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1.0 SCOPE AND INTRODUCTION

1.1 Scope

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

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

Aerospace Industries Association of America
Airport Operators' Council International
Air Transport Association of America
International Air Transport Association

1.2 Introduction

This document conforms to NAS 3601. It provides characteristics of the Boeing Model 707 family of airplanes for airport operators, airlines, and engineering consultant organizations. Airplane changes and available options may alter model characteristics; the data presented herein reflect typical airplanes in each model category.

For additional information contact:

The Boeing Company
Commercial Airplane Division
P. O. Box 707
Renton, Washington 98055
U. S. A.

Attention: Chief, Airport Studies
Air Commerce Research

1.3 A Brief Description and Comparison of the 707 Family of Airplanes

Model Development

The 707 family of airplanes was derived from the original 707 prototype (Boeing Model 367-80). The original 707-100 Series was developed from the 367-80, and all the other 707 models were derived from the 707-100. Throughout the development of subsequent models, the constant body section (height and width) of the 707-100 was maintained.

Model designations of the 707 family fall into four categories: 707-100 series, 707-200 series, 707-300 series, and 707-400 series. The -100 and -200 series are used on domestic routes. The majority of the -300 and -400 series are used in intercontinental service.

The 707-200 series was developed to meet a specific requirement for an airplane that would be lighter and carry somewhat less payload than the -100. It is essentially the same as the -100 except that it has a different engine and a smaller gross weight.

The 707-300 series was developed to meet the performance requirements for intercontinental service. These airplanes have a longer body, greater wingspan (with high-lift trailing-edge flaps and improved leading-edge flaps), and higher gross weight.

Model Comparison

Model 707-100 and 707-200 series airplanes are represented in this document by the 707-120B. The 707-120 and -220 airplanes originally had non-fan engines (JT3C and JT4A respectively); the majority of the -120's have been modified with JT3D fan engines to yield the 707-120B.

Model 707-300 series airplanes are represented in this document by the 707-320, -320B and -320C. The -320 airplanes have JT4A non-fan engines; the -320B and -320C airplanes have JT3D fan engines.

Model 707-400 series airplanes are represented by the 707-420. The 707-420 is the same as the 707-320 except that it has Rolls-Royce engines rather than Pratt and Whitney engines.

The 707-120, -220, -320, -320B, and -420 are passenger airplanes. The -320C is manufactured in a convertible passenger/cargo version and a strictly freighter version.

The data on the following two pages provide an overall comparison of the members of the 707 family. Minor dimensional and/or performance differences may exist between some models of the same series as a result of customer option; however, the data presented represent typical airplanes in each model category.

MODEL	ENGINE TYPE	LENGTH				SPAN				BODY				VERTICAL TAIL HEIGHT*		MAXIMUM RAMP WEIGHT
		OVERALL		FUSELAGE		WING		TAIL		HEIGHT		WIDTH				
		FT	IN.	FT	IN.	FT	IN.	FT	IN.	FT	IN.	FT	IN.	FT	IN.	(LB)
707-120B	JT3D	145	1	138	10	130	10	43	4	14	3	12	4	41	8	258,000
707-220	JT4A	144	6	↓				39	8					↓		248,000
720**	JT3C	136	2	130	6			↓						41	5	230,000
720B**	JT3D	136	9	↓				43	4					41	2	235,000
707-320	JT4A	152	11	145	6	142	5	45	8					42	2	316,000
707-420	R.Co.-12	↓		↓		↓		↓						↓		↓
707-320B	JT3D					145	9							42	1	328,000/336,000
707-320C	JT3D					↓		↓		↓		↓		42	0	336,000

*HEIGHT ABOVE GROUND AT OEW.

**MODELS 720 AND 720B ARE SHOWN HERE FOR INFORMATION BECAUSE THEY ARE DERIVATIVES OF THE 707-100 SERIES.

MODEL	ENGINE TYPE	LENGTH		SPAN		BODY		VERTICAL TAIL HEIGHT*	MAXIMUM RAMP WEIGHT
		OVERALL	FUSELAGE	WING	TAIL	HEIGHT	WIDTH		
		(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	KILOGRAMS
707-120B	JT3D	44.22	42.32	39.88	13.21	4.33	3.76	12.7	117,100
707-220	JT4A	44.20	↓	↓	12.20	↓	↓	↓	112,400
720**	JT3C	41.30	39.78	↓	↓	↓	↓	12.62	104,400
720B**	JT3D	41.68	↓	↓	13.21	↓	↓	12.55	106,700
707-320	JT4A	46.61	44.35	43.40	13.94	↓	↓	12.85	143,500
707-420	R.Co.-12	↓	↓	↓	↓	↓	↓	↓	↓
707-320B	JT3D	↓	↓	44.42	↓	↓	↓	12.83	148,900/152,500
707-320C	JT3D	↓	↓	↓	↓	↓	↓	12.80	152,500

*HEIGHT ABOVE GROUND AT OEW.

**MODELS 720 AND 720B ARE SHOWN HERE FOR INFORMATION BECAUSE THEY ARE DERIVATIVES OF THE 707-100 SERIES.