



ROAD VEHICLE SAFETY PROGRAMME

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ROAD VEHICLE SAFETY PROGRAMME

KEYWORDS

- AUDIT
- CONTRACTOR
- FIRE
- FORKLIFT
- HAZARD
- INSPECTION
- PREVENTION
- SAFETY
- TRAINING
- TRANSPORTATION

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1 Introduction

Safety in transport is an important issue for the Gases Industry. Road vehicle accidents:

- have a potential for severe consequences,
- have public concern with adverse publicity,
- result in delayed delivery or contacts to customers.

Safety in Transport is a recurrent topic in EIGA Symposia and was the main theme of the 1992 EIGA Symposium "Safety in Transport – People and Products. One outcome of that Symposium was the publication of the IGC Document 54/95 "Road Vehicle Safety Programme". This is a revised and reformatted version of that document.

The proposed Road Vehicle Safety programme consists of five elements that are each developed individually in a separate chapter of the document:

Chapter 4. Element 1; Reporting and analysing vehicle accidents.

Chapter 5. Element 2; Monitoring vehicle accident / incident frequency rates.

Chapter 6. Element 3; Driver selection and evaluation.

Chapter 7. Element 4; Driver training.

Chapter 8. Element 5; Auditing

2 Scope and Purpose

This programme will explain how to reduce the number of road vehicle accidents.

As a minimum all large commercial vehicles together with those of haulage contractors should be included, e.g.

- cylinder trucks,
- tank vehicles,
- battery vehicles,
- distribution vans and
- service vehicles.

Of course, the programme can be extended to passenger cars.

3 Definitions

RVSP: Road Vehicle Safety Programme

4 First element: Reporting and analysing vehicle accidents

4.1 General

All efforts for the improvement of safety on the road must be based on comprehensive information about accidents. All vehicles should be considered.

The programme should include accidents occurring on:

- public roads,
- own premises/depots,
- customer premises,
- vehicle parks; etc.

Analysis of data will enable problem areas to be identified and corrective actions to be implemented, including preparation of appropriate training material.

4.2 Data to be identified and recorded

4.2.1 Operational areas

These could include

- Countries
 - Regions
 - Depots
 - Product lines
 - Companies
- } Each operator should choose the operational area most appropriate to his organisation

4.2.2 Distance travelled

Total distance travelled by the Operational Unit in the areas as defined above. This would include all mileage including revenue and non-revenue miles.

4.2.3 Road vehicle accidents

Road vehicle accidents include:

- (a) Every instance of damage to a company owned road vehicle, hired or sub-contracted vehicle. Only exclusions are punctures, minor bodywork damage from stones thrown up whilst driving, and damage from vandalism/break-in. A mechanical failure in and of itself is not a road vehicle accident. An accident occurring as a result of a mechanical failure is a road vehicle accident. Example: A tire blowout is not an accident, but if as a result of the blowout a vehicle runs off the road and strikes an object, it is a road vehicle accident.
- (b) Every instance of damage to company property or third party property caused by a company owned vehicle or hired or sub-contracted vehicle driven by a company authorized driver – if not already recorded above.
- (c) Every instance of injury to company employees or third parties caused by company owned vehicle or hired or sub-contracted vehicle driven by a company authorized driver (unless recorded above).

All road vehicle accidents are to be recorded whether they occur on the road or on company, private or public property.

4.2.4 Preventable/non-preventable accident

An accident would be considered preventable if:

- (a) the driver lost control of the vehicle other than because of a mechanical failure, or
- (b) the driver failed to judge correctly the speed or size of his own or other vehicles or failed to check clearances, or
- (c) the driver failed to make reasonable assessments of traffic situations and the reactions of other drivers to these situations.

All other accidents would then be judged non-preventable.

4.3 Actions after accidents

4.3.1 Investigation

Investigations should be conducted by the supervisor of the driver and should include:

- Establishing facts (visit accident scene if appropriate)

- Interviewing the driver
 - Completion of a standard report [see Appendix A for an example]
 - Accident analysis
 - Result of analysis
 - Accident classification
 - Measures to prevent repetition
 - Driver data
- } involving
} safety
} specialists
(see Appendix B)

It is essential that the manager confirms the facts relating to the incident. To facilitate this it is recommended that the managers are trained in driving skills such that they are able to relate more directly to the problems involved.

An interview of the driver, even if the physical damage is minor, is a very powerful motivator. This may be time consuming for the manager but, not only is it a valuable learning opportunity, it also sends a clear message regarding the company's belief that all accidents to some extent are avoidable and that road vehicle safety is a top priority.

4.3.2 Reporting

A standard report form ensures consistency of information and enables comparisons to be made (see Appendix A).

A factor peculiar to the Road Traffic Accident Programme, is the decision regarding classification. There is a benefit in differentiating between preventable and non-preventable accidents (see above 4.2.4).

The purpose of such classification is to assist in developing longer term safety programmes and does not infer any liability decisions. Normally the outcome of such a review will result in changes to the management system, e.g.:

- improved training,
- improved maintenance,
- amended vehicle specification etc.

4.3.3 Records

Records should be held in the local files and for each driver will include if possible:

- Accident frequency rate,
- Repeat of accident types,
- Age,
- Service / experience,
- Shift patterns
- Traffic accidents reported
- Copy of valid driving licence.

5 Element 2: Monitoring vehicle accident frequency rates

5.1 General

Monitoring accident frequency rates is a beneficial tool for management to control their company safety performance and enables them to set targets for improvements.

Having good and consistent information on what is happening is imperative to the safety improvement process. Furthermore, the information has to be timely so that management can react immediately to a negative trend.

A formal and efficient accident frequency rate monitoring system will demonstrate whether the frequency of road vehicle accidents per kilometre travelled is improving and whether the cost of

accidents is being reduced. As mentioned above the system should be designed in such a way that managers can have an appropriate knowledge of the road vehicle accident phenomena and subsequently can take the appropriate corrective actions.

5.2 Presentation of statistics

The most common indicator in road accident statistics is the vehicle accident frequency rate (VAFR):

$$\text{VAFR} = \frac{\text{number of accidents}}{\text{total number of driven km}} \times K \quad (\text{K} = \text{constant} = 1,000,000 \text{ km})$$

This formula can be used for calculating the VAFR for total accidents / preventable accidents / non-preventable accidents.

However, satisfactory statistical information for management should also include:

- 1. Type of accident**
 - 1.1 Vehicle alone
 - 1.2 Collision with other vehicle(s)
 - 1.3 Collision with road users other than vehicles (pedestrians, animals, etc.)
 - 1.4 Rollover
 - 1.5 Jackknife
 - 1.6 Runoff road

- 2. Consequence of accident**
 - 2.1 Injury of own personnel
 - 2.2 Injury to 3rd party
 - 2.3 Damage to own vehicle
 - 2.4 Damage to 3rd party vehicle
 - 2.5 Damage to 3rd party property
 - 2.6 Product loss
 - 2.7 Environmental impact

- 3. Traffic area**
 - 3.1 Public road
 - 3.2 Non public road (e.g. company's premises)
 - 3.3 Non-public road – customer premises
 - 3.4 Non-public road – parking areas (rest areas, truckstops, restaurants, etc.)

- 4. Classification of accident**
 - 4.1 Preventable
 - 4.2 Non-preventable

- 5. Safety features of own vehicle**
 - 5.1 Antilocking brake system yes/no
 - 5.2 Stronger braking systems as requested by law yes/no
 - 5.3 Seat belts yes/no
 - 5.4 Seat belts used yes/no
 - 5.5 Load securing yes/no
 - 5.6 Load securing used yes/no
 - 5.7 Extended rear end protection (e.g. tank cabinets, additional fork lifts etc.)
 - 5.8 Lower point of gravity

- 6. Driver's experience with this kind of vehicle**
 - 6.1 Less than 2 years
 - 6.2 Between 2 and 5 years
 - 6.3 More than 5 years
 - 6.4 Previous accidents

7. Damage cost	7.1 Total (all accidents)
	7.2 Above (e.g.) 1,000 Euros
8. Characteristics of the accident	8.1 Driving too close
	8.2 Reversing
	8.3 Turning left/right
	8.4 Parking
	8.5 Merging traffic
	8.6 Excessive speed

Kilometres, instances, damage, preventable/non-preventable, type – characteristics and traffic area of accident should be grouped in four categories and frequency rates calculated for each category:

- tankers and other bulk vehicles
- cylinder transport trucks
- passenger/company cars
- all other commercial vehicles.

Each company should also define:

- areas of operation e.g. Europe, Individual Countries, Regions or Distribution Centres
- reference period e.g. quarterly, half yearly, yearly and have data grouped per vehicle category, area of operation and recording period.

Each vehicle category should display its own characteristics concerning frequency and nature of accidents. Groupings will provide a better analysis.

5.3 Targeting and monitoring

The key to the improvement system is targeting. Targets and objectives should be set for each category of vehicle and operational area. Initially targets may have to be set by the experience of the operators or management or extracted from published industry standards. It then becomes a process of monitoring and controlling information centrally and ensuring feedback to the operating locations. This will enable comparisons to be made and the information can be used to motivate the driver workforce and to identify where any corrective actions may need to be taken.

Target improvements for vehicle accidents should be set at least in terms of:

- no fatal accident
- reduction of number of instances
- total accidents cost reduction.

Industrial companies who have implemented and experienced such a system of monitoring accident frequency rates and managing targets for improvement prove that the system pays out, thus achieving excellent results in terms of reducing accidents and associated costs.

All EIGA members are encouraged to participate in the EIGA voluntary Road Safety Award Scheme, as outlined in the EIGA document 99/03 EIGA Safety Award Schemes.

6 Element 3: Driver selection and evaluation

6.1 General

Reports and statistics about traffic accidents prove that the majority of accidents are caused by human error. Technical deficiencies have only a minor effect on the origin of accidents.

In view of this background the personal characteristics and abilities of a driver have fundamental importance for transport safety within each company. Therefore every candidate - before employment - should run through a procedure for selection and evaluation.

This process would apply equally to own drivers and haulage contractor drivers.

6.2 Professional ability

The professional qualification of a candidate company driver should be checked on basis of the following:

- Driving licence for heavy good vehicles
- ADR driver training certificate
- Other education certificates
- Judgement of former employers
- Traffic violations (accident history, previous driving records)
- Practical and theoretical intelligence
- Evidence of continuous relevant employment (e.g. liquid tank vehicle)
- Experience with different kinds of trucks and trailers

A test drive is strongly recommended. Such a test should include a manoeuvring exercise plus a drive over a route of various types of roads including fast open roads and through varying traffic densities. It is essential that the test be conducted by a competent person.

6.3 Attitude and behavioural characteristics

Personal characteristics influence the behaviour of people. Therefore it is important to judge to what extent a candidate for a driving position possesses the following qualities:

- Sense of responsibility
- Perception of safety
- Compatibility with stress
- Comprehension of situation
- Power of judgement
- Ability to learn
- Readiness to help
- Independence
- Integrity
- Confidence

The most frequent way for testing these qualities is a well prepared interview of the candidate by superiors of the company.

Some of those qualities – sense of responsibility and safety, absence of aggressiveness, politeness to other traffic participants – should also be checked during the test drive.

Psychological tests may be useful in evaluating personal characteristics. Such tests are normally commercially available. For further details of examples see IGC Document 45/91 (Symposium: Safety in Transport: People and Products) and IGC Document 58/98 Safety and the human factor (in particular presentation 3 “Assessment of human behaviour – Driving ability tests – J.Marais LARCA).

6.4 Physical ability

Driver candidates must satisfy certain physical demands. An adequate investigation has to be carried out by a specialized physician. Essential parts of judgement are the following physical abilities:

- Visual acuity (with and without glasses)
- Stereoscopic seeing
- Colour vision
- Visual field
- Hearing ability
- Some common abilities like speed of reaction, attentiveness, physical fitness
- Evidence of existing muscular or skeletal disorders, e.g. back

Furthermore the physician has to find out that the driver candidate does not suffer from serious illness like diabetes, asthma, alcoholism, serious heart- or circulation diseases, nervous or mental disorders.

6.5 Result

Safe behaviour of a driver cannot be predicted exactly. Nevertheless it is possible to evaluate driver candidates with regard to their disposition for accidents. The evaluation demands some expense. This should be seen as an investment in selecting those drivers who will perform according to the expectations of the company.

7 Element 4: Driver training

7.1 General

In addition to the ADR regulations the drivers should be trained according to this document. Training is clearly a key part of any safety programme. EIGA considers that driver training should be more comprehensive, and the following should be considered:

- Induction training
- Vehicle related training
- Product training
- Product systems training
- Emergency procedures
- Defensive driver training
- Assessment
- Refresher training

These categories are considered in more detail below. It should be noted that contractors' drivers also require training to the same standard as a company's own drivers.

7.2 Induction training

Induction training for drivers will be essentially the same as for any other group of employees. A typical induction programme would include:

- Introduction to the Company
- Introduction to the local branch
- Issue of appropriate protective clothing
- Basic product knowledge
- Accident reporting procedures
- Other administrative procedures
- Completion of general safety induction checklist

7.3 Vehicle related training

It is assumed that the new employee, having been properly selected and evaluated, is already competent on the category of vehicle which he will be required to drive. It is therefore only necessary to instruct him in the various specific features of the vehicle(s) which he will be driving, with which he may not be familiar.

Obviously this instruction will depend upon the vehicle(s) in service but items for consideration include:

- Braking Systems (e.g. ABS system or engine brake system)
- Correct Use of different Gearbox types
- Emergency Equipment and its use
- Vehicle characteristics influencing stability.

7.4 Product training

Drivers need specific knowledge of products, which they may be required to handle. This would include:

- properties of the product
- safety requirements for product handling
- use of personal protective equipment
- hazardous chemical labelling requirements for vehicles
- documents dealing with the products (e.g. tremcards).

7.5 Product systems training

This training related specifically to the duties of a driver in relation to product handling.

For bulk liquid vehicles, for cryogenics or carbon dioxide, training should cover the design and construction of road tankers, ISO containers, rail cars, pallet tanks and liquid cylinders as appropriate. It should also include the design and construction of equipment at customer's premises and product transfer procedures including pressure decant or pump transfer and single/two hose transfer as appropriate.

For cylinder vehicles it should include cylinder design, identification and handling as well as use of pallets, tail-lifts, cranes and forklifts as appropriate and securing of loads.

For bulk compressed gases (tube trailers) training should include system design, isolation of cylinders/cylinder banks, filling procedures and customer decant procedures.

For all vehicles the training should also cover:

- Daily inspections
- Equipment defect systems (including defects on both the vehicle and associated distribution equipment).

7.6 Emergency procedures

Drivers are required to be trained in company emergency procedures, which should be appropriate to the type of vehicle and hazards presented by the load. Drivers also should be trained in fire fighting techniques, again appropriate in the hazards of their vehicle.

The training should also include company procedures for handling media enquiries during and following an emergency.

7.7 Defensive driving training

Defensive driving may be defined as avoidance of accidents by planning ahead, driving courteously and making allowance for the errors of others.

Defensive driving training needs to be tackled in a manner quite unlike that which would be used for normal operational training (which is generally "skills training").

Defensive driving is an attitude. The Defensive Driver is one who recognises that he has no control over:

- the unpredictable actions of other drivers and pedestrians;
- weather conditions;
- road and traffic conditions.

He therefore: develops a defence against all these hazards; is careful not to commit driving errors himself; is alert to avoid the accident traps and hazards created by weather, roads, pedestrians and other drivers.

He accepts a responsibility to drive without an accident regardless of icy roads, bends, hills, narrow roads, the absence of signs, signals out of order, the carelessness, recklessness, or ignorance on the part of other drivers. He knows that these are all situations which are likely to be encountered at any time, and he continuously makes allowances for them.

He continuously strives not only to avoid having an accident himself, but also to avoid becoming the recipient of someone else's accident.

Defensive driving training is therefore much more than mere skills training, and unless a company has its own expertise in this area, help should be sought from suitable specialist organisations.

7.8 Assessment

All aspects of training should be followed by an assessment process, whether by written or practical examination, or more probably both. It is important that assessments are done objectively and consistently. Practical examinations must therefore be carried out against a well developed checklist.

In the case of ADR Training this will be carried out by an external approved body and drivers will be licensed.

7.9 Refresher training

Drivers should undergo refresher training at predetermined intervals, or following an accident, or when changing job/vehicle type etc. Refresher training should also include evaluation. ADR regulations also set out refresher training requirements.

A final note – all training and assessments should be recorded, and records retained on file.

8 Element 5: Auditing

8.1 Why safety programme auditing and by whom?

The most obvious reason for auditing a road vehicle safety programme might seem to be to ensure that the adopted elements have been implemented within the organisation and thus management compliance with the decided programmes. Although this is important, the main objective of auditing should be the co-ordination of the programme by arranging qualitative feedback reports of results and comparison with the improvement targets set by management. Hence the results will become a motivating factor for all the personnel involved in the programme.

Ideally a senior person should be appointed to be responsible for the introduction of the entire road vehicle safety programme. This person would also be the most suitable and motivated person to monitor the progress at regular intervals. As found appropriate, especially in large organisations, teams of two or at the most three persons can be selected and trained to audit, on a routine basis, elements other than their own. The team will include the DGSA who has auditing compliance to transport regulations as one of his/her duties and could comprise also a senior driver, an haulier representative, a safety committee member associated with the distribution work or an expert relevant to the activity to be studied. The principle of substitution rather than addition should be used so that the teams do not become too large.

The frequency of audits at the same location will largely depend on the size of the organisation, its safety performance, result of previous audit, resources available etc. A reasonable and average interval between two audits can be 1-2 years. During this period the local management can arrange

safety tours and inspection and these can form a part of the monitoring system initiated after the first audit.

8.2 Scope of the audit

The scope should cover all the elements of the road safety action programme and must not be limited to a simple appraisal and condemnation of unsatisfactory conditions. It should aim to cover the objectives described by promoting contact with individual persons and to encourage comments, suggestions and invite co-operation in discovering conditions which need remedial action.

Before carrying out an audit it is important to have a decision, made at executive level, of the audit system and its objectives. The line management not only need to be thoroughly informed, understand and accept the objectives, but they must also be prepared to adjust their activities in accordance with the results of the audit.

An audit may also reveal that company policy decisions need to be taken, resulting in capital expenditure. Therefore it is essential that senior management are both involved and committed to review the audit reports and then be prepared to implement the agreed changes. Experience of audits has shown that, unless the necessary changes are carried out, the auditing technique becomes rapidly devalued.

Key items.

- A specific audit questionnaire shall be developed and used.
- The audit shall result in a report based on the completed questionnaire.

8.3 The questionnaire

A questionnaire or an audit checklist is a vital tool for successful auditing. The time spent in the preparation of a checklist is of value in itself as this process will draw attention to safety matters which perhaps have not been thought of earlier. Depending on the size of the framework comprising the road safety programme a number of control elements, e.g. a selection of the 15 safety elements referred to in the introduction, are covered and listed as a skeleton to be further detailed under additional subheadings.

The drafted audit checklist shall be presented and discussed with the management before being used in an audit. The first audit checklist, however carefully prepared, will not be completely comprehensive when in actual use and really does not need to be. It is better to adopt a flexible attitude and make sure that the auditing experience is utilised by gradually supplementing or modifying the concept.

The enclosed questionnaire (Appendix C) is an example of a simple and rough draft of an audit checklist that can be used when introducing a basic road vehicle safety programme. As the programme concept is developed and auditing experience is gained, the need for supplementing the first audit checklist will become more apparent.

8.4 The audit report

Methods and reporting practice vary. However it is recommended that the team make a preliminary report to the management of the field which has been audited after the checklist has been filled in. This will also give an opportunity for the participants to clarify any misunderstandings arising from the answers given earlier during the audit. In any case the local management will be interested to know the result of the audit and this is the best time to discuss observations and suggest recommendations.

Based on the completed audit checklist a report is prepared for a meeting and discussion with the responsible management and those for whom the audit has been undertaken. Recommendations leading to actions which have been agreed to be necessary shall be recorded.

As a part of the follow-up actions and future monitoring it shall be ensured that both recommendations for improvement or the reasons that no action has been agreed upon are communicated to the appropriate personnel. The final report containing the substance of the audit report shall be distributed

to appropriate personnel and management. Normally the works manager will be responsible for initiating any follow-up actions that were decided upon.

Please note that the whole auditing exercise can become discredited should the auditing team not set a good example by failing to complete the report in time or not working in a precise and careful way.

9 Bibliography

Doc. 81/01 Road Vehicle and Emergency and Recovery
Doc. 69/02 Transport Emergency Instructions

Appendix A: Vehicle accident report form

This report form is to be completed and signed by the driver of our vehicle in every case when an accident has occurred or is alleged.

OUR DRIVER	
Surname:	Christian name:
Date of birth:	Employed by company: Yes / No
Payroll Number or Equivalent:	If Yes, Location/Division:
Type of Licence	If No, explain status:
Endorsements: Yes / No	Endorsement Details
OUR VEHICLE	
Make and type of vehicle:	Describe damage:
Who owns vehicle:	
Where is vehicle now – if not in use	
ACCIDENT	
Date and time of accident:	Exact place:
Road and weather conditions: (icy, dry, wet, etc.)	Type of road (e.g. A road):
Your speed prior to accident:	Your speed on impact:
Describe what happened:	
Journey start:	Destination:
Purpose of journey	
OTHER VEHICLES	
Other vehicle/s involved (attach separate sheet if necessary)	
Registration No:	Make/Model:
Drivers name:	Owners name
Owners address:	Insurers name/address:
Damage:	
INJURIES	
Was anyone injured: Yes/No	Did anyone go to hospital: Yes/No
Name:	Injury:
WITNESSES	
Details of your passengers:	Details of other witnesses:
POLICE	
Were the police called (if so, name of police officer and address of station)	
Please draw a sketch on reverse	
Signatures:	
DRIVER (and USER if different):	LINE MANAGER:
Print name:	Print name:
Date:	Date:

Appendix B: Vehicle accident analysis form

RESULT OF ANALYSIS OF VEHICLE ACCIDENT No.

1 Failure of supervisory management	
1.1 Inadequate driver training	<input type="checkbox"/>
1.2 Inadequate scheduling	<input type="checkbox"/>
1.3 Failure to provide a safe vehicle standard	<input type="checkbox"/>
1.4 Inadequate maintenance of vehicle (tyres, brakes, etc.)	<input type="checkbox"/>
2 Failure of driver	
2.1 Failure to comply with traffic regulations	<input type="checkbox"/>
2.2 Failure to take account of hazard	
- Inappropriate speed	<input type="checkbox"/>
- Insufficient safety distance	<input type="checkbox"/>
- Other driving mistakes	<input type="checkbox"/>
2.3 Alcohol	<input type="checkbox"/>
2.4 Non-compliance with social regulations (e.g. driver overtired)	<input type="checkbox"/>
2.5 Others:	<input type="checkbox"/>
Specify: _____	
3 Technical defects of the vehicle	<input type="checkbox"/>
Specify: _____	
4 External forces outside the driver's control	<input type="checkbox"/>
5 Cause unknown	<input type="checkbox"/>

ACCIDENT CLASSIFICATION

If causes 1 to 3 apply (one or several): the accident is considered as "preventable"	<input type="checkbox"/>
If cause 4 alone applies: the accident is considered as "non-preventable"	<input type="checkbox"/>
If cause 5 applies: no classification	<input type="checkbox"/>

MEASURES TO PREVENT REPETITION

Appendix C: Audit checklist

Judgement : 4 = Good 1 = Bad, to be corrected within an agreed
 3 = Acceptable period
 2 = Ought to be improved Na = Not acceptable

1.	MANAGEMENT SYSTEM AND POLICY	Observations/ Recommendations	Judgement
1.1	Is there a policy statement?		
1.2	Has it been distributed to all employees?		
1.3	Is the policy known by all the employees (e.g. the drivers)?		
1.4	Is safety an item on the agenda for management meetings?		
1.5	Does the policy identify priority areas?		
1.6	Are executives committed to the policy?		
1.7	Are there specific policies e.g. use of seat belts, screening of drivers for drug abuse etc?		
1.8	Routines for accident investigation: 1. Informing responsible managers? 2. Visits to accident scenes and by whom? 3. Interviews with the driver? 4. Vehicle accident report used? 5. Accident analysis and classification? 6. Results of analysis recorded?		
1.9	Monitoring of accident frequency rates?		
1.10	Management of set targets for improvement?		
1.11	Driver data files kept: (in principle, information on file should be confidential) 1. Accident frequency rate? 2. Accident details? 3. Age and medical check ups? 4. Service and experience? 5. Shift patterns? 6. Traffic offences reported to the police? 7. Copy of valid driving licence?		
1.12	Routines for driver support after an accident?		
1.13	Routines for recruiting and selection of drivers?		
1.14	Requirements of contractors and/or hired drivers?		
2.	TRAINING OF DRIVERS	Observations/ Recommendations	Judgement
2.1	Is there a specific training programme for drivers?		
2.2	Are all elements of the training recorded?		

2.3	Driver training: 1. Regulations, e.g. products, equipment, loading, etc. (ADR)? 2. Products, product properties and hazards? 3. Marking and colour coding 4. Emergency procedures? 5. Protective equipment?		
2.4	Driver vehicle training: 1. Defensive driving? 2. Tanker, tank semi-trailer stability training? 3. Driving on slippery roads?		
2.5	Operational procedures training: 1. Loading/unloading of products? 2. Transferring product between tankers? 3. Conversion of tankers for other liquid products?		
2.6	Emergency preparedness training: 1. First aid training? 2. Fire fighting? 3. Procedures to handle product escape? 4. Vehicle recovery procedures?		
2.7	Refresher training – frequency and elements?		

3.	DOCUMENTATION AND REGISTRATION	Observations/ Recommendations	Judgement
3.1	Transport licence carried on board vehicles?		
3.2	Tachograph used in vehicles?		
3.3	Maximum working hours for drivers?		
3.4	Documentation carried in vehicles? 1. Material gas data sheets for all products? 2. Loading specification 3. Emergency instructions (emergency cards)? 4. Emergency telephone list?		
3.5	Marking and signs on vehicles: 1. Signs with product name on tank vehicles? 2. ADR sign where applicable? 3. No smoking signs where applicable?		

4.	VEHICLE SAFETY EQUIPMENT	Observations/ Recommendations	Judgement
4.1	Safety equipment carried on board: 1. Fire extinguishers, number and type (ADR)? 2. Road triangles? 3. Warning lights (flash lights)? 4. First aid equipment? 5. Safety belts?		

4.2	Maintenance and condition of vehicles? Are maintenance log sheets properly filled in? Check condition of: 1. Tires 2. Headlights and other lights 3. Brakes 4. Tow-away alarm/brake locking system 5. Alarm signal when reversing 6. Windscreen washer and wiper blades		
4.3	Written checklist for daily checks by the driver?		
4.4	Routine for locking unattended vehicles?		
4.5	Valve cabinet locking possible?		
4.6	Mobile telephone or radio in vehicle?		
4.7	Tank instrumentation and associated equipment: 1. Safety valve regularly tested within valid time period? 2. Flow sheet available? 3. Emergency stop valves fitted in accordance with the specifications? 4. Gauge and valves marked in accordance with flow sheet? 5. Are gauges calibrated and in good condition? 6. Are hoses regularly tested and in good condition?		
4.8	Miscellaneous: 1. Is vacuum of liquid vessel intact? 2. Any (authorised) modification to vehicle? 3. Any signs of severe corrosion? 4. Routines for product conversion known by driver? 5. Lifting devices regularly inspected and approved?		

5.	DRIVER RECOGNITION	Observations/ Recommendations	Judgement
5.1	Are guidelines used for recognising superior driver performance?		
5.2	Disciplinary procedures where appropriate?		
5.3	Are there systems to identify "problem" drivers?		