



ADVISORY CIRCULAR

SLCAA-AC-AGA015-Rev.01

EFFECTIVE DATE: 31st JULY 2021

SIERRA LEONE CIVIL AVIATION AUTHORITY

Guidance on Aerodrome Inspection Programme and Condition Reporting

A handwritten signature in blue ink, appearing to read 'M Baio', is positioned above the name of the Director General.

Moses Tiffa Baio
Director General
Sierra Leone Civil Aviation Authority



Table of Contents

1	GENERAL	3
1.1	PURPOSE	3
1.2	APPLICABILITY	3
1.3	DESCRIPTION OF CHANGE	3
1.4	REFERENCE.....	3
1.5	CANCELLED DOCUMENTS	3
1.6	ACRONYMS	4
2	AERODROME INSPECTION OVERVIEW	4
2.1	RESPONSIBILITY.....	5
2.2	OBJECTIVES	6
2.3	KNOWLEDGE AND EQUIPMENT FOR AERODROME INSPECTION	7
2.4	COMPONENTS OF AN AERODROME INSPECTION	7
2.5	INSPECTION PROCEDURES.....	7
3	GENERAL PROCEDURES FOR THE INSPECTION AND DOCUMENTED REPORTING OF THE MOVEMENT AREA	9
3.1	PROCEDURE	9
3.2	REPORTING	9
3.3	LEVELS OF INSPECTION	10
3.4	RUNWAY AND TAXIWAY STRIPS AND SAFETY AREAS	14
3.5	MARKINGS AND SIGNS	14
3.6	VISUAL NAVIGATION AIDS	14
3.7	OBSTRUCTIONS	15
3.8	CONSTRUCTION	15
3.9	AIRCRAFT RESCUE AND FIRE-FIGHTING	15
3.10	PUBLIC PROTECTION	16
3.11	WILDLIFE STRIKE HAZARD MANAGEMENT.....	16
4	CONTINUOUS SURVEILLANCE	17
4.1	INTRODUCTION	17
4.2	GROUND VEHICLES.....	17
4.3	FUELLING OPERATIONS	17
4.4	CONSTRUCTION	17
4.5	PUBLIC PROTECTION	18
4.6	WILDLIFE STRIKE HAZARD MANAGEMENT.....	18
4.7	POTENTIAL PROBLEMS	18
5	PERIODIC CONDITION EVALUATION	19

Guidance on Aerodrome Inspection Programme and Condition Reporting

5.1	INTRODUCTION	19
5.2	PAVEMENT AREAS.....	19
5.3	MARKINGS AND SIGNS	21
5.4	QUARTERLY FUELLING INSPECTIONS	21
5.5	VISUAL NAVIGATIONAL AIDS.....	22
5.6	OBSTACLES.....	22
5.7	AIRCRAFT RESCUE AND FIREFIGHTING	23
6	SPECIAL INSPECTIONS	24
6.1	INTRODUCTION	24
6.2	PAVED MOVEMENT AREAS	24
7	FLIGHT CHECKING OF VISUAL AIDS.....	26
7.1	INTRODUCTION	26
7.2	REQUIREMENTS FOR SPECIFIC FLIGHT CHECKING.....	26
7.3	FLIGHT CHECKING CRITERIA	26
7.4	FLIGHT CHECKS AFTER MAJOR MAINTENANCE	26
7.5	APPROACH AND RUNWAY LIGHTING SYSTEMS.....	26
7.6	LOCATION/IDENTIFICATION BEACON.....	28
8	AERODROME CONDITION REPORTING	29
8.1	INTRODUCTION	29
8.2	NOTAM.....	29
8.3	INFORMATION	29
9	AERODROME RUNWAY INSPECTION PROCEDURES	30
9.1	GENERAL GUIDANCE	30
	APPENDIX 1 – RUNWAY INSPECTION PROCEDURES	32
	APPENDIX 2 – SAMPLE CHECKLIST	34

1 GENERAL

The Sierra Leone Civil Aviation Authority's Advisory Circulars contains 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

This advisory circular provides provisions pertaining to inspections of the aerodrome movement areas (including runways, taxiways, aprons and their associated aeronautical lighting systems, markings and signs), required to ensure the safe and efficient operations of aircraft.

It outlines the different types of inspections, their frequency and relevant variable relating to the mix of aircraft operations, pavement materials and environmental conditions. It also suggests the continuous surveillance, periodic condition and special inspections, and sample checklists for use during airport safety self-inspections. The information and guidance in this publication serve as a basis by which airports operators may develop their own aerodrome inspection programme.

1.2 Applicability

This material is intended for aerodrome operators and users of the aerodrome.

1.3 Description of Change

This AC is the second to be issued on this subject

1.4 Reference

- (a) SLCAR, Part 14A – Aerodrome Design and Operations
- (b) SLCAR, Part 14C – Certification of Aerodromes
- (c) ICAO Doc 9981 – PANS Aerodromes
- (d) ICAO Doc 9137 Part 8 – Airport Operational Services
- (e) ICAO Doc 9137 Part 9 – Airport Maintenance Practices

1.5 Cancelled Documents

This document repeals and replaces the previous guidance prescribed in **SLCAA-AC-AATNS015-AERODROME INSPECTION PROGRAMME AND CONDITION REPORTING**

1.6 Acronyms

AIP	-	Aeronautical Information Publication
FOD	-	Foreign Object Debris
ILS	-	Instrument landing System
NOTAM	-	Notice to Airmen
PAPI	-	Precision Approach Path Indicator
PAR	-	Precision Approach Radial
VASIS	-	Visual Approach Slope Indicator

2 AERODROME INSPECTION OVERVIEW

(a) The inspection of the aerodrome movement areas (including runways, taxiways and aprons, and their lighting systems, markings, signs, etc.) is required to ensure that hazards to aircraft are minimized, and to create safe and efficient operations. Aerodrome movement areas are complex and maintaining them in an optimal condition for safety depends on a large number of variables relating to the mix of aircraft operations, pavement materials and environmental conditions at each aerodrome. Inspection procedures are an integral part of ensuring the serviceability of the aerodrome and the detection of foreign object debris (FOD).

Note - Provisions on FOD control can be found in SLCAA-AC-AGA047 Foreign Object Debris.

- (b) Movement area inspections are mainly intended for:
- (i) ensuring that the conditions of the movement area and associated equipment are fit for the intended operational use;
 - (ii) identifying faults and potential hazards to the safety of aircraft or aerodrome operations and take appropriate action; and
 - (iii) providing periodic, timely and accurate updates on the condition of the movement area and the operational status of related facilities, to be reported to air traffic services (ATS), aerodrome operations and aeronautical information services (AIS).
- (c) Several types of inspections should be performed:
- (i) *daily inspections* or “*Level 1 inspections*” provide an overview of the general condition of the movement area and its associated facilities; and
 - (ii) *regular inspections* or “*Level 2 inspections*” are part of the preventive maintenance of the aerodrome and consist of a more detailed verification of the conditions of the movement area and its associated facilities.
- (d) Due to the potentially large areas and distances covered, Level 1 inspections may necessitate the use of vehicles. However, the higher the speed of the vehicle, the potentially less effective the inspection. The speed of the vehicle should therefore be kept as low as practical.
- (e) Detailed Level 2 inspections of paved surfaces, coordinated with the ATS unit, are best completed on foot, thus enabling a far more comprehensive assessment, as part of preventive maintenance.
- (f) Faults in the lighting systems will normally be detected via monitoring. Monitoring by visual display on the lighting control panel in the ATS unit will enable detection of circuit failures and verification that brilliancy selection by ATS is providing the desired

light output. Monitoring by visual inspection also enables the detection of failed lamps and the contamination of fittings by dirt and rubber deposits or misalignment.

- (g) In certain circumstances, unplanned inspections may need to be carried out to ensure the safety of operations. These circumstances may include:
 - (i) following the completion of works;
 - (ii) a reported incident;
 - (iii) a pilot/ATC report;
 - (iv) adverse meteorological conditions; and/or
 - (v) an emergency response

2.1 Responsibility

- (a) **Aerodrome Inspection.** Aerodrome inspection is a primary responsibility of the aerodrome operator. Primary attention should be given to such operational items as the runway, taxiways and adjacent areas, apron and service areas, surface conditions, detection of FOD, status of visual aids, including visible electrical systems or parts thereof, status of obstacles within and outside the aerodrome boundary, safety areas, aircraft rescue and firefighting, fuelling operations, navigational aids, ground vehicles, public protection, wildlife strike hazard management, and construction. The responsibility for inspection of all or some of the aerodrome areas may be assigned to other tenants, but with aerodrome management retaining overall inspection supervision. Management cannot delegate responsibility for operating the aerodrome safely.
- (b) **Inspection Frequency.** The frequency of inspections should be determined by identifying areas critical to the on-going safety of aircraft operations through a hazard analysis and risk assessment process, taking into account the following factors —
 - (i) frequency of operations
 - (ii) duration of operations
 - (iii) types of aircraft served
 - (iv) the aerodrome environment
 - (v) complexity of the facilities
 - (vi) size of the aerodrome

As a minimum, the integrity and safety of the movement area should be established by an inspection of the runway. The SLCAR's Part 14A, section 2.9.3 stipulates that "to facilitate compliance with 2.9.1 and 2.9.2 the following inspections shall be carried out each day:

- (i) for the movement area, at least once where the aerodrome reference code number is 1 or 2 and at least twice where the aerodrome reference code number is 3 or 4; and
- (ii) for the runway(s), inspections in addition to (i) whenever the runway surface conditions may have changed significantly due to meteorological conditions."

However, inspection of the movement area should be regular and as frequent as possible. In any event, the minimum frequency should be at least 4 times per day (dawn, morning, evening and dusk) for runways; Taxiways and Aprons should be inspected at least daily. The inspection should be conducted at least 40 minutes prior

to the first aircraft movement. The reasons for establishing the frequency of inspections should be documented, and submitted to support the contents of the exposition, addressing the aerodrome operators safety inspection programme.

- (c) **Reporting.** An effective aerodrome inspection requires a procedure for reporting deficiencies so that they can be corrected. If a dangerous unserviceability is discovered during a runway inspection (e.g. damaged pit covers or broken lights), it shall be immediately reported to ATS by radiotelephony (RTF) for appropriate ATS action to be considered. The aerodrome operations department should also be informed. If the runway is closed as a result of such damage, the inspection team should continue their inspection whilst awaiting the arrival of airport maintenance support. The team should also be prepared to inspect any subsidiary runway if applicable. If unserviceability is found during an inspection, but which does not affect the use of the runway, it should be reported to the aerodrome maintenance department on the appropriate form, stating the degree of urgency, date and time. Should aircraft parts or tire pieces be found during a runway inspection, then airport operations and air traffic control must be informed immediately so that tracing and notification action can be taken.
- (d) **Inspection Records.** The aerodrome operator shall notify the Aeronautical Information Service (AIS) (for the issue of a NOTAM), as soon as practicable, of any aerodrome condition or defect which could have an immediate and critical impact on the safety of aircraft operations. When corrective action has been taken, the NOTAM is to be cancelled. For even the smallest aerodrome, it is desirable to use an aerodrome inspection checklist which constitutes a written record of conditions noted, and acts as a check on the follow-up actions taken. The scheduled use of a dated checklist will assure the regularity and thoroughness of safety inspections and follow-up of deficient items. It is most desirable to use a format in which each inspected area of the aerodrome complex is positively noted. Checklist in the form of “tick boxes” should be avoided unless they are devised in such a way that each item is a question whereby a tick yes or no box serves as the complete response to that question.

2.2 Objectives

- (a) Inspections of the movement area shall be planned so as to ensure that an appropriate level of vigilance is maintained at all times. The inspections shall cover, at a minimum, the following items:
 - (i) the runway;
 - (ii) the remaining manoeuvring area, including taxiways and adjacent areas;
 - (iii) the apron and service areas;
 - (iv) surface conditions;
 - (v) detection of FOD;
 - (vi) status of visual aids, including visible electrical systems or parts thereof; and
 - (vii) status of obstacles outside the aerodrome boundary.
- (b) An inspection programme of the movement area commensurate with the size and complexity of the aerodrome, along with the objectives set in 3.2.1 shall be established by the aerodrome operator.

- (c) All aerodrome inspections shall be formally documented in a log by the aerodrome operator and all records shall be maintained (for at least six (6) years) for future reference.
- (d) Each inspection shall include a reporting and follow-up mechanism to ensure that appropriate action is taken.

2.3 Knowledge and Equipment for Aerodrome Inspection

Personnel who conduct aerodrome inspections should:

- (a) know the location and types of aerodrome facilities and their design criteria;
- (b) know the standards applicable to the aerodrome as in SLCAR's Part 14A;
- (c) have a vehicle equipped with —
 - (i) two way voice radio communications with the air traffic services unit, if provided for the aerodrome;
 - (ii) a flashing or rotating beacon for night time inspections; and
 - (iii) either a beacon or chequered flag for day time inspections;
- (d) know and use correct radio communication procedures and techniques;
- (e) be supplied with checklists covering the various inspection areas. While the format of checklists vary, it is important to develop a checklist that is useful for the aerodrome and its operation. If certain personnel will be responsible for only certain items, separate checklists pertinent to those areas may be developed. A sketch of the aerodrome should accompany the checklist so that the location of problems can be marked for easy identification;
- (f) read the previous inspection report;
- (g) if construction is in process, be familiar with the safety plan for the project; and
- (h) if the aerodrome is certificated under SLCAR Part 14C, be familiar with the aerodrome certification requirements about aerodrome inspections.

2.4 Components of an aerodrome inspection

An effective safety inspection programme has four components —

- (a) a regularly scheduled inspection of physical facilities
- (b) continuous surveillance of certain aerodrome activities, such as fuelling operations, construction, aerodrome maintenance
- (c) a periodic inspection programme for such things as surveying approach slopes, checking for obstructions, the checking of visual aids, operation of Air field lighting system etc
- (d) special inspections during unusual conditions or situations, such as inclement weather or following maintenance activity on the manoeuvring areas.

2.5 Inspection Procedures

2.5.1 Movement Area

- (a) A runway inspection may involve the deliberate entry to an active runway. It is therefore essential that any potential hazards associated with this activity are identified and addressed so that staff with inspection duties have a clear understanding of what is involved and how the task is to be safely carried out.

- (b) All runway inspections undertaken on an active runway shall be conducted according to documented procedures developed to ensure the safety of aircraft operations and aerodrome personnel.
- (c) Procedures for the access to runways shall be established with the appropriate ATS unit. Prior to any runway inspection, radio contact shall be established with ATS and permission to begin the inspection shall be obtained and acknowledged by the inspection team.
- (d) If runway lighting is installed, inspections should be undertaken with the lights illuminated in order to enable the identification of unserviceable lamps and possible failures of light fittings.
- (e) When aircraft parts or aircraft tire pieces are found during a runway inspection, aerodrome operations and the ATS unit shall be informed immediately, so as to trace the origin of the parts and pieces and notify the appropriate aircraft operators.
- (f) Daily inspections should be undertaken on taxiways in regular active use. The frequency of inspections for remaining taxiways should be assessed to ensure that they remain suitable for use when required. All inspections undertaken on an active taxiway shall be conducted according to appropriate procedures developed for the location, which ensure the safety of aircraft operations and aerodrome personnel.
- (g) Procedures for access to taxiways shall be established with the appropriate ATS unit. Prior to any taxiway inspection, radio contact shall be established with ATS and permission to begin the inspection shall be obtained and acknowledged by the inspection team, unless a local safety assessment, taking into account also the aerodrome characteristics, size, complexity and level of traffic, has proven that a taxiway inspection can be safely conducted without radio contact with ATS, and a corresponding procedure has been documented and promulgated.
- (h) Inspections of the apron area should be undertaken at defined frequencies. Considering the level of operations undertaken at each aerodrome, the frequency may be adjusted in accordance with the level of risk identified by the aerodrome SMS.
- (i) Inspections may be undertaken in segments to account for the size and complexity of the operation.

2.5.2 Visual Aids

- (a) A routine ground inspection of all aerodrome ground lighting systems should be made daily or before use. Any deficiencies should be remedied as soon as possible, and the identified lights should again be inspected before use after the remedial action is taken. All deficiencies and associated remedial action should be logged.
- (b) Approach lighting systems should be inspected at adequate, defined frequencies. They may also be inspected upon request from aerodrome operations or ATS. The inspection should cover all the light units of the approach lighting system.
- (c) The inspecting team shall inform ATS before commencing the approach lighting system inspection.
- (d) ATS shall be informed when the inspection is complete in order to turn off any lights not required for regular operations.
- (e) If a major failure is discovered during the inspection, ATS and aerodrome maintenance shall be informed immediately

3 GENERAL PROCEDURES FOR THE INSPECTION AND DOCUMENTED REPORTING OF THE MOVEMENT AREA

The regularly scheduled inspection should consist of specific observations of the aerodrome's physical facilities on a frequency determined by the aerodrome operator. This inspection should concentrate on the areas described in this section and if deficiencies exist, indicate the item and identify its location on a sketch. If the deficiency is such that it could affect the safety of aircraft operations, the affected area must be immediately marked as being unserviceable and a NOTAM issued to that effect, Take photographs if appropriate, to document the condition.

3.1 Procedure

- (a) Prior to entering the runway, an entry request (e.g. “[vehicle call sign] holding at [...] for runway inspection”) shall be made. Upon leaving the runway, the control tower shall be advised when the inspection vehicle is clear of the runway. Some inspections are carried out on an ON/OFF basis (i.e. where the inspection vehicle may be required to enter or leave the runway on short notice). The request for runway entry and the notification that the vehicle is clear of the runway shall be made on each occasion that the inspection vehicle enters and leaves the runway. A listening watch should be maintained on the appropriate radiotelephony channel during any runway inspection.
- (b) If, during an inspection, the control tower requests the inspection personnel to vacate the runway, the vehicle shall move outside the runway before advising the control tower that they are clear. The inspection personnel shall not re-enter the runway until in receipt of specific clearance to do so. The inspection team shall never vacate a runway by driving through an instrument landing system (ILS) critical/sensitive area.
- (c) ATC clearance shall be obtained before crossing or entering any runway.
- (d) Runway inspections should be carried out in the direction opposite to that being used for landing or taking off, primarily to ensure the visibility of, and by, the operating aircraft.
- (e) Upon final completion of a runway inspection, the control tower shall be advised of the completion of the inspection, and on the status of the manoeuvring area, as necessary.
- (f) The times of commencement and completion of the inspection shall be noted and included in the record of inspection log.

3.2 Reporting

- (a) If a dangerous unserviceability is discovered during runway inspection (e.g. damaged pit covers or broken lights), it shall be immediately reported to ATS by radiotelephony (RTF) for appropriate ATS action to be considered. The aerodrome operations should also be informed.
- (b) If unserviceability is found during an inspection, but which does not affect the use of the runway, it should be reported to aerodrome maintenance.
- (c) An inspection log should include:
 - (i) description and exact location of the failure;
 - (ii) details of the task(s) and any remedial action(s) necessary or taken, such as notification to ATS and AIS, recording of events for further analysis (including as part of the aerodrome SMS) and informing maintenance services for further action;

- (iii) identifying the person/entity responsible for undertaking the task and/or further action; and
- (iv) Identifying the timescale by which it should be completed.

3.3 Levels of Inspection

Inspection procedures on several levels are key to ensuring that the highest standards of safety and efficiency are maintained for all stakeholders on the movement area.

(a) A typical two-level inspection system has the following main elements:

- (i) daily inspections (Level 1): covering the entire movement area and zones adjacent to the aerodrome boundary; and
- (ii) regular inspections (Level 2): carried out by specialists whereby all runways, taxiways and aprons are divided up into a number of areas and inspected in more detail.

Inspections shall be performed using checklists which cover the various inspection areas and a sketch of the aerodrome, which enables the location and marking of detected problems.

(b) A log shall be kept for all inspections, and will include:

- (i) details of inspection intervals and times;
- (ii) names of persons carrying out the inspection; and
- (iii) results and observations, if any.

A log of all remedial actions identified following an inspection shall be recorded and verification of their implementation shall be undertaken.

3.3.1 Daily Inspections (Level 1)

- (a) Level 1 inspections are ideally carried out at defined intervals during the day, typically:
 - (i) a first light inspection prior to daytime operations;
 - (ii) a last light inspection prior to night operations; and
 - (iii) other inspections may be planned in between those described above, their frequency being dictated by the hours of peak traffic.
- (b) Additional Level 1 inspections, particularly relating to the runway, may be carried out depending on local circumstances, the aerodromes hazard identification and analysis, and the safety risk assessment process
- (c) Standard inspection routes should be defined and followed so that an area cannot be forgotten.
- (d) Inspection personnel should report anything that affects safety and the serviceability of the following:

3.3.1.1 Paved Movement Areas

The condition of pavement surfaces is an important part of aerodrome safety. Pavement inspection should be conducted before beginning flight operations to ensure pavement surfaces are clear. As a minimum, a daily inspection should be performed of all paved areas as follows:

3.3.1.1.1 Runways

- (a) The runway, including its shoulders with regard to cleanliness, rubber build-up and pit/drain covers;
- (b) runway cleanliness, particularly FOD which could cause engine ingestion damage;
- (c) presence of contaminants affecting runway friction characteristics;
- (d) signs of pavement surface damage, including the cracking and spalling of concrete, and looseness of aggregate material;
- (e) runway signs and paint markings for damage and wear;
- (f) the runway strip and runway end safety area (RESA) including drainage;
- (g) failure of precision approach path indicator (PAPI) units, runway guard lights and any other runway lights and wing bars;
- (h) any object that may affect the runway strip;
- (i) all areas of work in progress on or adjacent to the runway;
- (j) the condition of all wind direction indicators for day/night operations; and
- (k) wildlife activity on and near the runway.

3.3.1.1.2 Taxiways and taxilanes

- (a) All taxiway pavement surfaces, particularly with regard to pavement damage, cleanliness and FOD;
- (b) all taxiway signs and paint markings for damage or wear;
- (c) any objects and excavations that may affect the taxiway strip;
- (d) all work in progress on or adjacent to the taxiway system;
- (e) all taxiway centre line and/or edge light fittings and markers;
- (f) the general condition of drains and covers; and
- (g) the state of the grass edge, including any waterlogged areas.

3.3.1.1.3 Apron areas

- (a) All apron pavement surfaces, particularly with regard to pavement damage, cleanliness (fuel/oil spillages) and FOD;
- (b) all apron signs and paint markings for damage or wear;
- (c) any incorrect parking of aircraft, vehicles, equipment, passenger loading bridges, etc.;
- (d) any work in progress areas; and
- (e) the general condition of drains and covers.

3.3.1.1.4 Aerodrome Lighting

At night and during periods of low visibility, lighting is important for safe aerodrome operations. Lights come in different shapes, sizes, colours, and configurations and can be flush mounted or elevated. The inspecting personnel should:

- (a) Check all runway approach lighting (including any Category III supplementary systems) should be inspected every evening at dusk prior to night operations and any defects reported;
- (b) Check all runway lighting should be checked as soon as practicable after the lighting has been switched on. Individual light outages and circuit failures should be reported;
- (c) Check all taxiway lighting should be checked as soon as practicable and should include all centre line lights, edge lights, stop bars, runway guard lights and lead-on/lead-off lights; and

- (d) Check during the night period, all apron lighting should be inspected and any deficiencies reported.
- (e) Check to ensure that the following are operable, if installed, and that the optical systems are not obscured by vegetation or deposits of foreign material —
 - (i) runway threshold and end lights
 - (ii) runway, taxiway, and apron edge lights
 - (iii) runway centreline and touchdown zone lights
 - (iv) taxiway centreline lights and apron guidance lights
 - (v) holding position lights
 - (vi) runway end identifier lights
 - (vii) runway guard lights and wing bars
 - (viii) reflectors
 - (ix) floodlights for signs
 - (x) visual docking systems
 - (xi) apron floodlighting
 - (xii) obstruction lights.
- (f) report all damaged or missing fixtures, and lights that are not working;
- (g) report any broken lenses;
- (h) ensure that runway and taxiway lights and runway threshold lights are the proper colour and are oriented correctly; and
- (i) check that lights function properly, including intensity controls, through the manual or radio control features, and that photocell controls function properly.

3.3.1.2 Unpaved Movement Areas

The conditions of these surfaces are as important as for paved surfaces and should be subject to the same level of thoroughness as follows:

- (a) Determine if there are any hazardous ruts, depressions, humps or variations from the normal smooth surfaces;
- (b) Determine if there are any holes that could cause directional control problems for any aircraft, depression, or aircraft wheel tracks ;
- (c) Check for debris and other foreign objects;
- (d) Check the condition, length of grass and the amount of weeds, particularly near lights and signs. The height of thick grass should not exceed 150mm on runways and taxiways and 300mm on runway strips; and
- (e) Check for vegetation growth along the edges that may impede drainage from the movement areas and areas of jet blast erosion;
- (f) any areas of standing water (waterlogged grass areas should be noted and reported, particularly since they may be an attraction to birds);
- (g) excessive difference in levels at the edge of paved surfaces;
- (a) any work in progress areas.

3.3.1.3 General Attention

- (a) When conducting routine daily inspections, general attention should be paid to the following points:

- (i) general cleanliness with particular attention to FOD which could cause engine ingestion damage. This may include debris from runway maintenance operations or excessive grit remaining after runway gritting. Any build-up of tire rubber deposits should be noted;
- (ii) signs of damage to the pavement surface including cracking and spalling of concrete, condition of joint sealing, cracking and looseness of aggregate in asphalt surfaces or break-up of friction courses. Damage or deterioration which could cause aircraft damage should be reported immediately for inspection by maintenance services and, if the damage is sufficiently serious, the area should remain closed to aircraft pending the results of such an inspection;
 - (1) after rain, flooded areas should be identified and marked, if possible, to facilitate later resurfacing;
 - (2) damage of light fittings;
 - (3) cleanliness and visibility of runway markings; and
 - (4) the condition and fit of pit covers.
- (b) The extremities of the runway should be inspected for early touchdown marks; jet blast damage to approach lights, marker cones and threshold lights; cleanliness; and obstacles in the runway end safety area.
- (c) The main objective of grass cutting shall be to ensure that lights and markers are not obscured by tall vegetation. It should also be managed in such a fashion as to limit the attraction of the aerodrome to birds and other wildlife. It will be necessary to ensure that mounds of grass cuttings are not left on areas where engine ingestion is possible.
- (d) A cursory visual inspection of the areas surrounding the aerodrome shall be made by the aerodrome operations staff to verify that no objects seem to affect any protected surfaces, particularly in the approach and departure areas of all runways.
- (e) The status of the lighting and marking of authorized obstacles shall be inspected.
- (f) Any unauthorized detected obstacles, and marking or lighting deficiencies of authorized obstacles, should be immediately reported to the designated persons, ATC, AIS, the Authority and other appropriate authorities, for corrective actions to be taken.

Note - guidance on obstacle control and management is contained in the SLCAA-AC-AGA011 Rev01 - Control of Obstacles.

3.3.2 Regular Inspections (Level 2)

- (a) Level 2 inspections consist of a more detailed verification of the condition on the movement area and its associated facilities than those carried out at Level 1. The Level 2 inspections should be carried out on foot, thus enabling a far more comprehensive assessment.
- (b) Within the Level 2 inspections process, it is recommended to proceed by dividing the movement area up into a number of zones depending on the size of the aerodrome. Each zone should be inspected in detail at defined, regular intervals. Level 2 inspections may be carried out at a time that best suits the stand demand, runway in use or other operational requirements.
- (c) In the case of precision approach runways, Level 2 inspections of visual aids will be more frequent and detailed than those carried out on other runways.

- (d) In case of a detected damage, photos should be taken to assess the evolution of the damage, in order to facilitate decision-making.
- (e) Inspection teams should report anything that affects the serviceability and safety of the movement areas.

3.4 Runway and Taxiway Strips and Safety Areas

The inspector should know the dimensions of the runway and taxiway strips and runway end safety areas at the aerodrome and:

- (a) Determine if there are any hazardous ruts, depressions, humps or variations from the normal smooth surface;
- (b) Any object that may affect the runway strip;
- (c) Check to ensure no object is located in these areas, except objects that must be in the areas because of their functions (such as runway lights, signs, or navigational aids);
- (d) Determine if the base for any equipment in safety areas is at grade level;
- (e) Check to ensure that the ground has not been eroded from around light bases, manhole covers, or other fittings that should be flush with the surface; and an exposed high edge could be a hazard to aircraft and should be filled in.
- (f) Check for any damage that might be caused by animals.

3.5 Markings and Signs

Aerodrome markings and signs provide important information to pilots during take-off, landing and taxiing. The inspecting personnel should know the appropriate markings and signs at the aerodrome and:

- (a) check markings for correct colour coding, blistering, chipping, fading, and obscurity due to rubber build-up;
- (b) check that markers are correctly positioned and in good condition;
- (c) check signs to ensure they are the correct colour coding, easy to read, secure, and that all lights are working and not obscured by vegetation or dirt;
- (d) check that signs within the strip areas are frangible mounted; and
- (e) check to see that signs are not missing, that they have the correct legend and orientation, and whether they are in need of repair.

3.6 Visual Navigation Aids

The inspection should concentrate on the visual navigational aids as follows:

- (a) ensure that the windsock area is clear of vegetation and that it can be easily seen;
- (b) check the windsock to ensure that the supporting mast is upright, that the windsock swings freely and, if lighted, that all lights are operating;
- (c) ensure that the aerodrome beacon, if provided, is visible and working properly;
- (d) ensure that the Runway Threshold Identification Lights are flashing, and not obscured to an approaching aircraft; and
- (e) check Visual Glide Slope Indicators (VASIS, PAPI) to ensure that their lights are working, not obscured to an approaching aircraft and that the mountings have not been damaged or disturbed.

3.7 Obstructions

The inspection should concentrate on a visual check of any construction underway on or around the aerodrome vicinity that could affect aircraft operations. The inspecting personnel should:

- (a) Check for any new or unreported obstructions such as cranes, masts, advertising hoardings, balloons etc, that intrude into the aerodrome obstacle free surfaces; and
- (b) Determine that obstructions are properly marked and lit.
- (c) Check for non-aeronautical ground light which by virtue of their location and setting can present a hazard to aircraft operations

3.8 Construction

The inspection should focus on construction activities on the aerodrome to ensure that a high level of safety for aircraft operations is maintained. The inspecting personnel should:

- (a) determine if stockpiled material and construction materials are properly stored to keep them from being moved by wind, jet blast, or prop-wash;
- (b) check all construction or work in progress adjacent to movement areas to ensure areas are identified with conspicuous marking and lighting;
- (c) determine if heavy construction equipment (such as bulldozers and cranes) are marked and lighted and parked clear of the runway and taxiway strips and any safety areas;
- (d) check to determine that stockpiles and stored equipment are not left in a position that would infringe the obstacle free surfaces; and
- (e) check to ensure that debris and foreign objects are progressively being picked up around construction areas.
- (f) Check operation of lighting in areas adjacent to construction daily before the construction crews depart for the day. In particular, ensure that mandatory instruction signs remain lit with the associated runway lights, even on taxiways that have been closed for construction;
- (g) Check NOTAMs daily during construction projects to ensure they accurately reflect the conditions on the airport;
- (h) Verify that closed taxiways or runways are properly marked and lighted; and
- (i) Report and monitor any dangerous condition created by construction activity, including damage to signs, lights, markings and NAVAIDS or equipment and supplies left in movement areas and safety areas.

3.9 Aircraft Rescue and Fire-Fighting

The inspection should focus if rescue and fire-fighting is required, on the rescue fire-fighting capability as follows —

- (a) at applicable aerodromes, check aircraft rescue and fire-fighting equipment availability;
- (b) determine that all required rescue and fire-fighting vehicles are serviceable and the required personnel are available;
- (c) ensure communication systems are working;
- (d) determine the adequacy of the fire-fighting agents on hand.

- (e) check for construction or maintenance activity on the movement area that could affect RFF response routes. Ensure that the RFFS has been notified if construction or maintenance activity could affect emergency response routes; and
- (f) report and monitor any RFF vehicle, equipment or extinguishing agent that is not available or inoperative, any RFF personnel that are not available; and any changes to aircraft that may require a change to RFF capabilities.

3.10 Public protection

Check the serviceability of barriers provided for public protection and the functioning of any control procedures.

3.11 Wildlife Strike hazard management

- (a) Check for dead birds or animals on the runways, taxiways, and aprons or other signs that wildlife problems may be developing, such as large flocks of birds on or adjacent to the aerodrome.
- (b) Wildlife hazards found during the daily self-inspection should be properly documented. All dead wildlife found and all wildlife aircraft strikes shall be reported using the appropriate form.
- (c) Check fencing and gates for wildlife accessibility and should ensure that wildlife control equipment is available and operational.

4 CONTINUOUS SURVEILLANCE

4.1 Introduction

Continuous surveillance is an alertness practised by personnel to look for defects at any time they are on the aerodrome operational area. Continuous surveillance of aerodrome physical facilities and activities should cover at least the areas described in this section.

4.2 Ground Vehicles

- (a) determine if procedures and arrangements for the orderly operations of ground vehicles (including grass mowing machines) are being followed; and
- (b) report any deficiencies, if appropriate.

4.3 Fuelling Operations

The Aerodrome Operator should:

- (a) Emphasize fire and explosion hazards inherent in aircraft refuelling.
- (b) Ensure proper bonding is being used, deadman controls are not blocked, and no smoking prohibitions are being observed.
- (c) Check for proper parking of mobile fuelers to ensure these vehicles are at least 3m apart and 15m from buildings.
- (d) Check for fuel leaks or spills in the fuel storage area and around mobile fuelers.
- (e) Determine if the fuel farm is free of flammable materials, including litter and vegetation.
- (f) Monitor and report any unsafe fuelling conditions and other obvious violations of airport fuel fire safety procedures.

4.4 Construction

The Aerodrome Operator should check construction projects to ensure that the contractor is following the construction works in accordance with the approved Method of Work Plan (MOWP). During the continuous surveillance inspection of construction activity, the aerodrome operator should check for, and report, any of the following conditions:

- (a) unauthorized use of runways, taxiways, and aprons by construction personnel and equipment;
- (b) conditions that may result in runway incursions and other irregularities. This includes ensuring that construction areas are delineated appropriately with barricades, cones, markings, etc. ;
- (c) Construction equipment is not operated in ILS critical areas unless coordination with the ATC;
- (d) Perimeter gates are left open and unattended, unlocked or construction vehicles and personnel are not following access and escort procedures;
- (e) Construction vehicles not properly marked or missing appropriate flags and/or beacons;
- (f) Foreign object debris on haul roads adjacent to movement areas that can be tracked onto taxiways, aprons, and ramp areas;
- (g) Confusing or missing signs, markings or lighting that could potentially confuse or mislead pilots;
- (h) Barricades and lighting are in place and operational; and

- (i) check all construction projects to ensure that the safety plan is being followed by the contractor.

4.5 Public protection

Pay special attention to public protection during construction and special events. During the continuous surveillance inspection of safeguards used to protect the public, the aerodrome operator should:

- (a) be alert on the presence of unauthorized personnel, vehicles, and animals;
- (b) ensure gates are secured, serviceable and clear for access by rescue and firefighting vehicles.
- (c) Check for open or unlocked gates and missing or damaged signs posted to prevent unauthorized access to the airfield; and
- (d) check for damaged or missing jet blast fences.

4.6 Wildlife Strike hazard management

During surveillance of wildlife hazards, the wildlife controller should:

- (a) note any birds or animals on or adjacent to the runways, taxiways, and aprons, to determine if there is a potential wildlife hazard problem; and
- (b) report any potential hazard created by birds on or adjacent to the aerodrome.

4.7 Potential problems

Check the following for any potential problems —

- (a) control of pedestrian access to the movement areas;
- (b) passenger loading and off-loading areas;
- (c) other movement areas frequented by the general public; and
- (d) debris on movement areas

5 PERIODIC CONDITION EVALUATION

5.1 Introduction

Periodic condition evaluations consist of specific detailed checks on the condition of the movement area on a regularly scheduled basis (but less frequently than daily). Checks may require use of specialist equipment and should cover at least the areas described in this section.

5.2 Pavement areas

(a) Runways

Runways should be inspected in detail every three months or at a reduced frequency based on runway usage, unless a documented analysis indicates a different frequency that would not affect the safety of aircraft operations. Typically, the runway may be divided up into a number of sections. Depending on the movement rate on the day of the inspection, a number of sections can be checked, as follows:

- (i) Surfaces. The full length and width of the runway should be inspected during the cycle. The inspections should record cracks, general break-up and any other surface failure, particularly if there are signs of debris. Special attention should be paid to the touchdown zones and other areas highly trafficked by aircraft. The touchdown zones should also receive particular attention to assess the degree of rubber build-up that may affect the runway surface friction co-efficient. Attention should also be given to rapid exits, access taxiways and runway turn pads.
- (ii) Signs, markings and lighting. The general condition of all signs along the runway should be inspected to ensure compliance with the SLCAR's Part 14A requirements. All runway markings should be inspected for conspicuity, particularly in the touchdown zones where rubber deposits may have blackened certain markings. A selection of light fittings should be inspected for general safety, particularly with regard to the torque setting of the fixings. The regularity of testing should be adjusted to achieve the target level of serviceability applicable to the service being tested.
- (iii) Runway strip. The area surrounding the runway, including the strip, clear and graded area, and runway end safety area (RESA) should also be inspected. Attention should be given to its general bearing strength, the nature of the surface, any obstacle that should be frangible and any other features that could cause damage to an aircraft, should it overrun into these areas.
- (iv) Runway approach lighting systems. Twice a year, each full approach lighting system, its cables, light fittings, masts and other support structures should be analysed for their general safety and serviceability by a physical check on foot. During the lighting check, a general assessment of the lighting pattern will be made and any outages or gross misalignments noted and reported.

- (v) Zones surrounding the aerodrome. At least once a week, aerodrome operations staff should conduct a review of the areas adjacent to and surrounding the aerodrome boundary to verify that there are no obstructions infringing protected surfaces, particularly in the approach and departure areas. Items of concern will include tall trees, cranes, lights that may cause confusion to pilots, and agricultural practices that could cause an increase in wildlife activity.

(b) Taxiways

At a time dictated by traffic movements and runway(s) in use, each section of the taxiway area should be inspected on foot and all deficiencies should be marked on a specialized map/diagram of the area. The taxiways should be inspected for the following:

- (i) Surfaces. All taxiway surfaces including any hard shoulders should be inspected. Surfaces should be inspected for cracks, deterioration and debris.
- (ii) Signs, markings and lights. All taxiway paint markings should be inspected and any repainting requirements noted. All signs should be checked for their conspicuity and stability, particularly where they may be affected by jet blast. A selection of taxiway light fittings should be verified for general safety.
- (iii) Surrounding areas. All taxiway strips and associated grass or other paved areas should also be inspected for their general safety, particularly with regard to obstructions and surface conditions in a similar way as the clear and graded areas of the runway are inspected.

(c) Aprons and Stands

The aprons and stand areas should be inspected and all defects noted on a specialized map/diagram of the area. All aprons and stands should be inspected for the following:

- (i) Surfaces. All aprons, stands and associated equipment parking areas should be inspected for surface break-up, particularly where FOD is being created.
- (ii) Signs, markings and lights. All surface paint markings associated with aircraft movement and parking should be inspected and any repainting requirements noted. Additionally, all signs, markings and lights associated with the visual docking guidance systems (VDGS) and advanced visual docking guidance systems (A-VDGS) should be checked for correct functionality and conspicuity.
- (iii) Surrounding areas. All service roads and equipment parking areas supporting each stand should also be inspected for general serviceability and condition, particularly where the surface may cause damage to vehicles or injury to passengers or personnel. These areas should also be inspected for general cleanliness and parking discipline.
- (iv) Equipment. When installed, all emergency telephones should be checked for serviceability.

5.3 Markings and Signs

- (a) check pavement markings to ensure they are correct and in good condition; and
- (b) determine if markings are visible at night, especially examine for rubber build-up in the touchdown zone areas.

5.4 Quarterly fuelling inspections

The fire safety standards for fuelling operations should be listed in the Aerodrome Manual (AM) and the quarterly inspections should be conducted for compliance to the fuelling fire safety standards listed in the AM. Sample quarterly inspection checklists for fuel storage areas and mobile fuelers are included in the Appendices to this AC. Typical fire safety standard to inspect quarterly are listed below.

5.4.1 Fuel storage areas and loading/unloading stations

The inspecting personnel should:

- (a) check fuel storage areas for adequate fencing and security to prevent unauthorized access or tampering;
- (b) check for "No Smoking" signs that are clearly visible;
- (c) check fuel storage areas for materials such as trash or vegetation that could contribute to the spread of fire. Also check for equipment, functions or activities that could be ignition sources;
- (d) note if fueling equipment appears to be in good operating condition and free of fuel leaks;
- (e) check piping for reasonable protection from damage by vehicles if piping is above ground,
- (f) check fuel storage areas for at least two accessible and serviceable fire extinguishers. Where the open hose discharge capacity of the equipment is more than 200 gallons per minute, at least one wheeled extinguisher with at least 125 lbs of agent is also required;
- (g) check for explosion proof equipment, switches and wiring that is reasonably protected from heat, abrasion or impact, which could cause an ignition source;
- (h) check for piping, filters, tanks and pumps being electrically bonded together and interconnected to an adequate grounding rod;
- (i) check for a serviceable bond/ground wire with clip at each loading/unloading facility for grounding tankers and mobile fuelers;
- (j) check loading stations for deadman control features; and
- (k) look for a boldly marked emergency cut-off capable of stopping all fuel flow with one physical movement. The emergency cut-off should be located outside the probable fuel spill area near the route that normally is used to leave the spill area or to reach the fire extinguishers.

5.4.2 Mobile fuelers

At least once every 3 months, inspect all fuel trucks to ensure they meet fire safety standards. The aerodrome operator inspecting personnel should:

- (a) note if mobile fuelers appear to be in good operating condition and free of fuel leaks;
- (b) check mobile fuelers for parking at least 50 feet from a building and at least 3m from each other;

- (c) check for flammability decals on all sides. Lettering should be at least 3 inches high. Also check for hazardous materials placards on all sides.
- (d) check the cab for a "No Smoking" sign and the presence of smoking equipment. Ashtrays and cigarette lighters are not to be prohibited;
- (e) check for two fire extinguishers, accessible from each side of the mobile fueler. Fire extinguishers should be charged, sealed and tagged from the last fire extinguisher inspection. Check dry chemical extinguishers to ensure they are only B rated. ABC rated multi-purpose dry chemical extinguishers are not to be used on mobile fuelers as they are highly corrosive to aircraft and can cause significant damage to aircraft engines;
- (f) check emergency fuel cut-offs to ensure they are boldly marked and operable. There should be an emergency fuel cut-off accessible from each side;
- (g) check electrical equipment, switches, wiring and tail light lens covers for explosion proof construction and reasonable protection from heat, abrasion or impact which could be an ignition source;
- (h) check for serviceable bonding wires and clamps;
- (i) check nozzles for deadman control feature; and
- (j) check the vehicle exhaust system for exhaust leaks and for adequate shielding if it extends under the fuel tank portion of the vehicle.

5.5 Visual Navigational Aids

An inspection programme for each visual navigation aid is essential to confirm their ongoing accuracy and reliability. Visual navigation aids inspections should:

- (a) include regular checks of the power supply, light emission and alignment using such equipment as a spot meter and aiming and calibration bars;
- (b) ensure that power generator and circuit resistance tests are being conducted;
- (c) ensure that operation on auxiliary power will cause no deterioration in any aspect of the lighting systems and that the time to cut in does not exceed 15 seconds.

5.6 Obstacles

- (a) if the aerodrome is required to provide the AIS with data for the promulgation of aerodrome obstacle charts, survey all take-off flight paths to confirm the accuracy of the data;
- (b) survey the other aerodrome obstacle limitation surfaces established for the aerodrome for clearance from protruding obstacles;
- (c) if an obstruction is found to infringe an obstacle limitation surface, either immediately remove the obstruction or notify the AIS with the corrected available runway lengths for promulgation in a NOTAM. If the infringing obstruction is permanent, notify the AIS of the permanent OLS for promulgation in the AIP; and
- (d) the period for the conduct of the checks should be determined, and included in the aerodrome operating manual, by a study of the aerodrome environment to identify the likelihood of significant obstructions, such as tree growth, structures, and similar, being developed in the intervening periods.

5.7 Aircraft Rescue and Firefighting

The inspecting personnel should:

- (a) periodically determine if the aircraft rescue and firefighting equipment is capable of meeting response times, as required under SLCAR Part 14A, section 9.2.27 through 9.2.29;
- (b) ensure that recurrent training and live fire drills are being conducted as required under SLCAR Part 14A, section 9.2.42; and
- (c) check to ensure the availability of adequate entry tools.

6 SPECIAL INSPECTIONS

6.1 Introduction

Special inspections occur after receipt of a complaint such as substandard braking action, or as triggered by an unusual condition or event. A special inspection should be conducted after an accident or incident.

Depending upon circumstances, special inspections may include the inspection of any of the specific facilities or activities under the other three components. A special inspection should cover at least the areas described in this section.

6.2 Paved movement areas

After heavy precipitation an inspection and assessment should be made as follows:

6.2.1 Water on a runway

Whenever water is present on a runway, a description of the runway surface conditions on the centre half of the width of the runway, including the possible assessment of water depth, where applicable, should be made available using the following terms:

- (a) **Dry Runway** - A runway is considered dry if its surface is free of visible moisture and not contaminated within the area intended to be used.
- (b) **Wet Runway** - The runway surface is covered by any visible dampness or water up to and including 3 mm deep within the intended area of use.
- (c) **Slippery Wet Runway.** A wet runway where the surface friction characteristics of a significant portion of the runway have been determined to be degraded.
- (d) **Standing Water.** For aeroplane performance purposes, a runway where more than 25 per cent of the runway surface area (whether in isolated areas or not) within the required length and width being used is covered by water more than 3 mm deep

Note. - Procedures on determination of contaminant coverage on runway is given in SLCAA-AC-AGA036-Rev.00 – Runway Surface Condition Assessment and Reporting and in the PANS - Aerodromes (Doc 9981).

6.2.2 Debris on runway

After or during a period of heavy precipitation or strong winds; check for debris, mud and washouts on or at the edges of a runway.

6.2.3 Unpaved movement areas.

After or during a period of heavy precipitation, check for ponding, and any surface softness which might affect the bearing strength and braking.

6.2.4 Runway and taxiway strips and safety areas

- (a) Check storm water system to verify that inlets are not clogged and drainage channels are free of debris. Note any standing water; and
- (b) Ensure all drain covers are in place and flush with the surface.

6.2.5 Maintenance and Construction

- (a) conduct a special inspection before reopening a runway or taxiway following any construction or maintenance that has been performed in or around the manoeuvring area;
- (b) ensure that construction areas are barricaded and lighted properly;
- (c) check construction equipment to ensure that they are parked within the pre-arranged areas;
- (d) conduct night inspections to ensure that barricades, warning lighting, and reflectors are adequate to keep aircraft away from the construction area;
- (e) check the location of construction material and stockpiles to ensure that they are outside of safety areas and do not block any sign;
- (f) check any movement areas adjacent to construction areas or movement areas traversed by construction vehicles to ensure there is no FOD present, and
- (g) check movement areas around construction sites for potentially confusing marking, lighting, and signs that could cause pilot confusion or result in a runway incursion.
- (h) any time an aircraft has left the pavement and entered a strip or safety area check to ensure that no ruts or holes have been made by the aircraft tires or personnel and equipment during the recovery operation;
- (i) check for construction and maintenance activities to ensure that no hazardous conditions have been created such as—
 - (i) equipment and debris left in safety areas; and
 - (ii) unacceptable pavement edges created by ground alteration work; and
 - (iii) oil or hydraulic fluid spillage; and
 - (iv) Physically drive or walk the safety areas to check for any discrepancies.

6.2.6 Ruts from Mowing Equipment or other Vehicles

After construction or maintenance operations, ensure that pavement markings are correct and that any unserviceable markers have been removed.

7 FLIGHT CHECKING OF VISUAL AIDS

7.1 Introduction

- (a) The objective for the flight checking of visual aid lights is to confirm the accuracy of the guidance provided by visual approach aids and to otherwise determine the complicity of all the lights required for the aerodrome.
- (b) Flight checking is not a means for determining the serviceability of lights and visual aids as this is best done by an effective aerodrome inspection, and preventive maintenance programme as mentioned earlier in Section 5. The requirements for on-going flight checking can also be minimised by such programmes.

7.2 Requirements for specific flight checking

- (a) Visual aids include markings, wind direction indicators and the like.
- (b) Visual aids and aerodrome lights, other than taxiway and apron lights, should be flight checked in the following circumstances:
 - (i) prior to commissioning into service;
 - (ii) when any major component is replaced with re-alignment or re-setting required;
 - (iii) when any visual aid is re-calibrated; and
 - (iv) periodically to confirm on-going performance.

7.3 Flight checking criteria

- (a) Approach slope indicators should be flight checked to confirm that each aid provides accurate guidance within the tolerances prescribed for that aid.
- (b) All other visual aid lighting should be flight checked to verify the appearance, uniformity, intensities of the light and that there is no visual interference by any other light or object.
- (c) The visual aid lighting performance characteristics to be verified by flight checking prior to being commissioned into service should be:
 - (i) Appearance and uniformity
 - (ii) Channel width, glide path angle and ILS/PAR coincidence:
 - (iii) Day and night angular coverage
 - (iv) Top of red crossbar.

7.4 Flight Checks after Major Maintenance

- (a) After major maintenance or development affecting operational facilities within the movement area, special flight checks will be arranged as necessary
- (b) Daylight visual aids checks - at least once per year checks should be carried out in daylight to inspect surface markings, VASIS for range and beam spread and the balance of the runway and approach lighting system at maximum brilliancy
- (c) New installations - before any new installation are brought in use or when there have been substantial changes to existing installations, a flight check should be arranged.

7.5 Approach and Runway Lighting Systems

Note - For simplicity in presentation the following is written in a series of logical steps, but persons with in-flight experience may wish to combine these steps in a reduced number of approaches.

7.5.1 Approach lighting pattern

- (a) Carry out a normal approach from about 6*8 km starting with all elements of the approach lighting system excluding side row barrettes (red) at the maximum brilliancy setting. Check that a uniform pattern is presented to an aircraft on the normal approach path. Variations should be made about the approach path. Small variations in elevation and azimuth should not produce any noticeable change in the intensity of the lights. Large variations will produce a progressive reduction in intensity as the aircraft leaves the area of primary cover of the lights. These changes in intensity should be substantially the same for all lights. Ragged changes are normally attributable to incorrect setting angles of individual units, and a note of these lights should be made for subsequent checking on the ground.
- (b) During the approach, call for progressive reductions in brilliancy down to the minimum setting. Check that all lights respond correctly and simultaneously to the setting changes. With the lights set at a suitable brilliancy setting (the lowest at which the individual lights are discernible in the conditions is normally best), check that all the individual lights are illuminated. Note and record all failures.

7.5.2 Approach side row (red) barrettes (when installed)

- (a) Repeat checks 1 and 2 above for side row barrettes (red) of the approach lighting system.
- (b) Repeat with all the elements of the approach lighting systems including the side row barrettes (red).

7.5.3 Runway edge, threshold and end lights

- (a) With edge, threshold and end lights at maximum brilliancy, check that a uniform pattern is presented to an aircraft taking off, landing and overshooting. Check that there is a progressive reduction in the intensity as the aircraft leaves the area of primary cover of the lights.
- (b) From the downwind leg, check that all omnidirectional runway edge lights are visible and clearly define the runway edges.
- (c) During a normal approach, and starting with the runway lights at maximum intensity, call for progressive reductions in the light intensities down to the minimum setting. Check that all lights respond correctly and simultaneously to the setting changes. At a low brilliancy setting carry out a low overshoot and check for any light failures.

7.5.4 Complete check of approach and runway lighting systems

- (a) With the approach (including side row red barrettes where installed) and runway lighting systems set at the brilliancy levels appropriate to the conditions carry out a normal approach. Check that a balanced lighting system is presented to the pilot. Call for brilliancy adjustments appropriate to other conditions and check that balance is maintained.
- (b) Repeat the above check with the addition of side row barrettes of the approach lighting systems and touchdown zone lights.

7.6 Location/Identification Beacon

Check that the beacon is clearly discernible at a range appropriate to the conditions, and that the coding/flash rate is correct.

8 AERODROME CONDITION REPORTING

8.1 Introduction

- (a) Under SLCAR's Part 14C each holder of an aerodrome certificate is required to provide information on any conditions which might affect the safe operations of aircraft.
- (b) Information on the condition of the movement area and the operational status of related facilities shall be notified to the AIS. The local air traffic service unit should also be notified to enable them to provide the information to arriving and departing aircraft. The information shall be kept up to date and changes in condition reported without delay.

8.2 NOTAM

- (a) Each holder of an aerodrome certificate shall ensure that if unsafe conditions are uncovered as a result of aerodrome inspections, or from any other source, and cannot be immediately rectified, appropriate NOTAM are issued and that local aerodrome users are aware of the situation. After providing the information to the AIS, follow up to ensure that the NOTAM were issued.
- (b) Once a NOTAM has been issued it is the responsibility of the aerodrome operator to monitor the reported condition and to either update the NOTAM information or cancel the NOTAM if the condition has been rectified.

Note: Guidance on the issuance of NOTAM is given in the Advisory Circular SLCAA-AC-ANS028-Rev.00 – Procedures for the Issuance of NOTAM

8.3 Information

- (a) The information provided for the issue of NOTAM should be clear and precise and should contain:
 - (i) type of unserviceability or unsafe condition;
 - (ii) extent (area) of the unserviceability or unsafe condition; and
 - (iii) duration (expected length of time) the condition will remain.
- (b) It is important that the area in which the unserviceability or unsafe condition occurs is referred to correctly. Runways and runway strips should be referred to by their runway designator and the difference between the runways and runway strips should be recognised and the correct terminology used.
- (c) In complying with the requirements of the Authority, the holder of an aerodrome certificate shall provide information to the AIS for the issue of a NOTAM on any of the following aerodrome conditions which may affect the safe operations of aircraft —
 - (i) establishment, closure or significant changes in the operation of the aerodrome or runways;
 - (ii) establishment, withdrawal or significant changes made to visual aids;
 - (iii) interruption of, or return to operation of major components of the aerodrome lighting systems;
 - (iv) occurrence, or correction of major defects or impediments in the manoeuvring areas;
 - (v) changes to and limitations on availability of fuel, oil and oxygen (International aerodromes);

- (vi) establishment, withdrawal or return to operation of hazard beacons marking significant obstacle to air navigation;
- (vii) erecting, removal of or changes to significant obstacles to air navigation in the take-off, climb, missed approach, approach areas, and runway strip;
- (viii) significant changes in the level of rescue and fire-fighting protection normally provided at the aerodrome;
- (ix) presence or removal of significant changes in hazardous conditions due to water on the movement area; and
- (x) any other occurrence associated with the aerodrome which might be a hazard to the safety of aircraft operations.

Note - further details on information to be promulgated by NOTAM are given in Advisory Circular SLCAA-AC-ANS028-Rev.00 – Procedures for the Issuance of NOTAM

9 AERODROME RUNWAY INSPECTION PROCEDURES

9.1 General Guidance

- (a) The objective is for each aerodrome to develop and implement fully documented runway inspection procedures, based on hazard analysis and risk assessment. The procedures will probably comprise core inspections plus a number of additional variable elements, which combine to form a ‘basket of measures’ approach. It is likely that each aerodrome’s ‘basket of measures’ will be different, being dictated by local circumstances. The hazard analysis should be performed in order to identify local hazards, assess any level of risk, and determine the appropriate control measures.
- (b) The hazard analysis should be reviewed on a regular basis, depending upon changes to critical areas of the runway environment and/or its operation.
- (c) Runway inspections are carried out to accomplish a wide variety of important aviation safety related activities that should, as a minimum, include:
 - (i) the inspection of the runway surface condition;
 - (ii) FOD detection and removal;
 - (iii) bird control and the removal of remains;
 - (iv) inspection of the visual aids, including markings and, where applicable, aeronautical ground lighting, particularly the structural integrity of the fittings;
 - (v) runway friction measurement, if applicable;
 - (vi) checks in the clear and graded area; and
 - (vii) any other purpose (e.g. after an abandoned take-off or landing incident).

A more detailed list of core and optional/variable inspection procedures is included in Appendix 1 to this Guidance.

- (d) For unpaved surfaces, inspections will probably need to be increased after periods of prolonged rain, which may result in damage to the surface and whereby the surface is considered no longer suitable for use. In addition to those already stated, checks should also include the detection of irregular surfaces which may affect the performance and control of aircraft using it. There should be in place a level of understanding of the local and seasonal variations that may affect the surface condition.

- (e) It is probable that to undertake these varied tasks, many different agencies under the control of the aerodrome will have inspection-related duties. These should be carried out to a common high standard and so procedures should be developed to reflect this.
- (f) At present, no proprietary system has been proven to be fully effective as a stand-alone or automatic method in the monitoring and identification of FOD on runways. However, while such systems should not be ignored, the use of advanced technology should only supplement current methods of inspection.
- (g) A runway inspection involves the deliberate entry of an active runway. It is therefore essential that any hazard associated with this activity are identified and addressed so that each agency with an inspection duty has a clear understanding of what is involved and how the task is carried out safely. All personnel with a task that involves entering a runway should clearly understand their responsibilities and the identified hazards. This training should be recorded and a system of review should be established so that new hazards can be identified and new training needs satisfied.
- (h) Each inspection should include a reporting mechanism to ensure that appropriate action is taken. Reports should include details of the task(s); any remedial action(s) necessary or taken; and should identify the person/agency responsible for undertaking the task and/or further action.
- (i) The runway inspection regime should form an integral part of the existing aerodrome inspection procedure for the movement area, and the aerodrome certificate holder should ensure that the development and use of runway inspection procedures are addressed in the safety management system employed at the aerodrome.

APPENDIX 1 – RUNWAY INSPECTION PROCEDURES

1. CORE INSPECTIONS

Runway inspections should be carried out at least 4 times per day, namely: dawn, morning, afternoon and evening. The inspection regime will need to consider and work around the core operational activity times and give consideration of the results of the hazard analysis and risk assessment to gain maximum benefit from inspections. . Inspections planned to take place during the hours of darkness may need to be done in a different manner from those undertaken during the daytime, with consideration being given to the presence of vehicles, people and lighting.

2. OPTIONAL ELEMENTS (DAILY)

2.1 SPECIFIC INSPECTIONS

These additional on-runway inspections, for example bird hazard control or FOD detection, might be undertaken by a single vehicle and should be carried out at an appropriate speed for effective monitoring.

2.2 OFF-RUNWAY OBSERVATIONS

This inspection involves observation of the runway from various vantage points, such as the edge of the clear and graded area, holding points, taxiways or tracks. Observations should be carried out from a stationary vehicle, with binoculars. This type of inspection may only be possible during daylight hours and, if utilised, should be integrated with the core ‘on-runway’ inspections.

2.3 OFF-RUNWAY OBSERVATION BY WILDLIFE MANAGEMENT PERSONNEL

The primary objective of the Wildlife Management Unit is to keep the runway environment clear of all type of wildlife, birds, and other animals.

A critical element of this task is ‘continuous’ observation of the runway from various static observation points; but these observations may only be suitable for daylight hours, possibly integrated with the off-runway observations above.

2.4 RUNWAY LIGHTING CHECKS

Daily runway lighting checks are normally undertaken in order to identify unserviceable lamps and possible failures of light fittings. It might be possible to incorporate inspections of particular areas of the runway at the same time. These inspections will need to integrate with the other on-runway inspections and be flexible in timing to cater for the variability of the onset of night.

2.5 RUNWAY CRITICAL AREAS

It may be desirable to concentrate runway inspections within those areas that are ‘high risk’, such as touchdown zones, displaced thresholds and frequently used crossing points. The use of this type of inspection might be dictated by such variables as type of traffic, runway length, and the entry/exit points being used and whether mixed/single mode operations are in use.

3. VARIABLE ELEMENTS

3.1 RUNWAY CONDITION/AGE INSPECTION

Dependent upon the age and current condition of the runway surface, additional on-runway inspections may be needed, covering the whole surface or identified critical areas.

3.2 RUNWAY WALKING INSPECTIONS

Although it may take a long period of time, walking the runway can provide a more thorough examination of the runway. The number of full walking inspections planned for each year will depend upon the age and use of the runway surface, and the level of operations undertaken at each aerodrome.

3.3 RUNWAY SURFACE FRICTION MEASUREMENT

Use of the existing runway friction measurement regime may provide additional opportunities to observe the runway.

3.4 DURING AND AFTER PERIODS OF MAINTENANCE

When engineering staff are working on the runway, it may be possible to provide an additional inspection of either the whole runway or part of it. In addition, a runway inspection should be conducted in the vicinity of the working area after completion of the works to ensure that tools, machinery and other forms of FOD are not present. This is particularly important after works at night where there is a greater risk of the misplacement of work items.

3.5 RUNWAY SWEEPING PROGRAMME

Dependent upon the age and current condition of the runway surface, a periodic sweeping programme should be implemented.

APPENDIX 2 – SAMPLE CHECKLIST

1. AIRPORT SAFETY SELF-INSPECTION CHECKLIST

FACILITIES	CONDITIONS	D (Done)	N (Not Done)	REMARKS	RESOLVED BY (Date/Initials)
Pavement Areas	Pavement lips over 3”				
	Hole – 5” diam. 3” deep				
	Cracks/spalling/heaves				
	FOD: gravels/debris/sand				
	Rubber deposits				
	Ponding/edge dams				
Safety Areas	Ruts/humps/erosion				
	Drainage/construction				
	Support equipment/aircraft				
	Frangible bases				
	Unauthorized objects				
Markings	Clearly visible/standard				
	Runway markings				
	Taxiway markings				
	Holding position markings				
	Glass beads				
Signs	Standard/meet sign plan				
	Obscure/operable				
	Damaged/retroreflective				
Lighting	Obscured/dirty/operable				
	Damaged/missing				
	Faulty aim/adjustable				
	Runway light				
	Taxiway light				

	Pilot control lighting				
Navigational Aids	Rotating beacon operable				
	Wind indicators				
	RENLS/VGSI systems				
Obstructions	Obstruction lights operable				
	Cranes/trees				
Fueling Operations	Fencing/gates/signs				
	Fuel marking/labelling				
	Fire extinguishers				
	Frayed wires				
	Fuel leaks/vegetation				
Construction	Barricades/lights				
	Equipment parking				
	Material stockpiles				
	Confusing signs/makings				
Aircraft Rescue and Fire Fighting	Equipment/crew availability				
	Communications/alarms				
	Response route affected				
Public Protection	Fencing/gates/signs				
	Jet blast problems				
Wildlife Hazards	Wildlife present/location				
	Complying with WHMP				
	Dead birds				

Comments/Remarks:

Airfield Map on Reverse Side

2. AIRPORT CONTINUOUS SURVEILLANCE CHECKLIST

Satisfactory			
DATE: _____ DAY: _____ X Unsatisfactory			
TIME: _____ INSPECTING PERSONNEL: _____			
FACILITIES	CONDITIONS		REMARKS/ACTIONS TAKEN
Ground Vehicles	Rules/Procedures Followed		
Fueling Operations	Fire/Explosion Hazards		
	Signing/No smoking		
Construction	MOWP		
	Safety Plan		
	Runway Incursion		
	Runway & Taxiway Use		
	FOD		
Public Protection	Unauthorized Persons		
	Unauthorized Vehicles		

	Gates Clear		
Wildlife Hazards	Birds/Animals		
Miscellaneous	Pedestrians in Movement		
	Passengers Load/Unload		
	Debris in Movement Area		
Additional Remarks:			
<hr/>			
<hr/>			
<hr/>			
<hr/>			
<hr/>			
<hr/>			
<hr/>			
<hr/>			

3. PERIODIC CONDITION INSPECTION CHECKLIST

✓ Satisfactory X Unsatisfactory			
DATE: _____ DAY: _____			
TIME: _____ INSPECTING PERSONNEL: _____			
FACILITIES	CONDITIONS		REMARKS/ACTIONS TAKEN
Pavement Areas	Rubber Deposits		
	Polishing		
Markings and Signs	Visible		
	Standards		
Fueling Operations	Physical Facilities		
	Mobile Fuelers		
	Fire Extinguishers		
	Fuel Marking/Labelling		
	Frayed Wiring		
Navigational Aids	RENLS/VGSI Aiming		
Lighting	Power Generation Check		
	Circuit Resistance Test		
	Aim/Adjustment		
Obstructions	Surveyed Trees/Structures		

	Overhead Power Lines		
Aircraft Rescue and Fire Fighting	Response Times		
	Live Fire Drills		
	Training		
Additional Remarks:			

4. SPECIAL INSPECTION CHECKLIST

			√ Satisfactory
DATE: _____			
DAY: _____			X Unsatisfactory
TIME: _____			
INSPECTING PERSONNEL: _____			
FACILITIES	CONDITIONS		REMARKS/ACTIONS TAKEN
Pavement Areas	Ponding/Edge Dams		

Markings and Signs	Visible after rain		
	Standards after construction		
Safety Areas	Drainage		
	Reopening Runways		
	Reopening Taxiways		
Construction	Barricades		
	Construction Lights		
	Equipment Parking		
SMGCS	SMGCS Lighting		
Additional Remarks:			
<hr/>			
<hr/>			
<hr/>			
<hr/>			
<hr/>			

5. QUARTERLY INSPECTION - MOBILE FUELERS

INSPECTING PERSONNEL: _____

FUELING AGENT: _____

DATE: _____

S – Satisfactory	Jet A Section			100LL Section			Other:		
	S	U	R	S	U	R	S	U	R
U – Unsatisfactory									
R – Remark Below									
No smoking sign in cab									
Flammability Signs/Haz Mat Placards all side									
Bonding cables and clips functional									
Deadman controls all nozzles									
2 Fire Extinguishers – Proper type/inspected									
Emergency shutoffs operable and marked									

Guidance on Aerodrome Inspection Programme and Condition Reporting

No Fuel Leaks – Hoses/Gaskets/Valves									
Vehicle Exhaust system – shielded/leak free									
No evidence of smoking – No ashtray in cab									
Vehicle Parking – 3m’ apart/15m from buildings									
Explosion Proof Electrical/Light lens intact									
Ignition Sources (Clothing, Shoes, Matches)									
							No: of Mobile Fuelers		
Proper Fueling Procedures Observed							Jet A		
Fueling Personnel Meet Training Requirements							100LL		
Fueling Personnel Training Records maintained							Other		
Remarks:									
<hr/>									
<hr/>									
<hr/>									
<hr/>									

6. QUARTERLY INSPECTION - FUEL STORAGE AREAS

INSPECTING PERSONNEL: _____

FUELING AGENT: _____ DATE: _____

S – Satisfactory U – Unsatisfactory R – Remark Below	Jet A Section			100LL Section			Other:		
	S	U	R	S	U	R	S	U	R
Fencing/Locking/Signs									
Piping protection from vehicles									
No smoking signs posted									
Deadman controls for loading stations									
2 Fire Extinguishers – Inspected/Accessible									
Boldly Marked Emergency Cutoffs - Location									
No Fuel Leaks									
Bonding wire/clips at loading stations/operable									
Piping/Pumps bonded and grounded									
No vegetation or materials to spread fire									
No evidence of smoking									

Hoses in good condition									
Explosion Proof Electrical Equipment									
Remarks:									
<hr/>									
<hr/>									
<hr/>									
<hr/>									
<hr/>									
<hr/>									
<hr/>									