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Assessing the Certification Application

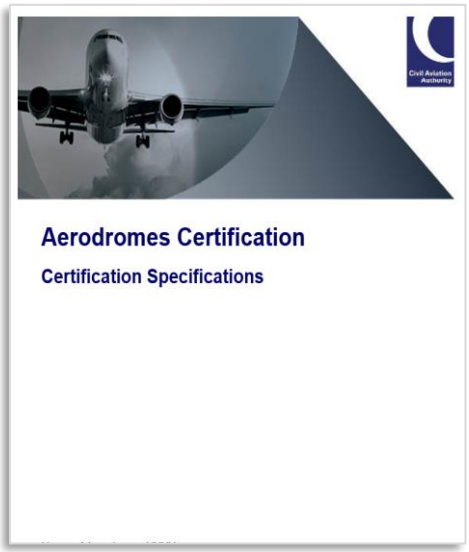
Objective & Plan

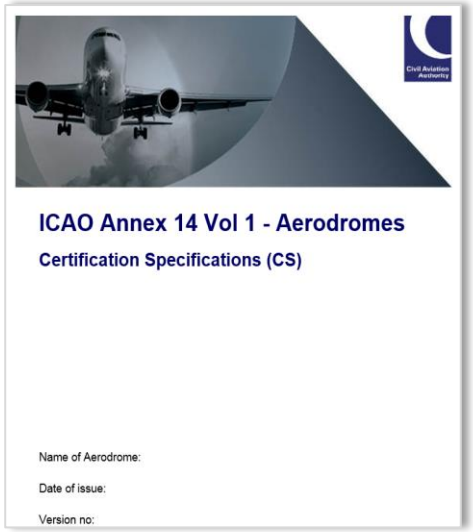
Compliance with the standards of Annex 14 Vol 1 Aerodromes Design and Operations

- Chapter 1 - General
- Chapter 2 - Aerodrome data
- Chapter 3 - Physical characteristics
- Chapter 4 - Obstacle restriction and removal
- Chapter 5 - Visual aids to navigation
- Chapter 6 - Visual aids for denoting obstacles
- Chapter 7 - Visual aids for restricted use areas
- Chapter 8 - Electrical systems

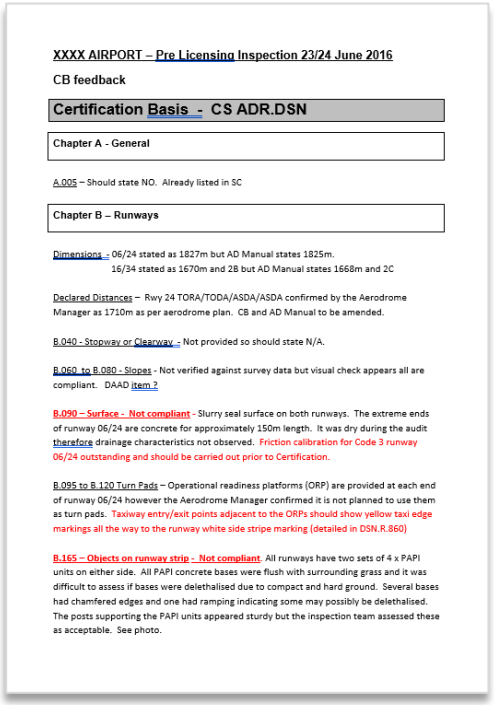
Certification Specifications

- Prior to Certification and as part of the process for application for a Certificate the aerodrome is to provide the National Authority (CAA) with details of the aerodrome design against Annex 14 Vol 1 standards.
- UK CAA examples below:





Pre – Certification Inspections



XXXX AIRPORT – Pre Licensing Inspection 23/24 June 2016

CB feedback

Certification Basis - CS ADR.DSN

Chapter A - General

A.005 – Should state NO. Already listed in SC

Chapter B – Runways

Dimensions - 06/24 stated as 1827m but AD Manual states 1825m.
16/34 stated as 1670m and 2B but AD Manual states 1668m and 2C

Declared Distances – Rwy 24 TORA/TODA/ASDA/ASDA confirmed by the Aerodrome Manager as 1710m as per aerodrome plan. CB and AD Manual to be amended.

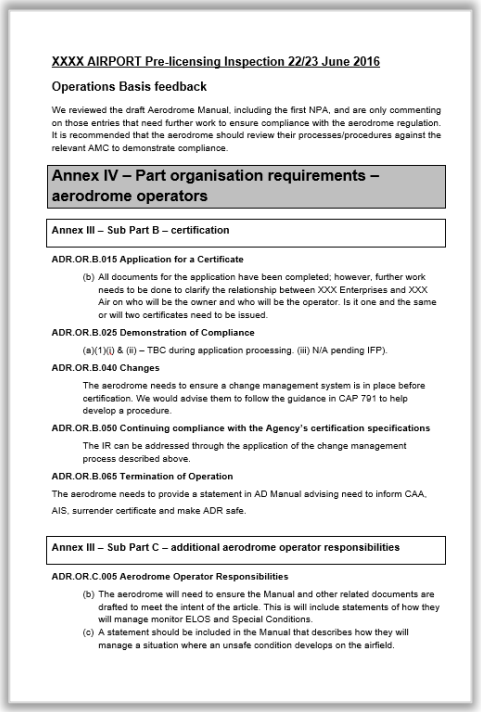
B.040 - Stopway or Clearway - Not provided so should state N/A.

B.060 to B.080 - Slopes - Not verified against survey data but visual check appears all are compliant. DAAD item ?

B.090 – Surface - Not compliant - Slurry seal surface on both runways. The extreme ends of runway 06/24 are concrete for approximately 150m length. It was dry during the audit therefore drainage characteristics not observed. Friction calibration for Code 3 runway 06/24 outstanding and should be carried out prior to Certification.

B.095 to B.120 Turn Pads – Operational readiness platforms (ORP) are provided at each end of runway 06/24 however the Aerodrome Manager confirmed it is not planned to use them as turn pads. Taxiway entry/exit points adjacent to the ORPs should show yellow taxi edge markings all the way to the runway white side stripe marking (detailed in DSN.R.860)

B.165 – Objects on runway strip - Not compliant. All runways have two sets of 4 x PAPI units on either side. All PAPI concrete bases were flush with surrounding grass and it was difficult to assess if bases were delethalised due to compact and hard ground. Several bases had chamfered edges and one had ramping indicating some may possibly be delethalised. The posts supporting the PAPI units appeared sturdy but the inspection team assessed these as acceptable. See photo.



XXXX AIRPORT Pre-licensing Inspection 22/23 June 2016

Operations Basis feedback

We reviewed the draft Aerodrome Manual, including the first NPA, and are only commenting on those entries that need further work to ensure compliance with the aerodrome regulation. It is recommended that the aerodrome should review their processes/procedures against the relevant AMC to demonstrate compliance.

Annex IV – Part organisation requirements – aerodrome operators

Annex III – Sub Part B – certification

ADR.OR.B.015 Application for a Certificate

(b) All documents for the application have been completed; however, further work needs to be done to clarify the relationship between XXX Enterprises and XXX Air on who will be the owner and who will be the operator. Is it one and the same or will two certificates need to be issued.

ADR.OR.B.025 Demonstration of Compliance

(a)(1)(i) & (ii) – TBC during application processing. (iii) N/A pending IFP).

ADR.OR.B.040 Changes

The aerodrome needs to ensure a change management system is in place before certification. We would advise them to follow the guidance in CAP 791 to help develop a procedure.

ADR.OR.B.050 Continuing compliance with the Agency's certification specifications

The IR can be addressed through the application of the change management process described above.

ADR.OR.B.065 Termination of Operation

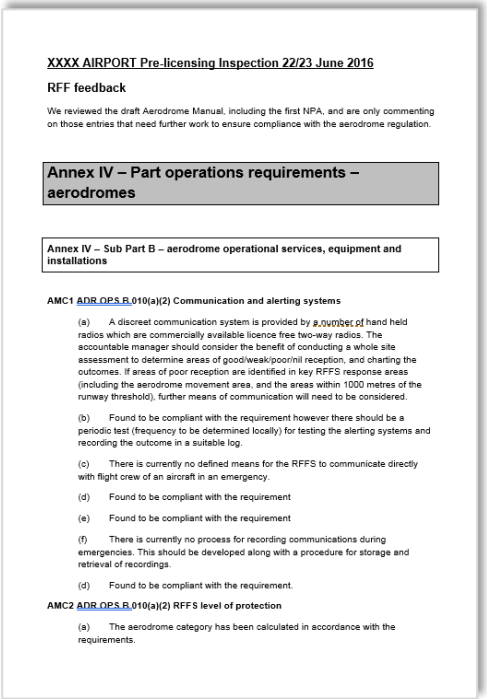
The aerodrome needs to provide a statement in AD Manual advising need to inform CAA, AIS, surrender certificate and make ADR safe.

Annex III – Sub Part C – additional aerodrome operator responsibilities

ADR.OR.C.005 Aerodrome Operator Responsibilities

(b) The aerodrome will need to ensure the Manual and other related documents are drafted to meet the intent of the article. This is will include statements of how they will manage monitor ELOS and Special Conditions.

(c) A statement should be included in the Manual that describes how they will manage a situation where an unsafe condition develops on the airfield.



XXXX AIRPORT Pre-licensing Inspection 22/23 June 2016

RFF feedback

We reviewed the draft Aerodrome Manual, including the first NPA, and are only commenting on those entries that need further work to ensure compliance with the aerodrome regulation.

Annex IV – Part operations requirements – aerodromes

Annex IV – Sub Part B – aerodrome operational services, equipment and installations

AMC1 ADR.OPS.B.010(a)(2) Communication and alerting systems

(a) A discreet communication system is provided by a number of hand held radios which are commercially available licence free two-way radios. The accountable manager should consider the benefit of conducting a whole site assessment to determine areas of good/weak/poor/nil reception, and charting the outcomes. If areas of poor reception are identified in key RFFS response areas (including the aerodrome movement area, and the areas within 1000 metres of the runway threshold), further means of communication will need to be considered.

(b) Found to be compliant with the requirement however there should be a periodic test (frequency to be determined locally) for testing the alerting systems and recording the outcome in a suitable log.

(c) There is currently no defined means for the RFFS to communicate directly with flight crew of an aircraft in an emergency.

(d) Found to be compliant with the requirement

(e) Found to be compliant with the requirement

(f) There is currently no process for recording communications during emergencies. This should be developed along with a procedure for storage and retrieval of recordings.

(d) Found to be compliant with the requirement.

AMC2 ADR.OPS.B.010(a)(2) RFFS level of protection

(a) The aerodrome category has been calculated in accordance with the requirements.

Pre – Certification Inspections

Aim is to:

- Ensure that the aerodrome infrastructure is compliant;
- Ensure that non-compliances have been assessed;
- Ensure that operating procedures are in place for all activities;
- Ensure that the safety management system elements are in place;

Pre – Certification Inspections

- Detailed check on the infrastructure and operation;
- Covers all the certification specifications/SARPs;
  Certificated - Infrastructure Compliance Matrix Template
- Ensure that all operational procedures are in place:
  Certificated - Operations Compliance Matrix Template
- Ensure that the elements of the SMS are in place:
  https://www.caa.co.uk/safety-initiatives-and-resources/working-with-industry/safety-management-systems/safety-management-systems/

Dealing with variations and non-compliances

Deviations/Variations/Non-Compliances

There may be items that are not compliant

Can they be accepted?

What do you do?

How do you ensure that they are safe enough?

Variations/Deviations and Safety Assessments

ICAO Doc 9774 (Aerodrome Certification) details the process for conducting aeronautical studies and technical analysis in respect of a safety assessment for variations.

Technical analysis will provide justification for a deviation on the grounds that an equivalent level of safety can be attained by other means. It is generally applicable in situations where the cost of correcting a problem that violates a standard is excessive but where the unsafe effects of the problem can be overcome by some procedural means which offers both practical and reasonable solutions.

Variations/Deviations and Safety Assessments

ICAO Doc 9981 PANS Aerodromes details the process for approval and acceptance of a safety assessment for variations.

- A safety assessment subject to approval or acceptance by the State for any variations shall be submitted by the aerodrome operator prior to implementation.
- The State analyses the safety assessment and verifies that:
  a) appropriate coordination has been performed between the concerned stakeholders;
  b) the risks have been properly identified and assessed, based on documented arguments (e.g. physical or Human Factors studies, analysis of previous accidents and incidents);
  c) the proposed mitigation measures adequately address the risk; and
  d) the time frames for planned implementation are acceptable.

Note — It is preferable to work with a team of the State's operational experts in the areas considered in the safety assessment.

Variations/Deviations and Safety Assessments

In conducting a technical analysis, inspectors will draw upon their practical experience and specialised knowledge. They may also consult other specialists in relevant areas.

When considering alternative procedures in the deviation approval process, it is essential to bear in mind the safety objective of the aerodrome certification regulations and the applicable standards so that the intent of the regulations is not circumvented.

Variations and Safety Assessments

On completion of the analysis of the safety assessment, the State:

a) either gives formal approval or acceptance of the safety assessment to the aerodrome operator as required;

b) if some risks have been underestimated or have not been identified, coordinates with the aerodrome operator to reach an agreement on safety acceptance; or

c) if no agreement can be reached, rejects the proposal for possible resubmission by the aerodrome operator; or

d) may choose to impose conditional measures to ensure safety.

Variations and Safety Assessments

On completion of the analysis of the safety assessment, the NAA:

a) either gives formal approval or acceptance of the safety assessment to the aerodrome operator as required

b) if some risks have been underestimated or have not been identified, coordinates with the aerodrome operator to reach an agreement on safety acceptance; or

c) if no agreement can be reached, rejects the proposal for possible resubmission by the aerodrome operator; or

d) may choose to impose conditional measures to ensure safety.

Deviations/Variations

Any deviations/variations identified by the aerodrome in the pre-certification submission must be supported by a safety assessment.

Variations – Risk Management Process

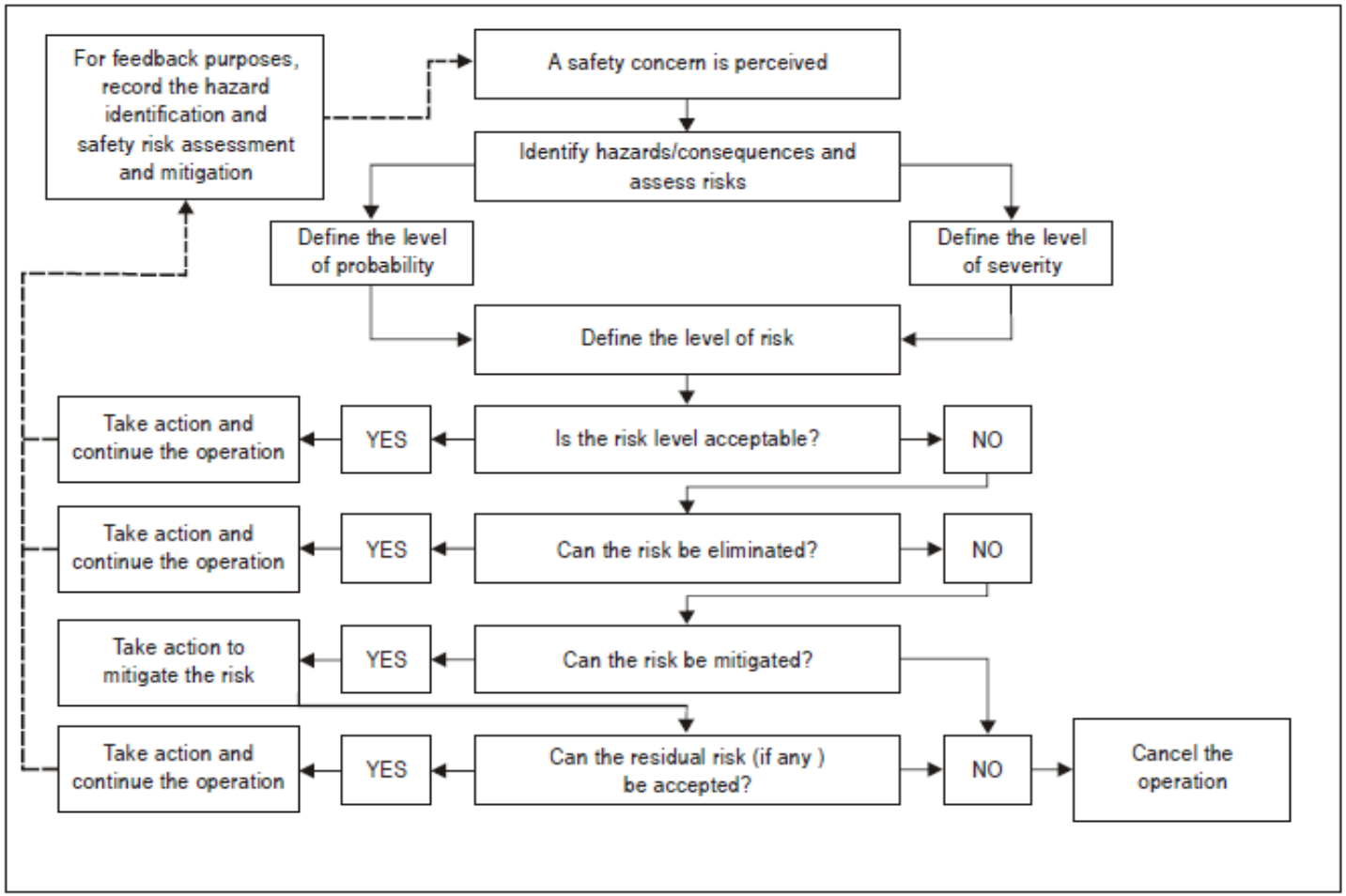


Figure 5-4. The safety risk management process

Deviations/Variations Flowchart (1)

	Variation...	Criteria for Option selection.
Supported by Safety Assurance Documentation	**Equivalent Level of Safety (ELOS)**	• Part of the Certification Basis (CB). • Long term with no known changes planned. • Can apply to any variation.

	Special Conditions (SC)	• Part of the CB.
		• Can only be issued by Competent Authority (CA).
		• Generally issued when the CS is inappropriate or inadequate because:
		  ○ the certification specifications cannot be met due to physical, topographical or similar limitations related to the location of the aerodrome;
		  ○ the aerodrome has novel or unusual design features; or
		  ○ experience from the operation of that aerodrome or other aerodromes having similar design features has shown that safety may be endangered.
		• No intention for development or change of operation that will have an affect the variation.
		• Costly or disproportionate to make right.

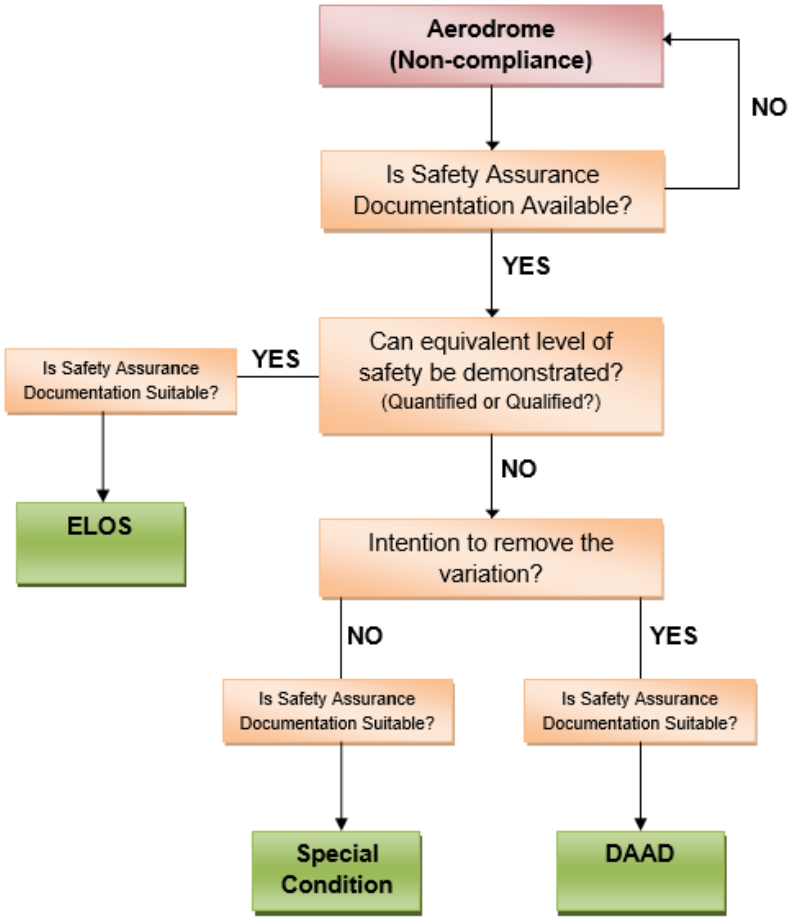
	Deviation Acceptance and Action Document (DAAD)	• Not part of CB. • Can apply to any variation. • such deviations do not qualify as an equivalent level of safety case under ADR.AR.C.020, nor qualify as a case of special condition under ADR.AR.C.025 of Annex I of this Regulation. • such deviations have existed prior to the entry into force of this Regulation. • Intention for development or change of operation that will have an affect the variation.

Deviations/Variations Flowchart (2)

Variations Flowchart.

The flowchart is provided to give an overview of where the variation should be placed. The intention is to place most variations in the ELOS or the SC to enable them to be attached to the Certification Basis and thereby need not be subject to regular oversight. However, all variations will be subject to oversight through the change management process.

The variations placed on the DAAD will form part of the Certificate but will be subject to regular oversight.



Approval of Variations/Deviations

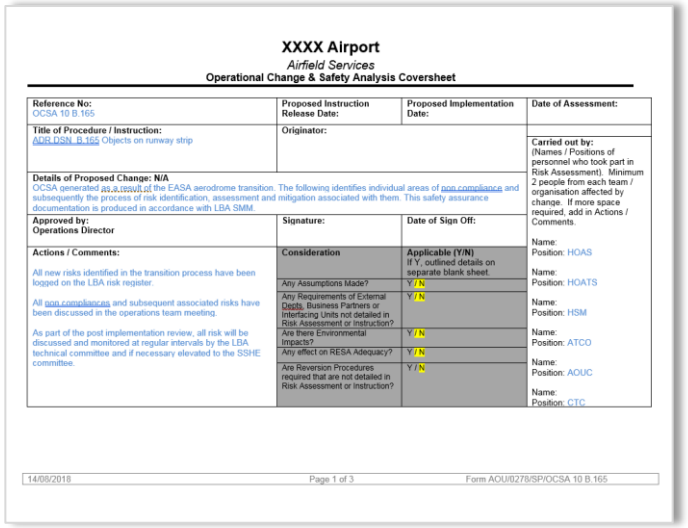
In some instances, the only reasonable means of providing an equivalent level of safety is to adopt suitable procedures and to require, as a condition of certification, that cautionary advice be published in the appropriate AIS publications.

The determination to require caution will be primarily dependent on two considerations:

a) a pilot's need to be made aware of potentially hazardous conditions; and

b) the responsibility of the CAA to publish deviations from standards that would otherwise be assumed under certificate status.

Variations/Deviations and Safety Assessments - Examples



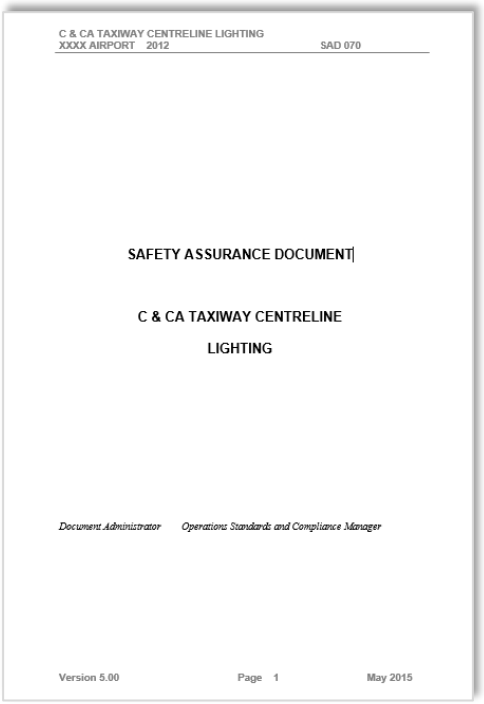
XXXX Airport

Airfield Services

Operational Change & Safety Analysis Coversheet

Reference No: OCSA 10.B.165	**Proposed Instruction Release Date:**	**Proposed Implementation Date:**	**Date of Assessment:**
Title of Procedure / Instruction: ADR.DSN..B.165 Objects on runway strip	**Originator:**		**Carried out by:** (Names / Positions of personnel who took part in Risk Assessment). Minimum 2 people from each team / organisation affected by change. If more space required, add in Actions / Comments. Name: Position: HOAS Name: Position: HOATS Name: Position: HSM Name: Position: ATCO Name: Position: AOUC Name: Position: CTC
Details of Proposed Change: N/A OCSA generated as a result of the EASA aerodrome transition. The following identifies individual areas of non compliance and subsequently the process of risk identification, assessment and mitigation associated with them. This safety assurance documentation is produced in accordance with LBA SMM.			
Approved by: **Operations Director**	**Signature:**	**Date of Sign Off:**	
Actions / Comments: All new risks identified in the transition process have been logged on the LBA risk register. All non compliances and subsequent associated risks have been discussed in the operations team meeting. As part of the post implementation review, all risk will be discussed and monitored at regular intervals by the LBA technical committee and if necessary elevated to the SSHE committee.	**Consideration**	**Applicable (Y/N)** If Y, outlined details on separate blank sheet.	
	Any Assumptions Made?	Y / N	
	Any Requirements of External Depts, Business Partners or Interfacing Units not detailed in Risk Assessment or instruction?	Y / N	
	Are there Environmental Impacts?	Y / N	
	Any effect on RESA Adequacy?	Y / N	
	Are Reversion Procedures required that are not detailed in Risk Assessment or instruction?	Y / N	

14/06/2018 Page 1 of 3 Form AOU/0278/SP/OCSA 10.B.165



C & CA TAXIWAY CENTRELINE LIGHTING
XXXX AIRPORT 2012 SAD 070

SAFETY ASSURANCE DOCUMENT

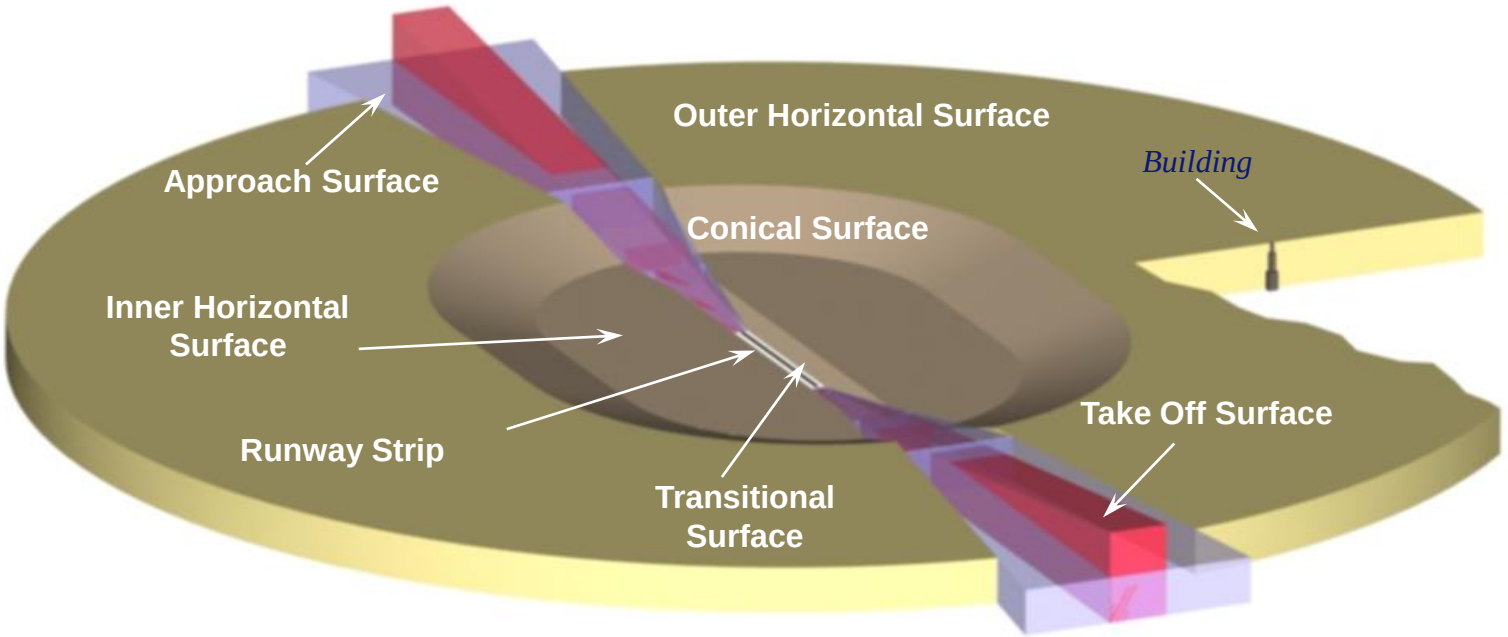
C & CA TAXIWAY CENTRELINE

LIGHTING

Document Administrator *Operations Standards and Compliance Manager*

Version 5.00 Page 1 May 2015

Assessment - Safeguarding and Obstacle Limitation Surfaces (OLS)



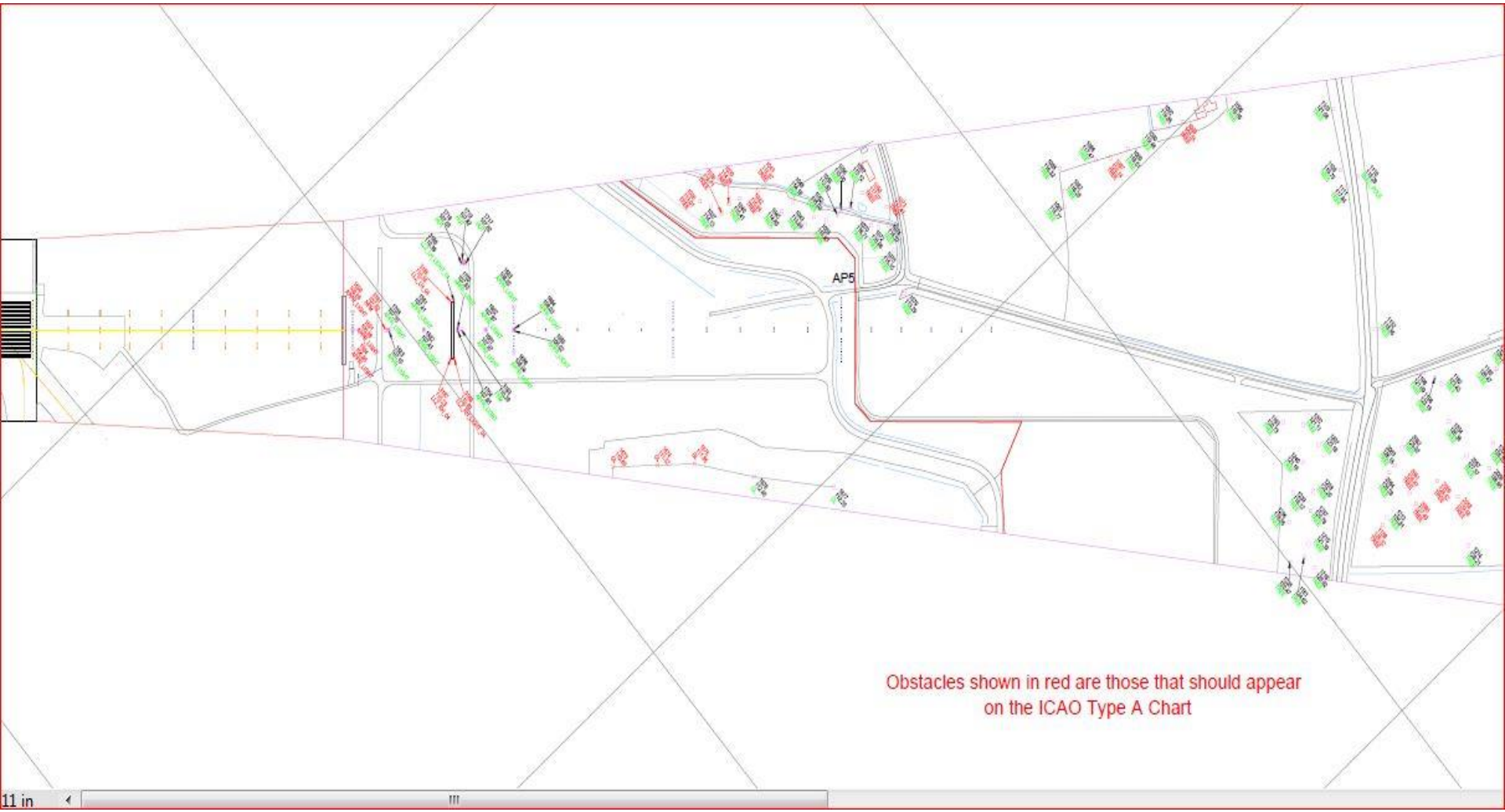
Obstacle Assessment

Annex 14

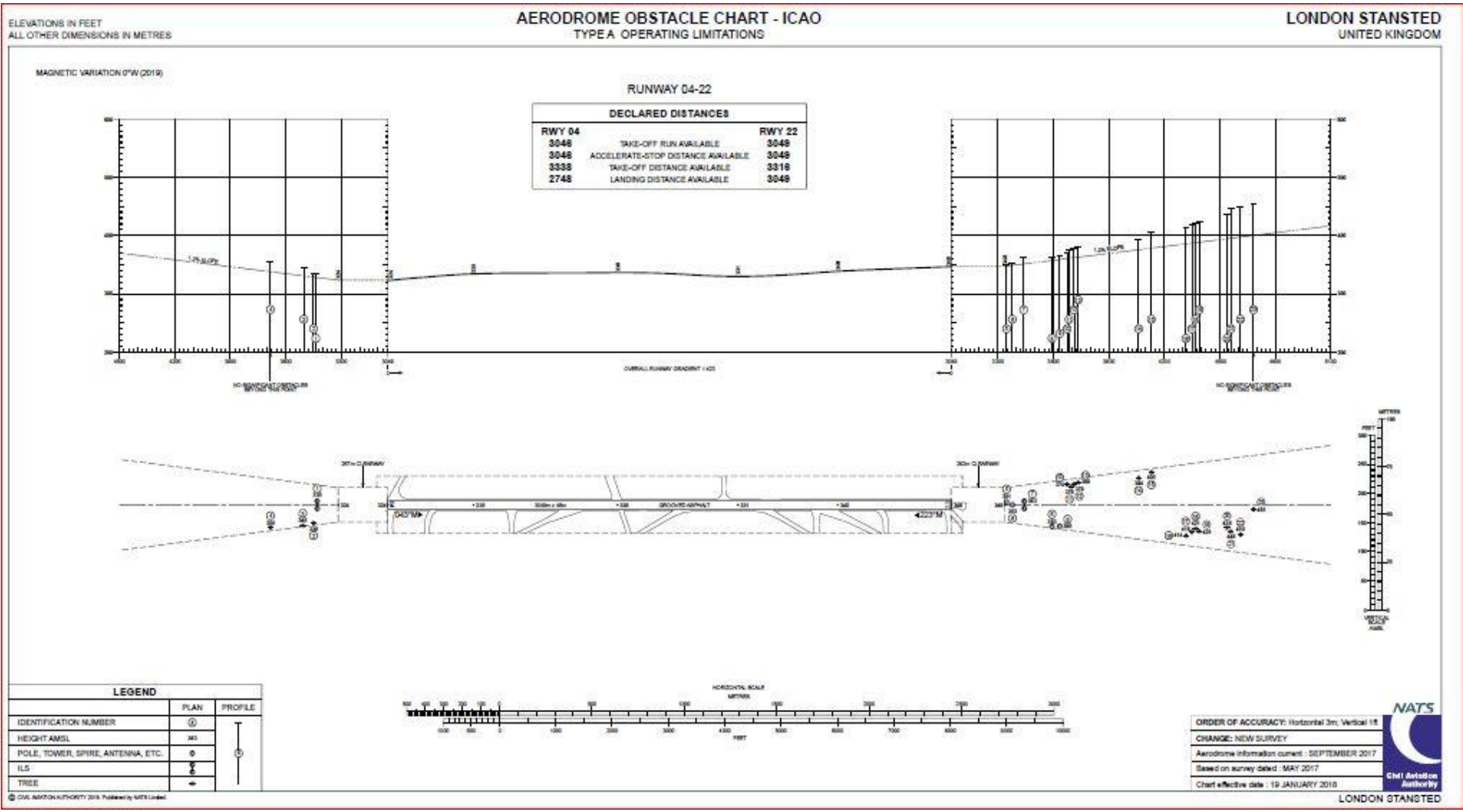
- Existing objects that extend above an obstacle limitation surface should as far as practicable be removed except when, in the opinion of the appropriate authority, an object is shielded by an existing immovable object, or after an aeronautical study it is determined that the object would not adversely affect the safety or significantly affect the regularity of operations of aeroplanes.

Obstacle Assessment – Survey Data

Obstacle Assessment
Type A Chart Survey



Obstacle Assessment
ICAO Type A Chart from Survey Data

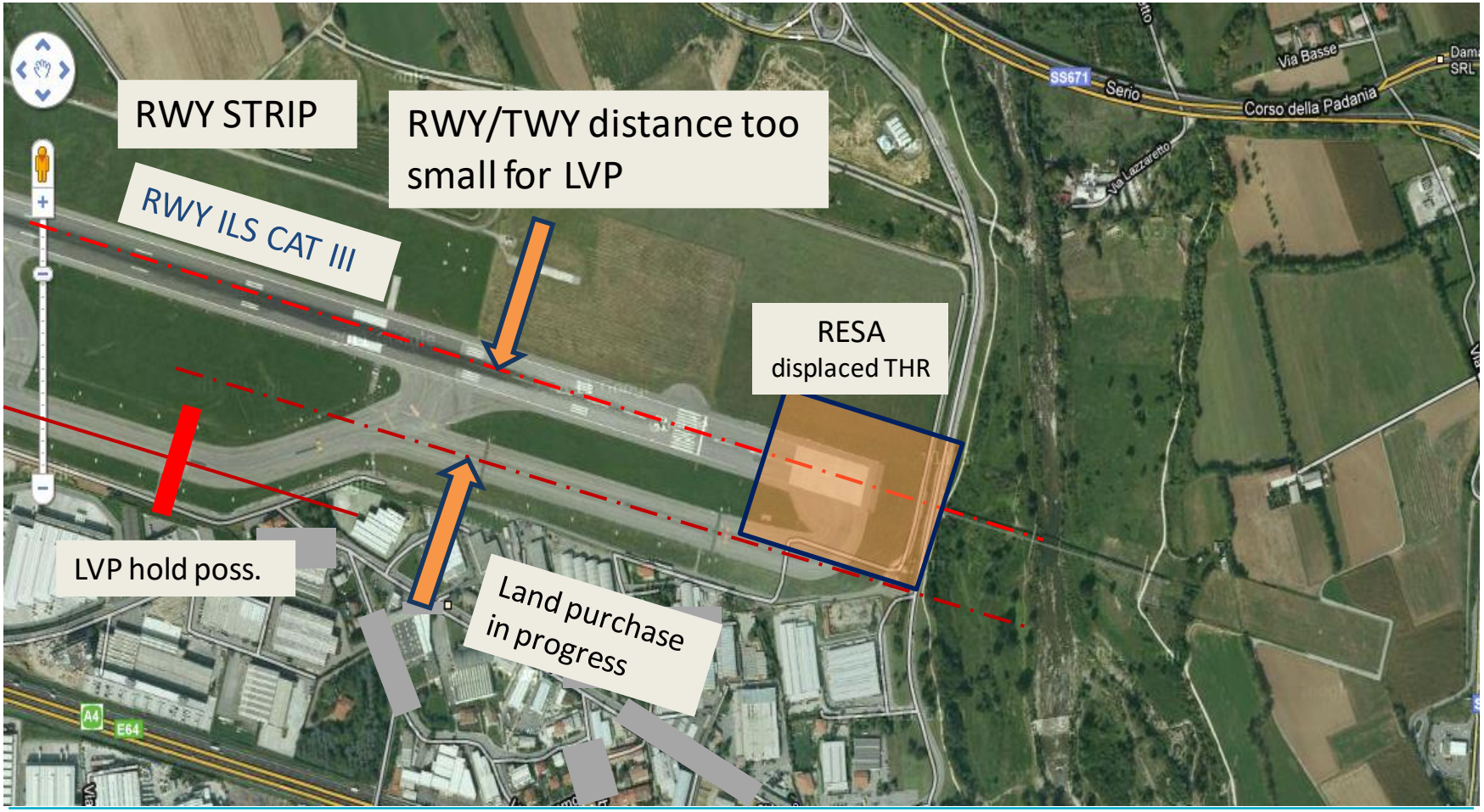


Managing Non-Compliances

Variations need to be reviewed regularly:

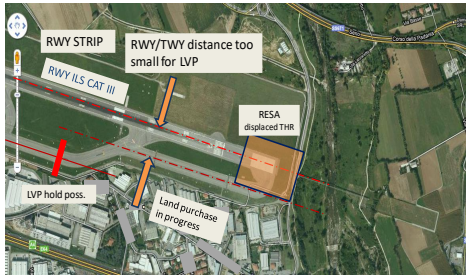
- Must be reviewed when operations change (e.g. new a/c)
- Must be reviewed when the infrastructure changes (e.g. new taxiway)
- Must be reviewed when the CS change (e.g. possibly containing new obligation)
- Must be reviewed where there are incident or accidents
- Are subject to the general change management principles of ADR.OR.B.040

Equivalent Level Of Safety



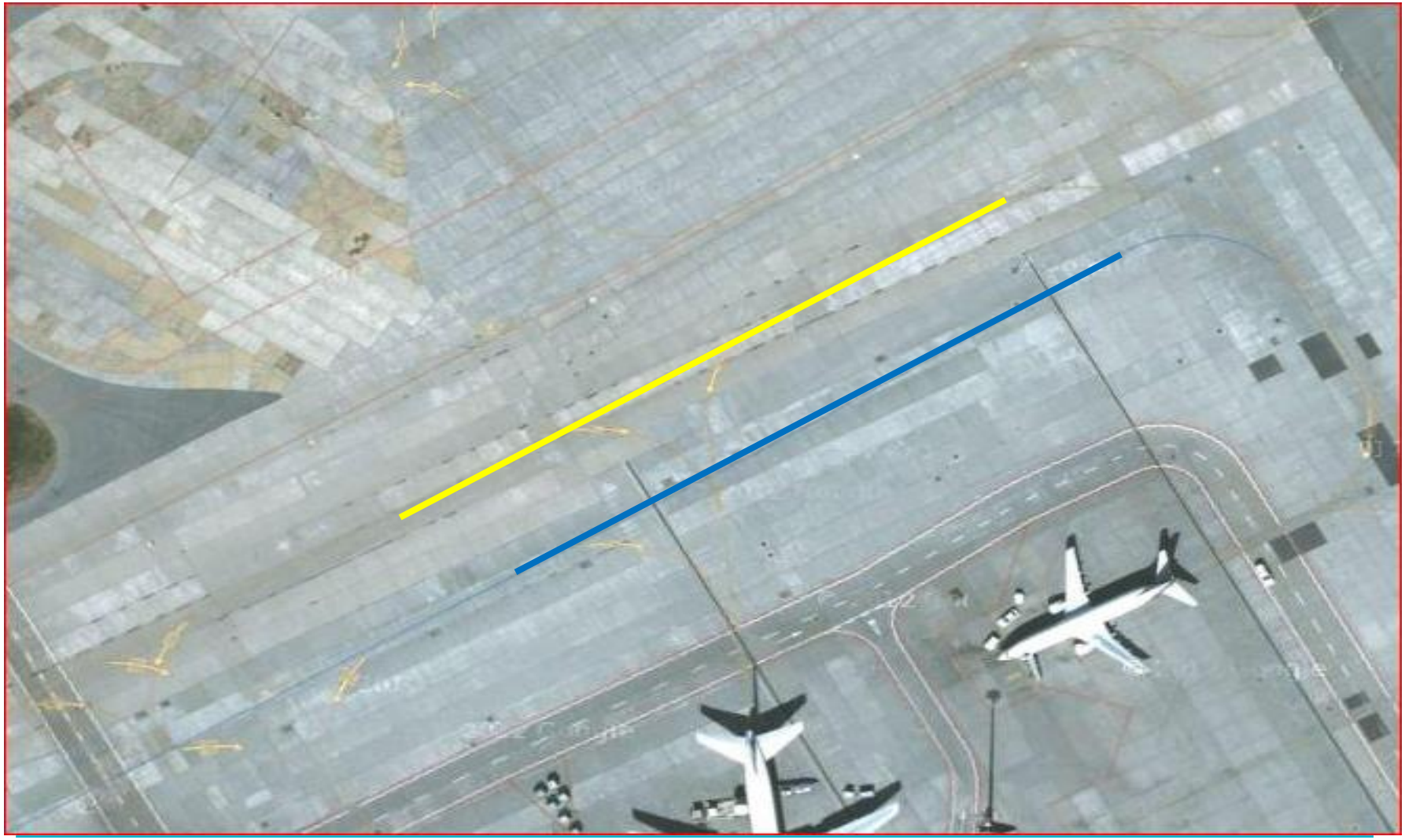
Equivalent Level Of Safety

- Aerodrome is certified for operations in CAT II/III conditions
- Taxiway C is safe to operate in visual conditions
- CAT II/III holding position is installed on taxiway A which has required RWY/TWY centre line distance



- The aerodrome does not comply with the required CS regarding the RWY/TWY separation distance
- The operational restrictions for taxiway C are in place during LVPs
- The aerodrome is in the process of purchasing the land necessary to remove the taxiway C at the required distance from the RWY

Equivalent Level Of Safety



Equivalent Level Of Safety

- The colour of the apron taxilane C/L marking does not comply with the required CS
- The CL marking on an apron taxilane is in the blue colour to identify TWY centrelines that could be used by different sized aircraft

- The ADR does not comply with the required CS
- The aerodrome operator has undertaken the safety assessment and proposed to CAA an acceptance of the deviation as ELOS
- The information has been provided in the AIP

Variation

Variation

- Aerodrome Reference Code 3C. Single Parallel Taxiway A which has a longitudinal slope of 2%
- To meet the required longitudinal slope would incur substantial cost

- Aerodrome does not comply with the required CS
- Aerodrome has developed procedures to:-
  - Increase de-icing operation during winter conditions
  - Installed new warning signage
  - Increase inspections in icing conditions that could lead to closure of portion of taxiway
- AIP advises pilots to take extra care during possible icing conditions

Variation

Variation

- Taxiway S at this aerodrome has an infringement of the Code E strip by 10.5m
- There is an intention that future development in the area would provide the opportunity to meet the required strip dimensions

- The ADR does not comply with the required CS for the Taxiway Strip
- Aerodrome has assessed the safety concern
- Infringement on a straight portion of taxiway
- AIP advises pilots to take extra care while taxying past the infringement

Variation

Variation

- The width of the RWY strip is reduced to 260 m due to the proximity of the wood/trees
- The RWY strip width does not comply with the required CS, trees and ADR fence are penetrating the Transitional Surface

1. The aerodrome can purchase the necessary land to widen the RWY Strip to fulfill the CS requirement, although this will take time
2. Aerodrome has assessed the safety concern and proposed to NAA an acceptance of this deviation. AIP advises pilots about the situation in case of runway excursion or low missed approach

Other Deviations

Other Deviations

Other Deviations

Other Deviations

Other Deviations

Other Deviations

Operational Variations

- **Typical IR from Subpart B – Aerodrome Operational Services, Equipment and Installations**

ADR-OPS.B.010 Rescue and fire-fighting services

(a) The aerodrome operator shall ensure that:

(1) aerodrome rescue and fire-fighting, facilities, equipment and services are provided;

(2) adequate equipment, fire extinguishing agents and sufficient personnel are available for immediate response;

(3) rescue and fire-fighting personnel are properly trained, equipped and qualified to operate in the aerodrome environment;

(4) rescue and fire-fighting personnel potentially required to act in aviation emergencies demonstrate their medical fitness to execute their functions satisfactorily, taking into account the type of activity.

(b) Temporary reduction of the level of protection of the aerodrome rescue and fire-fighting services, due to unforeseen circumstances, shall not require a prior approval by the competent authority.

Operator & Operations Basis

- **Typical AMC from Subpart B – Aerodrome Operational Services, Equipment and Installations**

AMC6-ADR-OPS.B.010 — Personnel

(a) The aerodrome operator should ensure that:

(1) During flight operations, sufficient trained personnel is detailed and readily available to ride the rescue and fire-fighting vehicles and to operate the equipment at maximum capacity;

(2) Personnel is deployed in a way that ensures the minimum response times can be achieved and continuous agent application at the appropriate rate can be fully maintained considering also the use of hand lines, ladders and other rescue and fire-fighting equipment normally associated with aircraft rescue and fire-fighting operations;

(3) All responding rescue and fire-fighting personnel are provided with protective clothing and respiratory equipment to enable them to perform their duties in an effective manner.

Alternative Means of Compliance

Variations/Deviations - Summary

- Non-compliances are inevitable – most aerodromes have grown over time and have them!
- Aim should be to remove them where possible
- ICAO, EASA and (in the UK) regulations allow for unusual/non-compliant situations
- The regulations give the CAA/Inspector the tools to decide
- Aim should be to remove them where possible but, if not, they can be safety assessed and managed
- Assess and test safety assurance as required
- Consult your colleagues
- You may have to use judgement as the rules do not cover everything
- Have a decision-making system in place
- Note and keep good records

ICAO

UK Civil Aviation Authority International

Thank you
Any Questions?