Australian Government
Civil Aviation Safety Authority

ADVISORY CIRCULAR
AC 139.C-04 v1.1

Aerodrome technical inspections and aerodrome manual validations

Date December 2020

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Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.

Advisory Circulars should always be read in conjunction with the relevant regulations.

Audience

This advisory circular (AC) applies to:

- aerodrome owners/operators
- persons conducting aerodrome technical inspections/manual validations
- the Civil Aviation Safety Authority (CASA).

Purpose

The operator of a certified aerodrome is required to carry out periodic inspections/validations of the aerodrome's facilities, equipment and operational activities as appropriate. As these periodic inspections/validations require detailed preparation, this AC provides guidance on:

- frequency of inspections/validations
- required qualifications, knowledge and skills of persons carrying out inspections/validations
- items to be inspected/validated
- providing a copy of the report to CASA
- plans for corrective action
- record retention.

Operators of non-certified aerodromes are encouraged to consider the relevance and applicability of all matters identified in this AC.

For further information

For further information, contact CASA’s Personnel Licensing, Aerodromes and Air Navigation Standards (telephone 131 757).

Unless specified otherwise, all subregulations, regulations, divisions, subparts and parts referenced in this AC are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

Status

This version of the AC is approved by the Branch Manager, Flight Standards.

Note: Changes made in the current version are not annotated. The document should be read in full.

Version	Date	Details
v1.1	January 2020	Clarified responsibilities associated with VSS & OAS. Additional guidance provided where runway strips are made available for landing and take-off as well as other minor (editorial) amendments.
v1.0	October 2020	Initial release of this AC.

Contents

1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Acronym	Description
AC	advisory circular
AIP	aeronautical information publication
AIS	aeronautical information service
ARC	aerodrome reference code
ATC	air traffic control
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations 1998
CNS	communications, navigation, surveillance equipment
MET	meteorological facilities
MOS	Part 139 Manual of Standards
NOTAM	Notice to airmen
OAS	obstacle assessment surface
OLS	obstacle limitation surface
RMP	risk management plan
SMS	safety management system
VASIS	visual approach slope indictor system
VSS	visual segment surface

1.2 Definitions

Terms that have specific meaning within this AC are defined in the table below.

Term	Definition
aerodrome	A defined area on land or water (including any buildings, installations and equipment) intended for use wholly or partly for the arrival, departure and surface movement of aircraft.
aerodrome facility	means any of the following physical things at an aerodrome: a. the physical characteristics of any movement area, including runways, taxiways, taxilanes, shoulders, aprons, primary and secondary parking positions, runway strips and taxiway strips b. infrastructure c. structures

Term	Definition
	d. equipment e. earthing points f. cables g. lighting h. signage i. markings j. visual approach slope indicators k. any other similar thing that is physical matter and is used for the operation of aircraft at the aerodrome.
aerodrome technical inspection	An inspection of the facilities, equipment and operation of a certified aerodrome, conducted by, or on behalf of, the aerodrome operator to ensure detection of any deterioration that could make any of the facilities, equipment or operations unsafe for aircraft operations.
air transport passenger	A passenger in an air transport operation.
air transport passenger movement numbers	For an aerodrome, for a financial year, means the numbers, published by the Department, of air transport passenger movements at the aerodrome during the financial year, and any reference to air transport passenger movements is a reference to the movements compiled in these numbers.
aircraft movement	One of the following: a. the landing of an aircraft at an aerodrome b. the take-off of an aircraft from an aerodrome c. a touch-and-go manoeuvre of an aircraft at an aerodrome.
aircraft movements	When referred to numerically for an aerodrome, for a financial year, this means the numbers of aircraft movements at the aerodrome during the financial year, as compiled by the aerodrome operator or the ATS provider.
Department	The Department of State of the Commonwealth that is administered by the Minister who, from time to time, administers CASR. At the date of making, this is the Department of Infrastructure, Regional Development and Communications but may change from time to time in accordance with Administrative Arrangements Orders made by the Governor-General.
Manual of Standards	A documented containing the aerodrome standards, published by CASA (under the CASRs), as in force from time to time.
notice to airmen	A notice to airmen (NOTAM) is a notice containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
obstacle limitation surfaces	A series of planes, associated with each runway at an aerodrome, that defines the desirable limits to which objects or structures may penetrate into the airspace around the aerodrome, so that aircraft operations at the aerodrome may be conducted safely. The obstacle limitation surfaces are as follows: a. the outer horizontal surface b. the conical surface c. the inner horizontal surface d. the approach surface e. the inner approach surface

Term	Definition
	f. the transitional surface g. the inner transitional surface h. the baulked landing surface i. the take-off climb surface. **Note:** The requirements for obstacle limitation surfaces are based on the intended use of a runway. Not all surfaces will be applicable at all aerodromes.
visual aids	Visual aids to navigation in the form of markers, markings, lights, signs, signals, displays or wind direction indicators, or a combination of these, which provide information to aircraft and vehicles on, or using the movement area of the aerodrome.

1.3 References

Regulations

Regulations are available on the Federal Register of Legislation website https://www.legislation.gov.au/

Document	Title
Part 139 of CASR	Aerodromes
Part 175 of CASR	Aeronautical information management
Part 139 Manual of Standards	Aerodromes

Advisory material

CASA's advisory circulars are available at http://www.casa.gov.au/AC

CASA's Civil Aviation Advisory Publications are available at http://www.casa.gov.au/CAAP

Document	Title
AC 139.C-01	Aerodrome manual
AC 139.C-02	Aerodrome personnel
AC 139.C-03	Aerodrome serviceability inspections
AC 139.C-06	Skid resistance of aerodrome pavements
AC 139.C-09	Visual aids, markings, signals and signs
AC 139.C-10	Aerodrome lighting - under development
AC 139.C-11	Commissioning of aerodrome lighting systems
AC 139.C-26	Safety management systems for aerodromes - under development
AC 139.C-27	Risk management plans for aerodromes

2 Introduction

2.1 Aerodrome operator obligations

2.1.1 To ensure they are compliant the CASRs and Part 139 Manual of Standards (MOS) and to assist them in operating the aerodrome safely, all operators of certified aerodromes are required to establish and implement a periodic technical inspection or a manual validation program.

2.1.2 The type of program to be implemented will be determined by the number of air transport passengers as published by the Department and/or the number of aircraft movements as collated by the aerodrome operator or ATC (if applicable).

2.1.3 Effective remedial action(s) are required to be undertaken by the aerodrome operator in the event any deficiencies are identified irrespective of the type of program.

2.2 What type of program is required at my aerodrome?

2.2.1 The operator of a certified aerodrome that has 10 000 or more air transport passenger movements, or 20 000 or more aircraft movements (in a financial year), is required to complete an aerodrome technical inspection (ATI) in accordance with Chapter 3 of this AC.

2.2.2 The operator of a certified aerodrome that has less than 10,000 air transport passenger movements, or less than 20,000 aircraft movements (in a financial year), is required to complete an aerodrome manual validation in accordance with Chapter 4 of this AC. Operators of these aerodromes are encouraged to consider undertaking an ATI at intervals they consider appropriate.

2.3 Additional requirement to complete a technical inspection at all aerodromes

2.3.1 If a reporting officer during a serviceability inspection[1], identifies a change to the condition of an aerodrome facility which may impact the safe operation of aircraft, immediate actions are to be taken to ensure the safety of aircraft operations and personnel at the aerodrome has not been compromised. This is irrespective of passenger or aircraft movement rates.

2.3.2 Although repairs may be completed, an ATI of the facility subject to the safety concern (or the relevant section of the facility as appropriate) is to be arranged without delay.

[1] Refer to AC 139.C-03 'Aerodrome serviceability inspections.'

2.3.3 In these circumstances, all matters in this AC that are applicable to ATIs are to be complied with, such as:

- technical qualifications and experience of person(s) performing the inspection
- developing and maintaining a corrective action plan
- provision of a copy of the report to CASA
- record retention.

3 Aerodrome technical inspection

3.1 Purpose of aerodrome technical inspections

3.1.1 Aerodrome facilities and equipment slowly deteriorate over time until they no longer meet the required performance standards.

3.1.2 An aerodrome technical inspection (ATI) enables the early detection of deterioration that, without timely remedial works, could make the aerodromes facilities unsafe for aircraft, or otherwise make them unsuitable for their intended purpose.

3.1.3 The ATI will also provide an opportunity to review and confirm:

- the accuracy of information published in the Aeronautical Information Publication (AIP)
- the airspace that the aerodrome operator is responsible for is being appropriately maintained so that intended aircraft operations at the aerodrome can be conducted safely
- the operation and maintenance of the aerodrome is being carried out in accordance with the procedures contained in the aerodrome manual and referenced subsidiary materials
- all reporting officer and works safety personnel are appropriately trained to carry out their required duties
- the operator is effectively identifying aviation safety hazards and managing the associated risks.

3.1.4 For those aerodromes required to have a safety management system, the ATI will establish whether it is operating effectively.

3.2 Frequency of aerodrome technical inspections

3.2.1 Operators of aerodromes that were previously registered or certified are obligated to commence their first inspection in accordance with the transitional provisions[2].

3.2.2 For aerodromes not subject to the transitional provisions, an ATI is required to be conducted within 12 months of the operator becoming aware that the aircraft or passenger movement threshold criteria has been reached.

3.2.3 From this point on, those aerodromes that have 50 000 or more air transport passenger movements, or 100 000 or more aircraft movements, are to complete all required elements of an ATI at intervals not exceeding 12 months.

3.2.4 Those aerodromes that are required to conduct an ATI but have less than 50 000 air transport passenger movements, or less than 100 000 aircraft movements, may after completion of the first full ATI where all elements have been inspected, defer the following elements, allowing for their inspection at intervals not exceeding 24 months:

- pavements and drainage
- aerodrome lighting and reticulation systems.

[2] Refer to AC 139.A-03 'Application of aerodromes standards'.

3.2.5 Where the operator elects to defer these elements, all other ATI elements are to be completed within 12 months of their last inspection.

3.2.6 While the Part 139 MOS mandates maximum interval inspection periods, the frequency of inspections may need to be increased if an analysis of ATI reports shows deterioration is occurring at an accelerated rate.

3.3 Who can conduct aerodrome technical inspections?

3.3.1 Aerodrome operators are required to have procedures in their aerodrome manual as a means to ensure that persons performing each element of the ATI have the appropriate technical qualifications and experience. A person who cannot demonstrate that they have the required technical qualifications and experience should not be permitted to perform the inspection.

3.3.2 To satisfy their obligations an aerodrome operator should request the provision of academic records/certificates, copies of previous inspection records, surveys and reports etc. as evidence to substantiate their suitability prior to appointing them to carry out the inspection.

3.3.3 Movement area pavements and drainage must be inspected by a person who has a recognised degree, diploma or certificate in civil engineering, or demonstratable relevant experience in aviation pavement construction and maintenance.

3.3.4 Lighting and electrical facilities must be inspected by a qualified person who is an electrical engineer or a licensed electrician with relevant aerodrome lighting knowledge and experience.

3.3.5 The approach, take-off, and transitional surfaces require an instrument survey, or an alternative method that produces an equivalent spatial measurement of potential obstacles. This is to be conducted by a person who is technically qualified or experienced in surveying and who has a sound knowledge and understanding of the standards for OLS. A survey is not required for the remaining surfaces of the OLS, however, the person(s) completing these visual checks must be able to demonstrate a sound knowledge and understanding of the standards and dimensions for OLS.

3.3.6 As the aerodrome operator is responsible for establishing and maintaining the VASIS obstacle assessment surface (OAS), a survey of the OAS may also be considered as a means of confirming the OAS remains free of objects or structures that may adversely affect aviation safety.

3.3.7 A check to verify the aerodrome operator is monitoring the critical obstacles within the PANS-OPS (determined and provided by the procedure designer) is also required at those aerodromes that have instrument approach procedures.

3.3.8 Checks of the aerodrome manual, supporting procedures, training records, and aerodrome information that is published in the AIP must be conducted by a person with sound knowledge and experience of the civil aviation safety legislation applicable to the inspection, reporting, operation and maintenance of aerodromes. CASA recommends these persons are also trained in, or are familiar with, auditing techniques.

3.3.9 Evidentiary records used to establish a person's technical knowledge or experience are either required to be included in the aerodrome manual or in the ATI report. Where the aerodrome operator elects the latter, before accepting the report, the aerodrome operator should verify the required information has been suitably included.

3.4 Planning an aerodrome technical inspection

3.4.1 Chapter 11 of the MOS requires an aerodrome operator to record in their aerodrome manual specific information that will assist them to effectively manage the ATI process.

3.4.2 The aerodrome operator could consider commissioning an ATI through their organisation's procurement process. Maintaining a calendar identifying when an inspection is due, and a date in advance of the due date should assist in the timely engagement of persons to conduct the inspections. This will ensure the required timeframes are not exceeded.

3.4.3 The scope provided in the aerodrome manual should include sufficient detail to guide the person(s) undertaking the inspection of the aerodrome facilities, equipment, operational procedures that are to be the subject of inspection. and the associated recordkeeping practices.

3.4.4 Prior to commencing the inspection, the person conducting the inspection is to be briefed on the scope of the inspection including the technical matters and the locations that are to be inspected. Persons conducting the inspection(s) should also be advised that where an unsafe condition is identified during the inspection, they are to report the matter without delay so it can be addressed with priority.

3.4.5 The person(s) tasked with completing the inspection should also be advised that the report is to clearly identify the following:

- non-compliances with the MOS
- defects or deterioration that could make the aerodrome unsafe for aircraft operations
- incorrect aerodrome information published in the AIP / NOTAMs or reported to ATC (if applicable)
- information in the aerodrome manual which is incorrect or not current
- procedures occurring at the aerodrome which are not in accordance with, or conflict with the procedures documented in the aerodrome manual.

3.5 Items to be inspected

3.5.1 Obstacle limitation surface

3.5.1.1 The OLS needs to be evaluated periodically so that new obstacles can be identified as well as any changes to existing obstacles, e.g. due to tree growth.[3]

3.5.1.2 While all defined surfaces of the aerodrome's OLS are required to be visually checked to ensure clearance from obstacles, an instrument survey of the approach, take-off and

[3] A detailed description of each surface of the OLS is contained in AC 139.C-08 'Obstacle limitation surfaces'

transitional surfaces is mandatory. To ensure the integrity of the surfaces, the VASIS OAS should also be subject of inspection.

3.5.1.3 Before undertaking the survey, the aerodrome operator should provide the person conducting the survey with a register of existing known obstacles. Each known obstacle should be validated during the survey to ensure it has not been removed or its height has altered.

3.5.1.4 A baseline survey may only identify obstacles that are immediately visible from the aerodrome and will not detect those that are shielded. The aerodrome operator will need to consider the environment when specifying the scope of the survey to ensure that all obstacles are identified and recorded, including those that may be shielded.

3.5.1.5 A check to confirm the ongoing suitability (visibility) of obstacle marking and/or lighting should also be performed for any obstacle within the OLS. This check doesn't need to be performed by a surveyor.

3.5.1.6 The survey data should be used to verify the accuracy of the data promulgated in the AIP.

3.5.1.7 As survey information can be difficult to interpret by those without a formal survey or engineering qualification, to assist the aerodrome operator the survey report should clearly identify:

- each surface that was visually inspected/surveyed
- a list of all objects identified, including the:
  - type of the object e.g. building, tower etc
  - geographic location (WGS-84 datum) of the object
  - elevation of the object above mean sea level
  - whether the object is marked or lit
  - the surface infringed
  - obstacles that penetrate a surface and the extent of the penetration.
- any discrepancies in information published in the AIP.

3.5.1.8 The survey report should also contain clear recommendations to be considered by the aerodrome operator. These recommendations may include matters such as:

- immediate removal of the identified infringement
- displacement of the runway threshold
- requesting the issue of a NOTAM to advise matters such as the:
  - corrected runway declared distances
  - type/location of the obstacle
  - gradient over the approach and/or take-off surfaces for each obstacle
  - obstacle height and infringement of transitional surfaces
  - defined critical obstacle for each runway direction.
- referring the obstacle to CASA for hazard assessment.

3.5.2 When referring an obstacle to CASA the aerodrome operator should include:

- actions already taken to mitigate the hazard
- their own risk assessment
- the proposed method for managing the obstacle.

3.5.3 Monitoring critical obstacles associated with published terminal instrument flight procedures

3.5.3.1 For those aerodromes that have terminal instrument flight procedures (TIFP) the aerodrome operator is required to monitor the critical obstacles nominated by the procedure designer.

3.5.3.2 As part of the ATI, the following evidence should be sighted to confirm for each runway with a published TIFP:

- a list of critical obstacles associated with the TIFP has been provided to the aerodrome operator by the procedure designer
- the aerodrome operator has documented procedures in their manual that require the monitoring of those critical obstacles as well as the OLS
- monitoring is occurring in accordance with the documented procedures
- the aerodrome operator has documented procedures in their manual that require notification to the procedure designer in the event:
  - there is a change to a critical obstacle
  - a proposed development will be of equivalent elevation or higher than the critical obstacle(s)
  - a new object or structure is equivalent in elevation or higher than the critical obstacle(s).

3.5.4 This element of the ATI can be completed by the person engaged to review the currency and accuracy of the aerodrome manual.

3.5.5 Movement area pavement and drainage

3.5.5.1 Due to the continual effects of aircraft operations as well as weather and other environmental conditions all movement area surfaces will be prone to wear over time. Movement area surfaces should be kept in serviceable condition in order to maintain continuous and safe aircraft operations.

3.5.5.2 Unpaved movement area surfaces have the potential to deteriorate faster than sealed surfaces. As such the following surfaces should be considered 'movement area pavements' and be inspected as part of this element of the ATI:

- runway (including stopways where provided)
- runway shoulders (if provided)
- runway strips (graded and flyover)
- runway end safety areas
- taxiway(s)
- taxiway shoulders (if provided)
- taxiway strips
- apron.

3.5.5.3 Runway strips that have been made available for aircraft operations are to be inspected as a natural surface runway pavement.

3.5.5.4 To enable a comprehensive inspection and evaluation, checks of the movement area surfaces should preferably be completed on foot or where this may not be possible at very low speed.

3.5.5.5 When inspecting the runway, runway shoulders, runway strip(s) and runway end safety areas, the inspector should provide for each facility, confirmation that:

- each surface meets the required dimensions applicable to the nominated aerodrome reference code (code number and letter), and instrument classification (as applicable).
- there are no irregularities (on a sealed runway), or surface contaminants (including rubber build up) that may impair runway surface friction. Friction testing with a continuous friction testing device is required annually at international airports. At all other aerodromes either surface texture depth testing or surface friction testing is required:
  - after resurfacing
  - at not more than 10 yearly intervals.[4] .
- minimum sight distance requirements on a runway are to be checked to ensure they meet the standards required for the nominated aerodrome reference code.
- the longitudinal and transverse slopes of each facility are to be checked to verify they are within the permitted range, and any changes in slope are compliant.
- there are no ruts, depressions, cracks, humps, holes or other deteriorations in the surface that could present a hazard to aircraft or result in the release of foreign object debris
- the runway strip at the end of the runway is resistant to or not eroded by jet blast, prop wash or rotor wash
- the graded strip width surface is suitable to accommodate an aircraft inadvertently running off the runway, or where the runway strip is made available for landing and take-off the strip, is to be assessed as a natural surface runway
- the bearing strength of a stopway if provided is suitable to support an aircraft if required (the most significant aircraft type that operates at the aerodrome should be considered when determining suitability)
- there are no objects in these areas, except those that are permissible as a navigation aid
- the base for any equipment, signage or other installation is not greater than 25 mm above the surrounding ground
- no open drains are present within the graded strip
- drainage is effective to negate pooling of ponding of water, particularly in relation to the runway surface.

3.5.5.6 When inspecting a taxiway, taxiway shoulders and taxiway strips the person performing the inspection should provide for each facility, confirmation that:

- Each surface meets the required dimensions applicable to the nominated aerodrome reference codes (code letter and OMGWS).

[4] Refer to AC 139.C-06 Skid resistance of aerodrome pavements

- The longitudinal and transverse slopes of each facility are to be checked to verify they are within the permitted range, and any changes in slope are compliant.
- There are no ruts, depressions, cracks, humps, holes or other deteriorations in the surface that could present a hazard to aircraft or result in the release of foreign object debris.
- There are no objects in these areas, except those that are permissible as a navigation aid.
- The base for any equipment, signage or other installation is at the same level as the surrounding area.
- Taxiway edge lights must be confirmed as being of a height that they cannot be struck by the propellers, engine pods, or wings of aircraft using the taxiway.
- The drainage is effective to negate pooling of ponding of water.

3.5.5.7 When inspecting the surface of an apron, the person performing the inspection is to provide confirmation that the surface is:

- within the maximum allowable grade as specified in the Part 139 MOS or as grandfathered
- constructed and maintained in a manner that does not permit water pooling or ponding and that the slope is not toward the terminal building unless a drainage system with the capacity to divert fuel spills away from the building
- resistant to a fuel spill
- there are no ruts, depressions, cracks, humps, holes or other deteriorations that could present a hazard to aircraft.

3.5.5.8 In confirming compliance, the person conducting the inspection may not need to conduct extensive pavement surveys. For example, a review of surveys or plans completed at the conclusion of construction (Ascon plans) may be considered a suitable method in determining whether the standards have been met.

3.5.6 Aerodrome lighting and electrical reticulation systems

3.5.7 As lighting is the primary visual guidance for pilots and ground personnel at night (as well as in reduced visibility) an inspection to evaluate lighting should be conducted during darkness.

3.5.8 Each of the following lighting and their electrical systems, where provided, are required to be checked as part of this element of the ATI:

- runway edge lights
- runway centreline and touchdown zone lights
- runway threshold and end lights
- approach lighting systems
- illuminated wind direction indicators
- pilot-activated lighting systems
- stop bar lights
- runway guard lights
- visual approach slope indicator system (VASIS)
- taxiway centreline lights or reflective markers

- illuminated movement area guidance signs (MAGS)
- apron edge lights
- apron flood lighting (illumination of the apron and parking positions)
- obstacle lights and beacons maintained by the aerodrome operator.

3.5.9 Before commencing their inspection, a check should be conducted to confirm that each lighting system has been appropriately commissioned.

3.5.10 The inspection should provide for each lighting system in operation at the aerodrome confirmation that:

- all lighting is positioned correctly and meets current standards
- all elevated lights are clean and not covered with dust, dirt etc. or obscured by vegetation
- switching and intensity controls are working correctly
- all visual navigation aids are accurately aligned
- light colour and illumination meet the standards
- correct operation of control switching
- VASIS are appropriately aligned, mounted on tangible couplings, changes in lighting intensities are correct and each light fitting is at the correct height
- illumination levels for each aircraft parking position are in accordance with the design for the parking position
- illumination levels on the remainder of the apron achieve the minimum requirements
- power supply reliability, including switchover to a secondary power supply if provided, meets specified change over times
- pilot activated lighting controls operate correctly (where applicable)
- all prescribed and scheduled maintenance has been carried out.

3.5.11 Aerodrome markings and signs

3.5.11.1 Markings and signs on an aerodrome provide important information and direction to pilots and ground personnel, therefore it is fundamental that they are correctly positioned, and their conspicuity is not degraded.

3.5.11.2 For the purpose of completing this section of the ATI the following facilities are to be inspected:

- movement area markings
- movement area guidance signs, including aircraft parking position signs
- airside vehicle control signs
- protection of navigational aids and meteorological equipment signs.

3.5.11.3 When inspecting these facilities, the ATI should confirm:

- all painted markings are the correct colour, specification, and that they are not faded, or obscured (i.e. due rubber build-up)
- all markings are correctly positioned
- all signs:
  - have the correct inscription, orientation and colour

- are easy to read, secure and in good condition
- are frangible mounted if within strip areas
- are free of vegetation growth that would impede sign visibility

– a check should also confirm there are no missing markings or signs[5].

3.5.12 Aerodrome equipment and facilities

3.5.12.1 The ATI must include an inspection of equipment and facilities at the aerodrome used for wildlife hazard management, including aerodrome fencing and gates, as well as any equipment or facilities at the aerodrome used for aerodrome emergencies.

3.5.12.2 Any degradation or unserviceability of this equipment can result in risk mitigation not being achieved.

3.5.13 Currency and accuracy of aerodrome information and procedures

3.5.13.1 To meet the requirements of Part 175 of CASR and the technical inspection requirements for an ATI, an aerodrome operator is required to review, at least once in every 12-month period, the published aeronautical data and aeronautical information for which aerodrome operator is responsible.

3.5.13.2 Where inaccurate information is identified during the review, Airservices should be notified immediately. Not only will this result in a change to published information it will also require an amendment to the aerodrome manual.

3.5.13.3 The aerodrome manual is required to contain, or refer to, all necessary information that enables the safe use, operation and maintenance of the aerodrome. The ATI is to provide confirmation as to whether the information documented in the aerodrome manual, and any subsidiary materials provide an accurate representation of the aerodrome and the aerodrome's operating environment. Identified deviations from the manual requirements must also be reported.

3.5.13.4 Failure to comply with the processes and procedures contained within the aerodrome manual indicates either a failure of those processes and procedures, or a failure of aerodrome personnel to comply with the aerodrome operator's own processes and procedures.

3.5.13.5 A check must also be conducted to confirm the safety management system or risk management plan (as applicable) is up-to-date and is functioning as documented. The person completing the ATI should determine that the operator is effectively identifying aviation safety hazards as well as controls for managing the associated risks.

3.5.14 Training and assessment of aerodrome personnel

3.5.14.1 The technical inspection must include a check that personnel appointed as aerodrome reporting officer(s) and works safety officer(s) have been trained and assessed in accordance with Chapter 13 of the MOS and that they appear to be competent to carry out the required duties in accordance with the MOS.

[5] Additional guidance for markings and signs is contained in AC 139.C-09 'Visual aids, markings, signs and signals.

3.6 Aerodrome technical inspection report

3.6.1 Upon completion of the inspection, the person(s) conducting the inspection are to prepare and present an ATI report that demonstrates all required elements within the provided scope have been checked as well as identifying those matters outlined in section 3.5.5 of this AC.

3.6.2 The report must represent an accurate picture of the aerodrome condition. It should be prepared to enable readers without technical skills to interpret the results. Diagrams and photographs are encouraged to be included in the report as they assist to illustrate written comments.

3.6.3 Recommendations for corrective action where appropriate are also required to be documented in the report.

3.6.4 The report should be provided as expediently as possible so that any identified deficiencies can be remedied without delay.

3.7 Aerodrome operator obligations on receipt of the report

3.7.1 Before accepting the report, the aerodrome operator should read and assess the report to confirm that all scope items have been inspected and that the report contains sufficient information to clarify whether each facility, equipment or operation meets the Part 139 of CASR and Part 139 MOS requirements.

3.7.2 Unless a longer timeframe is agreed by CASA in writing, the aerodrome operator must provide CASA with a copy of the technical inspection report within 30 days of receiving the report.

3.7.3 As a proactive safety measure, the aerodrome operator may consider providing a copy of the report to aircraft operators that use the aerodrome.

3.7.4 Where recommendations have been provided in the ATI report, the aerodrome operator is to develop a corrective actions plan.

3.8 Corrective action plan

3.8.1 Each recommendation provided in the ATI report is to be entered into the corrective action plan as well as timeframes for implementation.

3.8.2 Each recommendation should be addressed, preferably by a committee responsible for safety at the aerodrome. The accountable manager should be present when reviewing and considering each recommendation.

3.8.3 Where a recommendation has been supported, the agreed corrective actions should be documented in the corrective action plan. An individual should be assigned responsibility for implementing the listed corrective action(s). A risk assessment may assist in prioritising each corrective action.

3.8.4 In the event a recommendation is not supported, the reasons for not supporting the recommendation are also to be documented in the corrective action plan.

3.8.5 CASA recommends the aerodrome operator seek to identify and understand the effects of the non-compliance including its root cause. Proper determination of the root cause is crucial for defining effective corrective actions to prevent recurrence of the non-compliance, or other undesirable conditions or situations.

3.8.6 The corrective action plan should be reviewed and updated regularly.

3.8.7 CASA may request in writing a copy of the corrective action plan. If CASA makes a request in writing, the aerodrome operator must, supply CASA with a copy of the plan within 30 days, including details of any progress already made to address any defects or deterioration identified during the inspection.

3.9 Maintaining a record of aerodrome technical inspections

3.9.1 The aerodrome operator must keep records of each technical inspection for at least 3 years after the technical inspection was completed.

4 Aerodrome manual validation and report

4.1 Purpose of aerodrome manual validations

4.1.1 The aerodrome manual validation will provide an opportunity to review and confirm:

- the accuracy of information published in the AIP
- the airspace around the aerodrome is being appropriately maintained so that intended aircraft operations at the aerodrome can be conducted safely
- the operation and maintenance of the aerodrome is being carried out in accordance with the procedures contained in the aerodrome manual and referenced subsidiary materials
- all reporting officer and works safety personnel are appropriately trained to carry out their required duties
- the operator is effectively identifying aviation safety hazards and managing the associated risks.

4.2 Frequency of aerodrome manual validations

4.2.1 Operators of aerodromes that were previously registered or certified, and who do not reach the trigger criteria for an ATI, are obligated to commence their first manual validation in accordance with the transitional provisions[6].

4.2.2 For aerodromes not subject to the transitional provisions, a validation is required to be conducted within 12 months of the aerodrome being certified.

4.2.3 From this point on, validations must be conducted at intervals not exceeding 12 months.

4.2.4 Should there be an increase in aircraft passenger or movement rates that warrant the conduct of an ATI, it is to be coordinated so that it is completed within the 12 month interval period in which the next manual validation would have been scheduled to occur.

4.3 Who can conduct aerodrome manual validations?

4.3.1 Aerodrome operators are required to ensure persons performing each element of a manual validation has the appropriate technical qualifications and/or experience. A person who cannot demonstrate that they have the required qualifications and/or experience should not be permitted to perform the validation.

4.3.2 To satisfy their obligations, an aerodrome operator should require the provision of certificates, copies of previous manual validations, surveys and reports etc. as evidence to substantiate the suitability of the person prior to appointing them to carry out the validation.

4.3.3 All surfaces within the aerodromes OLS are required to be checked during the validation. Each surface must be checked by a person who is either technically qualified in surveying or who has a sound knowledge and understanding of the standards and dimensions for OLS and is able to validate the accuracy of the current published

[6] Refer to AC 139.A-03 'Application of aerodromes standards.'

information in the AIP. As the accuracy of the published gradient is required to be within 0.05%, an instrument survey is to be conducted where a visual check not conclusively show there has been no definitive change.

4.3.4 Checks of the aerodrome manual, supporting procedures, training records, and aerodrome information that has been published in the AIP must be conducted by a person with sound knowledge and experience of the civil aviation safety legislation applicable to the inspection, reporting, operation and maintenance of aerodromes. CASA recommends these persons are also trained in or are familiar with auditing techniques.

4.3.5 Evidentiary records used to establish a person's technical knowledge or experience are either required to be included in the aerodrome manual or in the manual validation report. Where the aerodrome operator elects the latter, before accepting the report, the aerodrome operator should verify the required information has been suitably included.

4.4 Planning an aerodrome manual validation

4.4.1 The aerodrome operator could consider appointing a manual validation through their organisation's procurement process. Maintaining a calendar identifying when a validation is due, as well as a date in advance of the due date, should assist in the timely engagement of persons to conduct the validations, and in ensuring the maximum interval time frames permitted are not exceeded.

4.4.2 Prior to commencing the validation, the person conducting the validation should be briefed on the scope of the validation. They should also be advised that if an unsafe condition or process is identified during their validation, they are to report the matter without delay so the matter can be addressed with priority.

4.4.3 At the time of briefing the person tasked with completing the validation should be advised that their report is to clearly identify the following:

- any non-compliance with the MOS
- incorrect aerodrome information published in the:
  - AIP or NOTAMs
  - aerodrome manual.
- any procedure, or practice in use at the aerodrome, which is not in accordance with, or conflicts with, procedures in the aerodrome manual
- discrepancies in training requirements for reporting officer(s) and works safety officer(s).

4.5 Items to be validated

4.5.1 Obstacle limitation surface

4.5.1.1 The OLS needs to be evaluated periodically so that new obstacles can be identified as well as any changes to existing obstacles, i.e. due to tree growth[7].

[7] A detailed description of each surface of the OLS is contained in AC 139.C-08 'Obstacle limitation surfaces'.

4.5.1.2 While all defined surfaces of the aerodrome's OLS are required to be visually checked to ensure clearance from obstacles, an instrument survey of the approach, take-off and transitional surface will be required unless the person completing the validation can conclusively confirm the published gradient remains accurate to within 0.05%. The VASIS OAS should also be assessed to ensure the integrity of the surfaces.

4.5.1.3 Before undertaking the survey or visual check, the aerodrome operator should provide the person conducting the inspection with a register of existing known obstacles. Each known obstacle should be validated during the survey or inspection to ensure it has not been removed or has altered in height.

4.5.1.4 A baseline survey or check may only identify obstacles that are immediately visible from the aerodrome and will not detect those that are shielded. The aerodrome operator will need to consider the environment when specifying the scope of the survey or check to ensure that all obstacles are identified and recorded, including those that are shielded.

4.5.1.5 A check to confirm the ongoing suitability (visibility) of obstacle marking and/or lighting should also be performed for any obstacle within the OLS. This check doesn't need to be performed by a surveyor.

4.5.1.6 The survey data should be used to verify the accuracy of the data listed in the AIP.

4.5.1.7 As survey information can be difficult to interpret by those without a formal survey or engineering qualification, to assist the aerodrome operator the survey report should clearly identify:

- each surface that was visually inspected/surveyed
- a list of all objects identified, including the:
  - type of the object e.g. building or tower
  - geographic location (WGS-84 datum) of the object
  - elevation of the object above mean sea level
  - whether the object is marked or lit
  - the surface infringed
  - obstacles that penetrate a surface and the extent of the penetration.
- any discrepancies in information published in the AIP.

4.5.1.8 The report should also contain clear recommendations to be considered by the aerodrome operator. These recommendations may include matters such as:

- immediate removal of the identified infringement
- displacement of the runway threshold
- requesting the issue of a NOTAM to advise matters such as the:
  - corrected runway declared distances
  - type/location of the obstacle
  - gradient over the approach and/or take-off surfaces for each obstacle
  - obstacle height and infringement of transitional surfaces
  - defined critical obstacle for each runway direction.
- referring the obstacle to CASA for hazard assessment.

4.5.1.9 When referring an obstacle to CASA the aerodrome operator should include:

- actions already taken to mitigate the hazard

- their own risk assessment
- the proposed method for managing the obstacle.

4.5.2 Monitoring critical obstacles associated with published terminal instrument flight procedures

4.5.2.1 For those aerodromes that have TIFPs, the aerodrome operator is required to monitor the critical obstacles nominated by the procedure designer.

4.5.2.2 As part of the validation, evidence should be sighted to confirm:

- a list of critical obstacles associated with the TIFP has been provided to the aerodrome operator by the procedure designer
- the aerodrome operator has documented procedures in their manual that requires the monitoring of those critical obstacles
- monitoring is occurring in accordance with the documented procedures
- the aerodrome operator has documented procedures in their manual that requires notification to the procedure designer in the event:
  - there is a change to a critical obstacle
  - a proposed development will be of equivalent elevation or higher than the critical obstacle(s)
  - a new object or structure is equivalent in elevation or higher than the critical obstacle(s).

4.5.3 This element of the validation can be completed by the person engaged to review the currency and accuracy of the aerodrome manual.

4.5.4 Currency and accuracy of aerodrome information and procedures

4.5.4.1 To meet the requirements of Part 175 of CASR and the manual validation requirement, an aerodrome operator is required to review the published aeronautical data and aeronautical information the aerodrome operator is responsible for at least once in every 12-month period.

4.5.4.2 Where inaccurate information is identified during the review Airservices should be notified immediately. This result in a change to published information will require an amendment to the aerodrome manual.

4.5.4.3 The aerodrome manual is required to contain, or refer to, all necessary information that enables the safe use, operation and maintenance of the aerodrome. The validation is to provide confirmation if the information documented in the aerodrome manual, and any subsidiary materials, is an accurate representation of the aerodrome and the aerodrome's operating environment. Any identified deviations from the manual requirements must be stated in the report.

4.5.4.4 Failure to comply with the processes and procedures contained within the aerodrome manual indicates either a failure of those processes and procedures, or a failure of aerodrome personnel to comply with the aerodrome operator's own processes and procedures.

4.5.4.5 A check must also be conducted to confirm the risk management plan (if applicable) is up-to-date and is functioning as documented. The person completing the validation

should ensure the operator is effectively identifying aviation safety hazards as well as controls for managing the associated risks.

4.5.5 Training and assessment of aerodrome personnel

4.5.5.1 The validation must include a check that personnel appointed as aerodrome reporting officer(s) and works safety officer(s) have been trained and assessed in accordance with Chapter 13 of the MOS and that they appear to be competent to carry out the required duties in accordance with the MOS.

4.6 Aerodrome manual validation report

4.6.1 Upon completion of the validation, the person(s) conducting the validation should prepare and present a aerodrome manual validation report that demonstrates all required elements within the provided scope have been checked as well as identifying those matters outlined in section 4.4.3 of this AC.

4.6.2 The report must be an accurate representation of the items subject of inspection. Photograms are encouraged to be included in the report as they assist to communicate written comments.

4.7 Aerodrome operator obligations on receipt of the report

4.7.1 Before accepting the report, the aerodrome operator should read and assess the report to confirm that all scope items have been inspected and that the report contains sufficient information if:

- compliance with the standards has been achieved
- there are any errors in published information
- there are any details in the aerodrome manual which are incorrect or not current
- there are any procedures in use at the aerodrome which are not in accordance with or conflict with procedures in the aerodrome manual
- training requirements for reporting officers and works safety officers has been met.

4.7.2 The aerodrome operator must correct any anomalies as soon as possible.

4.7.3 If any matters of non-compliance are identified a copy of the report is to be provided to CASA within 30 days.

4.7.4 If CASA is sent an amendment to the aerodrome manual which addresses the anomalies in this subsection, this would normally constitute an acceptable report.

4.8 Maintaining a record of aerodrome manual validations

4.8.1 The aerodrome operator must keep in safe custody records of the results of the annual validation, for at least 3 years after the validation was completed.