ADVISORY CIRCULAR

SLCAA-AC-AGA009-Rev.01

SIERRA LEONE CIVIL AVIATION AUTHORITY

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Ground Vehicle Operations

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1 GENERAL

Sierra Leone Civil Aviation Authority Advisory Circulars from the Aerodrome and Ground Aids Department contain information about standards, practices and procedures that the Authority has found to be an Acceptable Means of Compliance (AMC) with the associated Regulations.

An AMC is not intended to be the only means of compliance with a regulation, and consideration will be given to other methods of compliance that may be presented to the Authority.

Information considered directive in nature is described in this AC in terms such as "shall" and "must", indicating the actions are mandatory. Guidance information is described in terms such as "should" and "may" indicating the actions are desirable or permissive, but not mandatory.

1.1 Purpose

The airside of an airport is a specialized working environment which is governed by specialized safety rules and procedures. Numerous vehicles and equipment operate on the airside in close proximity to aircraft, as such, this AC contains provisions on the establishment and procedures for the implementation of an airside driver permit scheme and safety requirements for vehicles and equipment operating at an aerodrome, with the objective of minimising the risk of accidents causing injury to persons and damage to aircraft and property, arising from the use of vehicles in the airside areas.

It also provides detailed supporting provisions on the framework for an airside vehicle driver training programme, radiotelephony and record keeping.

1.2 Applicability

This AC is designed to give guidance to an aerodrome operator performing Ground Vehicle Operations.

1.3 Description of Changes

This AC is the second to be issued on this subject

1.4 Reference

(a) SLCAR Part 14A - Aerodrome Design and Operation
(b) SLCAA-AC-AGA033-Rev.00 - Runway Incursion Prevention Measures
(c) SLCAA-AC-AGA014-Rev.01 - Visual Aids
(d) ICAO Doc 9981 – PANS-AGA

1.5 Cancelled Documents

This document repeals and replaces the previous guidance prescribed in **SLCAA-AC-AATNS009 – AIRPORT TRAFFIC DIRECTIVES**

1.6 Definitions

(a) **Aerodrome** - A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

(b) **Aircraft** - Any machine capable of deriving support in the atmosphere from the reactions of the air.

(c) **Airport** - An aerodrome in respect of which a (name of the country) aviation document is in force.

(d) **Accountable Manager** - The most senior post holder who has full control of the resources, absolute authority over operations specified in the conditions of the Aerodrome certificate, and ultimate responsibility and accountability for the establishment, implementation and maintenance of the SMS; safety policies and the timely resolution of all safety issues.

(e) **Airport Traffic** - All traffic on the manoeuvring area of an airport, and all aircraft flying in the vicinity of an airport.

(f) **Airside** - That area of airport intended to be used for activities related to aircraft operations and to which public access is normally restricted.

(g) **Airside Driver's Permit (ADP)** - a document issued by the Accountable Manager certifying that the person named therein is permitted to access the airside area, and authorized to operate a vehicle/equipment in the areas specified.

(h) **Apron** - a defined area, on a land aerodrome, intended to accommodate aircraft for the purposes of loading and unloading of passengers, mail or cargo, fuelling, parking, servicing or maintenance.

(i) **Apron Traffic** - All aircraft, vehicles, equipment and pedestrians using the apron of an airport

(j) **Blind Transmissions** - A transmission from one station to another when two-way communication cannot be established and it is believed that the called station can hear transmissions, but is unable to transmit.

(k) **Controlled Airport** - An airport provided with and controlled by air traffic control.

(l) **Cross-Walk** - Any portion of road, an apron or any other area designated by a sign or surface marking as a pedestrian crossing.

(m) **Designated Vehicle Corridor** - A road delineated by surface markings on an apron for the ground movement of vehicle.

(n) **Designated Vehicle Crossing Point** - A location on an apron, delineated by surface markings, where vehicles are to cross an aircraft taxi-line.

(o) **Equipment** - Any motor vehicle or mobile device, either self-propelled or towed or of a specialized nature, used for runway and airfield maintenance or in the maintenance, repair and servicing of aircraft including test equipment, cargo and passenger handling equipment.

(p) **Flight Service Specialist** - An employee who provides advisory information to aircraft and vehicles using, or about to use, the manoeuvring areas of an airport where control service is not available.

(q) **Glide Path** - That part of an Instrument Landing System that helps the pilot approach the runway on the correct descent angle to the designated touchdown zone.

(r) **Ground Control** - The operating position in the control tower that provides: (a) clearances and instructions for the movement of airport traffic, and (b) information to all traffic within the airport perimeter as it is known and pertinent.

(s) **Groundside** - That area of an airport not intended to be used for activities related to aircraft operations and to which the public normally has unrestricted access.

(t) **Holding Bay** - A defined area where aircraft can be held, or bypassed, to facilitate efficient surface movement of aircraft.

(u) **Holding Short** - Instructions to hold at least 45 m (150ft.) from the edge of a taxiway while awaiting permission to cross or proceed onto a runway

(v) **Intersection** - The point at which a road, runway or taxiway meets or crosses another road, runway or taxiway.

(w) **Light Signal from Airport Control Tower** - A light used by the tower to control airport traffic when there is no radio communication.

(x) **Localizer** – a component of an Instrument Landing System that helps the pilot remain lined up with the runway during his approach.

(y) **Manoeuvring Area** - That part of an aerodrome intended to be used for the taking off, landing and the taxiing of aircraft, excluding aprons.

(z) **Mobile Equipment** – an equipment that is non-motorized.

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

(bb) **Off the Runway** - Indicates a vehicle at least 45 m (150 ft.) to the side of the nearest edge of the runway in use, wherever practical.

(cc) **Aircraft Stand** - An area on an airport apron designated for the parking of aircraft for the purpose of loading and unloading passengers, and the provision of ground services.

(dd) **Operator** - The person responsible for the operations and safety of the vehicle(s) and equipment; usually referred to as the driver.

(ee) **Positive Vehicle Advisory Service (PVAS**) - Instructions issued by Flight Service Specialists at designated uncontrolled airports to:

i) Regulate vehicles entering, leaving or moving along runways; and

ii) Coordinate the movement of vehicle traffic on the airport manoeuvring area other than runways.

(ff) **Restricted Area** - An area of an airport designated by a sign as an area to which access by persons or vehicles requires the production of valid identification.

(gg) **Taxiway** - 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.

(hh) **Threshold** - the beginning of that portion of the runway usable for landing.

(ii) **Uncontrolled Airport** - An airport is "non-controlled" to the extent that the airport does not have an operating air traffic control tower.

(jj) **Restricted Radiotelephone Operator's Certificate** - A document issued by the State certifying that the holder may act as an operator on any aeronautical-land radio station with radiotelephone equipment only, transmitting on fixed frequencies and not open to public correspondence.

(kk) **Vehicle** - An automobile, bicycle, truck, bus or any self-propelled vehicle or device in, on or by which a person or thing is or may be transported, carried, or conveyed on

land, and includes a machine designed to derive support in the atmosphere from reactions against the earth's surface of air expelled from the machine, but does not include an aircraft.

(ll) **Vehicle Advisory Service** - Information provided by the ATC for the safe movement of known vehicles and aircraft on manoeuvring areas at locations where no control tower is in operation.

(mm) **Vehicle Corridors** - Parallel 150mm (6in.) wide, solid white line spaces 7.5m apart to provide guidance to vehicle and equipment operators.

(nn) **Warning Devices** - A siren and flashing red light.

2 AIRPORT TRAFFIC DIRECTIVES FOR THE OPERATION OF VEHICLES ON THE AERODROME MOVEMENT AREAS

2.1 National Traffic Directives

The directives contained in sections 2 through 8 of this manual apply at airports operated by and/or under the legal jurisdiction of Sierra Leone.

However, the airport operator shall ensure, operations of vehicles at the aerodrome are based on State Acts, Regulations and procedures applied nationally for the safe and orderly operation of vehicles.

2.2 Local Airport Traffic Directives

There may be considerable difference in the operating conditions of each airport because of their size and complexity of operations, climatic conditions, geographical location and other factors. Local Airport Traffic Directives established by the aerodrome operator should address these differences by developing procedures that apply to the operations of a vehicle at a specific airport.

3 AIRSIDE DRIVER PERMIT SCHEME AND VEHICLE/EQUIPMENT SAFETY REQUIREMENTS

(a) The airside of an aerodrome presents a number of challenges to drivers of vehicles and equipment not normally encountered landside. Vehicles operating around manoeuvring aircraft also create a risk, which should be managed by the aerodrome operator. As such, a number of formal control measures should be in place to manage such risks. A driver training programme is one of the many control measures that shall be established and implemented, and should be a part of the aerodrome's overall safety management system (SMS).

(b) The objective of the driver training programme should be, to set out requirements and guidance to minimize the risk of accidents and injury to persons as well as damage to aircraft and property, arising from the use of vehicles in airside areas.

(c) The programme should further describe what may be considered as "good practice" guidance for airside vehicle driver training, with special attention given to a separate framework for radiotelephony training, when required. It should ensure consistency and a high degree of standardization, when drivers qualify for their airside driver permit.

(d) The effectiveness of the driver training programme will depend on the support it receives and the intensity of its application by all airport stakeholders including the ANSP, ground handling service providers, aircraft operators and other airside service providers. The success of the driver training programme will depend on the cooperation and compliance of these stakeholders.

(e) The training programme should be established based on the scale and complexity of the aerodrome and the individual requirements of the driver. The driver shall be able to demonstrate competence, as appropriate, in:

(i) the operation or use of vehicle radio communication devices;

(ii) understanding and complying with ATS and local procedures; and

(iii)vehicle navigation on the aerodrome

3.1 Objectives

(a) The aerodrome operator shall establish and implement a formal driver training assessment and permit scheme for all drivers operating on the airside.

(b) An aerodrome operator shall establish a system for issuing and revoking Airside Driver Permits (ADP). Airside driver permits shall have a defined validity period and the aerodrome operator shall specify the conditions for their renewal.

(c) The aerodrome operator shall establish a procedure for the issuance of an ADP. The procedure should ensure that a permit is not issued unless the individual meets the minimum required driving standards; additionally, the individual should hold a current State or other recognized driving licence.

(d) The training programme shall include the following, as a minimum;

(i) a generic airside vehicle driver training programme which covers the safety of operating vehicles and equipment on the airside area, such as runways, taxiways, aprons, stands, airside roads and areas adjacent to the movement area;

(ii) additional training on the hazards associated with runways and taxiways; and

(iii) the correct use of RTF and standard phraseology for drivers required to operate on the manoeuvring area.

(e) The aerodrome operator shall establish requirements for the periodic inspection and maintenance of vehicles and equipment intended to operate on the airside.

(f) The aerodrome operator shall establish minimum safety requirements for vehicle use on the airside.

3.2 Operational Practices

(a) The airside driver permit (ADP) scheme should cover three specific areas of the aerodrome. The areas have been identified separately, in recognition of the increased level of risk on:

(i) the airside roads and aprons;

(ii) the manoeuvring area excluding runways; and

(iii) the manoeuvring area including runways.

Note - *An airside driver permit does not confer a general right-of-entry to airside areas which may require a security access authorization.*

(b) The operator of the vehicle/equipment shall be called "Driver" and issued an Airside Driving Permit (ADP) after successful completion of all relevant requirements, meaning that the holder is entitled to drive a vehicle at an area to be specified in the ADP. For practical reasons and ease of control, the letter "D" could appear on the driver's aerodrome pass.

(c) The training program should consist of two main parts: classroom/theoretical aspects, which should include the use of prepared presentations, maps, diagrams, videos, booklets and checklists, as appropriate; and practical training and visual familiarization on the aerodrome with a suitably trained person aimed at certifying the driver’s knowledge of the aerodromes layout and approved airside operating procedures. A practical radio communication test is also to be passed by the driver candidate by

simulating different routes to follow according to scenarios established in corporation with the ATC or ground control services as applicable.

(d) Following the initial training, a refresher training should be organized after an agreed period of time. The Aerodrome Operator is to maintain training and testing records for all ADP holders.

3.2.1 Types of Airside Vehicle Permit

3.2.1.1 The Airside Roads and Aprons

(a) The airside roads and apron(s) permit is the initial permit awarded to a new driver who has successfully completed a training course and assessment. The permit allows a driver to operate on airside roads and aprons, which may include controlled and uncontrolled taxiway crossings. The awarding of the permit allows the holder to progress their training to operate on the manoeuvring area, excluding runways.

(b) For this category of permit, an airside driver's permit labelled **"Driver Airside Roads / Apron"** should be issued to the driver, thus meaning that the holder is entitled to drive a vehicle on the **apron(s) only**. For practical reasons and ease of control, the letters **"D/ARA"** could appear on the driver's aerodrome pass.

3.2.1.2 The Manoeuvring Area excluding Runways

(a) The manoeuvring area (excluding runways) permit allows a driver to operate on the manoeuvring area but excludes operation on the runway. It is a pre-requisite for the candidate to successfully complete a radiotelephony course, prior to obtaining this permit. The holder of the permit should maintain competence in RTF throughout the validity period of the permit. RTF competence checks should be completed by persons approved by the aerodrome operator. The requirements relating to permits for the manoeuvring areas are directly aimed at reducing runway incursions.

(b) For this category of permit, an airside driver's permit labelled **"Driver Manoeuvring Area"** will be issued to the driver, thus meaning that the holder is entitled to drive a vehicle on the aerodromes **manoeuvring area only excluding runways**. For practical reasons and ease of control, the letters **"D/MA"** could appear on the driver's aerodrome pass.

3.2.1.3 The Manoeuvring Area including Runways

(a) The manoeuvring area (including runways) permit allows a driver to operate on runway(s) once the RTF training course is successfully completed.

(b) For this category of permit, an airside driver's permit labelled **"Driver Manoeuvring Area / Runway"** will be issued to the driver, thus meaning that the holder is entitled to drive a vehicle on the aerodromes **manoeuvring area and runway only**. For practical reasons and ease of control, the letters **"D/MAR"** could appear on the driver's aerodrome pass.

3.2.2 Medical requirements

(a) An ADP procedure should include the requirements for a driver to disclose to their employer any change to their State's driving licence.

(b) The aerodrome operator should require that medical checks and/or fitness assessments are carried out as part of the ADP application process.

3.2.3 Managing driving standards

(a) Aerodrome Operators should establish and implement rules and procedures to manage driving behavior of personnel involved in aerodrome operations at the aerodrome. These actions should include recording of offences (e.g. speeding, bad parking, driving without lights, unsecured load etc.) and implementation and enforcement of disciplinary measures as appropriate and/or the revocation of a driver's ADP.

Note - *Consequences for poor driving behavior are not contradictory to an open reporting culture.*

Note - *An airside driver permit does not confer a general right-of-entry to airside areas which may require a security access authorization.*

(b) The ADP procedure should include a period of validity for each category of permit and state conditions for their renewal.

3.2.4 Work Equipment

(a) Airside vehicles should be operated by drivers holding a valid State driving licence (cars, vans, etc.). However, many specialist vehicles are used airside, for example with aircraft and baggage tugs, specialist aircraft loading equipment and ground service equipment.

(b) The State's work equipment regulations, where applicable, may apply to all work equipment, including vehicles, tugs, luggage moving equipment, pushback vehicles, ground service equipment and most other moveable plant equipment found at an aerodrome. The ADP procedure may include recognition of a "Certificate of Competence" for specialist vehicles, instead of the State's driving licence.

Note - *"Certificates of Competence" may form part of the ADP procedure established by aerodrome operators for driving specialist vehicles where a State licence is not appropriate, e.g. aircraft tug.*

3.2.5 Vehicle Requirements

The aerodrome operator should develop, maintain and ensure that specific requirements for the condition and maintenance of vehicles operating airside are in place. The requirements should include:

(i) specifications for vehicles to be marked and, if they are used at night or in conditions of low visibility, lighted with obstruction lights;

(ii) specifications for regular vehicle safety inspections; and

(iii) specifications for the rectification of faults.

(a) No person shall operate a vehicle/equipment in the airside area of an airport unless:
   (i) That person is in possession of an ADL, or
   (ii) That person is escorted or accompanied by a person who is in possession of an ADL, or
   (iii) That person is authorized by the airport manager to operate a vehicle/equipment in that area.

(b) An ADL is issued by the Airport Manager on the basis of satisfactory outcomes of the applicant's knowledge of both the State Standards and aerodrome operators SOPs on

airport traffic directives for the airport named on the ADL, and may be based on a test, practical knowledge and medical fitness certificate.

(c) Application for an ADL must be made to the Airport Manager of the aerodrome by the applicant in writing and must include the address of the applicant and reasons for the application.

3.3 Requirements for Issuance of Permits

3.3.1 Airside Roads and Aprons (D/ARA) Permit

(a) It is a requirement for the issue of a **D/ARA Permit** that the applicant is:

(i) employed with an organization authorized to operate at the aerodrome;

(ii) the holder of a current full State, or foreign equivalent driving licence which permits the holder to drive a motor vehicle on public roads within the State;

(iii) in possession of an operational requirement (ADP) to drive a vehicle on the airside;

(iv) medically fit to drive to State-equivalent standards;

(v) able to demonstrate the required driving competence; and

(vi) able to demonstrate adequate language proficiency in the language normally used for airside operations at the aerodrome.

(b) There may be additional requirements set out by the aerodrome operator for the issuance of an ADP

3.3.1.1 Revalidation Requirements for a D/ARA Permit

The airside roads and aprons permit may be valid for up to five years and falls due for revalidation at the anniversary of the date of issue. In order to be revalidated, the competence of the permit holder must be demonstrated, and employers must check that the driver still holds the necessary current State, or foreign equivalent driving licence.

3.3.2 Manoeuvring Area Licence

(a) Excluding runway – D/MA

(i) Same requirements as per a D/ARA licence, and demonstration of competence in RTF, and

(ii) Require access to the manoeuvring area.

(b) Including runway – D/MAR

(i) Same requirements as section 3.3.2(a); and

(ii) Require access to runway.

3.3.2.1 Revalidation Requirements For A D/MA And D/MAR Licence

Aerodrome operators shall ensure that drivers still hold the correct categories of Permit before renewal. This check should be carried out annually.

(a) Excluding runway:

(i) Duration: up to five years; and

(ii) Revalidation: competence should be maintained. This may be confirmed/assesses by a maintenance of competence scheme or refresher training, but in either case, must include appropriate assessments.

(b) Including runway:

(i) Duration: up to three years; and

(ii) Revalidation: competence should be maintained. This may be confirmed/assesses by a maintenance of competence scheme or refresher training, but in either case, must include appropriate assessments.

3.4 Other requirements

(a) Records of training and assessments for the different categories of ADP should be retained. Third-party trainers/assessors must ensure that records are available for audit by the aerodrome operator.

(b) 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:

(i) cessation of the purpose for which the permit was issued;

(ii) change of the holder's employer;

(iii) loss of State driving licence for offences under the State's road traffic regulations;

(iv) any defacing, alteration, or misuse of a permit;

(v) proof of disregard of aerodrome traffic rules; and

(vi) any use of a permit in relation to a customs or immigration offence

(c) On the expiry of the ADP, the holder shall forthwith return both documents to the Accountable Manager, as soon as possible.

4 RESPONSIBILITIES AND DUTIES

(a) Each employer must ensure that their employees are qualified and possess the relevant authorization to operate vehicles and equipment which they are required to operate in the course of performing their duties on the airside.

(b) It is the responsibility of the employer to ensure that the driver is proficient in the language normally used for airside operations at the aerodrome in order to complete the required training, competence assessments and designated activities on the aerodrome. Such proficiency may include:

a) the ability to complete the requisite driver training/familiarization;
b) the ability to undertake successfully the operational communication requirements that may be required of airside drivers, e.g. reporting an accident or incident on the airside;
c) the ability to read and understand relevant local safety information, e.g. information and mandatory aerodrome signs; and
d) the ability to understand verbal instructions or notifications given by the police or aerodrome operations staff.

(c) Before operating a vehicle/equipment on the airside of an airport, the operator must become familiar with the relevant regulatory requirements and operating procedures and obtain authorisation from the Airport Manager.

(d) The vehicle/equipment operator must determine that his vehicle/equipment is well maintained, operating satisfactorily and has the required safety gears and markings (See Section 8). All operators shall notify their immediate supervisor of any equipment malfunction.

(e) Regular inspection and maintenance of vehicles and equipment intended to be used on the airside is therefore important to reduce the risk of incidents and accidents caused by defective vehicles and equipment.

(f) All personnel with an airport restricted area pass, ADL must wear them on outer clothing, ensuring they are always visible when in the restricted areas.

(g) A person who is not in possession of a valid authorisation must not enter or remain in any area of an airport that is designated by a sign as a restricted area, unless authorised by the Airport Manager.

(h) Persons not displaying the passes should be considered unauthorised and should be immediately escorted out of the restricted area and reported immediately to the Airport Manager or representative. All designated airside access gates must be kept locked to prevent unauthorised personnel or vehicles assess to the airside.

(i) It is the responsibility of the employer to immediately notify the aerodrome operator of any accidents/incidents caused by vehicles/equipment operating on the airside area.

5 AIRSIDE OPERATING PROCEDURES

5.1 Airside Vehicle Rules

(a) Aircraft always have the right-of-way. A vehicle operator therefore, shall yield to any aircraft. Before entering an airport movement area, the vehicle operator shall seek the

necessary clearances from ATC and always visually check and ensure that aircraft are not approaching or departing.

(b) Vehicles and pedestrians are permitted on the airport movement area only with possession of the relevant authorisation from the Accountable Manager.

(c) No person shall operate a vehicle in an airside area unless the vehicle displays a State registration plate or a registration plate or other means of identification issued or authorised by the Accountable Manager.

(d) No person shall operate a vehicle/equipment in an airside area while under a prohibition from operating the vehicle/equipment, imposed by a court of law or judge.

(e) No person shall operate a vehicle/equipment in an airside area in a manner that, having regard to all the circumstances, including the amount of traffic, is dangerous to aircraft, other vehicles/equipment or persons.

(f) Headlights must be turned on whenever a vehicle is operating in the manoeuvring area.

(g) All vehicles/equipment operating on the aerodromes movement areas, shall have the required safety gears and display markings as described in Section 7.

(h) Every operator of a vehicle/equipment in an airside area shall yield the right-of-way to an emergency vehicle with warning devices operating.

(i) Every operator of a vehicle in an airside other than an emergency vehicle with warning devices operating, shall yield the right-of-way to:

(i) Vehicles and equipment engaged in maintenance activities; and

(ii) Vehicles towing aircraft.

(j) Every operator of a vehicle involved in an accident in the airside area of an airport shall report the accident to the Accountable Manager.

(k) Smoking is not permitted on apron, movement and manoeuvring areas or other prohibited areas in the airside area. This prohibition applies to persons both inside and outside vehicles and equipment.

(l) No person shall park an aircraft fuel servicing vehicle within 15m of any airport terminal building, aircraft cargo building, aircraft hangar or any other airport facility designed to house the public.

(m) No person shall park a vehicle in any area designated by a sign as an area in which parking is prohibited.

(n) No person shall, without permission of the Accountable Manager, park a vehicle in any area of an airport not intended for the use of vehicles. No person shall park in any area of an airport designated by a sign as a loading area.

(o) Wherever possible and practical, vehicles and equipment should be backed into parking areas. This is particularly important around terminal buildings, loading bridge areas, and other heavy traffic areas.

(p) No person shall:

(i) Throw, deposit or knowingly leave on a road, apron or manoeuvring area at an airport any glass, nails, tacks, scraps of metal, chemical substance or other materials that may cause damage to aircraft, vehicle or equipment; or

(ii) Throw, deposit or knowingly leave any form of trash or garbage (FOD) at an airport except in a container provided for that purpose.

(q) Foreign materials such as mud and gravel can seriously damage aircraft engines. Vehicle/equipment operators shall therefore ensure that surfaces of movement / manoeuvring areas are kept clean, by checking that wheels and tires are clean before they enter these areas. If foreign material is deposited on these surfaces, operators shall notify the Airport Manager to arrange for immediate removal.

(r) Vehicle operators shall remain a safe distance from areas affected by jet blast or prop wash of manoeuvring aircraft, and not pass in front of or closely behind aircraft with engines running unless the wheels of the aircraft are chocked or by the marshallers wave permission.

(s) All vehicles and equipment operating on airport manoeuvring areas, shall have a functioning two-way radio operated by a qualified person or be escorted by a vehicle so equipped and manned. Each operator shall ensure that the two-way radio is working before the vehicle enters the manoeuvring area.

(t) Vehicles/equipment can seriously interfere with electronic equipment. No vehicle shall proceed closer than 150m (500ft.) from an Instrument Landing System (ILS) transmitter building, except with permission of the Control Tower.

(u) Vehicle operators shall use service and perimeter roads to reach field locations when these roads are available and time permits.

(v) No person shall operate a vehicle on a road at an aerodrome at a rate of speed that exceeds the speed limit posted for that road or, where no speed limit is posted, 50 km/h (30 mph).

(w) Operators and vehicles/equipment shall remain clear of the scene of an accident and aircraft carrying distinguished visitors unless authorised by the Accountable Manager.

5.2 Operation of Vehicles on Aprons and other Uncontrolled Movement Areas

(a) The airport operator is responsible for regulating vehicular traffic movement on the apron in order to reduce to an acceptable minimum, the risk of aircraft/vehicle, vehicle/vehicle and vehicle/equipment conflict, to promote the safety of pedestrians and to achieve efficient traffic flows.

(b) Every operator of a vehicle on an apron shall acknowledge and obey any instructions received from ATC or an apron management unit as applicable.

(c) All vehicles and equipment used on the apron area shall display an airside or apron pass and the person responsible for a given vehicle shall ensure that all drivers are properly briefed. They must be operated by persons authorised by the Accountable Manager or be escorted by a vehicle operated by a person so qualified. The operator must always carry the ADP while on the apron. An AVP should not be issued unless the vehicle operator can produce a certificate (or other means) showing that the vehicle is in good working condition.

(d) The person responsible for the vehicle shall bring the following points to the attention of the driver:

(i) Speed limits - in specific or general terms

(ii) Authorised routes

(iii) Rules relating to rights of way of aircraft and vehicles; and

(iv) Authorised parking areas.

(e) A driver with a D/ARA Permit will limit the holder to operations of a vehicle/equipment on the airport apron. This limitation recognises that the operator will not require access to airside areas other than the apron and that the vehicle/equipment used in the normal performance of his/her duties will not normally be equipped with safety and radio equipment, required for safe vehicle operations on airport manoeuvring area.

(f) All self-propelled vehicle must be equipped with head lamps, tail lamps, parking lamps and, if licensed for off airport use, a license plate lamp. Vehicles with a cab must also be equipped with a rotating or flashing beacon lamp mounted on top of the vehicle. Vehicles without a cab must be capable of operating the parking and tail lamps so that they flash on and off in unison.

(g) Whenever a self-propelled vehicle is moving from one place to another on the airport apron, those lamps equipped with a flasher (beacon lamp only for vehicles with a cab) must be in operation. The purpose of this procedure is to indicate to taxing aircraft that the vehicle is being operated in the active apron area. These lamps should not be left flashing when the vehicle is stationary within the perimeter of a parked aircraft for the purpose of providing service to that aircraft. Improper use of flashing lamps is potentially distracting to taxiing aircraft and downgrades their value as a warning indicator that the vehicle is in motion.

(h) Headlamps and non-flashing tail and parking lamps must be operated during hours of darkness and reduced visibility and may be left on as required while engaged in service to parked aircraft. All vehicle lamps should be turned off when the vehicle is parked in approved parking locations.

(i) All non-self-propelled equipment is required to carry a strip of yellow reflective material along the full length of the equipment and diagonal yellow and black panels on the front and rear lower corners.

(j) The presence of unlit equipment on airport aprons can be a significant hazard to taxiing aircraft. For this reason, it is important that the reflective material on all equipment should be kept clean and in good condition at all times.

(k) Sub-section 8.2 of this AC illustrates the location and colour of apron vehicle safety marking required at aerodromes in Sierra Leone (identifiers for airport vehicles).

(l) The vehicle operator must know the apron layout, including the location of operational stands, vehicle corridors, and aircraft taxi lanes.

(m) Vehicle operators must understand the pavement marking system as follows:

(i) White lines pertaining to vehicle movement and control;

(1) Vehicle corridors used on busy aprons are marked by two solid white lines 7.5m (25ft.) apart, centred by a single broken line.

(2) Security lines are solid white lines 150mm (6in.) wide, used to denote the parking area for ground service vehicles and equipment.

(ii) Yellow lines pertaining to aircraft movement and control.

(1) Aircraft movement guidelines, solid yellow lines 150mm (6in.) wide, are continuations to taxiway centrelines that serve as a centre-of-aircraft guideline to aid aircraft traversing the apron. (These lines may not be required on some aprons).

(2) Aircraft lead-in lines is marked by 150mm (6in.) solid yellow line The spacing and angle vary, depending on the "design aircraft" and local operating procedures.

(n) At airports with designated vehicle corridors, all vehicles (with the exception of vehicles noted below) must operate within these corridors when moving about the apron, e.g., to or from operational stands, between operational stands, across aircraft taxi lanes, etc.

(o) Only these vehicles may operate outside the corridors:

(i) Vehicles such as maintenance and construction vehicles, that require access to other areas of the apron when performing their duties; and

(ii) Emergency vehicles, with warning devices operating, when responding to an emergency.

(p) All vehicles and equipment shall yield the right-of-way to airport maintenance equipment and airport emergency service vehicles performing their duties.

(q) No person shall operate a vehicle within 50m (50ft.) of an aircraft being fuelled or defueled except for the purpose of serving that aircraft or as required when operating within a designated vehicle corridor.

(r) Vehicles already in designated vehicle corridors have right-of-way over all other vehicles attempting to enter. Where the thoroughfares intersect, the vehicle on the right has the right-of-way. You must use the right hand lane of a designated vehicle corridor and should not pass other moving vehicles.

(s) Vehicles corridors are not "guaranteed safe routes". Taxiing or parked aircraft may at times encroach on vehicle corridors and vehicle operators must avoid such aircraft.

(t) If a vehicle lane is obscured for any reason, such as faded paint, operators should conform to the designated roadway as nearly as possible, and exercise caution.

(u) On aprons where vehicle corridors have not been designated, operators should use extra care. Avoid as much as possible, operating in aircraft taxi lanes and cross aircraft taxi lanes only at right angles.

(v) Areas within operational stands provide free movement for vehicles performing their duties.

(w) Every operator of a vehicle entering, or on an apron shall yield the right-of-way to an aircraft that is approaching and is close enough to constitute an immediate hazard, and refrain from proceeding until the operator can do so in safety.

(x) No operator of a vehicle entering, or on an apron shall approach or cross an aircraft movement guideline except:

(i) At a right angle to the aircraft movement guideline; or

(ii) Where a designated vehicle crossing point exist, at that crossing point.

(y) Unless otherwise authorised by the Accountable Manager, no person shall drive vehicles and equipment on an apron at a speed in excess of 25 km/h (15mph). Check the aerodrome operator's airport traffic directives for changes. Vehicle/equipment operators shall reduce speed and maintain a careful lookout when near aircraft and corners of buildings or other installations.

(z) Equipment and vehicles shall not be parked or left unattended on vehicular routes or aircraft movement areas without the permission of the Accountable Manager. Vehicles must be parked only in approved areas when not in immediate use.

(aa) Every person operating a vehicle on an apron shall yield the right-of-way to pedestrians being escorted between an aircraft and the terminal building.

(bb) Every operator of a vehicle shall yield the right-of-way to a pedestrian who is within a pedestrian cross-walk.

(cc) Pedestrians on an apron shall impede, interfere with or obstruct in any way the free of apron traffic except in the course of his job functions relating to the control of that traffic.

(dd) Adequate controls should be established to ensure that drivers have no difficulty in complying with safety measures. Such controls may be setting up manned crossing points, establishing control by traffic lights, warning signs or pavement markings. All visual aids should conform to the standards in the SLCAR part 14A.

5.3 Operation of Vehicles on Manoeuvring Areas - Controlled Airports

(a) The airport operator is responsible for ensuring that all possible steps are taken to coordinate with ATC in discharging its responsibility for control of vehicles on the manoeuvring area. In particular, action should be taken to see that:

(i) A system of vehicle permits is established and only authorized vehicles are permitted on the manoeuvring area;

(ii) Radiotelephony (R/T) equipment is provided on all such vehicles and is maintained in fully serviceable conditions;

(iii) Drivers are fully conversant with:

(1) Proper R/T operating procedures

(2) The terms and phrases used in ATC including the ICAO spelling alphabet

(3) The meaning of visual signals on the airport, with particular emphasis on those intended to prevent inadvertent infringement of active runways;

(4) The geography of the aerodrome;

(5) Aerodrome signs, markings and lights;

(6) The "rules of the road" relating to vehicles and aircraft; and

(7) The need to avoid infringement of the restricted areas associated with radio navigation facilities.

(8) Hazards which may be encountered while driving on the movement area;

(9) Emergency procedures, eg. Vehicle accident or breakdown

(10) Rights of way

(iv) an airside plan should displayed in the cab of all vehicles, indicating the boundaries of the manoeuvring areas and the runway crossing points.

(v) Unless specifically exempted, vehicles shall be fitted with appropriate obstacle markings and lighting as specified in the SLCAR part 14A, chapter 6.

(b) The airport operator is responsible for the supply, fitting and maintenance of signs, lights and markings needed for the control of traffic on the manoeuvring area.

(c) Before operating a vehicle on the manoeuvring area the operator must have a valid ADP.

(d) Whenever non-radio-equipped vehicles and equipment are operating in groups or fleets with a radio-equipped vehicle, they shall be under the control of a qualified employee responsible for requesting and acknowledging all ground control instructions. Recommended radio procedures are outlined in Section 5, Radiotelephone Procedures.

(e) Air Traffic control ground controller (as applicable), is responsible for the control of the movement of vehicles on the manoeuvring area. To maintain such control, vehicles operating on the movement area should be fitted with R/T on the appropriate channel or closely escorted by a R/T equipped vehicle.

(f) The control tower directs all traffic on an airport manoeuvring area, unless otherwise stated in the Control Tower agreement and drivers and pedestrians must always obey its instructions.

(g) Vehicle operators must always report to the ATC or ground controller before entering and immediately after leaving the manoeuvring area.

(h) Before proceeding onto manoeuvring areas the vehicle operator shall contact the ground controller for permission to proceed to a specific location by a specified route. The vehicle operator shall acknowledge all instructions from the ground controller as understood, or request that the instructions be repeated if not understood. The operator shall proceed, only along the specified route to the specified location unless he receives alternate instructions.

(i) Aircraft being towed or vehicle towing an aircraft must always be in radio contact with ground control before entering and while within the manoeuvring area.

(j) Requests for permission to proceed into the manoeuvring area shall include:

(i) The vehicle identification;

(ii) Its current location;

(iii) The intended activity/work to be performed while in the manoeuvring area and/or specific destination and intended route (otherwise, the ground controller will normally specify the route to be followed) and;

(iv) The time and duration the vehicle and/or the operator(s) will be in the manoeuvring area.

(k) Whenever an operator is instructed to hold short of a runway, or is awaiting permission to cross or to proceed onto a runway, the operator shall hold the vehicle 45m (150ft.) from the nearest edge of the runway, or behind the solid yellow lines on taxiway so marked. See Drawing at Appendix 1 of this AC.

(l) This procedure also applies to the area extending from each end of the runway to permit unobstructed aircraft approach to the runway for landing and to gain altitude after take-off. Where the land falls away sharply off the end of a runway, this procedure may not apply.

Note - Taxiways are marked with a solid yellow line, (centre line) or two solid yellow lines, (edge lines).

(m) When instructed to leave the runway, vehicle operators shall acknowledge instructions and proceed to a taxi holding position or to a safe position off to the side of the runway at least 45m (150ft.) from the nearest edge of the runway. Once in a holding position, vehicle operators shall inform the ground controller that they are off the runway and give their exact position.

Note - Vehicles and equipment sometimes may have to operate within 45m (150ft.) of the runway. When this happens, the operator must inform the ground controller of the approximate distance of the vehicle or equipment from the nearest runway edge.

(n) If vehicle/equipment breaks down, the operator shall immediately notify ground control of the location and difficulty and request for assistance.

(o) While on the manoeuvring areas, vehicle operators shall always monitor the appropriate ground control frequency and acknowledge and comply with any instructions from the ground control.

(p) If the radio fails while the vehicle is in the manoeuvring areas, turn the vehicle to face the control tower and flash the headlights off and on. The ground controller will respond using the following light signals:

(i) Flashing green light	-	proceed;
(ii) Steady red light	-	stop, hold your position;
(iii) Flashing red light	-	vacate the runway;
(iv) Flashing white light	-	return to starting point on the airport.

Note - In the course of moving from the manoeuvring area, the vehicle operator must hold short of each intervening runway and receive permission to proceed (flashing green light signal) before crossing the runway.

(q) If R/T radio and vehicle/equipment both fail while in the manoeuvring area, light and place red, road flares approximately 30m (100ft.) ahead of and behind the vehicle/equipment in a line parallel to the nearest runway or taxiway as a warning to aircraft. If the flares when placed are not likely to be seen from the control tower due to intervening constructions, light and place more flares near the vehicle where they may be clearly visible from the control tower.

(r) The vehicle operator must always stay with the vehicle. In adverse weather conditions normally associated with combined vehicle/equipment and radio failure, the vehicle may provide your best protection until help arrives.

(s) The blinking on and off, of runway lights is a warning signal for all vehicles to leave the runway immediately.

5.3.1 Combined Radio/Vehicle Failure

(a) If R/T radio and vehicle/equipment both fail while in the manoeuvring area, light and place red road flares approximately 30m (100ft.) ahead of and behind the vehicle/equipment parallel to the runway or taxiway as a warning to aircraft. If you have reason to believe your flares will be noticed and assistance provided, stay with the vehicle. In adverse weather conditions normally associated with combined vehicle/equipment and radio failure, the vehicle may provide your best protection.

(b) When instructed to hold short of a runway, or while awaiting permission to cross or to proceed on to a runway, vehicle operators shall remain at least 45m (150ft.) from the nearest edge of the runway or behind the solid yellow line on taxiways marked accordingly.

(c) Same procedure also applies to the area extending from each end of the runway to permit unobstructed aircraft approach to the runway for landing and gain altitude after take-off. Where the land falls away sharply off the end of a runway, this procedure may not apply.

(d) When instructed to leave the runway, vehicle operators shall acknowledge the instruction and proceed to a taxi holding position or to a safe position off to the side of the runway at least 45m (150ft.) from the nearest edge of the runway. Once in the holding position, immediately inform the ATC that you are off the runway and state your exact position.

(e) If vehicle/equipment breaks down, the operator shall immediately notify ground control of the location and difficulty of the disabled vehicle/equipment and request for assistance.

(f) If the vehicle/equipment radio fails while in the manoeuvring area, the vehicle operator must leave the manoeuvring area immediately and, as soon as possible, inform the ATC by telephone or other appropriate means that the vehicle(s) is no longer in the manoeuvring area.

(g) Vehicle operators shall immediately leave the runway when:

(i) An aircraft makes a low pass, or

(ii) The runway lights are blinked on and off.

5.4 Airside Pavement Markings, Lights and Signs

5.4.1 General

(a) Both vehicle and aircraft movement on the ground is guided by visual aids (pavement markings, lights and signs) on the airside which is different from those used on roads and highways.

(b) This section describes and illustrates the markings, lights and signs most commonly used at airports and which an airside vehicle operator is required to know. Other traffic control devices, in addition to the following ones, may be used at some airports and will be explained as required, in the Local Directives.

5.4.2 Pavement Markings

5.4.2.1 Aircraft Movement Guide Lines

A single yellow line extending from the runway along a taxiway to, and in some cases, along the apron. The nose wheel of the aircraft is centred on this line to ensure that the main wheels are on pavement and that the wings will not contact known obstructions (buildings, light, etc.). On aprons, vehicles may only cross aircraft movement guidelines at right angles. See Drawing in Appendix 2

5.4.2.2 Aircraft Lead-in Lines

A yellow line between an aircraft guide line and a gate or parking position. The aircraft nose wheel is centred on these lines to guide the aircraft into the parking position without hitting other parked aircraft or obstructions. See Drawing in Appendix 3

5.4.2.3 Hold Lines

Two solid and two broken yellow lines across the width of a taxiway with the broken line(s) closest to the runway, vehicles and aircraft must stop behind the solid line(s) and not proceed unless and until permitted to do so by the air traffic controller. See Drawing in Appendix 3

5.4.2.4 Runway Headings (Designation)

Each end of a runway is numbered in tens of degrees corresponding to the direction of the runway in relation to a magnetic compass. The compass of an aircraft will read 270° when approaching the end of a runway marked with the number 27. The numbers are painted white and face towards the end of the runway. When two parallel runways are provided at an airport they will be identified with the compass heading number plus the letter **L** for **left** and **R** for **right** painted in white below the number. Vehicle operators should know the various runway headings (numbers) and their location on the airport. These will be illustrated in the site plan. See Drawing Appendix 4

5.4.2.5 Runway Centre Line

The centre of a runway may be marked with a broken white line made up of several lines close together with dimensions as specified in SLCAR Part 14A

5.4.2.6 Threshold Markings

The beginning of the usable part of a runway for aircraft landing may be marked with a series of solid white lines parallel to the length of the runway. The lines are in groups. The number of lines in group and the number of groups of lines varies according to the width of the runway. See Drawing Appendix 4

5.4.2.7 Displaced Threshold Markings

If for any reason, the threshold is set-in from the end of the runway, white lines painted close together to form arrows, pointed to a bar across the runway, indicate the beginning of the usable runway for aircraft. See Drawing Appendix 4

5.4.3 Lights

5.4.3.1 Aerodrome Beacon

The aerodrome beacon is a large rotating white light mounted at a location such as on top of the control tower. It is provided for visual identification of the airport by

aircraft but is also a good reference point for vehicles on the airfield. The location of the aerodrome beacon will be illustrated on the airport site plan.

5.4.3.2 General lighting system

(a) Different coloured lights are used to indicate the edge of various aircraft movement surfaces. Blue lights are used along the edge of aprons and taxiways. White lights are used along the edge of runways.

(b) Two sided lights, half red and half green, are used at the end of runways with the red half facing the runway and the green half pointing towards the approach to the runway.

(c) Every vehicle operator must know the meaning of these lights to avoid entering areas where they are not permitted to be and as a guide to vehicle movement when within the manoeuvring areas (runways and taxiways) of the airport.

Note: Edge Lighting for Aircraft Movement Surfaces See Drawing Appendix 5

5.4.4 Signs

5.4.4.1 Airside Service Roads

Signs used on aprons and airside service roads are generally the same signs as those used on roads throughout the country. All vehicle operators on airside service roads are required to comply with these signs.

5.4.4.2 Manoeuvring Area Signs

(a) Signs used on the manoeuvring area (runways and taxiways) are designed and intended for the use and guidance of the aircraft. They are also of value to vehicle operators to identify area they should not enter or as guides to vehicle operation while in the manoeuvring area.

(b) These signs are normally mounted on either the left, right or both sides of the runway or taxiway according to requirements and are both located 15 m to 20 m (50’ to 65’) from the edge of the manoeuvring surface.

5.4.4.3 Mandatory Instruction Signs

(a) These are signs with white letter(s)/numbers on a red background. These include:

(b) Runway Designator signs; when used at an intersecting runway must be properly oriented with respect to the viewing position of the sign, except that a runway designation sign installed in the vicinity of a runway extremity may show the runway designation of the concerned runway extremity only. See Drawing Appendix 7

5.4.4.4 Directional, Information and Location signs

(a) When used in conjunction with a holding position sign may be yellow with black letter(s)/numbers or black with yellow letters/numbers, these are define below;

(i) Directional signs normally have an arrow indicating the direction of travel to exits, aprons, terminal buildings or other facilities named on the sign. See Drawing Appendix 8

(ii) Information signs provide information of interest primarily to aircraft but which may also be helpful to vehicle operators as reference point.

(iii)Location signs like street signs identify the names of taxiways are identified by letter. Remember that taxiways are referred to when speaking by using the phonetic

alphabet so that taxiway "**A**" is spoken of as "**taxiway Alpha**"; taxiway "**B**" is "**taxiway Bravo**", etc. and that a vehicle may not enter a taxiway without prior approval of ground control or Accountable Manager. See Drawing Appendix 9

6 RADIOTELEPHONY

The movement of vehicles on the manoeuvring area is ordinarily subject to authorization by air traffic services (ATS). Depending on the complexity of the aerodrome, ATS may operate a number of radio frequencies. Typically in these cases, the aerodrome ground controller will be responsible for all vehicles operating on the taxiways, and the air controller will be responsible for all vehicles wishing to enter or cross the runway(s). It is essential that all vehicles required to be under positive control on the manoeuvring area are equipped with the appropriate radio communication devices tuned to the appropriate frequencies.

All drivers of vehicles operating on the manoeuvring area shall have an appropriate level of competence with respect to the use of RTF phraseology.

The aerodrome operator should establish a system of allocating RTF call signs to be used by vehicles, so that the potential for confusion between vehicles and aircraft is minimized. This is particularly important at aerodromes where the RTF frequency used by vehicles is the same as that used by aircraft, or where the RTF frequency used by vehicles is re-broadcast on the RTF frequency used by aircraft.

The ANSP shall be made aware of all radio call signs used at the aerodrome, whether or not they are used for communication with ATS.

6.1 Radiotelephone Procedures

6.1.1 Radiotelephone and Voice Techniques

(a) Hold background-noise-cancelling microphones as close to the lips as possible, Hold most other microphones approximately 6.5cm (2-3cm.) in front of the mouth

(b) Listen out first to ensure that you will not interrupt another transmission, then: depress the “press to talk” (PTT) switch before beginning to speak and keep it depressed for the entire transmission. Avoid clicking on and off. When the transmission is finished, release the PTT switch immediately.

(c) Speak plainly and distinctly to prevent running consecutive words together. Do not shout, accentuate syllables artificially, or speak too rapidly.

(d) Use standard procedure words and phrases and standard airport terminology.

(e) Due to obstruction (i.e. metal buildings, hills etc.) there may be some areas on the airport where signals are not received. These areas are referred to as blind spots and should be indicated on the airport site plan in the Local Airport Traffic Directives.

6.1.2 Always:

(a) Obtain permission before entering within 45m of the side of a runway, taxiway or approach to the end of the runway and including any portion of an apron which is identified with a sign and/or pavement marking as being part of the manoeuvring area (i.e. CAT II Hold).

(b) Monitor the radio at all times when in the manoeuvring area. No vehicle operator may leave a vehicle radio unattended while in the manoeuvring area.

(c) Advice ground control when your vehicle has exited the manoeuvring area.

(d) Report completion of an activity only after it has been completed i.e. report being off of a runway only after your vehicle is at least 45m (150ft.) away from the runway edge not while you are still in the process of leaving.

(e) Ensure that you fully understand all instructions given by a controller before entering within 45m of an aircraft manoeuvring area or crossing an active runway.

(f) In addition to any permission given by radio to proceed into or within the manoeuvring area, check visually to ensure that you will not interfere with any aircraft on, or approaching the path you have been given permission to follow.

(g) Always use the correct radio call sign for the vehicle you are operating in every radio transmission.

6.2 ICAO Phonetic Alphabet and Pronunciation of Numbers

(a) Always use the ICAO Phonetic alphabet when phonetics is required for clarity in radiotelephone communications as shown in the table below;

Letter	Word	Spoken
A	ALPHA	Al fah
B	BRAVO	BRAH VOH
C	CHARLIE	CHAR lee
D	DELTA	DELL tah
E	ECHO	ECK oh
F	FOXTROT	FOKS trot
G	GOLF	GOLF
H	HOTEL	Hoh TEL
I	INDIA	IN dee ah
J	JULIET	JEW lee ETT
K	KILO	KEY loh
L	LIMA	LEE mah
M	MIKE	MIKE
N	NOVEMBER	No VEM ber
O	OSCAR	OSS car
P	PAPA	Pa PAH
Q	QUEBEC	keh BECk
R	ROMEO	ROW me oh
S	SIERRA	see AIR rah
T	TANGO	TANG go
U	UNIFROM	YOU nee form
V	VICTOR	VIK tah
W	WHISKEY	WISS key
X	X-RAY	ECKS ray

Y	YANKEE	YANG key
Z	ZULU	ZOO loo

Pronounce numbers as:

0	ZE-RO
1	WUN
2	TOO
3	TREE
4	FOW-er
5	FIFE
6	SIX
7	SEV-en
8	AIT
9	NIN-er

Notes - Stress the syllable printed in CAPITAL letters. For example, give the two syllables in ZE-RO equal emphasis, but give the first syllable for FOW-er primary emphasis.

(b) Transmit all numbers, except whole thousands, by pronouncing each digit separately. Transmit whole thousands by pronouncing each digit in the number of thousands followed by the word "thousand".

(c) Numbers with a decimal point shall be spoken as:

118.1 - ONE ONE EIGHT DECIMAL ONE

465.2125 - FOUR SIX FIVE DECIMAL TWO ONE TWO FIVE

6.3 Standard Procedures and Words

(a) While it is not practical to lay down a precise phraseology for all radiotelephone procedures, the following words and phrases should be used where applicable. Do not use words and phrases such as "OK", "REPEAT", "HOW IS THAT", or slang expressions.

Words or Phrases	**Meaning**
ACKNOWLEDGE	Let me know that you have received and understood this message.
AFFIRMATIVE	Yes or permission granted.
CONFIRM	My version is … is that correct?

CORRECTION	An error has been made in this transmission (or message indicated). My correct version is…
HOW DO YOU READ?	Can you hear and understand me?
I SAY AGAIN	I will now repeat my last word (sentence) for clarification.
NEGATIVE	No, or permission not granted, or THAT is not correct, or I do not agree.
OVER	My transmission is ended and I expect a response from you. (Normally used only under poor communication conditions).
OUT	This conversation is ended and no response is expected. (Normally used only under poor communication conditions)
READ BACK	Repeat all, or the specified part, of this message back to me exactly as received.
ROGER	I have received all your last transmission.
SAY AGAIN	Repeat all, or the following part, of your last transmission. (**Do not use the word "Repeat**").
SPEAK LOWER	(Self-explanatory).
STANDBY	Wait and listen. I will call you again.
THAT IS CORRECT	(Self-explanatory).
VERIFY	Check text with originator and send correct version.
WHAT IS YOUR REQUEST/MESSAGE	(Self-explanatory)

6.4 Call-up Procedure

A "call-up" procedure used to establish two-way communication between an airport vehicle and ground control (ATC). Before making a "call-up", listen out to avoid cutting into a transmission from other users. Proceed only when the frequency is not being used by others.

(a) A call-up consists of:

(i) Call sign of the station called;

(ii) Identification of the station from which the call is made

On call-up, always use the call sign of the station called.

Examples:

(i) "**(Site Name) GROUND, STAFF FOUR SIX**".

(ii) "**(Site Name) RADIO, GRADER ONE FOUR TWO**"

(b) If you do not receive a response to your call-up, wait a reasonable time and call again.

6.5 Acknowledgements

An acknowledgement means a transmission has been received and understood. Never acknowledge until the transmission is fully understood.

Examples:

(a) "**(Site Name) RADIO, STAFF TWO NINER, ROGER**"

Or;

(b) "**(Site Name) RADIO. STAFF TWO NINER, SAY AGAIN**".

6.6 End of Transmission

To end any two-way communication, say the name of the vehicle call sign.

Example:

"**GRADER ONE FIVE SEVEN**".

6.7 Standard Phraseologies

Standard phraseology has been developed through years of practice to transmit instructions, and messages most efficiently and without misunderstanding, using the fewest words.

Examples:

(a) Authorisation Request and Response

Vehicle Operator: "**PRAIA GROUND, (vehicle identification)**".

Ground Controller: "**(vehicle identification), PRAIA GROUND**".

Vehicle Operator: "**PRAIA GROUND, (vehicle identification) ON OR AT (location), REQUEST PERMISSION TO PROCEED TO (location) VIA (route)**".

Ground Controller: "**(vehicle identification) PROCEED TO (location) VIA (route)**".

If the request for permission to proceed is denied, response from ground control will start with the word "**NEGATIVE**", for example:

Ground Controller: "**(vehicle identification) NEGATIVE! HOLD YOUR POSITION**".

(b) Authorisation Request when accompanying a Non-radio-equipped Vehicle

Vehicle Operator: "**SAL GROUND, (vehicle identification) PLUS ONE, REQUEST PERMISSION TO PROCEED TO …etc**."

Use the term "**plus one**" or "**plus two**" because it indicates to the ground controller, the number of vehicles in the group.

(c) Control Instructions

"**PROCEED ON TO RUNWAY 14-32 FOR INSPECTION, ADVICE WHEN OFF THE RUNWAY**".

"**HOLD SHORT RUNWAY 32**".

"**TRUCK EIGHT THREE, (site Name) GROUND, LEAVE RUNWAY (Number) AT (location) AND REPORT WHEN OFF THE RUNWAY**"

(d) Request to ATC and Reponses

Vehicle Operator: "**MAYO RADIO, STAFF TWO SEVEN**".

ATC: "**STAFF TWO SEVEN, MAYO RADIO**".

Vehicle Operator: "**MAYO RADIO, STAFF TWO SEVEN, REQUEST PERMISSION TO INSPECT THRESHOLD LIGHTS RUNWAY 15**".

ATC: "**STAFF TWO SEVEN, MAYO RADIO, NO REPORTED TRAFFIC, PROCEED TO THRESHOLD RUNWAY 15, ADVICE WHEN OFF THE RUNWAY**".

6.8 Radio Test Procedures

(a) On-the-air radio test when necessary, should be short (not more than 10 seconds). Do not interfere with other communications.

(b) The readability of signals may be reported in plain language, but most often is reported according to the following scale:

(i) Unreadable;

(ii) Readable now and then;

(iii) Readable but with difficulty

(iv) Readable

(v) Perfectly readable.

6.8.1 Examples of radio check communications:

Vehicle Operator: **"(Site Name) GROUND, STAFF TWO SEVEN, RADIO CHECK**".

Short response may be:

Ground Control: "**STAFF TWO SEVEN, (Site Name) GROUND, RADIO CHECKS**" or,

Ground Control: "**STAFF TWO SEVEN, (Site Name) GROUND, COMMENCE TEST COUNT**".

Vehicle Operator: "**TEST COUNT, ONE, TWO, THREE, TWO, ONE**",

Ground Control: "**READ YOU FIVE**".

6.9 General Radio Regulations

(a) Superfluous Communications

Restrict transmissions to authorised messages.

No unnecessary signals permitted.

(b) Profane Language

Profane and offensive language is strictly prohibited.

(c) False Distress Signals

Any person who knowingly transmits or causes to be transmitted, a false or fraudulent distress signal, call, or message, or who without lawful excuse, interferes with. or obstructs any radio-communication, is guilty of an offence.

(d) Secrecy of Communications

Persons operating radio equipment must preserve the secrecy of correspondence and are not to divulge contents of any communication except through authorised channels.

7 VEHICLE IDENTIFICATION

For radiotelephone communication, airport vehicles should given the following identifiers.

FUNCTION	GENERIC IDENTIFIER	NUMBER ALLOCATED
Crash Fire and Rescue Vehicles	Red	1-19
Staff vehicles (cars, station wagons, pick-ups, panels) include Accountable Manager, telecommunications, and air traffic services	Staff	20-29
Trucks (dump, etc.)	Truck	80-119
Tractors, Graders	Tractor/Grader	150-179
Passenger Transfer Vehicles (PTV) or buses	PTV	180-204
Police & Security	Security	205-219
Other vehicles & equipment not covered above	Type of Vehicle	220-239
Commercial, maintenance, & construction vehicles & mobile equipment rented or contracted to the Airport Operator	Type of Vehicle	240-299
Air carrier & service agency vehicles & equipment	Type of vehicle	300-499
National Defence Vehicles except Airport Emergency Services Vehicles	Type of Vehicle consistent with the above	500-599

Note - The identification assigned to a vehicle must be used in-full in every radio-telephone transmission from the vehicle.

8 RECOMMENDED SAFETY GEARS FOR VEHICLES

8.1 Safety Equipment requirements for Manoeuvring Areas

(a) All vehicles that will be operated or driven on the aircraft manoeuvring areas of airports must be equipped with a rotating warning light that must be turned on while a vehicle is on these areas. If equipped with headlights, these must also be turned on while in the manoeuvring area.

(b) The rotating warning lights shall be mounted on the vehicle in a location that will permit the beam to be seen by aircraft or surface traffic from any position within 360^{o}. The Light beam shall be set at an angle of 6^{o} above the horizontal and it shall rotate at a constant speed of 35RPM. The enclosing globe of the warning light shall be "**aviation yellow**" for all vehicle except airport emergency service vehicle, which are to be equipped with a **red warning light**.

(c) Vehicles operated alone (not in company of another vehicle or vehicles) in the manoeuvring area or other remote locations, of the airfield for an extended period of time are to carry a supply of red road safety flares sufficient to provide a continuous signal for a minimum of one hour. Although not required to be in the vehicle at all times, the carriage of these flares is strongly recommended. The vehicle owner is responsible to ensure provision of an adequate supply of flares based on operating requirements. The vehicle operator and his/her supervisor are responsible to ensure that flares are in the vehicle when required, based on prevailing operating conditions and work assignments.

8.2 Safety Equipment requirements for Apron Areas

All vehicles and equipment operating on aprons shall be equipped with the standard safety markings prescribed for apron service vehicles.

8.2.1 Exceptions

(a) Occasional use of vehicles/equipment on the apron area, not equipped with standard safety markings may be permitted while under escort of a vehicle so equipped.

(b) Aircraft fuelling vehicles which have an overall height in excess of 3.5m are permitted to mount 360^{o} beacon lamps on the vehicle cab provided that tail signal lamps are operated in conjunction with the 360^{o} beacon lamp to provide adequate indication to the rear of the vehicle.

(c) Police, emergency services and other vehicles equipped with safety markings, prescribed for operations on airport manoeuvring areas should be considered as equal to or exceed these standards. See Drawing Appendix 10.

9 COMPETENCE ASSESSMENT OF VEHICLE/EQUIPMENT OPERATORS

(a) The Aerodrome Operator should develop a system to assess the theoretical knowledge of the vehicle/equipment operator aimed at certifying the driver's knowledge of the aerodromes layout, approved airside operating procedures, radio communications etc.

(b) As such, the aerodrome operator shall develop and implement a theoretical and practical examination system. The aerodrome operator should establish a databank of questions which represents the essential knowledge the applicant should possess. These questions and related answers should be made available to the persons applying for an ADP.

(c) At least 50 questions of a suitable mix covering all relevant areas the applicant is expected to operate, should be chosen amongst the databank of questions. Since the questions and answers are available to the candidates for study purposes, a result of 100% is to be expected. The aerodrome operator shall provide other necessary supplemental information to the candidate that he/she will also be tested on, such as:

(i) Aerodrome diagrams showing; runways, taxiways aprons, movement areas, manoeuvring areas, vehicle roadways, location of the aerodrome fire station, critical areas of the aerodromes NAVAIDS and other areas, where vehicles are permitted to operate;

(ii) Eligibility requirement to be met by prospective airside drivers, and procedures for the issuance and control of ADP;

(iii) Airport security areas and airside driving enforcement procedures that the employee should be aware of, and the employees responsibility in these areas;

(iv) Procedures, contact person(s) and information (telephone number) to report ground vehicle operations;

(v) Other "local" airport traffic directives and sample questions associated.

9.1 Maintenance of Competence of Airside Vehicle Drivers

(a) The aerodrome operator should establish a system ensuring that drivers maintain competence in their driving rules, duties and procedures in those areas where they are permitted to drive. The aerodrome operator may delegate these functions to third-party driver trainers, vehicle operators or other parties, but in such circumstances, will need to conduct regular audits in order to assess the effectiveness of the training and assessment of drivers and the assessment and record-keeping of maintenance of competence of drivers. Such competence is additional to the continuing maintenance of competence to operate the vehicle/equipment.

(b) Examples of the areas to be assessed include, but are not limited to:

(i) pushback procedures;

(ii) towing (on the apron and on the manoeuvring area);

(iii) runway access;

(iv) radiotelephony;

(v) aerodrome topography;

(vi) aerodromes physical characteristics

(vii) general airside driving;

(viii) vehicle check; and

(ix) table-top discussions

10 ADP SELF-TEST

(a) The written ADP test will be based on a number of multiple choice questions taken from the question databank. (Questions related to the Local Airport Traffic Directives, will also form part of the ADP).

(b) Section 9.1 contains sample questions that should form part of the question databank for self-test purposes.

(c) The correct answer for each question is provided in Section 10.2 to check individual scores, and identify those parts and the manual(s) which may need further study.

10.1 National Test Questions

10.1.1 AVOP National Test

(1) Which of the following most accurately describes that part of an aerodrome intended to be used for the taking off and landing of aircraft and the movement of aircraft associated with taking off and landings, excluding aprons:

(i) Restricted area.
(ii) Movement area.
(iii) Airport area.
(iv) Manoeuvring area.

(2) Which of the following most accurately describes the beginning of that portion of the runway usable for landing?
(i) Taxiway.
(ii) Apron.
(iii) Threshold.
(iv) Button.

(3) An airport at which an air traffic control unit is provided is called a:
(i) Aerodrome.
(ii) Controlled airport.
(iii) ATC.
(iv) Uncontrolled airport.

(4) A road delineated by surface markings on an apron is called a:
(i) Designated Vehicle Corridor.
(ii) Aircraft Taxi Line.
(iii) Airport Service Road.
(iv) Aircraft Lead-in Line.

10.1.2 Local Airport Traffic Directives

(5) Local Airport Traffic Directives:
(i) Apply at all airports in Sierra Leone.

(ii) Apply only to commercial vehicles.
(iii) Apply only at the airport where issued.
(iv) Apply only to government vehicles.

(6) Who has the authority for the issuing, suspension or cancellation of permission to operate a vehicle on the airside of an airport?
(i) The Minister of Transport.
(ii) The Airport Manager.
(iii) The Officer in Charge of Security.
(iv) A police Constable.

10.1.3 Responsibilities and Duties

(7) The manual which contains all regulations and procedures related to operations of a vehicle/equipment on the airside of an airport is:
(i) The General Radio Operator Handbook.
(ii) The Manual of Airport Traffic Directives.
(iii) The National Drivers Handbook.
(iv) The Guide to Sport Car Driving on Runway and Taxiways.

(8) The person responsible for ensuring that his/her vehicle is operating satisfactorily and the requirement for provision of safety gears and markings is implemented, is:
(i) The owner of the vehicle.
(ii) The operator of the vehicle.
(iii) The police.
(iv) The Airport Manager.

(9) If you encounter a condition on an aircraft movement surface that is likely to cause damage to an aircraft, you should report it to:
(i) The airport mechanic or foreman.
(ii) Your immediate supervisor.
(iii) All aircraft operators.
(iv) The local security office.

(10) Who is responsible for reporting any vehicle malfunction or dangerous conditions to the supervisor?
(i) Any other driver.
(ii) The base supervisor.
(iii) The mechanic.
(iv) The vehicle operator.

(11) Who is required to wear an airport Restricted Area Pass while on the airside of the airport?
(i) All persons on the airside of an airport.

(ii) Every person who is not aircrew or a ticketed passenger.
(iii) Aircrew and passengers.
(iv) Security staff only.

(12) How is a restricted area pass carried?
(i) On the outside of the clothing.
(ii) In your wallet.
(iii) In the vehicle glove compartment.
(iv) Not required to be carried.

(13) Who is responsible for reporting a person found on the airside of an airport who is not wearing a restricted area pass?
(i) The Security Officer.
(ii) The company chief representative.
(iii) Everyone who has a restricted area pass.
(iv) Any passenger.

(14) Who is responsible for ensuring that all designated gates to the airside of the airport are closed and locked?
(i) Every person who has authority to use a gate giving airside access.
(ii) Airport Management staff.
(iii) Airport Management staff.
(iv) Airline employees only.

(15) There are many types of vehicles/equipment used on the airside of an airport. Who is responsible for ensuring that a vehicle operator knows how to operate the equipment he/she uses?
(i) The licensing authority.
(ii) The vehicle operator.
(iii) The vehicle operator's employers.
(iv) The security office.

10.1.4 Vehicle operating procedures – General

(16) All vehicle operated on the airport manoeuvring areas, except those under escort, must be equipped with:
(i) Headlamps and tail lamps and reflective tape on both sides.
(ii) A flashing beacon and radio on company frequency.
(iii) An approved rotating beacon lamp and radiotelephone on the appropriate radio frequency.
(iv) A reflective yellow material on the sides and striped black and yellow patches on the lower left and right corners of the vehicle.

(17) All vehicles with a cab while operating without escort on the airport aprons must be equipped with which of the following lights or markings?
   (i) An amber flashing or rotating beacon, headlamps, parking and tail lamps.
   (ii) Headlamps, tail lamps and reflective tape on both sides.
   (iii) A two-way radio on the citizens band or company frequency.
   (iv) None of the above.

(18) All non-self-propelled equipment used on the airport aprons must be equipped with safety markings. Which of the following most accurately describes that marking?
   (i) Yellow reflective stripe along the sides, and black and yellow patches at the front and rear lower corners.
   (ii) Headlamps, tail lamps and a horn.
   (iii) Both 1 and 2 above.
   (iv) Any reflective material that can be seen from 300m at night.

(19) Which of the following traffic has first priority / right of way over all other traffic?
   (i) Maintenance vehicles in the performance of their duties.
   (ii) Emergency vehicles.
   (iii) Aircraft.
   (iv) The vehicle approaching from the right.

(20) Which of the following examples most accurately describes the precaution which must be taken before operating a vehicle near radio navigational facilities?
   (i) Get permission from the Airport Manager first.
   (ii) Drive a small vehicle so that the signal will be affected as little as possible.
   (iii) Get approval from ground control
   (iv) Stay away from this equipment at all times.

(21) Smoking on apron areas is:
   (i) Permitted.
   (ii) Permitted in vehicles only.
   (iii) Prohibited both inside and outside vehicles.
   (iv) Permitted if no aircraft are within 100m of the smoker.

(22) It is permissible to operate a vehicle in front of or directly behind an aircraft with engines running when:
   (i) Not at any time.
   (ii) The red, anti-collision beacon of the aircraft is turned off.
   (iii) The marshaller waves permission and the aircraft wheels are blocked (chocked)
   (iv) You have waited three minutes and the pilot has not indicated any intention to move the aircraft.

(23)When vehicles are parked in an approved parking space in the vicinity of the Terminal Building(s) or adjacent to heavy traffic areas, they should be:
(i) Left with beacon or flashing signal lamps in operation.
(ii) Backed into the parking area.
(iii)Driven in front first.
(iv)Left with engine running.

(24)Whenever an aircraft carrying distinguished visitors is at an airport, unauthorised personnel and vehicles are required to:
(i) Remain clear of the aircraft unless otherwise authorised by the Airport Manager.
(ii) Drive slowly past the area but to not take pictures.
(iii)Conduct normal vehicle movements but do not stare.
(iv)There is no restriction on vehicle movement.

(25)Vehicle operators must ensure that mud and gravel are not deposited on aircraft movement surfaces because:
(i) This material can cause damage to taxing aircraft and engines.
(ii) Erosion could occur if too much dirt is removed from the runway edge.
(iii)The material can cause damage to aircraft in the air.
(iv)Dirty vehicles are not permitted on airport property.

(26)If a vehicle operator notices foreign materials (mud, gravel, solid objects) on an aircraft movement surface, the vehicle operator is required to:
(i) Report the natures and location of the material to the police.
(ii) Stop and remove the material.
(iii)Report the nature and location of the material to your supervisor.
(iv)No special requirements exist for vehicles operators.

(27)If an aircraft were to crash on the airport, unauthorised vehicle operators are required to:
(i) Wait until Crash Firefighting and Rescue is over before entering the area.
(ii) Proceed immediately to the scene and render assistance.
(iii)Stay away from the area unless authorised by your supervisor.
(iv)Remain clear of the area unless otherwise authorised by the Airport Manager.

10.1.5 Operation of Vehicles on Aprons

(28)The colour of pavement marking which outline vehicle corridor and security line is:
(i) Green except in grassed areas.
(ii) Yellow.
(iii)White.
(iv)Red at intersections, white in other areas.

(29)The colours of pavement markings related to aircraft movement guidelines and aircraft lead-in lines is:
(i) Green except in grassed areas.
(ii) Yellow.
(iii)White.
(iv)Different for each class and type of aircraft.

(30)Select the description below which most accurately describes how vehicle corridors are indicated on paved aprons:
(i) Two solid white lines 7.5m apart, centred by a single broken line.
(ii) Two broken yellow lines divided by a solid white line.
(iii)Two solid yellow lines 7.5m apart, centred by a single broken line.
(iv)Two solid white lines 7.5m apart, centred by a broken green line.

(31)The purpose of an aircraft movement guideline is:
(i) To indicate where aircraft movement is permitted.
(ii) To show where aircraft movement is not permitted.
(iii)To delineate lanes on a taxiway for vehicle movement.
(iv)To serve as a centre-of-aircraft guideline to aid aircraft travelling on taxiways and aprons.

(32)Aircraft lead-in lines are provided to:
(i) Lead the aircraft onto the runway when landing.
(ii) Assist in the docking of an aircraft at a gate.
(iii)Indicate the limits of vehicle corridors.
(iv)Indicate the limits of vehicle corridors.

(33)What vehicles must stay within vehicle corridors when moving about the apron to or from operational stands, between operational stands, across aircraft taxi lines, etc.?
(i) Emergency vehicles and vehicles towing aircraft.
(ii) All vehicles except emergency and airport maintenance vehicles in the performance of their duties.
(iii)Delivery vehicles, except those under escort.
(iv)Airline service vehicles only.

(34)What vehicles are permitted to operate outside the vehicle corridors on aprons?
(i) Emergency vehicles and airport maintenance vehicles operated in the performance of their duties.
(ii) Anyone who wishes to pass at speed.
(iii)No one except the Airport Manager.
(iv)Both two and three above.

(35)A vehicle operating in the right hand lane of a vehicle corridor has right of way over:
- (i) Heavy maintenance vehicles entering the corridor.
- (ii) Other vehicles entering the corridor.
- (iii) Small aircraft only.
- (iv) All other vehicles traffic.

(36)When operating a vehicle in a vehicle corridor on an apron, the operator may:
- (i) Use the left lane to pass slower vehicles.
- (ii) Leave the vehicle corridor to pass slower vehicles
- (iii) Drive in the left lane rather than tailgate another vehicle.
- (iv) None of the above.

(37)Where vehicle corridors intersect, the vehicle which has the right of way is:
- (i) The vehicle on the left.
- (ii) The vehicle entering the corridor from the right.
- (iii) The vehicle travelling at the greater speed.
- (iv) The vehicle on the right.

(38)When operating a vehicle in a vehicle corridor, which passes behind an aircraft with engines running, you are required to:
- (i) Stop well clear of the aircraft and wait until the aircraft has been backed out or the marshaller clears you to pass.
- (ii) Pass behind the aircraft as quickly as possible.
- (iii) Leave the vehicle corridor and go around the aircraft at a minimum distance of 15m.
- (iv) Turn your vehicle around and return to your starting point on the apron.

(39)Vehicle Corridors are:
- (i) Required to be used at all times regardless of circumstances.
- (ii) Not guaranteed safe routes and caution must always be exercised to avoid parked and moving aircraft.
- (iii) Guaranteed safe routes for vehicles under all circumstances.
- (iv) Provided to ensure the safe and orderly movement of aircraft.

(40)Areas within Operational Stands:
- (i) Are provided for the servicing and maintenance of vehicles.
- (ii) Provided for free movement of vehicles performing their duties related to aircraft.
- (iii) Are defined as areas where vehicle flashing lamps or beacon lamps must always be turned on.
- (iv) Are provided for the refuelling of aircraft only.

(41)Vehicle operators must always exercise caution:
- (i) When vehicle corridor markings are obscured due to faded paint, sand cover or any other reason.
- (ii) When entering and leaving the active apron area and entering and leaving vehicle corridors.
- (iii)When operating in front of or behind aircraft with engines running.
- (iv)When any of the conditions indicated above are encountered.

(42)Where vehicle roads or corridors intersect, the vehicle which has the right of way is:
- (i) The largest vehicle.
- (ii) The vehicle on the left.
- (iii)The vehicle on the right.
- (iv)The vehicle with a cab and flashing or rotating beacon.

(43)When not in use, Apron Service Vehicles may be parked:
- (i) On the apron where space is available.
- (ii) In any apron area not used for the movement of aircraft.
- (iii)In parking areas designated by the Airport Manager only.
- (iv)As in one and two above if overflow parking is only provided on the groundside of the airport and assigned space on the apron is full.

(44)All non-self-propelled equipment used on an apron is required to be marked with reflective material. Which of the following most accurately describes how this equipment must be marked?
- (i) A yellow stripe on the front and back – the full width of the vehicle.
- (ii) Black and yellow patches on the sides and a yellow stripe across the end.
- (iii)One and two (above), but not four (below).
- (iv)A solid yellow stripe on the sides and black and yellow patches at the front and rear lower corners.

(45)Three documents must be carried at all times when operating a vehicle without escort on the manoeuvring area a controlled airport. Which of the following most accurately describe these documents?
- (i) National driver's license, ADL, AVOP, security passes.
- (ii) Security pass, AVOP.
- (iii)Security pass, parking permit, radio operator handbook.
- (iv)All of the above.

(46)At controlled airports, the control tower is responsible for directing which of the following traffic?
- (i) Vehicles and pedestrians on aprons.

(ii) Aircraft, vehicles and pedestrians on manoeuvring areas.
(iii) All vehicles, aircraft and pedestrians on the airport.
(iv) Aircraft on manoeuvring areas but not vehicles.

(47) When required to operate a vehicle in the manoeuvring area of a controlled airport, the vehicle operator must first:
(i) Notify the Airport Manager.
(ii) Consult his/her supervisor.
(iii) Contact the ground controller by radio for permission.
(iv) Contact apron management by radio for permission.

(48) The instructions of a ground controller:
(i) Apply to vehicles on runways but not taxiways.
(ii) Must be obeyed at all times.
(iii) Are guides only for vehicle operator's information.
(iv) Apply to aircraft only.

(49) Standard procedures for a vehicle operator who has received instructions from a ground controller is to:
(i) Acknowledge all instructions as understood or request that the instructions be repeated.
(ii) Proceed immediately according to instructions heard.
(iii) Always ask for a repeat of the instructions to ensure they are fully understood.
(iv) Do nothing if all instructions are not fully understood.

(50) When instructed by a ground controller to proceed into the manoeuvring area only along a specified route, the vehicle operator has the following options if he/she chooses to proceed:
(i) Proceed as originally planned regardless of instructions from ground control.
(ii) Proceed as directed or do not enter the manoeuvring area.
(iii) Request the reason why you may not use an alternated route.
(iv) Drive on the unpaved edge of the runway to reach your destination.

(51) When a vehicle is towing an aircraft on the manoeuvring areas of an airport, the vehicle operator must:
(i) Ensure that the towing vehicle is diesel powered only.
(ii) Maintain radio contact with ground control.
(iii) Refrain from further radio contact with the tower after towing commences.
(iv) Maintain radio contact with the pilot only.

(52)When is it permissible to operate a vehicle on taxiways or runways without first receiving permission by radio from ground control?

(i) When radio contact with ground control cannot be made due to interference.

(ii) Whenever you are unable to get permission by radio within a reasonably short period of time.

(iii)Whenever use of part of a runway or taxiway is the most direct route to your destination.

(iv)When the taxiway or runway has been designated to be used in this manner in the Local Airport Traffic Directives.

(53)Which of the following should be included in a request to operate a vehicle in the manoeuvring area?

(i) Vehicle identification and location.

(ii) Requested destination and route within the manoeuvring area.

(iii)Duration of time and purpose for being in the manoeuvring area.

(iv)All of the above.

(54)When told to "Hold Short" or when awaiting permission to cross a runway, what must the vehicle operator do?

(i) Stop at least 45m from the nearest edge of the runway or behind the solid yellow lines painted on the taxiway and wait for permission from ground control to proceed.

(ii) Stop at least 45 m from the nearest edge of the runway or behind the solid yellow line on the taxiway. Look both to the right and left and proceed only if aircraft are not landing or taking off.

(iii)Remain out of the manoeuvring area and do not proceed until the ground controller gives permission.

(iv)Keep all future transmissions as brief as possible.

(55)Which of the following illustrations most accurately illustrates how yellow hold lines are painted on a taxiway?

Note - Only the <u>horizontal lines</u> and in <u>bold characters</u> are to be considered for answering purposes.

The runway is located above the lines and the apron under the lines.

1	**Instrument Runway**	**Non-instrument Runway**
Line A		
Line B		

Line C		
Line D		

2	**Instrument Runway**	**Non-instrument Runway**
Line A		
Line B		
Line C		
Line D		

3	**Instrument Runway**	**Non-instrument Runway**
Line A		
Line B		
Line C		
Line D		

4	**Instrument Runway**	**Non-instrument Runway**
Line A		
Line B		
Line C		

Line D		

(56)Which of the following is used to indicate the "HOLD" position on a taxiway?

(i) A red sign to the side of the taxiway bearing the word "HOLD".
(ii) A solid and broken yellow line across the width of the taxiway with the broken line closest to the runway.
(iii)Two solid and two broken yellow lines across the width of the taxiway with the broken lines closest to the runway.
(iv)All of the above.

(57)The colour of "HOLD" lines is:

(i) White.
(ii) Green.
(iii)Yellow.
(iv)Red.

(58)As soon as a vehicle has left the runway of a controlled airport, the vehicle operator must:

(i) Turn off the rotating beacon light.
(ii) Reduced speed and use a lower gear.
(iii)Stop and hold short of the apron until given permission to proceed.
(iv)Advised the ground controller that you are off the runway and give your location.

(59)When instructed by the ground controller to "Leave (or) Get Off the Runway", the vehicle operator must:

(i) Acknowledge the instruction.
(ii) Proceed to a holding position or to a safe position off to the side of the runway at least 45m from the nearest runway edge.
(iii)Inform the ground controller when off the runway and given your exact location.
(iv)All of the above.

(60)When is it permissible to operate closer than 45m from the edge of a runway?

(i) When the work to be performed is closer than 45m from the edge of the runway.
(ii) During grass cutting only.
(iii)Only on non-instrument runways.
(iv)When the ground controller has given permission.

(61)You are working in the manoeuvring area and your vehicle breaks down. You are unable to move the vehicle under its own power. What should you do?

(i) Leave your vehicle with the lights on and walk to where you can get assistance.

(ii) Wait until your shift ends and go home.
(iii) Try to repair the vehicle on your own.
(iv) Notify the ground controller of your location and difficulty and ask for assistance and stay with the vehicle until help arrives.

(62) Vehicle Operators must monitor the ground control frequency:
(i) When in the manoeuvring area.
(ii) At all times and in all locations of the airport.
(iii) Only when on the apron.
(iv) When operating on aprons and service roads.

(63) A vehicle which is not equipped with a radio on the ground control frequency may be operated in the manoeuvring area when:
(i) The vehicle weight exceeds (14,000lb - 6,500 kg).
(ii) A radio-equipped vehicle is not available.
(iii) It is under escort of a radio-equipped vehicle operated by a qualified employee responsible for requesting and acknowledging all ground control instructions.
(iv) No aircraft are schedule to land or take off from the airport for at least thirty minutes.

(64) You are operating a radio-equipped vehicle in the manoeuvring area and your radio breaks down. What should you do?
(i) Return to a non-manoeuvring area by the shortest route for repairs.
(ii) Try to repair the radio and if this fails, sound the horn until someone comes to your assistance.
(iii) Wait until the next aircraft lands and follow it back to the apron.
(iv) Turn your vehicle to face the control tower and flash your headlights on and off. Wait for the controller to respond using lights signals.

(65) A flashing green light signal from the control tower means:
(i) Stop, hold your position.
(ii) Proceed.
(iii) Leave/vacate the runway.
(iv) Return to starting point on the airport.

(66) A steady red light signal from the control tower means:
(i) Proceed
(ii) Stop, hold your position.
(iii) Leave/vacate the runway.
(iv) Return to starting point on the airport.

(67)A flashing red light signal from the control tower means:

(i) Stop, hold your position.
(ii) Return to starting point on the airport.
(iii)Leave/vacate the runway.
(iv)Proceed.

(68)A flashing white light from the control tower means:

(i) Proceed.
(ii) Return to starting point on the airport.
(iii)Stop, hold your position.
(iv)Leave/vacate the runway.

(69)A vehicle with a disabled radio has received ground control instruction by light signal to return to starting point on the airport". To get there, the vehicle must cross a runway to reach the apron. The vehicle operator is required to:

(i) Proceed without stopping until off the manoeuvring area.
(ii) Sound the horn twice before crossing the runway.
(iii)Hold short of the runway and check for arriving or departing aircraft before proceeding across the runway.
(iv)Hold short of the runway and wait for a green flashing light from the control tower before proceeding.

(70)The blinking on and off of runway lights means:

(i) Identify yourself to the tower by turning your beacon light off.
(ii) Leave the runway immediately.
(iii)The controller wants you to drive faster.
(iv)The runway lights are being tested.

(71)An airport is considered to be uncontrolled when:

(i) There is no control tower at the airport or the existing control tower is not staffed (closes for the day).
(ii) There is no control tower at the airport.
(iii)The airport is served by an Air Traffic Control Service which is located at another airport.
(iv)All of the above.

(72)At uncontrolled airport, vehicle advisory for the airport manoeuvring areas may be provided by radio from:

(i) The ATC.
(ii) The maintenance garage.
(iii)The airport Manager's office.
(iv)A control tower at a remotely located airport.

(73)Vehicle operators are required to respond to a ATC advisory:
- (i) If aircraft are currently using the runways and taxiways.
- (ii) In the same way as if it were issued from ground control.
- (iii)In the majority of cases but not as strictly as for ground control.
- (iv)Not at all.

(74)At uncontrolled airports with a ATC, vehicles may operate on or near manoeuvring areas only according to:
- (i) Instructions issued by radio from the Airport Manager.
- (ii) Instructions issued by the ground controller.
- (iii)Instructions issued by the ATC.
- (iv)Instruction issued by the Airfield Maintenance Foreman.

(75)A vehicle advisory from a ATC may indicate that there is "No reported traffic". What does this term mean?
- (i) No aircraft traffic has been reported to the ATC but aircraft without a radio may be present.
- (ii) There are no aircraft in the area of concern to the vehicle operator.
- (iii)Aircraft are known to be operating to and from the airport but are not big enough to bother reporting them to the vehicle operator.
- (iv)Secret military flights are operating into the airport which cannot be reported to the vehicle operator.

(76)At all uncontrolled airports, every vehicle operator before driving onto or crossing the runway, must:
- (i) Check his brakes to ensure the vehicle will stop short of the "HOLD" position on taxiways.
- (ii) Ensure that all cigarettes and other smoking material is extinguished.
- (iii)Flash the vehicle headlights on and off three times to notify the ATC of his intentions to cross the runway.
- (iv)Visually check to ensure that aircraft are not approaching or departing using the runway.

(77)At uncontrolled airports with a ATC, a vehicle operator may not proceed into the manoeuvring area before:
- (i) Receiving traffic advisory from the ATC, and acknowledging all information received as understood.
- (ii) Checking the vehicle for safety and fastening the seatbelt.
- (iii)Turning on all vehicle lights.
- (iv)Checking first the ATC to ensure that the vehicle has been registered with the ATC.

(78)If all vehicle advisory information from a ATC is not fully understood, the vehicle operator must:

(i) Assume that he has enough knowledge of the airport to proceed in safety based on that portion of the instructions that he heard.

(ii) Assume that the ATC operator is too busy to ask for a repeat of the message ("say again") and proceed with caution.

(iii)Ask the ATC to repeat ("say again") the message until it is understood and confirmed ("Roger") to the ATC.

(iv)Report the problem of communication to your supervisory and refuse to enter the manoeuvring area.

(79)A radio request from a vehicle to a ATC to operate on or near the manoeuvring area must include which of the following:

(i) The vehicle identification and present location.

(ii) The specific destination in the manoeuvring area where you wish to operate.

(iii)The time that you will be in the manoeuvring area and purpose for being there.

(iv)All of information listed above.

(80)Hold lines painted on a taxiway always have the broken line:

(i) Closest to the runway.

(ii) Furthest from the runway.

(iii)Between solid the runway.

(iv)In pairs.

(81)When instructed to leave the runway, the vehicle operator shall:

(i) Acknowledge the instruction.

(ii) Proceed to the nearest taxiway hold position or to a safe position at least 45 m to the side of the runway.

(iii)Advice ground advisory when you are off the runway and give your exact location.

(iv) All of the above.

(82)When is it permissible to operate a vehicle within 45 m of a runway edge at an airport with a ATC?

(i) When your work requires you to be there and permission has been given by the ATC to operate in that area.

(ii) When the ground is dry and the vehicle will not sink into the soft shoulder.

(iii)Whenever required in order to perform necessary maintenance.

(iv)Any time if you ensure that the vehicle's rotating beacon in on at all times.

(83)What are you required to do if your vehicle breaks down while in the manoeuvring area at an airport with a ATC?

(i) Abandon the vehicle and walk as quickly as possible to the ATC to advise the location of the vehicle.

(ii) Stay in the vehicle and hope that aircraft see the rotating beacon in time to avoid collision.

(iii)Complain very strongly to vehicle maintenance staff for not maintained the equipment.

(iv)Immediately notify the ATC and ask for assistance.

(84)When leaving the manoeuvring area, every vehicle operator is required to:

(i) Proceed to the ATC and sound the horn to indicate you are no longer in the manoeuvring area.

(ii) Advice the ATC by radio when you are off the manoeuvring area.

(iii)Proceed directly to the vehicle fuelling location and refill the tank.

(iv)Take a coffee break.

(85)When vehicles are operating in a group or fleet in the manoeuvring area under guidance of one radio-equipped vehicle, the operator of the radio-equipped vehicle is responsible to:

(i) Display a red flag on the right front fender to indicate that the vehicle is radio equipped.

(ii) Display red flags on all vehicles in the group which are not radio equipped.

(iii)Request and acknowledge all ATC advisories for all vehicles in the group.

(iv)Ensure that all the operators of vehicles without a radio know the meaning of light signals used to direct vehicles during radio failure at controlled airports.

(86)If at an uncontrolled airport your radio fails while you are in the manoeuvring area, you must:

(i) Stay where you are and sound the horn repeatedly until someone is sent to escort you out of the area.

(ii) Leave the vehicle and proceed directly to the ATC for assistance.

(iii)Wait until an aircraft lands and then follow it as it taxies out of the manoeuvring area.

(iv)Leave the manoeuvring area immediately and advise the ATC of your action as soon as possible by telephone or other appropriate means.

(87)When an aircraft makes a low pass over the runway, all vehicle operators on the runway must:

(i) Wave vigorously to show the pilot where you are.

(ii) Proceed with your duties until you receive direct instructions to leave the manoeuvring area.

(iii) Park your vehicle parallel to the runway edge with headlights on and facing the direction of aircraft approach.
(iv) Leave the runway immediately.

10.1.6 Manoeuvring Area - Uncontrolled Airport without a ATC

(88) At airport where vehicle radios are not required before entering the manoeuvring area, every vehicle operator must:
(i) Drive quickly to ensure the vehicle is on the runway for the shortest period of time.
(ii) Check the runway visually to ensure there are no aircraft arriving or departing.
(iii) Wait until an aircraft makes a low pass and then proceed onto the runway.
(iv) Always travel in company of a second vehicle so that both ends of the runway can be watched for approaching aircraft at the same time.

(89) At uncontrolled airports without a ATC, the vehicle operator must not:
(i) Interfere with wild animals on the runway unless they have a license to do so from the appropriate authority.
(ii) Perform maintenance during hours of darkness.
(iii) Drive in excess of the posted speed limit.
(iv) Leave the vehicle unattended on the manoeuvring area.

(90) At uncontrolled airports without a ATC, vehicle operators must while in the manoeuvring area:
(i) Keep a lookout for arriving or departing aircraft.
(ii) Leave the runway as soon as aircraft appear.
(iii) Leave the runway if an aircraft makes a low pass.
(iv) Be alert at all times and do all of the foregoing.

10.1.7 Airside Pavement Marking, Lights and Signs

(91) The colour of a “Hold” sign is:
(i) Green with white letters.
(ii) White with black letters.
(iii) Red with white letters.
(iv) Yellow with black letters.

(92) Manoeuvring surfaces at an airport that are designated by a letter are:
(i) Apron.
(ii) Runways.
(iii) Service Roads.
(iv) Taxiways.

(93) Runway edge lights are what colour:
(i) Red.
(ii) White.

(iii) Blue.
(iv) Amber (Yellow)

(94) Apron and taxiway edge lights are what colour:
(i) Red.
(ii) White.
(iii) Amber (Yellow).
(iv) Blue.

(95) Lights used to indicate the intersection of a taxiway and an apron are what colour:
(i) Blue closer to one another.
(ii) White.
(iii) Red.
(iv) Green.

(96) Signs used to identify the location of various surfaces and giving direction to various movement area locations may be which of the following colours:
(i) White with black or Green with yellow number/letters.
(ii) Green with white or Yellow with black letters/numbers.
(iii) Red with white or Green with black letters/numbers.
(iv) Blue with white or White with black letters/numbers.

(97) Two coloured (double faced) threshold marker lights are what colours:
(i) Blue and white.
(ii) Red and white.
(iii) Red and green.
(iv) Green and amber.

(98) The colour of threshold marker lights which face towards the runway is which of the following colours:
(i) White.
(ii) Green.
(iii) Amber.
(iv) Red.

(99) The arrival and departure point on an airport for use by helicopters is identified by which of the following pavement markings:
(i) A large white, “H” within a white circle or square or a yellow triangle.
(ii) A silhouette of a helicopter within a white circle.
(iii) A yellow “H” within two concentric yellow circles.
(iv) A large white “H” within a white cross

(100) The pavement marking which indicated an apron location reserved for the parking of helicopters is:
(i) A yellow triangle.
(ii) A white "H" within a yellow triangle.
(iii) A yellow "H" within two concentric yellow circles.
(iv) None of the above.

10.1.8 Radio Telephone Procedures

10.1.8.1 Radio Telephone and Voice Techniques

(101) Microphones which have background noise-cancelling capability should be held how close to the lips?
(i) 6.5centimetres in front of the mouth.
(ii) As close to the lips as possible.
(iii) 2.4centimetres in front of the mouth.
(iv) 6.5inches from the lips.

(102) Most microphones which are not background noise-cancelling, should be held how far in front of the mouth?
(i) 6.5centimetres in front of the mouth.
(ii) One meter in front of the mouth.
(iii) Against the lips.
(iv) To the side of, but near the mouth.

(103) The "press to talk" switch on a microphone should be:
(i) Clicked on and off between words or phrases while you think about what you want to say.
(ii) Left open after you complete your transmission to show you are waiting for a reply.
(iii) Depressed before beginning to speak and kept depressed for the full transmission.
(iv) Clicked on and off rapidly to get the attention of the ground controller or FSS as appropriate.

(104) When speaking into a microphone, you should always:
(i) Speak plainly and distinctly without artificial accentuating words or running words together.
(ii) Speak rapidly and loudly to ensure that the message received is loud enough and does not take up too much time.
(iii) Accentuate every syllable of every word in a loud clear voice and slowly so that nothing is missed by ground control or ground advisory.

(iv) Make sure that aircraft are listening so that everyone gets the message the first time.

(105) A radio "blind spot" is:

(i) Any place on the airport where radio signal to or from a vehicle cannot be received by control tower, ATC or the vehicle.

(ii) Any place where the vehicle operator cannot see the control tower or ATC.

(iii) Any place in a vehicle where the vehicle operator cannot see the vehicle radio.

(iv) A hole in the ionosphere trough which radio signals will not pass.

(106) When phonetics is required for clarity in radiotelephone communications, what alphabet must be used?

(i) The Standard English (French) Alphabet.

(ii) The radio Technician's Alphabet.

(iii) The ICAO Phonetic Alphabet.

(iv) The State's Ground Controller's Alphabet for Vehicle Communication.

10.1.9 ICAO Phonetic Alphabet and Pronunciation of Numbers

(107) Circle the correct phonetic word for each of the following letters of the alphabet:

	1	2	3	4
A	Apple	Australia	Alpha	Able
B	Boston	Bravo	Baker	Baron
C	Cape Verde	Charlie	Cocoa	China
D	Delta	Doughnut	Datsun	Dog
E	Ecuador	Easy	Echo	Empty
F	Fox	Frigid	Foxtrot	Fan
G	Golf	Golden	Gantry	Girl
H	Handle	How	Hostle	Hotel
I	Income	India	Item	Ink
J	Juliet	John	Jig	January
K	King	Kangaroo	Kilometre	Kilo
L	Love	Liter	Lima	Lost
M	Mary	Mexico	Matron	Mike
N	Neilson	November	Nugget	Nancy
O	Oslo	Oboe	October	Oscar
P	Papa	Police	Peter	Poland
Q	Quart	Quebec	Quick	Queen
R	Romeo	Rose	Roger	Rat

S	Sugar	Sam	Sierra	Spitfire
T	Tang	Taxi	Tear	Tango
U	Uncle	Uniform	Unit	Under
V	Victor	Vision	Vapour	Vent
W	Walter	Whiskey	Wing	West
X	Xebec	Xanadu	X-Ray	Xerox
Y	Yak	Young	Yoke	Yankee
Z	Zebra	Zipper	Zip	Zulu

(108) Which of the following is the correct way to speak numbers?

2330
(i) Twenty-three, thirty.
(ii) Two thousand, three hundred and thirty.
(iii) Two-three-three-zero.
(iv) Two-thirty-three-zero.

583
(i) Five hundred and eighty-three.
(ii) Five-eighty-three.
(iii) Fifty-eighty-three.
(iv) Five-eighty-three.

12000
(i) One two thousand.
(ii) Twelve thousand.
(iii) One-two-zero-zero-zero.
(iv) Twelve-zero-zero-zero

10.1.10 Standard Procedures and Words

(109) In the space opposite to the following words and phrases, enter the number which corresponds to the correct meaning listed below.

(i) Repeat all, or the following part, of your last transmission.
(ii) Wait and listen. I will call you again.
(iii) Let me know that you have received and understood the message.
(iv) My transmission is ended and I expect a response from you.
(v) Yes, or permission granted.
(vi) Check text with originator and send correct version.
(vii) I will now repeat my last word (sentence) for clarification.
(viii) Repeat all, or the specified part, of this message back exactly as received.
(ix) My version is …… is that correct.
(x) I have received all of your last transmission.

(xi) An error has been made in this transmission. My correct version is ……

(xii) This conversation is ended and no response is expected.

(xiii) No, or permission not granted, or that is not correct, or I do not agree.

(xiv) Can you hear and understand me?

Acknowledge ----------

Affirmative ----------

Confirm ----------

Correction ----------

Verify ----------

How do you read? ----------

I say again ----------

Negative ----------

Over ----------

Out ----------

Read back ----------

Roger ----------

Say again ----------

Standby ----------

(110) Before making a radio "call-up", the vehicle operator must:

(i) Ask for a radio check.

(ii) Click the switch to let others know your attention.

(iii) Turn up the volume of the transmitter to maximum.

(iv) Listen out to make sure the frequency is not is use.

(111) A "call-up" consist of:

(i) The call sign of the station called and the call sign of the station from which the call is made.

(ii) The name - number (call sign) of your vehicle and your request.

(iii) The station called and your request.

(iv) No special procedures have been developed for radio "call up".

(112) If a vehicle operator does not receive a response to a call up, he/she should:

(i) Repeat the call until he gets an answer.

(ii) Wait a reasonable time and call again.

(iii) Try a different frequency.

(iv) Proceed without approval.

(113) An "acknowledgement" means a message or instruction transmitted by radio has been received and fully understood. Vehicle operators entering within the manoeuvring area should always:

(i) Avoid requesting a repeat of the message because it required too much radio transmission time.

(ii) Be careful if the message refers to runway crossing but do not be concerned if only taxiways are involved.

(iii) Never acknowledge a message or instruction unless it is received and fully understood.

(iv) Respond according to past procedures if the message is not clear or fully understood.

10.1.11 Acknowledgements

(114) When ground control transmit direction or instructions that are not fully understood or not clearly transmitted, the vehicle operator must:

(i) Assume that the portion of the message heard is adequate and proceed.

(ii) Guess at what is meant on the basis of past experience.

(iii) Request a repeat of the message and fully understand it before proceeding.

(iv) Consult the manual for possible meanings for what was heard.

(115) When ground transmits direction or instructions which are heard clearly and fully understood, the vehicle operator must:

(i) Acknowledge the directions or instructions and then proceed.

(ii) Proceed immediately according to directions/instructions.

(iii) Ignore the directions/instruction if not suited to your needs.

(iv) Call back to ensure that the instructions given were exactly what was wanted/intended.

(116) When a vehicle operator wishes to end a radio transmission, the proper procedure is:

(i) Say the name of station called and the vehicle call sign.

(ii) Stop transmitting.

(iii) Say the vehicle call sign.

(iv) There is no standard procedure.

(117) Standard phraseology is used in radio communication with ground control. What is the purpose of using these standard ways of saying things?

(i) It is a habit of the old timers that is hard to change.

(ii) Because this method of communication has always been used.

(iii) A better system of spoken communication has not been developed.

(iv) To transmit clear instruction and messages efficiently (in the shortest time) with the fewest words and without misunderstanding.

(118) Staff 27 is providing escort for two other vehicles which are not radio equipped. Staff 27 is required to identify himself/herself to ground control as:
(i) Staff 27 with grader and truck.
(ii) Staff 27 escorting two other vehicles.
(iii) Staff 27 plus 2.
(iv) Staff 27.

(119) What is the correct meaning for the following ground control instruction to a vehicle? "Proceed to Runway 14-32 inspection, advice when off the runway."
(i) You are authorized to go to runway 14-32 but not enter on to it. You are to advise ground control when you are off the runway.
(ii) You are directed to inspect runway 14-32 and must advise ground control if you drive off the edge of the runway.
(iii) You are not inspect runway 14-32 and must confirm to ground control that you are off the runway at this time.
(iv) You are authorized to drive on runway 14-32 for the purpose of inspecting that runway and are required to advice ground control by radio when you have left the runway, giving your location at that time.

(120) What is the correct meaning of the following ground control instruction: "Hold short Runway 32."
(i) Stop and hold vehicle 45m from the nearest edge of runway 32 or behind the solid yellow line on a taxiway so marked until given permission to cross.
(ii) Stop and hold your vehicle at the edge of runway 32 and await permission to cross.
(iii) Stop and hold your vehicle at the taxiway leading to runway 32 and await further instructions.
(iv) The term "hold short" applies only to aircraft and need not be obeyed by vehicle operators.

(121) Which of the following call up to ground control is correct?
(i) (Site name) Ground, this is truck eighty-eight.
(ii) (Site name) Ground, staff twenty-nine.
(iii) (Site name) Ground, truck eight three.
(iv) (Site name) Ground, this is staff six eight.

10.1.12 Radio procedures

(122) On-the-air radio test, when necessary should be:
(i) Conducted only by a supervisor.
(ii) At least three (3) minutes long to ensure they need not be repeated.
(iii) Should be short (not more than 10 seconds).
(iv) Conducted using the ICAO phonetic alphabet only.

(123) The readability of a radio signal may be reported numerically. A reported readability of three (3) means:
(i) Perfectly readable.
(ii) Readable but with difficulty.
(iii) Unreadable.
(iv) Readable.

(124) The readability of a radio signal may be reported numerically. A reported readability of four (4) means:
(i) Readable.
(ii) Unreadable.
(iii) Readable but with difficulty.
(iv) Perfectly readable.

(125) The readability of a radio signal may be reported numerically. A reported readability of five (5) means:
(i) Readable now and then.
(ii) Perfect readable.
(iii) Unreadable.
(iv) Readable but with difficulty.

(126) The readability of a radio signal may be reported numerically. A reported readability of one (1) means:
(i) Perfectly readable.
(ii) Readable now and then.
(iii) Readable but with difficulty.
(iv) Unreadable.

10.2 AVOP National Test Answers

Listed below are the correct answers to questions in section 10.1.

(1) – 4	(44) – 4	(86) -3
(2) – 3	(45) – 2	(87) – 4
(3) – 2	(46) – 2	(88) – 4
(4) – 1	(47) – 3	(89) – 2
(5) – 3	(48) – 2	(90) – 4
(6) – 2	(49) – 1	(91) – 4
(7) – 2	(50) – 2	(92) – 3
(8) – 2	(51) – 2	(93) – 4
(9) – 2	(52) – 4	(94) – 2
(10) – 4	(53) – 4	(95) – 4
(11) – 2	(54) – 1	(96) – 1
(12) – 1	(55) – 3	(97) – 2
(13) – 3	(56) – 4	(98) – 3
(14) – 1	(57) – 3	(99) – 4
(15) – 3	(58) – 4	(100) – 1
(16) – 3	(59) – 4	(101) - 3
(17) – 1	(60) – 4	(102) – 2

(18) – 1
(19) – 3
(20) – 3
(21) – 3
(22) – 3
(23) – 2
(24) – 1
(25) – 1
(26) – 3
(27) – 4
(28) – 3
(29) – 2
(30) – 1
(31) – 4
(32) – 2
(33) – 2
(34) – 1
(35) – 2
(36) – 4
(37) – 4
(38) – 1
(39) – 2
(40) – 2
(41) – 4
(42) – 3
(43) – 3
(61) – 4
(62) – 1
(63) – 3
(64) – 4
(65) – 2
(66) – 2
(67) – 3
(68) – 2
(69) – 4
(70) – 2
(71) – 1
(72) – 1
(73) – 2
(74) – 3
(75) – 3
(76) – 1
(77) – 4
(78) – 1
(79) – 3
(80) – 4
(81) – 1
(82) – 4
(83) – 1
(84) – 4
(85) – 2
(103) – 1
(104) – 3
(105) – 1
(106) – 1
(107) – 3
(108) – see next page.
(109) – 3
(110) – 4
(111) – 1
(112) – see next page.
(113) – 4
(114) – 1
(115) – 2
(116) – 3
(117) – 3
(118) – 1
(119) – 3
(120) – 4
(121) – 3
(122) – 4
(123) – 1
(124) – 3
(125) – 3
(126) – 2

11 LOCAL AIRPORT TRAFFIC DIRECTIVES

Local Airport Traffic Directives shall contain but not limited to, the following information:

(i) How and where:

(1) To apply for an ADP

(2) To report an accident.

(3) To report an FOD on the movement area.

(4) Make an appointment for an ADL test.

(ii) An airport plan to include:

(1) Runways with their orientation.

(2) Taxiways with identification.

(3) Aircraft parking area with identification.

(4) Roads leading to runway(s).

(5) Visual Aids such as PAPI, airport beacon.

(6) Electronic navigational aids such as: Glide Path, Localizer, VOR, NDB, VHF, DF, radar, etc. as well as the protected area around these instruments.

(7) The stop lines painted on taxiways as well as holding points.

(8) The lines delineating the taxiways from the aircraft parking area.

(9) The terminal building(s).

(10) The cargo area.

(11) The main hangars.

(12) Roads leading to aircraft parking area.

(13) Access points to airside in the operational area and for the airport perimeter.

(14) Emergency roads. Etc.

(iii) The airport operational area inclusive of the aircraft parking area(s) to include (plan on a large scale than 2):

(1) The aircraft stands.

(2) Marking for aircraft.

(3) Vehicles corridors marking.

(4) Vehicles parking area.

(5) Service vehicles parking area.

(6) Mandatory stop for vehicles.

(7) Lines delineating aircraft parking area and taxiways.

(8) The terminal building.

(9) The cargo area(s).

(10) The main hangars.

(11) Roads leading to aircraft parking area(s). etc.

(iv) Listing of operational procedures/restrictions specific to the airport.

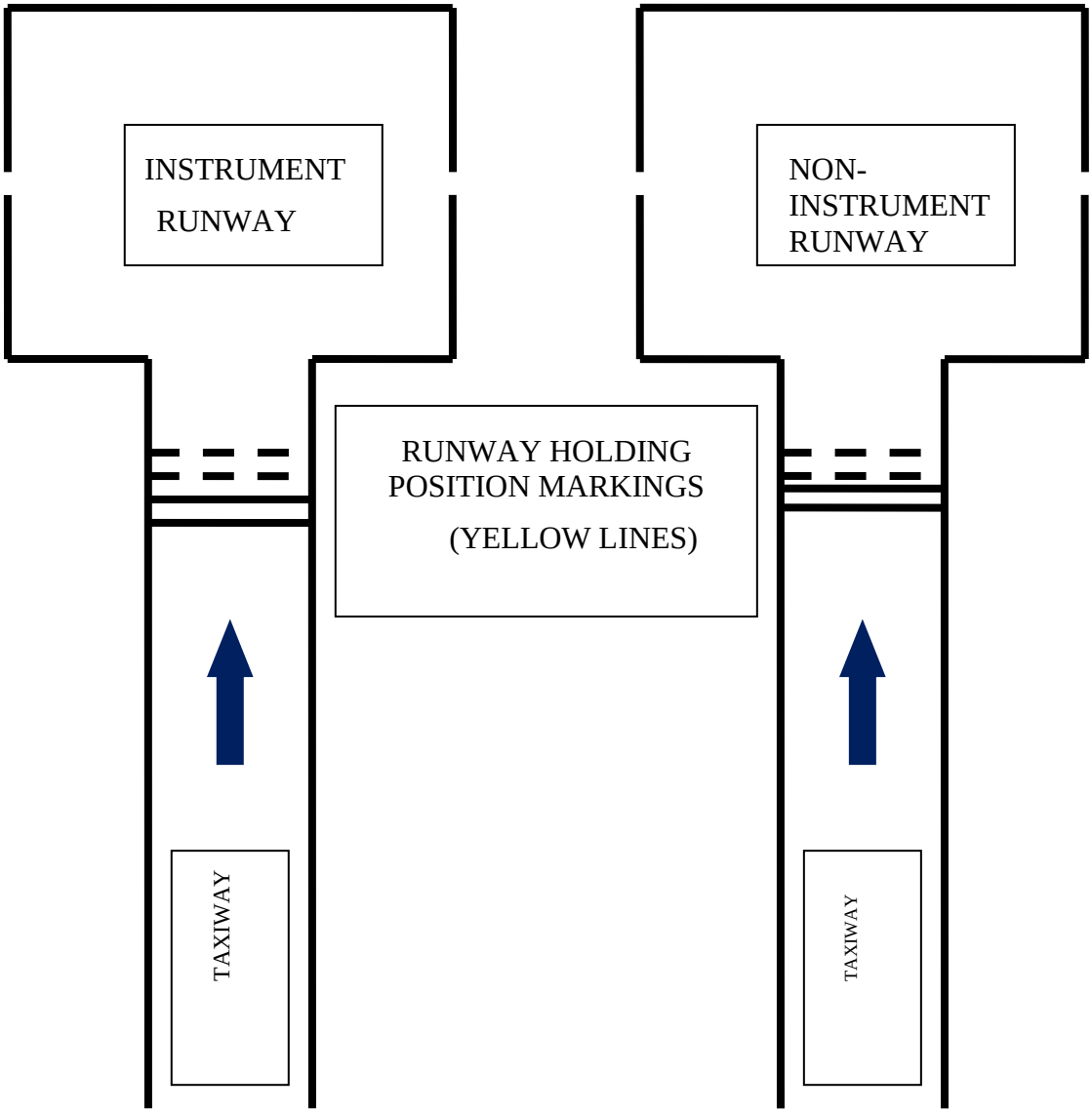
(v) Agreement between the airport management and the ATC for the operation of vehicles on the airside.

(vi) The aerodromes radio frequencies and operating hours.

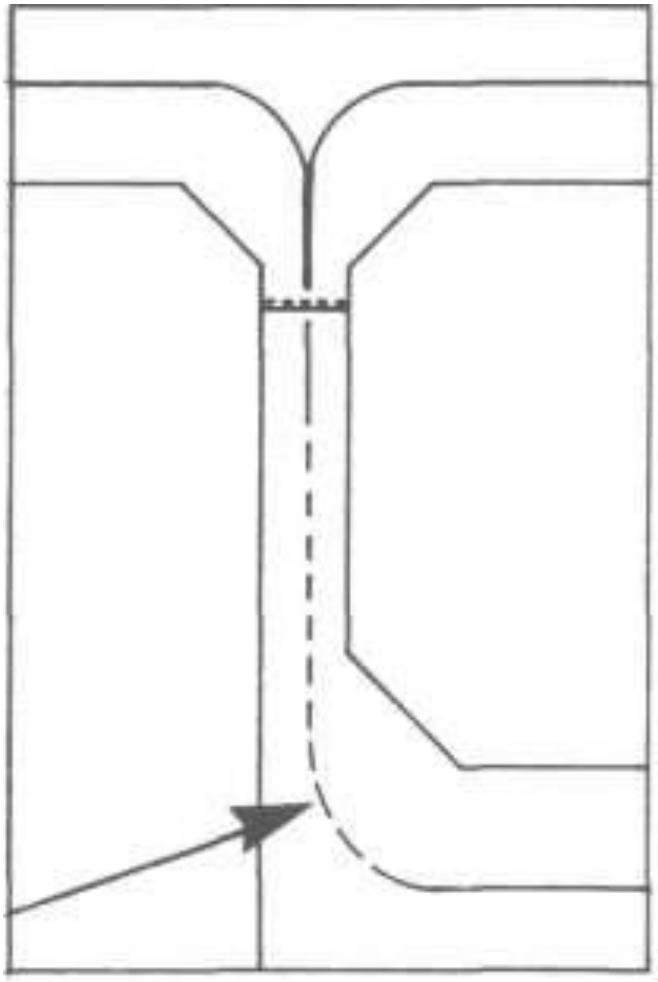
(vii) ADL self-examinations (directives, questions and answers).

(viii) ADL local test (directives, questions and answers).

APPENDIX 1 - RUNWAY HOLDING POSITION MARKING

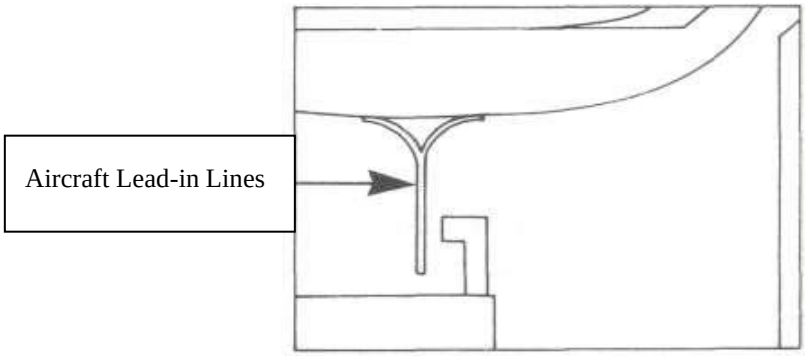


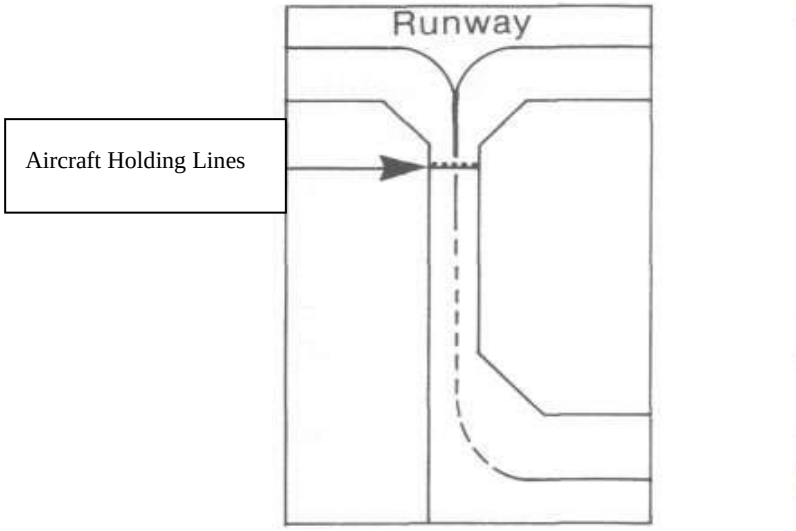
APPENDIX 2 - AIRCRAFT MOVEMENT GUIDE LINES



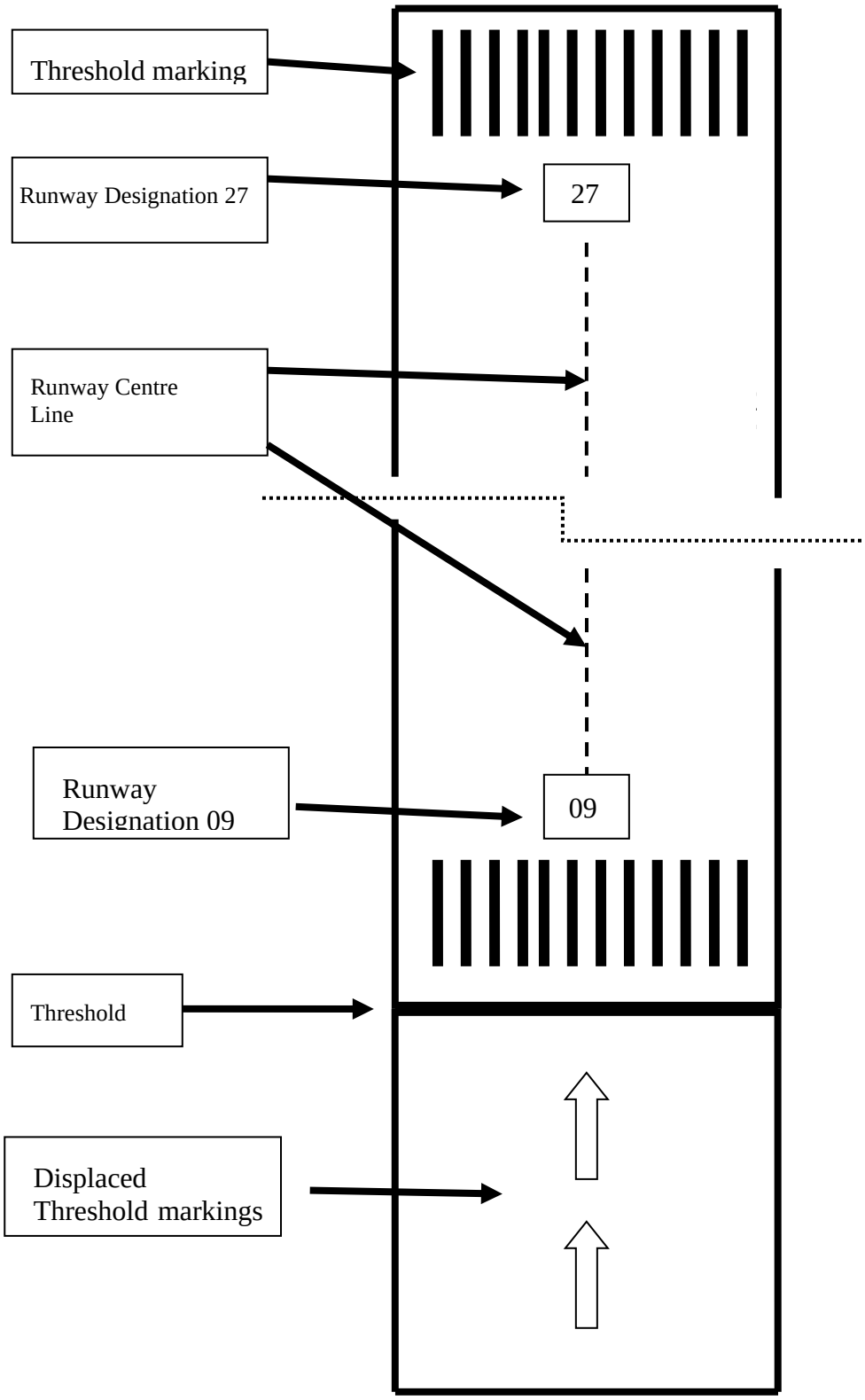
Aircraft Movement Guidelines

APPENDIX 3 - AIRCRAFT LEAD-IN LINE AND AIRCRAFT HOLDING LINE

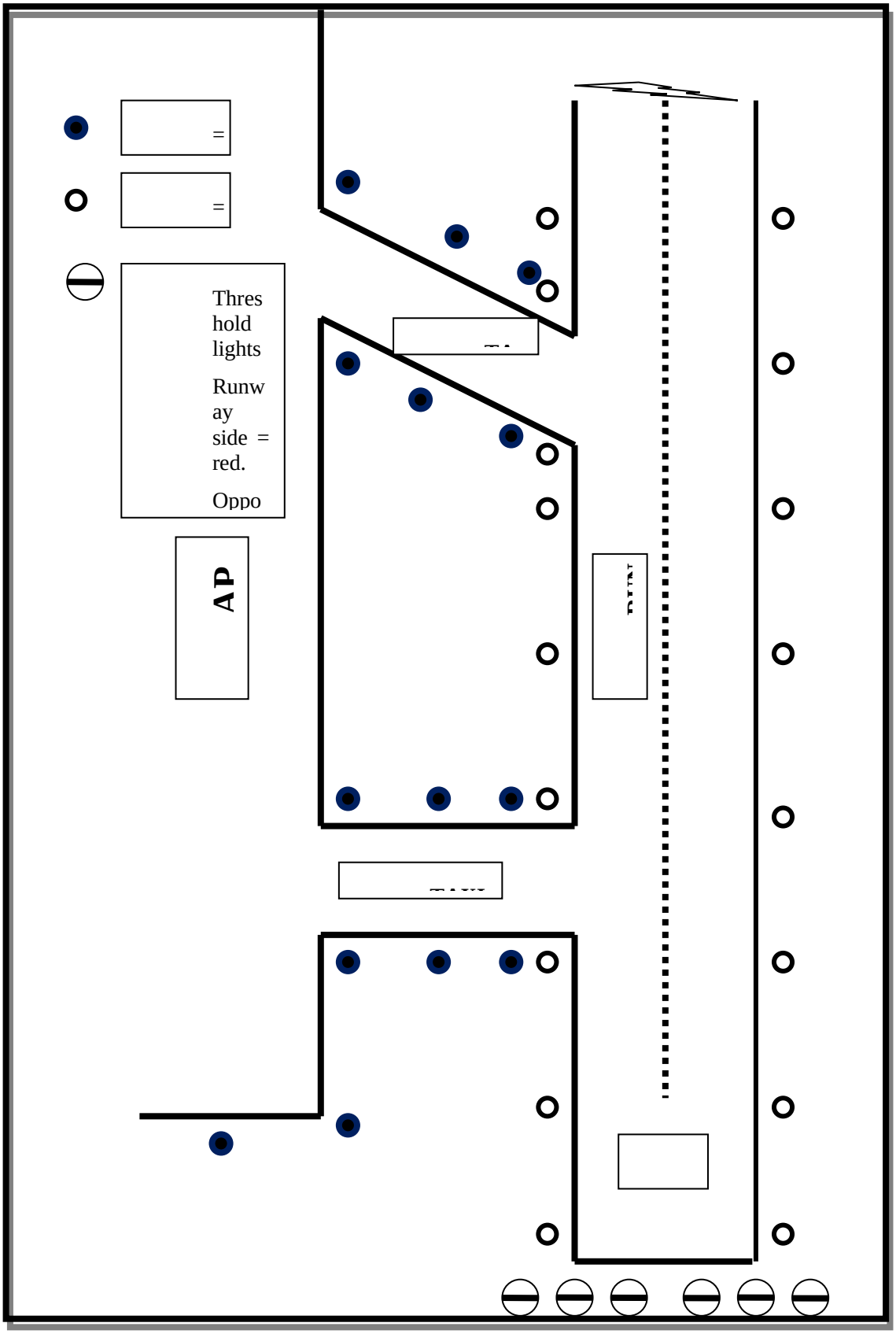




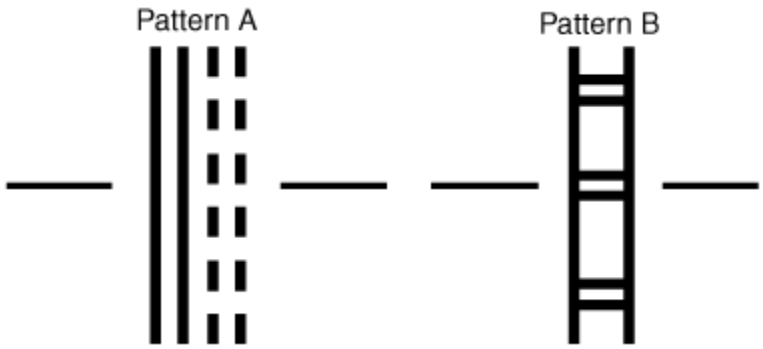
APPENDIX 4 - RUNWAY MARKINGS



APPENDIX 5 - EDGE LIGHTING FOR AIRCRAFT SURFACE MOVEMENT



APPENDIX 6 - HOLDING POSITION MARKINGS



APPENDIX 7 - MANDATORY INSTRUCTIONS SIGNS, RUNWAY DESIGNATOR SIGNS

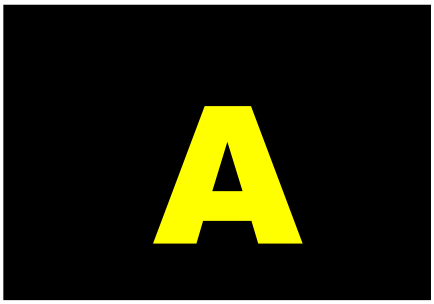
Background - RED

Letters - WHITE

APPENDIX 8 - DIRECTIONAL SIGNS

Background	-	YELLOW
Letters	-	BLACK

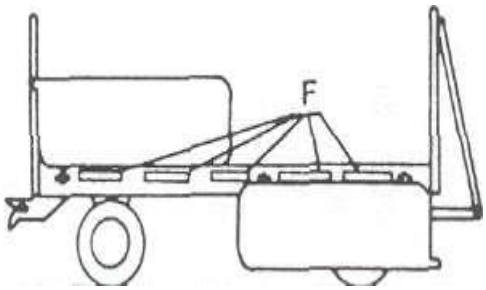
APPENDIX 9 - LOCATION SIGNS

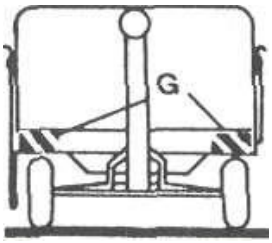


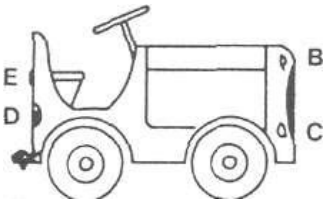
Background - BLACK

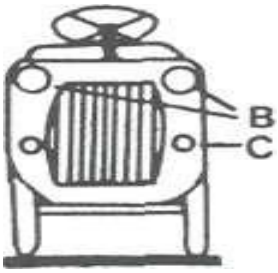
Letters - YELLOW

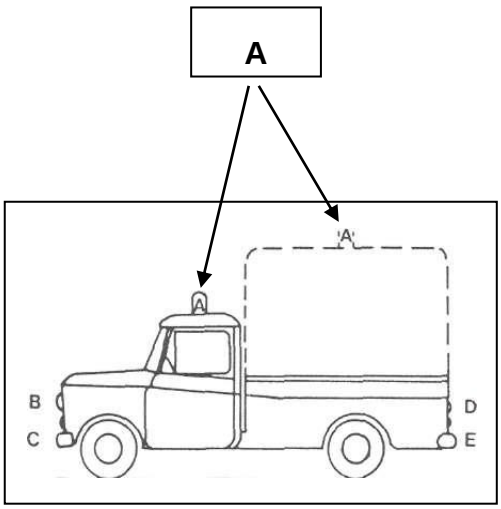
APPENDIX 10 - SAFETY MARKING REQUIREMENTS FOR APRON SERVICE VEHICLES.











A - Beacon Lamp

B - Head Lamps

C - Parking/Signal Lamps

D - Tail/Signal Lamps

E - License Plate Lamp

F - Reflectorized Strip

G - Reflectorized Panel

APPENDIX 11 - FRAMEWORK FOR AN AIRSIDE VEHICLE DRIVER TRAINING PROGRAMME.

The airside vehicle driver training programme is key to the safety and efficiency of airside operations. To ensure that procedures are respected and the level of competence of all personnel is appropriate, the elements listed below should be considered for the establishment of the airside vehicle training programme.

1.1 AIRSIDE ROADS AND APRONS - ADP

1.1.1 The airside driver permit (ADP)

(a) The issuing authority (normally the aerodrome operator), its validity in terms of time, conditions of use, non-transferability of ownership of the permit, control and audit of permit issue

(b) Local enforcement and driving offence procedures

(c) Relationship to State driver licensing system

1.1.2 National legislation and regulation

(a) State regulations related to general vehicle driving licences

(b) State/regional/local government requirements

(c) Regulatory requirements/guidance for driving airside

(d) Local organizations' rules/procedures

1.1.3 Aerodrome regulations and requirements

(a) Rules of Air Traffic Control, rights of way of aircraft

(b) Specific aerodrome regulations, requirements and local instructions

(c) Local methods used to disseminate general information and instructions to drivers

(d) Local methods used to disseminate information regarding work in progress

1.1.4 Aerodrome topography

(a) The general geography of the local aerodrome

(b) Surface markings and signs (for both vehicles and aircraft)

(c) Speed limits

(d) Aviation terminology used such as taxiway, apron, roads, crossings, etc.

(e) Parking areas and restrictions, hot spots and local requirements

1.1.5 Personal responsibilities

(a) Reporting of incidents

(b) Fitness to drive (medical/health standards) aligned to national requirements.

(c) Issue and use of personal protective equipment, such as high visibility clothing and hearing protection

(d) General driving standards

(e) No smoking requirements airside

(f) Responsibilities with respect to FOD and fuel/oil spillages

(g) Responsibility of individuals to ensure that their vehicle is suitable for the task and used correctly

(h) Following drugs and alcohol policy

(i) No use of mobile phones while driving

(j) Wearing of seat belts if fitted in the vehicle

1.1.6 Vehicle safety standards

(a) Agreed condition and maintenance standards at the aerodrome and/or national level

(b) The requirements to display obstruction lights and company insignia

(c) Requirements and content of daily vehicle inspections

(d) Agreed standards of aerodrome and company vehicle fault reporting and rectification

(e) Local requirements for the issue and display of airside vehicle permits (AVPs)

1.1.7 Airside traffic rules

(a) General rules

(b) Local rules

(c) Rules for operating in low visibility

(d) Speed limits, prohibited areas and no parking regulations

(e) Reversing procedures

1.1.8 Hazards and safety-related issues

(a) Aircraft movements

(b) Taxiway crossings

(c) The danger zones around aircraft

(d) Engine suction/ingestion and blast, propellers and helicopters

(e) Aircraft refueling

(f) FOD and spillages

(g) Vehicle reversing

(h) Staff and passengers walking across aprons

(i) Air bridges and other services, such as fixed electrical ground power

(j) The general aircraft turnaround process

(k) Aircraft emergency stop and fuel cut-off procedures

(l) Hazardous cargo

(m) Local vehicle towing requirements

(n) Driving at night

(o) Specialist vehicles

(p) Low visibility procedures

(q) Security of loads

(r) Escorting procedures and briefings

1.1.9 The role of:

(a) The regulator

(b) Local law enforcement

(c) The airport operator

(d) The local ATS unit

1.1.10 Security procedures

(a) Personal requirements (identification cards) and exemptions where applicable

(b) Vehicle security permits

(c) Security restricted areas

(d) Security critical areas

1.1.11 Emergency procedures

(a) Action in the event of a vehicle accident

(b) Specific action to be taken in the event of a vehicle striking an aircraft

(c) Action in the event of a fire

(d) Action in the event of an aircraft accident or incident

(e) FOD

(f) Reporting procedures

(g) Mandatory incident reporting

(h) Local emergency telephone numbers

1.1.12 Penalties for non-compliance

(a) General penalties

(b) Local penalties

1.1.13 Practical training (visual familiarization)

(a) Airside service roads, taxiway crossings and any restrictions during low visibility, standard taxiways used

(b) Aprons and stands

(c) Surface paint markings for vehicles and aircraft

(d) Surface paint markings delineating the boundary between aprons and taxiways

(e) Signs, markings and lights used on the taxiway that help indicate runways ahead

(f) Parking areas and restrictions

(g) Speed limits and regulations

(h) Hazards during aircraft turnarounds and aircraft movements

1.2 MANOEUVRING AREA - ADP

1.2.1 Air traffic services

(a) Function of aerodrome control and its area of responsibility

(b) Function of ground movement control and its 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, standard phraseology

(f) Demarcation of responsibilities between ATS and apron control, if applicable

1.2.2 Aerodrome topography

(a) Emphasis on SLCAR standard signs, markings and lights used on the manoeuvring area

(b) Special emphasis on those signs, markings and lights used to protect the runway

(c) Description of equipment used in non-visual aids to navigation, i.e. ILS

(d) Description of protection zones related to non-visual aids to navigation

(e) Description of ILS-protected areas and their relation to runway holding points

(f) Description of runway instrument/visual strip, cleared and graded area

1.2.3 Hazards and safety-related issues pertaining to manoeuvring area driving

(a) Engine suction/ingestion and blast, vortex, propellers and helicopter operations

(b) Procedures for vehicle and or radio becoming unserviceable while on manoeuvring area

(c) Rights of way for aircraft, towed aircraft and rescue and firefighting service (RFFS) vehicles in emergency

(d) Runway incursions

(e) Procedures for vacating the runway, including upon ATC instruction, in order to ensure the safety of aircraft operations and taking into account relevant local runway and taxiway safety-related factors such as locations of runway-holding positions, protected zones, and runway strip dimensions

1.2.4 Emergency procedures

(a) Actions to be taken if FOD is found on runways and/or taxiways

(b) Procedures to be used by drivers if lost or unsure of position

(c) Local emergency telephone numbers

1.2.5 Aircraft familiarization

(a) Knowledge of aircraft types and ability to identify all types normally operating at the aerodrome

(b) Knowledge of aircraft operator call signs

(c) Knowledge of aircraft terminology relating to engines, fuselage, control surfaces, undercarriage, lights, vents, helicopters, etc.

1.2.6 Practical training

(a) All runways (including access and exit routes), holding areas, taxiways and aprons

(b) All signs, surface markings and lights associated with runways, holding positions, Category I/II/III operations

(c) All signs, surface markings and lights associated with taxiways

(d) Hazards of operating around aircraft landing, taking off or taxiing

(e) Identification of hazardous situations and assessment of mitigation techniques

(f) Navigation aids, such as ILS-protected areas, antennas, RVR equipment and other meteorological equipment

(g) Knowledge of standard taxi routes, primarily intended for aircraft

(h) Any locally used naming convention for particular areas or routes

(i) Local procedure for vacating runways and taxiways, while ensuring safety of aircraft operations

1.3 RADIOTELEPHONY

1.3.1 Hierarchy of message priority

(a) Message priorities, understanding of distress, alerting, control and information messages

1.3.2 Phonetic alphabet

(a) Correct pronunciation of letters, words and numbers

(b) Emphasis on drivers using standard phraseology similar to pilots

1.3.3 Aircraft, ATS and vehicle call signs

(a) Understanding the terminology and acronyms used by ATS and pilots

(b) Knowledge of the aircraft operator call signs used at the aerodrome

1.3.4 Read-back of clearances and safety-related information

(a) Vehicle drivers shall use standard read-back in the same manner as pilots for instructions, such as "enter/cross the runway", and if conditional clearances are used.

Note 1 - Provisions on read-back of clearances and safety-related information by vehicle drivers operating on the manoeuvring area are contained in SLCAR Part 11 - Air Traffic Services.

Note 2 - Provisions on voice communications are contained in SLCAR Part 10B - Aeronautical Telecommunications - Communication Procedures including those with PANS status, Chapter 5, and phraseologies to be used by pilots, ATS personnel and other ground personnel are contained in the Procedures for Air Navigation Services - Air Traffic Management (PANS-ATM, Doc 4444), Chapter 12.

1.3.5 Readability scale

(a) Understanding the use of the readability scale from 1 to 5

1.3.6 Vehicle breakdown procedure

(b) Local procedure for vehicle breakdown on runways or taxiways

(c) Procedure for indicating vehicle failure to the ANSP

1.3.7 Radio failure procedure

(a) Understanding of the local procedure if radio failure occurs while on the runway or taxiway

(b) Understanding of light signals that may be used by ATS to pass instructions to vehicles

1.3.8 Transmitting techniques

(a) Understanding the reasons for listening prior to transmitting

(b) Use of aviation English

(c) Words and sounds to be avoided

(d) Correct positioning of microphones to avoid distortion

(e) Avoidance of "clipped" transmissions

(f) Awareness of regional accents and variations of speech

(g) Speed of delivery of RTF phraseology

1.3.9 Portable radios

(a) Correct use of radios

(b) Effective range and battery life

(c) Screening/shielding effects on the aerodrome

(d) Use of correct call signs, either relating to vehicle or an individual

1.3.10 Legal requirements (local to issuing aerodromes)

(a) Local instructions regarding use of portable radios and hand-held microphones while driving a vehicle

(b) Local instructions on the use of mobile/cellular telephones while operating airside

APPENDIX 12 - AIRSIDE DRIVER PERMIT RECORDS

1. RECORD KEEPING

1.1 A suitable means should be provided for the secure storage of information relating to ADPs. The information should include:

(a) identification number;

(b) name;

(c) date of birth;

(d) employer;

(e) name of training organization;

(f) name of trainer;

(g) date of completion of training;

(h) date of validation;

(i) assessment results;

(j) date of revalidation;

(k) infringement notices;

(l) type of permit held;

(m) driving history (accidents/incidents);

(n) State licence checks;

(o) any required medical evidence; and

(p) copies of self-declarations of fitness or approved declarations by an occupational health practitioner.

1.2 The information described above may be kept in any suitable format and made available for audit.