

CAP 790

Requirement for an Airside Driving Permit (ADP) Scheme

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Revision History

First Edition 29 February 2012

Second Edition July 2026 – This revision is modernisation of CAP790

Glossary

Abbreviations

ADP	Airside Driving Permit
ATS	Air Traffic Services
ATCO	Air Traffic Controller Officer
AVP	Airside Vehicle Permit
DVLA	Driver and Vehicle Licensing Agency
EC/EEA	European Community/European Economic Area
EC/EEA licences	Driving licences issued by countries in the European Community and other countries in the European Economic Area (EC/EEA)
FOD	Foreign Object Debris
HSE	Health and Safety Executive
IFR	Instrument Flight Rules
MOR	Mandatory Occurrence Reporting
R/T	Radiotelephony
SMS	Safety Management System

Definitions

Although there are many terms used in this document that have a particular meaning, the following are of particular significance:

Airside means that part of the aerodrome within the security boundary.

Apron means a defined area intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking, or maintenance.

Manoeuvring Area means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

For the purposes of this document and an Airside Driving Permit (ADP) Scheme the manoeuvring area is divided into the area excluding runways ('M' permit) and including runways ('R' permit).

Movement Area means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft consisting of the manoeuvring area and the apron(s).

Runway means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Taxiway means a defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

a) **Aircraft stand taxilane** means a portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

b) **Apron taxiway** means a portion of a taxiway system located on an apron and intended to provide a through taxi-route across the apron.

c) **Rapid exit taxiway** means a taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimising runway occupancy times.

Runway Incursion means any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take-off of aircraft.

Competence is the demonstration of knowledge, skills, and abilities at a level of expertise sufficient to be able to perform safely in an appropriate work setting.

Introduction

Purpose

- 1.1 This Civil Aviation Publication (CAP) sets out the requirement for an Airside Driving Permit (ADP) Scheme and provides guidance as to how that scheme should be managed.
- 1.2 This CAP applies to all aerodrome operators whose aerodromes meet or exceed Runway Code 2 AND are available for IFR traffic. Aerodrome operators outside of this scope are recommended to provide a consistent approach to training and competence of personnel driving in airside areas. Also, systems in place to assure vehicle standards entering the airside environment.
- 1.3 The Health and Safety Executive (HSE) is responsible for overseeing work-related safety. They publish guides HSG 136 Workplace Transport Safety and HSG 209 Aircraft Turnround. This CAP enhances the HSE guides in respect of driving on an aerodrome, where vehicles and aircraft mix and the greatest risk is found.
- 1.4 The aerodrome operator should consider guidance in the Global Action Plan for the Prevention of Runway Incursions (GAPPRI).
- 1.5 The objective of this CAP is to set out requirements for a scheme designed to minimise the risk of accidents and injury to individuals, damage to aircraft and property, arising from the use of vehicles in airside areas. Additionally, the requirements relating to permits for the manoeuvring and runway areas are directly aimed at reducing runway incursions. Guidance material is provided to support the requirements.
- 1.6 The material in this document is therefore intended to assist aerodrome operators in establishing an ADP Scheme that addresses the need for a consistent approach to training and competence of personnel driving in airside areas.
- 1.7 This document relates to the driving of vehicles airside. Should an aerodrome wish to carry out operations involving autonomous vehicles (i.e. without a driver) then prior approval is required to be obtained from the CAA using the procedures as set out in CAP791. Aerodromes should consult with their aerodrome inspector if further clarity is required.

Amendments

From time to time, the CAA will wish to supplement the guidance or requirements given in this publication, and this will be achieved in the form of a specific document or Information Notice. Where appropriate, such material will subsequently be included in the publication by amendment. Suggestions for improvement should be addressed to:

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CHAPTER 1**Safety Management and Accountability**

National legal and regulatory framework

- 1.1 Requirements for the safe operation of aerodromes, with respect to both aircraft safety and the safety of individuals at their places of work, are contained within legislation that forms part of United Kingdom law. It is therefore legally incumbent on those who provide the workplace and for all employers and employees to comply with the safety requirements that are set out in the relevant Statutory Instruments. Nothing in this CAP substitutes the requirements of the law.
- 1.2 This document outlines the means of compliance, procedures and responsibilities necessary to ensure compliance with Article 212(9) and Schedule 12 of the Air Navigation Order 2016, specifically regarding the operation of vehicles within airside areas of the aerodrome.

Scope

- 1.3 The requirements apply to all personnel, contractors, and organisations operating vehicles within the airside areas of the aerodrome, including the runway, manoeuvring areas and aprons.
- 1.4 Responsibility for assuring the safety of airside operations rests with the aerodrome operator, who is required to comply with the regulatory requirements of the CAA and relevant HSE legislation. The aerodrome operator shall publish rules governing the operation of vehicles and mobile equipment in the airside areas. Employers and employees are in turn responsible for compliance with the rules set out by the aerodrome operator and with any legislation directly related to their specific activities. Drivers must be fully conversant with the relevant rules, procedures and instructions at all aerodromes where they drive.
- 1.5 There is potential for an overlap of regulatory responsibility between the CAA and the HSE in respect to activity in airside areas. The division of responsibility for the two regulatory bodies is set out in a memorandum of understanding and is such that the CAA is responsible for securing adequate provisions for the safety of aircraft whilst the HSE is responsible for securing adequate provisions for the safety of individuals in the workplace.
- 1.6 Relevant HSE websites:

[Employers - driving and riding safely for work - Overview - HSE](#)

Vehicle safety <http://www.hse.gov.uk/workplacetransport/vehicles/index.htm>.

Aerodrome safety management

- 1.7 Aerodromes are required to implement a Safety Management System in accordance with the requirements of CAP 168 and Reg UK (EU) 139/2014. An effective Safety Management System will include measures to provide assurance that drivers operating in the airside environment are competent to do so through the implementation of an Airside Driving Permit Scheme.
- 1.8 The aerodrome operator shall establish a system for the issue of ADPs for drivers. The system shall ensure that a permit is not issued unless the individual meets minimum required driving standards; additionally the individual will need to meet the required medical requirements and hold the relevant current DVLA or other recognised driving licence.

Communications skills

- 1.9 It is the responsibility of the employer to ensure that the driver is proficient in English to complete the required training, competence assessments and designated activities on the aerodrome. Such proficiency shall include:
1. The ability to complete the requisite driver training/familiarisation and assessment conducted in English:
 2. The ability to undertake successfully the operational communication requirements that may be required of airside drivers e.g. reporting an accident or incident airside:
 3. The ability to read and understand relevant local safety information, e.g. safety instructions and mandatory aerodrome signage:
 4. The ability to understand verbal instruction or notification given by the police or aerodrome operations staff.

CHAPTER 2

The Airside Vehicle Driver Authorisation

Management of driving standards

2.1 The aerodrome operator, in line with its Aerodrome Manual and SMS processes, should include rules and procedures to manage driving behaviour. Consideration should be given by aerodrome operators to adopt a scheme such as recording 'offences' and possibly penalties to measure the level of poor behaviour or standards and to indicate where mitigation measures are required. Considerations to be included in the ADP scheme are:

1. Application;
2. Reference to byelaws, rules and penalties;
3. Sanctions and penalties, including those for serious or repeat offences;
4. Notification to employer;
5. Who can issue any warnings or penalties;
6. Infringements;
7. Use of a points and/or fines system, rules and totting up;
8. Time limits for offences or points; and
9. Appeals procedures.

Authorisation of vehicle drivers

- 2.2 The driving of a vehicle on any part of the movement area or other operational areas of an aerodrome requires an authorisation issued to the driver by the operator of that aerodrome.
- 2.3 Driving authorisations are meant to be issued only to individuals whose functions and tasks require the driving of a vehicle on the movement area or other operational areas of the aerodrome.
- 2.4 Driving authorisations cover all types of activities that involve driving in these areas, including but not limited to aerodrome operations and maintenance, ground handling, security, aircraft maintenance, etc. The identity of the organisation with which a driver is associated (e.g. private entity, State entity) is not considered relevant.

- 2.5 The number of individuals authorised to drive on the manoeuvring area, and particularly on runways, needs to be limited to the minimum required to minimise the risk of runway incursions and should be reviewed periodically.
- 2.6 The driving authorisation should be issued to a person who:
1. Is allocated tasks that involve driving in such areas;
 2. Holds a valid UK driving licence, or has a current full EC/EEA, or foreign equivalent driving licence as described by the DVLA which permits the holder to drive a motor vehicle on public roads within the UK;
 3. Meets the required medical requirements;
 4. Has successfully completed a relevant driving training programme and demonstrated their competence;
 5. Has demonstrated language proficiency if the person intends to drive a vehicle on the manoeuvring area;
 6. Has received training by their employer on the use of the vehicle intended to be operated at the aerodrome; and
 7. Any other licence required for the operation of specialised vehicles
- 2.7 A permit should not be issued unless the individual meets minimum required driving standards.
- 2.8 The aerodrome operator should establish and implement separate driving training programmes for (a) drivers that operate on the apron or other operational areas, except the manoeuvring area, and (b) for drivers that operate on the manoeuvring area. The training programme should:
1. Be appropriate to the characteristics and operation of the aerodrome, the driver's functions and tasks to be performed, and the areas of the aerodrome that drivers may be authorised to operate in; and
 2. Include:
 - a) Theoretical and practical training of adequate duration, at least in the following areas:
 - i. Regulatory framework and personal responsibilities;
 - ii. Vehicle standards, aerodrome operational requirements and procedures;
 - iii. Communications;
 - iv. Radiotelephony, for drivers that operate in the manoeuvring area;

- v. Human performance;
- vi. Familiarisation with the operating environment; and
- vii. A competence assessment of the drivers.

2.9 A driving authorisation issued in accordance with point 2.6 should specify the parts of the movement area or other operational areas on which the driver is allowed to drive and should remain valid as long as:

1. The requirements of points 2.6 1) and 2) are met;
2. The holder of the driving authorisation:
 - a) Undergoes and successfully completes training and proficiency checks; and
 - b) If applicable, continues to demonstrate the required language proficiency.

2.10 The aerodrome operator may permit a person to temporarily drive a vehicle on the movement area or other operational areas if:

1. That person holds a valid driving licence, and any other licence required for the operation of specialised vehicles; and
2. That vehicle is escorted by a vehicle driven by a driver authorised in accordance with point 2.6.

2.11 The aerodrome operator should establish a system and implement procedures for:

1. Issuing driving authorisations and temporarily permitting the driving of vehicles; and
2. Monitoring the compliance of drivers with any driving requirements applicable at the aerodrome and for taking appropriate action, including the suspension and revocation of driving authorisations or permissions to temporarily drive a vehicle.

2.12 The aerodrome operator shall set out the circumstances under which a permit will cease to be valid and must be surrendered for cancellation. Such circumstances may include:

1. Cessation of the purpose for which the permit was issued;
2. Change of the holder's employer;
3. Loss of Driving Licence for offences under the Road Traffic Acts;
4. Any defacing, alteration, or misuse of a permit;
5. Proof of disregard to Airside Traffic Rules;

6. Any use of a permit in relation to a customs or immigration offence.
- 2.13 Responsibility for assuring the safety of airside operations rests with the aerodrome operator, who is required to comply with the regulatory requirements of the CAA and relevant HSE legislation.
- 2.14 The aerodrome operator should publish rules governing the operation of vehicles and mobile equipment in the airside areas.
- 2.15 Employers and employees are in turn responsible for complying with the rules set out by the aerodrome operator and with any legislation related to their specific activities.
- 2.16 Drivers must be fully conversant with the relevant rules, procedures and instructions at all aerodromes where they drive.

Driving authorisation for the movement area and other operational areas

- 2.17 Depending on its design, the 'airside' part of an aerodrome may also encompass operational areas, other than the movement area, in which vehicles may also be operating for various purposes.
- 2.18 Example cases of such other operational areas, which are not part of the movement area, could be service roads that exist between the terminal buildings and aprons, perimeter roads used for various purposes, areas that are used for the parking of vehicles and ground support equipment, etc. The driving in such other operational areas is also subject to the provisions of this CAP.
- 2.19 Aerodrome operators should establish and maintain an Airside Driving Permit (ADP) Scheme in accordance with the requirements contained herein. This CAP provides minimum requirements for such an ADP scheme along with guidance to which local procedures and protocols can be aligned, or may be exceeded, to take into account of the scale and complexity of any aerodrome.

CHAPTER 3

Airside Drivers Medical Assessment

- 3.1 Drivers must be medically fit to drive the appropriate vehicle being driven for their role.
- 3.2 An aerodrome operator may decide to impose additional medical fitness requirements over and above those required for driving on the public roads.
- 3.3 It is the responsibility of the aerodrome operator to decide what additional specific factors there might be about the workplace and vehicles which may impose additional medical fitness requirements over and above those required for driving on the public roads. This should be based on a local risk assessment by the aerodrome operator, which may include organisations that operate airside, and should relate to local procedures, environment, infrastructure, topography and complexity.
- 3.4 As a minimum the ADP must require:
1. An initial and renewal medical declaration to align with DVLA standards:
 2. Medical assessments to relate to occupational age limits e.g. LGV:
 3. Medical assessments where DVLA health conditions are declared by the driver:
 4. Reviews following driving accidents or incidents at work.
- 3.5 A driver must disclose to the DVLA and their employer any medical condition or prescribed medication which may affect their ability to drive safely. Further guidance can be found on the Medical Information section of the DVLA website.
- 3.6 Where the DVLA places a condition or restriction on a driver this must be considered by the employer and medical advice obtained. The employer shall inform the aerodrome operator of any such condition or restriction. Appropriate action may involve suspending or removing the ADP as soon as a potential medical issue is brought to their notice.

<https://www.gov.uk/health-conditions-and-driving/find-condition-a-to-z>

HSE guidance

<http://www.hse.gov.uk/workplacetransport/personnel/index.htm>
<http://www.hse.gov.uk/workplacetransport/personnel/recruitment.htm>
<http://www.hse.gov.uk/workplacetransport/personnel/medicalfitness.htm>
<http://www.hse.gov.uk/workplacetransport/checklist/section1.htm>
<http://www.hse.gov.uk/humanfactors/topics/fatigue.htm>

CHAPTER 4**Training of drivers on the use of vehicles**

- 4.1 A driver needs to receive specific training on the use of any vehicle or equipment, they will be using during their duties, e.g. special vehicle, tug, high loader, coach, etc.
- 4.2 Upon completion of this training, the responsible organisation should provide the relevant records to the aerodrome operator. If the driver is to be assigned a new vehicle type following the issuance of the authorisation, the process outline in 2.1 should be repeated prior to allowing the driver to operate the new vehicle.

Training of Drivers - General

- 4.3 The training programme that drivers need to follow should depend on the areas where they need to be operating. The following two training programmes should be developed:

General driving training programme

- 4.4 General driving training should cover the needs of all drivers operating on the apron area and other operational areas of the aerodrome. The successful completion of this training grants a driver the right to operate unescorted a vehicle on aprons and other operational areas of the aerodrome, except on the manoeuvring area.

Manoeuvring area training programme

- 4.5 Manoeuvring area training should cover the additional specific needs of the drivers who will be operating on the manoeuvring area. A driver is granted the right to operate unescorted on the manoeuvring area subject to the:
1. Provisions of 2.1 and 2.4;
 2. Successful completion of the general driving training programme; and
 3. Successful completion of the manoeuvring area training programme.
- 4.6 Each of the above-mentioned training programmes (general driving training programme and manoeuvring area training programme) should consist of the following parts:
1. Theoretical training
 - a) Theoretical training should be of a defined and adequate duration, supported by suitable educational means and material. Theoretical training should be followed by an assessment of the trainees. Once the

theoretical part has been successfully completed, the driver should undertake practical training.

2. Practical training

- a) During the phase of the practical training, which needs to be of a defined and adequate duration, the trainees should be provided with adequate practical training and familiarisation with the aerodrome facilities and its procedures by the nominated instructors, in day and, if relevant, night conditions.
- b) Following the delivery of the practical training, the competence of the trainees should be assessed. This assessment should aim at assessing the ability of the trainees to apply, in practice, the knowledge and skills they have acquired through the theoretical and practical training.
- c) Upon the successful completion of the practical training, and provided that the driver has received training on the use of a specific vehicle, a driving authorisation should be issued.

Work equipment – certificates of competence

- 4.7 In the case of aerodrome specific or specialist vehicles not covered by a DVLA licence or equivalent the applicant should have a certificate of competence acceptable to the aerodrome operator confirming that they have been trained to an appropriate standard for the safe operation of that vehicle.
- 4.8 The Provision and Use of Work Equipment Regulations 1998 apply to all work equipment including vehicles, tugs, luggage moving equipment, pushback vehicles, ground service equipment and most other moveable plant or equipment found at an aerodrome. The regulations cover the selection of suitable equipment, maintenance, inspection and use of equipment, and require that people using work equipment have received adequate training, instruction and information for the equipment, so that the people are competent. The control of this equipment should be aligned to an ADP scheme and include 'Certificates of Competence' or similar passport type systems.

Training and assessments

- 4.9 Trainers delivering training or assessments should be suitably qualified and competent. The aerodrome operator should ensure oversight of the content and quality of the training for the ADP scheme.
- 4.10 It is for employers to select suitable task or equipment-specific training provision. One method of assuring quality in training is for those delivering training and assessments to obtain professional qualifications.

Language and radiotelephony requirements

- 4.11 Any driver who will be operating on the manoeuvring area should undertake and complete a radiotelephony training course, demonstrating both theoretical knowledge and practical competency in voice communication procedures.
- 4.12 All ADP drivers must have appropriate communication skills in the English language. Chapter 7 states the minimum requirements for obtaining an ADP.
- 4.13 All 'M' and 'R' ADP drivers must also have R/T competence. Chapter 7, and Table 1 state the minimum R/T and language proficiency requirements for obtaining an 'M' or 'R' ADP.

CHAPTER 5**Airside Driver Training Programmes**

Driving training programmes**General driving training programme**

5.1 The theoretical part of the general driving training programme should, as a minimum, cover the following areas:

1. Driving authorisation framework, including:
 - a) Issuance, validity, conditions of use;
 - b) Control and audit of its issue;
 - c) Driving violations and enforcement procedures;
 - d) Relationship with the national driver licensing system;
 - e) National requirements related to general vehicle driving licences;
 - f) CAA guidance for movement area driving;
 - g) Roles of various organisations;
 - h) The role of the aerodrome operator in setting and maintaining standards;
 - i) The CAA role and its responsibilities;
 - j) The role of the national and/or local police, and their involvement with airside driving; and
 - k) The role of any other enforcement authorities dealing with vehicles, driving, health, and safety.
2. Personal responsibilities, include:
 - a) Requirements concerning fitness to drive (medical standards);
 - b) Use of personal protective equipment (e.g. high-visibility clothing and hearing protection);
 - c) General driving standards;
 - d) No-smoking: use of psychoactive substances and medicines, including requirements on alcohol consumption;

- e) Implementation of 'sterile cab' concept, by avoiding disturbing and distracting activities while driving;
 - f) Responsibilities with respect to FOD and fuel/oil spillage; and
 - g) The responsibility to ensure that a vehicle is suitable for the task and is used correctly.
3. Vehicle standards, including:
- a) Condition and maintenance standards at the aerodrome and/or national level;
 - b) The requirement to display obstruction lights and company insignia;
 - c) The requirement for, and content of, daily vehicle inspections;
 - d) Vehicle fault reporting and rectification;
 - e) Requirements for the issue and display of vehicle authorisations;
 - f) Serviceability of all essential communication systems with air traffic services and base operations; and
 - g) Maintaining the vehicle's cabin free of loose and distracting articles/items, as per the 'sterile cab' concept.
4. Aerodrome rules and procedures, including:
- a) Rules of the air and air traffic service procedures applicable to aerodromes as they relate to vehicles, particularly rights of way;
 - b) Aerodrome regulations, procedures and instructions pertaining to vehicle operations;
 - c) Definition of movement areas, manoeuvring areas and aprons;
 - d) Methods used to disseminate general information and instructions to drivers;
 - e) Methods used to disseminate information regarding works in progress; and
 - f) Reporting of occurrences the driver is involved in or witnesses.
5. General aerodrome layout, including:
- a) The general topography of the aerodrome;
 - b) Aviation terminology used such as runway, taxiway, apron, roads, crossings, runway-holding points;

- c) All aerodrome signs, markings and lighting for vehicles and aircraft, including their meaning;
 - d) Specific reference to signs, markings and lighting used to protect runways and critical areas; and
 - e) Specific reference to any controlled/uncontrolled taxiway crossing procedures.
6. Hazards of general movement area driving, including:
- a) Speed limits, prohibited areas, and no parking requirements;
 - b) The danger zones around aircraft;
 - c) Engine suction/ingestion and blast, propellers, and helicopters;
 - d) Aircraft refuelling;
 - e) FOD and spillages;
 - f) Vehicle reversing;
 - g) Staff and passengers walking across aprons;
 - h) Air bridges and other services such as fixed electrical ground power;
 - i) The general aircraft turnaround process;
 - j) Aircraft emergency stop and fuel cut-off procedures;
 - k) Hazardous cargo;
 - l) Vehicle-towing requirements and procedures;
 - m) Driving at night; and
 - n) Driving in adverse weather conditions, particularly low visibility.
7. Human performance, including:
- a) Basic concepts of human factors; and
 - b) Basic aviation psychology, including:
 - i. Attention and vigilance;
 - ii. Perception;
 - iii. Memory;
 - iv. Human error;
 - v. Decision-making;

- vi. Avoiding and managing errors;
 - vii. Human behaviour; and
 - viii. Human overload and underload.
8. Emergency procedures, including:
- a) Actions and responsibilities in a crisis situation (any accident or serious incident occurring on the aerodrome);
 - b) Action in the event of a vehicle accident;
 - c) Specific action in the event of a vehicle striking an aircraft;
 - d) Action in the event of fire;
 - e) Action in the event of an aircraft accident/incident; and
 - f) Action in the event of personal injury.
9. Communications, including:
- a) Radio procedures and phraseologies to be used (other than with air traffic services);
 - b) Light signals used by air traffic services;
 - c) Procedures to be used by vehicle drivers if lost or uncertain of their position;
 - d) Local emergency telephone numbers;
 - e) How to contact the local aerodrome unit;
 - f) Portable radio, including:
 - i. Correct use of radios;
 - ii. Effective range and battery life;
 - iii. Screening/shielding effects on the aerodrome leading to loss of signal;
 - iv. Use of correct call signs, as applicable; and
 - v. Safety while using radios, including procedures and instructions regarding the use of portable radios and hand-held microphones whilst driving a vehicle.
10. The practical part of the general driving training programme should, as a minimum, include the following visual familiarisation of the aerodrome:

- a) Airside service roads, taxiway crossings, and any restrictions during low-visibility conditions;
- b) Aprons and stands;
- c) Surface paint markings for vehicles and aircraft;
- d) Surface paint markings that delineate the boundary between aprons and taxiways;
- e) Signs, markings and lighting used on the taxiway that indicate the runways ahead;
- f) Parking areas and restrictions;
- g) Speed limits and regulations; and
- h) Hazards during aircraft turnarounds and aircraft movements

5.2 Manoeuvring area training programme

1. The theoretical part of the manoeuvring area training programme should, as a minimum, cover the following areas;
 - a) Air traffic services, including;
 - i. The aerodrome's air traffic services function and area of responsibility;
 - ii. The ground movement control function and area of responsibility;
 - iii. Normal and emergency procedures used by air traffic services relating to aircraft;
 - iv. Normal handover/transfer points for vehicles;
 - v. Air traffic services call signs, vehicle call signs; and
 - vi. Demarcation of responsibilities between air traffic services and apron management unit, if applicable.
2. Personal responsibilities, including:
 - a) Fitness to drive with particular emphasis on eyesight and colour perception;
 - b) Correct use of personal protective equipment;
 - c) Responsibilities with respect to FOD; and
 - d) Responsibilities with respect to escorting other vehicles on the manoeuvring area.

3. Vehicle standards, including:

- a) Responsibility for ensuring the vehicle used is fit for the purpose and task and appropriately marked and illuminated;
- b) Requirements for daily inspection prior to operating on the manoeuvring area;
- c) Particular attention to the display of obstruction and general lights; and
- d) Serviceability of all essential communication systems with air traffic services and base operations.

4. Aerodrome layout, including:

- a) Particular emphasis on signs, markings and lighting used on the manoeuvring area;
- b) Special emphasis on signs, markings and lighting used to protect the runway;
- c) Description of equipment essential to air navigation such as instrument landing systems (ILS);
- d) Description of sensitive, critical or other protected zones areas related to ILS or other navigation aid antennae and the related markings and signs;
- e) Description of ILS protected areas, and their relation to runway-holding points;
- f) Description of runway instrument/visual strip, cleared and graded area; and
- g) Description of lighting used on the manoeuvring area with particular emphasis on those related to low-visibility operations.
- h) Hazards of manoeuvring area driving, including:
 - i. Engine suction/ingestion and blast, vortex, propellers, and helicopter or VTOL operations;
 - ii. Requirements and procedures for driving at night;
 - iii. Requirements and procedures for operations in low visibility and other adverse weather conditions;
 - iv. Right of way of vehicles, aircraft, towed aircraft, and rescue and firefighting vehicles in an emergency.

5. Emergency procedures, including:

- a) Actions to be taken in the event of a vehicle accident/incident on the manoeuvring area;
 - b) Actions to be taken in the event of an aircraft accident/incident on the manoeuvring area;
 - c) Actions to be taken if FOD or other debris is found on runways and taxiways; and
 - d) Local emergency telephone numbers.
6. Communication procedures, including:
- a) Air traffic services frequencies used and areas of applicability;
 - b) Language to be used when communicating with the air traffic services;
 - c) Procedure to be used by vehicle drivers if lost or uncertain of their position on the manoeuvring area;
 - d) Procedure for a vehicle breakdown on runways and taxiways and notifying the air traffic services unit of such events; and
 - e) Radio communication failure:
 - i. Procedure in the event of a radio communication or transponder or equivalent equipment failure while a vehicle is on the manoeuvring area; and
 - ii. Procedures for light signals and other communication means that can be used by the air traffic services unit to pass instructions to a vehicle driver on the manoeuvring area.
7. Aircraft familiarisation, including:
- a) Knowledge of and ability to identify all types normally operating aircraft at the aerodrome;
 - b) Knowledge of aircraft call signs; and
 - c) Knowledge of aircraft terminology relating to engines, fuselage, control surfaces, undercarriage, lights, vents, etc.
8. The practical part of the manoeuvring area training programme should, as a minimum, include the following visual familiarisation of the aerodrome:
- a) All runways (including access and exit routes), holding areas, taxiways and aprons;
 - b) All signs, surface markings and lighting associated with runways, holding positions, and CAT I, II, and III operations;

- c) All signs, surface markings and lighting associated with taxiways;
- d) Specific markings that demarcate the boundary between aprons and manoeuvring areas;
- e) Navigation aids such as ILS, sensitive, critical, or other protected areas, antennae, RVR equipment, and other meteorological equipment;
- f) Hazards of operating around aircraft landing, taking off or taxiing; and
- g) Any used naming convention for areas or routes.

CHAPTER 6

Requirements for an Airside Vehicle Driver Training Programme

Airside vehicle driver

- 6.1 The following elements could be considered when developing programs and knowledge requirements for an airside vehicle driver training programme:
1. Airside Driving Permit (ADP)
 - a) The issuing authority, the validity of the permit in terms of time, conditions of use, and its transferability;
 - b) Ownership of the permit and control, and audit of permit issue;
 - c) Local enforcement, and driving offence procedures; and
 - d) Relationship to DVLA driver licensing system.
 2. National legislation and DVLA regulations related to general vehicle driving licenses Aerodrome regulations and requirements rules of the air, and ATS procedures applicable to aerodromes as they relate to:
 - a) Vehicles, particularly rights of way;
 - b) Specific aerodrome regulations, requirements, and local instructions;
 - c) Local methods used to promulgate general information, and instructions to driver; and
 - d) Local methods used to disseminate information regarding works in progress.
 3. Personal responsibilities:
 - a) Agreed national or aerodrome requirements concerning fitness to drive (medical and health standards);
 - b) Issue and use of personal protective equipment, such as high visibility clothing and hearing protection;
 - c) General driving standards;
 - d) No-smoking/no-drinking requirements airside;
 - e) Use of psychoactive substance;

- f) Responsibilities with respect to foreign object debris and fuel/oil spillage; and
 - g) The responsibility to ensure that a vehicle is suitable for the task and is used correctly.
4. Vehicle standards:
- a) Condition and maintenance standards agreed at the aerodrome, and/or national level;
 - b) The requirement to display obstruction lights and company insignia;
 - c) The requirement for, and content of, daily vehicle inspections;
 - d) Agreed standards of aerodrome and company vehicle fault reporting and rectification; and
 - e) Local requirements for the issue and display of airside vehicle permits.
5. General aerodrome layout:
- a) The general topography of the local aerodrome;
 - b) Aviation terminology used such as runway, taxiway, apron, roads, crossings;
 - c) Runway holding points;
 - d) All aerodrome signs, markings and lighting for vehicles and aircraft;
 - e) Specific reference to signs, markings and lighting used to guard runways, and
 - f) Critical areas; and
 - g) Specific reference to any controlled/uncontrolled taxiway crossing procedures.
6. Hazards of general airside driving:
- a) Speed limits, prohibited areas, and no parking regulations;
 - b) The danger zones around aircraft;
 - c) Engine suction/ingestion and jetblast, propeller hazards, and helicopter downwash and outwash;
 - d) Foreign object debris and spillages;
 - e) Vehicle reversing;
 - f) Staff and passengers walking across aprons;

- g) Air bridges and other services such as fixed electrical ground power;
- h) The general aircraft turnaround process;
- i) Aircraft emergency stop and fuel cut-off procedures;
- j) Hazardous cargo;
- k) Local vehicle towing requirements;
- l) Requirements for driving at night; and
- m) Requirements for driving in adverse weather conditions, particularly low visibility.

7. Local organisations:

- a) The role of the aerodrome operator in setting and maintaining standards;
- b) The police, and their involvement with airside driving; and
- c) Other enforcement authorities dealing with vehicles, driving, health, and safety.

8. Emergency procedures:

- a) Actions and responsibilities in a crisis situation (any accident or significant);
- b) Incidents occurring on the aerodrome;
- c) Action in the event of a vehicle accident;
- d) Specific actions to be taken in the event of a vehicle striking an aircraft;
- e) Action in the event of fire;
- f) Action in the event of an aircraft accident/incident; and
- g) Action in the event of personal injury.

9. Communications:

- a) Radio procedures and phraseologies to be used if applicable;
- b) Light signals used by ATS;
- c) Procedures to be used by vehicle drivers if lost or unsure of position;
- d) Local emergency telephone numbers;
- e) How to contact the local aerodrome safety unit;

- f) In addition to the requirements that must be met in Table 1, the guidance material in Appendix C gives examples of questions that could be used for assessing communications skills;
- g) Communication between vehicles and ATS requires the same standard of competence as that required for communication between aircraft and ATS. Standard radiotelephony (R/T) phraseology is described in CAP 413 Radiotelephony Manual and must be used for R/T communications between vehicle drivers and ATS;
- h) The aerodrome operator shall establish a system of allocating R/T callsigns to be used by vehicles so that the potential for confusion between vehicles and aircraft is minimised. This is particularly important at aerodromes where the R/T frequency used by vehicles is the same as that used by aircraft or where the R/T frequency used by vehicles is re-broadcast on the R/T frequency used by aircraft;
- i) The ATS shall be made aware of all radio callsigns used at the aerodrome, whether they are used for communication with ATS.

10. Practical training (visual familiarisation):

- a) Airside service roads, taxiway crossings, and any restrictions during low visibility;
- b) Aprons and stands;
- c) Surface paint markings for vehicles and aircraft;
- d) Surface paint markings that delineate the boundary between aprons and taxiways;
- e) Signs, markings and lighting used on the taxiway that indicate the runways ahead;
- f) Stop bars, guard lights, intermediate and runway holding positions;
- g) Parking areas and restrictions;
- h) Speed limits and regulations; and
- i) Hazards during aircraft turnarounds and aircraft movements.

Manoeuvring area vehicle driver

- 6.2 All drivers expected to operate on the manoeuvring area of the aerodrome should obtain an M/R ADP covering the programme above.
- 6.3 Any driver expected to drive on the manoeuvring area should, also, obtain an agreed period of experience in general airside driving before training to operate on the manoeuvring area.

6.4 All drivers should be trained initially and be provided with refresher training regularly, with additional emphasis on the following areas:

1. Aerodrome regulations and requirements

- a) Air traffic control rules, right of way of aircraft;
- b) The definition of movement areas, manoeuvring areas, aprons, stands; and
- c) Methods used to disseminate information regarding works in progress.

2. Air traffic control

- a) The aerodrome control function and area of responsibility;
- b) The ground movement control function and area of responsibility;
- c) Normal and emergency procedures used by ATS relating to aircraft;
- d) ATS frequencies used and normal handover/transfer points for vehicles;
- e) ATS call signs, vehicle call signs, phonetic alphabet, and standard phraseology; and
- f) Demarcation of responsibilities between ATS and apron control if applicable.

3. Personal responsibilities

- a) Fitness to drive with particular emphasis on eyesight and colour perception;
- b) Correct use of personal protective equipment;
- c) Responsibilities with respect to foreign object debris; and
- d) Responsibilities with respect to escorting other vehicles on the manoeuvring area.

4. Vehicle standards

- a) Responsibility for ensuring the vehicle used is fit for the purpose and task;
- b) Requirements for daily inspection prior to operating on the manoeuvring area;
- c) Particular attention to the display of obstruction and general lights; and
- d) Serviceability of all essential communications systems with ATS and base operations.

5. Aerodrome layout

- a) Particular emphasis on signs, markings and lighting used on the manoeuvring area;
- b) Special emphasis on signs, markings and lighting used to protect the runway;
- c) Description of equipment essential to air navigation such as instrument landing systems (ILS);
- d) Description of protected areas related to ILS antenna;
- e) Description of ILS protected areas, and their relation to runway-holding points;
- f) Description of runway instrument/visual strip, cleared and graded area; and
- g) Provide a detailed description of the lighting systems installed on the manoeuvring area, with particular emphasis on those supporting low-visibility operations. This must include consideration of stop bars operating on timed sequences and an understanding of the Runway Incursion Monitoring and Collision Avoidance System (RIMCAS), where applicable.

6. Hazards of manoeuvring area driving

- a) Engine suction/ingestion and blast, vortex, propellers, and helicopter operations;
- b) Driving at night;
- c) Operations in low visibility and other adverse weather conditions;
- d) Vehicle or radio becoming unserviceable while on the manoeuvring area; and
- e) Rights of way of aircraft, towed aircraft, and rescue and fire fighting vehicles in an emergency.

7. Emergency procedures

- a) Actions to be taken in the event of a vehicle accident/incident;
- b) Actions to be taken in the event of an aircraft accident/incident;
- c) Actions to be taken if foreign object debris or other debris is found on runways and taxiways;
- d) Procedures to be used by vehicle drivers if lost or unsure of their position; and

- e) Local emergency telephone numbers.

8. Aircraft familiarisation

- a) Knowledge of aircraft types and ability to identify all types normally operating at the aerodrome;
- b) Knowledge of airline call signs; and
- c) Knowledge of aircraft terminology relating to engines, fuselage, control surfaces, undercarriage, lights, vents, etc.

9. Practical training (visual familiarisation)

- a) All runways (including access and exit routes), holding areas, taxiways and aprons;
- b) All signs, surface markings and lighting associated with runways, holding positions, CAT I, II, and III operations;
- c) All signs, surface markings and lighting associated with taxiways;
- d) Specific markings that demarcate the boundary between aprons and manoeuvring areas;
- e) Navigation aids such as ILS, protected area, antenna, RVR equipment, and other meteorological equipment;
- f) Hazards of operating around aircraft landing, taking off or taxiing; and
- g) Any locally used naming convention for areas or routes.

10. Radiotelephony

All drivers of vehicles operating on the manoeuvring area should be expected to display a high degree of competence with respect to the use of RTF phraseology and ICAO language requirements for air ground radiotelephony communications. Emphasis should be placed on the following areas;

- a) Hierarchy of message priority message priorities, an understanding of distress, alerting, control and information messages;
- b) Phonetic alphabet;
- c) Correct pronunciation of letters, words, and numbers;
- d) Standard phraseology;
 - i. Emphasis on the need for drivers to use standard phraseology; and
 - ii. The need for caution with certain phrases such as 'cleared' and 'go ahead'.

e) Call signs for aircraft, ATS, and vehicles

- i. An understanding of terminology and acronyms used by ATS and pilots;
- ii. Knowledge of the airline call signs used at the aerodrome; and
- iii. Knowledge of vehicle call signs, and that they should be appropriate to them; and
- iv. Function (e.g. 'Operations', 'Fire', 'Engineer') and numbered when more than one vehicle is used (e.g. 'Fire 2').

f) Read back procedures

The need for vehicle drivers to use standard readback, in the same manner as pilots, for instructions such as 'enter/cross the runway', and if conditional clearances are used.

g) Readability scale

Understanding and use of the readability scale from 1 to 5.

h) Lost or uncertain of position

Understanding of local procedures for vehicle drivers lost or uncertain of their position on the manoeuvring area.

i) Vehicle breakdown

- i. Local procedure for vehicle breakdown on runways and taxiways; and
- ii. Procedure for notifying ATS of vehicle failure.

j) Radio failure

- i. Understanding of the local procedure if radio failure occurs while on the runway or taxiway; and
- ii. Understanding of the light signals that can be used by ATS to pass instructions to vehicles.

k) Transmitting techniques and use of RTF

- i. Understanding the reasons for listening out prior to transmitting;
- ii. Use of standard phraseology and ICAO air-ground radiotelephony;
- iii. Communications procedures;
- iv. Words and sounds to be avoided;
- v. Correct positioning of microphones to avoid voice distortion;

- vi. Avoidance of 'clipped' transmissions;
 - vii. Awareness of regional accents and variations of speech; and
 - viii. speed of delivery of RTF phraseology.
- l) Portable radios
- i. Correct use of radios;
 - ii. Effective range and battery life;
 - iii. Screening/shielding effects on the aerodrome; and
 - iv. Use of correct call signs, either related to a vehicle or a person.
- m) Safety while using radios
- i. Local instructions regarding the use of portable radios and hand-held microphones while driving a vehicle; and
 - ii. Local instructions on the use of mobile telephones while operating airside.

CHAPTER 7**Language proficiency**

- 7.1 A person should demonstrate language proficiency, at least at an operational level both in the use of phraseologies and in plain language using the English language and any other language or languages used at the aerodrome for radio communication purposes with the air traffic services unit of the aerodrome.
- 7.2 The applicant should demonstrate the ability to:
1. Communicate effectively in voice-only and in face-to-face situations;
 2. Communicate on common and work-related topics with accuracy and clarity;
 3. Use appropriate communicative strategies to exchange messages and to recognise and resolve misunderstandings in a general or work-related context;
 4. Handle successfully the linguistic challenges presented by a complication or unexpected turn of events which occurs within the context of a routine work situation or communicative task with which they are otherwise familiar;
 5. Use a dialect or accent which is intelligible to the aeronautical community.
- 7.3 Language proficiency should be demonstrated by a certificate issued by the organisation that conducted the assessment, attesting the language or languages, the level or levels of proficiency, and the date of the assessment.
- 7.4 Except for individuals who have demonstrated language proficiency at an expert level, the language proficiency should be re-assessed every:
1. Four years from the date of the assessment, if the level demonstrated is operational level;
 2. Six years from the date of the assessment, if the level demonstrated is extended level.
- 7.5 The demonstration of language proficiency should be done through a method of assessment, which should contain:
1. The process by which an assessment is done;
 2. The qualifications of the assessors conducting assessments of language proficiency;
 3. The appeal procedure.

- 7.6 The aerodrome operator should make available language training to maintain the required level of language proficiency of its personnel.

The following rating table describes the various levels of language proficiency

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
	Assumes a dialect or accent intelligible to the aeronautical community	Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task				
Expert (Level 6)	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, for example to emphasise a point. Uses appropriate discourse markers and connectors spontaneously	Comprehension is consistently accurate in all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately
Extended (Level 5)	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation,	Basic grammatical structures and sentence patterns are consistently well	Vocabulary range and accuracy are sufficient to communicate effectively on common,	Able to speak at length with relative ease on familiar topics but may not vary speech flow as a	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is	Responses are immediate, appropriate, and informative. Manages the speaker or listener

	rarely interfere with ease of understanding.	controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	concrete, and work-related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic	stylistic device. Can make use of appropriate discourse markers or connectors.	confronted with a linguistic or situational complication or an unexpected turn of events. Can comprehend a range of speech varieties (dialect or accent) or registers.	relationship effectively.
Operational (Level 4)	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary particularly in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional losses of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers and connectors.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deal adequately with apparent misunderstandings by checking, confirming, or clarifying.

				Fillers are not distracting.		
Pre-operational (Level 3)	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation and frequently interfere with ease of understanding.	Basic grammatical structures and sentence patterns associated with predictable situations are not always well controlled. Errors frequently interfere with meaning.	Vocabulary range and accuracy are often sufficient to communicate effectively on common, concrete, and work-related topics but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary.	Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitations or slowness in language processing may prevent effective communication Fillers are sometimes distracting.	Comprehension is often accurate on common, concrete and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fail to understand a linguistic or situational complication or an unexpected turn of events.	Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Inadequate when dealing with an unexpected turn of events.
Elementary (Level 2)	Pronunciation, stress, rhythm, and intonation are heavily influenced by the first language or regional variation and usually	Shows only limited control of few simple memorised grammatical structures and sentence patterns.	Limited vocabulary range consisting only of isolated words and memorised phrases.	Can produce very short, isolated, memorised utterances with frequent pausing and a distracting use of fillers to search for expressions and	Comprehension is limited to isolated, memorised phrases when they are carefully and slowly articulated.	Response time is slow, and often inappropriate. Interaction is limited to simple routine exchanges.

	interfere with ease of understanding.			articulate fewer familiar words.		
Pre-Elementary (Level 1).	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.	Performs at a level below the elementary level.

Table 1 Rating Table

Note: Operational level (Level 4) is the minimum required proficiency level for radiotelephony communication.

Levels 1 through 3 describe pre-elementary, elementary and pre-operational levels of language proficiency respectively, all of which describe a level below the language proficiency requirement.

Levels 5 and 6 describe extended and expert levels at levels of proficiency more advanced than the minimum required standard. Note: Operational level (Level 4) is the minimum required proficiency level for radiotelephony communication.

- 7.7 The language competence assessment should be designed to reflect a range of tasks undertaken by vehicle drivers with special focus on the knowledge of the language rather than knowledge of the operational procedures.
- 7.8 The assessment should determine the applicant's ability to:
1. Communicate effectively using standard radiotelephony phraseology;
 2. Deliver and understand messages in plain language in both usual and unusual situations that necessitate departure from standard radiotelephony phraseology; and
 3. Deal with an unexpected turn of events and the ability to solve apparent misunderstandings.

Assessment

- 7.9 The assessment should comprise the following six elements:
1. Listening: assessment of comprehension.
 2. Speaking: proficiency will be assessed on the following criteria: accuracy of pronunciation, fluency, appropriate use of grammatical structures, precision of vocabulary, and effectiveness of interactive communication.
 3. The switch between phraseology and plain language should be assessed in relation to listening and speaking proficiency.
 4. When the assessment is not conducted in a face-to-face situation, appropriate technologies should be used for the assessment of the person's abilities to listen and speak, and to enable interactions.
 5. The assessment may also be conducted during training activities or during proficiency checks, with prior notification given to the person concerned.
 6. The assessment should be conducted using the rating scale.

Language proficiency assessors

- 7.10 Individuals responsible for language competency assessment ('assessors') should be suitably trained, including in the requirements specific to the language proficiency assessment, and qualified. They should be either aviation specialists or language specialists with additional aviation-related training.
- 7.11 Language proficiency assessors should undergo regular refresher training on language assessment skills.
- 7.12 The assessors should not conduct language proficiency assessments of individuals to whom they have provided language training, or whenever, for any other reason, their objectivity may be affected.

Criteria for the acceptability of language assessment organisations

- 7.13 If the language assessment organisation also provides language training, there should be a clear and documented separation between the two activities.
- 7.14 The language assessment organisation should employ a sufficient number of qualified interlocutors and language proficiency assessors to administer the tests.
- 7.15 The assessment documentation should include at least the following:
1. Assessment objectives;
 2. Assessment layout, timescale, technologies used, assessment samples, voice samples;
 3. Assessment criteria and standards (at least for the operational, extended and expert level of the rating scale);
 4. Documentation demonstrating the assessment validity, relevance and reliability for the operational, extended and expert level;
 5. Procedures to ensure that language assessments are standardised within the organisation and across the aerodrome organisations;
 6. Assessment procedures and responsibilities:
 - a) Preparation of individual assessment;
 - b) Administration: location(s), identity check and invigilation, assessment discipline, confidentiality/security;
 - c) Reporting and documentation provided to the aerodrome operator or to the applicant, including sample certificate; and
 - d) Retention of documents and records.
- 7.16 The assessment documentation and records should be kept for a period of time determined by the CAA and made available by request.

Language proficiency assessment

- 7.17 The aim of the assessment is to determine the ability of a person to speak and understand the language(s) used for radiotelephony communications.
- 7.18 The assessment includes:
1. Voice-only or face-to-face situations;
 2. Common, concrete and work-related topics for vehicle drivers.

- 7.19 The assessment determines the applicant's speaking and listening abilities. A mere assessment of the grammatical knowledge, reading and writing is not appropriate.
- 7.20 The assessment determines the language skills of the applicant in the following areas:
1. Pronunciation:
 - a) The extent to which the pronunciation, stress, rhythm and intonation are;
 - b) Influenced by the applicant's first language or national variations;
 - c) How much they interfere with ease of understanding.
 2. Structure:
 - a) The ability of the applicant to use both basic and complex grammatical structures;
 - b) The extent to which the applicant's errors interfere with the meaning.
 3. Vocabulary:
 - a) The range and accuracy of the vocabulary used;
 - b) The ability of the applicant to paraphrase successfully when lacking vocabulary.
 4. Fluency:
 - a) Tempo;
 - b) Hesitancy;
 - c) Rehearsed versus spontaneous speech;
 - d) Use of discourse markers and connectors.
 5. Comprehension:
 - a) On common, concrete and work-related topics;
 - b) When confronted with a linguistic or situational complication or an unexpected turn of events.
 6. Interactions:
 - a) Quality of response (immediate, appropriate, and informative);
 - b) The ability to initiate and maintain exchanges:
 - i. On common, concrete and work-related topics;

- ii. When dealing with an unexpected turn of events;
- c) The ability to deal with apparent misunderstandings by checking, confirming or clarifying.

7.21 The accent or variety of accents used in the test material should be sufficiently intelligible for an international community of users.

Language proficiency assessors

7.22 The preferred approach for an assessment would be to form an assessment panel consisting of an operational expert and a language expert.

7.23 The language proficiency assessors need to be trained in the requirements specific to the language proficiency assessment, and assessment and interlocution techniques.

7.24 Further guidance on the assessment of language proficiency may be found in ICAO Doc 9835 'Manual on the Implementation of ICAO Language Proficiency Requirements'.

Language training

7.25 Language training should contain communication in a job-related context particularly to the handling of abnormal and emergency situations and conduct non-routine coordination with air traffic controllers, colleagues and other technical staff.

7.26 Emphasis should be placed on listening comprehension, speaking interaction and vocabulary building.

7.27 A routine use of the language through phraseology, standard procedures and limited social contact only maintains a restricted core usage of the language which might be inadequate for managing unexpected and abnormal situations.

7.28 Language proficiency erosion (language attrition) occurs rapidly over time: the lower the initial level, the faster the rate of erosion unless systematic strategies and a high degree of motivation counteract this trend.

7.29 It is documented that one's language and communicative proficiency, even in one's native language, deteriorates sharply under stress: therefore, participation in available language training is recommended.

Guidance for communications skills assessment

7.30 Examples of communication skills assessment and how this can be tested are given below, the assessment is conducted in English.

7.31 A series of statements can be used which require the candidate to select the correct use of English words. Examples include:

- a) At airports, driving permits are _____. In other words, you must have one to drive on the airport.

compulsory forbidden optional prohibited

- b) The instructions are as _____.: first, write your name.

follow followed following follows

- c) The ID centre opens _____ 8.30 am.

at on in during

- d) "No smoking" at the airport means that you _____ smoke cigarettes there.

do not have to must not are not might not

- e) The answers to this test are kept _____ until the test is over.

hid hide hiding hidden

- 7.32 The ability to undertake successfully the operational communication requirements that may be required of airside drivers e.g. reporting an accident or incident airside

Example:

Look at the picture below: what is the important information you need to communicate about this item found on an airside road?



- 7.33 The ability to read and understand relevant local safety information, e.g. safety instructions and mandatory aerodrome signage

Example:

The candidate should read the following:

“The scene of the accident/incident should be isolated, and the vehicles, plant and equipment involved in the accident/incident should not normally be moved until the police or airport operations officer is in attendance. However, if in the judgement of the senior person present or the Officer in Charge of the Fire Service their removal is necessary in the interests of safety or to affect a rescue, this may be done. The scene should preferably be photographed before being disturbed, by digital camera if possible.”

7.34 The candidate should then verbally explain the information and include at least three of the following four main messages in the instruction:

1. Isolate vehicles
2. Do not move until police or airport operations officer attends;
3. If they instruct, removal can be allowed;
4. Photograph by digital camera if possible.

7.35 The ability to understand verbal instruction or notification given by the police or aerodrome operations staff:

Example:

Read the following passage to the candidate.

“As a result of an incident on the southern road it is now closed and all vehicle access to pier 4 must be by the western road, which is one way. This route will take more time and deliveries to the aircraft stands on pier 4 will take at least ten more minutes.”

7.36 The candidate should then be asked:

1. Which road is closed?
2. Which pier is affected?
3. What has caused the problem?
4. How much longer will it take to get to pier 4?

CHAPTER 8

ADP Scheme

8.1 The ADP Scheme covers three specific areas of the airfield. The areas have been identified separately in recognition of the increased level of risk on:

1. The airside roads and aprons ('A' permit):
2. The manoeuvring area excluding runways ('M' permit):
3. The manoeuvring area including runways ('R' permit).

Note: These last two permits may be combined subject to local assessment.

8.2 The 'A' ADP is the initial permit awarded to a driver who has successfully completed a local training course and assessment. The 'A' permit allows a driver to operate on airside roads and aprons, which may include controlled and uncontrolled taxiway crossings. The awarding of the 'A' permit allows the holder to progress their training to operating on the manoeuvring area excluding runways, where appropriate.

8.3 The 'M' ADP allows a driver to operate on the manoeuvring area but excluding the runway. To obtain an 'M' permit, the driver must have successfully completed a Radiotelephony (R/T) course and R/T assessment, including a practical element (see Chapter 4). This should be completed before seeking training for an 'M' permit.

8.4 The assessments must be completed by individuals approved by the aerodrome operator: this may be a training provider, the employer or the aerodrome operator. The holder of the 'M' permit should maintain competency in R/T throughout the validity period of the 'M' permit.

8.5 The 'R' ADP allows a driver to operate on runway(s). Increased risks encountered whilst operating on a runway should be subject to enhanced training.

8.6 The progressive acquisition of competence for the 'M' or 'R' permit should involve monitoring and assessment and may include use of a 'provisional' permit. The use of a provisional permit is a local decision and will require local terms and conditions to be set out. An example of the use of a provisional permit is where it is considered necessary for individuals to indicate that they are training for the higher level.

8.7 An Airside Driving Permit does not confer a general right of entry to airside areas. There may be circumstances where some flexibility is acceptable. For example:

1. When a pushback drivers have a limited need to enter the manoeuvring area, an 'A' permit may be acceptable where the pushback tug returns immediately to the apron, subject to local assessment and specific procedures.
2. When a pushback driver uses the taxiway to route to another part of the aerodrome then an 'M' permit will be required.
3. Where 'A' or 'M' permit holders may be allowed to use a runway crossing point that is part of a main airside route providing they have been trained in the necessary procedures and assessed as competent. In both cases local risk assessment and training procedures will be required.
4. Where it is beneficial that the 'M' and 'R' permits are combined.

8.8 Where flexibility is considered the aerodrome operator should assess the benefits and risks in consultation with all organisations.

‘A’ ADP – Airside roads and apron

Requirements

8.9 It is a requirement for the issue of an ADP that the applicant shall:

1. Be employed by an organisation authorised to operate at the aerodrome:
2. Have a current full UK EC/EEA, or foreign equivalent driving licence¹ which permits the holder to drive a motor vehicle on public roads within the UK:
3. Have an operational requirement to drive a vehicle on the airside roads and aprons:
4. Be medically fit to drive to DVLA Group 1 or Group 2 standard:
5. Have adequate language proficiency:
6. Have received training and familiarisation.

8.10 A person applying for a driving permit who holds a licence issued outside the EEA will be required to declare their residency start date in the UK. A driving permit may then be issued for a period not exceeding 12 months from that date. This matches the period that a foreign driver can drive in the UK on their foreign licence. If they become resident, they must obtain a UK licence.

8.11 For further advice about acceptable foreign licences in the UK and definition of residency, refer to the DVLA website and their Information Leaflets.

Revalidation requirements

- 8.12 The ADP 'A' permit may be valid for up to 5 years and falls due for revalidation at the anniversary of the date of issue.
- 8.13 To be revalidated, the competence of the permit holder must be demonstrated e.g. by a refresher course and assessment.
- 8.14 Employers must confirm the driver still holds the necessary current UK EC/EEA, or foreign equivalent driving licence³ and continues to meet the minimum medical requirements.
- 8.15 Records of training and assessments for the 'A' permit must be retained. Third party trainers/assessors must ensure that records are available for audit by the aerodrome operator.

'M' and 'R' ADP Permits – Manoeuvring area and Runway

General considerations

- 8.16 All three training programmes should consist of two main parts, the first being the theoretical part which should include the use of prepared presentations, maps, diagrams, videos, booklets and checklists as appropriate. The second part should involve practical training and visual familiarisation on the aerodrome with a suitably trained person. This practical tuition will take time depending upon the complexity of the aerodrome.
- 8.17 Where the responsibility for vehicle driver training (apron and manoeuvring area) and RTF training is delegated to a third-party provider, the aerodrome management should institute a programme of audits, as part of its safety management system, to ensure that agreed standards are being maintained.
- 8.18 The framework for a vehicle driver training programme is intended only as a guide and is based on current 'good practice'. It is incumbent on aerodrome operators to regularly review their vehicle driver training programmes against programmes and documentation available across the industry.

Requirements

- 8.19 The applicant shall fulfil the following requirements for the issue of an 'M' and 'R' ADP:
- 8.20 'M' Permit - as per an 'A' Permit: and
 - 1. Demonstrate competence in R/T by means of an R/T course and assessment:

2. Be able to demonstrate language proficiency to the minimum of ICAO Operational Level 4 as described in Table 1:
3. Require access to the Manoeuvring Area.

8.21 'R' Permit - as per 'M' Permit and require access to the runway.

Revalidation requirements

8.22 Aerodrome operators shall ensure that drivers still hold the correct categories of licence for the public roads or certificates of competency and continue to meet the minimum medical requirements before renewing the ADP. This check should be carried out at the renewal date.

8.23 'M' ADP

1. Duration: Up to five years
2. Revalidation: Competence must be maintained. This may be confirmed/assessed by a Maintenance of Competence Scheme or refresher training but in either case must include appropriate assessments.

8.24 'R' ADP

1. Duration: One year
2. Revalidation: Competence must be maintained. This may be confirmed/assessed by a Maintenance of Competence Scheme or refresher training but in either case must include appropriate assessments.

8.25 Depending on the local level of risk, the aerodrome operator may combine 'M' and 'R' ADPs, or they may be issued separately. If they are combined the training and assessments should be based on the 'R' requirements. Where 'M' and 'R' permits are combined the validation period may be harmonised up to a maximum of three years, subject to satisfactory assessment of the risks arising from the operational environment at the aerodrome.

Maintenance of competence

8.26 To provide means to achieve revalidation and continued competence, the aerodrome operator should establish a system that ensures all staff that are permitted to drive and operate vehicles and equipment on the manoeuvring and runway areas, maintain their competence in their driving rules, duties and procedures in those areas where they are permitted to drive.

8.27 The aerodrome operator may delegate the assessment of competence to third party driver trainers, vehicle operators or other parties.

8.28 When third party driver assessments are provided the aerodrome operator should conduct regular audits to assess the effectiveness of the third-party

assessment provision. These audits must include a check of training records and driver assessments.

8.29 The following should be assessed as part of any maintenance of competence scheme, subject to the proposed activities of the driver:

1. Pushback procedures:
2. Towing – apron and airfield:
3. Runway access:
4. Radiotelephony (CAP 413):
5. Airfield topography:
6. General airside driving:
7. Vehicle check:
8. Emergency procedures

CHAPTER 9**Training Records**

Training records

- 9.1 The aerodrome operator shall maintain records of the training sessions that it has provided, including as a minimum the following:
1. Area of training and subjects covered;
 2. Names of participants/signed list of participants;
 3. Date and duration of training;
 4. Name of the instructor; and
 5. Copy of DVLA or EC/EEA driving licence.
- 9.2 The training records maintained for each individual shall include as a minimum:
1. The name of the trainee;
 2. The date(s) and the duration of the training;
 3. The place where the training was received;
 4. The name of the organisation that provided the training;
 5. The subjects covered, and the methodology of the course;
 6. The performance evaluation of the trainee if applicable; and
 7. The name and signature of the instructor.

Proficiency check records

- 9.3 The proficiency check records maintained for each individual should include as a minimum:
1. The name of the person checked;
 2. The date(s) and the duration of the proficiency check;
 3. The methodology of the check conducted;
 4. Any comments made by the assessor;
 5. The performance evaluation of the person checked; and
 6. The name and signature of the assessor.

- 9.4 The information described in 9.1 above may be kept in any suitable format and shall be made available for audit.

Operating vehicles airside

- 9.5 Aerodrome operators should consider establishing procedures as recommended by GAPPRI to ensure that vehicles entering or operating on a runway do so in the opposite direction of arriving or departing aircraft. This practice provides drivers with a direct line of sight to approaching aircraft, significantly enhancing situational awareness and reducing the risk of runway incursions.
- 9.6 Facing oncoming traffic allows drivers to visually detect aircraft movement earlier, assess closing speeds more accurately, and take timely evasive action if necessary. This is particularly critical in low-visibility conditions or during periods of high operational tempo. The procedure aligns with the principles of proactive risk mitigation and the importance of visual awareness and surface movement safety in the manoeuvring area.
- 9.7 Ensuring that vehicle operators are always oriented toward potential hazards, aerodrome operators contribute to a safer operating environment and support compliance with safety management system (SMS) framework.

ATS radio used by airside vehicles

- 9.8 One of the key requirements for the safe deployment of vehicles airside, on manoeuvring areas shared with aircraft, is that their drivers (or their front seat colleagues) are competent in RTF communication with ATS.
- 9.9 Aerodrome operators have overall responsibility for setting and monitoring standards, but the agency operating a vehicle has direct responsibility for ensuring that ATS communications with their vehicle is of a standard which will preclude any contribution to diminished safety standards for aircraft. Whilst some vehicles will be operated directly by the airport operator, most will be operated by various service providers. The chance of disaster is at its greatest when the possibility exists of an aircraft at speed on a runway, during the take-off or landing roll, encountering ground vehicle.
- 9.10 Apart from aerodrome operators' personnel who may fulfil many different roles including RFFS, it is likely that airside drivers will also include individuals working airside in connection with:
1. Aircraft Maintenance;
 2. Aircraft Ground De/Anti-Icing;
 3. Aircraft and Passenger Handling;

4. Aircraft Catering;
5. Aircraft Cleaning;
6. Aircraft Refuelling;
7. Passenger and Crew transport;
8. Cargo; and
9. Visiting vehicles requiring escort.

Acceptable ATS radio communication for vehicle drivers

- 9.11 At larger airports, it is usual to find different parts of the airport controlled by ATS using different radio frequencies, often with different radio call sign endings. A call sign ending in "Tower" (TWR) usually indicates a radio frequency used to control at least one active (in use) runway: a call sign ending in "Ground" (GND) usually indicates that an active (in use) runway is not being controlled. When speaking to either it is important to:
1. Speak clearly and at a moderate speed, especially if the speaker has marked regional or non-native accent.
 2. Always listen before starting a transmission and be aware that there may be a short gap between a transmission by other traffic or ATS and the corresponding reply.
 3. Press the radio transmit switch before beginning to speak and do not release it until a transmission is finished, otherwise it may be 'clipped' and an important part of the content lost.
 4. Know the airport layout and the location and designation of all runways, taxiways and holding points.
 5. Find out before setting out which runways are in use and the location of any "work in progress" or taxiway closures which may affect usual routes.
 6. Strictly adhere to vehicle speed limits: ATS will assume this if they need to amend a current clearance.
 7. Use marked roadways where available
 8. If in any doubt about an ATS instruction, obtain a repeat by saying "Say Again" (or "Say Again all before/after/between..."). Do not proceed beyond the previous clearance limit until a response has been obtained and understood.
 9. Ensure that all ATS clearances are read back in full before proceeding.

10. Remember the designated radio call sign for either the driver or the vehicle and always listen out for it and use it to identify each transmission made.
11. Listen to aircraft/ATS communications and where possible, use the information acquired to build up a mental map of what else is moving or about to be moving in the area in which you are at present, or where you are about to proceed. This is called maintaining 'situational awareness' and is important for both vehicle drivers and flight crews.
12. If the vehicle being driven has an automatic position transmitter fitted which allows ATS to see its position on a remote display, then this must be switched on whenever the vehicle is in use.
13. If a vehicle driver becomes uncertain of their position, the vehicle should be stopped immediately, and ATS informed. Further movement should await ATS instructions.
14. If individuals in a vehicle under ATS control need to exit and work outside, they must have a reliable means of receiving ATS communications such as a vehicle-mounted loudspeaker or portable radio. These devices must remain clearly audible even in high-noise environments typically encountered airside.
15. Be aware of local radio failure procedures and be prepared to recognise the signs that this has occurred - whether wholly or only in respect of vehicle reception or (apparently) vehicle transmissions.
16. Review ADP training materials for your specific airport regarding airport signage and markings, hot spot locations, and construction.

Standard phraseology

- 9.12 It is important that radio communications are concise so that the amount of transmission time is minimised, but also even more important that they are fully understood. In many cases, single words are used which are equivalent to a phrase. Sometimes, even single words which are not commonly encountered in everyday use are used by ATS as important instructions. Also, where letters or numbers have to be spoken individually e.g. "Hold at C12" then it is important that the international radio telephony alphabet is used.
- 9.13 Standard phraseology reduces the risk that a message will be misunderstood and aids the read-back/hear-back process so that any error is quickly detected. Ambiguous or non-standard phraseology is a frequent causal or contributory factor in aircraft accidents and incidents, so should be avoided.
- 9.14 The UK CAA has adopted certain non-standard phraseology designed to reduce the chance of mishearing or misunderstanding RTF communications. This phraseology is not in accordance with ICAO but is based on careful study of the breakdown of pilot/controller communications.

- 9.15 Where non-standard phraseology is introduced after careful consideration to address a particular problem, it can make a positive contribution to flight safety: however, this must be balanced with the possibility of confusion for pilots or ATSOs not familiar with the phraseology used.
- 9.16 Sometimes controllers and pilots use phraseology that is neither standard, nor approved by the Civil Aviation Authority. The reasons for this may be various, e.g. poor knowledge or training, phrase that is rarely used, personal experience or preference, etc. The main difference between approved and non-approved phraseology is that the latter has not undergone any safety impact assessment.
- 9.17 There are several major risks associated with such phraseology:
1. The other party may not hear the message correctly. When standard phraseology was developed, special attention was given to choosing words and phrases that sound distinctly different and therefore cannot be confused under any readability circumstances.
 2. When replacing standard phraseology with their own people do not perform thorough research as to whether their custom phrase may sound similarly to another one.
 3. The other party may not understand the message. This may be due to e.g. using phrasal verbs or other words that are not commonly known. The different levels of knowledge of the English language contributes to this as well.
 4. The message may be ambiguous, i.e. the transmitting person may mean one thing and the other one may understand something else.
 5. If you do not understand or there is an element of doubt do not proceed, request the message to be clarified

Preparation before driving

- 9.18 Understand the task, anticipated route and exact location of the task to be performed before leaving base.
- 9.19 Check for works in progress that could affect your plan.

Airside

- 9.20 Once airside limit conversations to the task in hand with any passengers in the vehicle do not allow yourself to become distracted and must not look at mobile phones or devices while the vehicle is moving.
- 9.21 Used dipped headlights on taxiways and runways at all times of day and night.
- 9.22 Only somebody with the appropriate ADP should operate the radio to ATS.

- 9.23 If you are unsure about a clearance, ask ATS to repeat or clarify.

After receiving clearance to enter the runway, pause before proceeding and visually check both left and right to ensure full situational awareness of any aircraft taxiing, landing, or taking off.

Towing

- 9.24 Individuals authorised to drive or operate vehicles (and/or deliver ATS communications) used for towing aircraft must be carefully selected and thoroughly trained. Particular attention should be given to any visibility limitations of the vehicles and to ensuring drivers are fully aware of the dimensions and characteristics of the aircraft types they may be required to tow. The potential consequences of failing to comply with ATS clearances while towing an aircraft or if the connection between the towing vehicle and the aircraft's nose landing gear fails are significantly more serious than those involving a vehicle operating alone. Escorted Vehicles not in Radio Contact with ATS
- 9.25 Where appropriate procedures have been agreed with Air Traffic Control (ATS), a radio-equipped vehicle operated by a suitably authorised permit holder may escort a visiting vehicle within an ATS-controlled zone. In such instances, the escorting driver assumes significant responsibility for ensuring the visiting driver is adequately briefed and for maintaining continuous awareness of both vehicles' positions to ensure full compliance with ATS clearances. This is particularly critical when providing position reports, which must only be made once the entire convoy is confirmed to be in compliance.
- 9.26 The escorting driver must assess the maximum number of vehicles that can be safely managed within a convoy by a single lead vehicle. If maintaining safe control becomes challenging, the driver should implement a 'top-and-tail' escorting arrangement to ensure effective oversight and safety of the convoy.
- 9.27 The crossing of runways at the midpoint should be avoided, where permitted appropriate risk assessment and inspection regime should be in place.

Proactive reporting

- 9.28 The most important aspects of driving under ATS control are:
1. To follow all clearances as given; and
 2. To maintain situational awareness.
- 9.29 Additionally, it is part of the driver's responsibility to be observant and to make radio reports to ATS of:
1. Any apparent external abnormalities in respect of an aircraft in the vicinity;

2. Bird or other wildlife activity which may be unknown to ATS (and apparently hazardous to aircraft);
3. Any significant FOD sighting;
4. Any other hazard to aircraft or personal safety which is seen from the vehicle.

Runway Incursion, GAPPRI

Definition

- 9.30 Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft. (Source: ICAO Doc 4444 - PANS-ATM)

Note: 'incorrect presence' may be a consequence of a failure of a pilot or vehicle driver to comply with a valid ATS clearance or their compliance with an inappropriate ATS clearance.

Effects

- 9.31 An increased risk of collision for aircraft on the ground. When collisions occur off the runway, the aircraft and/or vehicles involved are usually travelling relatively slowly: in contrast, when a collision occurs on the runway, the aircraft involved will often be travelling at considerable speed which increases the risk of significant aircraft damage and the severity of the consequences therefrom, including serious or fatal injury.

CHAPTER 10**Runway Incursion Prevention**

Integration of runway incursion prevention principles

- 10.1 Aerodrome operators should ensure that Airside Driving Permit (ADP) schemes and associated driver training programmes reflect the latest runway safety principles contained within the Global Action Plan for the Prevention of Runway Incursions (GAPPRI).
- 10.2 Runway incursions remain one of the most significant risks within the aviation system and frequently involve vehicle operations, communication failures, loss of situational awareness, or non-compliance with aerodrome procedures. Aerodromes should therefore adopt a risk-based approach that promotes continuous improvement in driver competence, airfield discipline and runway safety culture.
- 10.3 Training syllabi should place particular emphasis on runway entry procedures, the correct interpretation of aeronautical ground lighting and signage, adherence to air traffic control clearances, and the management of distractions during airside operations.
- 10.4 Aerodrome operators should also consider the use of recurrent scenario-based training, local runway incursion case studies, and competency assessments that examine a driver's understanding of threats and error management within the manoeuvring area. These measures should be supported by active monitoring of occurrence data and participation in local Runway Safety Teams to identify emerging hazards and implement effective mitigations.
- 10.5 Consistent with GAPPRI recommendations, aerodrome operators should evaluate opportunities to enhance situational awareness through the introduction of technologies such as vehicle tracking, improved stop-bar operating procedures, and other safety systems proportionate to the complexity and risk profile of the aerodrome.
- 10.6 The objective should be to establish multiple layers of defence against runway incursions, recognising that effective runway safety depends upon the combined performance of aerodrome operators, vehicle drivers, air traffic services and aircraft operators.
- 10.7 This approach aligns CAP 790 with contemporary international runway safety initiatives and reinforces the expectation that airside drivers contribute actively to the prevention of runway incursions through procedural compliance, communication discipline and continuous vigilance

10.8 CAA analysis of MORs shows reoccurring patterns in vehicle/equipment runway incursions. These can be grouped into the following types:

1. **Incorrect entry into the runway protected area** – e.g. Vehicle enters runway and/or crosses holding point without clearance or contrary to clearance.
2. **Incorrect runway crossing by a vehicle** - without clearance or due to incorrect clearance.
3. **Unauthorised following** - additional vehicles entering the runway after following a cleared party without ATS clearance.
4. **Exceeding clearance limits** - vehicle moves beyond its authorised point, entering the protected area.
5. **Incorrect vacating procedure** - vehicle re-enters, routes incorrectly when exiting, or remains inside the protected area after vacating.

Example

10.9 Vehicle driver-induced situation:

A vehicle driver is not sufficiently familiar with the manoeuvring area layout at an airport (e.g. due to inappropriate training and lack of formal runway access approval dependent upon satisfactory training completion) and misinterprets the runway entry clearance issued by ATS leading them to enter the runway at the incorrect position.

Contributory factors

10.10 Weather - low visibility may increase the chance of vehicle operators becoming disorientated and unsure of their position whilst taxiing. Low visibility is also likely to restrict a controller's ability to identify and follow aircraft and vehicles visually so that cross-checking a reported aircraft position with its actual location may become impossible unless Surface Movement Radar is available.

Defences

10.11 Available defences relate to both the occurrence of runway incursions and the danger thereby created. The role of safety nets as a last line of defence against error is increasingly valuable at busy airports with complex movement areas. Not in any order of significance these defences include:

1. Maintenance of situation awareness by drivers using the manoeuvring area, specifically in respect of their own location in relation to active runways, and that of other aircraft and vehicles relative to active runways.
2. Maintenance of situation awareness by TWR, GND ATCOs, and AFISO in respect of aircraft and vehicle disposition and movements near to active runways.

3. Use of ICAO standard phraseology at all times to minimise any risk of clearance confusion.
4. Presence of ICAO standard runway markings and taxiway surface markings and signs.
5. Presence of ICAO standard runway lighting and taxiway lighting including the installation of runway status lights (RWSL) and runway holding point stop bars.

CHAPTER 11**Airside driver safety check list**

This Check List is designed as an aide-memoire to print off and keep if no equivalent document is available so that it can be reviewed periodically. It does not cover the conduct of effective vehicle airside radio communications with ATS.

Understand aerodrome surface marking colour coding

1. White for runway markings
2. Yellow for taxiway markings including lead on/off lines to / from runway centrelines
3. Markings on apron and ramp areas for various subordinate purposes may use colours other than yellow such as the commonly used white for roadways.
4. Be aware that the yellow line markings which define the division between taxiways and runways are always continuous on taxiway side and always broken on the runway side. When crossing from the continuous lines first direction a clearance is required, whereas when crossing from the broken lines first direction clearance is not required.

Understand aerodrome signs

1. Different types of aerodrome signs will be used in combination with each other
2. You are here
= Yellow designation on black background
3. Mandatory instruction indicating restricted or prohibited access
= White on a red background
4. Arrow and identifier prior to an intersection
= Which directions lead where black on a yellow background usually with a 'you are here' sign
5. This way to
= black on yellow background with an arrow`

Understand aerodrome lighting

1. Lit taxiway centrelines are green: green reflectors may be substituted at some aerodromes:
2. Lit taxiway edges use blue lights: blue reflectors may be substituted at some aerodromes:
3. Lit runway centrelines are white except near the end when they may change to red:
4. Runway edge lights are fixed lights showing variable white, except that:
 - a) In the case of a displaced threshold, the lights between the beginning of the runway and the displaced threshold should show red in the approach direction; and
 - b) A section of the lights 600 m or one-third of the runway length, whichever is the less, at the remote end of the runway from the end at which the take-off run is started, should show yellow.
5. A transverse row of red lights is a stop bar and must never be crossed.

Tactical preparation

1. Be aware of the extent of the airside area which requires prior ATS clearance to proceed.
2. If there is more than one ATS designated for control of airside vehicle movements, including active runway crossings, ensure each of their control areas is understood so that frequency changes on expected or likely routes can be anticipated:
3. Note promulgated speed limits and any variation of these in different airside areas:
4. Check for any temporary restrictions and changes in the extent of the authorised movement area:
5. Review any issues which might arise because of reduced forward visibility or frozen surface deposits:
6. Have a current aerodrome chart which shows all taxiway and runway designations available in any vehicle being driven:
7. Consider expected routes in advance of a request for clearance to destination, taking note of runways which may be in use and in proximity to or likely to be encountered on these routes:
8. Re-check that you are familiar with the meaning of light signals which may be used by ATS if radio communications cannot be maintained:

Table 11.1

LIGHTS SIGNAL FROM AIR TRAFFIC SERVICES	MEANING
Green flashes	Permission to cross landing area or to move onto taxiway
Steady red	Stop
Red flashes	Move off the landing area or taxiway and watch out for aircraft
White flashes	Vacate manoeuvring area in accordance with local instructions

9. In emergency conditions or if the signals in Table 8.1 are not observed, the signal given below in table 9.1 will be used for runways or taxiways equipped with a lighting system and should have the following meaning:

Table 11.2

LIGHT SIGNAL	MEANING
Flashing runway or taxiway lights	Vacate the runway and observe the tower for light signal

10. Satisfy yourself, either before setting off or immediately as you do, that the vehicle being driven appears to be serviceable and that adequate forward visibility through the windscreen is available.

Maintaining situational awareness

1. Improving the situational awareness of vehicle drivers operating on the manoeuvring area is important, as it may also affect the situational awareness and decision-making of the air traffic services personnel and flight crews. Situational awareness is improved by conducting communications in a common frequency and language, whenever this is possible.
2. It is essential that an airside vehicle driver always remains positively aware of their location.
3. If position uncertainty occurs, STOP at once and seek assistance from ATS.

4. Be especially careful at night or when Low Visibility Procedures (LVP) are in force.
5. Monitor ATS instructions to other vehicles and aircraft and mentally 'position' them relative to the actual and projected position of your vehicle.
6. Focus 100% on the driving and navigation task: if a colleague is in the driving compartment of the vehicle with you, involve them in tracking vehicle position but do not devolve that responsibility to them.
7. If about to cross a runway having obtained an ATS clearance to do so, always carry out a visual inspection in both potential directions of the full length of the runway, and up the approach paths if visible, to ensure that no aircraft or other vehicles which might conflict with the received crossing clearance are visible.
8. Make full use of all aerodrome surface markings, signs and lights to aid situational awareness.