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<p>Document No. TCAA/QSP/SR/AC/AGA-017</p>	<p style="text-align: center;">ADVISORY CIRCULAR ON PREPARATION, SUBMISSION AND FOLLOW-UP OF CORRECTIVE ACTION PLAN (CAP)</p>	<p style="text-align: right;">Page 1</p>

1.0 PURPOSE

- 1.1 This Advisory Circular provides Aerodrome Operators with guidance for the development of corrective action plans to be implemented in order to address findings generated during safety inspections/audits of aerodrome services, facilities and personnel and thus achieve resolution of safety concerns.
- 1.2 Considering the diversity of personnel and organizations involved it is necessary to standardize the procedures and ensure that the corrective actions provided by the aerodrome operators are objective, implementable, measurable and of timely significance taking into consideration the safety concerns addressed.

2.0 REFERENCES

- 2.1 Civil Aviation (Aerodrome) Regulations, 2017
- 2.2 Manual of Aerodromes Standards, 4th edition, December 2016
- 2.3 ICAO Annex 14 – Volume I, 7th edition, July 2016
- 2.4 ICAO Doc 9774 – Manual on Certification of Aerodromes
- 2.5 Manual of Aerodrome Licensing Procedures
- 2.6 Manual of Aerodrome Certification Procedures

3.0 GUIDANCE INFORMATION

3.1 Introduction

Safety audit is an in-depth review of the activities of an organization that is carried out to verify conformance to regulatory requirements. A non-conformance to a specified regulatory requirement or company approved procedure identified during an audit is referred to as a finding and is documented for action. The severity of audit findings may range from minor to significant. Following each audit the inspectors will make comprehensive report outlining the audit process and provide a summary of the audit findings;

Non compliances may also be identified from a variety of sources including specific operational event, internal, assessment or investigation and observation during daily work performance. All these constitute findings and must be recorded and addressed as if they were identified during safety audits even if they do not warrant notification to the Authority.

For each finding generated during the safety audit, the accountable manager concerned shall develop a corrective action plan for approval of the Authority. The plan will outline how the company proposes to correct the deficiencies

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3.2 Developing the Corrective Action Plan

3.2.1 As an initial step the Accountable manager shall define the finding by collecting and evaluating relevant information to determine the facts and causal factors (including root causes) that lead to non compliance. The unit responsible for the function or activity where non compliance was identified should have a clear understanding and description of the finding supported by the facts and causal factors in order to develop the most appropriate and timely corrective actions to resolve the finding and prevent recurrence.

3.2.2 The second step in the process is to identify the action that must be taken in order to clear the finding. Corrective actions must be overt and constructed in the style of performance objectives. A performance objective typically consists of an action verb (a word describing an action) and a direct object (the person, facility or procedure affected by the action expressed by the verb). The criterion for performance will be the prescribed regulatory requirement. In addition time frame for accomplishment of the set objective. It is necessary to ensure that the performance is measurable in the safety oversight context.

3.3 Approval and Implementation of Corrective Action Plans

3.3.1 All corrective action plans shall be submitted to the Authority for approval. Approved corrective action plans shall be sent to the organization concerned for implementation and copies kept in appropriate inspection/audit files to facilitate follow up actions.

3.3.2 The inspectors will follow up the implementation of the corrective action plans until the Authority is sure that the finding has been cleared and a letter is forwarded to the organization concerned that the inspection/audit is closed.

3.4 Types of Corrective Action

3.4.1 Short-term corrective action This action corrects the specific non-conformance specified in the inspection/audit finding and is preliminary to the long-term action that prevents recurrence of the problem. Short-term corrective action will be completed:

- a) by the date/time specified in the corrective action section of the finding form; or
- b) per the accepted corrective action plan.

3.4.2 Long-term corrective action Long-term corrective action has two components. The first component will involve identifying the root cause of the problem and indicating the measures the aerodrome operators will take to prevent a recurrence. These measures should focus on a system change. The

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second component is a timetable for the implementation of the long-term corrective action. Subject to the following paragraph, long-term corrective action will take place within 90 days and will include a proposed completion date.

Some long-term corrective actions may require time periods in excess of 90 days (e.g. major equipment purchases). In this case, refer to 3.6.5.4, which explains how to deal with inspection/audit findings both beyond 90 days and closure of findings within 12 months. Where applicable, the CAP will include milestones or progress review points at 90 day intervals leading up to the proposed completion date for each inspection/audit finding.

Where the short-term corrective action taken meets the requirements for long-term corrective action, this shall be so stated in the long-term corrective action section on the corrective action form.

3.5 Corrective Action Plan Submission

The covering letter of the inspection/audit report will require the aerodrome operators to submit:

- a) where applicable, corrective action forms for each finding requiring corrective actions by the date specified in the corrective action section of the finding form; and
- b) a corrective action plan addressing all other findings within 30 days from the date of receipt of the report. This deadline will not be extended without the approval of the Director of Safety ;

Corrective action plans received from the Aerodrome operators should include completed corrective action forms and where applicable, supporting documentation that may take the form of technical record entries, purchase orders, memoranda, revised inspection/audit procedure cards, manual amendments, etc. A sample corrective action form is attached as **Appendix A** of this AC.

3.6 Corrective Action Acceptance

Where the corrective action plan is acceptable, the aerodrome operators shall be so advised and the appropriate information (administrative/on-site follow-up, proposed completion date) will be entered on the corrective action form or where applicable, the corrective action tracking form, for the purpose of follow-up. Functional databases should also be used to track the progress of inspection/audit follow up.

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Before accepting plans for findings that include long-term corrective actions exceeding 90 days, the Director of Safety Regulation must be satisfied that the proposed corrective action is reasonable and that safety will not be jeopardized.

If the aerodrome operator's corrective action plan is not acceptable, the responsible Inspector/Auditor or other assigned person will request the plan be revised and re-submitted within 10 days of the request. Where the aerodrome operator is non-responsive to this action, an alternative course of action may be pursued, such action could include the sending of a Notice of Suspension to the organisation by the Director of Safety Regulation.

3.7 Corrective Action Follow-up

3.7.1 Follow-up process

- a) Where the inspection/audit findings are of a minor nature and no threat to aviation safety exists an "administrative follow-up" may be acceptable. All other findings require "on-site follow-up" to ensure that non-conformances have been rectified and that corrective actions are effective;
- b) Progress will be monitored as the aerodrome operators completes inspection/audit finding corrective actions. This will be accomplished by using the follow-up section on the corrective action form, the corrective action tracking form or functional database. Both forms identify the finding number, the type of inspection/audit follow-up (administrative or on-site) and the date upon which the corrective action was completed;
- c) Long-term corrective actions that have been accepted will be followed-up by the applicable Inspector/Auditor or other assigned person, who will advise the Director of Safety Regulation when the item is complete. This follow-up will be confirmed through routine surveillance activities.

3.7.2 Inspection/Audit follow-up Personnel assigned inspection/audit follow-up responsibilities will:

- a) monitor the aerodrome operators to ensure that the 30 day response time for corrective action plan submission is observed or, where applicable, that corrective actions required by a specific date (indicated on the corrective action section of the finding form) have been completed;
- b) ensure that the corrective action plan addresses the most critical findings first;

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- c) ensure that each proposed corrective action will rectify the root cause of the finding to prevent its recurrence;
- d) determine that the aerodrome operators has developed a reasonable timetable for long-term corrective action and ensure that the proposed completion date is indicated on the appropriate section of the corrective action form, entered on the corrective action tracking form or entered in the applicable functional database;
- e) accept the corrective action plan in co-ordination with the Director of Safety Regulation and appropriate team leader and/or team member;
- f) determine for each corrective action plan item whether the follow-up is to be administrative or on-site and indicate so on the corrective action form, corrective action tracking form or applicable functional database;
- g) monitor the progress of the corrective action plan by maintaining the follow-up section of the corrective action form, the corrective action tracking form or applicable functional database and ensuring that the appropriate follow-up (administrative or on-site) has been conducted;
- h) ensure that all completed corrective action forms and corrective action tracking forms, together with any supporting documentation are placed in the Inspection/audit file; and
- i) advise the Director of Safety when all corrective actions have been completed.

3.7.3 Inspection/Audit closure To enable the Director of Safety Regulation to close regulatory inspection/audits within 12 months following Corrective Action Plan (CAP) acceptance, the following process should be applied. The CAP should aim at having all corrective action in place within 90 days of acceptance by the responsible Inspector/Auditor or other assigned person. If it is not possible to meet the set deadline, special consideration may be required to ensure a timely closure of the inspection/audit.

Inspection/audit findings will be categorized as follows:

- a) **An immediate safety issue** - corrective action must be carried out immediately in order for the aerodrome operators to continue with its activities. The finding should be written into the report. Should long-term corrective actions be required, depending on the circumstances, this will be dealt with as identified in (b), (c) or (d) below.
- b) **Corrected within 90 days** - the majority of findings should fall into this category. The accepted CAP must indicate that the long and short-term corrective action will be in place within 90 days.

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- The applicable Inspector/Auditor or other assigned person will ensure follow-up.
- c) **Corrected between 90 days and twelve months** - where it is anticipated that the corrective action will take more than 90 days after CAP acceptance, a risk assessment shall be completed by the applicable Inspector/Auditor or other assigned person before acceptance by the Director of Safety Regulation.
 - d) **Longer than 12 months** - where it is not possible or reasonable to implement the corrective action within 12 months of acceptance of the CAP, a risk assessment study may be conducted by the responsible Inspector/Auditor or other assigned person in order to assess safety risks.

The inspection/audit can be closed by the Director of Safety 12 months after acceptance. The Director of Safety will confirm that all follow-up actions have been completed, entered in the functional database and will then forward a letter to the aerodrome operator informing that the inspection/audit is closed.

3.8 Aerodrome Risk Assessment and Categorization

3.8.1 Aerodrome Risk Assessment

For continued operations to an aerodrome which has undergone a significant change to systems or procedures, a new risk assessment will be completed.

The procedures for carrying out aerodrome risk assessments are based on the guidance material on the Seven-Step Risk Assessment and Mitigation Process, and aerodrome categorisation as detailed in Section 3.8.3.

Operations to aerodromes with identified hazards which have a risk classification following mitigation, at review must be authorised by the Flight Operations Director.

Operations will not be conducted to aerodromes with a risk classification following an unacceptable risk assessment

Completed risk assessment templates and aerodrome categorisation checklists should be adequately filed by an authorized person and promulgated.

3.8.2 Aerodrome Risk Assessment

Aerodrome risk assessment is carried out by completing the aerodrome risk assessment system using the following guidance.

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Step 1 – System Description

Describe in detail the Aerodrome, facilities, installations and equipment available. In particular the runway characteristics, approach aids, lighting system, PCN, rescue and fire services, and associated operational environment. The operational environment would include security, alternates, meteorology, local topography and ATC considerations, looking at both arrivals and departures. Pre-existing contingency procedures and other non-normal operations should be considered.

As an aid to this, a list of items to be considered is included with the system description for the risk assessment, however, this list may not include all items and any items not included should be added. At this stage hazards should have been identified.

Step 2 - Hazard Identification and Consequence

From the system description list the possible hazards associated with operations to the aerodrome. Hazards can be identified using historical analysis, brainstorming or a systematic review. Appropriate staff should be consulted in identifying hazards including pilots, ground operation staff, flight operation, safety officers and air traffic management staff.

The consequences of hazards are determined by analysing what could happen if the hazard manifests itself into an accident or incident.

Each hazard identified, should be recorded on the risk assessment template. The consequences of each hazard should be detailed and the severity of hazard consequences entered

Step 3 – Estimation of the Severity of the Hazard Consequences

Once the hazards and consequences have been identified, the severity of hazard consequences should be estimated using the severity classification scheme detailed below. The hazard severity is entered on the risk assessment template.

<p>Hazard consequence category:</p>	<p style="text-align: center;">Description</p>
<p>Catastrophic</p>	<p>Accident</p> <p>Serious loss or substantial damage to aircraft or facilities. Serious</p>

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	<p>injury or death.</p>
<p>Significant</p>	<p>An event where an accident nearly occurs. No safety barriers remaining. The outcome is not under control and could very likely lead to an accident. Damage to aircraft or facilities.</p>
<p>Moderate</p>	<p>An incident I which the safety of the aircraft may have been compromised.</p> <p>A large reduction in safety margins. The outcome is controllable by use of existing non normal procedures and or equipment. Safety barriers are very few approaching none.</p> <p>Minor injuries or minor damage may occur.</p>
<p>Minor</p>	<p>An accident, serious or major incident could have occurred if the risk had not been managed within safety margins or if another aircraft had been in the vicinity.</p> <p>A significant reduction in safety margins may occur but several barriers remain to prevent an accident.</p> <p>There will be a reduction in the ability of the flight crew to cope with the increased workload as a result of the conditions impairing their efficiency.</p> <p>Only on rare occasions would the occurrence develop into an accident.</p> <p>A nuisance to occupants or others in the vicinity occurs.</p>
<p>Negligible</p>	<p>No immediate effect on safety.</p> <p>Existing safety barriers come into play to avoid the event turning into a significant incident.</p>

Step 4 – Probability of Hazard Consequences Occurring

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Once the hazards and consequences have been identified, and the severity of hazard consequences estimated, the probability of the hazard consequences occurring should be classified. Probability classification is detailed in the table below.

Where several hazards lead to the same consequence the probability of occurrence for each hazard should be summed to get an overall likelihood of the hazard occurring.

The probability classification associated with Hazard Consequences is entered in the risk assessment template.

Probability of Occurrence Definitions				
Extremely Improbable	Improbable	Remote	Occasional	Frequent
Almost inconceivable that the event will occur, or it is eradicated by control measures.	Very Unlikely to occur	Unlikely to occur during the total operational life of the system	May occur once during the total operational life of the system	May occur several times during operational life

Step 5 – Evaluation of the Risk

At this stage the hazard number is entered into the Risk Classification / Tolerability Matrix on the risk assessment template in order to evaluate the risk. Once stage 6 is completed and the item is reassessed this should be re-entered on the matrix and an arrow added showing the movement from initial to final risk assessment.

The consequence will fall in one of the three regions:

Acceptable – the consequence is so unlikely or not severe enough to be of concern. The risk is tolerable and the Safety Objective has been met.

Review – the consequence and or likelihood is of concern. Measures to mitigate the risk should be sought. The risk may be acceptable provided that the risk is understood.

Unacceptable – the likelihood and or severity of the consequence is intolerable.

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Step 6 –Risk Mitigation and Safety Requirements

At this stage attempts are required to mitigate any risks identified as unacceptable. The hazards resulting in unacceptable risks are entered into the risk mitigation section of the **Hazard Identification and Mitigation Table**, and boundaries identified such that the risk is mitigated to a suitable level are recorded.

Examples of the systems boundaries to be enforced such that risks are mitigated as acceptable include:

- Modification of operational procedures
- Training
- Developing emergency or contingency procedures
- Changes to staffing arrangements
- Not commencing / ceasing operations

Proposed risk mitigation measures must be assessed closely to ensure new hazards are not introduced.

It may be necessary to repeat previous steps in an iterative manner such that the optimised outcome is achieved.

Step 7 Risk Summary and Operating requirements

At this stage the aerodrome risk assessment should be summarised with details of any mitigating requirements. The overall aerodrome assessment is detailed as acceptable, review or unacceptable.

It is important that requirements to be met prior to operations must be clearly stated.

3.8.3 Aerodrome Categorisation

The aerodrome risk assessment together with the aerodrome categorisation guidance list below should be used to categorise the aerodrome. The aerodrome risk assessment and aerodrome categorisation should tie closely together and any items highlighted during the categorisation that have not been included in the aerodrome risk assessment should result in a review of the Risk Assessment.

The aerodrome risk summary and specific operational requirements as listed in the aerodrome risk assessment should be used to drive the aerodrome brief.

Aerodromes are categorised as either a Category A, Category B or Category C Aerodrome.

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A **Category A** Aerodrome satisfies all of the following requirements:

- (a) An approved instrument approach procedure.
- (b) At least on runway with no performance limited procedure for take off and/or landing
- (c) Published circling minima not higher than 1000ft above aerodrome level
- (d) Night operations capability

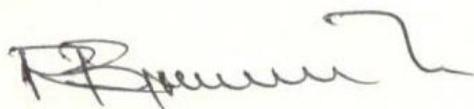
A **Category B** Aerodrome is an Aerodrome which does not satisfy all of the Category A Aerodrome requirements, or which requires extra considerations such as:

- (a) Non Standard Approach aids and / or approach patterns, or
- (b) Unusual local weather conditions or
- (c) Unusual characteristics or performance limitations, or
- (d) Any other relevant considerations including obstructions, physical layout, lighting etc.

A **Category C** Aerodrome requires additional considerations to a Category B aerodrome and is considered to pose certain hazard for the approach and / or landing and / or take-off.

In general, the following steps are required for Aerodrome categorisation

- (1) Review aerodrome charts, meteorological data, ATC services and briefings;
- (2) Request aerodrome performance information from navigation performance section;
- (3) Complete the aerodrome categorisation checklist
- (4) Produce an aerodrome brief (Cat A, B or C aerodromes);
- (5) Disseminate the aerodrome brief by Notice to Airmen or manual amendment as required.
- (6) Have the Aerodrome categorisation authorised.



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Appendix A – SAMPLE CORRECTIVE ACTION PLAN FORM

Finding No:	Date:	Name of Aerodrome:
Description of Finding:		
Recommendation:		
Operator's Comments and Observations:		
Corrective Action(S) Proposed	Action Office	Estimated Date
Corrective action evaluation (follow up taken):		
Satisfactory (Yes/No):		
Closed out date:	Signed by Inspector:	Signed by Operator: