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# **Aerodrome Compatibility**

(Chapter 4 of the PANS-Aerodromes, 1<sup>st</sup> ed)

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## Contents of the PANS-Aerodromes Chapter 4 – Aerodrome Compatibility

***Compatibility study*** - A study undertaken by the aerodrome operator to address the impact of introducing an aeroplane type/model new to the aerodrome. A compatibility study may include one or several safety assessments.



## Contents of the PANS-Aerodromes Chapter 4 – Aerodrome Compatibility

### Background

- Aerodrome compatibility issues in the past
- Circular 305 — Operation of New Larger Aeroplanes at Existing Aerodromes
- Doc 9157 ADM P. 2 — Taxiways, Aprons and Holding bays
- Two directional process
- In most cases the aircraft operator will conduct its preliminary assessment, based on available information, first and foremost in the AIP.
- Aerodrome operators/Aircraft operators/manufacturers interfaces
- Not only Code F aircrafts...



## **Contents of the PANS-Aerodromes Chapter 4 – Aerodrome Compatibility**

### **4.1 Introduction**

### **4.2 Impact of aeroplane characteristics on the aerodrome infrastructure**

### **4.3 Physical characteristics of aerodromes**

Appendix — **Physical characteristics of aerodromes**

Attachment A — **Aeroplane physical characteristics**

Attachment B — **Aeroplane ground servicing requirements**

Attachment C — **List of references**

Attachment D — **Selected aeroplane characteristics**

## Chapter 4 - Aerodrome compatibility

### Introduction:

4.1.1 This chapter outlines a methodology and procedures to assess the compatibility between aeroplane operations and aerodrome infrastructure and operations when an aerodrome accommodates an aeroplane that exceeds the certificated characteristics of the aerodrome.

4.1.2 A compatibility study should be performed collaboratively between affected stakeholders which includes the aerodrome operator, the aeroplane operator, ground handling service providers, as well as air navigation service providers (ANSPs).

### **4.1.3 Steps for the introduction of an aeroplane type/subtype new to the aerodrome:**

1. the aeroplane operator submits a request to the aerodrome operator to operate an aeroplane type/subtype new to the aerodrome;
2. the aerodrome operator identifies possible means of accommodating the aeroplane type/subtype including access to movement areas and, if necessary, considers the feasibility and economic viability of upgrading the aerodrome infrastructure; and
3. the aerodrome operator and aircraft operator discuss the aerodrome operator's assessment, and whether operations of the aeroplane type/subtype can be accommodated and, if permitted, under what conditions.

## 4.1.4 The following procedures should be included in the aerodrome compatibility study:

- a) identify the aeroplane's physical and operational characteristics (see Attachments A, B and D);
- b) identify the applicable regulatory requirements;
- c) establish the adequacy of the aerodrome infrastructure and facilities vis-à-vis the requirements of the new aeroplane;
- d) identify the changes required to the aerodrome;
- e) document the compatibility study.
- f) perform the required safety assessments identified during the compatibility study.

## 4.1.4 The following procedures should be included in the aerodrome compatibility study (cont'd):

**Note 1.**— A compatibility study may require a review of the obstacle limitation surfaces at an aerodrome as specified in Chapter 4, Annex 14, Volume I. Further guidance on the function of these surfaces is given in Doc 9137, Part 6 — Control of Obstacles. Where required, reporting of obstacles is prescribed in Annex 4 — Aeronautical Charts and Annex 15 — Aeronautical Information Services.

**Note 2.**— For aerodrome operations in low visibility conditions, additional procedures may be implemented in order to safeguard the operation of aeroplanes. Further guidance on operations in low visibility conditions are available in Doc 9137 Part 8 (Airport Operational Service), Doc 9476 — Manual of Surface Movement Guidance and Control Systems (SMGCS) and Doc 9830 — Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual.



## 4.1.4 The following procedures should be included in the aerodrome compatibility study (cont'd):

**Note 3.**— Additional processes that ensure suitable measures are in place to protect the signal produced by the ground-based radio navigation equipment may be necessary at aerodromes with precision instrument approaches

## 4.1.5 The result of the compatibility study should enable decisions to be made and should provide:

- a) **the aerodrome operator** with the necessary information in order to make a decision on allowing the operation of the specific aeroplane at the given aerodrome;
- b) **the aerodrome operator** with the necessary information in order to make a decision on the changes required to the aerodrome infrastructure and facilities to ensure safe operations at the aerodrome with due consideration to the harmonious future development of the aerodrome; and
- c) **the State** with the information which is necessary for its safety oversight and the continued monitoring of the conditions specified in the aerodrome certification.

## 4.1.5 The result of the compatibility study should enable decisions to be made and should provide (cont'd):

**Note 1.**— Each compatibility study is specific to a particular operational context and to a particular type of aeroplane.

**Note 3.**— Information resulting from the compatibility study that is considered to be of operational significance is published in accordance with Annex 14, Volume I, 2.13.1 (Coordination between aeronautical information services and aerodrome authorities) and Annex 15

## Appendix to Chapter 4

# Physical Characteristics of Aerodromes

### 1) Runways

- Runway Length
- Runway Width
- Runway Shoulders
- Runway Turn Pads
- Runway Strips
- Obstacle on runway strips



## Appendix to Chapter 4

### Physical Characteristics of Aerodromes (cont'd):

- 2) Runway End Safety Area
- 3) Taxiways and Taxiway curves
- 4) Runway and Taxiway minimum separation distances
- 5) Taxiway and Taxilane minimum separation distances
- 6) Taxiway on bridges
- 7) Taxiway shoulders
- 8) Clearance distance on aircraft stands
- 9) De-icing/Anti - icing facilities
- 10) Pavement Design



## Attachment A to Chapter 4

**Aeroplane Physical characteristics** that may have an impact on the relevant aerodrome characteristics, facilities and service in the movement area:

1. Fuselage Length
2. Fuselage Width
3. Door Sill Height
4. Tail Height





## Attachment A to Chapter 4 (cont'd)

5. Aeroplane Nose Characteristics
6. Wing Tip Vertical Clearance
7. Cockpit View
8. Wingspan



## Attachment A to Chapter 4

### **Aeroplane Physical characteristics (cont'd):**

9. Distance from the Pilots Eye Position to the Nose Landing Gear
10. Landing Gear Design
11. Outer Main Gear Wheel Span
12. Wheel Base
13. Gear Steering System
14. Maximum Aeroplane Mass
15. Landing Gear Geometry, Tire Pressure and ACN Values
16. Engine Characteristics
17. Maximum Passenger and Fuel carrying Capacity
18. Flight Performance



## Attachment B to Chapter 4

**Aeroplane ground servicing** characteristics and requirements that may affect the available aerodrome infrastructure:

- a) Ground power
- b) Passenger embarking and disembarking
- c) Cargo loading and unloading
- d) Fuelling
- e) Pushback and towing
- f) De-icing
- g) Taxiing and marshalling
- h) Aeroplane maintenance
- i) RFF
- j) Equipment areas



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