Doc 9157-AN/901
Part 3

AERODROME DESIGN MANUAL

PART 3

PAVEMENTS

SECOND EDITION — 1983

Approved by the Secretary General
and published under his authority

INTERNATIONAL CIVIL AVIATION ORGANIZATION

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Pavements

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AMENDMENTS

Amendments are announced in the supplements to the *Catalogue of ICAO Publications;* the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS		
No.	Date	Entered by
1	25/10/85	ICAO
2	31/8/89	ICAO

CORRIGENDA		
No.	Date	Entered by

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FOREWORD

This revised and updated version of the *Aerodrome Design Manual*, Part 3, includes guidance on the design of pavements including their characteristics and on evaluation and reporting of their bearing strength. The material included herein is closely associated with the specifications contained in Annex 14 - *Aerodromes*. The main purpose of this Manual is to encourage the uniform application of those specifications and to provide information and guidance to States. The significant additions/revisions to the Manual as a result of this revision are:

a) background information on the ACN-PCN method for reporting pavement bearing strength (Chapter 1);

b) material on regulating overload operations (Chapter 2);

c) updated material on evaluation of pavements (Chapter 3) and on runway surface texture and drainage characteristics (Chapter 5);

d) updated material on the design and evaluation of pavements provided by Canada, France, the United Kingdom and the United States (Chapter 4);

e) guidance on protection of asphalt pavements (Chapter 6); and

f) material on structural design considerations for culverts and bridges (Chapter 7).

Chapter 4 of this Manual is based on updated material on pavement design and evaluation submitted by States and is, therefore, believed to be current. Should a State, at any time, consider that the material included therein is out of date, it should inform the Secretary General of this and, if possible, provide appropriate revised material.

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TABLE OF CONTENTS

This is a preview. Click here to purchase the full publication.

This is a preview. Click here to purchase the full publication.

Page

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GLOSSARY

Terms which are defined in the *ICAO Lexicon* Volume II (Doc 9110) are used in accordance with the meanings and usages given therein. A wide variety of terms is in use throughout the world to describe soils, construction materials, and components of airport pavements. As far as possible the terms used in this document are those which have the widest international use. However, for the convenience of the reader a short list of preferred terms and secondary terms which are considered to be their equivalent, and their definitions, is given below.

Preferred Term	Secondary Term	Definition
Aggregate		General term for the mineral fragments or particles which, through the agency of a suitable binder, can be combined into a solid mass, e.g., to form a pavement.
Aircraft Classification Number (ACN)		A number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade strength.
Asphaltic concrete	Bitumen concrete	A graded mixture of aggregate, and filler with asphalt or bitumen, placed hot or cold, and rolled.
Base course	Base	The layer or layers of specified or selected material of designed thickness placed on a sub-base or subgrade to support a surface course.
Bearing strength	Bearing capacity Pavement strength	The measure of the ability of a pavement to sustain the applied load.
CBR	California Bearing Ratio	The bearing ratio of soil determined by comparing the penetration load of the soil to that of a standard material (see ASTM D1883). The method covers evaluation of the relative quality of subgrade soils but is applicable to sub-base and some base course materials.
Composite pavement		A pavement consisting of both flexible and rigid layers with or without separating granular layers.

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