

Procedure	Brunei DCA	
	Aerodromes Standards Section	
ADR 010	On Aerodrome Development	
	Issue No: 01	Date: 01 February 2019
	Procedure Owner: Head of Aerodromes Standards Section	

On Aerodrome Development

RELATED MATERIAL	ASSOCIATED FORMS
Brunei Civil Aviation Order 2006	
BAR 14 Volume 1 Aerodromes	

1 Introduction

1.1 The purpose of this document is to give guidance on the procedures to be used to notify the Brunei DCA of developments on an aerodrome and other changes to the physical characteristics of an aerodrome. Additionally, it includes guidance to help ensure that changes comply with certification criteria and are managed safely.

1.2 Projects that involve changes to the aerodrome infrastructure fall into three categories:

Development

Where new or upgraded infrastructure is to be provided. Examples include new buildings or extensions to buildings, aerodrome infrastructure (such as taxiways and aprons), visual aids and navigation aids. Developments are classified as major or minor, details of which are provided in paragraph 5.2.

Changes

Where existing aerodrome infrastructure or physical characteristics are being changed, for example, reconfiguration of stands, changes to the runway or declared distances. Changes include projects that involve removing or amending existing aerodrome certification variations.

Maintenance

Where existing infrastructure is being repaired, refurbished or replaced to ensure continuance but without changing the characteristics of the piece of infrastructure.

2 Policy or Policy Reference

BAR 14 paragraph 2.3.8(c) places an obligation on the aerodrome operator for the:

“Notification of changes to the aerodrome facilities, equipment and level of service planned in advance. An aerodrome operator shall notify AIS and the Brunei DCA in writing, at least 6 months before effecting any change to the aerodrome facility or equipment or the level of service at the aerodrome that has been planned in advance and which is likely to affect the accuracy of the information contained in any AIS publication.”

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3 Purpose and Scope

To provide guidance to aerodrome inspectors for the formal approval by the DCA of major or minor changes on aerodromes.

4 Definitions

ADT	Aerodrome Development Team
AGL	Aeronautical Ground Lighting
DCA	Brunei Department of Civil Aviation
IDM	Initial Development Meeting
ILS	Instrument Landing System
LVP	Low Visibility Procedures
RESA	Runway End Safety Area
SAD	Safety Assurance Document
SMS	Safety Management System
VCR	Visual Control Room
WIP	Work In Progress

5 Procedure

5.1 Engagement with the Brunei DCA

When an aerodrome receives its certificate, it is granted on the basis that it meets aerodrome certification criteria, unless variations to these criteria have been agreed by the Brunei DCA. An aerodrome certificate condition requires that changes in the physical characteristics of the aerodrome, including the erection of new buildings and alterations to existing buildings or the visual aids, shall not be made without prior approval of the Brunei DCA. The purpose of this is to ensure that the Brunei DCA is satisfied that changes in the physical characteristics meet certification criteria and do not present a safety hazard. Failure to notify the Brunei DCA of changes may leave the aerodrome vulnerable to costly remedial action or operational restrictions.

Project proposals should comply with the criteria contained in BAR 14. Additionally, some proposals provide an opportunity to review existing variations to certification criteria, with the intention of their removal, where possible. Where a variation cannot be removed, a supporting hazard analysis should be carried out, taking into account current and foreseeable operations, and the outcome of the analysis should be acted upon accordingly. However, there may be circumstances where the proposal does not comply with certification criteria, but would enhance safety. In such cases additional safety assurance will be required to assist the Brunei DCA in examining its feasibility.

Whenever possible, aerodrome certificate holders should inform the Brunei DCA of forthcoming projects and changes in good time prior to the process described in this document. This will enable the Brunei DCA to identify the level of specialist resources required to meet their objectives, to plan and to manage the work involved.

Typically, developments involving navigation aids, instrument flight procedure changes, ATC facilities and aeronautical ground lighting might require a lead-time of

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six months. Projects that involve changes to the aerodrome's infrastructure will require prior approval from the Brunei DCA and should be submitted to the Aerodrome Development Team (ADT) using the submission process in paragraph 5.4. Projects that involve the construction of new facilities, extensions or enhancements are classed as development, and will also require prior approval from the Brunei DCA. They should also be submitted to the ADT.

The ADT will assess the proposal, identify whether the project is minor or major using the criteria shown in paragraph 5.2, and inform the aerodrome accordingly. When necessary, the ADT will seek involvement of specialists from across the DCA, for example on matters of Airspace Policy, Air Traffic Standards and Flight Operations.

For maintenance projects see paragraph 5.5.

Development Meetings

An Initial Development Meeting (IDM) may be required to brief the Brunei DCA on the project when the Brunei DCA deems it necessary. Where possible, all aspects of the development should be covered at the IDM and a presentation, given by the aerodrome certificate holder or his representative, often proves the most successful way to brief all participants. Notes of the meeting should be produced by the aerodrome certificate holder and agreed by all parties.

Ideally, outline plans and drawings should be made available to the Brunei DCA before the IDM, in sufficient time to ensure that the IDM achieves the maximum benefit. Further development meetings can be expected, both whilst preparing for and during the development. It may also be necessary for some meetings to take place at the aerodrome.

The Brunei DCA will deal directly with the aerodrome certificate holder or their representative who will be expected to attend each meeting, although consultants may also attend.

The IDM will not be counted towards the chargeable regulatory oversight time for major developments.

5.2 Major or Minor Developments

Aerodrome developments are classified as major or minor. When an application is made to obtain approval from the Brunei DCA of a major development project at an aerodrome, the aerodrome shall be charged, in accordance Brunei DCA local rules. The purpose of this is to enable the Brunei DCA to recover the costs for projects which are deemed to be over and above those incurred during normal regulatory oversight.

A DCA Aerodrome Inspector and assessment team will evaluate each development proposal in detail and classify it as major or minor depending on the expected level of regulatory oversight to see the project to a satisfactory conclusion. The team will ensure all development proposals are evaluated consistently, will explain the reasons

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for any decision reached, and may also involve the aerodrome certificate holder in assisting with the evaluation process. The Brunei DCA will inform the aerodrome in writing of the outcome of the evaluation process and the rationale for the decision.

The criteria used to determine whether a development is deemed to be major or minor may include the following, although this list is not exhaustive:

- the complexity of the development;
- the need for site visits;
- the impact on aerodrome operations (level of disruption to normal operations);
- changes required to aerodrome operations resulting from the new facility;
- changes required to the Aerodrome Manual;
- whether the development would create a new certificate variation that would require detailed evaluation;
- the need for a Brunei DCA Flight Lighting Check (for AGL projects);
- the level of internal Brunei DCA liaison required – ATS, Flight Operations, Airspace/ Instrument Flight Procedures.

Typically, the projects listed in Table 1 may qualify as a major development, for which the Brunei DCA may levy charges for their approval.

Table 1 Developments that might be classed as 'major'

This list is indicative only and projects may be excluded or included, dependent upon the complexity of the proposal and regulatory oversight required.	
Project	
New Runway	A development resulting in the construction of a 'new' runway (e.g. new construction, or the change of an existing grass surface to a hard surface).
Runway Extension	A runway extension resulting in an amendment to declared distances or the provision of or changes to RESA.
Threshold Relocation (Instrument Status)	A development involving relocation of the instrument runway threshold, or relocation of a non-instrument runway threshold in preparation for instrument status.
AGL Installation, Instrument Status Runways	A new lighting installation or upgrade intended to facilitate additional operations (e.g. to accommodate low visibility operations and/or night operations).
New Buildings/Structures	A proposal involving a new terminal or terminal extension, hangars, or any other structure that may affect aircraft operations.
Installation of Aids to Navigation	An installation of ILS or MLS, glide path or associated equipment, radar, or other navigation equipment.

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Taxiway Development	A new taxiway or significant change to the existing taxiway system.
Apron Development	A new apron or a development resulting in a large increase in area, or a significant change to the apron operation.
Innovative Development	A proposal not covered by certification criteria contained in BAR 14, that requires the development of safety requirements by the Brunei DCA.
New or Replacement Visual Control Tower (VCR)	Introduction of a new or replacement VCR.
Any other development that affects the basis upon which the aerodrome certificate has been granted.	

5.3 Project Planning and Preparation

Projects require extensive planning, and the following areas will need to be considered. However, it is stressed that this list is neither mandatory nor exhaustive and it is recognised that these elements may not be available or fully developed at the planning stage:

- Aeronautical Ground Lighting;
- Aerodrome Manual changes;
- Air traffic procedures during and post-development;
- ATC line-of-sight requirements;
- Bird Hazard implications;
- Building Induced Turbulence;
- Changes to the existing aerodrome operating procedures;
- Changes to Magnetic Field Density as a result of development;
- Emergency Procedures;
- Environmental impact;
- Instrument Approach and Departure Procedures and Minima;
- Project Safety Management Procedures (outline);
- Proposed timescale;
- Revised Low Visibility Procedures;
- Removal of certification variations;
- Revised runway incursion prevention measures;
- Signage;
- Site access plan.

Whenever a project is proposed, it is essential to establish whether it will result in a change to the established operating procedures at the aerodrome. It is therefore imperative that the management of any change is fully integrated into the aerodrome's safety management system and that the Safety Assurance Documentation (SAD) addresses this.

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When considering a project it is important that, at an early stage, aerodrome certification holders undertake a hazard appraisal and risk assessment to identify the potential hazards and associated risks surrounding any proposed changes.

Note: The following document provide guidance to assist this process - ICAO Guidance on the Conduct of Hazard Identification, Risk Assessments and the Production of Safety Cases, (Available on www.caa.co.uk website).

The level of detail required should be commensurate with the size and complexity of the project and the aerodrome, as well as to the safety hazards and change presented.

5.4 Project Submission Process

Introduction

For development projects and changes the Brunei DCA will employ a three-part process to assist aerodromes and ensure that aerodrome certificate holders meet their obligations under the certification process. This section details the information required for each of the three parts and the process to be followed.

This process must be used for development projects and changes, but may also be used for significant maintenance projects should the aerodrome certificate holder or the Brunei DCA deem it necessary. Additionally, the process and/or elements of it can be used whatever the project type or size as determined within the aerodrome SMS. The documentation submitted should be proportionate to the size of the project. For smaller projects it is acceptable to submit Parts 1 and 2 together.

The submission process consists of three separate parts:

- Part 1: Compliance
- Part 2: Control
- Part 3: Completion

Compliance (Part 1)

Each development proposal should be accompanied by documentation that provides clear evidence that the proposal conforms to certification requirements detailed in BAR 14 and any other applicable documents. It will enable the Brunei DCA to assess the proposal as described in paragraph 5.2 and should include:

- Project Overview;
- Notification Form (for an example of this form,
- Compliance Matrix (to show the project design meets certification requirements);
- Scaled Drawings.

When compliance has been achieved to the satisfaction of the Brunei DCA, confirmation will be given that the project is compliant with certification requirements.

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However, if any changes are proposed to the design or build, the modified information shall be notified to the Brunei DCA.

Control (Part 2)

Following the completion and acceptance of the development design, the aerodrome certificate holder must demonstrate to the Brunei DCA that the project will be managed safely. Accordingly, the Brunei DCA will expect aerodrome certificate holders to develop safety assurance documentation that describes how the aerodrome will manage the construction works and operating procedures, to ensure that aerodrome operations can continue safely during the project. Aerodrome certificate holders should develop and implement a formal system for the strict control, safety management, safeguarding and safety coordination of all airside works. Safety Assurance Documentation can take many forms but should be proportionate to the size of the project. The aerodrome certificate holder must ensure that systems for control and safe management extend to contractors working at the aerodrome.

All members of the project management team should have clearly defined responsibilities and accountabilities in the project programme. During construction on an aerodrome, safety levels and standards of conduct must be maintained. These are essential to promoting safety, preventing accidents and meeting the aerodrome certificate requirements.

It is important that accurate, up-to-date information is made available to all stakeholders involved in the project, including the Brunei DCA, both as part of the project planning and during the work itself. Therefore, the safety assurance and project management documentation may include any or all of the following information:

- A clear statement of the supervision structure for the safety management and monitoring of works, including contact details of key duty personnel concerned, for both project and aerodrome management. This should include clear responsibilities, and include the person with overall accountability for the development;
- Airfield Operating Procedures during the development, including contingencies such as low visibility procedures;
- Arrangements for liaison meetings/briefings between the aerodrome management and the contractors;
- Appropriate plans and diagrams relating to the construction process;
- Control of contractors;
- Day and night start, control and completion of work procedures;
- Communications procedures between the aerodrome operating units (e.g. ATC, Airfield Operations) and construction teams;
- Emergency procedures;
- Method of working;
- Plans of site, limits and diagrams of works;
- Points of contact – aerodrome management and contractor, including identification of manager with overall responsibility;

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- Site access plan;
- Weather minima that will affect the works;
- The general layout of the aerodrome including airside access points;
- The specific security access points to be used and the location and marking of the access routes to be used to reach airside sites;
- Methods of control and access for works sites within the Apron and Manoeuvring Area including arrangements for crossing taxiways and runways (if applicable);
- The methods and equipment to be used for safeguarding, marking and lighting the boundaries of works sites and for protecting normal aerodrome operations in the vicinity of the site.
- The requirement to control site lighting to prevent the distraction of aircraft crews, drivers and ATC;
- The strict timing for the setting up of work sites, the start of work, daily permitted working hours at the site and procedures to be followed for starting and stopping work;
- Aerodrome emergency procedures, including response times, should not be compromised during periods of work in progress. This extends to ensuring that alternative arrangements are in place to cover depletions of fire main or fire hydrants when the fire main has been deactivated due to work in progress;
- Vehicle and equipment requirements, operating rules and the requirements for staff discipline;
- Calculating and communicating amended runway declared distances;
- Maintaining appropriate pavement friction characteristics;
- Information on special safety requirements for aircraft operations in the vicinity of works and the methods of control available on the Manoeuvring Area, including radio telecommunication procedures if appropriate;
- Arrangements for the special control of 'hot works';
- Requirements for the operation of cranes and other tall structures;
- Arrangements for the receipt and movement of heavy or bulky loads;
- Requirements for vehicle and area cleanliness, also the implications of Foreign Object Debris (FOD) and loose material hazards for aircraft operations;
- Arrangements for the disposal of waste;
- Information on the safety implications for the site and staff of special aircraft hazards including blast, vibration, fumes and noise;
- Information on the effects of strong winds at the aerodrome;
- Site safety, including personnel protection.

Note: Guidance on the control of work in progress is given in the UK CAA *CAP 168 Certification of Aerodromes*, Appendix 2F, and further guidance material on the planning and management of a runway rehabilitation programme is provided in *CAP 781 Runway Rehabilitation*.

The aerodrome certificate holder should ensure that all stakeholders are notified of aerodrome projects in a timely manner. These communications should continue through the project and may include Safety Instructions, Aerodrome Information Circulars, NOTAMs or other local procedures.

Before contractors start work at any aerodrome/airside location, aerodrome certificate holders should provide a comprehensive safety briefing including the

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results of hazard analyses, to ensure that all information needed to achieve the safe completion of any works or activity is clearly understood and agreed. Additionally, aerodrome certificate holders should hold regular progress meetings to ensure that project safety and operational objectives continue to be met. There should be close monitoring of the safety of aerodrome/airside operations while the project work is in progress and, when reaching decisions, project priorities should be subordinate to the maintenance of safety standards.

When the Brunei DCA has been assured that the aerodrome can continue to operate safely during the project, approval will be given to commence work.

Completion (Part 3)

Transition into service is a critical phase of a project and can present complex challenges. Careful planning and robust procedures need to be established to ensure that the change is introduced safely and efficiently. This may be demonstrated by undertaking a process of operational readiness, which may include simulations, testing, audits or sample inspections, involving appropriate key stakeholders.

On completion of the development, but prior to operational use, the aerodrome certificate holder should confirm to the Brunei DCA ADT that the project meets the agreed design criteria and is fit for purpose. The Brunei DCA ADT will then confirm that the new facility is accepted and may be brought into operation.

Safety performance monitoring should be a key process of an aerodrome's SMS, to ensure that the introduction of the new facility maintains or enhances safety standards at the aerodrome.

5.5 Maintenance Projects

Maintenance projects can vary enormously in size. Much maintenance work involves short-term minor works, such as painting, planned periodic replacements (e.g. light cleaning in accordance with a preventative maintenance schedule), refinements to systems/infrastructure and small repairs to aerodrome infrastructure, which can be completed in short timescales and with limited disruption. Smaller routine maintenance works need not be notified to the Brunei DCA, although the Aerodrome Inspector would also expect to be kept informed of some of these activities.

However, maintenance may also involve large, longer-term projects (weeks/months), which may involve many key stakeholders, and which may disrupt or have significant impacts on operations and so test the aerodrome's safety management system. Examples of major maintenance would include runway rehabilitation, taxiway reconstruction and replacement of aeronautical ground lighting systems. Major maintenance projects such as these should be notified directly to the Aerodrome Inspector, who will advise on the approval required and maintain regulatory oversight of each project.

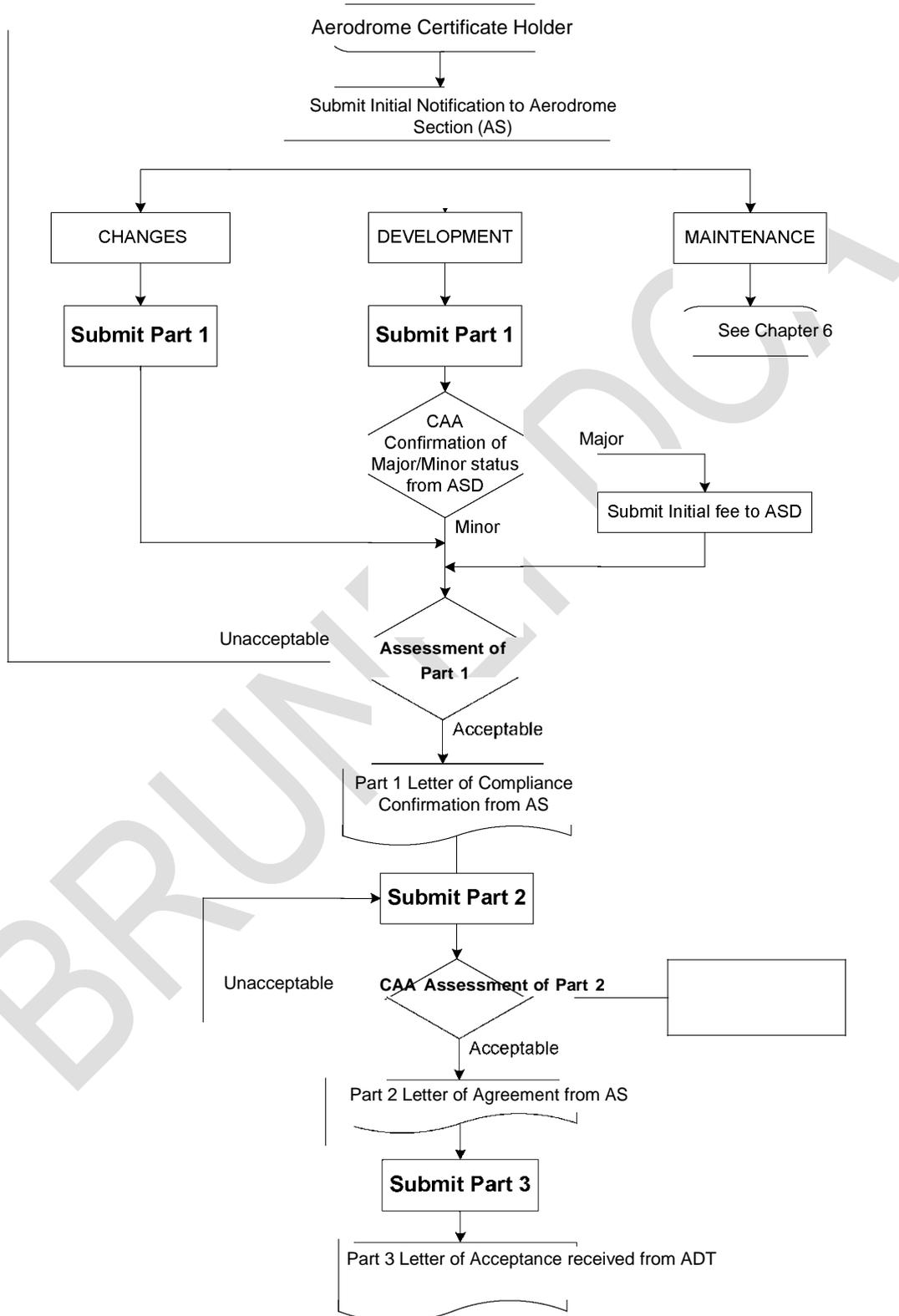
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In certain circumstances, however, the Inspector might conclude that the project qualifies for the submission process described in this document. In such cases the guidance in the preceding chapters should be followed.

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Appendix 1 Submission Procedure Flowchart



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6 Performance Measure

Ensuring that aerodrome operators provide the appropriate documents and records required by national legislation within a reasonable timescale.

Ensuring that authorised Aerodromes Inspectors undertake an assessment, if necessary, within a reasonable timescale.

7 Documentation and Reference

BAR 14 Volume 1 Aerodromes

ICAO Doc 9774, Manual on Certification of Aerodromes.

The following UK CAA CAPs (available from the UK CAA Website)

- CAP 168 Certification of Aerodromes
- CAP 760 Guidance on the Conduct of Hazard Identification, Risk Assessments and the Production of Safety Cases.
- CAP 791 Procedures for Changes to Aerodrome Infrastructure

8 Records

All documentation is on appropriate company data base.

9 Responsibilities

Aerodromes Inspectorate – ensures compliance with the requirements for Approval.

Approvals – Support to the Inspector and ensure all records are complete and correct and that all fees are invoiced for.