mirrors and Blind Spots		
13	Use of Signals		
14	Overtaking		
15	Vehicle Sympathy		
16	Driver's Attitude/Technique		
17	Reaction to Road Markings and Signs		

General comments and notes: _____

Candidate's signature: _____

Instructor's signature: _____

Document 6 Deferred Candidate Report Sheet

This document is to be completed by the SAFED instructor if, on either drive, a candidate's driving is deemed to be dangerous and practical training can no longer continue on the grounds of safety. The instructor may choose to defer further practical training until a later date and will take control of the vehicle and return to base. The deferred candidate will still be given the option to attend the classroom based instruction sessions.

Candidate's Name _____ Driving Licence number _____

Instructor's Name _____ DSA registration number _____

Date of assessment ___ / ___ / _____ Venue _____

Please Note: Your driving has been assessed according to the set criteria for the following list of SAFED elements. As a result of your standard of driving, I have deemed you unsuitable to proceed with the remainder of the practical elements of today's SAFED programme. Those areas in which you require additional development in order to reach the required standard are marked for your attention.

Ref	SAFED Element	Remarks
1	Acceleration and Cruise Control	
2	Braking (including engine/exhaust brake)	
3	Clutch Control	
4	Driving Position/Seat Belt	
5	Road and Weather Conditions	
6	Steering	
7	Gear Selection and Use	
8	Hazard Perception and Prioritisation	
9	Speed	
10	Lane Discipline and Positioning	
11	Making Progress and Planning	
12	Use of Mirrors and Blind Spots	
13	Use of Signals	
14	Overtaking	
15	Vehicle Sympathy	
16	Driver's Attitude/Technique	
17	Reaction to Road Markings and Signs	
	Run details (only if complete): Time Distance Gear change Fuel used MPG	

General comments and notes: _____

Candidate's signature: _____

Instructor's signature: _____

Document 7 Sample Theory Test Paper A - Safe Driving

This is a sample of the first of two theory test papers to be completed by candidates after the day's practical driving assessments have finished. It concentrates on the safety aspects of driving. The pass mark for this paper is 60%. A candidate must pass this paper to successfully complete the SAFED programme. After marking, the instructor will complete the General Assessment Report by entering "Pass" or "Fail" in the relevant section. (Additional questions can be found in The Official Theory Test for Drivers of Large Vehicles, ISBN 0 11 552346 4, available from The Stationery Office on 0870 241 4523 or at www.tso.co.uk).

Candidates should attempt all questions. Each question is worth one point but some questions may require candidates to give more than one correct answer, so candidates should read the instructions carefully. Candidates must score at least six points to pass this test and have 10 minutes to complete the test. Answers are given on page 30.

Candidate's Name _____ Date ____ / ____ / ____

Score: _____

Q1. When approaching a zebra crossing you should:

- Stop before the zig-zag lines
- Wave pedestrians across the road
- Sound the horn and flash headlights
- Be prepared to stop in good time

Q2. You are driving in town. Ahead is a stationary bus showing a school children sign. You should:

- Accelerate quickly
- Stop behind the bus and wait until it moves off
- Drive past slowly
- Drive normally, the driver will look after the children

Q3. You are following a scooter on an uneven road. You should:

- Allow extra room, the rider may swerve to avoid potholes
- Leave less room so the rider can see you in their mirrors
- Drive closely behind and get ready to overtake
- Drive closely to shield the rider

Q4. You are following a vehicle on a wet road. You should leave a time gap of at least:

- One second
- Two seconds
- Three seconds
- Four seconds

Q5A heavily laden lorry is taking a long time to overtake you. You should:

- Speed up
- Slow down
- Hold your speed
- Change direction

Q6A cyclist enters a roundabout in front of you and indicates their intention to turn right. You should:

- Sound your horn
- Undertake on the left
- Overtake on the right
- Allow plenty of room

Q7A large vehicle is most stable when driven in a straight line under:

- Harsh acceleration
- Gentle braking
- Gentle acceleration
- Harsh braking

Q8.You are driving in the left-hand lane of a motorway. You see another large vehicle merging from a slip road. It is travelling at the same speed as you. You should:

- Try to race ahead of it
- Leave the other vehicle to adjust its speed
- Stay at the maximum speed allowed for your vehicle
- Be ready to adjust your speed

Q9. In heavy rain what is the least amount of space you should allow for braking?

- The normal distance
- Twice the normal distance
- Three times the normal distance
- Five times the normal distance

Q10.You should be extra careful when following riders of scooters as they may suddenly:

- Look down
- Give signals
- Swerve
- Accelerate

Document 8 Sample Theory Test Paper B - Fuel Efficient Driving

This is the second of two theory test papers to be completed by candidates after the day's practical driving assessments have finished. It concentrates on fuel efficient driving issues. The pass mark for this paper is 60%. A candidate must pass this paper to successfully complete the SAFED programme. After marking, the instructor should complete the General Assessment Report by entering "Pass" or "Fail" in the relevant section. (Additional questions can be found in The Official Theory Test for Drivers of Large Vehicles, ISBN 0 11 552346 4, available from The Stationery Office on 0870 241 4523 or at www.tso.co.uk).

Candidates should attempt all questions. Each question is worth one point but some questions may require candidates to give more than one correct answer, so candidates should read the instructions carefully. Candidates must score at least six points to pass this test and have 10 minutes to complete the test. Answers are given on page 30.

Candidate's Name _____ Date ____ / ____ / ____

Score: _____

Q1. List three vehicle checks to be carried out prior to moving off to help with fuel efficiency.

1. _____
2. _____
3. _____

Q2. To maintain good fuel efficiency which statement is correct?

- Low gear/high revs
- High gear/low revs

Q3. As a general rule, a 20% under-inflation of tyres will lead to which one of the following:

- A 5% decrease in rolling resistance and a 2% improvement in fuel consumption
- A 10% decrease in rolling resistance and a 5% improvement in fuel consumption
- A 10% increase in rolling resistance and a 2% deterioration in fuel consumption
- A 20% decrease in rolling resistance and a 5% improvement in fuel consumption

Q4. When descending a hill what device is fitted to the vehicle to assist in engine braking and is an aid to fuel efficiency?

- _____
- _____

Q5. You are allocated a new vehicle. What should you read through to find out how to drive the vehicle efficiently?

- _____
- _____

Q6. You are driving along a dual carriageway. What device should you use to maintain a constant speed and assist in fuel efficiency?

- _____
- _____

Q7. Which three of the following would help to reduce the impact of your lorry on the environment?

- Driving through town centres
- Braking in good time
- Planning routes to avoid busy times
- Racing to make up time
- Anticipating well ahead

Q8. List two actions you, as a driver, can carry out when refuelling your vehicle to maximise fuel efficiency.

1. _____
2. _____

Q9. Instead of using every single gear, what gear changing technique could you adopt to increase fuel efficiency?

Q10. Which of the following statements is correct?

- Double declutching is good for the vehicle engine and reduces fuel consumption
- Double declutching increases vehicle engine wear and tear and reduces fuel efficiency

Document 9 General Assessment Report

The General Assessment Report will be completed by the SAFED instructor. Performance indicators from the two practical driving assessments, as well as the results of the safety check exercises and the theory test papers will be recorded on this form. These individual components will determine the overall grade allocated to the candidate.

General Details			
Candidate Name:		Date:	
Training Venue:		Weather Conditions:	
Vehicle Type:		Vehicle Weight:	
		Vehicle Registration:	
Licence valid: Yes/No		Eyesight satisfactory: Yes/No	
Licence number:		Company:	
Run Details	Run 1	Run 2	Instructor's Run (Optional)
Start Time:			
End Time:			
Duration:			
Miles:			
Number of Gear Changes:			
Fuel Used:			
MPG:			
Safety Checks and Theory Exercises			
Vehicle Safety Check	Trailer Safety Check (if applicable)	Theory Paper A	Theory Paper B
Pass/Fail:	Pass/Fail:	Pass/Fail:	Pass/Fail:

Practical Driving Assessments

Good (G) = 0 faults, Fair (F) = 1 fault and Unsatisfactory (U) = 3 faults

		FIRST DRIVE		SECOND DRIVE		
1	Acceleration and Cruise Control					
2	Braking (including engine/exhaust brake)					
3	Clutch Control					
4	Driving Position/Seat Belt					
5	Road and Weather Conditions					
6	Steering					
7	Gear Selection and Use					
8	Hazard Perception and Prioritisation					
9	Speed					
10	Lane Discipline and Positioning					
11	Making Progress and Planning					
12	Use of Mirrors and Blind Spots					
13	Use of Signals					
14	Overtaking					
15	Vehicle Sympathy					
16	Driver's Attitude/Technique					
17	Reaction to Road Markings and Signs					

TOTAL FAULTS:

--

Grading

--

Overall Grade:	Certificate issued? Yes/No
----------------	----------------------------

Document 10 Evaluation Form

Candidates will be asked to complete a copy of this form during the final feedback session of the day. It will be used to gauge opinion on the content and delivery of the programme.

Candidate's Name (optional): _____ Instructor's Name: _____

Venue: _____ Date: ____/____/____

Please rate the following aspects of the SAFED programme, by circling the appropriate number on a scale of 1 to 5, where 1 = Unsatisfactory and 5 = Excellent.

The explanation of and subsequent delivery of the course 1 2 3 4 5

Help in developing new ideas, skills and techniques to benefit both your company and you 1 2 3 4 5

Clarity, conciseness and relevance of the course content 1 2 3 4 5

Instructor's responsiveness to your needs 1 2 3 4 5

The usefulness of the training materials used 1 2 3 4 5

Location and standard of the venue and its facilities 1 2 3 4 5

The date and time of the programme 1 2 3 4 5

The time taken to complete the programme 1 2 3 4 5

If you have given a low score for any of the above, it would be helpful if you could explain how you think we could improve the programme

Please Circle:

Were the Health and Safety procedures explained? Yes No

In general, how satisfied are you with the services you have received today from the training provider?

- Extremely Satisfied Very Satisfied Satisfied
 Dissatisfied Very Dissatisfied

What do you feel has been the most valuable part of today's course?

Please use the following space to make any additional comments about this programme

Sample Theory Test Papers - Answers

Paper A – Safe Driving (Document 7)

- Q1. Be prepared to stop in good time.
- Q2. Drive past slowly.
- Q3. Allow extra room, the rider may swerve to avoid potholes.
- Q4. Four seconds.
- Q5. Slow down.
- Q6. Allow plenty of room.
- Q7. Gentle acceleration.
- Q8. Be ready to adjust your speed.
- Q9. Twice the normal distance.
- Q10. Swerve.

Paper B – Fuel Efficient Driving (Document 8)

- Q1. For example: tyre condition, wheel alignment, fuel leaks, oil and coolant leaks, brakes and streamlining.
- Q2. High gear/Low revs.
- Q3. A 10% increase in rolling resistance and a 2% deterioration in fuel consumption.
- Q4. Exhaust brake.
- Q5. Vehicle handbook.
- Q6. Cruise control.
- Q7. Braking in good time. Planning routes to avoid busy times. Anticipating well ahead.
- Q8. For example: Avoid filling to the brim, avoid spillage, never leave a nozzle in use unattended, ensure fuel cap secured.
- Q9. Block/skip changing.
- Q10. Double de-clutching increases vehicle engine wear and tear and reduces fuel efficiency.

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