



# 747-400

Airplane Characteristics for

## Airport Planning




Boeing Commercial Airplanes

THIS PAGE INTENTIONALLY LEFT BLANK

**747-400 AIRPLANE CHARACTERISTICS  
LIST OF ACTIVE PAGES**

Page	Date	Page	Date	Page	Date
Original 1 to 116	Preliminary July 1986				
REV A 1 to 122	April 1988				
REV B 1 to 156	March 1990				
REV C 1 to 164	October 1994				
REV D 1 to 218	December 2002				

## TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
1.0	SCOPE AND INTRODUCTION	1
1.1	Scope	2
1.2	Introduction	3
1.3	A Brief Description of the 747-400	4
2.0	AIRPLANE DESCRIPTION	7
2.1	General Characteristics	8
2.2	General Dimensions	21
2.3	Ground Clearances	24
2.4	Interior Arrangements	29
2.5	Cabin Cross-Sections	35
2.6	Lower Cargo Compartments	39
2.7	Door Clearances	42
3.0	AIRPLANE PERFORMANCE	53
3.1	General Information	54
3.2	Payload/Range for 0.85 Mach Cruise	55
3.3	F.A.R. Takeoff Runway Length Requirements	66
3.4	F.A.R. Landing Runway Length Requirements	88
4.0	GROUND MANEUVERING	93
4.1	General Information	94
4.2	Turning Radii	96
4.3	Clearance Radii	101
4.4	Visibility from Cockpit in Static Position	105
4.5	Runway and Taxiway Turn Paths	106
4.6	Runway Holding Bay	111
5.0	TERMINAL SERVICING	113
5.1	Airplane Servicing Arrangement - Typical Turnaround	115
5.2	Terminal Operations - Turnaround Station	118
5.3	Terminal Operations - En Route Station	124
5.4	Ground Servicing Connections	126
5.5	Engine Start Pneumatic Requirements - Sea Level	129
5.6	Ground Pneumatic Power Requirements - Heating/Cooling	134
5.7	Conditioned Air Flow Requirements	135
5.8	Ground Towing Requirements	136

## TABLE OF CONTENTS (CONTINUED)

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
6.0	JET ENGINE WAKE AND NOISE DATA	139
6.1	Jet Engine Exhaust Velocities and Temperatures	140
6.2	Airport and Community Noise	148
7.0	PAVEMENT DATA	151
7.1	General Information	152
7.2	Landing Gear Footprint	156
7.3	Maximum Pavement Loads	159
7.4	Landing Gear Loading on Pavement	160
7.5	Flexible Pavement Requirements - U.S. Army Corps of Engineers Method (S-77-1) and FAA Design Method	164
7.6	Flexible Pavement Requirements - LCN Method	167
7.7	Rigid Pavement Requirements - Portland Cement Association Design Method	170
7.8	Rigid Pavement Requirements - LCN Conversion	173
7.9	Rigid Pavement Requirements - FAA Design Method	177
7.10	ACN/PCN Reporting System: Flexible and Rigid Pavements	180
8.0	FUTURE 747-400 DERIVATIVE AIRPLANES	185
9.0	SCALED 747-400 DRAWINGS	187

THIS PAGE INTENTIONALLY LEFT BLANK