

# Airport Operations

**Second Edition** 

Norman Ashford
H. P. Martin Stanton
Clifton A. Moore

# **Contents**

Preface to first edition lx Preface to second edition Acknowledgments xiii

## Chapter 1. The airport as an operational System

National airport System	J
	4
The function of the airport	7
Centralized and decentralized terminal Systems	9
The complexity of airport Operation	15
Management and operational structures	15
References	26
Chapter 2. Airport peaks and airline rescheduling	29
The problem	29
Methods of describing peaking	31
Implications of variations in volumes	38
Factors and constraints on airline scheduling policies	42
Scheduling within the airline	50
Fleet utilization	53
IATA policy on scheduling	53
The airport viewpoint on scheduling	54
Hubs	55
References >	56
Chapter 3. Airport noise control	57
Introduction	57
Aircraft noise	59
Community response to aircraft noise	62
Noise control strategies	63
Noise certif ication	67
Noise monitoring procedures	70
Night curfews	77

#### vi Contents

Noise compatibility and land use

References	88
Chapter 4. Aircraft operating characteristics	89
General considerations	89
Departure Performance	96
Approach Performance	103
Operations in inclement weather	109
Implications of the development of the new large aircraft	112
References	114
Chapter 5. Operational readiness	115
Introduction	115
Airport licensing	115
Operating constraints	117
Operational areas	127
Approach/landing aids	132
Approach/runway lighting	142
Airfield inspections	149
MaintainIng readiness	151
References	158
Chapter 6. Ground handling	159
Introduction	159
Passenger handiing	160
Ramp handiing	163
Aircraft ramp servicing	167
Ramp layout	172
Departure control	174
Division of ground handling responsibilities	174
Control of ground handling efficiency	177
General	181
References ,	184
Chapter 7. Baggage handiing	185
Introduction	185
Baggage operations	187
Operating characteristics of baggage-handling Systems	190
The Inbound baggage System	192
The outbound baggage system	197
Operating Performance	203
Organizing for the task	207
References	210
Chapter 8. Passenger terminal operations	211
Functions of the passenger terminal	211

80

	Contents	vii
Terminal functions		215
Philosophies of terminal management		219
Direct passenger Services		220
Airline related passenger Services		227
Airline related operational functions		229
Governmental requirements		239
Nonpassenger-related airport authority functions		240 241
Processing Very Important Persons		241
Passenger Information Systems Space components and adjacencies		246
Aids to circulation		249
Hubbing considerations		252
References		254
Relefices		
Chapter 9. Airport security		255
Introduction		255
Structure of planning for security		259
Responsibility and Organisation		261
Airside security procedures		263
Landside security procedures—passenger terminal		268
Landside procedures—cargo terminal		271
Security equipment and Systems		272
Security operations		273
References		280
Chapter 10. Cargo operations		281
The air cargo market		281
Expediting the movement		286
Flow through the cargo terminal		291
Unit loading devices		293
Handiing within the terminal		295
Cargo apron Operation		299
Computerization of facilitation		304
Examples of modern cargo terminal designs		307
Freight operations for the integrated carrier		307
References		310
Chapter 11 Airport technical Convince		211
Chapter 11. Airport technical Services		311
The scope of technical Services		311
Air traffic control		312
Telecommunications		332
Meteorology		341
Aeronautical Information		357
References		370
Chapter 12. Airport aircraft emergencies		373
General		373

### viii Contents

Probability of an aircraft accident	373
Types of emergencies	375
Level of protection required	376
Water supply and emergency access roads	379
Communication and alarm requirements	379
Rescue and fire-fighting vehicles	381
Personnel requirements	383
The airport emergency plan	385
Aircraft fire-fighting and rescue procedures	394
Foaming the runways	396
Removal of disabled aircraft	398
Summary	401
References	401
Chapter 13. Airport access	409
Access as part of the airport System	409
Access users and modal choice	412
Access interaction with passenger terminal Operation	416
Access modes	421
In-town and other off-airport terminals	431
Factors äffecting access mode choice	431
General conclusions	432
References	433
Chapter 14. Operational administration and Performance	437
The airport as a Service	437
Operations within the international context	438
Domestic regulation	440
Organizational intent	440
The framework of Performance measurement	441
Management structures	444
External assessment of management Performance	449
Implementation	453
Infernal assessments	454
Chapter 15. The airport operations manual	457
The function of the airport operations manual .	457
A format for the airport operations manual	458
Distribution of the manual	464
U.S. example: FAA recommendations on the airport certification manual	464
United Kingdom example: CAA recommendations on aerodrome manual	469
References	472
110101011000	712

/:

Index 473