AC 139-2-1 (Rev 1)
23 January 2026

Civil Aviation Authority of Singapore

Advisory Circular

GUIDANCE ON AERODROME MANUAL OR HELIPORT MANUAL

GENERAL

Advisory Circulars (ACs) are issued by the Director-General of Civil Aviation (DGCA) from time to time to provide practical guidance or certainty in respect of the statutory requirements for aviation safety. ACs contain information about standards, practices and procedures acceptable to CAAS. An AC may be used, in accordance with section 11 of the Air Navigation Act 1966 (ANA), to demonstrate compliance with a statutory requirement. The revision number of the AC is indicated in parenthesis in the suffix of the AC number.

PURPOSE

This AC provides the guidance to demonstrate compliance with, and information related to the contents of an aerodrome manual or heliport manual to be developed and maintained by the operator. It states the details to be included under the various parts of an aerodrome manual or heliport manual.

APPLICABILITY

This AC is applicable to an operator seeking or holding an aerodrome or heliport certificate.

RELATED REGULATIONS

This AC relates specifically to Regulation 11 of the Air Navigation (139 – Aerodromes) Regulations 2023 (ANR-139).

RELATED ADVISORY CIRCULARS

- AC 1-3 Safety Management System
- AC 139-1-1 Guidance on the application for, renewal and variation of an aerodrome certificate or heliport certificate
- AC 139-4-2 Recommended Practices for Aerodromes
- AC 139-4-6 Recommended Practices for Heliports

CANCELLATION
This AC supersedes AC 139-2-1 (Rev 0) dated 1 March 2023. In this revision, the AC is updated to clarify that the implementation status to AC 139-4-2 (for aerodromes) and AC 139-4-6 (for heliports) should be listed in the Table of Implementation to the respective ACs.

EFFECTIVE DATE
This AC is effective from 23 January 2026.

OTHER REFERENCES
ICAO PANS Aerodrome (Doc 9981)

1 PURPOSE AND SCOPE OF AERODROME MANUAL OR HELIPORT MANUAL

1.1 Regulation 11 of the ANR-139 requires an operator of an aerodrome or heliport to establish and maintain an aerodrome or heliport manual. The aerodrome or heliport manual is fundamental to the certification of the aerodrome or heliport. It serves as a reference document on the standards, conditions and the level of service to be maintained by the operator at the aerodrome or heliport. The manual is to demonstrate the means and methods for ongoing compliance with the ANR-139 and relevant Aviation Specifications and must contain all the pertinent information concerning the aerodrome or heliport site, facilities, equipment, services, operating procedures, emergency planning, organisation and management, including the safety management system. Any deviation from any of the requirements specified in the relevant Aviation Specifications must also be included in the manual.

1.2 The manual should also provide all such information and instructions as may be necessary to enable the aerodrome or heliport operating staff, including contractors to effectively perform their duties in ensuring that the aerodrome or heliport is safe for use by aircraft. Details of organisation structure such as key operational personnel and their areas of responsibility should be stated clearly in the manual.

1.3 The manual would be used to assess the suitability of the aerodrome or heliport for the operations proposed and to evaluate an applicant's fitness to hold an aerodrome or heliport certificate. It is also the basic reference guide for conducting site inspections for granting an aerodrome or heliport certificate, and for subsequent safety surveillance audits and inspections carried out by CAAS.

1.4 The operator should ensure that the manual prepared for their aerodrome or heliport is comprehensive and clear. Where the manual, or any part of it, is found to be unacceptable, incomplete or inadequate, CAAS may reject the manual and/or request supplementary information.

2 FORMAT AND CONTENT OF AN AERODROME MANUAL OR HELIPORT MANUAL

2.1 The aerodrome or heliport manual should be organised in a manner that facilitates the preparation, review and acceptance or approval process.

2.2 An aerodrome operator should organise and include in the aerodrome manual, the information as detailed in **Appendix A.**

2.3 A heliport operator should organise and include in the heliport manual, the information as detailed in **Appendix B.**

2.4 Depending on the size and complexity of the aerodrome or heliport operations, all the related information and procedures may not easily be included in a single document. In such cases, it is acceptable for the manual to contain a main manual covering all areas that need to be addressed, as well as identifying and referencing within the manual, relevant supporting documents and manuals for the aerodrome or heliport operations.

2.5 The aerodrome or heliport manual may also be supplemented by other internal documents and manuals, circulars, notices and instructions issued to the staff, contractors, or agents on operational matters.

3 AMENDMENT AND DISTRIBUTION OF AERODROME MANUAL OR HELIPORT MANUAL

3.1 Procedures on the amendment and distribution of the aerodrome manual or heliport manual must be included in the respective manual. The manual should be approved by the accountable manager.

3.2 The operator should provide CAAS with a complete and current copy of the manual.

3.3 The operator should keep at least one complete and current copy of the manual at the aerodrome or heliport and, if the aerodrome or heliport is not their principal place of business, keep another such copy of the manual at their principal place of business. The manual should be made available for inspection by CAAS.

3.4 The operator should make prompt amendments to the manual to maintain the accuracy and currency of the information, or when required by CAAS.

3.5 The operator should send the proposed amendments to CAAS as soon as practicable, for acceptance before they may come into effect.

3.6 The operator must notify the CAAS in writing of the names and positions of the key personnel as early as practicable, but at least 1 month before the planned change in appointment/functions.

3.7 Being a controlled document, the operator should appoint a document controller to be responsible for updating and distributing its manual. Each copy of the manual should be numbered and a list of their holders maintained by the document controller. Amendments should be recorded on the amendment page in front of each copy.

3.8 Any change should be traceable (e.g. specify the date of change). If the amendment affects the action of external parties, an acknowledgement slip should be requested from each external party concerned when amendments are circulated so as to document that each party concerned has received and taken notice of the amendment.

3.9 Apart from submission of the manual to CAAS and internal distribution of copies to relevant operating staff, copies of the manuals should also be made available to other external parties with a part to play in the aerodrome or heliport's safety process. In particular, the airport emergency section of the aerodrome manual should also be extended to all external parties (e.g. Singapore Civil Defence Force, Airport Police Division, etc.) involved in the aerodrome's emergency alert and response.

3.10 Copies of relevant sections of the manual should be made available to each supervisory staff involved in its operations including those employed by the operator's contractors or agents, where relevant, so that the aerodrome or heliport operating staff:

(a) is aware of the contents of every part of the manual relevant to their duties; and

(b) undertakes their duties in conformity with the relevant provisions of the manual.

3.11 For the purpose of paragraph 3.10, aerodrome or heliport operating staff means all persons, whether employed or engaged by the operator, who in the course of their duties are:

(a) concerned with ensuring that the aerodrome or heliport is safe for use by aircraft or helicopters respectively; or

(b) required to have access to the aerodrome or heliport manoeuvring area or apron.

3.12 Each holder of the manual should be responsible for ensuring that their copy is kept up-to-date. For copies intended for common use, the operator should designate a person to look after any amendments.

APPENDIX A – PARTICULARS TO BE INCLUDED IN THE AERODROME MANUAL

The aerodrome operator should organise and include the following particulars, to the extent applicable to the aerodrome, under the Sections in this Appendix.

Section 1 – General

1.1 General information of the aerodrome, including the following:

(a) A table of contents of the manual;
(b) A list of corrigenda/amendments, including the updates and/or corrections made to the aerodrome manual;
(c) A distribution list of the aerodrome manual;
(d) The purpose and scope of the aerodrome manual;
(e) The legal requirement for an aerodrome certificate and an aerodrome manual as prescribed in the ANR-139;
(f) The conditions for use of the aerodrome – a statement to indicate that the aerodrome shall at all times when it is available for the take-off and landing of aircraft, be so available to all persons on equal terms and conditions;
(g) The available aeronautical information services and procedures for timely and accurate effecting promulgation of AIP Amendment, AIP Supplement or NOTAM;
(h) The system for recording aircraft movements at the aerodrome;
(i) A description of the operator's safety management system (SMS) and reference to the operator's SMS manual;
(j) A description of the intended operations, including:
    (i) the critical aeroplanes the aerodrome is intended to serve;
    (ii) the category of runway(s) provided (non-instrument, instrument including non-precision and precision);
    (iii) the different runways and their associated levels of service;
    (iv) the nature of aviation activities (commercial, passenger, air transport, cargo, aerial work, general aviation);
    (v) the type of traffic permitted to use the aerodrome (international/national, IFR/VFR, scheduled/non-scheduled); and
    (vi) the minimum RVR that aerodrome operations can be permitted;
(k) The obligations of the aerodrome operator; and
(l) A table presented in the format shown below to indicate the aerodrome and aerodrome operator's compliance status with EACH clause in the ANR-139 and AS-5. Deviations, if any, should be listed together with their validity, details and reasons, any resultant limitations, conditions or procedures imposed and other references to the related documents (including any safety assessment);

Table of Compliance with the ANR-139 and AS-5		
ANR-139 Regulation No. / AS-5 Paragraph No.	**Compliance Status**	**Remarks/Explanation**
[Specific regulation /	[Fully compliant / partially compliant / non-compliant]	[Brief explanation when partially compliant or non-compliant]

paragraph reference]		

(m) A table presented in the format shown below to indicate the aerodrome and aerodrome operator's implementation status with EACH recommended practice in the AC 139-4-2. Any RP that is partially implemented or not implemented should be listed together with their validity, details and reasons, any resultant limitations, conditions or procedures imposed and other references to the related documents (including any safety assessment);

Table of Implementation with the AC 139-4-2		
AC 139-4-2 paragraph No.	**Implementation Status**	**Remarks/Explanation**
[Specific paragraph reference]	[Fully implemented / partially implemented / not implemented]	[Brief explanation when partially implemented or not implemented]

(n) A description of the operator's quality system to:
   (i) monitor the aerodrome operator's compliance with applicable aviation safety subsidiary legislation, requirements and procedures;
   (ii) monitor the adequacy of measures to comply with such aviation safety subsidiary legislation, requirements and procedures to ensure safe operational practices; and
   (iii) verify that all the aerodrome operator's operations and activities are conducted in accordance with the applicable aviation safety subsidiary legislation, requirements, standards and procedures;

(o) The description of the system mentioned in paragraph (n) should cover at least the following elements:
   (i) safekeeping of safety records;
   (ii) use of internal or external auditors;
   (iii) scope of audit to be conducted;
   (iv) responsibilities of the auditor;
   (v) quality audit which must include inspections but not limited to apron management service, aerodrome vehicle operations, ground handling operations, rescue and firefighting, wildlife management, aviation fuel quality, maintenance of aerodrome equipment and facilities and external contractors and agencies;
   (vi) audit scheduling;
   (vii) monitoring of corrective actions;
   (viii) management evaluation;
   (ix) audit record keeping;

(p) Procedures for bringing urgent or temporary information to the notice of aerodrome operations and maintenance staff.

Section 2 – Particulars of the Aerodrome Site

2.1 A plan of the aerodrome showing the main aerodrome facilities for the operation of the aerodrome including, particularly, the location of each wind direction indicator.

2.2 A plan of the aerodrome showing the aerodrome boundaries.

2.3 A plan showing the distance of the aerodrome from the city or other populous area, and the location of any aerodrome facilities and equipment outside the boundaries of the aerodrome.

2.4 Particulars of the title of the aerodrome site. If the boundaries of the aerodrome are not defined in the title documents particulars of the title to, or interest in, the property on which the aerodrome is located and a plan showing the boundaries and position of the aerodrome.

Section 3 – Particulars of the Aerodrome required to be reported to the Aeronautical Information Service (AIS)

3.1 General Information

(a) the name of the aerodrome;
(b) the location of the aerodrome;
(c) the geographical coordinates of the aerodrome reference point determined in terms of the World Geodetic System – 1984 (WGS-84) reference datum;
(d) the aerodrome elevation and geoid undulation;
(e) the elevation of each threshold and geoid undulation, the elevation of the runway end and any significant high and low points along the runway, and the highest elevation of the touchdown zone of a precision approach runway;
(f) the aerodrome reference temperature;
(g) details of the aerodrome beacon; and
(h) the name of the aerodrome operator and the address and telephone number at which the operator may be contacted at all times.

3.2 Aerodrome Dimensions and Related Information

3.2.1 Information relating to aerodrome dimensions, including the following:

(a) runway – true bearing, designation number, length, width, displaced threshold location, slope, surface type, type of runway and, for a precision approach runway, the existence of an obstacle free zone;
(b) length, width and surface type of strip, runway end safety areas, stopways;
(c) length, width and surface type of taxiways;
(d) apron surface type and aircraft stands;
(e) clearway length and ground profile;
(f) visual aids for approach procedures, *viz*, approach lighting type and visual approach slope indicator system (PAPI/APAPI and T-VASIS/AT-VASIS); marking and lighting of runways, taxiways, and aprons; other visual guidance and control aids on taxiways (including runway holding positions, intermediate holding

positions and stop bars) and aprons, location and type of visual docking guidance system; availability of standby power for lighting;

(g) the location and radio frequency of VOR aerodrome checkpoints;
(h) the location and designation of standard taxi routes;
(i) the geographical coordinates of each threshold;
(j) the geographical coordinates of appropriate taxiway centre line points;
(k) the geographical coordinates of each aircraft stand;
(l) the geographical coordinates and the top elevation of significant obstacles in the approach and take-off areas, in the circling area and in the vicinity of the aerodrome. (This information may best be shown in the form of charts such as those required for the preparation of aeronautical information publications, as specified in Annexes 4 and 15 to the Convention);
(m) pavement surface type and bearing strength using the Aircraft Classification Rating– Pavement Classification Rating (ACR-PCR) method;
(n) one or more pre-flight altimeter check locations established on an apron and their elevation;
(o) declared distances: take-off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA), landing distance available (LDA);
(p) disabled aircraft removal plan: the telephone/telex/facsimile numbers and e-mail address of the aerodrome coordinator for the removal of a disabled aircraft on or adjacent to the movement area, information on the capability to remove a disabled aircraft, expressed in terms of the largest type of aircraft which the aerodrome is equipped to remove;
(q) rescue and fire-fighting: the level of protection provided, expressed in terms of the category of the rescue and fire-fighting services, which should be in accordance with the longest aeroplane normally using the aerodrome and the type and amounts of extinguishing agents normally available at the aerodrome.
(r) width and surface type of taxiway shoulders;
(s) location, markings, lighting and the largest aircraft type that can use the runway turnpad; and
(t) location, dimensions and largest helicopter that can use the Final Approach and Takeoff area (FATO).

3.2.2 The accuracy of the information in Section 3 is critical to aircraft safety. Information requiring engineering survey and assessment should be gathered or verified by qualified technical persons.

Section 4 – Particulars of the Aerodrome Operating Procedures and Safety Measures

4.1 Aerodrome Reporting

4.1.1 Particulars of the procedures for reporting any changes to the aerodrome information set out in the AIP and procedures for requesting the issue of NOTAMS, including the following:

(a) arrangement for reporting any changes to CAAS and recording the reporting of changes during and outside the normal hours of aerodrome operations;
(b) the names and roles of persons responsible for notifying the changes, and their telephone numbers during and outside the normal hours of aerodrome operations; and
(c) the address and telephone numbers, as provided by CAAS, of the place where changes are to be reported to the CAAS.

4.2 Access to the Aerodrome Movement Area

4.2.1 Particulars of the procedures that have been developed and are to be followed in coordination with the agency responsible for preventing unlawful interferences in civil aviation at the aerodrome and for preventing unauthorised entry of persons, vehicles, equipment, animals or other things into the movement area, including the following:

(a) the role of the aerodrome operator, the aircraft operator, aerodrome fixed-base operators, the aerodrome security entity, air navigation service provider, CAAS and other government departments, as applicable; and

(b) the names and roles of the personnel responsible for controlling access to the aerodrome, and the telephone numbers for contacting them during and after working hours.

4.3 Aerodrome Emergency Plan

4.3.1 Particulars of the aerodrome emergency plan, including the following:

(a) plans for dealing with emergencies occurring at the aerodrome or in its vicinity, including the malfunction of aircraft in flight; structural fires; sabotage, including bomb threats (aircraft or structure); unlawful seizure of aircraft; and incidents on the airport covering “during the emergency” and “after the emergency” considerations;

(b) details of test for aerodrome facilities and equipment to be used in emergencies, including the frequency of those tests;

(c) details of exercises to test emergency plans, including the frequency of those exercises;

(d) a list of organisations, agencies and persons of authority, both on- and off-airport, for site roles; their telephone and facsimile numbers, e-mail and SITA addresses and the radio frequencies of their offices;

(e) the establishment of an aerodrome emergency committee to organise training and other preparations for dealing with emergencies; and

(f) the appointment of an on-scene commander for the overall emergency operation.

4.4 Rescue and Firefighting

4.4.1 Particulars of the facilities, equipment, personnel and procedures for meeting the rescue and firefighting requirements, including the names and roles of the persons responsible for dealing with the rescue and fire-fighting services at the aerodrome. This also includes the level of staffing after the task resource analysis is carried out.

4.4.2 This subject should also be covered in appropriate detail in the aerodrome emergency plan.

4.5 Inspection of the Aerodrome Movement Area and Obstacle Limitation Surface by the Aerodrome Operator

4.5.1 Particulars of the procedures for the inspection of the aerodrome movement area and obstacle limitation surfaces, including the following:

(a) arrangement for carrying out inspections, including runway friction and water-depth measurements on runways and taxiways, during and outside the normal hours of aerodrome operations;
(b) arrangement and means of communicating with the aerodrome air traffic control unit during an inspection;
(c) arrangements for keeping an inspection logbook, and the location of the logbook;
(d) details of inspection intervals and times;
(e) inspection checklist;
(f) arrangement for reporting the results of inspections and for taking prompt follow-up actions to ensure correction of unsafe conditions; and
(g) the names and roles of persons responsible for carrying out inspections, and their telephone number during and after working hours.

4.6 Visual Aids and Aerodrome Electrical Systems

4.6.1 Particulars of the procedures for the inspection and maintenance of aeronautical lights (including obstacle lighting), signs, markers and aerodrome electrical systems, including the following:

(a) arrangement for carrying out inspections during and outside the normal hours of aerodrome operation, and the checklist for such inspection;
(b) arrangements for recording the results of inspections and for taking follow-up action to correct deficiencies;
(c) arrangements for carrying out routine maintenance and emergency maintenance;
(d) arrangements for secondary power supplies, if any, and, if applicable, the particulars of any other method of dealing with partial or total system failure; and
(e) the names and roles of the persons responsible for the inspection and maintenance of the lighting, and the telephone numbers for contacting those persons during and after working hours.

4.7 Maintenance of the Movement Area

4.7.1 Particulars of the facilities and procedures for the maintenance of the movement area, including:

(a) arrangements for maintaining the paved areas;
(b) arrangements for maintaining the unpaved runways and taxiways;
(c) arrangements for maintaining the runway and taxiway strips; and
(d) arrangements for the maintenance of aerodrome drainage.

4.8 Aerodrome Work Safety

4.8.1 Particulars of the procedures for planning and carrying out construction and maintenance work safely (including work that may have to be carried out at short notice) on or in the vicinity of the movement area which may extend above an obstacle limitation surface, including the following:

(a) arrangements for communicating with the aerodrome air traffic control unit during the progress of such work;
(b) the names, telephone numbers and roles of the persons and organisations responsible for planning and carrying out the work, and arrangements for contacting those persons and organisations at all times;

(c) the names and telephone numbers, during and after working hours, of the aerodrome fixed-base operators, ground handling agents and aircraft operators who are to be notified of the work; and
(d) a distribution list for work plans, if required.

4.9 Apron Management

4.9.1 Particulars of the apron management procedures, including the following:

(a) arrangements between air traffic control and the apron management units;
(b) arrangements for allocating aircraft parking positions;
(c) arrangements for initiating engine start and ensuring clearance of aircraft push-back; and
(d) marshalling service.

4.10 Apron Safety Management

4.10.1 Procedures to ensure apron safety include:

(a) protection from jet blasts;
(b) enforcement of safety precautions during aircraft refuelling operations including specifying the type and size of fire extinguishers at suitable intervals along the length of the apron;
(c) apron sweeping;
(d) apron cleaning;
(e) arrangements for reporting incidents and accidents on an apron;
(f) arrangements for auditing the safety compliance of all personnel working on the apron; and
(g) management of safety of ground handling operations which include, but are not limited to the following:
    (i) Operation of ground support equipment associated with aircraft handling and loading;
    (ii) Operation of passenger loading bridge;
    (iii) Aircraft fuelling;
    (iv) Aircraft pushback;
    (v) Aircraft powerback;
    (vi) Aircraft towing;
    (vii) Aircraft power-in arrival and power-out departure; and
    (viii) Aircraft marshalling.

4.11 Airside Vehicle Control

4.11.1 Particulars of the procedure for the control of surface vehicles on or in the vicinity of the movement area, including the following:

(a) details of the application traffic rules (including speed limits and the means of enforcing the rules); and
(b) the method of issuing driving permits for operating vehicles in the movement area.

4.12 Wildlife Hazard Management

4.12.1 Particulars of the procedures to deal with the danger posed to aircraft operations by the presence of bird or mammals in the aerodrome flight pattern or movement area, including the following:

(a) arrangements for assessing wildlife hazards;
(b) arrangements for implementing wildlife control programmes; and
(c) the names and roles of the persons responsible for dealing with wildlife hazards, and their telephone numbers during and after working hours.

4.13 Obstacle Control

4.13.1 Particulars setting out the procedures for:

(a) monitoring the obstacle limitation surfaces and Type A Chart for obstacle in the take-off surface;
(b) controlling obstacles within the authority of the operator;
(c) monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces;
(d) controlling new developments in the vicinity of aerodromes; and
(e) notifying CAAS (attention to Aerodrome and ANS Regulation Division) of the nature and location of obstacles and any subsequent addition or removal of obstacles for action as necessary, including amendment of the AIS publications.

4.14 Removal of Disabled Aircraft

4.14.1 Particulars of the procedures for removing a disabled aircraft on or adjacent to the movement area, including the following:

(a) the roles of the aerodrome operator and the holder of the aircraft certificate of registration;
(b) arrangements for notifying the holder of the certificate of registration;
(c) arrangements for liaising with the aerodrome air traffic control unit;
(d) arrangements for obtaining equipment and personnel to remove the disabled aircraft; and
(e) the names, role and telephone numbers of persons responsible for arranging for the removal of disabled aircraft.

4.15 Handling of Dangerous Goods

4.15.1 Particulars of the procedures for the safe handling and storage of dangerous goods on the aerodrome, including the following:

(a) arrangements for special areas on the aerodrome to be set up for the storage of inflammable liquids (including aviation fuels) and any other dangerous goods; and

(b) the method to be followed for the delivery, storage, dispensing and handling of dangerous goods.

4.15.2 Dangerous goods include inflammable liquids and solid, corrosive liquids, compressed gases and magnetised or radioactive materials. Arrangements for dealing with the accidental spillage of dangerous goods should be included in the aerodrome emergency plan.

4.16 Low-Visibility Operations

4.16.1 Particulars of procedures to be introduced for low-visibility operations, including the following:

(a) measurement and reporting of runway visual range as and when required, and the names and telephone numbers, during and after working hours, of the persons responsible for measuring the runway visual range; and

(b) Arrangements to protect the instrument landing system critical sensitive area.

4.17 Protection of Sites for Radar and Navigational Aids

4.17.1 Particulars of the procedures for the protection of sites for radar and radio navigational aids located on the aerodrome to ensure that their performance will not be degraded, including the following:

(a) arrangements for the control of activities in the vicinity of radar and navaids installations;
(b) arrangements for ground maintenance in the vicinity of these installations; and
(c) arrangements for the supply and installation of signs warning hazardous microwave radiation.

4.17.2 In writing the procedures for each category, clear and precise information should be included on:

(a) when, or in what circumstances, an operating procedure is to be activated;
(b) how an operating procedure is to be activated;
(c) actions to be taken;
(d) the persons who are to carry out the actions; and
(e) the equipment necessary for carrying out the actions, and access to such equipment.

4.17.3 If any of the procedures specified above are not relevant or applicable, the reason should be given.

4.18 Runway Safety

4.18.1 Particulars of the Runway Safety Team and Runway Safety Action Plan in place to improve the safety of runway operations at the aerodrome. Refer to AC 139-8-1 Guidance on Runway Safety Team for more information.

4.18.2 Particulars of the facilities, equipment and procedures in place for runway incursion prevention, taking account of different traffic intensities and visibility conditions, including the following:

(a) integration of facilities, equipment, markings, lights and signs as a whole in the runway incursion prevention plan;
(b) management of the related as-built drawings; and
(c) maintenance of the facilities, equipment, markings, lights and signs to ensure reliability and availability.

4.19 Hazardous Meteorological Conditions

4.19.1 Particulars of the procedures to deal with hazardous meteorological conditions, include the following:

(a) the role of the aerodrome operator, the aircraft operator, the aerodrome air traffic control unit, the ground handling service providers and other relevant stakeholders, as applicable; and

(b) the names and roles of the personnel responsible for dealing with hazardous meteorological conditions, and the telephone numbers for contacting them during and after working hours.

4.20 Aviation Fuel Quality at aerodromes

4.20.1 Particulars of the procedures to deal with aviation fuel quality at aerodromes

Section 5 – Details of the Aerodrome Administration and Safety Management System

5.1 Aerodrome administration

5.1.1 Particulars of the aerodrome administration, include the following:

(a) an aerodrome organisation chart showing the names and positions of key personnel, including their safety responsibilities;
(b) the name, position and telephone number of the person who has overall responsibility for aerodrome safety;
(c) airport committees;
(d) particulars of staff training and competency, including the specifications of staff qualifications and experience, training and programme for upgrading of skills provided to staff on safety-related duties, and where necessary, the certification system for testing their competency; and
(e) Responsibilities attributed to other aerodrome stakeholders

5.1.2 Details on the operator's safety management system. Refer to AC 1-3 on Safety Management System and AC 139-5-1 on Safety performance indicators and target monitoring for more information.

APPENDIX B – PARTICULARS TO BE INCLUDED IN THE HELIPORT MANUAL

The heliport operator should organise and include the following particulars, to the extent applicable to the heliport, under the Sections as stated in this Appendix.

Section 1 – General

1.1 General information, including the following:

(a) A table of contents;
(b) A list of corrigenda/amendments, including the updates and/or corrections made to the heliport manual;
(c) A distribution list;
(d) The purpose and scope of the heliport manual;
(e) The legal requirement for a heliport certificate and a heliport manual as prescribed in the ANR-139;
(f) The conditions for use of the heliport – a statement to indicate that the heliport shall at all times when it is available for the take-off and landing of helicopters, be so available to all persons on equal terms and conditions;
(g) The available aeronautical information services and procedures for timely and accurate effecting promulgation of AIP Amendment, AIP Supplement or NOTAM;
(h) The system for recording helicopter movements;
(i) A description of the operator's safety management system (SMS) and reference to the operator's SMS manual;
(j) A description of the intended operations, including:
    (i) the performance class of the helicopters the heliport is intended to serve;
    (ii) the heliport type and their associated levels of service;
    (iii) the nature of aviation activities (commercial, passenger, air transport, cargo, aerial work, general aviation);
    (iv) the type of traffic permitted to use the heliport (international/national, IFR/VFR, scheduled/non-scheduled); and
    (v) the minimum RVR that heliport operations can be permitted;
(k) The obligations of the heliport operator;
(l) A table presented in the format shown below to indicate the heliport and heliport operator's compliance status with EACH clause in the ANR-139 and AS-6. Deviations, if any, should be listed together with their validity, details and reasons of the exemption, any resultant limitations, conditions or procedures imposed and other references to the related documents (including any safety assessment);

Table of Compliance with the clauses in the ANR-139 and AS-6		
ANR-139 Regulation No. / AS-6 Paragraph No.	**Compliance Status**	**Remarks/Explanation**
[Specific regulation / paragraph reference]	[Fully compliant / partially compliant / non-compliant]	[Brief explanation when partially compliant or non-compliant]

(m) A table presented in the format shown below to indicate the heliport and heliport operator's implementation status with EACH Recommended Practice(RP) in the AC 139-4-6. Any RP that is partially implemented or not implemented should be listed together with their validity, details and reasons, any resultant limitations, conditions or procedures imposed and other references to the related documents (including any safety assessment);

Table of Implementation with the AC 139-4-6		
AC 139-4-6 paragraph No.	**Implementation Status**	**Remarks/Explanation**
[Specific paragraph reference]	[Fully implemented / partially implemented / not implemented]	[Brief explanation when partially implemented or not implemented]

(n) A description of the system to:
- (i) monitor the heliport operator's compliance with applicable aviation safety subsidiary legislation, requirements and procedures;
- (ii) monitor the adequacy of measures to comply with such aviation safety subsidiary legislation, requirements and procedures to ensure safe operational practices; and
- (iii) verify that all the heliport operator's operations and activities are conducted in accordance with the applicable aviation safety subsidiary legislation, requirements, standards and procedures;

(o) The description of the system mentioned in sub-paragraph (n) should cover at least the following elements:
- (i) safekeeping of safety records;
- (ii) use of internal or external auditors;
- (iii) scope of audit to be conducted;
- (iv) responsibilities of the auditor;
- (v) quality audit which must include inspections but not limited to apron management service, heliport vehicle operations, ground handling operations, rescue and firefighting, wildlife management, aviation fuel quality, maintenance of heliport equipment and facilities and external contractors and agencies;
- (vi) audit scheduling;
- (vii) monitoring of corrective actions;
- (viii) management evaluation;
- (ix) audit record keeping;

(p) Procedures for bringing urgent or temporary information to the notice of heliport operations and maintenance staff.

Section 2 – Particulars of the Heliport Site

2.1 General information, including the following:

(a) a plan of the heliport showing the heliport facilities for the operation of the heliport including, particularly, the location of each wind direction indicator;
(b) a plan of the heliport showing the heliport boundaries;
(c) a plan showing the distance of the heliport from the city or other populous area, and the location of any heliport facilities and equipment outside the boundaries of the heliport; and
(d) particulars of the title of the heliport site. If the boundaries of the heliport are not defined in the title documents particulars of the title to, or interest in, the property on which the heliport is located and a plan showing the boundaries and position of the heliport.

Section 3 – Particulars of the Heliport required to be reported to the Aeronautical Information Service (AIS)

3.1 General Information

(a) the name of the heliport;
(b) the location of the heliport;
(c) the geographical coordinates of the heliport reference point determined in terms of the World Geodetic System – 1984 (WGS-84) reference datum;
(d) the heliport elevation and geoid undulation;
(e) the heliport reference temperature; and
(f) the name of the heliport operator and the address and telephone number at which the operator may be contacted at all times.

3.2 Heliport Dimensions and Related Information

3.2.1 Information relating to heliport dimensions, including the following:
(a) heliport type — surface-level, elevated, shipboard or helideck;
(b) touch-down and lift-off (TLOFs) area — dimensions to the nearest metre, slope, surface type, bearing strength in tonnes (1 000 kg), whether collocated or coincident with the final approach and take-off (FATOs) area or situated in helicopter stands;
(c) FATOs — type of FATOs (non-instrument, Point-in-space (PinS), instrument including non-precision and precision), surface type, true bearing to one-hundredth of a degree, designation number (where appropriate), length and width to the nearest metre, slope, surface type;
(d) safety area — length, width and surface type;
(e) helicopter taxiway and helicopter taxi route — designation, width, surface type;
(f) apron — surface type, helicopter stands;
(g) clearway — length, ground profile;
(h) visual aids for approach procedures, marking and lighting of FATOs, TLOFs, helicopter ground taxiways, helicopter air taxiways and helicopter stands; and
(i) declared distances

Section 4 – Particulars of the Heliport Operating Procedures and Safety Measures

4.1 Heliport Reporting

4.1.1 Particulars of the procedures for reporting any changes to the heliport information set out in the AIP and procedures for requesting the issue of NOTAMS, including the following:

(a) arrangement for reporting any changes to CAAS and recording the reporting of changes during and outside the normal hours of heliport operations;
(b) the names and roles of persons responsible for notifying the changes, and their telephone numbers during and outside the normal hours of heliport operations; and
(c) the address and telephone numbers, as provided by CAAS, of the place where changes are to be reported to CAAS.

4.2 Access to the Heliport Movement Area

4.2.1 Particulars of the procedures that have been developed and are to be followed in coordination with the agency responsible for preventing unlawful interferences in civil aviation at the heliport and for preventing unauthorised entry of persons, vehicles, equipment, animals or other things into the movement area, including the following:

(a) the role of the heliport operator, the helicopter operator, the heliport security entity, the air navigation service provider, CAAS and other government departments, as applicable; and
(b) the names and roles of the personnel responsible for controlling access to the heliport, and the telephone numbers for contacting them during and after working hours.

4.3 Heliport Emergency Plan

4.3.1 Particulars of the heliport emergency plan, including the following:

(a) the types of emergencies planned for;
(b) how to initiate the plan for each emergency specified;
(c) the name of agencies on and off the heliport to contact for each type of emergency with telephone numbers or other;
(d) contact information;
(e) the role of each agency for each type of emergency;
(f) a list of pertinent on-heliport services available with telephone numbers or other contact information;
(g) copies of any written agreements with other agencies for mutual aid and the provision of emergency services; and
(h) a grid map of the heliport and its immediate vicinity.

4.4 Rescue and Firefighting

4.4.1 Particulars of the facilities, equipment, personnel and procedures for meeting the rescue and firefighting requirements, including the names and roles of the persons responsible for dealing with the rescue and firefighting services at the heliport. This also includes the level of staffing after the task resource analysis is carried out.

4.4.2 This subject should also be covered in appropriate detail in the heliport emergency plan.

4.5 Inspection of the Heliport and Obstacle Limitation Surface by the Heliport Operator

4.5.1 Particulars of the procedures for the inspection of the heliport movement area and obstacle limitation surfaces, including the following:

(a) arrangement for carrying out inspections, during and outside the normal hours of heliport operations;
(b) arrangement and means of communicating with the air traffic control unit during an inspection;
(c) arrangements for keeping an inspection logbook, and the location of the logbook;
(d) details of inspection intervals and times;
(e) inspection checklist;
(f) arrangement for reporting the results of inspections and for taking prompt follow-up actions to ensure correction of unsafe conditions; and
(g) the names and roles of persons responsible for carrying out inspections, and their telephone number during and after working hours.

4.6 Heliport Visual Aids and Electrical Systems

4.6.1 Particulars of the procedures for the inspection and maintenance of aeronautical lights (including obstacle lighting), signs, markers and heliport electrical systems, including the following:

(a) arrangement for carrying out inspections during and outside the normal hours of heliport operation, and the checklist for such inspection;
(b) arrangements for recording the results of inspections and for taking follow-up action to correct deficiencies;
(c) arrangements for carrying out routine maintenance and emergency maintenance;
(d) arrangements for secondary power supplies, if any, and, if applicable, the particulars of any other method of dealing with partial or total system failure; and
(e) the names and roles of the persons responsible for the inspection and maintenance of the lighting, and the telephone numbers for contacting those persons during and after working hours.

4.7 Maintenance of the Heliport

4.7.1 Particulars of the facilities and procedures for the maintenance of the heliport, including:

(a) arrangements for maintaining heliport site, infrastructure (e.g. FATOs, TLOFs, helicopter stands, pavement), facilities and equipment;
(b) arrangements for maintaining the movement area; and
(c) arrangements for the maintenance of heliport drainage.

4.8 Heliport Work Safety

4.8.1 Particulars of the procedures for planning and carrying out construction and maintenance work safely (including work that may have to be carried out at short notice) on or in the vicinity of the heliport which may extend above an obstacle limitation surface, including the following:

(a) arrangements for communicating with the air traffic control unit during the progress of such work;
(b) the names, telephone numbers and roles of the persons and organisations responsible for planning and carrying out the work, and arrangements for contacting those persons and organisations at all times;
(c) the names and telephone numbers, during and after working hours, of the heliport fixed-based operators, ground handling agents and helicopter operators who are to be notified of the work.
(d) a distribution list for work plans, if required.

4.9 Apron Management

4.9.1 Particulars of the apron management procedures, including the following:

(a) arrangements between air traffic control and the apron management units;
(b) arrangements for allocating helicopter parking positions;
(c) arrangements for initiating engine start and ensuring clearance of helicopter take-off; and
(d) marshalling service.

4.10 Apron Safety Management

4.10.1 Procedures to ensure apron safety include:

(a) protection from rotor downwash;
(b) enforcement of safety precautions during helicopter refuelling operations including specifying the type and size of fire extinguishers at suitable intervals along the length of the apron;
(c) apron sweeping;
(d) apron cleaning;
(e) arrangements for reporting incidents and accidents on an apron;
(f) arrangements for auditing the safety compliance of all personnel working on the apron; and
(g) management of safety of ground handling operations which include, but are not limited to the following:
    (i) Operation of ground support equipment associated with helicopter handling and loading/unloading;
    (ii) helicopter fuelling;
    (iii) Helicopter towing;
    (iv) Helicopter marshalling.

4.11 Vehicle Control

4.11.1 Particulars of the procedure for the control of surface vehicles on or in the vicinity of the heliport, including the following:

(a) details of the application traffic rules (including speed limits and the means of enforcing the rules); and
(b) the method of issuing driving permits for operating vehicles in the movement area.

4.12 Wildlife Hazard Management

4.12.1 Particulars of the procedures to deal with the danger posed to helicopter operations by the presence of bird or mammals in the heliport flight pattern or movement area, including the following:

(a) arrangements for assessing wildlife hazards;
(b) arrangements for implementing wildlife control programmes; and
(c) the names and roles of the persons responsible for dealing with wildlife hazards, and their telephone numbers during and after working hours.

4.13 Obstacle Control

4.13.1 Particulars setting out the procedures for:

(a) monitoring the obstacle limitation;
(b) controlling obstacles within the authority of the operator;
(c) monitoring the height of buildings or structures within the boundaries of the obstacle limitation surfaces;
(d) controlling new developments in the vicinity of heliport; and
(e) notifying CAAS of the nature and location of obstacles and any subsequent addition or removal of obstacles for action as necessary, including amendment of the AIS publications.

4.14 Removal of Disabled Helicopter

4.14.1 Particulars of the procedures for removing a disabled helicopter on or adjacent to the movement area, including the following:

(a) the roles of the heliport operator and the holder of the helicopter certificate of registration;
(b) arrangements for notifying the holder of the certificate of registration;
(c) arrangements for liaising with the air traffic control unit;
(d) arrangements for obtaining equipment and personnel to remove the disabled helicopter; and
(e) the names, role and telephone numbers of persons responsible for arranging for the removal of disabled helicopter.

4.15 Handling of Dangerous Goods

4.15.1 Particulars of the procedures for the safe handling and storage of dangerous goods on the heliport, including the following:

(a) arrangements for special areas on the heliport to be set up for the storage of inflammable liquids (including aviation fuels) and any other dangerous goods; and
(b) the method to be followed for the delivery, storage, dispensing and handling of dangerous goods.

4.15.2 Dangerous goods include inflammable liquids and solid, corrosive liquids, compressed gases and magnetised or radioactive materials. Arrangements for dealing with the accidental spillage of dangerous goods should be included in the heliport emergency plan.

4.16 Low-Visibility Operations

4.16.1 Particulars of procedures to be introduced for low-visibility operations, including the following:

(a) measurement and reporting of visibility as and when required; and

(b) the names and telephone numbers, during and after working hours, of the persons responsible for measuring the appropriate visual range.

4.17 Protection of Sites for Radar and Navigational Aids

4.17.1 Particulars of the procedures for the protection of sites for radar and radio navigational aids located on the heliport to ensure that their performance will not be degraded, including the following:

(a) arrangements for the control of activities in the vicinity of radar and navaids installations;
(b) arrangements for ground maintenance in the vicinity of these installations; and
(c) arrangements for the supply and installation of signs warning hazardous microwave radiation.

4.17.2 In writing the procedures for each category, clear and precise information should be included on:

(a) when, or in what circumstances, an operating procedure is to be activated;
(b) how an operating procedure is to be activated;
(c) actions to be taken;
(d) the persons who are to carry out the actions; and
(e) the equipment necessary for carrying out the actions, and access to such equipment.

4.17.3 If any of the procedures specified above are not relevant or applicable, the reason should be given.

4.18 Hazardous Meteorological Conditions

4.18.1 Particulars of the procedures to deal with hazardous meteorological conditions, include the following:

(a) the role of the heliport operator, the helicopter operator, the air traffic control unit, the ground handling service providers and other relevant stakeholders, as applicable; and
(b) the names and roles of the personnel responsible for dealing with hazardous meteorological conditions, and the telephone numbers for contacting them during and after working hours.

4.19 Aviation Fuel Quality at Heliport

4.19.1 Particulars of the procedures to deal with aviation fuel quality at heliport

Section 5 – Details of the Heliport Administration and Safety Management System

5.1 Heliport administration

5.1.1 Particulars of the heliport administration, include the following:

(a) a heliport organisation chart showing the names and positions of key personnel, including their safety responsibilities;
(b) the name, position and telephone number of the person who has overall responsibility for heliport safety;
(c) safety committees;

(d) particulars of staff training and competency, including the specifications of staff qualifications and experience, training and programme for upgrading of skills provided to staff on safety-related duties, and where necessary, the certification system for testing their competency; and
(e) responsibilities attributed to other heliport stakeholders.

5.1.2 Details on the operator's safety management system. Refer to AC 1-3 on Safety Management System.