

Procedures for changes to aerodrome infrastructure

CAP 791



Published by the Civil Aviation Authority, 2016

Civil Aviation Authority,
Aviation House,
Gatwick Airport South,
West Sussex,
RH6 0YR.

You can copy and use this text but please ensure you always use the most up to date version and use it in context so as not to be misleading, and credit the CAA.

First published June 2010 Second edition August 2016

Enquiries regarding the content of this publication should be addressed to: asddocs@caa.co.uk

Aerodrome Standards Department, Safety Regulation Group, Civil Aviation Authority, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR

Contents

Contents	1
Revision history	3
Executive summary	4
Introduction	4
Development	4
Changes	4
Maintenance	4
Management systems	5
Chapter 1	6
Regulation requirements	6
Aerodrome certification – EASA aerodromes	6
Aerodrome licensing – National aerodromes	6
Chapter 2	8
Engagement with the CAA	8
Submission process	8
Initial change meetings	8
Chapter 3	10
Aerodrome development project charges	10
Charges	10
Chapter 4	13
Project planning and preparation	13
Items to consider	13

Contents

Chapter 5	15
Change submission process	15
Introduction	15
Changes to infrastructure	15
Licensed aerodromes	15
Certified aerodromes	15
The 3-part process	16
Compliance (Part 1)	16
Control (Part 2)	16
Completion (Part 3)	20
Chapter 6	21
Changes to the management system (EASA certified aerodromes only)	21
Changes to the organisational structure	21
Chapter 7	23
Changes not requiring prior approval (EASA certified aerodromes only)	23
Understanding what changes can be made without prior approval	23
Changes requiring prior approval	23
Changes not requiring prior approval	24
Chapter 8	26
Maintenance projects	26
Maintenance works	26

CAP 791 Revision history

Revision history

Issue 2 August 2016

Version	Date	Change
2	30/08/2016	Changes within this first amendment comprise:
		Chapter 1
		Introduction of EU Regulation requirements.
		Chapter 2 Multiple changes to include guidance on engagement with the CAA for certificated aerodromes
		Chapter 4
		Multiple changes to include guidance on project planning and preparation for certificated aerodromes
		Chapter 5
		Multiple changes to include guidance on the submission process to the CAA for certificated aerodromes
		Chapter 6
		Multiple changes to include guidance on maintenance projects including those classified as significant maintenance projects for certificated aerodromes

Executive summary

Introduction

- 1. The purpose of this document is to give guidance on the procedures to be used to notify the CAA of changes at an aerodrome, covering both infrastructure and management system changes. Additionally, it includes guidance to help ensure that changes comply with licensing and certification criteria and are managed safely. Further information can be found at the CAA Airports Change Management webpage (http://www.caa.co.uk/Commercial-Industry/Airports/).
- 2. Throughout this document the CAA refers to both licensed and certificated aerodromes. To clarify the difference it should be noted that 'licensed' aerodromes are those issued with a UK national licence, whereas certificated aerodromes at those issued with an EASA certificate.
- 3. The 4 categories are defined as follows:

Development

Where new or upgraded infrastructure is to be provided. Examples include new 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 Chapter 3.

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 non-conformities.

Maintenance

Where existing infrastructure is being repaired, refurbished or replaced but without changing the characteristics of the piece of infrastructure. See Chapter 8.

Management system

Significant changes to the management system, involving organisational structure changes. It is not intended that changes to personnel need prior approval from the CAA, however where it is intended that an individual role takes on additional responsibility or the current structure's reporting line changes, it is likely this will need prior approval. This requirement applies to certificated aerodromes only.

Regulation requirements

Aerodrome certification – EASA aerodromes

- 1.1 The certification of an aerodrome is governed by Commission Regulation (EU) No 139/2014 (Aerodromes) 'the Aerodrome Regulation'. When an aerodrome receives its certificate, it is granted on the basis that it meets aerodrome certification criteria including the establishment of a Certification Basis (CB) and a management system.
- 1.2 The aerodrome regulation requires that all changes to aerodrome facilities and those procedures and policies that have the potential to affect the aerodromes continuing basis for certification need to be notified to the CAA. This procedure applies to changes that affect the Aerodrome Manual, as well as the CB.
- 1.3 However, the regulation requires that some changes require prior approval by the CAA. This publication defines those changes, in addition to those changes that do not require prior approval (see Chapter 7).

Aerodrome licensing – National aerodromes

- 1.4 The grant of an aerodrome licence is governed by the Air Navigation Order, which requires the CAA to grant a licence in respect of any aerodrome in the United Kingdom if it is satisfied that the aerodrome is safe for use by aircraft, having regard in particular to the physical characteristics of the aerodrome and of its surroundings. When an aerodrome receives its licence, it is granted on the basis that it meets aerodrome licensing criteria, unless variations to these criteria have been agreed by the CAA.
- 1.5 An aerodrome licence 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 CAA. The purpose of this is to ensure that the CAA is satisfied that changes in the physical characteristics meet licensing criteria and do not present a safety hazard.

1.6 Project proposals should comply with the criteria contained within the appropriate regulations. Additionally, some proposals provide an opportunity to review existing non-compliances, with the intention of removal, where possible. Where a non-compliance cannot be removed, a supporting risk assessment should be carried out, taking into account current and foreseeable operations, and the outcome of the analysis acted upon accordingly.

Engagement with the CAA

Submission process

- 2.1 For EASA aerodromes, changes that require prior approval from the CAA (see paragraph 5.5) should be submitted using <u>SRG 2011</u>¹.
- 2.2 For National aerodromes, changes that require prior approval from the CAA should be submitted using <u>SRG 2006</u>².
- 2.3 Any other communications relating to infrastructure changes should be sent either electronically by email to developments@caa.co.uk, or hard copy to the following address:

Aerodromes

Safety and Airspace Regulation Group

Civil Aviation Authority

Aviation House

Gatwick Airport South

West Sussex

RH6 0YR

- 2.4 The CAA will assess whether the project is minor or major, using the criteria shown in Chapter 3 and inform the aerodrome accordingly. When necessary, the CAA will involve specialists from across the CAA.
- 2.5 For maintenance projects see Chapter 8.

Initial change meetings

2.6 An Initial Change Meeting (ICM) may be required to brief the CAA on the change, when the CAA deems it beneficial. Where possible, all aspects of

More information can be found at www.caa.co.uk/Commercial-industry/Airports/Changes/Changes-to-EASA-certificated-aerodromes

More information can be found at www.caa.co.uk/Commercial-industry/Airports/Changes/Changes-to-national-licenced-aerodromes

the change should be covered at the ICM and a presentation, given by the aerodrome operator, often proves the most successful way to brief all participants. Notes of the meeting should be produced by the aerodrome operator and agreed by all parties.

- 2.7 Ideally, outline plans and drawings should be made available to the CAA before the ICM, in sufficient time to ensure that the meeting achieves the maximum benefit. Further meetings may be expected both whilst preparing for and during the change.
- 2.8 The CAA will deal directly with the aerodrome operator or his appointed representative.
- 2.9 The ICM will not be counted towards the chargeable regulatory oversight time for major developments.

Aerodrome development project charges

Charges

- 3.1 Aerodrome developments are classified as either major or minor. In accordance with the CAA Official Record Series 5, No. 242³, when an application is made to obtain approval from the CAA of a major development project at an aerodrome, the aerodrome shall be charged. The purpose of this is to enable the CAA to recover those costs for projects, which are deemed to be over and above those incurred during normal regulatory oversight.
- 3.2 A CAA assessment team will evaluate each development proposal in detail and classify it as major or minor depending on the level of regulatory oversight expected to see the project to a satisfactory conclusion. The team will ensure all development proposals are evaluated consistently, will explain the reasons for the decision reached, and may also involve the aerodrome operator in assisting with the evaluation process. The CAA will inform the aerodrome in writing of the outcome of the evaluation process and the rationale for the decision.
- 3.3 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 number of site visits required;
 - The impact on aerodrome operations (level of disruption to normal operations);

When an application is made to obtain approval from the CAA of a major development project at an aerodrome, the applicant shall pay a charge. Where the time taken to process the application for approval exceeds 6 hours then the applicant shall be invoiced monthly in arrears on the basis of an hourly rate for each hour in excess of 6 hours prior to the approval being granted.

- Changes required to aerodrome operations resulting from the new facility;
- Changes required to the Aerodrome Manual;
- Whether the development would create a new non-conformance that would require detailed evaluation;
- The level of internal CAA liaison required Air Traffic Services,
 Flight Operations, Airspace/Instrument Flight Procedures).
- 3.4 Typically, the projects listed in Table 1 are those that may qualify as a major development. and for which the CAA may levy charges in respect of approving the development.

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	Description	
New runway	A development resulting in the construction of a 'new' runway (e.g. new construction or the change of an existing grass to hard surface).	
Runway extension	A runway extension resulting in an amendment to declared distances or the provision of extra 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.	
Taxiway development	A new taxiway or significant change to the existing taxiway system.	
Apron development	A new apron or apron development resulting in a substantial increase in area.	
New or replacement visual control tower (VCT)	Introduction of a new or replacement VCR.	
Any other development which materially affects the basis upon which the aerodrome certificate or licence has been granted.		

Project planning and preparation

Items to consider

- 4.1 Changes often 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
 - Wildlife 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 licence variations
 - Revised runway incursion prevention measures
 - Signage
 - Site access plan
- 4.2 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. Therefore, at an early stage, aerodrome operators should undertake a hazard appraisal and risk assessment to identify the potential

hazards and associated risks surrounding any proposed changes, including the impact on stakeholders. CAP 760 Guidance on the Conduct of Hazard Identification, Risk Assessments and the Production of Safety Cases: For Aerodrome Operators and Air Traffic Service Providers and CAP 728 The Management of Safety: Guidance to Aerodromes and Air Traffic Service Units on the Development of Safety Management Systems provide useful information to assist this process.

- 4.3 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)⁴ covers this aspect.
- 4.4 The level of detail should be as required by the appropriate regulation and should also be commensurate with the size and complexity of the change.

Safety assurance documentation is described in <u>CAP 728 The Management of Safety</u>

Change submission process

Introduction

- 5.1 The CAA has developed a 3-stage process to assist aerodromes and ensure that aerodrome operators meet their obligations under their respective regulation. This chapter details the information required for each of the 3 stages and the process to be followed.
- 5.2 This process should be used for all changes requiring prior approval. It is acceptable to submit Parts 1 and 2 together.
- 5.3 The submission process consists of 3 separate parts:
 - Part 1: Compliance
 - Part 2: Control
 - Part 3: Completion

Changes to infrastructure

Licensed aerodromes

5.4 For licensed aerodromes, all infrastructure changes require prior approval by the CAA, as specified in aerodrome licence conditions.

Certified aerodromes

- For certificated aerodromes, in addition to the "infrastructure" changes required in ADR.OR.B.040(a)(1) relating to the certification basis and its supporting AMC, the CAA requires that the additional following changes are subject to prior approval:
 - Constructions affecting sightlines from VCR;
 - Developments on the movement area (e.g. new aprons, taxiways);

- Developments which might impact on the movement area (e.g. new or extensions to terminals or piers);
- Significant maintenance projects (e.g. runway rehabilitation); or
- Changes to the management system.

The 3-part process

Compliance (Part 1)

- 5.6 Each change proposal should be submitted on the appropriate form(s), providing clear evidence that the change conforms to the relevant regulation, including:
 - Change overview;
 - Supporting documentation (e.g. Safety Assurance Documentation or change assessment);
 - Compliance matrix (to demonstrate that the project design meets regulatory requirements); and
 - Scaled drawings, where applicable.
- 5.7 When the CAA has assessed the Part 1 submission and is satisfied that change meets regulatory requirements, it will issue an approval for the change. It should be noted that where a Part 1 approval has been issued and a subsequent change is proposed to the design or build, the modified information shall be notified to CAA.

Control (Part 2)

5.8 Following completion and acceptance of development design, the aerodrome operator shall demonstrate to the CAA that the project will be managed safely. Accordingly, the CAA will expect aerodrome operators 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 operators 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.
- 5.9 The aerodrome operator shall ensure that systems for control and safe management extend to contractors working at the aerodrome.
- 5.10 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 licence requirements.
- 5.11 It is important that accurate, up to date information is made available to all stakeholders involved in the project, including the CAA, 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, including 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 contraction 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 and diagrams of works;
 - Site access plan;

- Site safeguarding and marking;
- Weather minima that will affect the works;
- The general layout of the aerodrome including airside access points;
- The location and limits of works areas;
- 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 protecting, marking and lighting the boundaries of works sites and for protecting normal aerodrome operations in the vicinity of the site. Also the requirement to control site lighting to prevent 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 during periods of WIP, should not be compromised. This extends to ensuring compensatory 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;
- Rules and guidance on control of work in progress is given in AMCs and GM to ADR.OPS.B.070 and CAP 168 "Licensing of Aerodromes", Appendix 2F. Further guidance material on the planning and management of a runway rehabilitation programme is provided in CAP 781 "Runway Rehabilitation";
- Aerodrome operators 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 operators should provide a comprehensive safety briefing including the results of ongoing hazard analyses, to ensure all information needed to achieve the safe completion of any works or activity is clearly understood and agreed. Additionally, aerodrome operators should hold regular progress meetings to ensure 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.
- 5.13 When the CAA has been assured that the aerodrome can continue to operate safely during the project, approval will be given to commence work.

Completion (Part 3)

- 5.14 Transition into service is a critical phase of the 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.
- 5.15 On completion of the change, the aerodrome operator should confirm to the CAA that it meets the agreed design criteria and is fit for purpose.
- 5.16 Where the change impacts on the contents of the Aerodrome Manual, these should be incorporated and a revised version submitted to CAA.
- In addition to this, the aerodrome operator (EASA aerodromes only) should resubmit the amended CB reflecting the changes. The CAA will sign the CB to confirm its approval and forward this to the aerodrome operator.

Changes to the management system (EASA certified aerodromes only)

Changes to the organisational structure

- 6.1 The EU Aerodrome Regulation also specifies that changes significantly affecting elements of the aerodrome operator's management system (as listed in ADR.OR.D.005(b)) require the approval of the CAA before the change can take place.
- The CAA has further defined these as changes significantly affecting the organisation chart (changes to the clearly defined lines of responsibility and accountability), policies or safety culture of the aerodrome operator's management system, including the safety management system.
- In practice this means changes to the organisational structure (as opposed to individual posts being replaced on a like-for-like basis) or material changes to the way the management system and SMS are operated.
- The CAA is looking for evidence that the aerodrome operator has appropriate resource and correct competences in the management structure and the management system can deliver safety according to the regulation. The CAA would expect aerodrome operators to be able to demonstrate how a revised organisational structure or major change to the management system will be able to deliver the safe management of the aerodrome, as required by the regulation. Additionally we would expect that the aerodrome operator has developed safety assurance to satisfy itself that change will be managed during any transition period. We will then assess the proposed change against the management system requirements and would expect the process to be completed before the change takes effect.

- 6.5 If the aerodrome operator is unsure about whether a change to the management system requires prior approval please contact your allocated aerodrome inspector in the first instance.
- The submission process for changes to the management system differs slightly from the one used for infrastructure described earlier in this document. Each proposal should include an overview of the change including supporting documentation, (e.g. Safety Assurance Documentation or change assessment), providing clear evidence that the change conforms to the relevant regulation. The CAA forms available for the changes to infrastructure are suitable for completing changes to the management system; however there is no requirement to complete the compliance matrix section of the application form.
- 6.7 All members of the change management team should have clearly defined responsibilities and accountabilities in the change programme.

 These are essential to meeting the aerodrome certification requirements.
- Aerodrome operators should ensure that all stakeholders are notified of the change in a timely manner. These communications should continue through the project and may include Safety Instructions and other local procedures.
- On completion of the change, the aerodrome operator should confirm to the CAA that it meets any agreed criteria and is fit for purpose. The aerodrome operator should resubmit the amended Operations Basis (OB) and Aerodrome Manual reflecting the change. The CAA will sign the OB to confirm its approval and forward this to the aerodrome operator.

Changes not requiring prior approval (EASA certified aerodromes only)

Understanding what changes can be made without prior approval

7.1 With the introduction of the EU Aerodrome Regulation, there are some subtle differences to the way infrastructure and management changes are approved by the CAA. These differences are only relevant to EASA aerodromes.

Changes requiring prior approval

7.2 Changes affecting the movement area (manoeuvring area including the apron) require prior approval from the CAA, before the change is introduced. This requirement also extends to management systems.

For example:

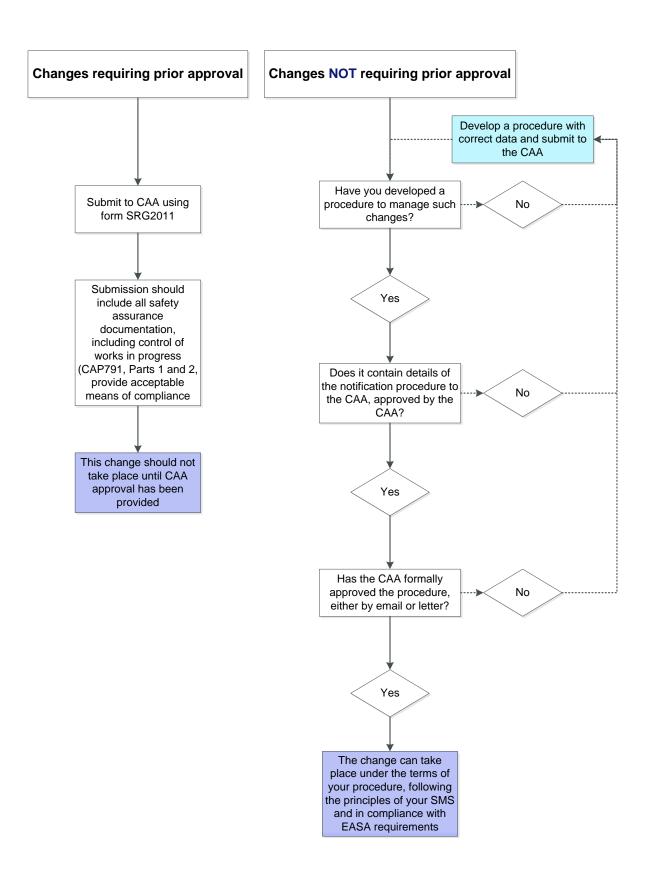
- Changes to the Safety Review Board (or equivalent) and Safety Services Office;
- Changes to the structure of the organisation;
- Changes to LVP procedures;
- Constructions affecting sightlines from VCR;
- Developments on or affecting the movement area;
- New, or relocation of, wind socks;
- Safety critical aerodrome equipment;
- Changes affecting the terms of the certificate;
- Changes affecting the CB and/or the SCs;
- Changes affecting DAADs;
- Use of an AltMoc.

Changes not requiring prior approval

7.3 Some changes do not require prior approval before the change is introduced. However, for this to be available the CAA has to approve the aerodrome's procedure to manage such changes. Therefore, it is imperative that the aerodrome operator submits its 'change management procedure' to the CAA for approval, prior to the commencement of any works, and ideally at the point of transition to its Certificate.

For example:

- Changes to the Accountable Manager postholder;
- Changes to nominated persons;
- Terminal extensions not affecting movement area;
- Passenger walkways;
- Land-locked developments, no impact on movement area;
- New, or extensions to, portacabins;
- Use of cranes;
- Unforeseen temporary reduction in RFFS;
- Pre-planned maintenance and rubber removal.
- 7.4 The procedure to manage these changes should be developed taking into account the aerodrome's policies and processes, but should include as a minimum:
 - Accountabilities for changes;
 - A policy statement on those changes that require prior approval
 - Inclusion in the Aerodrome Manual;
 - The process for undertaking safety assessments, including hazard analysis;
 - A list of projects that do/do not require prior approval; and
 - The process, agreed with the CAA inspector, on how changes not requiring prior approval shall be notified to the CAA.



Maintenance projects

Maintenance works

- 8.1 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 planned or routine maintenance works need not be notified to the CAA, although the Aerodrome Inspector would expect to be kept informed of these activities.
- 8.2 However, maintenance may also involve large, longer-term projects (weeks/months), which may involve many key stakeholders, and which may have significant impacts on operations and so test the aerodrome's safety management system. Examples of major maintenance would include partial or complete runway rehabilitation⁵ and replacement of aerodrome ground lighting systems.
- 8.3 The CAA has additionally included major maintenance work in the approval process. This decision is based on the risk the aerodrome operator is exposed to whilst undertaking major maintenance projects that normally include multiple stakeholders and complex operational procedures during the project.
- The CAA will evaluate the proposal and, once the evaluation is complete, and an assurance that the aerodrome can deliver the major maintenance works safely, the CAA will confirm its approval in writing.

Further guidance on the planning and management of a runway rehabilitation programme is provided in CAP 781 Runway Rehabilitation.