



ICAO

The Third Meeting of the Asia/Pacific Aerodrome Assistance Working Group (AP-AA/WG/3)

*Video Teleconference, 23 to 26 March 2021*

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**Agenda Item 7: AP-AA/WG Task List**

**GENERIC SURVEILLANCE PROGRAMME AT AERODROMES**

(Presented by Malaysia)

**SUMMARY**

This Working Paper presents a generic surveillance programme at aerodromes for the consideration by AP-AA/WG.

**1. INTRODUCTION**

1.1 This Working Paper presents a generic surveillance programme at aerodromes for the consideration by AP-AA/WG.

**2. DISCUSSION**

2.1 With reference to AP-AA/WG Task 1/3 (h), Malaysia presents a generic surveillance programme at aerodromes which was modified from an existing manual used in some States.

2.2 The generic manual is available in **Attachment A**.

**3. ACTION BY THE MEETING**

3.1 The Meeting is invited to review and amend the generic surveillance programme at aerodromes as appropriate.

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CIVIL AVIATION AUTHORITY

# GENERIC SURVEILLANCE PROGRAMME AT AERODROMES

## Foreword

This manual is a [CAA] safety programme document. It contains processes determined to be necessary in supporting operational safety at aerodromes in the [State]. This manual is being issued under the authority of the Director General of [CAA].

Copies are available at the office of:

[Post holder]

[Address]

This document may be amended from time to time as necessary, and the Director General of [CAA] will provide such amendment service.

The term "Head" as referred to in this manual describes the most senior [CAA] officer responsible for certification, registration and continuing safety oversight functions and surveillance of aerodromes, heliports and air navigation services. The incumbent official holding this position reports directly to the Director General, [Civil Aviation Authority (CAA)].

Comments from staff members of [CAA], stakeholders, (or members of the) concerned aviation industry users and public about the contents of this manual are welcome. Clarifications or inquiries can be directed to:

Head of Aerodrome Standards

[Office]

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[Email]:





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## Chapter 1 – Introduction

### 1.1 Purpose

- 1.1.1 The purpose of this document is to ensure safety of the existing facilities and maintain systematic records and a process to notify the concerned departments/divisions/sections to rectify the deficiencies which do not conform to all the specifications contained in the [\[Directive/Manual etc\]](#).

### 1.2 Background

- 1.2.1 While some hazardous aerodrome conditions develop virtually instantaneously, others are gradual. It is important that the aerodrome operator have an airport safety surveillance self-inspection program that monitors specific airport conditions in order to identify unsatisfactory conditions for prompt corrective actions. The programs vary in scope and effectiveness from verbal instructions and unscheduled and unrecorded inspections to very comprehensive inspection programs with multiple daily schedules and widely distributed responsibilities.
- 1.2.2 The self-inspection program is a key component of an aerodrome operator's airport certification program.
- 1.2.3 The operator of certified aerodrome is required regularly to conduct scheduled, continuous surveillance, periodic and special inspections, and a daily safety self-inspection to ensure that prompt corrective action is taken to eliminate unsafe conditions on the aerodrome. The specific requirements of the inspection program at each certified aerodrome are addressed in the aerodrome certification manual. This guideline suggests components, responsibilities and items for regularly scheduled, continuous surveillance, periodic condition and special inspections, and checklists for use during any of these aerodrome safety inspections. This guidance can be modified as necessary to meet specific local situations.
- 1.2.4 Responsibilities
- a) **Safety Self-Inspection.** Self-inspection is a primary responsibility of the Aerodrome Operator. Primary attention should be given to such operational items as pavement areas, safety areas, markings, signs, lighting, aircraft rescue and firefighting, fuelling operations, navigational aids, ground vehicles, obstructions, public protection, wildlife hazard management and construction. Inspection of areas that have been assigned to individual air carriers, fixed base operators, or other tenants can be made the responsibility of the user. However, the certificate holder is ultimately responsible for operating the aerodrome safely.
  - b) **Recommended Inspection Frequency**
    - 1) **Regularly scheduled inspection.** The aerodrome should be inspected daily preferably during times when aircraft activity is minimal in order to minimise the impact on aerodrome operations. Part of this inspection should be done during the hours of darkness at those airports that is open after dark. In accordance with ICAO Annex 14, Volume I, Section 2.9.3, movement area shall be inspected at least once daily where the aerodrome reference code number is 1 or 2, and at least twice daily where the aerodrome reference code number is 3 or 4. With reference to PANS-Aerodromes (Doc 9981), Part II, Chapter 3, Section 3.3.1, the frequency and detail of inspections may be increased from the minimum specified in Annex

14 , depending on the traffic expected and the type of inspection being performed.

- 2) **Continuous surveillance inspection.** Those activities and facilities that have been identified to require continuous surveillance should be inspected any time personnel are in the movement area. Hazardous conditions can occur at any time and in a short period of time. [CAA] may approve a schedule of inspection as per the need of the situation at the particular aerodrome.
- 3) **Periodic condition inspection.** Periodic condition inspection of activities and facilities can be conducted on a regularly scheduled basis but less frequently than daily. The time interval could be weekly, monthly, or quarterly, depending on the activity or facility.
- 4) **Special inspection.** Special inspections of activities and facilities should be conducted after receipt of a complaint or when an unusual condition or unusual event occurs on the airport, such as a significant meteorological event or an accident or incident. Special inspections should also be conducted at the end of construction activity to ensure that there are no unsafe conditions present related to the construction activity. A special inspection should be conducted prior to construction personnel leaving the airport in the event that corrective actions are necessary. Special inspections should be documented on the appropriate portions of the regularly scheduled inspection checklist.
- 5) **Inspection Records.** An effective safety self-inspection program includes procedures for reporting and correcting deficiencies. This means that the aerodrome operator should have a work order system in place so that deficiencies can be corrected in an expeditious manner.
  - i) The operator should issue a Notice to Airmen (NOTAM), as appropriate, through AIS Division reporting deficient conditions that could have an immediate and critical impact on the safety of aircraft operations. When corrective actions have been taken, the NOTAM should be cancelled.
  - ii) For even the smallest aerodrome, it is desirable to use a safety self-inspection checklist that constitutes a written record of conditions noted, and acts as a check on follow-up actions taken. The scheduled use of a dated checklist will assure the regularity and thoroughness of safety inspections and follow-up. The checklist can be an important administrative tool for aerodrome management. It can provide a snapshot of the condition of the aerodrome, indicating trends, defining problem areas, indicating systems that are beginning to deteriorate and helping to define budgetary requirements. It is most desirable to use a format (see examples, Appendices 1–5) in which each inspected area of the airport complex is positively noted. Retain the checklist until indicated actions are completed. However, the regularly scheduled inspection checklist should be the basic log documenting that safety inspection responsibilities are being met.
  - iii) The inspection records should be kept for a minimum of [.....] years as agreed with the [CAA].

- c) **Follow-up.** The aerodrome operator should follow up on complaints or requests for corrective action and on all deficient items or problem areas noted during the daily inspection. Determine which problems require immediate attention and treat those with highest priority, including developing appropriate NOTAM notification.

## Chapter 2 – Inspection Techniques

- 2.1 Inspectors should vary the pattern of the inspection. Fixed inspection patterns, while easy to learn, do not provide for an adequate inspection. The use of such fixed inspection patterns can lead to complacency and to the possibility of missing items that are in need of correction.
  
- 2.2 When conducting an inspection on a runway and when there is time to do only one pass on that runway, inspection personnel, whenever practical, should drive towards the direction of landing aircraft with high intensity flashing beacon and headlights in the day and at night. This practice will enable self-inspection personnel to see approaching aircraft and improve visibility of the vehicle to pilots. However, it is recommended that a runway inspection be done in both directions. Inspection personnel should also inspect the stub taxiways between the runway and parallel taxiway as these areas are commonly overlooked.

**Chapter 3 – Knowledge and Equipment for Self-Inspection**

- 3.1 Aerodrome personnel who conduct safety self-inspections (referred to as inspectors) should receive training in at least the following areas:
- 1) Airport familiarization, including airport signs, marking, and lighting;
  - 2) ICAO Annex 14 Vol. 1;
  - 3) ICAO PANS-Aerodromes (Doc 9981);
  - 4) Safety Management System (SMS);
  - 5) Radio Telephony;
  - 6) Obstruction Limitation Surfaces;
  - 7) Pavement design, drainage system;
  - 8) Aerodrome Manual and Airport Emergency Plan;
  - 9) Notice to Airmen (NOTAM) notification procedures;
  - 10) Procedures for pedestrians and ground vehicles in movement areas and safety areas;
  - 11) Airport inspection procedures and techniques; and
  - 12) Discrepancy reporting procedures.
- 3.2 Inspectors should know the location and types of aerodrome facilities, rules and regulations and be familiar with the Aerodrome Certification Manual.
- 3.3 Inspectors should have a vehicle equipped with:
- 1) A two-way ground control radio capable of communicating with the Aerodrome Control Tower on controlled airports;
  - 2) A beacon for night time (or inclement weather conditions) inspections; and
  - 3) A beacon and/or checkered flag for daytime inspections.
- 3.4 Inspectors should know and use correct radio communication phraseology, procedures and techniques, as specified in the Aeronautical Information Publication (AIP).
- 3.5 Inspectors should be supplied with checklists covering the various inspection areas (sample airport safety self-inspection checklists are contained in Appendices 1–5). While format of checklists varies, it is important to develop a checklist that is useful for the aerodrome and its operation. If certain inspectors 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.
- 3.6 Inspectors should review the most recently completed checklist from the previous inspection cycle prior to beginning the inspection, so as to identify any unsatisfactory item for enhanced awareness.
- 3.7 If construction is in progress, inspectors should be familiar with the safety plan for the project.
- 3.8 Inspectors should be familiar with the aerodrome certification manual requirements.

## Chapter 4 – Components of A Safety Self-Inspection Program

- 4.1 A successful safety self-inspection program has four components:
- a) A regularly scheduled inspection of physical facilities (which must be conducted once or twice daily at airports certified under [\[State regulations\]](#) and with reference to [Section 1.2.4 of this document](#)). If the airport is open after dark, there should also be a night time inspection of lighting;
  - b) Continuous surveillance inspection of certain airport activities, such as fuelling operations, construction, airfield maintenance, aircraft turn-around operation, etc.;
  - c) A periodic condition inspection program for such things as surveying approach slopes, obstructions, etc.; and
  - d) Special inspections during unusual conditions or situations, such as changing weather or days of unusually high number of aircraft operations.

## Chapter 5 – Regularly Scheduled Inspection

5.1 The regularly scheduled inspection consists of specific observations of aerodrome physical facilities on at least once or twice daily, as specified in Section 1.2.4. This inspection should concentrate on the areas described in this section, which are also included in Appendix 1. If deficiencies exist, the inspector should indicate the deficient item and identify its location on an aerodrome sketch, providing dimensions and depths, as necessary. If appropriate, the inspector should take photographs to document the condition.

5.1.1 **Pavement Areas.** The condition of pavement surfaces is an important part of aerodrome safety. Pavement inspection should be conducted daily before flight operations commence to ensure pavement surfaces are clear. As a minimum, a daily inspection should be performed of all paved areas that are the responsibility of the aerodrome operator. During the pavement inspection, the inspector should:

- 1) Check the pavement lips—the area between full-strength pavement and shoulders or paved shoulders and safety areas—to assure that they are no greater than necessary to allow water to drain off the pavement. A lip height no greater than [1 1/2] inches is usually sufficient to allow proper drainage.
- 2) Determine if there are any cracks wide enough to cause directional control problems for an aircraft. Report and monitor these cracks.
- 3) Determine if there are any holes that could cause directional control problems for an aircraft. (any hole that cannot be covered by a [5]-inch circle, and the side slope at any point in the hole that exceeds [3] inches in depth and is [45] degrees or greater, is a discrepancy. If the hole cannot be covered by a [5]-inch circle but the side slope at any point in the hole that exceeds 3 inches in depth or is less than [45] degrees, it may be a discrepancy if it is determined to be a surface variation that could impair directional control of an air carrier aircraft.)
- 4) Check the condition of pavement areas for cracks, scaling, sapling, bumps, low spots, and for debris that could cause foreign object damage to aircraft.
- 5) Check for vegetation growth along runway and taxiway edges that may impede drainage from the pavement surface.
- 6) Check for vegetation growth in cracks.
- 7) Report and monitor any cracks, holes, variations and vegetation that can cause loss of aircraft directional control or may cause pavement damage, including damaged caused by damming or ponding water.

5.1.2 **Safety Areas.** The inspector should know the dimensions of the runway and taxiway safety areas at the airport. The dimensions of the safety areas should be documented in the aerodrome manual. During the safety area inspection, the inspector should:

- 1) Determine if there are any hazardous ruts, depressions, humps or variations from the normal smooth surface.
- 2) Check to ensure no object is located in a safety area, except objects that must be in the safety areas because of their functions (such as runway lights, signs, or navigational aids). These objects must be constructed on frangibly mounted

structures of the lowest practical height. The frangible point must be no higher than 3 inches above grade.

- 3) Determine if the base for any equipment in safety areas is at grade level and equipment and NAVAIDs mounted on frangible couplings.
- 4) Check to ensure that manhole and handhole covers are at grade level and can support vehicles and aircraft. Check to ensure that mounts for light fixtures are at grade level.
- 5) Check for surface variation and other damage caused by rodents or other animals.
- 6) Report any objects that are not frangible or not at grade level. Also report extraneous equipment and objects, such construction equipment, and surface variations that would cause damage to an aircraft or impede emergency response vehicles.

5.1.3 **Markings.** Airport markings provide important information to pilots during take-off, landing, and taxiing. To avoid confusion and disorientation, airport markings should be in compliance with [\[directive/manual etc.\]](#). The inspector should know the appropriate markings required at the airport. During the marking inspection, the inspector should:

- 1) Check markings for correct color-coding, peeling, blistering, chipping, fading, and obscurity due to rubber build up.
- 2) Check to see if all runway holding position markings are clearly visible.
- 3) During and after construction projects, check new markings for compliance with [\[directive/manual etc.\]](#) marking standards.
- 4) If the markings have glass beads, check markings during periods of darkness to determine if the reflectivity of glass beads is adequate at night.
- 5) Report and monitor any nonstandard marking or markings that are obscured, faded or deteriorating.

5.1.4 **Signage.** Signs provide important information to pilots while taxiing. To avoid pilot confusion and disorientation, airport signs should be in accordance with [\[directive/manual etc.\]](#). The inspector should know the appropriate signage standards and specifications at the airport and

- 1) Check signs to ensure they are easy to read, in accordance with colour standards, retro-reflective, and that all lighted signs are working and not obscured by vegetation, dirt, etc.
- 2) Check signs to ensure they are frangible mounted and concrete bases are properly maintained at grade level.
- 3) Check to see that sign panels are not missing or damaged, that they have the correct legend and arrow orientation, and that they are not cracked or broken.
- 4) During and after construction projects, check new signs for compliance to [\[directive/manual etc.\]](#).

- 5) During periods of darkness, check signs to ensure they are properly illuminated. Ensure mandatory instruction signs are illuminated with the associated runway lighting system. Check signs for correct operations; that they are on the correct circuits, they do not flicker and that they follow the intensity setting of the runway or taxiway lights.
- 6) Report and monitor any nonstandard sign or any sign that is not functioning, is faded or damaged.

5.1.5 **Lighting.** At night and during periods of low visibility, lighting is important for safe aerodrome operations. Inspection of lighting is best accomplished during periods of darkness in order to evaluate lighting systems when they provide the primary visual aid for pilots. The inspection should concentrate on the lighting owned by the aerodrome operator. However, the inspector should observe any lighting owned or operated by others and report any observed problems immediately to the appropriate responsible owner. During the lighting inspection, the inspector should:

- 1) Check to ensure that the following are operable, if installed, and that vegetation or deposits of foreign material do not obscure the light fixture.
  - Runway and taxiway edge lights;
  - Apron edge lights;
  - Runway centre line and touchdown zone lights;
  - Taxiway centre line lights or centre line reflectors;
  - Runway threshold/end lights; and
  - Runway guard lights (both elevated and in-pavement, if installed).
- 2) Check that the following are operable, if installed:
  - Ramp lights and floodlights used in construction to ensure they are properly shielded);
  - Obstruction lights; and
  - Lighting in fuel storage areas.
- 3) Report all fixtures missing and lights that are not working or appear dim.
- 4) Report any missing or broken light fixture lenses.
- 5) Ensure that runway and taxiway lights and runway threshold lights are the proper color and are oriented correctly.
- 6) Check that lights function properly through the manual or radio control features, and that photocell controls function properly.
- 7) Check the lights for proper alignment, aiming and correct changes in intensity, for correct height, erosion around the bases and the height of frangibility.

5.1.6 **Navigational Aids (NAVAIDs).** The inspection of NAVAIDs should concentrate on the visual navigational aids owned by the aerodrome operator. During the inspection of NAVAIDs, the inspector should:

- 1) Determine if the segmented circle is clear of vegetation and that it can be seen easily from the air.

- 2) Determine if the airport rotating beacon is visible and working properly.
- 3) Check the wind cone(s) to ensure that it swings freely, the cone fabric is not faded or frayed, and, if lighted, that all lights are operating.
- 4) Determine if the Runway End Lights (RENs) are flashing in proper sequence and mounted on frangible couplings.
- 5) Check Visual Glide Slope Indicators (VASIs, PLASIs, or PAPIs) to ensure that their lights are working and mounted on frangible couplings.
- 6) Determine if the Approach Lighting systems are functioning properly.
- 7) Report and monitor any NAVAID that is malfunctioning, inoperable or misaligned, damaged or missing.

5.1.7 **Obstructions.** The inspection of obstructions should concentrate on a visual check of construction underway on or near the airport that could affect aircraft operations. This also includes checking for any vegetation, especially, trees that may penetrate the obstruction limitation surfaces. During the inspection of obstructions, the inspector should:

- 1) Check to ensure that construction equipment, especially tall cranes being used at construction sites, are not an obstruction. If construction is found and thought to create an obstruction, the airport operator should determine if proper notification to [CAA] or Airport Layout Plan review, has been provided.
- 2) Determine if obstructions are properly marked and lighted.
- 3) Direct any person proposing construction near a public-use aerodrome infringing the obstruction limitation surfaces to [CAA] or airport Civil Aviation Office immediately.
- 4) Report and monitor any obstruction light that is missing, inoperative or damaged, and any object that appears to be an obstruction and is not properly marked or lit.

5.1.8 **Fuelling Operations.** The daily inspection on aircraft fuelling operations should concentrate on a quick inspection for the most common problems concerning compliance with local fire safety codes at fuel storage areas and with mobile fuelers. The inspection should also include security, fire protection, general housekeeping, and fuel dispensing facilities and procedures. A more detailed fuelling operation inspection should be scheduled quarterly (see Quarterly Fuelling Operations under Periodic Condition Inspection). During the daily inspection of aircraft fuelling operations, the inspector should:

- 1) Determine if the fuelling operator is permitting any unsafe fuelling practices or is in violation of local fire code, such as failure to bond aircraft with the mobile fuellers during fuelling operations or fuelling personnel smoking while fuelling aircraft.
- 2) Check to ensure that the appropriate signs for the fuel farm are installed and that all gates are locked except when the facility is occupied by an authorized user.
- 3) Report and monitor any unsafe fuelling practices and violation of local fire codes.

5.1.9 **Construction.** The inspector should be familiar with the aerodrome's construction safety procedures and guidance during aerodrome construction. During the construction inspection, the inspector should:

- 1) Determine if stockpiled material and construction materials are properly stored to keep them from being moved by wind, jet blast, or prop wash, and is not left in safety areas or movement area.
- 2) Check all construction adjacent to movement areas to ensure areas are identified with conspicuous marking and lighting.
- 3) Determine if construction equipment (such as bulldozers, cranes, etc.) are marked and lighted and parked clear of the safety areas.
- 4) Ensure construction barricades are properly positioned to define the limits of construction and hazardous areas and, if barricades are lighted, check to ensure lights are working properly and are positioned correctly.
- 5) Check to ensure that debris and foreign objects are continuously being picked up around construction areas.
- 6) Check for open trenches in the safety areas or adjacent to movement areas.
- 7) 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.
- 8) Check NOTAMs daily during construction projects to ensure they accurately reflect the conditions on the airport.
- 9) Verify that closed taxiways or runways are properly marked and lighted.
- 10) 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.

5.1.10 **Aircraft Rescue and Fire Fighting.** During the inspection of rescue and fire fighting (RFF) capabilities, the inspector should:

- 1) Check the status of RFF response, including the availability of equipment, fire fighters and extinguishing agent. Ensure that such RFF capabilities comply with the approved Aerodrome Certification Manual and that the aerodrome's fire category is still appropriate for air carrier aircraft served.
- 2) Ensure alarm and emergency notification communication systems are operable.
- 3) Determine the adequacy of available fire extinguishing agents.
- 4) Check for construction or maintenance activity on the movement area that could affect RFF response routes. Ensure that the RFF Department has been notified if construction or maintenance activity could affect emergency response routes.
- 5) 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. Notify airport authority and [CAA] if RFF vehicles is inoperative and cannot be replaced immediately, as specified under Aerodrome.

- 6) Manual and issue a NOTAM regarding non-availability of any rescue and firefighting capability, as specified under Aerodrome Manual.
- 5.1.11 **Public Protection.** During the public protection inspection, check gates, fencing, locks, and other safeguards are in place and functioning properly to prevent inadvertent entry to movement areas by unauthorized persons and vehicles and offer protection from jet blast. Report and monitor any safeguards that are damaged or missing. In accordance with the airport's security plan, report unauthorized persons or vehicles in the movement area.
  - 5.1.12 **Wildlife Hazard Management.** During the wildlife hazard inspection, the inspector should check for evidence of birds or animals on the runways, taxiways, aprons, and ramps or other signs that wildlife problems may have developed - such as large flocks of birds on or adjacent to the aerodrome. Wildlife hazards found during the daily self-inspection should be properly documented. All dead wildlife found and all wildlife aircraft strikes should be reported to the [CAA] on form specified in table x.x of Aerodrome Manual. Additionally, the inspector should check fencing and gates for wildlife accessibility and should ensure that wildlife control equipment is available and operational.

## Chapter 6 – Continuous Surveillance Inspection

6.1 Continuous surveillance inspection consists of general observation of activities for compliance with regulations, procedures, etc., as well as abnormalities with physical facilities that are readily apparent. This is performed any time inspection personnel are on the movement area. Continuous surveillance of airport physical facilities and activities should cover at least the areas described in this section, which are also included in Appendix 2.

6.1.1 **Ground Vehicles.** During the continuous surveillance inspection of ground vehicles, the inspector should:

- 1) Determine if vehicle drivers are following the airport's procedures and arrangements for the orderly operations of ground vehicles (including mowing machines or other maintenance vehicles in the safety areas). Extra attention should be paid to ground vehicle activity during construction and other special events.
- 2) Ensure that prior entering the airside, the permitted driver has a valid Airside Driving Permit (ADP) & Airside Vehicle Permit (AVP) are issued to vehicles that complied with the required standards and condition of the vehicle.
- 3) Report and monitor any vehicle operator that is not complying with the airport's vehicle procedures and arrangements.
- 4) Report any ground vehicle accident observed and any ground vehicle signs and markings that are damaged, missing or obscured.

6.1.2 **Fuelling Operations.** The inspector should:

- 1) Emphasize fire and explosion hazards inherent in aircraft refuelling.
- 2) Ensure proper bonding is being used, deadman controls are not blocked, and no smoking prohibitions are being observed, and aircraft are not being fuelled inside hangars.
- 3) Check for proper parking of mobile fuellers to ensure these vehicles are at least 3 m (10 feet) apart and 15 m (50 feet) from buildings.
- 4) Check for fuel leaks or spills in the fuel storage area and around mobile fuellers.
- 5) Determine if the fuel farm is free of flammable materials, including litter and vegetation.
- 6) Report and monitor any of unsafe fuelling conditions discussed above and other obvious violations of local fire code and airport fuel fire safety procedures.

6.1.3 **Construction.** The Inspector should check construction projects to ensure that the contractor is following the construction safety plan. During the continuous surveillance inspection of construction activity, the inspector should check for, and report, any of the following conditions:

- 1) Unauthorized use of runways, taxiways, and aprons by construction personnel and equipment.
- 2) Conditions that may result in runway incursions and other irregularities. This includes ensuring that construction areas are delineated appropriately with barricades, cones, markings, etc.
- 3) Construction equipment is not operated in NAVAID critical areas unless coordination with NAVAID department/division/section of the airport has been accomplished.
- 4) Perimeter gates are left open and unattended, unlocked or construction vehicles and personnel are not following access and escort procedures.
- 5) Construction vehicles not properly marked or missing appropriate flags and/or beacons.
- 6) Foreign object debris on haul roads adjacent to movement areas that can be tracked onto taxiways, aprons, and ramp areas.
- 7) Confusing or missing signs, markings or lighting that could potentially confuse or mislead pilots.
- 8) Barricades and lighting are in place and operational.

6.1.4 **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 inspector should check for, and report, any of the following conditions:

- 1) Unauthorized personnel, vehicles, and animals, particularly in areas aircraft passengers and the general public are present on the air carrier ramp and other portions of the movement area, i.e, remote aircraft parking locations.
- 2) Inoperable or blocked gates, particularly those that would impede access by aircraft rescue and firefighting equipment.
- 3) Open or unlocked gates and missing or damaged signs posted to prevent unauthorized access to the airfield.
- 4) Damaged or missing jet blast fences.

6.1.5 **Wildlife Hazard Management.** During the continuous surveillance inspection of wildlife hazards, the inspector should check for, and report, any of the following conditions:

- 1) Birds or animals, such as dogs, deer, etc., on or adjacent to the runways, taxiways, aprons, and ramps to determine if there is a potential wildlife hazard problem.
- 2) Potential hazard created by birds on or adjacent to the airport.

- 3) Wildlife strikes and carcasses found on the runways. Report these to the [\[CAA\]](#) on form specified in Aerodrome Manual.

6.1.6 **Foreign Object Debris (FOD).** The inspector should continuously check for, and remove any FOD in movement areas, aircraft parking areas, loading ramps, and any adjacent areas.

## Chapter 7 – Periodic Condition Inspection

- 7.1 Periodic condition inspections consist of specific checks of physical facilities on a regularly scheduled basis (but less frequently than daily). Checks may require use of equipment (e.g., Walker Bar to measure VASI glide slope angles or transit to survey approach slopes, or continuous friction measurement equipment) or checking specific features of physical facilities. Periodic inspection of aerodrome physical facilities and activities should cover at least the areas described in this section, which are also included in Appendix 3.
- 7.1.1 **Pavement Areas.** The inspector should check pavement surfaces for rubber build up, polishing, or other items affecting friction.
- 7.1.2 **Markings.** The inspector should:
- 1) Check pavement markings to ensure they are correct and clearly visible. Markings on concrete and faded asphalt should be outlined with a black border.
  - 2) Determine if markings are visible at night; especially examine for rubber build up in the touchdown zone areas.
- 7.1.3 **Signs.** The inspector should check sign faces for peeling and for fading or faded colors.
- 7.1.4 **Quarterly Fuelling Inspections.** [directive/manual etc.] are required to establish fire safety standards for safe fuelling operations and conduct quarterly inspections of the fuelling facilities. Sample quarterly inspection checklists for fuel storage areas and mobile fuellers are included in Appendix 5. Typical fire safety standards to inspect quarterly are listed below. Aerodromes certified under [State regulations] are required to maintain a record of this inspection for at least [.....] months.
- 1) **Fuel storage areas and loading/unloading stations.** The inspector should:
    - Check fuel storage areas for adequate fencing and security to prevent unauthorized access or tampering.
    - Check for “No Smoking” signs that are clearly visible.
    - 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.
    - Note if fuelling equipment appears to be in good operating condition and free of fuel leaks.
    - Check piping for reasonable protection from damage by vehicles if piping is above ground.
    - Check fuel storage areas for at least two accessible and serviceable fire extinguishers.
    - Check for explosion proof equipment, switches and wiring that is reasonably protected from heat, abrasion or impact, which could cause an ignition source.

- Check for piping, filters, tanks and pumps being electrically bonded together and interconnected to an adequate grounding/earthing rod.
  - Check loading stations for deadman control features.
  - 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.
- 2) **Mobile fuellers.** At least once every [.....] months, inspect all fuel trucks to ensure they meet fire safety standards. The inspector should:
- Note if mobile fuellers appear to be in good operating condition and free of fuel leaks.
  - Check mobile fuellers for parking at least 15 m (50 feet) from a building and at least 3 m (10 feet) from each other.
  - Check for flammability labels on all sides. Lettering should be at least 3 inches high. Also check for hazardous materials placards on all sides.
  - Check the cab for a “No Smoking” sign and the presence of smoking equipment. Ashtrays and cigarette lighters are not to be provided.
  - Check for two fire extinguishers, accessible from each side of the mobile fueller. Fire extinguishers should be charged, sealed and tagged from the last fire extinguisher inspection.
  - 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.
  - 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.
  - Check for serviceable bonding wires and clamps.
  - Check nozzles for deadman control feature.
  - Check the vehicle exhaust system for exhaust leaks and for adequate shielding if it extends under the fuel tank portion of the vehicle.

7.1.5 **Navigational Aids.** Periodically check the aiming of REILs and Visual Glide Slope Indicators.

7.1.6 **Lighting.** The inspector should:

- 1) Determine that power generator and circuit resistance tests are being conducted.
- 2) Ensure lights with adjustable optical systems are checked for proper aiming.

7.1.7 **Obstructions.** The inspector should:

- 1) Check to ensure there are no overhead power lines in the aircraft parking areas.
- 2) Annually survey trees and other structures near the airport that could affect glide path angles, approach light lanes, or intruding Obstruction Limitation Surfaces.

7.1.8 **Aircraft Rescue and Fire Fighting.** The inspector should:

- 1) Periodically determine if the aircraft rescue and firefighting service is capable of meeting response times.
- 2) Ensure that recurrent training and hot-fire drills are being conducted.
- 3) Check to ensure the availability of adequate entry tools.

## Chapter 8 – Special Inspections

8.1 Special inspections occur after receipt of a complaint 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 of airport physical facilities and activities should cover at least the areas described in this section, which are also included in Appendix 4.

8.1.1 **Pavement Areas.** After a rain or thunderstorm, the inspector should check the pavement areas for ponding and edge damming.

8.1.2 **Markings and Signs.** The inspector should:

- 1) Determine if markings are visible at night especially when the pavement is wet following a rain.
- 2) After construction or maintenance operations, ensure that pavement markings are correct.

8.1.3 **Safety Areas.** The inspector should:

- 1) Ensure that the storm sewer system is checked to verify that inlets are not clogged and drainage channels are free of debris. Note any standing water.
- 2) Ensure all inlet covers are in place and sewer covers are at grade level.
- 3) Conduct a special inspection before reopening a runway or taxiway following any construction or maintenance that has been performed in or around that safety area.
- 4) Any time an aircraft has left the pavement and entered a safety area, check to ensure that no ruts or holes have been made by the aircraft tires or by personnel and equipment during the recovery operation.
- 5) Check for construction and maintenance activities to ensure that no hazardous conditions have been created.
- 6) Physically drive or walk the safety areas to check for any discrepancies.

8.1.4 **Construction.** The inspector should:

- 1) Ensure that construction areas are barricaded and lighted properly.
- 2) Check construction equipment to ensure that they are parked within the pre-arranged areas.
- 3) Conduct night inspections to ensure that barricades, warning lighting, and reflectors are adequate to keep aircraft away from the construction area.
- 4) Check the location of construction material and stockpiles to ensure that they are outside of safety areas and do not block any signs.

- 5) Check any movement areas adjacent to construction areas or movement areas traversed by construction vehicles to ensure there is no FOD present.
- 6) Check movement areas around construction sites for potentially confusing marking, lighting, and signs that could cause pilot confusion or result in a runway incursion.

#### 8.1.5 **Surface Movement Guidance and Control Systems (SMGCS).**

- 1) For operations below 1,200 feet runway visual range, the inspector should conduct an initial inspection of stop bar lights, runway guard lights, taxiway centre line lights, and taxiway edge lights installed on the low visibility routes in accordance with the airport's SMGCS plan.
- 2) SMGCS lighting systems that are not electronically monitored should be periodically inspected every 2 to 4 hours for during operations below 1,200 feet to 600 feet. For operations below 600 feet, these inspections should take place every 2 hours. Such inspections should be detailed in the airport's SMGCS plan.

**Chapter 9 – Condition Reporting**

Alert users of the aerodrome to any unsafe conditions that exists and that could affect their operations. Ensure appropriate NOTAMs are issued for unsafe conditions that are identified during an inspection but cannot be corrected immediately. After reporting NOTAMs to the AIS, follow-up to ensure that the NOTAMs were processed and transmitted.

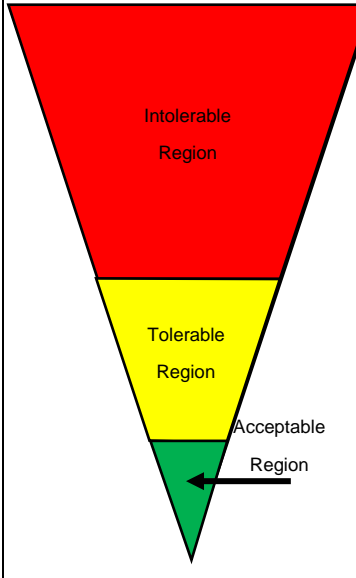
On receipt of an inspection report, the organization concerned is required to submit a Corrective Action Plan (CAP) within an agreed period. The CAP is a written confirmation by the concerns division/Department detailing the measures they intend to implement, to address all of the findings of non-compliance.

The CAP must incorporate actions that at least will remedy the deficiency in the short term and prevent a future re-occurrence.

**Table 9-1 Safety Risk Assessment Matrix (Risk Index)**

Risk probability	Risk Severity				
	Catastrophic (A)	Hazardous (B)	Major (C)	Minor (D)	Negligible (E)
Frequent (5)	5A	5B	5C	5D	5E
Occasional (4)	4A	4B	4C	4D	4E
Remote (3)	3A	3B	3C	3D	3E
Improbable (2)	2A	2B	2C	2D	2E
Extremely Improbable (1)	1A	1B	1C	1D	1E

**Table 9-2 Safety Risk Tolerability Matrix**

Suggested Criteria	Assessment Risk Index	Suggested Criteria [Acceptability/ Action Required]
	<p><b>5A, 5B, 5C</b> <b>4A, 4B,</b> <b>3A</b></p>	<p>Unacceptable under the existing circumstances.</p> <p>[Do not permit any operation until sufficient control measures have been implemented to reduce risk to an acceptable level.]</p>
	<p><b>5D, 5E</b> <b>4C, 4D, 4E</b> <b>3B, 3C, 3D</b> <b>2A, 2B, 2C</b></p>	<p>Acceptable based on risk mitigation. It may require management decision.</p>
	<p><b>3E,</b> <b>2D, 2E</b> <b>1A, 1B, 1C, 1D, 1E</b></p>	<p>Acceptable</p>

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## Chapter 10 – Categorization of Deficiency and Deadline for Correction

As the ultimate purpose of inspection/surveillance is to identify the safety hazards; assess the safety risk and rectify the deficiencies as required, it is practical here to utilize the safety risk probability table and safety risk severity table of Safety Management System Manual of aerodrome to find the level of probability and severity of the risk associated with the deficiency. The risk arising out of the deficiency is then assessed using the safety risk assessment matrix (risk index) Table 9-1 above. After getting the risk index, it is checked against the safety risk tolerability matrix Table 9-2 above and the outcome will be referred to Safety Review Board. If it is in the Intolerable Region, then the issue is immediately put forward as a top priority to the [CAA] for immediate action. If it falls under the tolerable region and deficiency can be rectified within the expertise and budget of aerodrome, then it will be rectified within three to six months, depending on the nature of deficiency. However, if it is not within the capacity, then aerodrome will coordinate with the [CAA] to rectify the same within one or two fiscal year, as the case may be.

## Appendices

### Appendix 1 - 4      Suggested Airport Safety Self-Inspection Checklists

An airport safety self-inspection checklist should cover the condition of the facilities and equipment on the airport for it to be a part of a good safety inspection program. The checklist should be developed so that it is useful for the airport and its operation. A *sketch of the airport* is highly recommended to readily identify the location of problems found during the daily inspection.

The suggested checklists consist of a listing of facilities and equipment and a series of conditions that are inspected.

The blank squares indicate the conditions to be evaluated for each facility. A check (✓) in one of these squares would indicate that the condition of the facility and equipment was found to be satisfactory. On the other hand, an “x” in one of these squares would indicate that the condition of the facility and equipment was found to be unsatisfactory.

When an unsatisfactory condition is found:

1. An — “x” for each applicable square should be entered;
2. A note provided in the Remark/Action Taken section;
3. The location of the condition should be identified in the airport sketch; and
4. Appropriate follow-up action including NOTAMs should be initiated. Corrective action should be documented on either the self-inspection checklists or on a separate work order system.

**Appendix 1 Airport Safety Self-Inspection Checklist**

DATE :  
Satisfactory

DAY :

√

Day Inspector/Time :  
Unsatisfactory

Night Inspector/Time :

X

FACILITIES	CONDITIONS	D	N	REMARKS	RESOLVED BY (Date/Initials)
Pavement Areas	Pavement lips over 3"				
	Hole – 5" diam. 3" deep				
	Cracks/heaves				
	FOD: gravel/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				
	Obscured/operable				
	Damaged/retroreflective				
Lighting	Obscured/dirty/operable				
	Damaged/missing				
	Faulty aim/adjustment				
	Runway lighting				
	Taxiway lighting				
	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				

FACILITIES	CONDITIONS	D	N	REMARKS	RESOLVED BY (Date/Initials)
	Fuel leaks/vegetation				
Construction	Barricades/lights				
	Equipment parking				
	Material stockpiles				
	Confusion signs/markings				
Aircraft Rescue and Fire Fighting	Equipment/crew availability				
	Communications/alarms				
	Response routes affected				
Public Protection	Fencing/gates/signs				
	Jet blast problems				
Wildlife Hazards	Wildlife present/location				
	Complying with WHMP				
	Dead birds				

Comments/Remarks : \_\_\_\_\_

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Airfield Map on Reverse Side

**Appendix 2 Continuous Surveillance Checklist**

DATE : _____ DAY : _____		√ Satisfactory	
TIME : _____ INSPECTOR : _____		X Unsatisfactory	
FACILITIES	CONDITIONS	√	REMARKS/ACTION TAKEN
Ground Vehicles	Rules/Procedures Followed		
Fueling Operations	Fire/Explosion Hazards		
	Signing/No smoking		
Construction	Safety Plan		
	Runway Incursions		
	Runway & Taxiway Use		
	FOD		
Public Protection	Unauthorized Persons		
	Unauthorized Vehicles		
	Gates clear		
Wildlife Hazards	Birds/Animals		
Miscellaneous	Pedestrians in Movement Areas		
	Passenger Load/Unload		
	Debris in Movement Area		
Additional Remarks			

Airfield Map on Reverse Side

**Appendix 3                      Periodic Condition Inspection Checklist**

DATE : _____ DAY : _____                      ✓ Satisfactory			
TIME : _____ INSPECTOR : _____                      X Unsatisfactory			
FACILITIES	CONDITIONS	✓	REMARKS/ACTION 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 Generator 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			

Airfield Map on Reverse Side

**Appendix 4 Special Inspection Checklist**

DATE : \_\_\_\_\_ DAY : \_\_\_\_\_ √ Satisfactory  
 TIME : \_\_\_\_\_ INSPECTOR : \_\_\_\_\_ X Unsatisfactory

FACILITIES	CONDITIONS	√	REMARKS/ACTION 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			

Airfield Map on Reverse Side

**Appendix 5A                      Quarterly Inspection – Mobile Fuelers**

Inspector : \_\_\_\_\_                      Fueling Agent : \_\_\_\_\_                      Date : \_\_\_\_\_

<b>S – Satisfactory</b> <b>U – Unsatisfactory</b> <b>R – Remarks Below</b>	Jet A Fuelers			100LL Fuelers			Other Fueler		
	S	U	R	S	U	R	S	U	R
No smoking sign in cab									
Flammability Signs/Haz Mat Placards all sides									
Bonding Cables and Clips functional									
Deadman Control for all nozzles									
2 Fire Extinguishers – Proper type/Inspected									
Emergency Shutoffs operable and marked									
No Fuel Leaks – Hoses/Gaskets/Valves									
Vehicle Exhaust System – Shielded/Leak free									
No evidence of Smoking – No ashtray in cab									
Vehicle Parking – 10' apart/50' from buildings.									
Explosion proof electrical/Light lens intact									
Ignition Sources (Clothing, Shoes, Matches)									
							<b>No of Mobile Fuelers</b>		
Proper Fueling Procedures Observed							Jet A _____		
Fueling Personnel Meet Training Requirements							100 LL _____		
Fueling Personnel Training Records maintained							Other _____		
Remarks : _____									
_____									
_____									
_____									
_____									

**Appendix 5B                      Quarterly Inspection – Fuel Storage Areas**

Inspector : \_\_\_\_\_                      Fueling Agent : \_\_\_\_\_                      Date : \_\_\_\_\_

<b>S – Satisfactory</b> <b>U – Unsatisfactory</b> <b>R – Remarks Below</b>	Jet A Section			100LL Section			Other		
	S	U	R	S	U	R	S	U	R
Fencing/Locks/Signs									
Piping protected 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 : _____ _____ _____ _____ _____ _____									

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