

## **1.0 SCOPE AND INTRODUCTION**

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### 1.1 Scope

This document provides, in a standardized format, airplane characteristics data for general airport planning. Since operational practices vary among airlines, specific data should be coordinated with the using airlines prior to facility design. Boeing Commercial Airplanes should be contacted for any additional information required.

Content of the document reflects the results of a coordinated effort by representatives from the following organizations:

- Aerospace Industries Association
- Airports Council International - North America
- International Industry Working Group
- International Air Transport Association

The airport planner may also want to consider the information presented in the "Commercial Aircraft Design Characteristics – Trends and Growth Projections," for long range planning needs and can be accessed via the following web site:

<http://www.boeing.com/airports>

The document is updated periodically and represents the coordinated efforts of the following organizations regarding future aircraft growth trends:

- International Civil Aviation Organization
- International Coordinating Council of Aerospace Industries Associations
- Airports Council International - North American and World Organizations
- International Industry Working Group
- International Air Transport Association

## 1.2 Introduction

This document conforms to NAS 3601. It provides characteristics of the Boeing Model 777-200LR, 777-300ER and 777 Freighter airplanes for airport planners and operators, airlines, architectural and engineering consultant organizations, and other interested industry agencies. Airplane changes and available options may alter model characteristics. The data presented herein reflect typical airplanes in each model category. Data used is generic in scope and not customer-specific.

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## **1.3 A Brief Description of the 777 Family of Airplanes**

### **777-200/-200ER Airplane**

The 777-200/-200ER is a twin-engine airplane designed for medium to long range flights. It is powered by advanced high bypass ratio engines. Characteristics unique to the 777 include:

- Two-crew cockpit with digital avionics
- Circular cross-section
- Lightweight aluminum and composite alloys
- Structural carbon brakes
- Six-wheel main landing gears
- Main gear aft axle steering
- High bypass ratio engines
- Fly-by-wire system

### **777-200LR Airplane**

The 777-200LR is a derivative of the 777-200 airplane and is equipped with raked wingtips to provide additional cruise altitude and range. It is powered by high bypass ratio engines that develop higher thrusts than those used in the 777-200/-200ER airplanes. The 777-200LR has an identical fuselage as the 777-200/-200ER but has a wider wingspan due to raked wingtips.

### **777-300 Airplane**

The 777-300 is a second-generation derivative of the 777-200. Two body sections are added to the fuselage to provide additional passenger seating and cargo capacity.

### **777-300ER Airplane**

The 777-300ER is a derivative of the 777-300 airplane and is equipped with raked wingtips for additional cruise altitude and range. It is powered by high bypass ratio engines that develop higher thrusts than those used in the 777-200/-200ER/-300 airplanes. The 777-300ER has an identical fuselage as the 777-300, but has a wider wingspan due to the raked wingtips.

## **777 Freighter Airplane**

The 777 Freighter, newest member of the 777 Family of airplanes, is based on the 777-200LR Worldliner (Longer Range) passenger airplane. The 777 Freighter will fly farther than any other freighter, providing more capacity than any other twin-engine freighter, and will meet QC2 noise standards for maximum accessibility to noise-sensitive airports. The 777 Freighter will share the 777 Family's advanced features of a state-of-the-art flight deck, fly-by-wire design and an advanced wing design, including raked wing tips. The 777 Freighter will be powered by the world's most powerful commercial jet engine, General Electric's GE90-110B1L.

The 777 Freighter is designed to integrate smoothly with existing cargo operations and facilitate interlining with 747 freighter fleets. Cargo operators will be able to easily transfer 10-foot-high pallets between the two models via the large main deck cargo door.

## Main Gear Aft Axle Steering

The main gear axle steering is automatically engaged based on the nose gear steering angle. This allows for less tire scrubbing and easier maneuvering into gates with limited parking clearances.

## High Bypass Ratio Engines

The 777 airplane is powered by two high bypass ratio engines. The following table shows the available engine options.

ENGINE MANUFACTURER	ENGINE MODEL	ENGINE THRUST	MAX TAXI WEIGHT (LB)				
			777-200ER	777-300	777-200LR	777-300ER	777F
GENERAL ELECTRIC	GE 90-B3/B4	74,500 LB	537,000	-	-	-	-
	GE 90-B5	76,400 LB	537,000	-	-	-	-
	GE 90-B1	84,100 LB	634,000	-	-	-	-
	GE 90-B4	84,700 LB	634,000	-	-	-	-
	GE 90-92B	90,500 LB	-	662,000	-	-	-
	GE 90-98B	98,000 LB	-	662,000	-	-	-
	GE90-110B	110,000 LB	-	-	768,000	-	-
	GE90-110B1L	110,000 LB	-	-	-	-	-
	GE90-110B1	110,000 LB	-	-	768,000	-	-
	GE90-110B1L	110,000 LB	-	-	-	-	768,800
PRATT & WHITNEY	PW 4073/4073A	73,500 LB	537,000	-	-	-	-
	PW 4077	77,200 LB	537,000	-	-	-	-
	PW 4082	82,200 LB	634,000	-	-	-	-
	PW 4084	84,600 LB	634,000	-	-	-	-
	PW 4090	90,500 LB	-	662,000	-	-	-
	PW 4098	98,000 LB	-	662,000	-	-	-
ROLLS ROYCE	TRENT 870/871	71,200 LB	537,000	-	-	-	-
	TRENT 877	74,900 LB	537,000	-	-	-	-
	TRENT 882	82,200 LB	634,000	-	-	-	-
	TRENT 884	84,300 LB	634,000	-	-	-	-
	TRENT 890	90,000 LB	-	662,000	-	-	-
	TRENT 898	98,000 LB	-	662,000	-	-	-

## Document Applicability

This document contains data pertinent to the 777-200LR, 777-300ER and 777-Freighter.

Data for the 777-200, 777-200ER, and 777-300 airplanes are contained in document D6-58329.