Civil Aviation Authority of Fiji

GUIDANCE MATERIAL

Calculation of declared distances

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PREFACE

This Guidance Material (GM) is published by the Civil Aviation Authority of Fiji for purposes of promulgating supplementary material to that published in the Authority's Standards Documents.

This GM provides guidance to aerodrome operators and CAAF staff on the calculation of runway declared distances. Aerodrome operators are to note that it is the responsibility of the aerodrome operator to calculate and publish accurate declared distances for runway(s) intended for use by air transport. Declared distances should be measured for each runway direction. The distances are measured along the centre line of the runway and of any associated stopway and clearway, and should be declared by publication in the Fiji AIP and as applicable via a NOTAM.

This GM explains certain regulatory requirements by providing interpretive and explanatory material.

Chief Executive
Civil Aviation Authority of Fiji

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1 INTRODUCTION

1.1 Overview

1.1.1 The purpose of this Guidance Material is to provide supplementary guidance to aerodrome operators on the calculation of declared distances for each runway direction.

1.1.2 It provides guidance on what is acceptable to the Authority and how the operator demonstrates compliance with the Standards Document Aerodrome (SD-AD) requirements in Appendix 1 section 10.0 - Declared distances.

1.1.3 It applies to all aerodromes intended for use by commercial air transport.

1.1.4 Declared distances are the available operational distances notified to a pilot for take-off, landing or safely aborting a take-off. These distances are used to determine whether the runway is adequate for the proposed landing or take-off or to determine the maximum payload permissible for a landing or take-off.

1.1.5 Declared distances are a combination of the runway (i.e. full-strength pavement), any stopway (SWY) and clearway (CWY) provided.

1.1.6 The objective of measuring and providing information on declared distances is to allow pilots to determine the allowable aircraft loading based on aircraft performance requirements.

1.2 Abbreviations and Glossary

ASDA – Accelerate Stop Distance Available

CWY – Clearway

LDA – Landing Distance Available

NU – Not Usable

SWY – Stopway

TORA – Take-off Run Available

TODA – Take-off Distance Available

Clearway (CWY)
A defined rectangular area on the ground or water under the control of the aerodrome operator, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height.

Stopway (SWY)
A defined rectangular on the ground at the end of take-off run available (TORA) prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned take off.

Take-off run available (TORA)
The length of runway declared available and suitable for the ground run of an aeroplane taking off.

Take-off distance available (TODA)
The length of the take-off run available plus the length of the clearway, if provided.

Accelerate-stop distance available (ASDA)
The length of the take-off run available plus the length of the stopway, if provided.

Landing distance available (LDA)
The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

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2 CALCULATION OF DECLARED DISTANCES

2.1 The declared distances shall be calculated to the nearest meter for each runway direction. These declared distances comprise of the take-off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA) and landing distance available (LDA).

Stopway and or clearway not provided

2.2 Where a runway is not provided with a stopway (SWY) or clearway (CWY) and the threshold is located at the extremity of the runway, the four declared distances should normally be equal to the length of the runway, as shown in Figure 1.

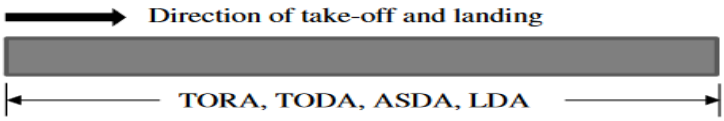


Figure 1

Clearway provided

2.3 Where a runway is provided with a clearway (CWY), then the TODA will include the length of clearway, as shown in Figure 2.

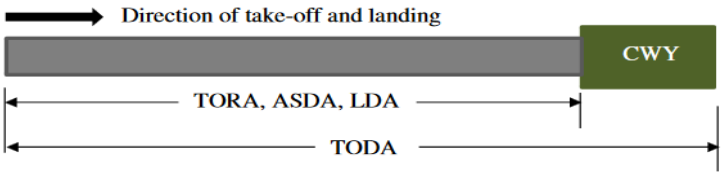


Figure 2

Stopway provided

2.4 Where a runway is provided with a stopway (SWY), then the ASDA will include the length of stopway (SWY), as shown in Figure 3.

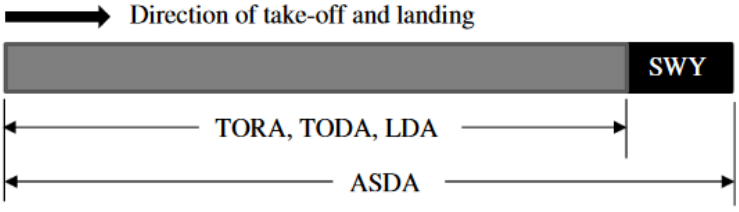


Figure 3

Runway threshold displaced

2.5 Where a runway has a displaced threshold, then the LDA will be reduced by the distance the threshold is displaced, as shown in Figure 4. A displaced threshold affects only the LDA for approaches made to that threshold; all declared distances for operations in the reciprocal direction are unaffected.

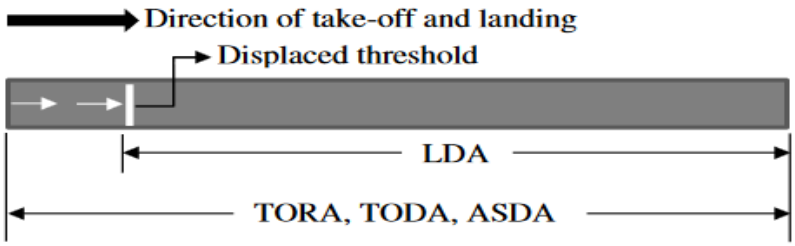


Figure 4

Clearway or stopway or displaced threshold provided

2.6 Figures 2 through 4 illustrate a runway provided with a clearway or a stopway or having a displaced threshold. Where more than one of these features exist, then more than one of the declared distances will be modified - but the modification will follow the same principle illustrated. An example showing a situation where all these features exist is shown in Figure 5.

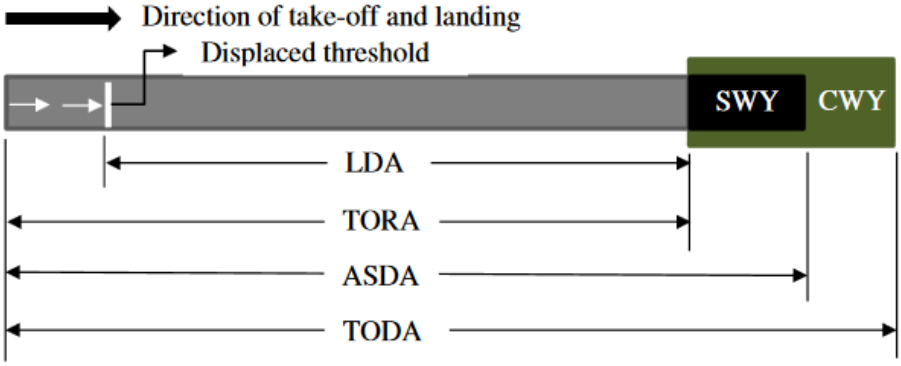
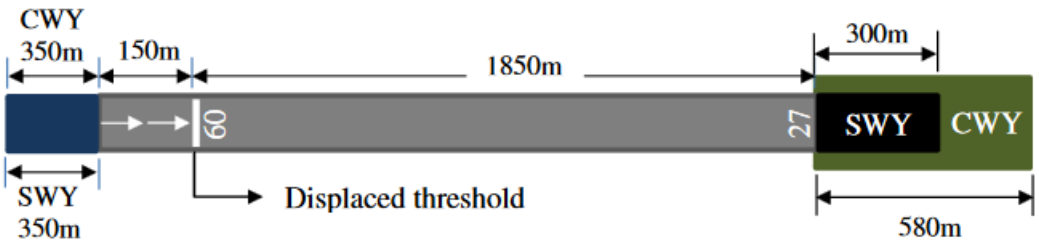
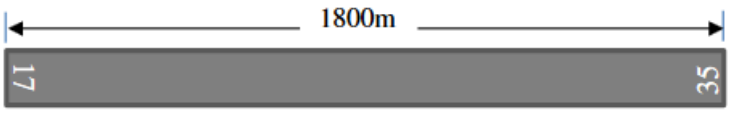


Figure 5

Format for providing information on declared distances

2.7 A suggested format for providing information on declared distances is given in Figure 6. If a runway direction cannot be used for take-off or landing, or both, because it is operational forbidden, then this should be declared and the words "not usable" or the abbreviation "NU" entered.





Runway	*TORA(m)*	*ASDA(m)*	*TODA(m)*	*LDA(m)*
09	2000	2300	2580	1850
27	2000	2350	2350	2000
17	NU	NU	NU	1800
35	1800	1800	1800	NU

Figure 6

3 GENERAL

3.1 Information to be reported to Aeronautical Information Services

3.1.1 The SD-Aerodrome Appendix 1 section 10.0 requires that declared distances be calculated and reported by the aerodrome operator to the Aeronautical Information Service (AIS).

3.1.2 This information shall be published in the AIP Fiji for access by airline operator/pilots.

3.2 References

i. Civil Aviation Reform Act 1999 (CARA 1999);
ii. Standards Document – Aerodrome (SD-AD); and
iii. ICAO Annex 14, Volume I, Edition 8.

3.3 Queries

3.3.1 If there are any queries in regards to this Guidance Material Publication, please address them to:

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