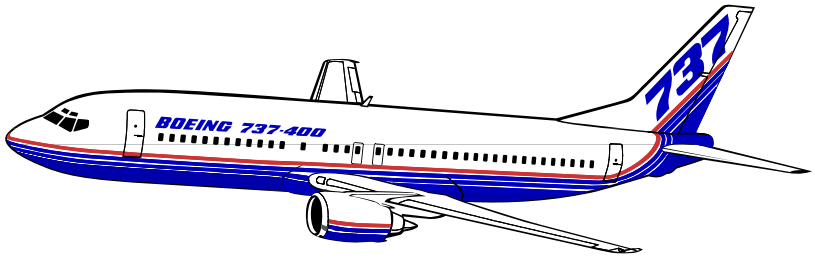
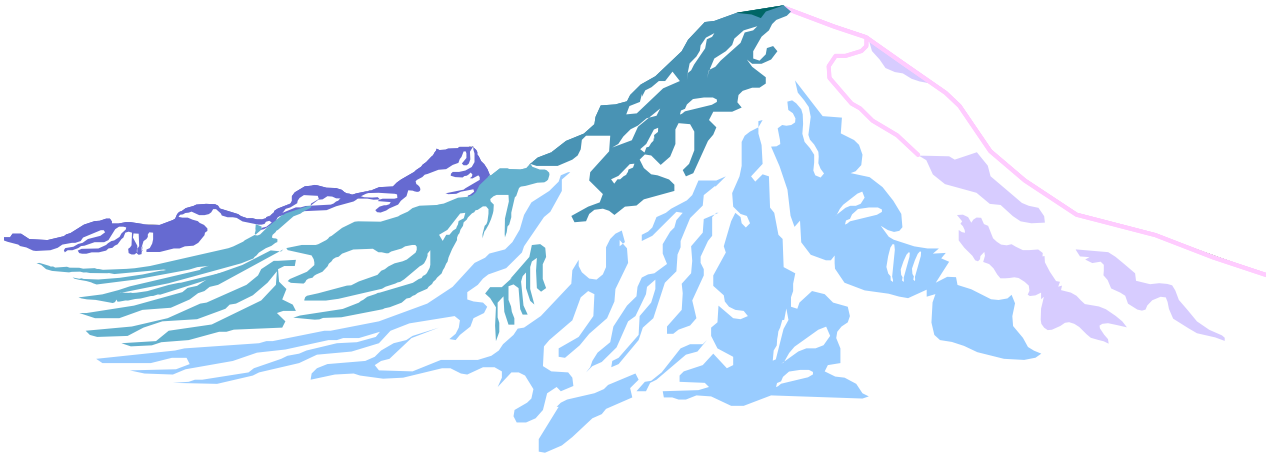
737-400

GPA GROUP, LIMITED

WEIGHT AND BALANCE
CONTROL AND LOADING MANUAL





Boeing Commercial Airplane Group
Weight Engineering Organization
P.O. Box 3707 Seattle, Washington 98124

Boeing Document No. D043A540-GUI1

INTRODUCTION

The data presented in this manual are in compliance with Federal Aviation Regulations Part 25, Paragraphs 25.29; 25.471 (b); 25.1519 and 25.1583 (c); and are provided for the purpose of establishing the Model 737-400 weight and balance requirements and allowables.

This manual presents all the weight and balance information necessary to ensure safe airplane operation. In addition, information is provided to allow the operator to efficiently plan loading procedures in such a manner that maximum payload capability is safely distributed for any type of operation.

The Weight and Balance Manual is organized following the guidelines of the Air Transport Association (ATA) Specification 2200 (iSpec 2200), “Information Standards for Aviation Maintenance”. Accordingly, the weight and balance information is arranged in two chapters.

CHAPTER 1 - CONTROL

Control contains all weight and balance data specifically related to the customer aircraft. The information presented in this chapter is modular, with groups of related data provided in discreet subject packages, each of which is uniquely identified by a three element Chapter-Section-Subject number (CHP-SEC-SUB). Major data groupings for the Chapter-Sections are as follows:

CHAPTER - SECTION	MAJOR DATA GROUPING
1- 00 through 1- 09	General
1- 20 through 1- 29	Fuel
1- 30 through 1- 39	Fluids
1- 40 through 1- 49	Personnel
1- 60 through 1- 69	Cargo
1- 80 through 1- 89	Ground Operations
1- 90 through 1- 99	Examples

The two digit section (SEC) element allows for ten distinct topics within each major group of data (e.g. 20 through 29 for Fuel). The subject (SUB) element is primarily used to uniquely identify topically identical data for varying aircraft configurations. However, in some cases the subject (SUB) element is used to further subdivide topical information.

The Chapter 1 document includes only those topics that apply to the airplanes called out in the “Airplane Configuration” section of the document. The CHP-SEC-SUB number, page numbering, revision date and document number appear on the lower outside corner of each page.

Changes within a revised CHP-SEC-SUB are identified with a solid bar in the outside margin, adjacent to the change. The date for the CHP-SEC-SUB will be revised and the changes will be noted in the revision highlights.

To determine if you have received a complete document, check each section listed in the “Table of Contents” and confirm that the section is included in this document. The total number of pages for each section is specified at the bottom of every page contained within it (e.g. “Page 1 of 4”, where “4” represents the total number of pages in the section).

APPLICABLE CONFIGURATIONS
All

INTRODUCTION (Continued)

MANAGING AIRCRAFT CONFIGURATIONS

The “Airplane Configuration” section of this document lists all aircraft covered in this document, along with the allowable configurations associated with each aircraft. Restrictions and limitations for each association of a configuration with a specific aircraft serial number are defined in the same section under the heading “Configuration Qualifications”.

The data presented within each CHP-SEC-SUB module apply to the aircraft configuration(s) listed in the “Applicable Configurations” box at the bottom of each page. The word “All” signifies that the data is applicable to all configurations listed in the “Airplane Configuration” section of this document, whereas data that is applicable to specific aircraft configurations will list only the appropriate configuration letter(s) in the “Applicable Configurations” box.

DOCUMENT NUMBERING

For all 737-400 Chapter 1 Manuals, document numbering will use the following convention:

D043A5[Y][Z]-[ccc][X]

where **[Y]** = Minor Model Designator (e.g. “4” for a -400 Minor Model)

[Z] = Derivative Designator (0=Passenger, 1=Combi, 2= Freighter, 3=Convertible, 4=Special Freighter

[ccc] = Airline 3-Letter Designator (As per Boeing Standard Designators - CCID)

[X] = Document Serial Number (This will always be “1” unless an airline has multiple Weight & Balance Manuals for a given derivative model.)

CHAPTER 2 - AIRCRAFT REPORTS

The Aircraft Report (covered in a separate document) contains weight and balance data specifically related to each delivered aircraft of the customer's fleet. The data includes: make, model, serial number, registration identification, actual weighing data, and inventory list for the delivery configuration of each aircraft.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 23

This revision increases the MTOW to 150000 LB, MLW to 124000 LB and MZFW to 117000 LB for Serial Number 24906 (PW041) per Master Change 3245MK3362. This change requires incorporation of Boeing Service Bulletin 737-32-1482.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “C” to Serial Number 24906 per Master Change 3245MK3362.
- Configuration Qualification [12] added.

INTERIOR EFFECTIVITY

- Updated for this revision.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 22

This revision increases the Maximum Takeoff Weight to 150000 pounds for Serial Numbers 26073 (PM557) and 26078 (PM560) per Master Change 0310MK3BCZ.

GENERAL

- Removed Section 1-02-062 from manual.
- Removed Configuration “J” (no longer applicable).

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “F” to Serial Number 26073 per Master Change 0310MK3BCZ.
- Assigned Configuration “F” to Serial Number 26078 per Master Change 0310MK3BCZ.
- Removed Configuration “J” from Serial Number 26073 per Master Change 0310MK3BCZ.
- Removed Configuration “J” from Serial Number 26078 per Master Change 0310MK3BCZ.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-20-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, K, L, M, N, P, R, S, V, W, Y”
  to “A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, K, L, M, N, P, R, S, V, W, Y”
  to “A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y”.

1-34-001

- Changed Applicable Configuration(s)
  from “A, B, C, F, G, H, J, K, L, M, N, P, R, S, W, Y”
  to “A, B, C, F, G, H, K, L, M, N, P, R, S, W, Y”.

1-60-006

- Changed Applicable Configuration(s) from “F, G, J, N, W” to “F, G, N, W”.

1-62-005

- Changed Applicable Configuration(s) from “F, G, J, N, W” to “F, G, N, W”.

1-62-402

- Changed Applicable Configuration(s) from “F, G, H, J, N, W” to “F, G, H, N, W”.

1-62-601

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, K, L, M, N, P, R, S, V, W, Y”
  to “A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y”.

1-80-002

- Changed Applicable Configuration(s)
  from “B, C, D, E, F, G, H, J, K, L, M, N, R, S, U, V, W”
  to “B, C, D, E, F, G, H, K, L, M, N, R, S, U, V, W”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 21

This revision increases the Maximum Takeoff Weight to 150000 pounds and Maximum Taxi Weight to 150500 pounds for Serial Number 24912 (PW043) per Master Change 3245MK3375 upon incorporation of Boeing Service Bulletin 737-32-1481.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “S” to Serial Number 24912 per Master Change 3245MK3375.
- Configuration Qualification [11] added.

INTERIOR EFFECTIVITY

- Updated for this revision.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 20

This revision increases the Maximum Taxi Weight from 143000 LB to 150500 LB, Maximum Takeoff Weight from 142500 LB to 150000 LB, Maximum Landing Weight from 121000 LB to 124000 LB, and Maximum Zero Fuel Weight from 113000 LB to 117000 LB for Serial Number 24493 (PW019) per Master Change 0310MK3AVR, upon incorporation of Boeing Service Bulletin 737-32-1464.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “C” to Serial Number 24493 per Master Change 0310MK3AVR.
- Configuration Qualification [10] added.

INTERIOR EFFECTIVITY

- Updated for this revision.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 19

This revision decreases Maximum Takeoff Weight from 129000 LB to 127800 LB for Serial Numbers 24545 (PW026) and 26069 (PM555) per Master Change 0310MK3ATE. In addition, this revision removes Serial Number 23977 (PW008) from the manual which has been permanently removed from service.

GENERAL

- Added Section 1-02-070 to manual.
- Removed Section 1-02-057 from manual.
- Added Configuration “K” per Master Change 0310MK3ATE.
- Revised Configuration “G” per Master Change 0310MK3ATE.
- Removed Configuration “AA” (no longer applicable).

TITLE PAGE

- Updated EAR99 classification designation.
- Updated 9E991 classification designation.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Removed Serial Number 23977.
- Assigned Configuration “K” to Serial Number 24545 per Master Change 0310MK3ATE.
- Revised Configuration “G” for Serial Number 26069 per Master Change 0310MK3ATE.
- Removed Configuration “AA” from Serial Number 24545 per Master Change 0310MK3ATE.
- Removed Configuration “A” from Serial Number 23977. Removed Serial Number 23977 from service.

INTERIOR EFFECTIVITY

- Removed Serial Number 23977.
- Removed LOPS-374-0137 from Serial Number 23977.

1-00-001

- Added metric conversion factors.

1-02-070

- Applicable Configuration(s) set to “G, K”.

1-20-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, L, M, N, P, R, S, V, W, Y, AA”
  to “A, B, C, E, F, G, J, K, L, M, N, P, R, S, V, W, Y”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, L, M, N, P, R, S, V, W, Y, AA”
  to “A, B, C, E, F, G, J, K, L, M, N, P, R, S, V, W, Y”.

1-34-001

- Changed Applicable Configuration(s)
  from “A, B, C, F, G, H, J, L, M, N, P, R, S, W, Y, AA”
  to “A, B, C, F, G, H, J, K, L, M, N, P, R, S, W, Y”.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 19 (Continued)

1-60-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, L, M, P, R, S, V, Y, AA”
  to “A, B, C, E, K, L, M, P, R, S, V, Y”.

1-62-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, L, M, P, R, S, V, Y, AA”
  to “A, B, C, E, K, L, M, P, R, S, V, Y”.

1-62-401

- Changed Applicable Configuration(s)
  from “A, B, C, D, E, L, M, P, R, S, U, V, Y, AA”
  to “A, B, C, D, E, K, L, M, P, R, S, U, V, Y”.

1-62-601

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, L, M, N, P, R, S, V, W, Y, AA”
  to “A, B, C, E, F, G, J, K, L, M, N, P, R, S, V, W, Y”.

1-80-002

- Changed Applicable Configuration(s)
  from “B, C, D, E, F, G, H, J, L, M, N, R, S, U, V, W, AA”
  to “B, C, D, E, F, G, H, J, K, L, M, N, R, S, U, V, W”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 18

This revision decreases the Maximum Takeoff Weight from 68038 KG (150000 LB) to 65999 KG (145505 LB) for Serial Numbers 26073 (PM557) and 26078 (PM560) per Master Change 0310MK3ADN.

GENERAL

- Added Section 1-02-062 to manual.
- Added Configuration “J” per Master Change 0310MK3ADN.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “J” to Serial Number 26073 per Master Change 0310MK3ADN.
- Assigned Configuration “J” to Serial Number 26078 per Master Change 0310MK3ADN.
- Removed Configuration “F” from Serial Number 26073 per Master Change 0310MK3ADN.
- Removed Configuration “F” from Serial Number 26078 per Master Change 0310MK3ADN.

INTERIOR EFFECTIVITY

- Added variable number column to the table.

1-02-062

- Applicable Configuration(s) set to “J”.

1-20-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, L, M, N, P, R, S, V, W, Y, AA”
  to “A, B, C, E, F, G, J, L, M, N, P, R, S, V, W, Y, AA”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, L, M, N, P, R, S, V, W, Y, AA”
  to “A, B, C, E, F, G, J, L, M, N, P, R, S, V, W, Y, AA”.

1-34-001

- Changed Applicable Configuration(s)
  from “A, B, C, F, G, H, L, M, N, P, R, S, W, Y, AA”
  to “A, B, C, F, G, H, J, L, M, N, P, R, S, W, Y, AA”.

1-60-006

- Changed Applicable Configuration(s) from “F, G, N, W” to “F, G, J, N, W”.

1-62-005

- Changed Applicable Configuration(s) from “F, G, N, W” to “F, G, J, N, W”.

1-62-402

- Changed Applicable Configuration(s) from “F, G, H, N, W” to “F, G, H, J, N, W”.

1-62-601

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, L, M, N, P, R, S, V, W, Y, AA”
  to “A, B, C, E, F, G, J, L, M, N, P, R, S, V, W, Y, AA”.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 18 (Continued)

1-80-002

- Changed Applicable Configuration(s)
  from “B, C, D, E, F, G, H, L, M, N, R, S, U, V, W, AA”
  to “B, C, D, E, F, G, H, J, L, M, N, R, S, U, V, W, AA”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 17

This revision increases the Maximum Takeoff Weight from 142500 LB to 143500 LB and the Maximum Taxi Weight from 143000 LB to 144000 LB for Serial Number 23865 (PW001) per Master Change 0310MK3AMI upon incorporation of Boeing Service Bulletin 737-11-1185.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “Y” to Serial Number 23865 per Master Change 0310MK3AMI.
- Configuration Qualification [9] added.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-017

- Revised to correct main gear tire requirements to 42 inch, 26 ply rating. Also removed 40 inch, 24 ply main gear tire restriction from c.g. grid.

1-02-018

- Revised to correct main gear tire requirements to 42 inch, 26 ply rating. Also removed 40 inch, 24 ply main gear tire restriction from c.g. grid.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 16

This revision increases the Maximum Takeoff Weight from 143000 LB to 150000 LB for Serial Number 26066 (PM554) per Master Change 0310MK3AJS.

GENERAL

- Removed Section 1-02-026 from manual.
- Removed Configuration “J” (no longer applicable).
- Removed Configuration “T” (no longer applicable).

TITLE PAGE

- Added EAR99 classification designation.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Removed Serial Number 24682. Airplane no longer in service.
- Assigned Configuration “F” to Serial Number 26066 per Master Change 0310MK3AJS.
- Removed Configuration “J” from Serial Number 26066 per Master Change 0310MK3AJS.
- Removed Configuration “R” from Serial Number 24682 (removed Serial Number 24682 from service).
- Removed Configuration “T” from Serial Number 24682 (removed Serial Number 24682 from service).

INTERIOR EFFECTIVITY

- Removed Serial Number 24682.
- Removed LOPS-374-0485 from Serial Number 24682.

1-02-017

- Changed Applicable Configuration(s) from “T, W” to “W”.

1-20-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, G, L, M, N, P, R, S, V, W, Y, AA”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, G, L, M, N, P, R, S, V, W, Y, AA”.

1-34-001

- Changed Applicable Configuration(s)
  from “A, B, C, F, G, H, J, L, M, N, P, R, S, T, W, Y, AA”
  to “A, B, C, F, G, H, L, M, N, P, R, S, W, Y, AA”.

1-60-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, L, M, P, R, S, T, V, Y, AA”
  to “A, B, C, E, L, M, P, R, S, V, Y, AA”.

1-60-006

- Changed Applicable Configuration(s) from “F, G, J, N, W” to “F, G, N, W”.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 16 (Continued)

1-62-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, L, M, P, R, S, T, V, Y, AA”
  to “A, B, C, E, L, M, P, R, S, V, Y, AA”.

1-62-005

- Changed Applicable Configuration(s) from “F, G, J, N, W” to “F, G, N, W”.

1-62-401

- Changed Applicable Configuration(s)
  from “A, B, C, D, E, L, M, P, R, S, T, U, V, Y, AA”
  to “A, B, C, D, E, L, M, P, R, S, U, V, Y, AA”.

1-62-402

- Changed Applicable Configuration(s) from “F, G, H, J, N, W” to “F, G, H, N, W”.

1-62-601

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, G, L, M, N, P, R, S, V, W, Y, AA”.

1-80-002

- Changed Applicable Configuration(s)
  from “B, C, D, E, F, G, H, J, L, M, N, R, S, T, U, V, W, AA”
  to “B, C, D, E, F, G, H, L, M, N, R, S, U, V, W, AA”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 15

This revision increases the Maximum Taxi Weight from 128300 LB to 129500 LB and Maximum Takeoff Weight from 127800 LB to 129000 LB, and decreases the Maximum Landing Weight from 124000 LB to 121000 LB and Maximum Zero Fuel Weight from 117000 LB to 113000 LB for Serial Number 24545 (PW026) per Master Change 0310MK3AJD. In addition, miscellaneous changes have been made to the manual. Details of the changes made to each section are listed below.

GENERAL

- Removed Section 1-02-045 from manual.
- Added Section 1-02-057 to Configuration “AA” per Master Change 0310MK3AJD.
- Removed Section 1-02-045 from Configuration “AA” (no longer applicable).

TITLE PAGE

- Removed the customer specific model designator.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Removed registry numbers.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-014

- Updated to revise aft c.g. point, which was inadvertently omitted.

1-02-057

- Changed Applicable Configuration(s) from “G” to “G, AA”.

1-40-001

- Revised the paragraph under passengers.

1-62-401

- Section number changed from “1-62-041” to “1-62-401”.

1-62-402

- Section number changed from “1-62-042” to “1-62-402”.

1-62-601

- Section number changed from “1-62-061” to “1-62-601”.

1-62-602

- Section number changed from “1-62-062” to “1-62-602”.

1-62-603

- Section number changed from “1-62-063” to “1-62-603”.

1-84-001

- Added a bullet in towing and tipping considerations and added a note.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 14

This revision increases the Maximum Takeoff Weight to 150000 LB for Serial Number 24494 (PW020) per Master Change 3245MK3247 upon incorporation of Boeing Service Bulletin 737-32-1406.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “S” to Serial Number 24494 per Master Change 3245MK3247.
- Revised registry number for Serial Numbers 23977, 23981, 24493, 24683 and 24684.
- Configuration Qualification [8] added.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-90-001

- Revised ordering information.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 13

This revision increases the Maximum Taxi Weight to 150500 pounds, the Maximum Takeoff Weight to 150000 pounds, the Maximum Landing Weight to 124000 pounds and the Maximum Zero Fuel Weight to 117000 pounds for Serial Number 24903 (PW039) per Master Change 3245MK3241. This requires incorporation of Boeing Service Bulletin 737-32-1398. In addition, miscellaneous changes are being made to the manual. Details of the changes made to each section are listed below.

TITLE PAGE

- Updated reference of Air Transport Association (ATA) Specification No. 100 to i2200, “Information Standards for Aviatioin Maintenance”.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Revised paragraph to redefine applicability of data.
- Assigned Configuration “C” to Serial Number 24903 per Master Change 3245MK3241.
- Revised registry number for Serial Number 23980.
- Revised registry number for Serial Number 24512.
- Revised registry number for Serial Number 24691.
- Revised registry number for Serial Number 24692.
- Revised registry number for Serial Number 24693.
- Revised registry number for Serial Number 24903.
- Revised registry number for Serial Number 24911.
- Revised registry number for Serial Number 25177.
- Revised registry number for Serial Number 26066.
- Revised registry number for Serial Number 26081.
- Configuration Qualification [7] added.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-001

- Added “taxi” to operations which need airplane balance accounted for, removed reference to Federal Aviation Regulations Part 121, and added reference to Advisory Circular AC 120-27D.
- Added additional information concerning Advisory Circular AC 120-27D.
- Updated reference of FAA Advisory Circular 120-27D to FAA Advisory Circular 120-27E.

1-02-013

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-014

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-017

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-018

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-021

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 13 (Continued)

1-02-022

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-023

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-026

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-027

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-034

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-037

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-038

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-039

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-045

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-02-057

- Added reference to Airplane Maintenance Manual Section 12-15-51 for tire pressure requirements.

1-06-001

- Added tolerance data to pages 3 and 4.

1-40-001

- Updated reference of FAA Advisory Circular 120-27D to FAA Advisory Circular 120-27E.

1-60-001

- Removed the “Linear Loading” subtitle and consolidated two columns to “Floor Loading” subtitle. Revised footnote [a].

1-60-002

- Removed the “Linear Loading” subtitle and consolidated two columns to “Floor Loading” subtitle. Revised footnote [a].

1-60-006

- Removed the “Linear Loading” subtitle and consolidated two columns to “Floor Loading” subtitle. Revised footnote [a].

1-60-008

- Removed the “Linear Loading” subtitle and consolidated two columns to “Floor Loading” subtitle. Revised footnote [a].

1-80-051

- Added equations for nose landing gear jack point and wheel center line.

1-80-081

- Added equations for main landing gear jackpoint and wheel center line.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 13 (Continued)

1-82-001

- Updated reference of FAA Advisory Circular 120-27C to FAA Advisory Circular 120-27E.
- Revised sentence for airplane weighing on Page 1. Revised wording on table from “Nose up” to “Tail down” to reflect wording of actual airplane placard.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 12

This revision decreases the MTOW from 150000 LB to 143000 LB for Serial Number 26066 per Master Change 0310MK3AAO.

GENERAL

- Added Section 1-02-026 to manual.
- Added Configuration “J” per Master Change 0310MK3AAO.

TITLE PAGE

- Revised document numbering derivative designators.
- Updated wording.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “J” to Serial Number 26066 per Master Change 0310MK3AAO.
- Removed Configuration “F” from Serial Number 26066 per Master Change 0310MK3AAO.
- Revised registry number for Serial Number 23869.
- Revised registry number for Serial Number 23981.
- Revised registry number for Serial Number 24345.
- Revised registry number for Serial Number 24467.
- Revised registry number for Serial Number 24469.
- Revised registry number for Serial Number 24493.
- Revised registry number for Serial Number 24494.
- Revised registry number for Serial Number 24511.
- Revised registry number for Serial Number 24513.
- Revised registry number for Serial Number 24519.
- Revised registry number for Serial Number 24520.
- Revised registry number for Serial Number 24682.
- Revised registry number for Serial Number 24687.
- Revised registry number for Serial Number 24688.
- Revised registry number for Serial Number 24690.
- Revised registry number for Serial Number 24692.
- Revised registry number for Serial Number 24769.
- Revised registry number for Serial Number 24904.
- Revised registry number for Serial Number 24911.
- Revised registry number for Serial Number 25180.
- Revised registry number for Serial Number 26069.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-001

- Added information to interpolate between inflection points for certified weight and center of gravity limits. Removed operational empty weight variation.

1-02-021

- Corrected forward inflection point for Maximum Takeoff Weight.

1-02-026

- Applicable Configuration(s) set to “J”.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 12 (Continued)

1-02-027

- Corrected aft inflection point for Maximum Takeoff Weight.

1-20-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, G, J, L, M, N, P, R, S, T, V, W, Y, AA”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, G, J, L, M, N, P, R, S, T, V, W, Y, AA”.

1-24-031

- Adding line in liters table for Auxiliary fuel tank.

1-34-001

- Changed Applicable Configuration(s)
  from “A, B, C, F, G, H, L, M, N, P, R, S, T, W, Y, AA”
  to “A, B, C, F, G, H, J, L, M, N, P, R, S, T, W, Y, AA”.

1-40-001

- Revised data per FAA Advisory Circular 120-27D.

1-60-006

- Changed Applicable Configuration(s) from “F, G, N, W” to “F, G, J, N, W”.

1-62-005

- Changed Applicable Configuration(s) from “F, G, N, W” to “F, G, J, N, W”.

1-62-042

- Changed Applicable Configuration(s) from “F, G, H, N, W” to “F, G, H, J, N, W”.

1-62-061

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, G, J, L, M, N, P, R, S, T, V, W, Y, AA”.

1-68-001

- Revised cargo compartment tiedown procedures.

1-80-002

- Changed Applicable Configuration(s)
  from “B, C, D, E, F, G, H, L, M, N, R, S, T, U, V, W, AA”
  to “B, C, D, E, F, G, H, J, L, M, N, R, S, T, U, V, W, AA”.

1-90-001

- Removed reference to Standardized Loading Schedule.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 11

This revision decreases the MTW to 129500 LB, MTOW to 129000 LB, MLW to 121000 LB and MZFW to 113000 LB for Serial Number 26069 per Master Change 0311MK3212.

GENERAL

- Added Section 1-02-057 to manual.
- Added Configuration “G” .

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “G” to Serial Number 26069 per Master Change 0311MK3212.
- Removed Configuration “F” from Serial Number 26069 per Master Change 0311MK3212.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-057

- Applicable Configuration(s) set to “G”.

1-20-001

- Changed Applicable Configuration(s) from “A, B, C, E, F, L, M, N, P, R, S, T, V, W, Y, AA” to “A, B, C, E, F, G, L, M, N, P, R, S, T, V, W, Y, AA”.

1-22-001

- Changed Applicable Configuration(s) from “A, B, C, E, F, L, M, N, P, R, S, T, V, W, Y, AA” to “A, B, C, E, F, G, L, M, N, P, R, S, T, V, W, Y, AA”.

1-34-001

- Changed Applicable Configuration(s) from “A, B, C, F, H, L, M, N, P, R, S, T, W, Y, AA” to “A, B, C, F, G, H, L, M, N, P, R, S, T, W, Y, AA”.

1-60-006

- Changed Applicable Configuration(s) from “F, N, W” to “F, G, N, W”.

1-62-005

- Changed Applicable Configuration(s) from “F, N, W” to “F, G, N, W”.

1-62-042

- Changed Applicable Configuration(s) from “F, H, N, W” to “F, G, H, N, W”.

1-62-061

- Changed Applicable Configuration(s) from “A, B, C, E, F, L, M, N, P, R, S, T, V, W, Y, AA” to “A, B, C, E, F, G, L, M, N, P, R, S, T, V, W, Y, AA”.

1-80-002

- Changed Applicable Configuration(s) from “B, C, D, E, F, H, L, M, N, R, S, T, U, V, W, AA” to “B, C, D, E, F, G, H, L, M, N, R, S, T, U, V, W, AA”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 10

This revision increases Maximum Taxi Weight to 143000 LB and Maximum Takeoff Weight to 142500 LB per Master Change 0311MK3136 for Serial Number 24469 and made miscellaneous changes to the manual. Details of changes made to each section are listed below.

GENERAL

- Removed Section 1-02-012 from manual.
- Removed Configuration “K” (no longer applicable).

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Revised registry number for Serial Numbers 23978, 23979 and 26071.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-013

- Adjusted the aft limit inflection point back to 28.8% from 28.7% which was right in the first place.

1-02-014

- Adjusted the aft limit inflection point back to 28.8% from 28.7% which was right in the first place.

1-02-017

- Adjusted the aft limit inflection point back to 28.8% from 28.7% which was right in the first place.

1-02-018

- Adjusted the aft limit inflection point back to 28.8% from 28.7% which was right in the first place.

1-20-001

- Changed Applicable Configuration(s) from “A, B, C, E, F, K, L, M, N, P, R, S, T, V, W, Y, AA” to “A, B, C, E, F, L, M, N, P, R, S, T, V, W, Y, AA”.

1-22-001

- Changed Applicable Configuration(s) from “A, B, C, E, F, K, L, M, N, P, R, S, T, V, W, Y, AA” to “A, B, C, E, F, L, M, N, P, R, S, T, V, W, Y, AA”.

1-34-001

- Changed Applicable Configuration(s) from “A, B, C, F, H, K, L, M, N, P, R, S, T, W, Y, AA” to “A, B, C, F, H, L, M, N, P, R, S, T, W, Y, AA”.

1-60-001

- Changed Applicable Configuration(s) from “A, B, C, E, K, L, M, P, R, S, T, V, Y, AA” to “A, B, C, E, L, M, P, R, S, T, V, Y, AA”.

1-62-001

- Changed Applicable Configuration(s) from “A, B, C, E, K, L, M, P, R, S, T, V, Y, AA” to “A, B, C, E, L, M, P, R, S, T, V, Y, AA”.

1-62-041

- Changed Applicable Configuration(s) from “A, B, C, D, E, K, L, M, P, R, S, T, U, V, Y, AA” to “A, B, C, D, E, L, M, P, R, S, T, U, V, Y, AA”.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 10 (Continued)

1-62-061

- Changed Applicable Configuration(s) from “A, B, C, E, F, K, L, M, N, P, R, S, T, V, W, Y, AA” to “A, B, C, E, F, L, M, N, P, R, S, T, V, W, Y, AA”.

1-80-002

- Changed Applicable Configuration(s) from “B, C, D, E, F, H, K, L, M, N, R, S, T, U, V, W, AA” to “B, C, D, E, F, H, L, M, N, R, S, T, U, V, W, AA”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 9

This revision increases the Maximum Takeoff Weight (MTOW) from 130000 LB to 142500 LB and the Maximum Taxi Weight (MTW) from 130500 LB to 143000 LB for Serial Numbers 23869, 23977 and 23978 per Master Change 0311MK3136.

GENERAL

- Removed Section 1-02-011 from manual.
- Removed Configuration “J” (no longer applicable).

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “A” to Serial Number 23869 per Master Change 0311MK3136.
- Assigned Configuration “A” to Serial Number 23977 per Master Change 0311MK3136.
- Assigned Configuration “A” to Serial Number 23978 per Master Change 0311MK3136.
- Removed Configuration “J” from Serial Number 23869 per Master Change 0311MK3136.
- Removed Configuration “J” from Serial Number 23977 per Master Change 0311MK3136.
- Removed Configuration “J” from Serial Number 23978 per Master Change 0311MK3136.
- Removed Serial Number 23867.
- Removed Serial Number 26074.
- Removed Configuration “A” from Serial Number 23867 (removed Serial Number 23867 from service).
- Removed Configuration “F” from Serial Number 26074 (removed Serial Number 26074 from service).
- Revised registry numbers for Serial Numbers 25190 and 24689.

INTERIOR EFFECTIVITY

- Removed Serial Number 23867.
- Removed Serial Number 26074.
- Removed LOPS-374-0137 from Serial Number 23867.
- Removed LOPS-374-0485 from Serial Number 26074.

1-02-013

- Adjusted the aft limit inflection point from 132000 LB at 28.8% to 132000 Lb at 28.7%.

1-02-014

- Adjusted the aft limit inflection point from 132000 LB at 28.8% to 132000 LB at 28.7%.

1-02-017

- Adjusted the aft limit inflection point from 132000 LB at 28.8% to 132000 LB at 28.7%.

1-02-018

- Adjusted the aft limit inflection point from 132000 LB at 28.8% to 132000 LB at 28.7%.

1-20-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, J, K, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, K, L, M, N, P, R, S, T, V, W, Y, AA”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, J, K, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, K, L, M, N, P, R, S, T, V, W, Y, AA”.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 9 (Continued)

1-34-001

- Changed Applicable Configuration(s)
  from “A, B, C, F, H, J, K, L, M, N, P, R, S, T, W, Y, AA”
  to “A, B, C, F, H, K, L, M, N, P, R, S, T, W, Y, AA”.

1-60-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, J, K, L, M, P, R, S, T, V, Y, AA”
  to “A, B, C, E, K, L, M, P, R, S, T, V, Y, AA”.

1-62-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, J, K, L, M, P, R, S, T, V, Y, AA”
  to “A, B, C, E, K, L, M, P, R, S, T, V, Y, AA”.

1-62-041

- Changed Applicable Configuration(s)
  from “A, B, C, D, E, J, K, L, M, P, R, S, T, U, V, Y, AA”
  to “A, B, C, D, E, K, L, M, P, R, S, T, U, V, Y, AA”.

1-62-061

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, J, K, L, M, N, P, R, S, T, V, W, Y, AA”
  to “A, B, C, E, F, K, L, M, N, P, R, S, T, V, W, Y, AA”.

1-80-001

- Changed Applicable Configuration(s) from “A, J, P, Y” to “A, P, Y”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 8

This revision increases the MTOW to 143500 LB from 142500 LB for Serial Number 23980 per Master Change 0311MK3127.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “Y” to Serial Number 23980 per Master Change 0311MK3127.
- Removed Configuration “A” from Serial Number 23980 per Master Change 0311MK3127.
- Revised Registry Numbers for Serial Numbers 23979, 24513, and 25177.

INTERIOR EFFECTIVITY

- Updated for this revision.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 7

This revision increases the MTOW to 150000 LB from 142500 LB, MLW to 124000 LB from 121000 LB and MZFW to 117000 LB from 113000 LB for Serial Number 25177 per Master Change 0310MK3987.

GENERAL

- Removed Configuration “G” (no longer applicable).

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “F” to Serial Number 25177 per Master Change 0310MK3987.
- Removed Configuration “G” from Serial Number 25177 per Master Change 0310MK3987.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-022

- Changed Applicable Configuration(s) from “B, G” to “B”.

1-20-001

- Changed Applicable Configuration(s)
  from “A, AA, B, C, E, F, G, J, K, L, M, N, P, R, S, T, V, W, Y”
  to “A, AA, B, C, E, F, J, K, L, M, N, P, R, S, T, V, W, Y”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, AA, B, C, E, F, G, J, K, L, M, N, P, R, S, T, V, W, Y”
  to “A, AA, B, C, E, F, J, K, L, M, N, P, R, S, T, V, W, Y”.

1-34-001

- Changed Applicable Configuration(s)
  from “A, AA, B, C, F, G, H, J, K, L, M, N, P, R, S, T, W, Y”
  to “A, AA, B, C, F, H, J, K, L, M, N, P, R, S, T, W, Y”.

1-60-006

- Changed Applicable Configuration(s) from “F, G, N, W” to “F, N, W”.

1-62-005

- Changed Applicable Configuration(s) from “F, G, N, W” to “F, N, W”.

1-62-042

- Changed Applicable Configuration(s) from “F, G, H, N, W” to “F, H, N, W”.

1-62-061

- Changed Applicable Configuration(s)
  from “A, AA, B, C, E, F, G, J, K, L, M, N, P, R, S, T, V, W, Y”
  to “A, AA, B, C, E, F, J, K, L, M, N, P, R, S, T, V, W, Y”.

1-80-002

- Changed Applicable Configuration(s)
  from “AA, B, C, D, E, F, G, H, K, L, M, N, R, S, T, U, V, W”
  to “AA, B, C, D, E, F, H, K, L, M, N, R, S, T, U, V, W”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 6

This revision increases the MLW to 124000 LB from 121000 LB and MZFW to 117000 LB from 113000 LB for Serial Number 24511 per Master Change 0310MK3104.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “C” to Serial Number 24511 per Master Change 0310MK3104.
- Configuration Qualification [6] added.

INTERIOR EFFECTIVITY

- Updated for this revision.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 5

This revision increases the MTOW to 150000 LB from 142500 LB for Serial Number 24511 per Master Change 0310MK3895.

GENERAL

- Added Section 1-02-039 to manual.
- Added Configuration “S” .

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Revised registry numbers for Serial Numbers 23980, 24511, 24688, 26066, and 26081.
- Assigned Configuration “S” to Serial Number 24511 per Master Change 0310MK3895.
- Removed Configuration “B” from Serial Number 24511 per Master Change 0310MK3895.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-00-001

- Added additional definitions .

1-02-039

- Applicable Configuration(s) set to “S”.

1-20-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y, AA”
  to “A, AA, B, C, E, F, G, J, K, L, M, N, P, R, S, T, V, W, Y”.

1-22-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y, AA”
  to “A, AA, B, C, E, F, G, J, K, L, M, N, P, R, S, T, V, W, Y”.

1-34-001

- Changed Applicable Configuration(s)
  from “A, B, C, F, G, H, J, K, L, M, N, P, R, T, W, Y, AA”
  to “A, AA, B, C, F, G, H, J, K, L, M, N, P, R, S, T, W, Y”.

1-60-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, J, K, L, M, P, R, T, V, Y, AA”
  to “A, AA, B, C, E, J, K, L, M, P, R, S, T, V, Y”.

1-62-001

- Changed Applicable Configuration(s)
  from “A, B, C, E, J, K, L, M, P, R, T, V, Y, AA”
  to “A, AA, B, C, E, J, K, L, M, P, R, S, T, V, Y”.

1-62-041

- Changed Applicable Configuration(s)
  from “A, B, C, D, E, J, K, L, M, P, R, T, U, V, Y, AA”
  to “A, AA, B, C, D, E, J, K, L, M, P, R, S, T, U, V, Y”.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 5 (Continued)

1-62-061

- Changed Applicable Configuration(s)
  from “A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y, AA”
  to “A, AA, B, C, E, F, G, J, K, L, M, N, P, R, S, T, V, W, Y”.

1-80-002

- Changed Applicable Configuration(s)
  from “B, C, D, E, F, G, H, K, L, M, N, R, T, U, V, W, AA”
  to “AA, B, C, D, E, F, G, H, K, L, M, N, R, S, T, U, V, W”.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 4

This revision decreases the MTOW to 142500 LB from 143500 LB and MTW to 143000 LB from 144000 for Serial Numbers 23980 and 24314 per Master Change 0310MK3957. In addition, various registry numbers were also updated.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “A” to Serial Number 23980 per Master Change 0310MK3957.
- Assigned Configuration “A” to Serial Number 24314 per Master Change 0310MK3957.
- Removed Configuration “Y” from Serial Number 23980.
- Removed Configuration “Y” from Serial Number 24314.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-00-001

- Added definition for Minimum Flight Weight.

1-22-001

- Added information pertaining to the center tank fuel pumps.

1-90-001

- Revised ordering instructions.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 3

This revision increases the MTOW to 143500 LB from 142500 LB and MTW to 144000 LB from 143000 for serial number 23981 per Master Change 0310MK3838.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration "Y" to Serial Number 23981 per Master Change 0310MK3838.
- Removed Configuration "A" from Serial Number 23981.
- Updated various Registry Numbers.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-06-001

- Added tolerance data.

1-20-001

- Added a fuel quantity restriction for the center tank.
- Removed fuel quantity restriction for the center tank since Service Bulletin 737-28A1132 is now expired.

1-20-002

- Added a fuel quantity restriction for the center tank.
- Removed fuel quantity restriction for the center tank.

1-20-003

- Removed fuel quantity restriction for the auxiliary tank since Service Bulletin 737-28A1132 is now expired.

1-24-021

- Added a fuel quantity restriction.
- Removed fuel quantity restriction.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 2

This revision increases the MTW to 144,000 LB from 139,000 LB and MTOW to 143,500 LB from 138,500 LB for Serial Number 24345 per Master Change 0310MK3765.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “Y” to Serial Number 24345 per Master Change 0310MK3765.
- Removed Configuration “P” from Serial Number 24345 per Master Change 0310MK3765.

INTERIOR EFFECTIVITY

- Updated for this revision.

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: 1

This revision decreases the MTW to 128,300 LB from 150,500 LB and the MTOW to 127,800 LB from 150,000 LB for Serial Number 24545 per Master Change 0310MK3763 and increases the MTW to 143,000 LB from 139,000 LB and the MTOW to 142,500 LB from 138,500 LB for Serial Number 23865 per Master Change 0310MK3748.

GENERAL

- Added Section 1-02-045 to manual.
- Added Configuration “AA” per Master Change 0310MK3763.

TABLE OF CONTENTS

- Updated for this revision.

AIRPLANE CONFIGURATION

- Assigned Configuration “A” to Serial Number 23865 per Master Change 0310MK3748.
- Assigned Configuration “AA” to Serial Number 24545 per Master Change 0310MK3763.
- Updated Registry Numbers for Serial Numbers 24545, 24682, 24688, 24689 and 25180.
- Removed Configuration “C” from Serial Number 24545 per Master Change 0310MK3763.
- Removed Configuration “P” from Serial Number 23865 per Master Change 0310MK3748.

INTERIOR EFFECTIVITY

- Updated for this revision.

1-02-034

- Revised the certified gross weights in pounds and corrected the kilogram C.G. limits diagram.

1-02-045

- Applicable Configuration(s) set to “AA”.

1-20-001

- Changed Applicable Configuration(s)
  from A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y
  to A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y, AA

1-22-001

- Changed Applicable Configuration(s)
  from A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y
  to A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y, AA

1-34-001

- Changed Applicable Configuration(s)
  from A, B, C, F, G, H, J, K, L, M, N, P, R, T, W, Y
  to A, B, C, F, G, H, J, K, L, M, N, P, R, T, W, Y, AA

1-60-001

- Changed Applicable Configuration(s)
  from A, B, C, E, J, K, L, M, P, R, T, V, Y
  to A, B, C, E, J, K, L, M, P, R, T, V, Y, AA

1-62-001

- Changed Applicable Configuration(s)
  from A, B, C, E, J, K, L, M, P, R, T, V, Y
  to A, B, C, E, J, K, L, M, P, R, T, V, Y, AA

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: 1 (Continued)

1-62-041

- Changed Applicable Configuration(s)
  from A, B, C, D, E, J, K, L, M, P, R, T, U, V, Y
  to A, B, C, D, E, J, K, L, M, P, R, T, U, V, Y, AA

1-62-061

- Changed Applicable Configuration(s)
  from A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y
  to A, B, C, E, F, G, J, K, L, M, N, P, R, T, V, W, Y, AA

1-80-002

- Changed Applicable Configuration(s)
  from B, C, D, E, F, G, H, K, L, M, N, R, T, U, V, W
  to B, C, D, E, F, G, H, K, L, M, N, R, T, U, V, W, AA

APPLICABLE CONFIGURATIONS
All

Highlights Revision No: Original Release

The information in this document (D043A540-GUI1) replaces and supercedes the information in “Weight and Balance Control and Loading Manual”, document D6-15066-5.4, Revision 24. The old document (D6-15066-5.4) will no longer be revised or kept up to date and should either be destroyed or archived for historical purposes.

This new document reflects an improved, standardized format for Weight and Balance Manuals produced by Boeing Commercial Airplanes. We are presently in the process of migrating all current production model Weight and Balance Manuals to this standard format.

There are significant changes in the presentation and arrangement of data within this document; much of the information provided has been reworked to improve its usefulness. However, due to the extensive nature of these changes, they will not all be itemized in the revision highlights. The content of this document should be considered equivalent to the content of D6-15066-5.4, Revision 24; which is the last and final revision issued for that document.

Note that the method of associating Chapter-Section-Subject (CHP-SEC-SUB) data sections to the aircraft to which they apply is different than the method previously used on the 737 Weight and Balance Manuals. The new method is described in the introduction to this document.

Also, all interior arrangement data is now collected into one CHP-SEC-SUB data section (1-44-020), and a new section, “Interior Effectivity” has been added to associate individual interior data sets in 1-44-020 to the aircraft serial numbers on which they are certified.

Furthermore, a new section, the “Table of Contents”, replaces the “Log of Pages” section. The “Table of Contents” shows the following information: the section title, the CHP-SEC-SUB number, the current revision date, and the Configuration letters associated with it (unless the section applies to every configuration in the manual, in which case the word “All” is shown). To determine if you have received a complete document, check each section listed in the “Table of Contents” and confirm that the section is included in this document. The total number of pages for each section is specified at the bottom of every page contained within it (e.g. “Page 1 of 4”, where “4” represents the total number of pages in the section).

The following is a more itemized explanation of significant revisions that have been made.

1-02-014

Values for the aft limit on the center of gravity grid have been revised.

1-02-022

Values for the aft limit on the center of gravity grid have been revised.

1-02-023

Values for the aft limit on the center of gravity grid have been revised.

1-02-034

Values for the aft limit on the center of gravity grid have been revised.

1-06-001

Presentation of the takeoff horizontal stabilizer trim settings has been revised.

APPLICABLE CONFIGURATIONS
All

HIGHLIGHTS REVISION NO: ORIGINAL RELEASE (Continued)

1-08-001

Presentation for flaps retraction moments has significantly changed.

1-20-00x

Unusable fuel locations have been revised.

1-24-xxx

The fuel tank quantities presentation has changed from even units of weight vs. balance arm to even units of volume vs. balance arm.

1-44-020

Passenger balance arm locations have been revised for LOPS-374-0164.

1-60-xxx

Maxiumum allowable weights for the cargo compartments have been revised.

1-62-xxx

Cargo compartment centroids have changed to volumetric instead of area. As a result, the balance arm locations of the cargo compartments have been revised.

Allowable Package Size data have been revised.

1-82-001

Non-level weighing procedures have been added.

1-84-001

Towing and tipping limits have been added.

1-90-001

Loading schedule development has been replaced with document number D043A640-TBC01 entitled “Loading Schedule Substantiation for Example Universal Index Type System”.

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS (Continued)

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS (Continued)

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS (Continued)

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS (Continued)

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS (Continued)

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS (Continued)

APPLICABLE CONFIGURATIONS
All

TABLE OF CONTENTS (Continued)

APPLICABLE CONFIGURATIONS
All

AIRPLANE CONFIGURATION

The engineering data and FAA certification provided by this document are applicable and valid only for the airplane as defined in the Type Design at delivery, and as modified by the incorporation of any Boeing Supplemental Type Certificate (STC) or Service Bulletin. With respect to any third party STC configuration, either pre-delivery or post-delivery, it shall be the responsibility of the buyer to obtain the data and appropriate regulatory agency approval.

CONFIGURATION ASSIGNMENT

The table shown below correlates each airplane serial number to the currently allowed configuration(s) for that airplane. Each configuration is designated by a different letter. Configuration qualifications are listed following the table and indicate the change authorization involved for airplanes with multiple allowable configurations. Because there may be multiple configuration letters applicable to any serial number, and also multiple configuration qualifications listed for any configuration letter, care should be exercised when determining the configuration letter which correctly reflects the applicable configuration of the airplane.

LINE NUMBER	SERIAL NUMBER	VARIABLE NUMBER	CONFIGURATION						
1582	23865	PW001	A	Y[9]					
1589	23866	PW002	A						
1616	23868	PW004	A						
1639	23869	PW005	A						
1647	23870	PW006	A						
1651	23976	PW007	A						
1659	23978	PW009	A						
1661	23979	PW010	A						
1667	23980	PW011	Y						
1678	23981	PW012	Y						
1680	24314	PW013	A						
1723	24344	PW014	P						
1731	24345	PW015	Y						
1733	24467	PW016	B						
1747	24468	PW017	R						
1749	24469	PW018	B						
1751	24493	PW019	B	C[10]					
1757	24494	PW020	B	S[8]					
1759	24511	PW021	S	C[6]					
1777	24512	PW022	C						
1779	24513	PW023	B						
1781	24519	PW024	C						
1803	24520	PW025	B						
1805	24545	PW026	K						
1901	24683	PW028	C						
1841	24684	PW029	C						

APPLICABLE CONFIGURATIONS
All

AIRPLANE CONFIGURATION (Continued)

LINE NUMBER	SERIAL NUMBER	VARIABLE NUMBER	CONFIGURATION						
1859	24685	PW030	C						
1861	24686	PW031	B						
1865	24687	PW032	L	M[1]					
1876	24688	PW033	B	C[1]					
1883	24689	PW034	C						
1885	24690	PW035	C						
1904	24691	PW036	C						
1963	24692	PW037	C						
1972	24693	PW038	B						
1839	24769	PW517	D	E[2]	U[4]	V[5]			
1978	24903	PW039	B	C[7]					
1988	24904	PW040	C						
2009	24906	PW041	B	C[12]					
2033	24911	PW042	B	C[1]					
2064	24912	PW043	B	S[11]					
2055	24915	PW044	B						
2071	24917	PW045	F						
2176	25177	PW046	F						
2199	25178	PW047	N	H[3]					
2201	25180	PW048	F						
2203	25181	PW049	F						
2227	25184	PW050	F						
2256	25190	PM551	F						
2258	25261	PM552	F						
2284	26065	PM553	F						
2301	26066	PM554	F						
2352	26069	PM555	G						
2361	26071	PM556	F						
2375	26073	PM557	F						
2425	26077	PM559	F						
2431	26078	PM560	F						
2442	26081	PM561	F	W[4]					
2468	26085	PM562	F						
2475	26086	PM563	F						
2487	26088	PM564	F						

CONFIGURATION QUALIFICATIONS

[1] Upon incorporation of Boeing Service Bulletin 737-32-1258 (Increase MTW to 150,500 LB from 143,000).

APPLICABLE CONFIGURATIONS
All

AIRPLANE CONFIGURATION (Continued)

[2] Upon incorporation of Boeing Service Bulletin 737-28-1079 (Auxiliary Tank Removal and Installation).

[3] Upon installation of Rogerson 500 Gal. auxiliary fuel tank.

[4] Upon incorporation of Boeing Service Bulletin 737-11-1062 (Change of Placard Installation between Basic and Alternate MTW).

[5] Upon incorporation of Boeing Service Bulletins 737-78-1079 and 737-11-1062.

[6] Upon incorporation of Boeing Service Bulletin 737-32-1364 (Landing Gear-Main Landing Gear-Replacement of Forty Inch Tires with Forty-Two Inch Tires).

[7] Upon incorporation of Boeing Service Bulletin 737-32-1398 (Landing Gear - Main Gear Wheel and Tire - Increase Maximum Takeoff Weight to 150,000 Pounds, Maximum Taxi Weight to 150,500 Pounds, Maximum Landing Weight to 124,000 Pounds, Maximum Zero Fuel Weight to 117,000 Pounds).

[8] Upon incorporation of Boeing Service Bulletin 737-32-1406 (Main Gear Wheel and Tire - Replace Main Landing Gear Wheels and Tires to Increase Maximum Takeoff Weight from 142,500 Pounds to 150,000 Pounds).

[9] Upon incorporation of Boeing Service Bulletin 737-11-1185 (Placards and Markings - Exterior Placards and Markings - Replace Tire Inflation Placards to Increase Maximum Taxi Weight to 144,000 Pounds and Maximum Takeoff Weight to 143,500 Pounds).

[10] Upon incorporation of Boeing Service Bulletin 737-32-1464 (Landing Gear - Tires and Wheels - Change to increase Maximum Takeoff Weight to 150,000 Pounds, Maximum Taxi Weight to 150,500 Pounds, Maximum Landing Weight to 124,000 Pounds, and Maximum Zero Fuel Weight to 117,000 Pounds).

[11] Upon incorporation of Boeing Service Bulletin 737-32-1481 (Landing Gear - Tires and Wheels - Change to increase Maximum Takeoff Weight to 150,000 Pounds and Maximum Taxi Weight to 150,500 Pounds).

[12] Upon incorporation of Boeing Service Bulletin 737-32-1482 (LANDING GEAR - Tires and Wheels - Change to increase Maximum Takeoff Weight from 142,500 Pounds to 150,000 Pounds).

APPLICABLE CONFIGURATIONS
All

INTERIOR EFFECTIVITY

The tabular data shown below correlates each airplane serial number to the passenger arrangement(s) certified for that airplane. Each passenger arrangement is designated by drawing number and revision letter. To locate a particular passenger arrangement(s), refer to the interior section listed below. Drawing numbers are listed beside each interior drawing in the interior section.

MAIN CABIN

Weight and balance data for each drawing identified in the following table are provided in Section 1-44-020 of this manual.

SERIAL NUMBER	VARIABLE NUMBER	PASSENGER ARRANGEMENT EFFECTIVITY - MAIN CABIN					
		DRAWING #	REV	DRAWING #	REV	DRAWING #	REV
23865	PW001	LOPS-374-0137	E				
23866	PW002	LOPS-374-0137	E				
23868	PW004	LOPS-374-0137	E				
23869	PW005	LOPS-374-0137	E				
23870	PW006	LOPS-374-0137	E				
23976	PW007	LOPS-374-0137	E				
23978	PW009	LOPS-374-0137	E				
23979	PW010	LOPS-374-0137	E				
23980	PW011	LOPS-374-0137	E				
23981	PW012	LOPS-374-0137	E				
24314	PW013	LOPS-374-0137	E				
24344	PW014	LOPS-374-0137	E				
24345	PW015	LOPS-374-0485	E				
24467	PW016	LOPS-374-0485	E				
24468	PW017	LOPS-374-0485	E				
24469	PW018	LOPS-374-0485	E				
24493	PW019	LOPS-374-0485	E				
24494	PW020	LOPS-374-0485	E				
24511	PW021	LOPS-374-0485	E				
24512	PW022	LOPS-374-0485	E				
24513	PW023	LOPS-374-0485	E				
24519	PW024	LOPS-374-0485	E				
24520	PW025	LOPS-374-0485	E				
24545	PW026	LOPS-374-0485	E				
24683	PW028	LOPS-374-0485	E				
24684	PW029	LOPS-374-0485	E				
24685	PW030	LOPS-374-0485	E				
24686	PW031	LOPS-374-0485	E				
24687	PW032	LOPS-374-0485	E				
24688	PW033	LOPS-374-0485	E				
24689	PW034	LOPS-374-0485	E				

APPLICABLE CONFIGURATIONS
All

INTERIOR EFFECTIVITY (Continued)

SERIAL NUMBER	VARIABLE NUMBER	PASSENGER ARRANGEMENT EFFECTIVITY - MAIN CABIN					
		DRAWING #	REV	DRAWING #	REV	DRAWING #	REV
24690	PW035	LOPS-374-0485	E				
24691	PW036	LOPS-374-0485	E				
24692	PW037	LOPS-374-0485	E				
24693	PW038	LOPS-374-0485	E				
24769	PW517	LOPS-374-0164	T				
24903	PW039	LOPS-374-0485	E				
24904	PW040	LOPS-374-0485	E				
24906	PW041	LOPS-374-0485	E				
24911	PW042	LOPS-374-0485	E				
24912	PW043	LOPS-374-0485	E				
24915	PW044	LOPS-374-0485	E				
24917	PW045	LOPS-374-0697	A				
25177	PW046	LOPS-374-0485	E				
25178	PW047	LOPS-374-0485	E				
25180	PW048	LOPS-374-0485	E				
25181	PW049	LOPS-374-0698	A				
25184	PW050	LOPS-374-0698	A				
25190	PM551	LOPS-374-0485	E				
25261	PM552	LOPS-374-0485	E				
26065	PM553	LOPS-374-0485	E				
26066	PM554	LOPS-374-0485	E				
26069	PM555	LOPS-374-0485	E				
26071	PM556	LOPS-374-0485	E				
26073	PM557	LOPS-374-0485	E				
26077	PM559	LOPS-374-0485	E				
26078	PM560	LOPS-374-0485	E				
26081	PM561	LOPS-374-0485	E				
26085	PM562	LOPS-374-0485	E				
26086	PM563	LOPS-374-0485	E				
26088	PM564	LOPS-374-0485	E				

APPLICABLE CONFIGURATIONS
All

GENERAL INFORMATION

WEIGHT AND BALANCE DEFINITIONS

The following definitions are provided to assist operators in having a better understanding of the terms used throughout the Weight and Balance Manual.

General Terms or Acronyms

Balance Arm (B.A.)	A true measure of distance from forward to aft, in inches, from a fixed datum. The fixed datum is selected by the airplane manufacturer. Balance Arms are used in weight and balance calculations. To see the relationship between B.A. and B.S., refer to CHP-SEC-SUB 1-00-04x of this manual.
Body Station (B.S.)	A manufacturing location on the airplane. For first of an airplane model, B.S. are continuous from the front to the aft of the airplane. For later versions that are either stretched (i.e. fuselage inserts added) or shrunk (i.e. fuselage sections removed), B.S. becomes discontinuous, for manufacturing reasons. To see the relationship between B.A. and B.S., refer to CHP-SEC-SUB 1-00-04x of this manual.
Layout of Passenger Arrangement (LOPA)	A Boeing internal drawing that depicts the interior layout.
Layout of Passenger Systems (LOPS)	A Boeing internal drawing that depicts the interior layout.

Weight Terms

Basic Empty Weight (BEW)	Standard Basic Empty Weight plus or minus weight of standard item variations.
Delivery Empty Weight (DEW)	Manufacturer's Empty Weight, less any shortages, plus those standard items and operational items in aircraft at time of delivery.
Fleet Empty Weight (FEW)	Average Basic Empty Weight used for a fleet or group of aircraft of the same model and configuration. (The weight of any fleet member shall not vary more than the tolerance established by government regulations.)
Guaranteed Weight	Weight the manufacturer clearly defines and guarantees, subject to contractual tolerances and adjustments.
Manufacturer's Empty Weight (MEW)	Weight of structure, powerplant, furnishings, systems and other items of equipment that are an integral part of a particular aircraft configuration. (It is essentially a “dry” weight, including only those fluids contained in closed systems.)
Maximum Payload	Maximum Zero Fuel Weight minus Operational Empty Weight.
Operational Empty Weight (OEW)	Basic Empty Weight or Fleet Empty Weight plus operational items.

GENERAL INFORMATION (Continued)

Operational Items	Personnel, equipment and supplies necessary for a particular operation but not included in Basic Empty Weight. These items may vary for a particular aircraft and may include, but are not limited to, the following: ❑ Crew and Baggage ❑ Manuals and navigational equipment ❑ Removable service equipment for cabin, galley and bar ❑ Food and beverage, including liquor ❑ Usable fluids other than those in useful load ❑ Life rafts, life vests and emergency transmitters ❑ Aircraft unit load devices
Operational Landing Weight (OLW)	Maximum authorized weight for landing. (It is subject to airport, operational and related restrictions. It must not exceed maximum certified landing weight.)
Operational Takeoff Weight (OTOW)	Maximum authorized weight for takeoff. (It is subject to airport, operational and related restrictions. This is the weight at start of takeoff run and must not exceed maximum certified takeoff weight.)
Payload	Weight of the passengers, cargo and baggage. (These may be revenue and/or nonrevenue.)
Standard Basic Empty Weight (SBEW)	Manufacturer's Empty Weight plus standard items.
Standard Items	Equipment and fluids not considered an integral part of a particular aircraft and not a variation for the same type of aircraft. These items may include, but are not limited to, the following: ❑ Unusable fuel and other unusable fluids ❑ Engine oil ❑ Toilet fluid and chemical ❑ Fire extinguishers, pyrotechnics and emergency oxygen equipment ❑ Structure in galley, buffet and bar ❑ Supplementary electronic equipment
Useful Load	Difference between takeoff weight and Operational Empty Weight. (It includes payload, usable fuel and other usable fluids not included as operational items.)
Zero Fuel Weight	Operational Empty Weight plus payload. (This weight must not exceed Maximum Zero Fuel Weight.)

Weight Limitation Terms

Maximum Landing Weight (MLW)	Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

APPLICABLE CONFIGURATIONS
All

GENERAL INFORMATION (Continued)

Maximum Takeoff Weight (MTOW)	Maximum weight at brake release as limited by aircraft strength and airworthiness requirements.
Maximum Taxi Weight (MTW)	Maximum weight for ground maneuver as limited by aircraft strength and airworthiness requirements. (It includes weight of taxi and runup fuel.)
Maximum Zero Fuel Weight (MZFW)	Maximum weight allowed before usable fuel must be loaded in the aircraft as limited by strength and airworthiness requirements.
Minimum Flight Weight (MFW)	Minimum weight for flight as limited by aircraft strength and airworthiness requirements.

Fuel Terms

Unusable Fuel	Fuel remaining after a fuel runout test has been completed in accordance with government regulations. (It includes drainable unusable fuel plus unusable portion of trapped fuel.)
Drainable Unusable Fuel	Unusable fuel minus unusable portion of trapped fuel.
Trapped Unusable Fuel	Unusable fuel remaining when aircraft is defueled by normal means using the procedures and attitudes specified for draining the tanks.
Usable Fuel	Fuel available for aircraft propulsion.
Drainable Usable Fuel	Usable fuel that can be drained from the aircraft by normal means using the procedures and attitudes specified for draining the tanks.
Trapped Usable Fuel	Usable fuel remaining in the fuel feed and engine lines after standard tank defueling.

Curtailments

Cargo Location Variation	Operational margin placed within the certified center of gravity limits to compensate for the effect of reasonable variations in cargo location when partially unrestricted cargo placement is permitted.
Fuel Density Variation	Operational margin placed within the certified center of gravity limits to compensate for the effect of fuel density variation.
Fuel Usage	Operational margin placed within the certified center of gravity limits to compensate for the effect of fuel management during the critical portions of flight.
Gear and Flap Movement	Operational margin placed within the certified center of gravity limits to compensate for the effect of extending or retracting landing gear and flaps.
In-flight Movement	Operational margin placed within the certified center of gravity limits to compensate for the effect of reasonable passenger, crew, and cart movement during flight.

APPLICABLE CONFIGURATIONS
All

GENERAL INFORMATION (Continued)

Loading Schedule	A hardcopy or computerized form used to record the aircraft's weight, load distribution and other appropriate information; to calculate and check the weight and balance conditions of the aircraft against operational limitations; and to establish the stabilizer trim setting for takeoff.
Operational Empty Weight Variation	Operational margin placed within the certified center of gravity limits to compensate for the known variations in the standard and operational items.
Passenger Seating Variation	Operational margin placed within the certified center of gravity limits to compensate for the effect of reasonable variations in passenger center of gravity when unrestricted seating is permitted.

Balance Terms

Fleet Center-of-Gravity	Average Basic Empty Weight center of gravity used for a fleet or group of aircraft of the same model and configuration. (The center of gravity of any fleet member shall not vary more than the maximum tolerance established by government regulations.)

ABBREVIATIONS

The following terms, when necessary, will be abbreviated as shown below.

UNIT	ABBREVIATION	UNIT	ABBREVIATION
Pounds	LB	Inches	IN.
Kilograms	KG	Feet	FT
U. S. Gallons	U.S. GAL.	Square Feet	SQ FT
Liters	L	Cubic Feet	CU FT
Number	NO.	Inboard	INBD
Forward	FWD	Outboard	OUTBD
Balance Arm	B.A.	Mean Aerodynamic Chord	MAC
Body Buttock Line	B.B.L.	Leading Edge of the MAC	LEMAC
Water Line	W.L.	Center of Gravity	C.G.

CONVERSION FACTORS

The data in this manual is provided in both English and Metric units. Unless otherwise stated, the conversions listed below are used throughout this manual.

MULTIPLY	BY	TO OBTAIN
Pounds	0.45359237	Kilograms
U. S. Gallons	3.78541180	Liters
Inches	2.54000000	Centimeters
Feet	0.30480000	Meters

APPLICABLE CONFIGURATIONS
All

GENERAL INFORMATION (Continued)

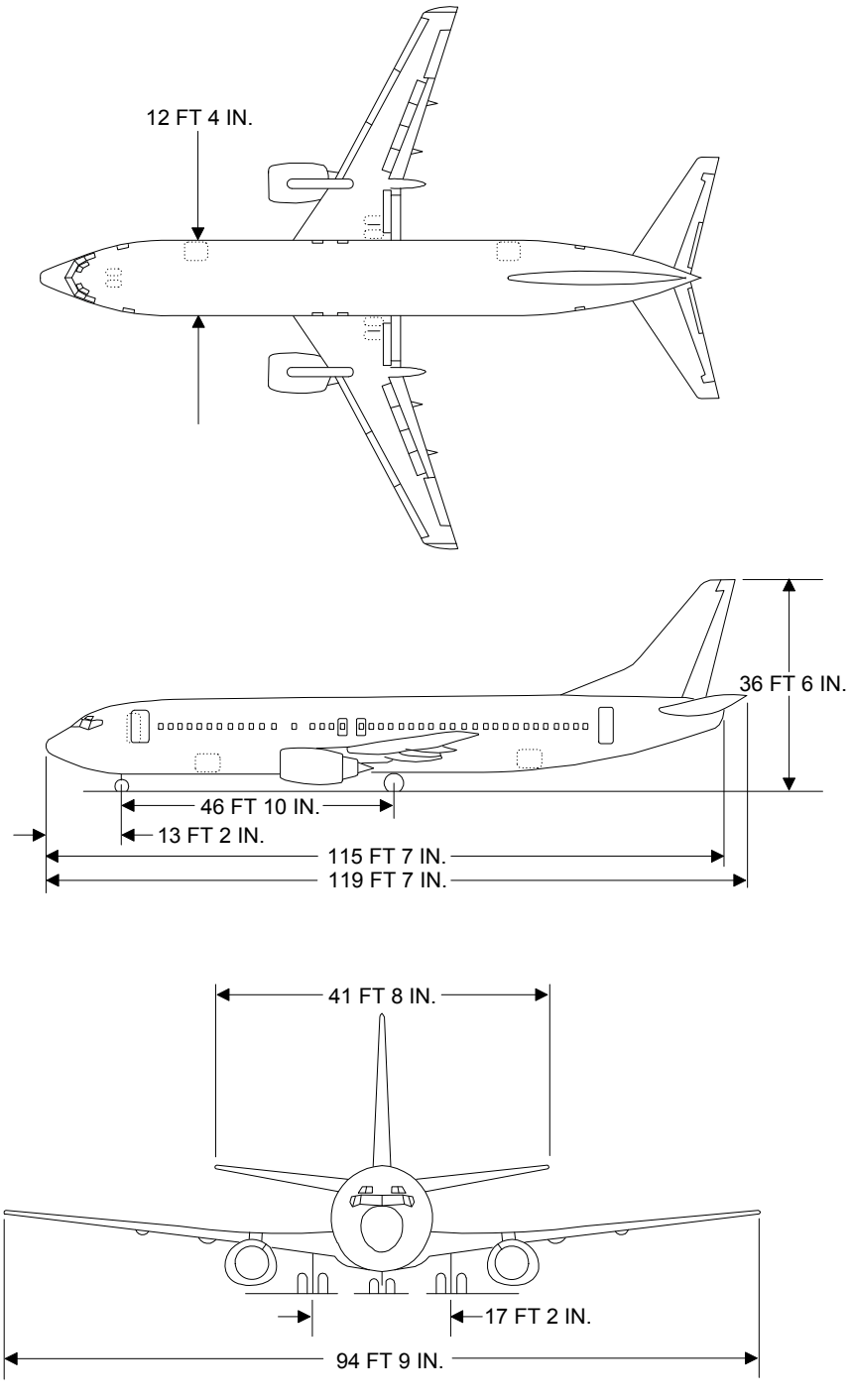
When totals or summations are required the English values are summed separately from the metric values. Differences may occur when comparing the English totals with the metric totals due to round off.

All metric values are converted from English values. When using the conversion factors in this manual, all resultants will be rounded except when the value is a weight limitation. For minimum or maximum weight limitations the resultant metric values will be rounded up or truncated, whichever is more conservative.

AIRPLANE DIMENSIONS

GENERAL ARRANGEMENT AND PRIMARY DIMENSIONS

The following figure shows the 737-400 general arrangement and primary dimensions.

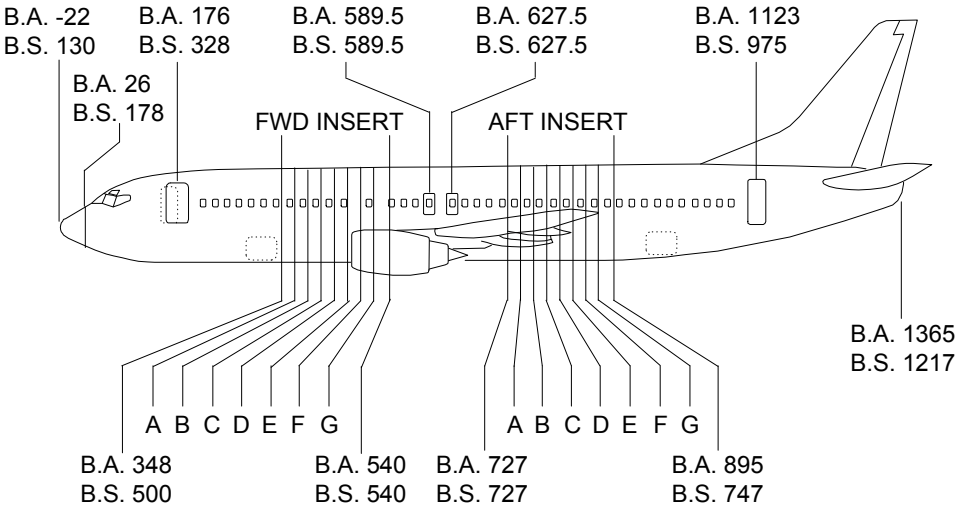


APPLICABLE CONFIGURATIONS
All

BALANCE REFERENCE SYSTEM

BALANCE ARMS / BODY STATIONS

Longitudinal location of all airplane component centers of gravity identified throughout this manual will be referred to as Balance Arms. The Balance Arm is a true measure in inches from the reference datum 540 IN. forward of the front spar. The following figure shows the relationship between Balance Arms and Body Stations (B.S.).



The following table provides Body Station to Balance Arm conversion data.

BODY STATION CONVERSION TO BALANCE ARM					
B.S.	**CONVERSION**	**B.A. - IN.**	**B.S.**	**CONVERSION**	**B.A. - IN.**
Forward Body Forward of B.S. 500			130 to 500	B.S. - 152 IN.	-22 to 348
Center Body between B.S. 540 and B.S. 727			540 to 727	B.S. + 0 IN.	540 to 727
Aft Body Aft of B.S. 747			747 to 1217	B.S. + 148 IN.	895 to 1365
FORWARD BODY INSERT			**AFT BODY INSERT**		
500A	348 + 22 IN.	370	727A	727 + 20 IN.	747
500B	348 + 44 IN.	392	727B	727 + 40 IN.	767
500C	348 + 66 IN.	414	727C	727 + 60 IN.	787
500D	348 + 88 IN.	436	727D	727 + 82 IN.	809
500E	348 + 110 IN.	458	727E	727 + 104 IN.	831
500F	348 + 132 IN.	480	727F	727 + 126 IN.	853
500G	348 + 152 IN.	500	727G	727 + 148 IN.	875

APPLICABLE CONFIGURATIONS
All

BALANCE REFERENCE SYSTEM (Continued)

MEAN AERODYNAMIC CHORD

The Mean Aerodynamic Chord, as used in this manual, is a wing reference distance with a length of 134.5 IN. The Leading Edge of the Mean Aerodynamic Chord is at Balance Arm 625.6 IN. Conversion of the airplane center of gravity from Balance Arm, in inches, to a percentage of Mean Aerodynamic Chord is derived using the following formula:

$$\%MAC = \frac{[(B.A. - 625.6) \times 100.0]}{134.5}$$

The reverse conversion of the airplane center of gravity from a percentage of Mean Aerodynamic Chord to Balance Arm, in inches, is derived using the following formula:

$$B.A. = \frac{(134.5 \times \%MAC)}{100.0} + 625.6$$

BODY BUTTOCK LINE

The Body Buttock Line is a vertical line or a vertical plane parallel to the centerline of the airplane used to locate points or planes to the left or right of the airplane centerline.

WATER LINE

The Water Line is a horizontal reference line or a horizontal plane parallel to the main deck floor used to locate points or planes vertically. The Water Line is measured from the reference datum 208.1 IN. below the top of the main deck floor beams.

APPLICABLE CONFIGURATIONS
All

FACTORS AFFECTING PERFORMANCE AND OPERATIONAL LIMITATIONS

INTERPOLATION OF CERTIFIED CENTER OF GRAVITY LIMITS

CHP-SEC 1-02-xxx presents the certified weight and center of gravity limits by identifying inflection points (end points) for each limit in terms of weight and %MAC. Intermediate points between the inflection points must be determined by interpolating the weight and moment, not the weight and %MAC. The moment is calculated for any given weight and %MAC by using the following formula:

$$\text{Moment} = \text{Weight} \times \left[\frac{(134.5 \times \%\text{MAC})}{100.0} + 625.6 \right]$$

Weight versus moment grids can be presented in various ways. The Loading Schedule Substantiation documents referenced in CHP-SEC 1-90-00x typically show weight and center of gravity limits converted to a weight versus index. The index values on these grids are an alternate way of displaying moment and are calculated using an index equation. Interpolating intermediate points using weight and index is equivalent to weight and moment.

OPERATIONAL WEIGHT AND CENTER OF GRAVITY REQUIREMENTS

To comply with the performance and operational limitations of the Federal Aviation Regulations, the allowable takeoff weight and the landing weight may be restricted to less than the Maximum Takeoff Weight and the Maximum Landing Weight respectively. The Operational Takeoff Weight may be limited by the most restrictive of the following requirements:

- Operational Takeoff Weight for altitude and temperature
- Takeoff field length requirements
- Tire speed and brake energy limits
- Tire pressure
- Obstacle clearance, enroute and landing requirements
- Noise requirements

The Operational Landing Weight may be limited by the most restrictive of the following requirements:

- Landing field length requirements
- Maximum approach and landing climb weight for altitude and temperature
- Noise requirements

These may not be all of the limitations; see the Airplane Flight Manual for further information.

To ensure that the airplane center of gravity remains within the center of gravity limits, airplane balance must be accounted for with all load conditions during all taxi, takeoff, flight and landing operations. Appropriate constraints must be established and applied to the center of gravity limits as required to account for such changes in the airplane balance condition as due to:

- Cargo location variation
- Fuel density variation
- Fuel usage
- Gear and flap movement
- In-flight movement
- Passenger seating variation

The data in the remainder of this manual will allow the operator to develop these constraints. For guidance in accounting for these items, refer to Advisory Circular 120-27E.

APPLICABLE CONFIGURATIONS
All

FACTORS AFFECTING PERFORMANCE AND OPERATIONAL LIMITATIONS

COMMONWEALTH OF INDEPENDENT STATES (CIS) REQUIREMENTS

Airplanes operating under the regulatory agency of the Commonwealth of Independent States (CIS) are required to be in compliance with NLGS-3 (comparable to FAR Part 25). Aviation Register (AR) Specialists identified changes to some Boeing procedural documents that would be necessary to be in compliance with NLGS-3 and operate in the CIS.

Continuous Cold Weather Operations

Boeing document number D6-81416-3, “The Aviation Register Requirements for Operation in the Commonwealth of Independent States”, defines a procedure for airplanes operating continuously in cold weather (i.e. ground temperatures below the freezing point). When these conditions exist, the Operational Empty Weight must be increased by 700 LB (317 KG), with no impact on the airplane center of gravity, after each 50 flight hours. This is to account for interior ice build-up. The Maintenance Manual Section of document D6-81416-3 defines the prescribed maximum flight hours before removal of interior ice is required. After the ice removal task has been completed, the weight added as a result of ice build-up should be subtracted.

APPLICABLE CONFIGURATIONS
All

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 139000 LB (63049 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	139000	63049
Maximum Takeoff Weight	(MTOW)	138500	62822
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

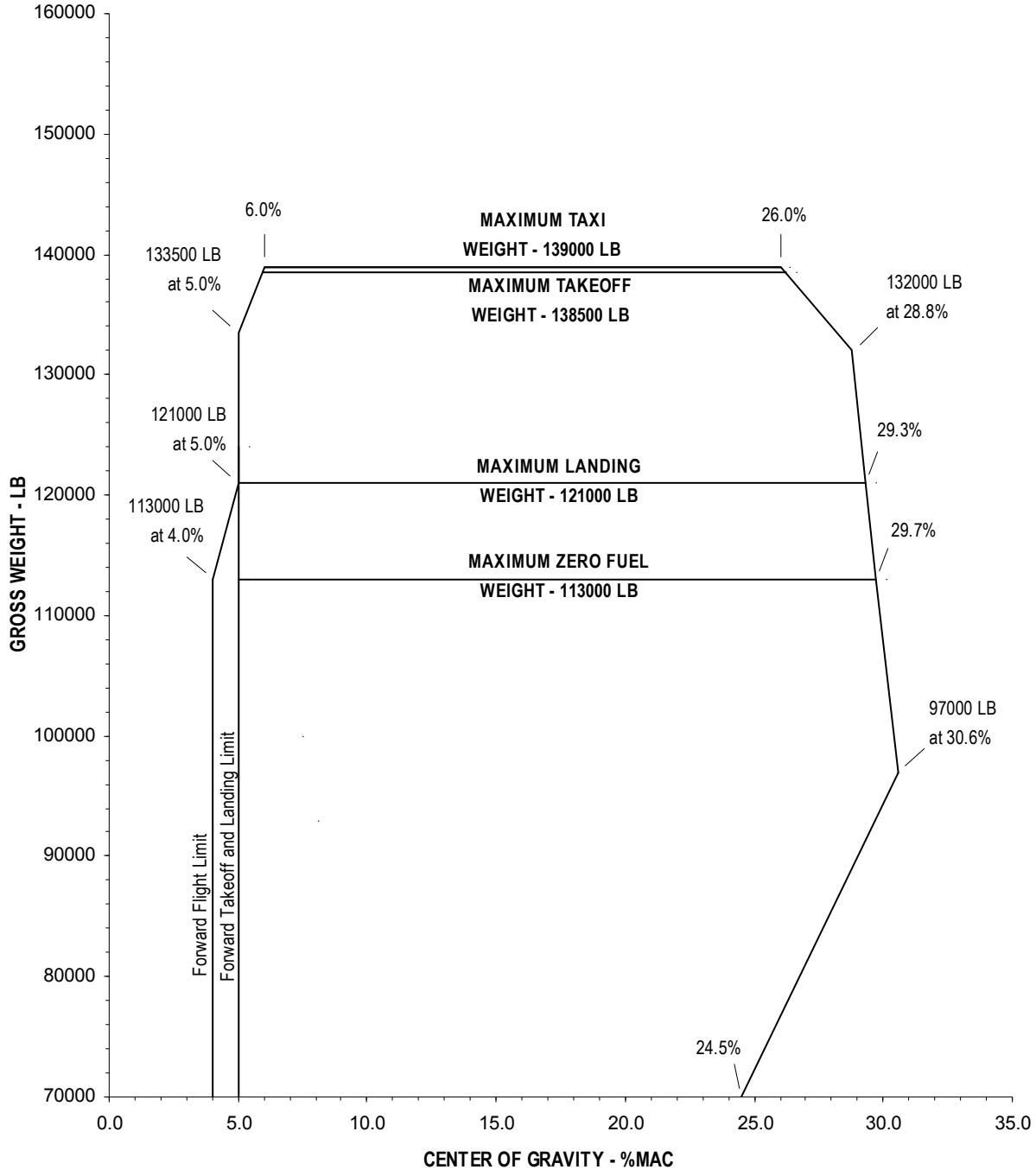
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H40X14.5-19/24 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
P

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 139000 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



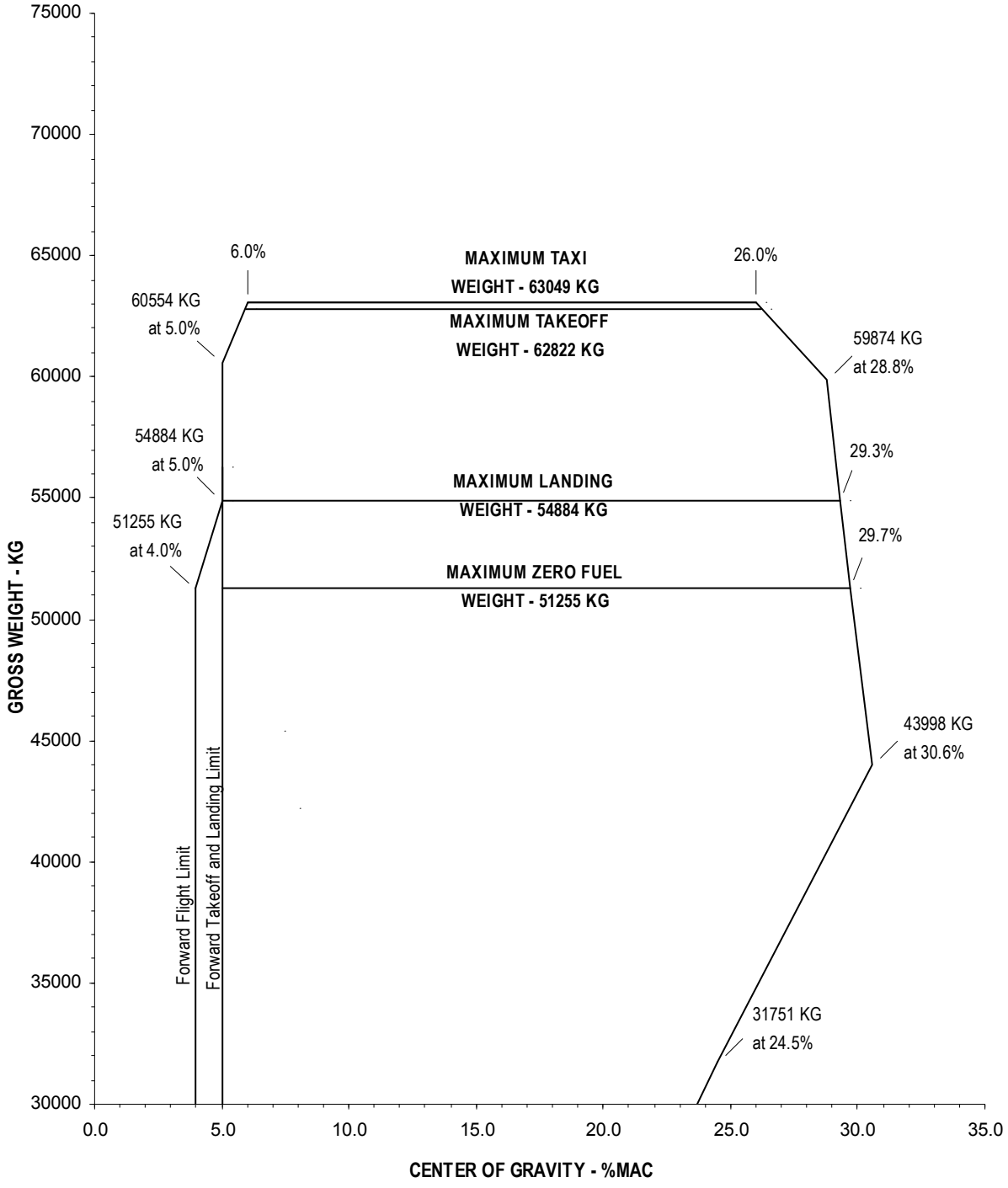
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
P

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 63049 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
P

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 139000 LB (63049 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	139000	63049
Maximum Takeoff Weight	(MTOW)	138500	62822
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

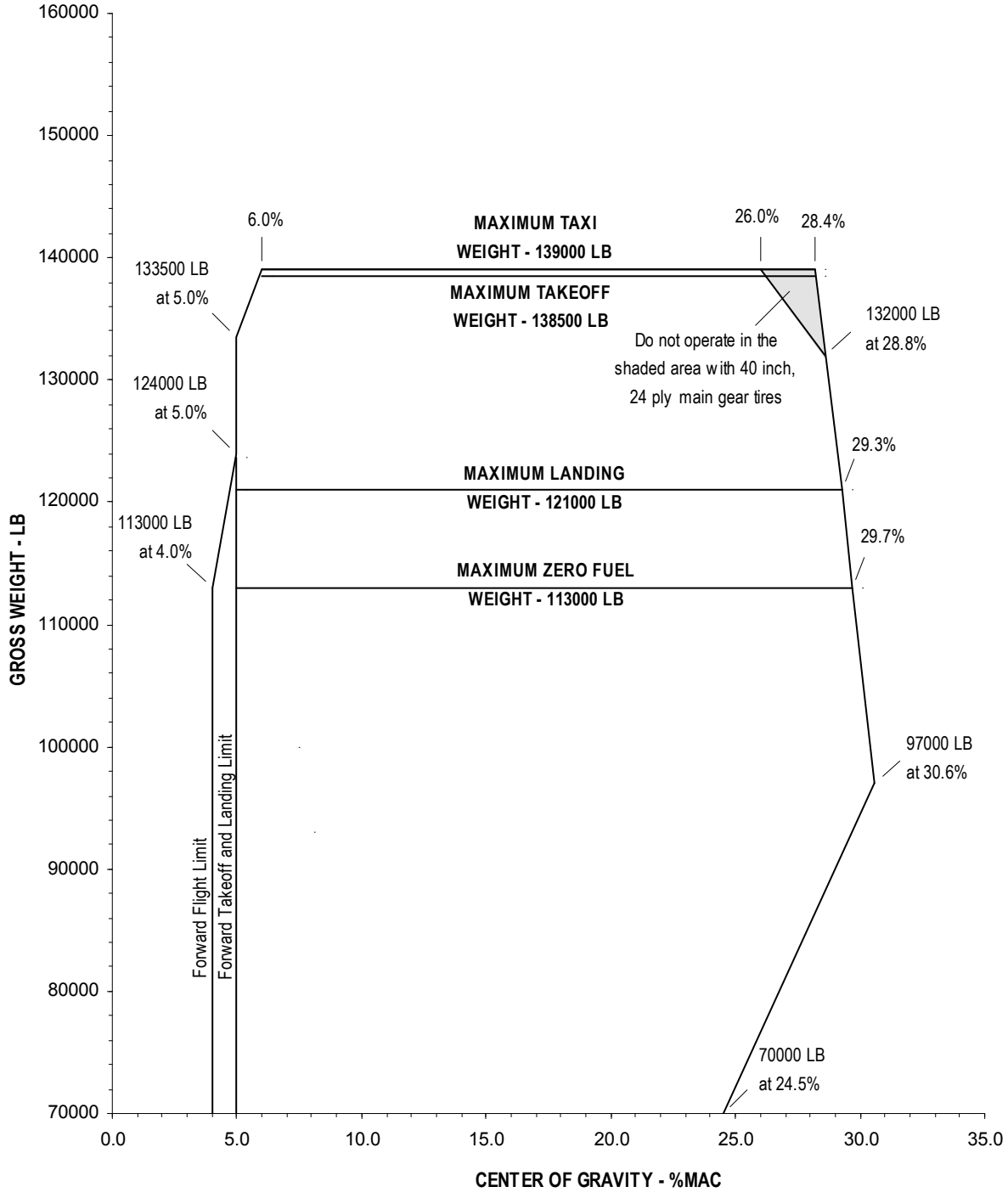
- Minimum Tire Size Required (40 inch main gear tires)
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H40X14.5-19/24 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
R

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 139000 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



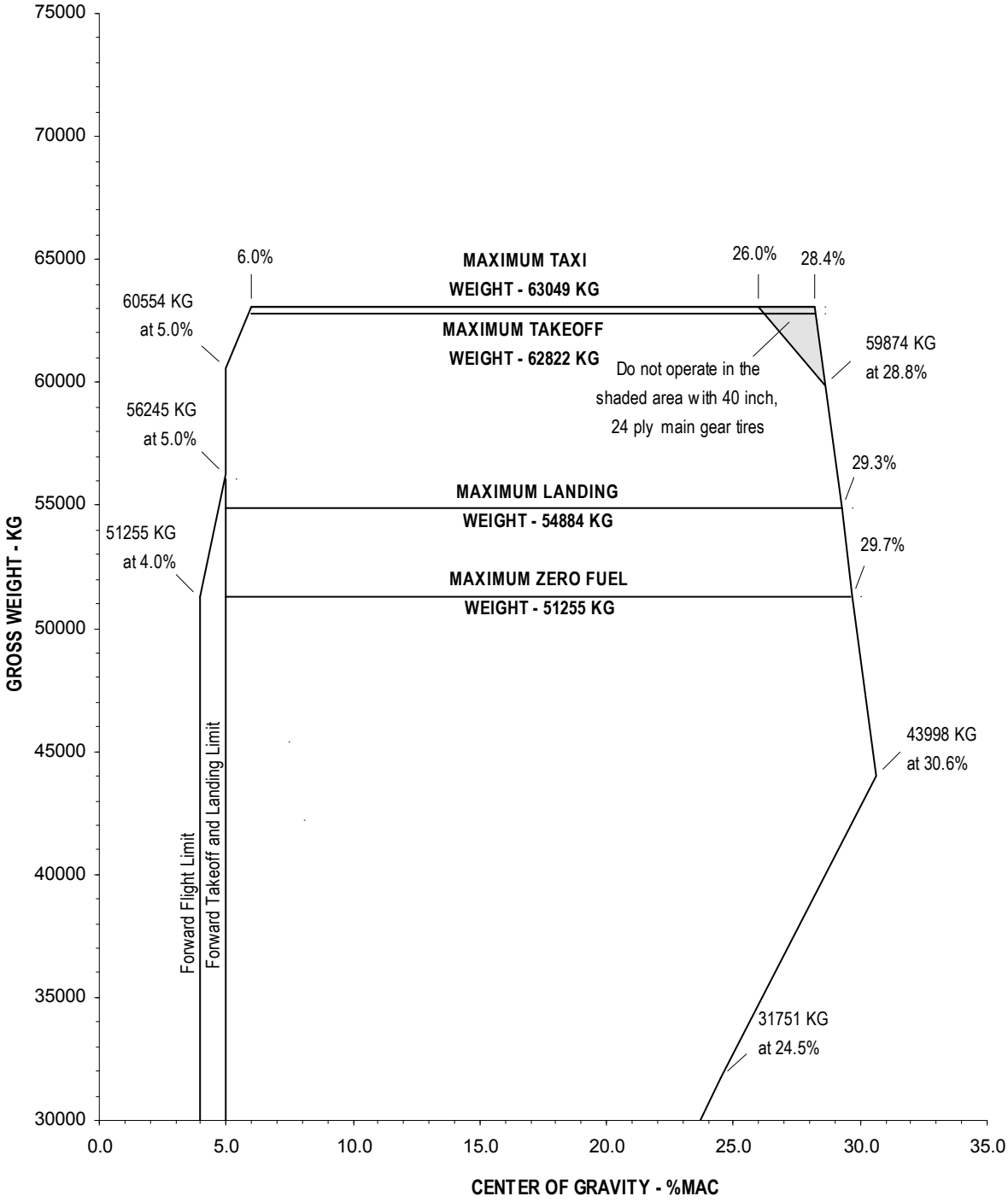
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
R

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 63049 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
R

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 139000 LB (63049 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	139000	63049
Maximum Takeoff Weight	(MTOW)	138500	62822
Maximum Landing Weight	(MLW)	124000	56245
Maximum Zero Fuel Weight	(MZFW)	117000	53070
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

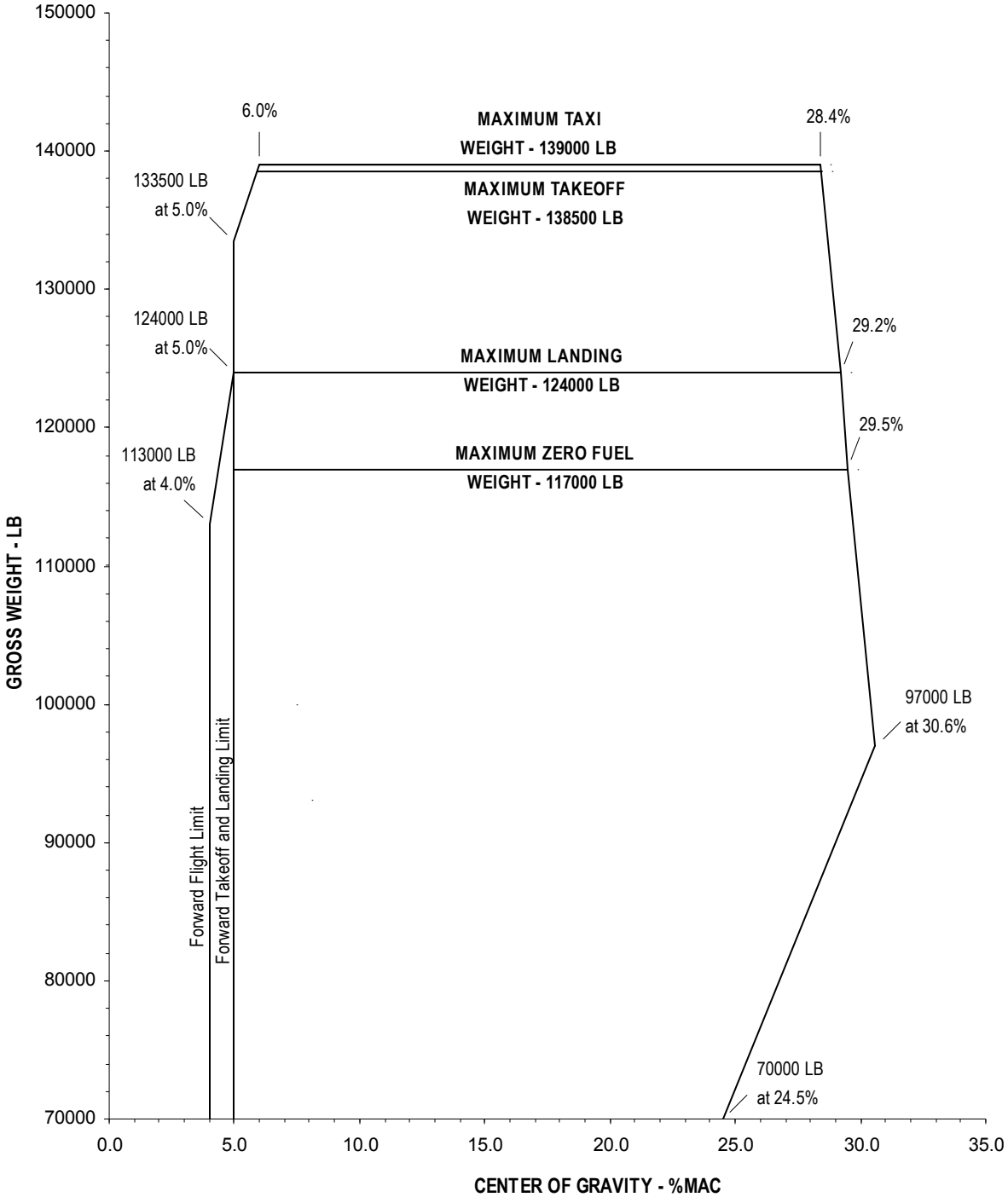
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H42X16-19/26 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
W

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 139000 LB, MLW 124000 LB, MZFW 117000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



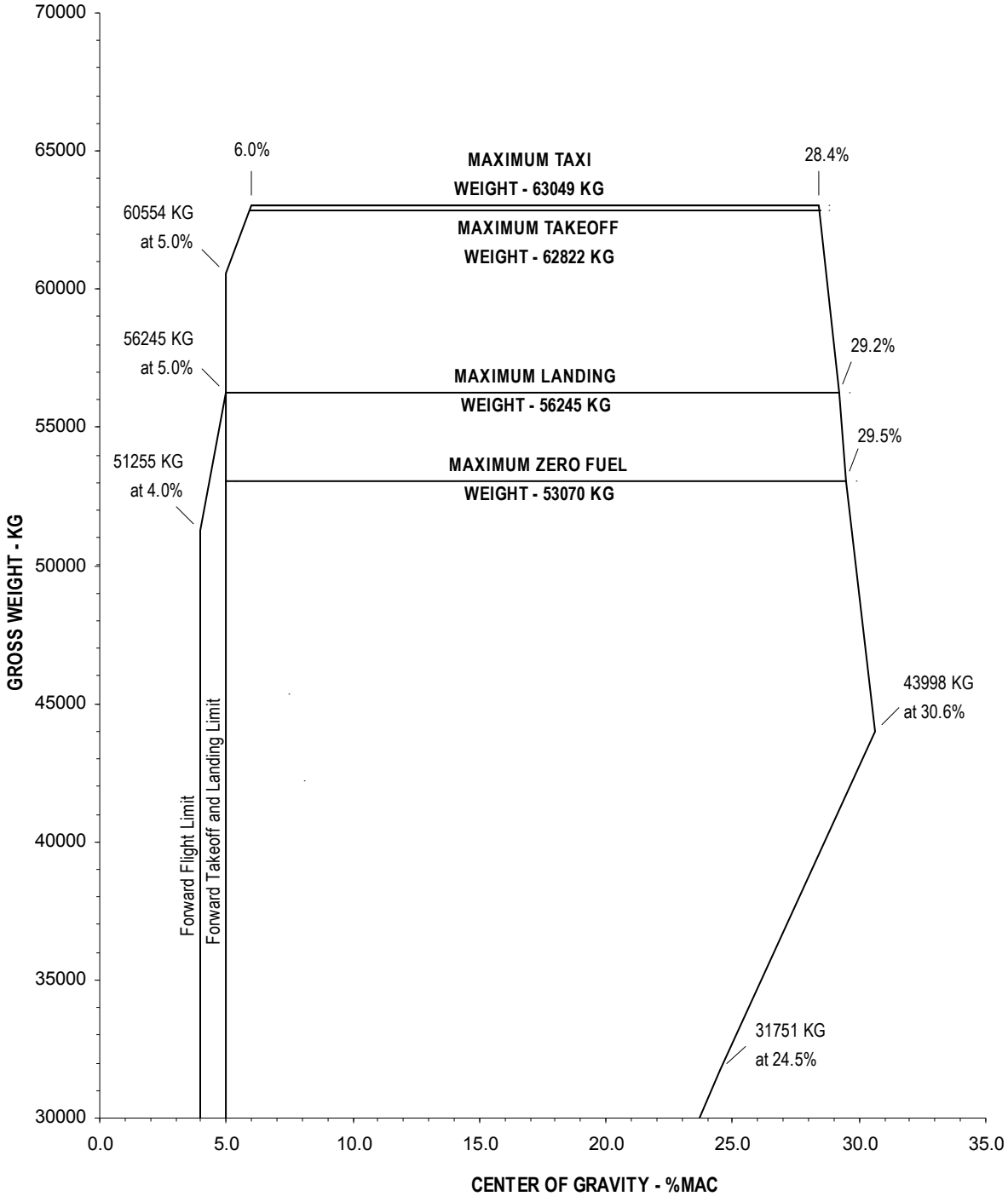
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
W

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 63049 KG, MLW 56245 KG, MZFW 53070 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
W

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 139000 LB (63049 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	139000	63049
Maximum Takeoff Weight	(MTOW)	138500	62822
Maximum Landing Weight	(MLW)	124000	56245
Maximum Zero Fuel Weight	(MZFW)	117000	53070
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

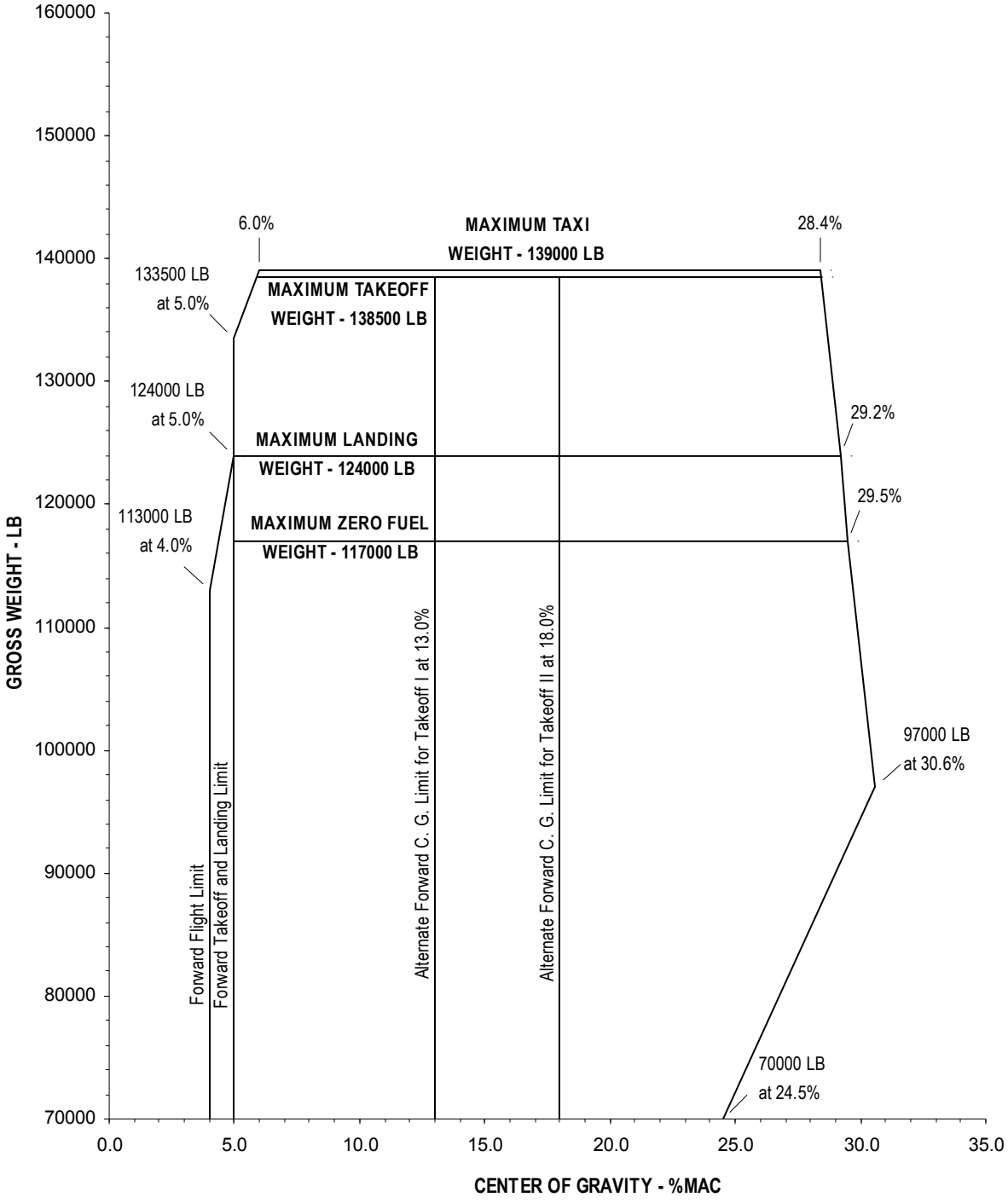
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear -H42X16-19/26 Ply Rating
- Refer to the Airplane Flight Manual “Operation with Alternate Forward Center of Gravity Limit for Takeoff” for use of Alternate Forward C. G. Limits.
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
U, V

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 139000 LB, MLW 124000 LB, MZFW 117000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



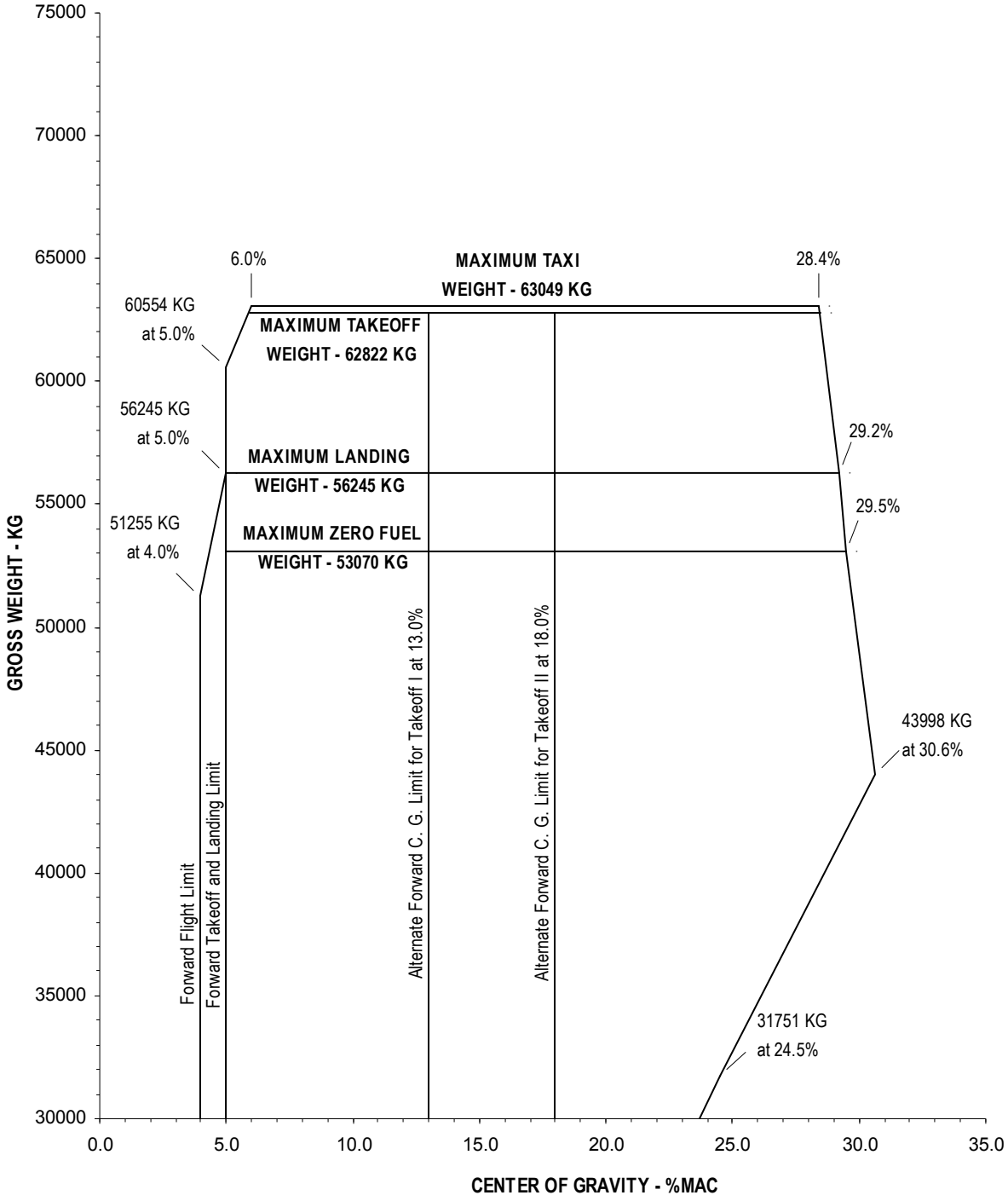
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
U, V

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 63049 KG, MLW 56245 KG, MZFW 53070 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
U, V

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 143000 LB (64863 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	143000	64863
Maximum Takeoff Weight	(MTOW)	142500	64636
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

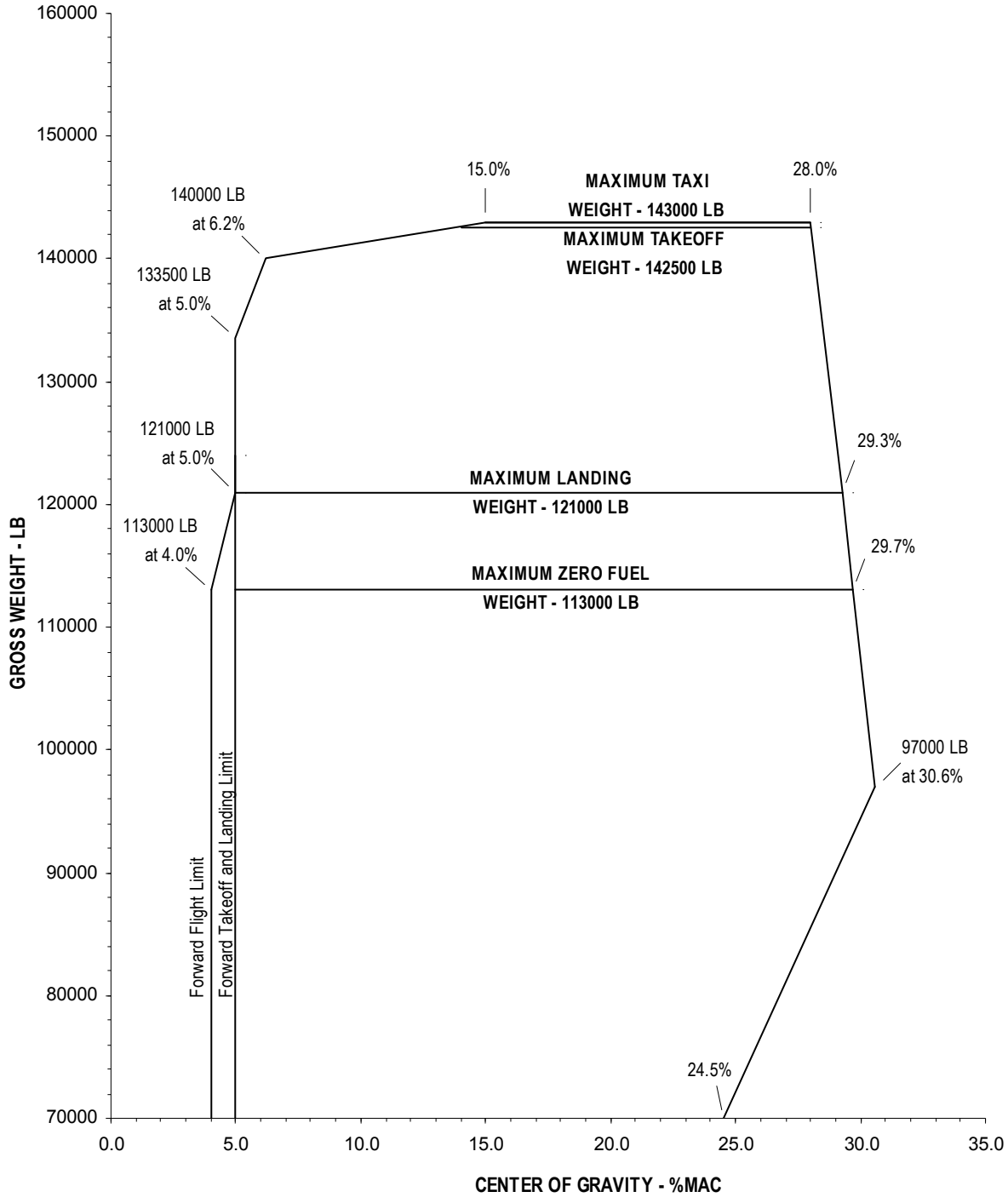
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H40X14.5-19/26 Ply Rating or H42X16-19/24 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
A

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 143000 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



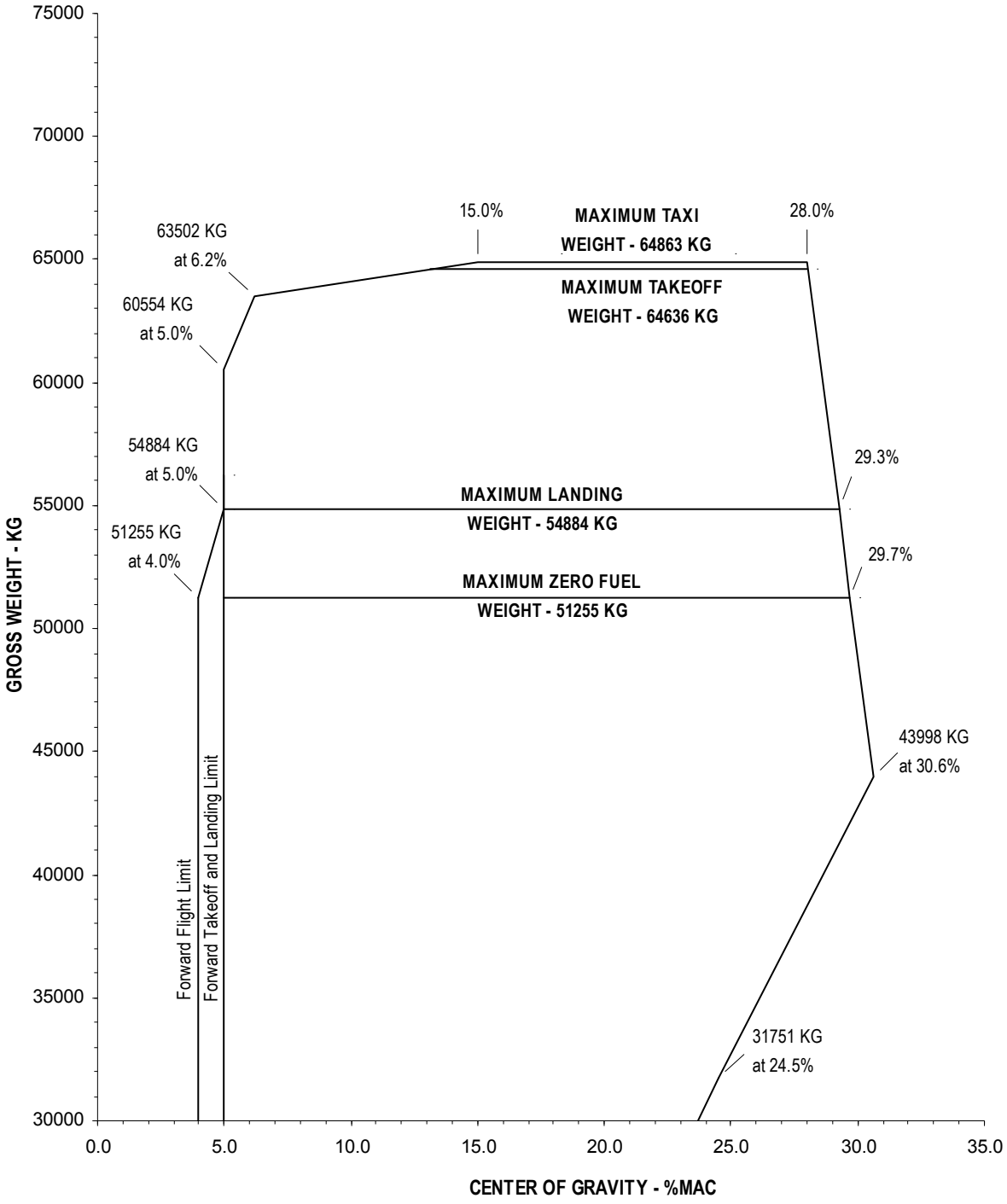
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
A

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 64863 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
A

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 143000 LB (64863 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	143000	64863
Maximum Takeoff Weight	(MTOW)	142500	64636
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

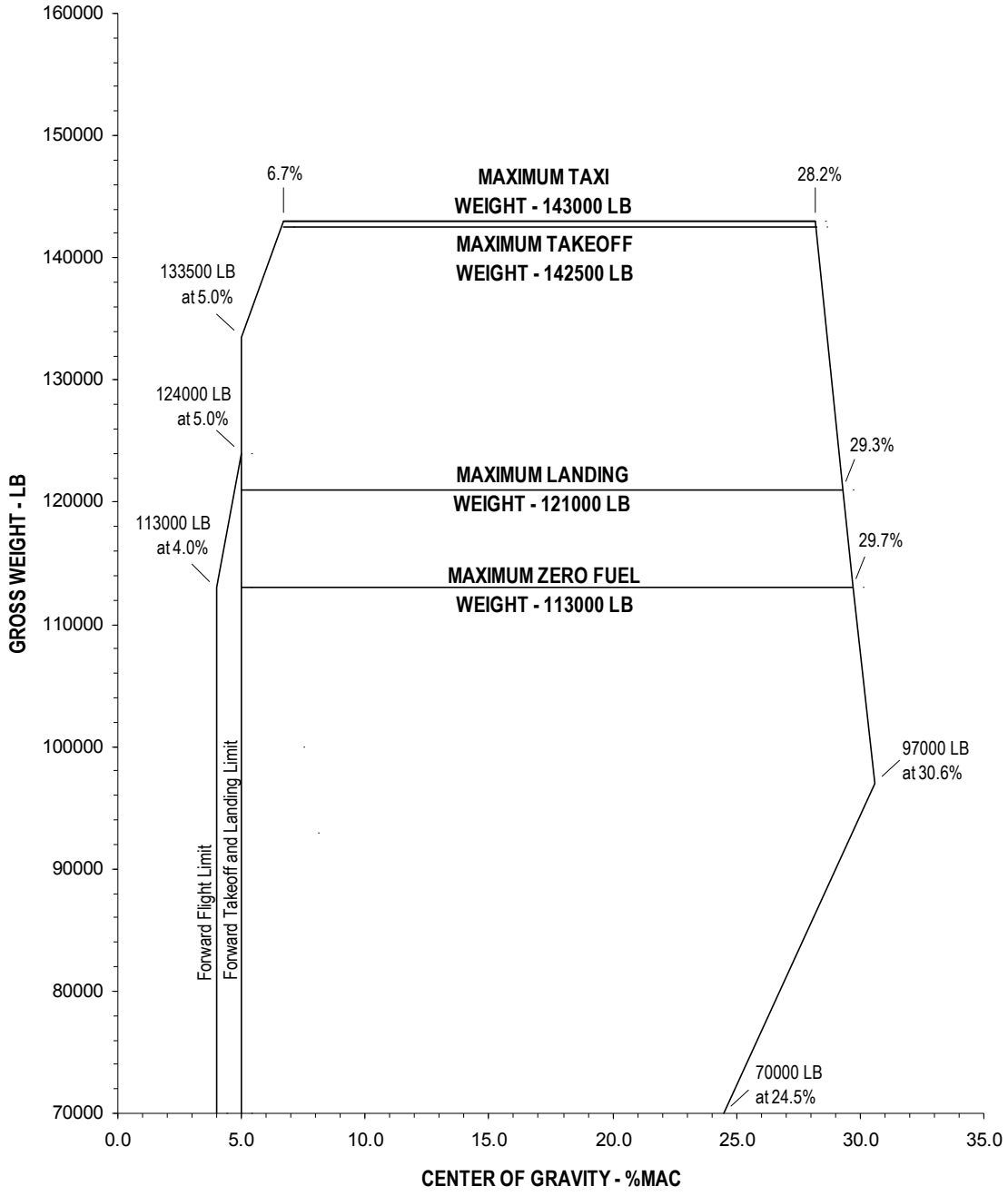
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H40X14.5-19/26 Ply Rating or H42X16-19/24 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
B

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 143000 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



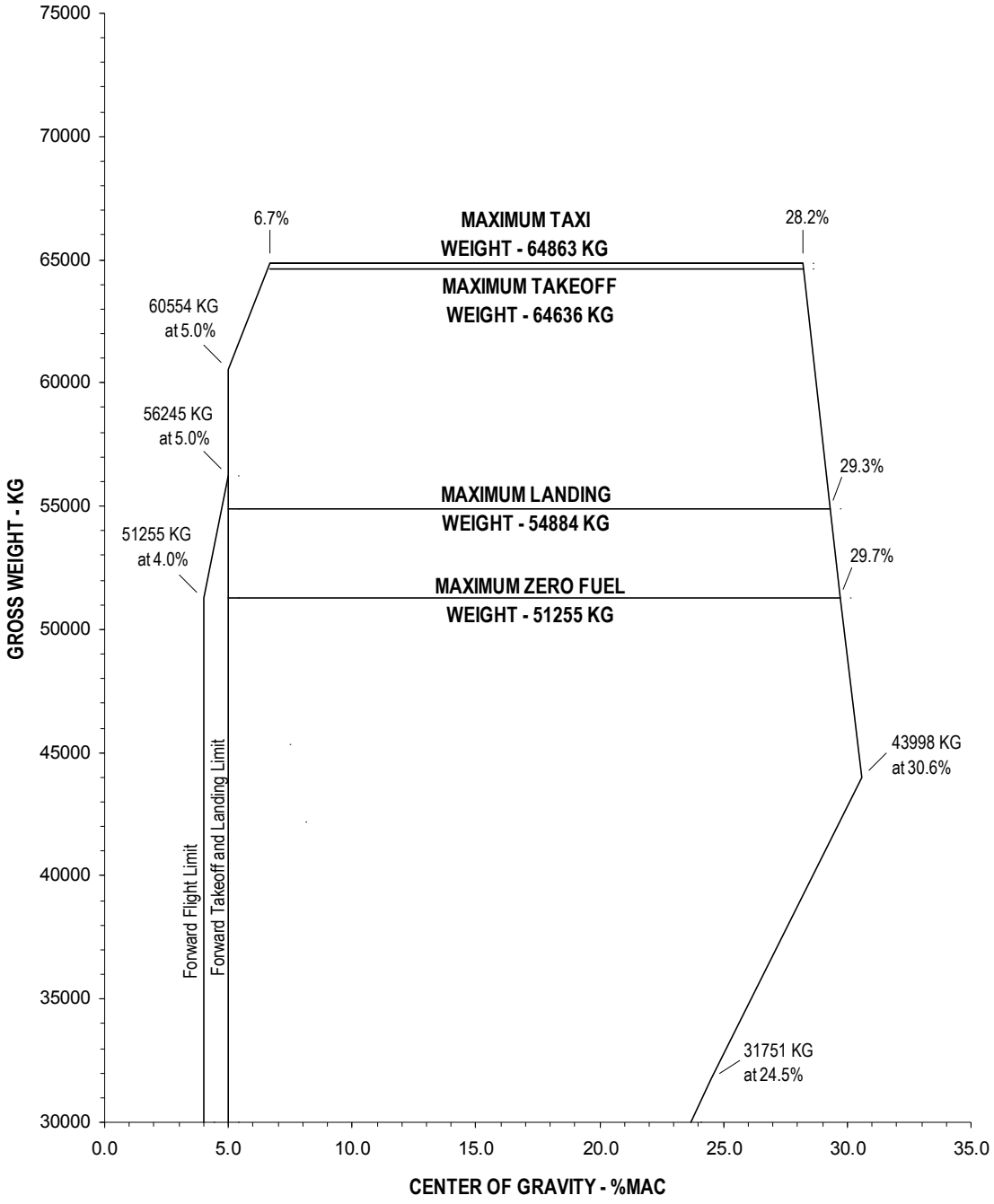
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
B

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 64863 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
B

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 143000 LB (64863 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	143000	64863
Maximum Takeoff Weight	(MTOW)	142500	64636
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

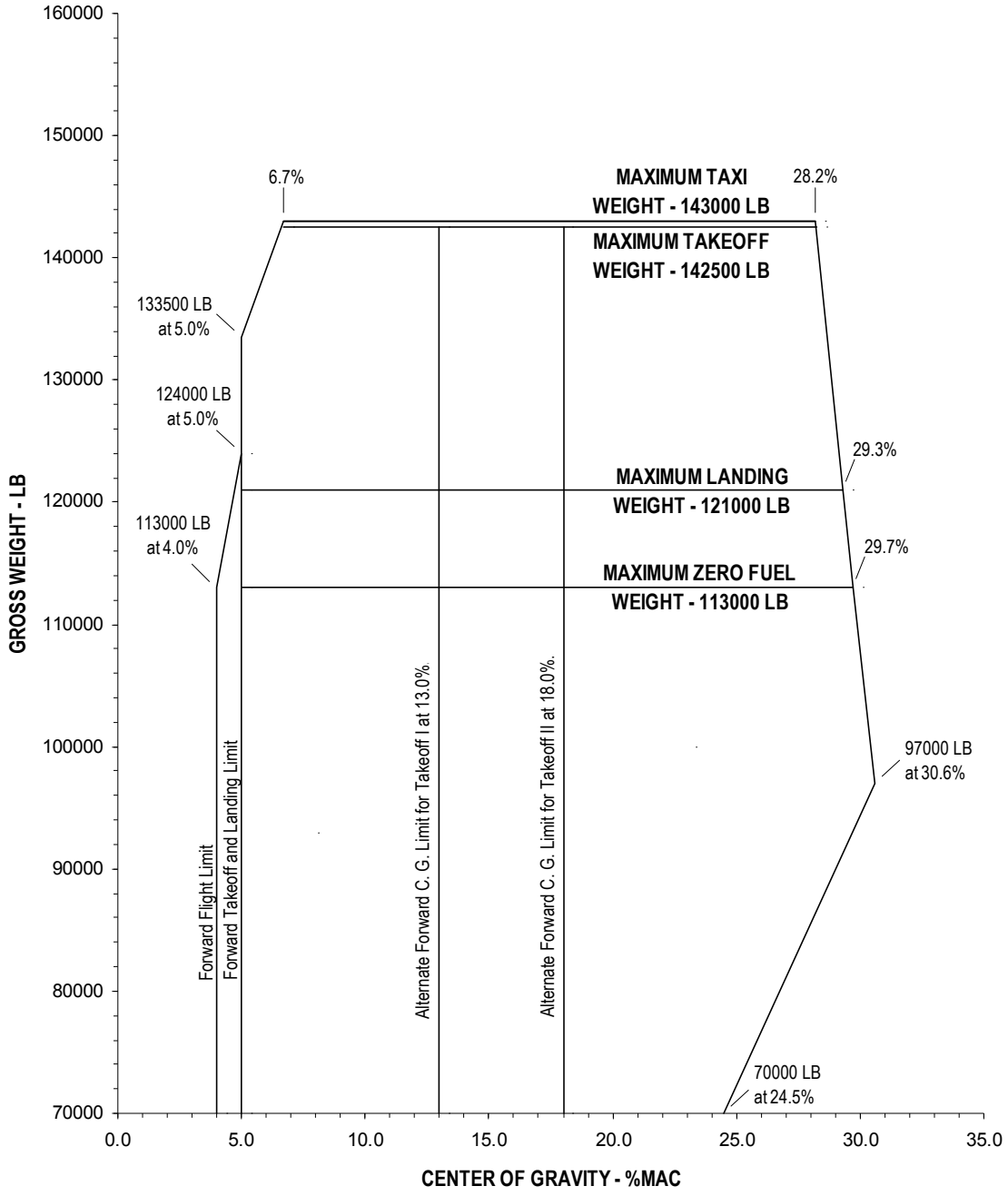
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H40X14.5-19/26 Ply Rating or H42X16-19/24 Ply Rating
- Refer to the Airplane Flight Manual “Operation with Alternate Forward Center of Gravity Limit for Takeoff” for use of Alternate Forward C. G. Limits.
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
L

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 143000 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



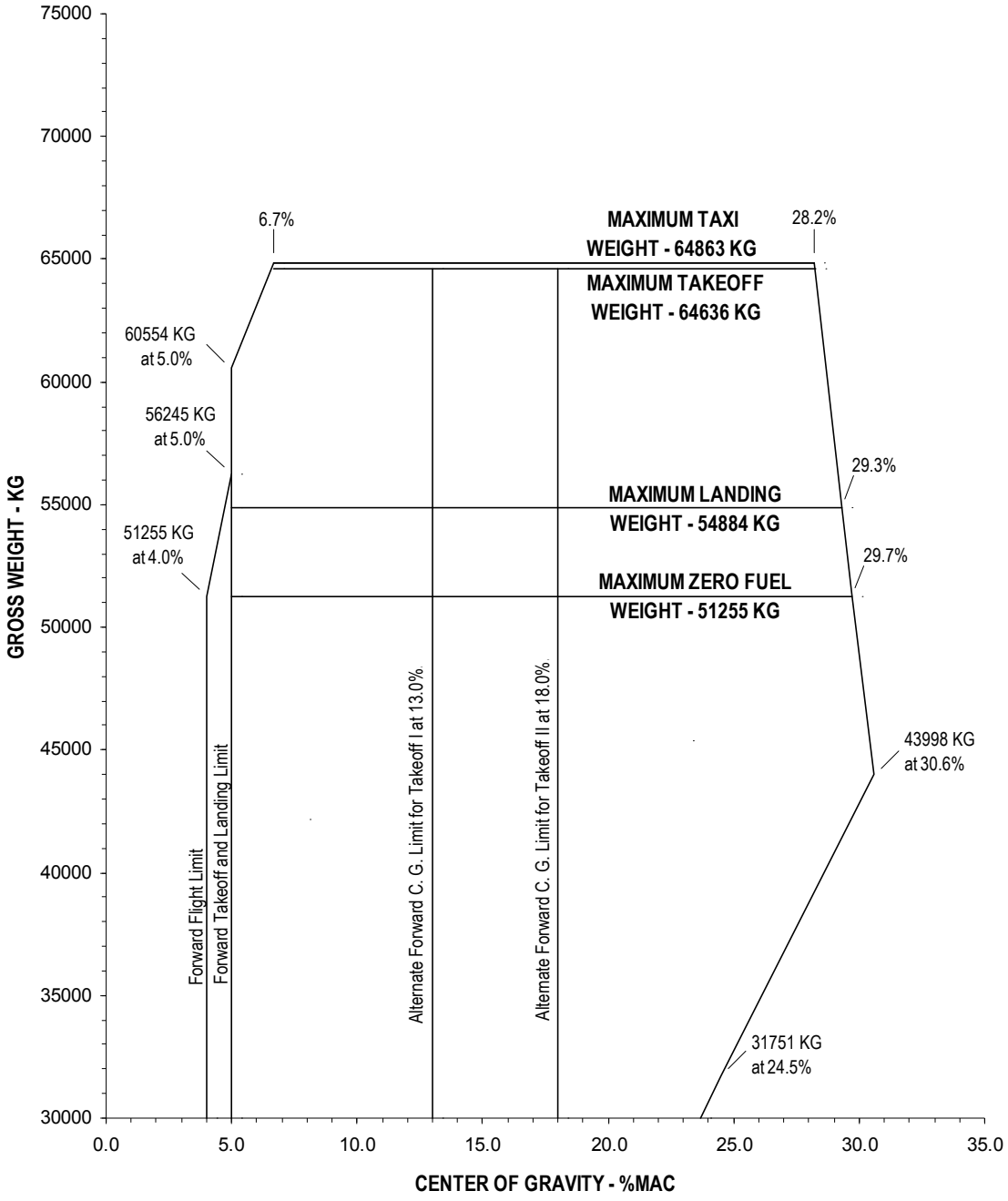
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
L

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 64863 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
L

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 144000 LB (65317 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	144000	65317
Maximum Takeoff Weight	(MTOW)	143500	65090
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

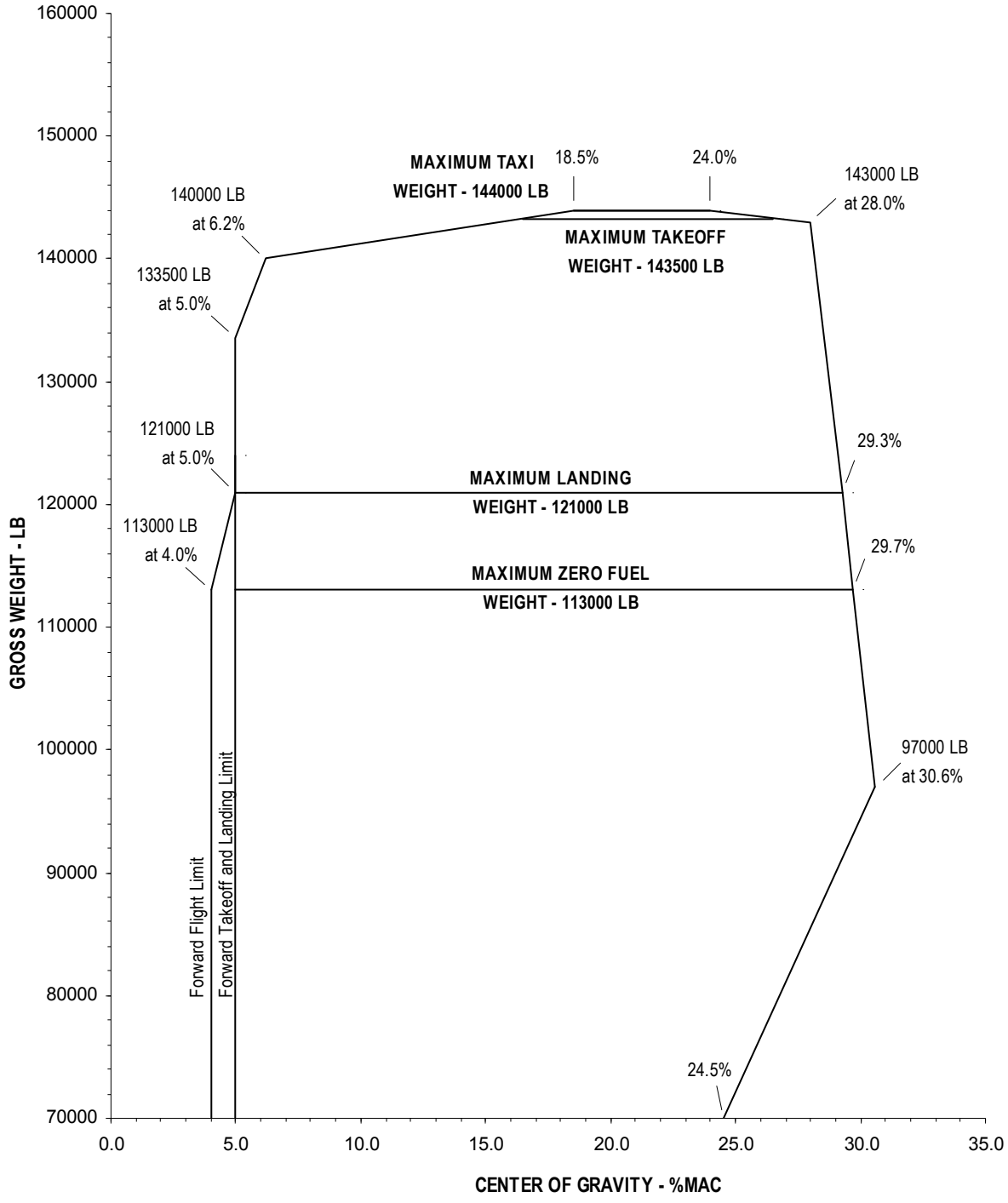
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H40X14.5-19/26 Ply Rating or H42X16-19/24 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
Y

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 144000 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



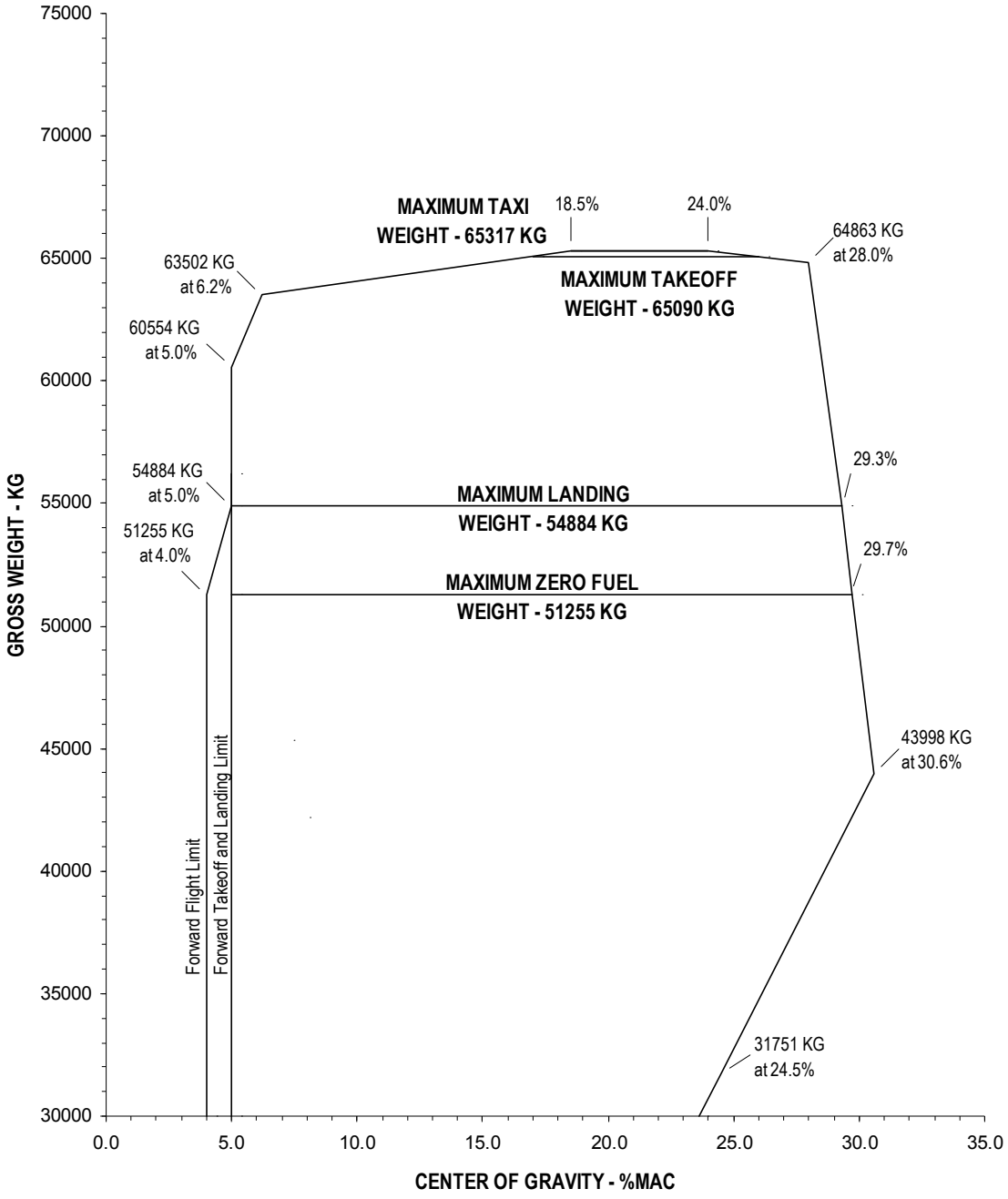
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
Y

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 65317 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
Y

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 150356 LB (68200 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	150356	68200
Maximum Takeoff Weight	(MTOW)	149915	68000
Maximum Landing Weight	(MLW)	123900	56200
Maximum Zero Fuel Weight	(MZFW)	116845	53000
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

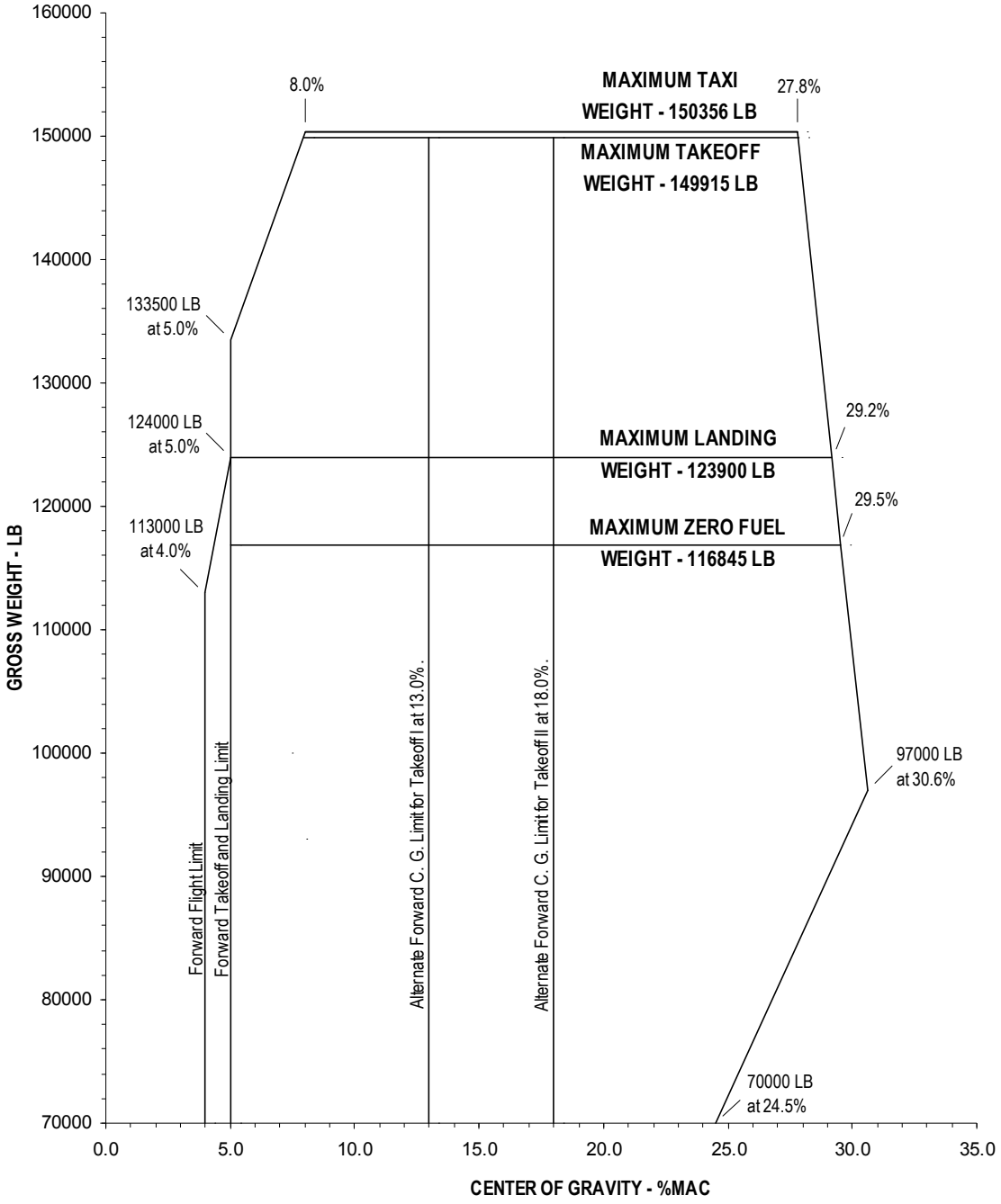
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H42X16-19/26 Ply Rating
- Refer to the Airplane Flight Manual “Operation with Alternate Forward Center of Gravity Limit for Takeoff” for use of Alternate Forward C. G. Limits.
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
D, E

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 150356 LB, MLW 123900 LB, MZFW 116845 LB

The following diagram represents the certified Center of Gravity Limits in English units:



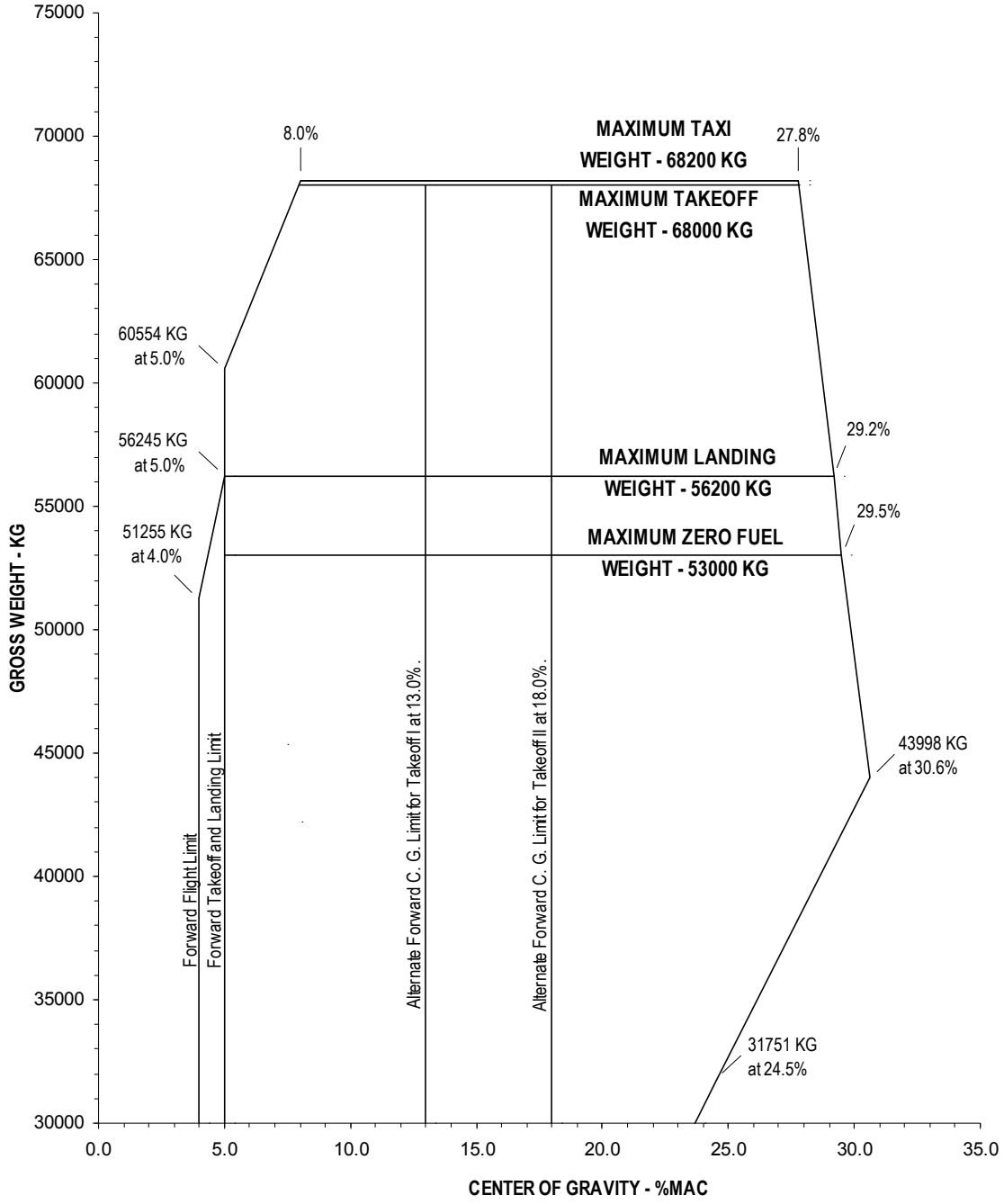
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
D, E

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 68200 KG, MLW 56200 KG, MZFW 53000 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
D, E

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 150500 LB (68265 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	150500	68265
Maximum Takeoff Weight	(MTOW)	150000	68038
Maximum Landing Weight	(MLW)	124000	56245
Maximum Zero Fuel Weight	(MZFW)	117000	53070
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

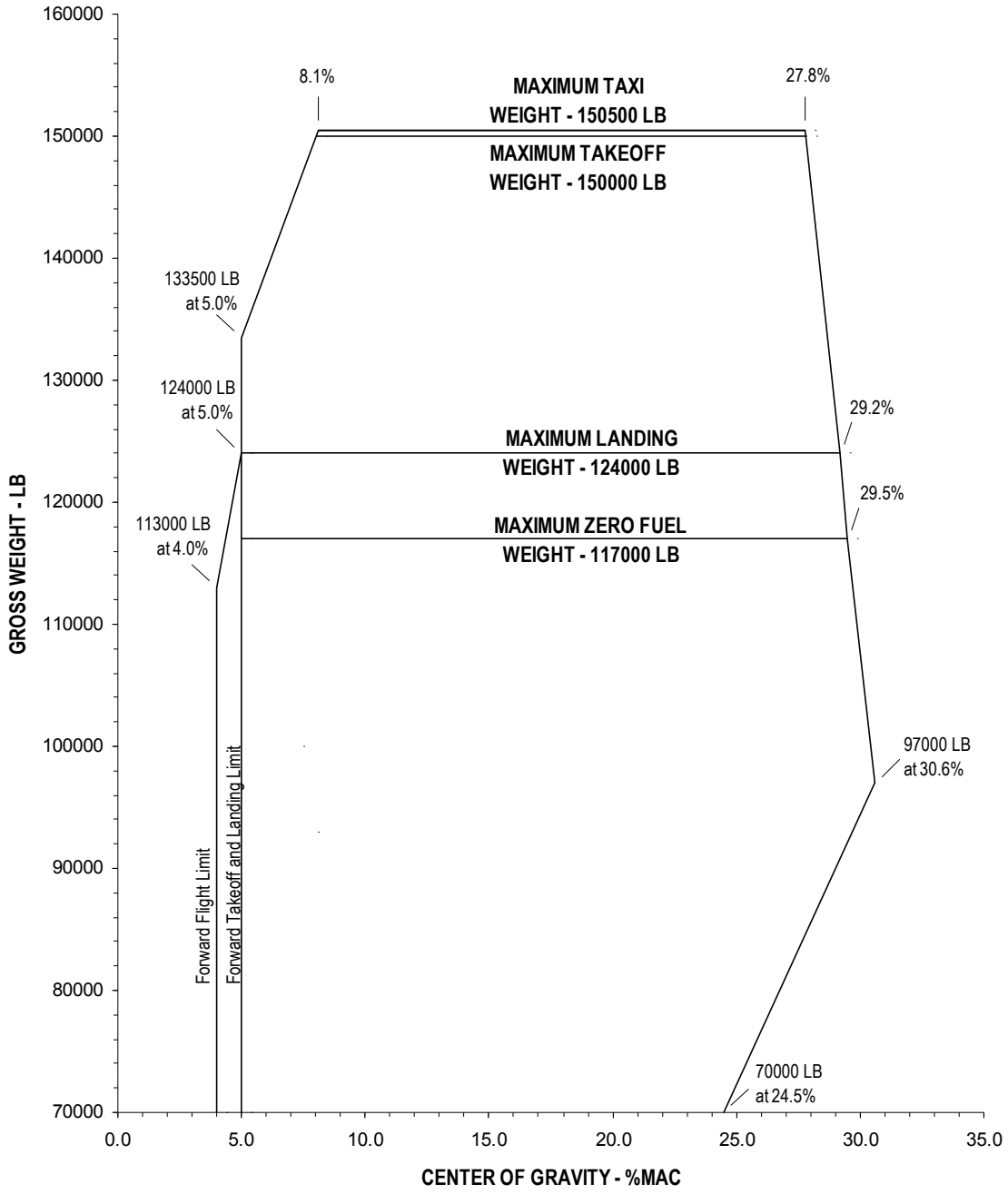
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H42X16-19/26 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
C, F

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 150500 LB, MLW 124000 LB, MZFW 117000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



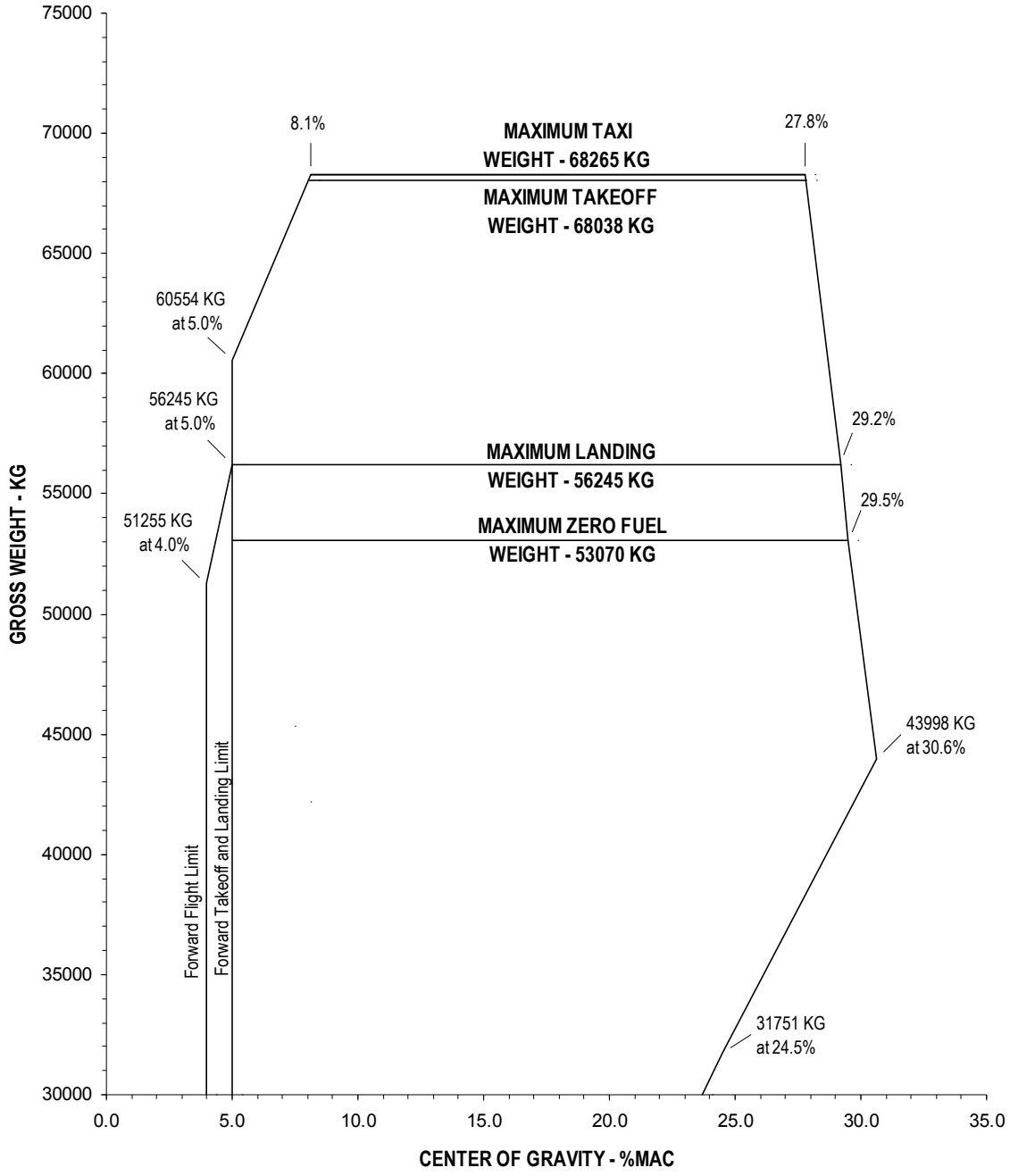
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
C, F

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 68265 KG, MLW 56245 KG, MZFW 53070 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
C, F

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 150500 LB (68265 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	150500	68265
Maximum Takeoff Weight	(MTOW)	150000	68038
Maximum Landing Weight	(MLW)	124000	56245
Maximum Zero Fuel Weight	(MZFW)	117000	53070
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

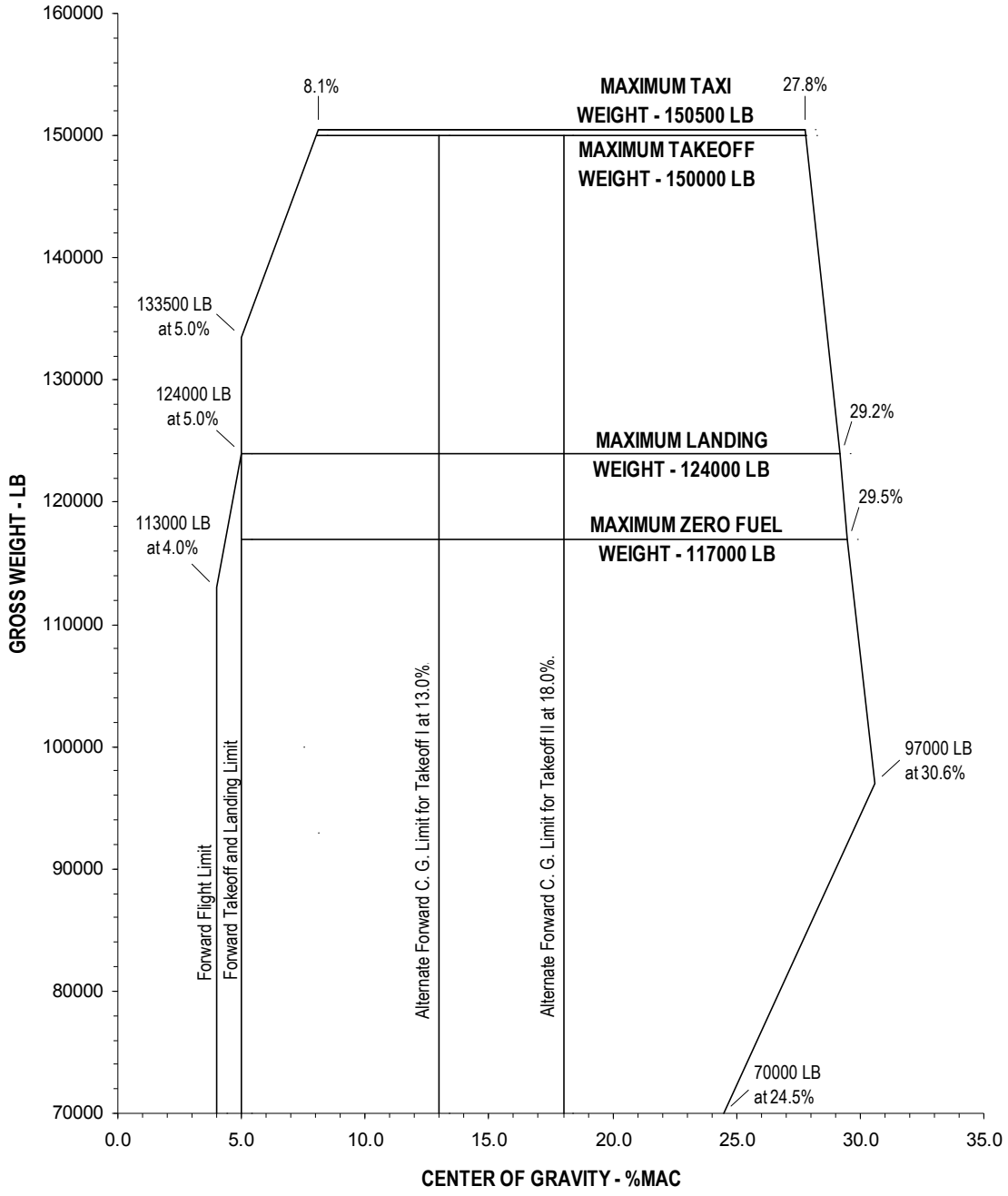
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H42X16-19/26 Ply Rating
- Refer to the Airplane Flight Manual “Operation with Alternate Forward Center of Gravity Limit for Takeoff” for use of Alternate Forward C. G. Limits.
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
H, M, N

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 150500 LB, MLW 124000 LB, MZFW 117000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



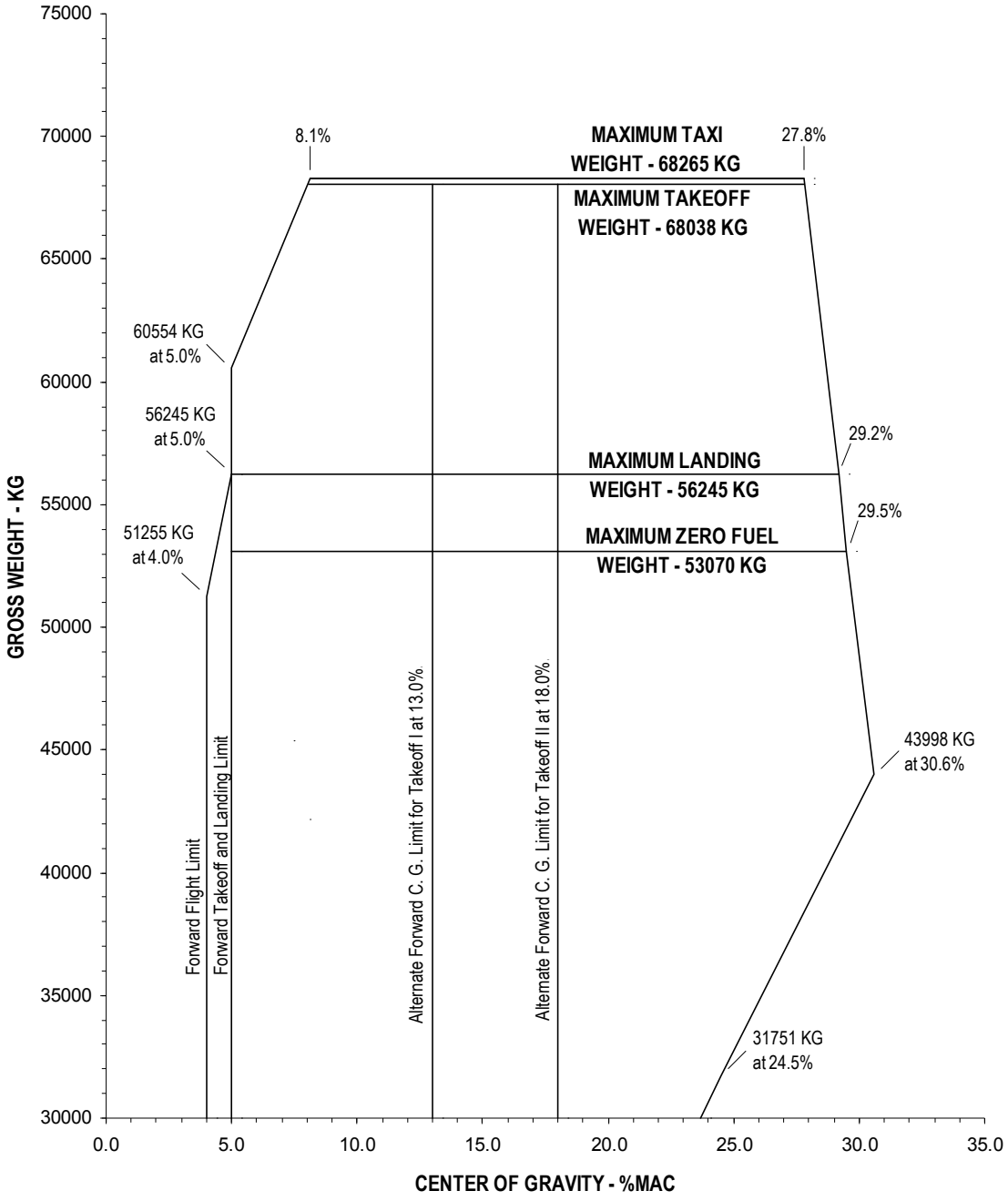
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
H, M, N

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 68265 KG, MLW 56245 KG, MZFW 53070 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
H, M, N

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 150500 LB (68265 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	150500	68265
Maximum Takeoff Weight	(MTOW)	150000	68038
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

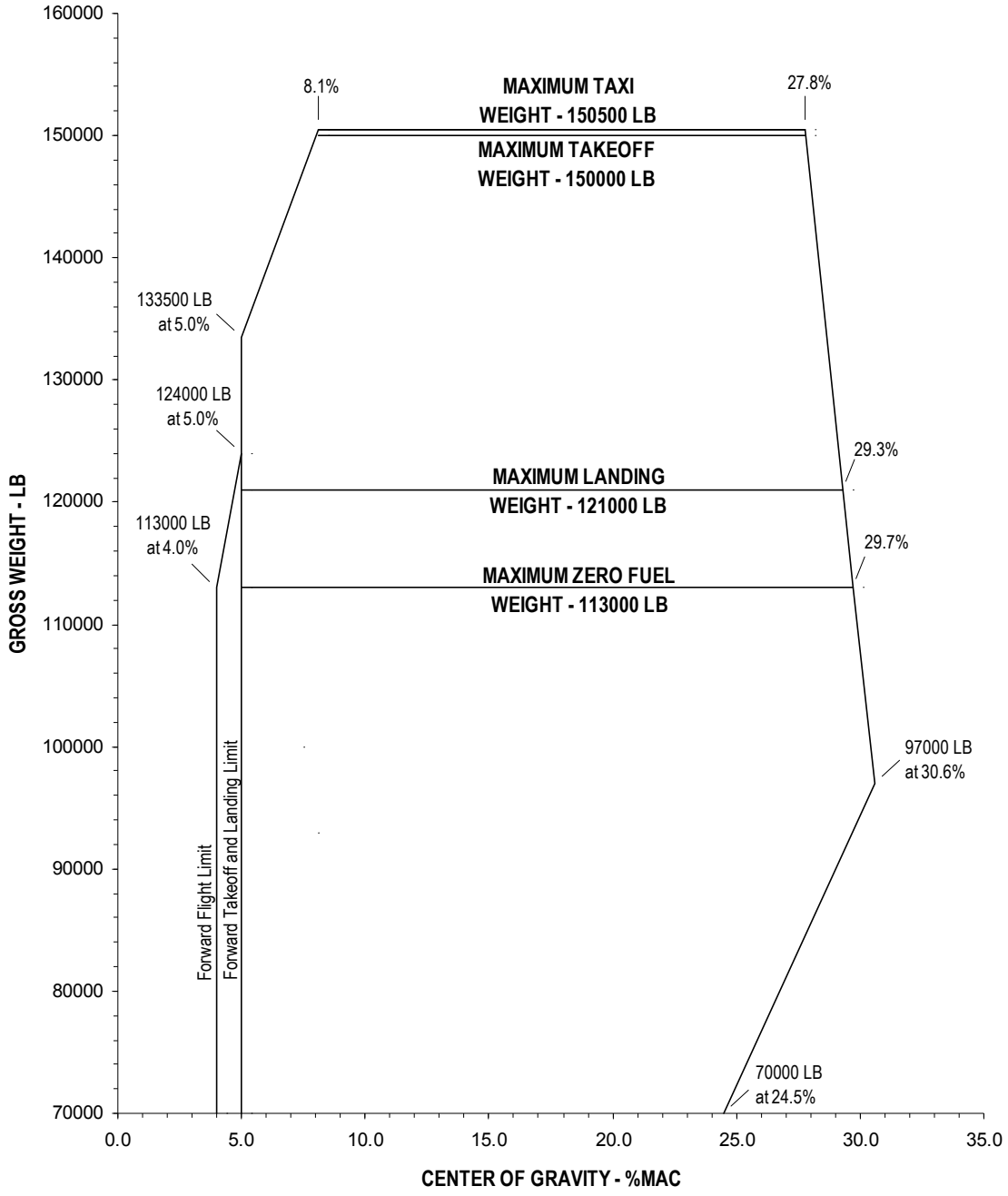
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H42X16-19/26 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
S

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 150500 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



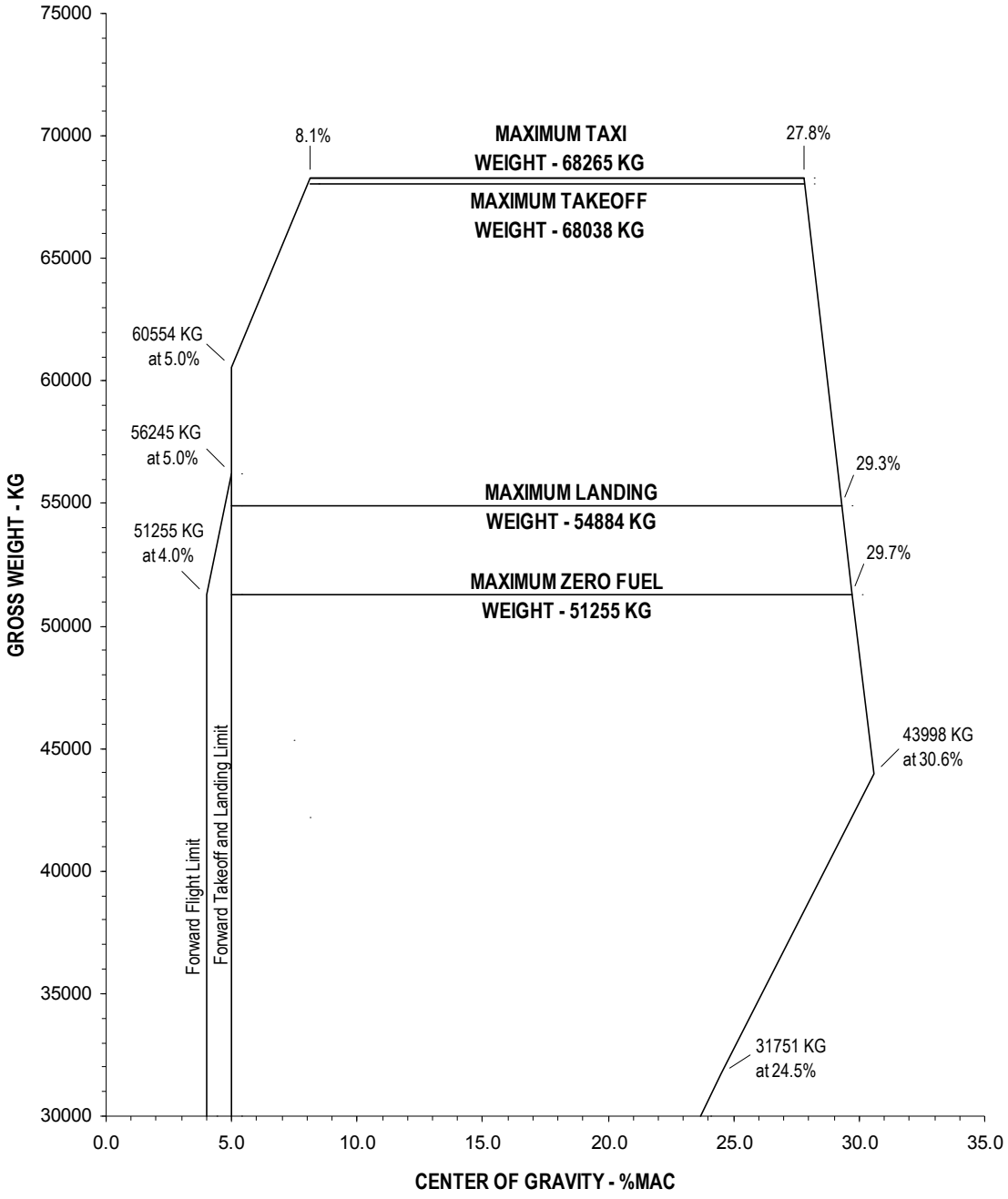
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
S

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 68265 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
S

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 128300 LB (58195 KG)

The Maximum Certified Gross Weights and Center of Gravity Limits are shown graphically on pages 2 & 3. These Center of Gravity Limits are for taxi, takeoff, flight and landing unless otherwise specified, and are the absolute limits which must not be exceeded by the airplane center of gravity in any taxi, takeoff, flight, or landing configuration.

CERTIFIED GROSS WEIGHTS			
		LB	KG
Maximum Taxi Weight	(MTW)	128300	58195
Maximum Takeoff Weight	(MTOW)	127800	57969
Maximum Landing Weight	(MLW)	121000	54884
Maximum Zero Fuel Weight	(MZFW)	113000	51255
Minimum Flight Weight	(MFW)	66956	30370

LIMITATIONS

The following limitations must be met in order to use the certified gross weight and center of gravity limits:

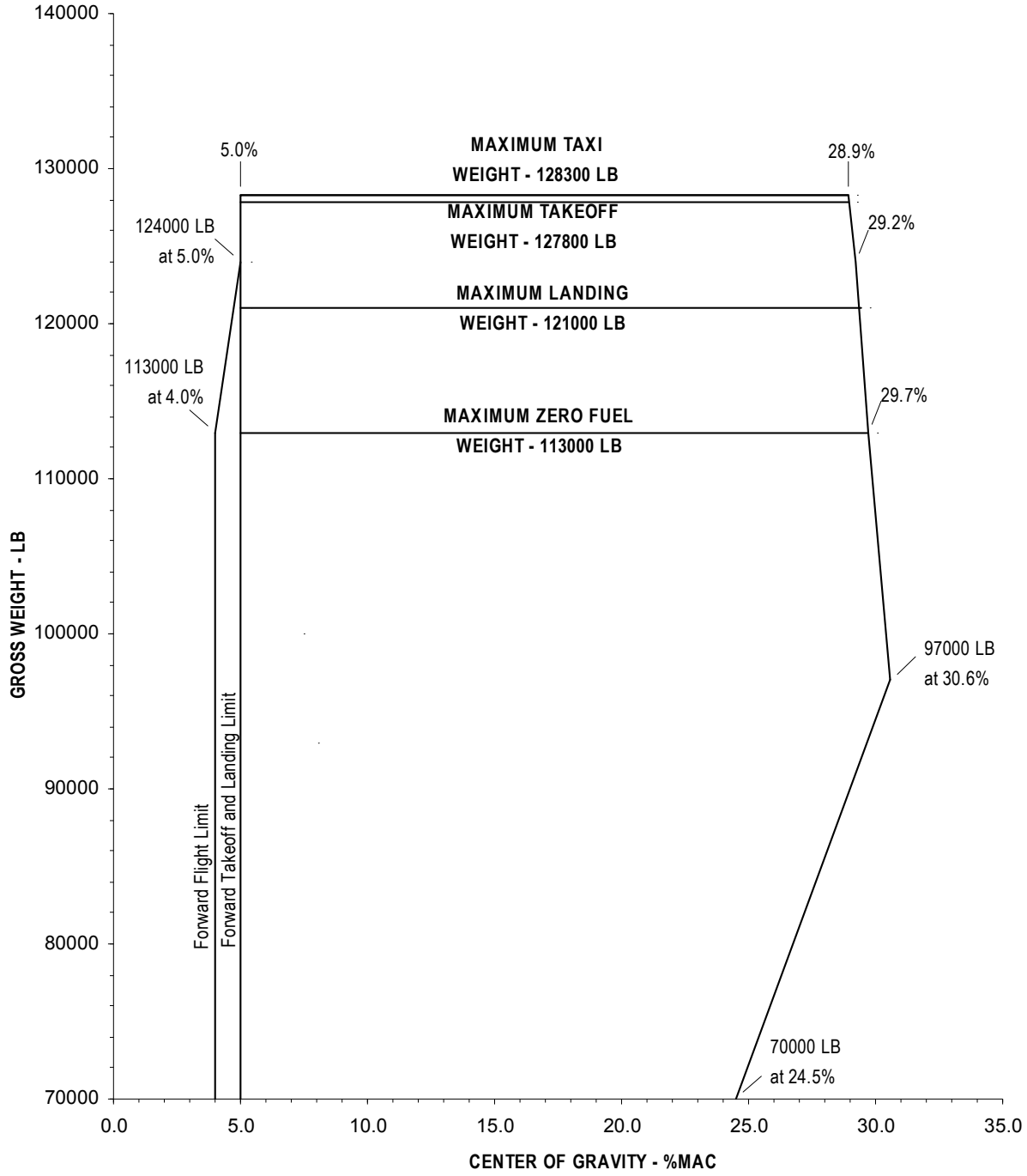
- Minimum Tire Size Required
  - Nose Gear - 27X7.75-15/12 Ply Rating
  - Main Gear - H40X14.5-19/24 Ply Rating
- Refer to the Airplane Maintenance Manual Section 12-15-51 for minimum tire pressure requirements.

APPLICABLE CONFIGURATIONS
G, K

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 128300 LB, MLW 121000 LB, MZFW 113000 LB

The following diagram represents the certified Center of Gravity Limits in English units:



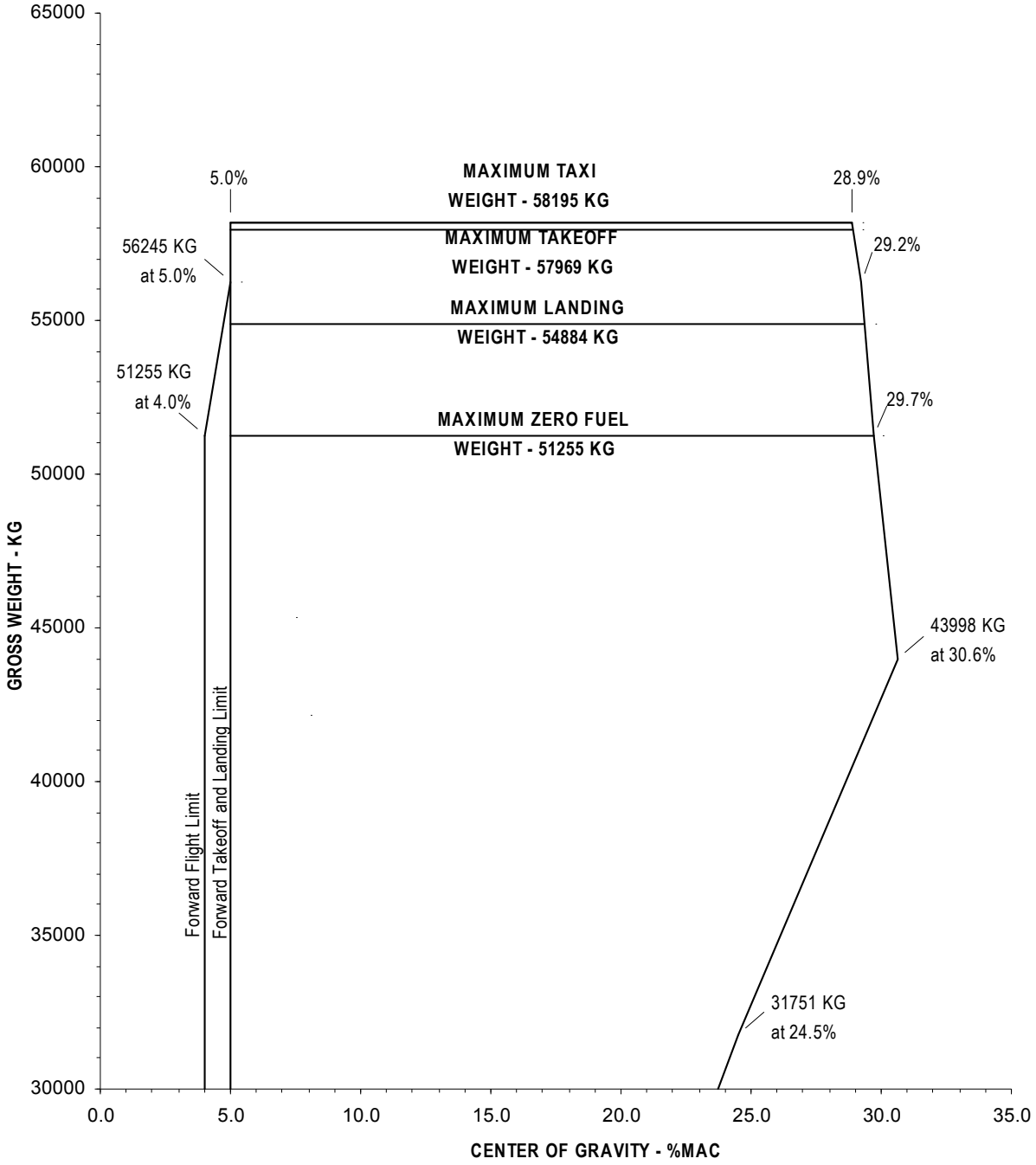
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
G, K

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (Continued)

C.G. LIMITS - MTW 58195 KG, MLW 54884 KG, MZFW 51255 KG

The following diagram represents the certified Center of Gravity Limits in Metric units:



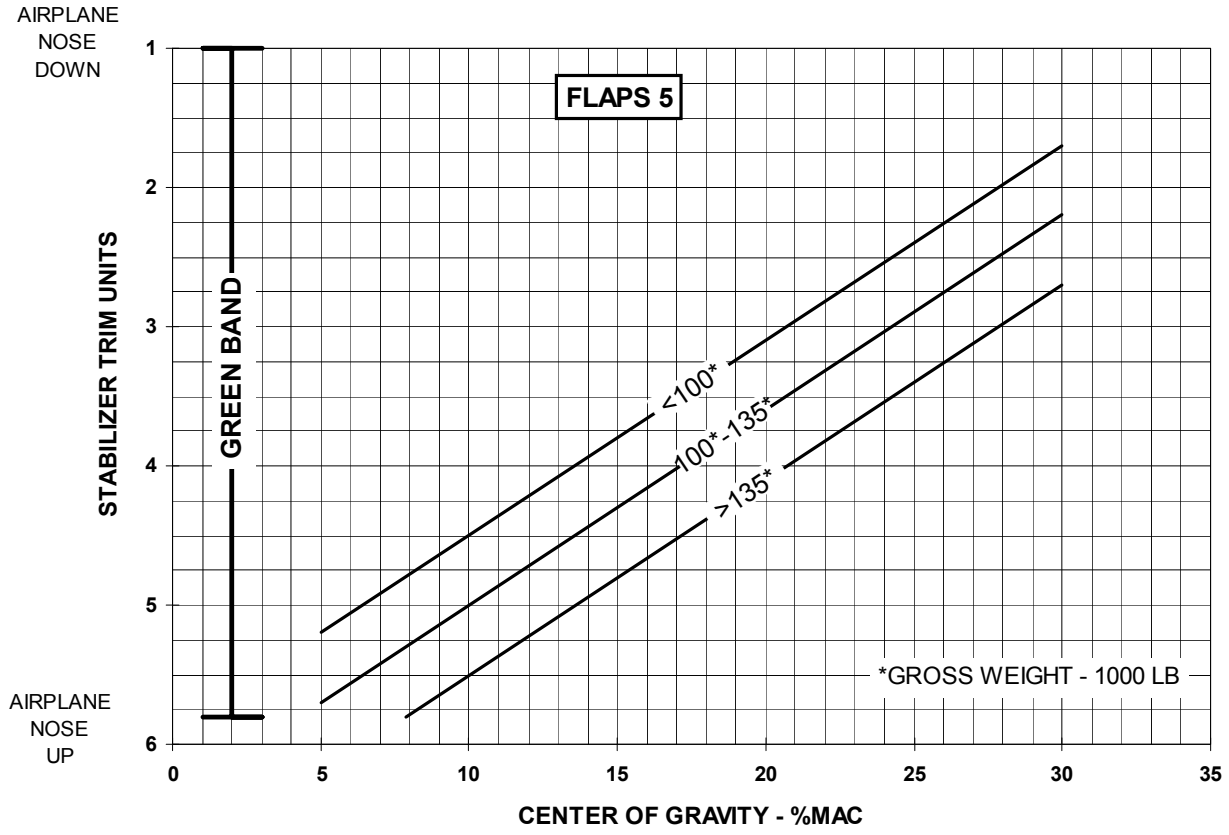
WARNING REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.

APPLICABLE CONFIGURATIONS
G, K

TAKEOFF HORIZONTAL STABILIZER TRIM SETTING

ENGLISH UNITS FLAPS 5

The following diagram provides Takeoff Trim Settings versus Airplane Center of Gravity for Flaps 5 in Pounds.



The following table provides inflection point data for the Takeoff Trim Settings versus Airplane Center of Gravity diagram.

TAKEOFF TRIM SETTING INFLECTION POINTS (Gross Weight - 1000 LB)					
<100		100-135		>135	
C.G.	STAB. TRIM	C.G.	STAB. TRIM	C.G.	STAB. TRIM
5.0	5.2	5.0	5.7	7.9	5.8
30.0	1.7	30.0	2.2	30.0	2.7

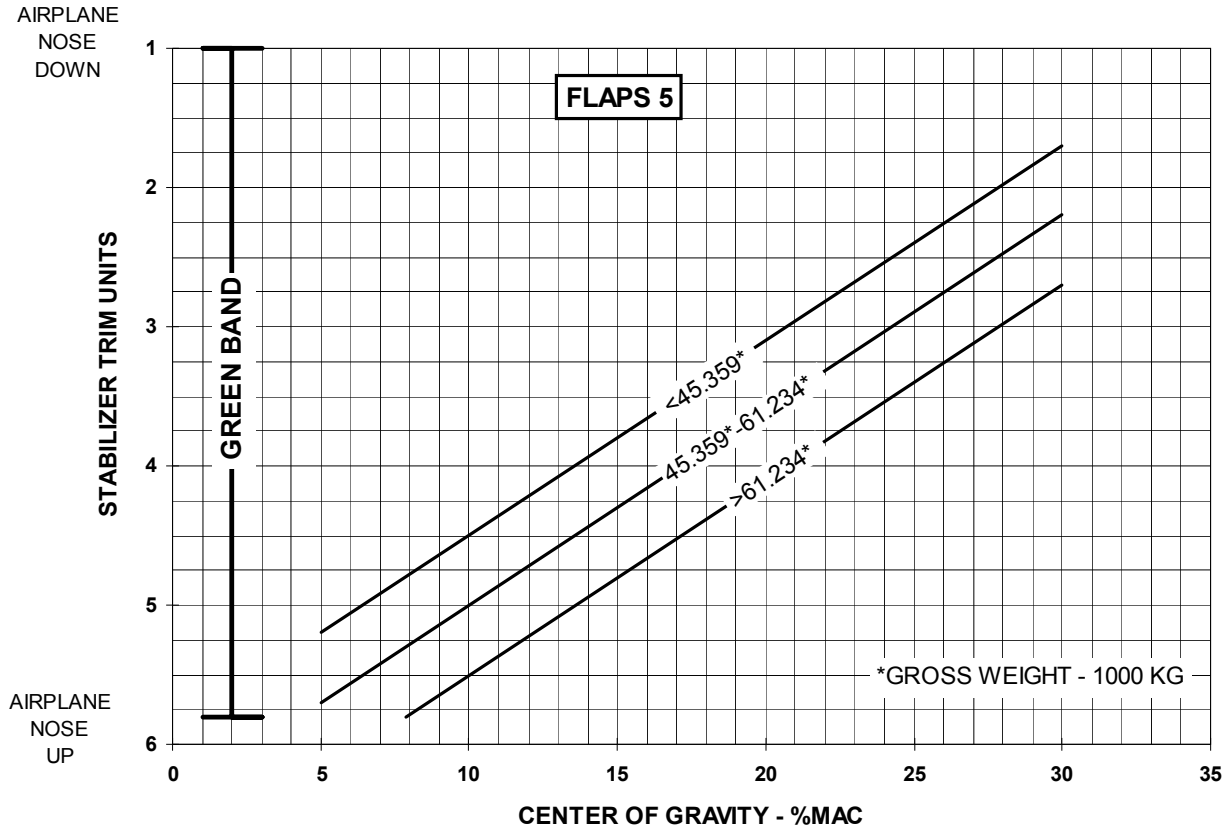
A tolerance of plus or minus 0.75 trim units is acceptable when determining takeoff trim as a function of airplane takeoff weight and center of gravity. This is approximately equivalent to plus or minus 4.6% MAC. This allowable tolerance between “actual” and “calculated” takeoff center of gravity must be adhered to in the development of simplified loading devices or manifests.

APPLICABLE CONFIGURATIONS
All

TAKEOFF HORIZONTAL STABILIZER TRIM SETTING (Continued)

METRIC UNITS FLAPS 5

The following diagram provides Takeoff Trim Settings versus Airplane Center of Gravity for Flaps 5 in Kilograms.



The following table provides inflection point data for the Takeoff Trim Settings versus Airplane Center of Gravity diagram.

TAKEOFF TRIM SETTING INFLECTION POINTS (Gross Weight - 1000 KG)					
<45.359		45.359-61.234		>61.234	
C.G.	STAB. TRIM	C.G.	STAB. TRIM	C.G.	STAB. TRIM
5.0	5.2	5.0	5.7	7.9	5.8
30.0	1.7	30.0	2.2	30.0	2.7

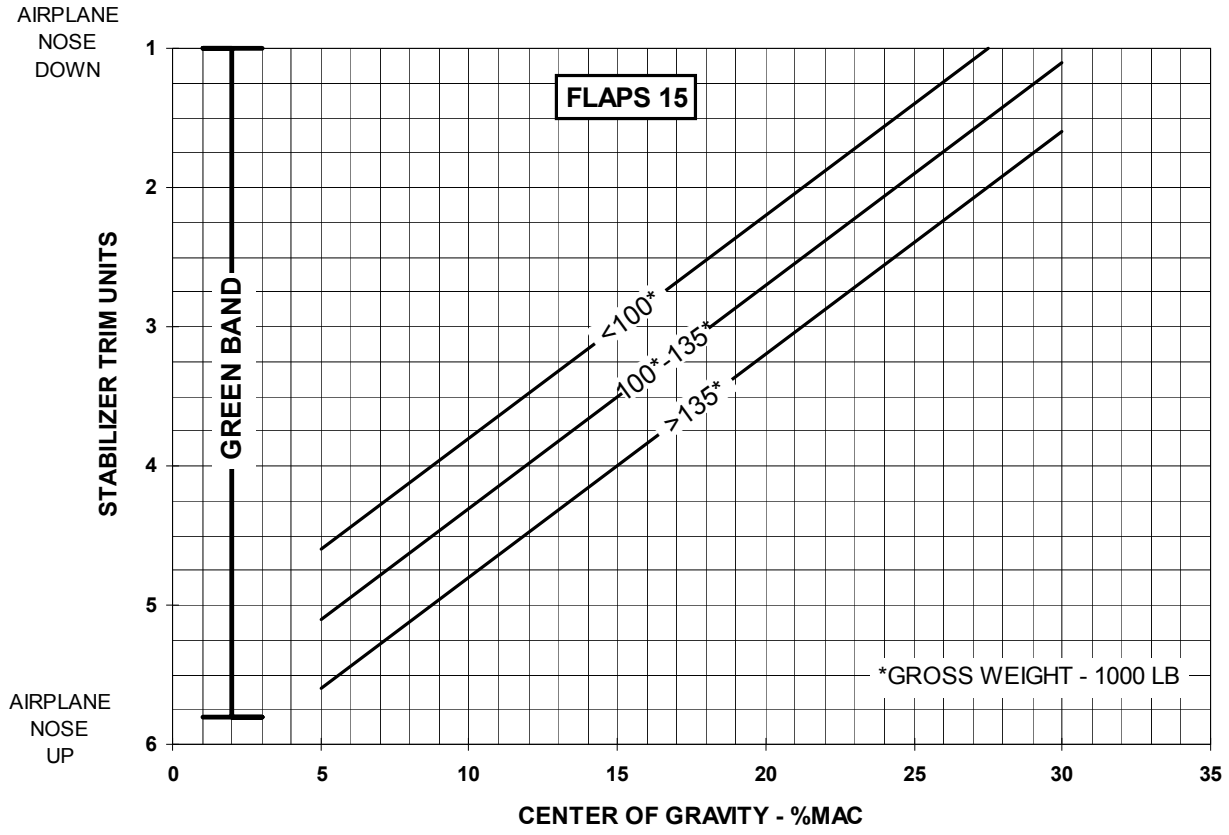
A tolerance of plus or minus 0.75 trim units is acceptable when determining takeoff trim as a function of airplane takeoff weight and center of gravity. This is approximately equivalent to plus or minus 4.6% MAC. This allowable tolerance between “actual” and “calculated” takeoff center of gravity must be adhered to in the development of simplified loading devices or manifests.

APPLICABLE CONFIGURATIONS
All

TAKEOFF HORIZONTAL STABILIZER TRIM SETTING (Continued)

ENGLISH UNITS FLAPS 15

The following diagram provides Takeoff Trim Settings versus Airplane Center of Gravity for Flaps 15 in Pounds.



The following table provides inflection point data for the Takeoff Trim Settings versus Airplane Center of Gravity diagram.

TAKEOFF TRIM SETTING INFLECTION POINTS (Gross Weight - 1000 LB)					
<100		100-135		>135	
C.G.	STAB. TRIM	C.G.	STAB. TRIM	C.G.	STAB. TRIM
5.0	4.6	5.0	5.1	5.0	5.6
27.5	1.0	30.0	1.1	30.0	1.6

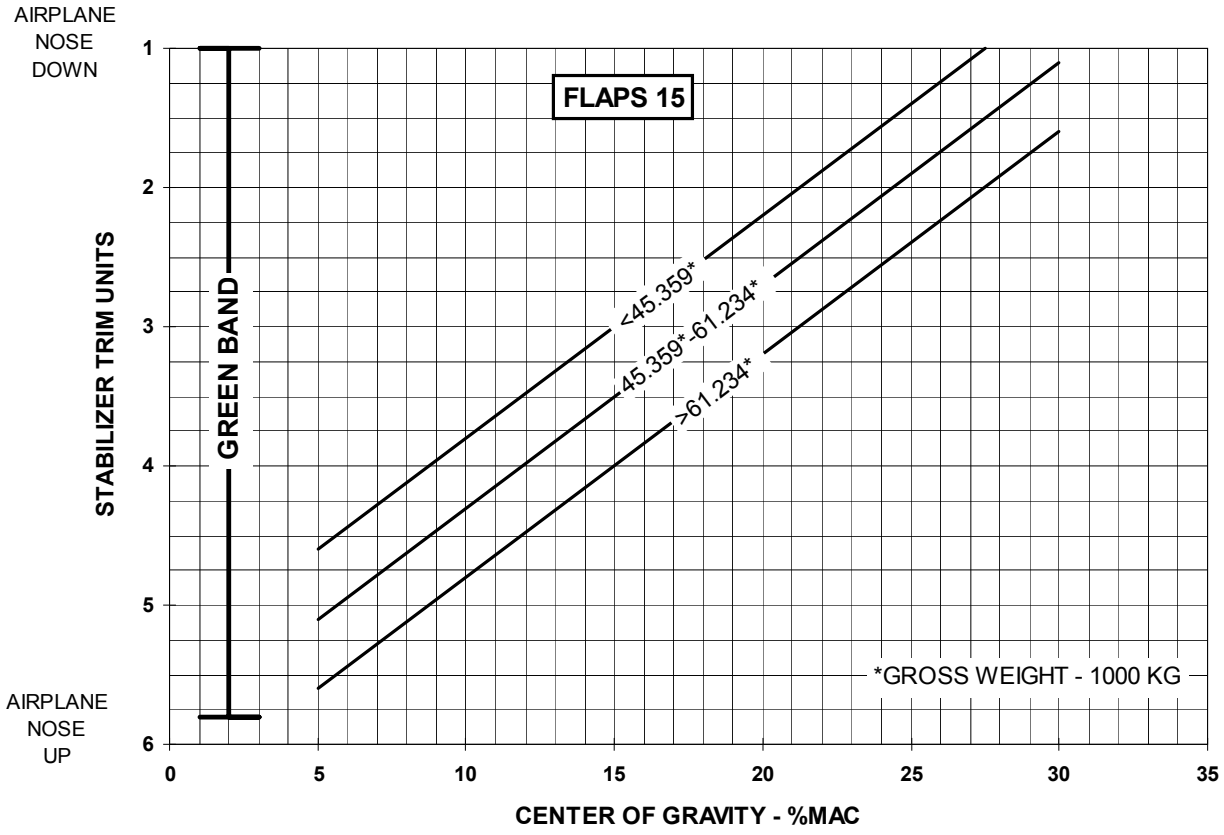
A tolerance of plus or minus 0.75 trim units is acceptable when determining takeoff trim as a function of airplane takeoff weight and center of gravity. This is approximately equivalent to plus or minus 4.6% MAC. This allowable tolerance between “actual” and “calculated” takeoff center of gravity must be adhered to in the development of simplified loading devices or manifests.

APPLICABLE CONFIGURATIONS
All

TAKEOFF HORIZONTAL STABILIZER TRIM SETTING (Continued)

METRIC UNITS FLAPS 15

The following diagram provides Takeoff Trim Settings versus Airplane Center of Gravity for Flaps 15 in Kilograms.



The following table provides inflection point data for the Takeoff Trim Settings versus Airplane Center of Gravity diagram.

TAKEOFF TRIM SETTING INFLECTION POINTS (Gross Weight - 1000 KG)					
<45.359		45.359-61.234		>61.234	
C.G.	STAB. TRIM	C.G.	STAB. TRIM	C.G.	STAB. TRIM
5.0	4.6	5.0	5.1	5.0	5.6
27.5	1.0	30.0	1.1	30.0	1.6

A tolerance of plus or minus 0.75 trim units is acceptable when determining takeoff trim as a function of airplane takeoff weight and center of gravity. This is approximately equivalent to plus or minus 4.6% MAC. This allowable tolerance between “actual” and “calculated” takeoff center of gravity must be adhered to in the development of simplified loading devices or manifests.

APPLICABLE CONFIGURATIONS
All

LANDING GEAR AND FLAP MOVEMENT BALANCE EFFECT

LANDING GEAR RETRACTION MOMENT

The following table provides airplane moment changes caused by retraction of the landing gear from the taxi position (gear down) to the flight position (retracted, gear up).

GEAR	MOMENT	
	LB-IN.	KG-IN.
Nose (Down to Up)	-8310	-3769
Main (Down to Up)	0	0
Total Moment Change	-8310	-3769

FLAPS RETRACTION MOMENT

The following table provides airplane moment changes caused by retraction of the leading edge (L.E.) and the trailing edge (T.E.) flaps.

FLAP POSITION		MOMENT LB-IN.			MOMENT KG-IN.		
FROM	TO	L.E. FLAPS	T.E. FLAPS	TOTAL	L.E. FLAPS	T.E. FLAPS	TOTAL
40	30	0	-2000	-2000	0	-907	-907
40	25	0	-4090	-4090	0	-1855	-1855
40	15	0	-5460	-5460	0	-2558	-2558
40	10	0	-8490	-8490	0	-3851	-3851
40	5	+2050	-12240	-10190	+929	-5552	-4623
40	2	+2050	-25810	-23760	+929	-11707	-10778
40	1	+2050	-31585	-29535	+929	-14327	-13398
40	0	+3120	-38070	-34950	+1415	-17268	-15853

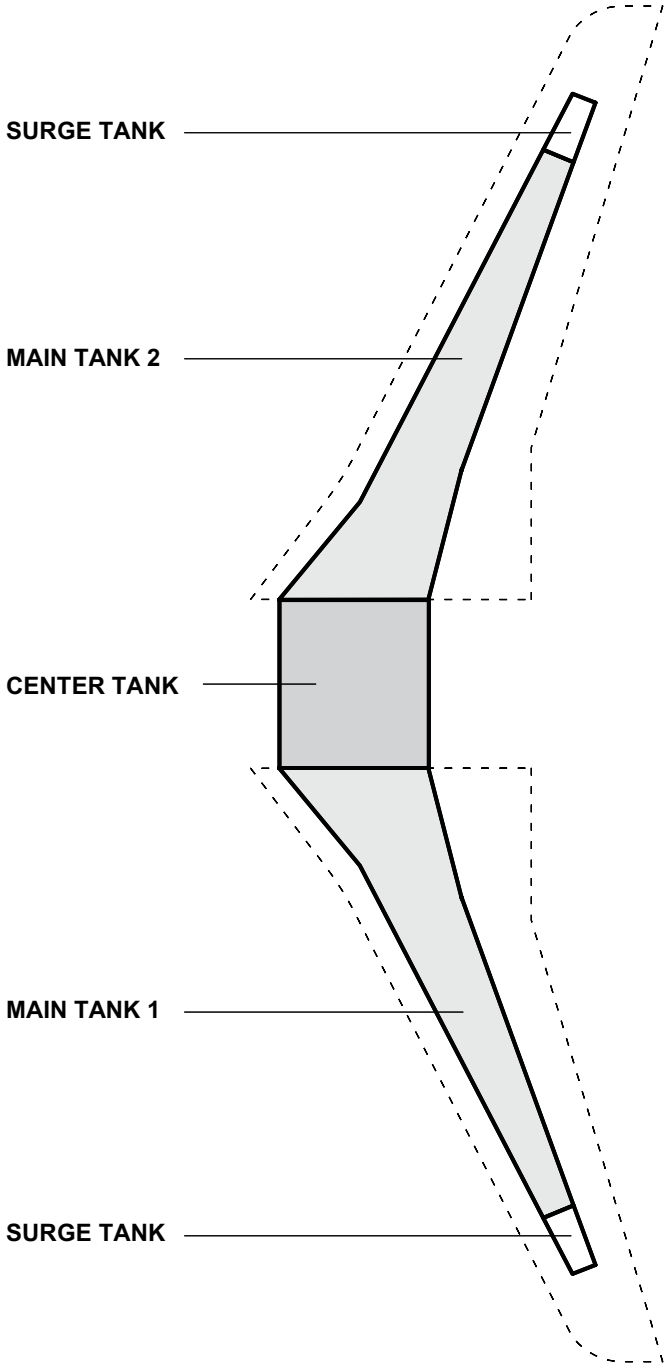
NOTE A forward movement of airplane center of gravity is a negative moment. An aft movement of airplane center of gravity is a positive moment

APPLICABLE CONFIGURATIONS
All

FUEL TANK ARRANGEMENT AND CAPACITIES

FUEL TANK LOCATIONS

The following diagram shows the fuel tank arrangement:



APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

FUEL TANK ARRANGEMENT AND CAPACITIES (Continued)

MAXIMUM ALLOWABLE FUEL WEIGHT

The maximum allowable usable tank quantities shown in the following table are based on a fuel density of 7.1 LB/U.S. GAL. (0.8507 KG/L).

LOCATION	MAXIMUM VOLUME		MAXIMUM WEIGHT	
	U.S. GAL.	L	LB	KG
Main Tank 1 or 2	1499.0	5674.3	10643	4827
Center Tank	2313.0	8755.7	16422	7448

USABLE FUEL QUANTITIES AND LOCATIONS

The following tables provide volume and center of gravity data for usable fuel. For definitions of “usable”, “drainable usable” and “trapped usable”, refer to General Information (CHP-SEC 1-00-001).

Under Wing Fueling

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Usable	Main Tank 1	1499.0	5674.3	650.7
	Main Tank 2	1499.0	5674.3	650.7
	Center Tank	2313.0	8755.7	600.4
	Feed Lines[a]	4.6[b]	17.4[b]	603.0
	Engines	1.1[b]	4.2[b]	559.4
TOTAL USABLE		5316.7	20125.9	628.8

[a] All fuel in lines between boost pump check valves and engine pump inlets, bypass valves, defuel valves, and APU fuel control. Pump inlet line volume included in tank volume.

[b] These volumes are not gauged.

Over Wing Fueling

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Usable	Main Tank 1	1494.0	5655.4	650.4
	Main Tank 2	1494.0	5655.4	650.4
TOTAL USABLE		2988.0	11310.8	650.4

APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

FUEL TANK ARRANGEMENT AND CAPACITIES (Continued)

UNUSABLE FUEL QUANTITIES AND LOCATIONS

The following table provides volume and center of gravity data for unusable fuel. For definitions of “unusable”, “drainable unusable” and “trapped unusable”, refer to General Information (CHP-SEC 1-00-001).

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Unusable[a]	Main Tank 1	4.3	16.3	599.0
	Main Tank 2	4.3	16.3	599.0
	Center Tank	2.3	8.7	600.9
	Total Drainable	10.9	41.3	599.4
Trapped Unusable[a]	Main Tank 1	0.3	1.1	598.0
	Main Tank 2	0.3	1.1	598.0
	Center Tank	5.6	21.2	599.4
	Feed Lines[b]	0.9	3.4	554.9
	Fueling Manifold	1.1	4.2	577.6
	Engines	4.2	15.9	559.3
	Pumps	0.2	0.8	603.0
	Total Trapped	12.6	47.7	581.0
TOTAL UNUSABLE		23.5	89.0	589.5

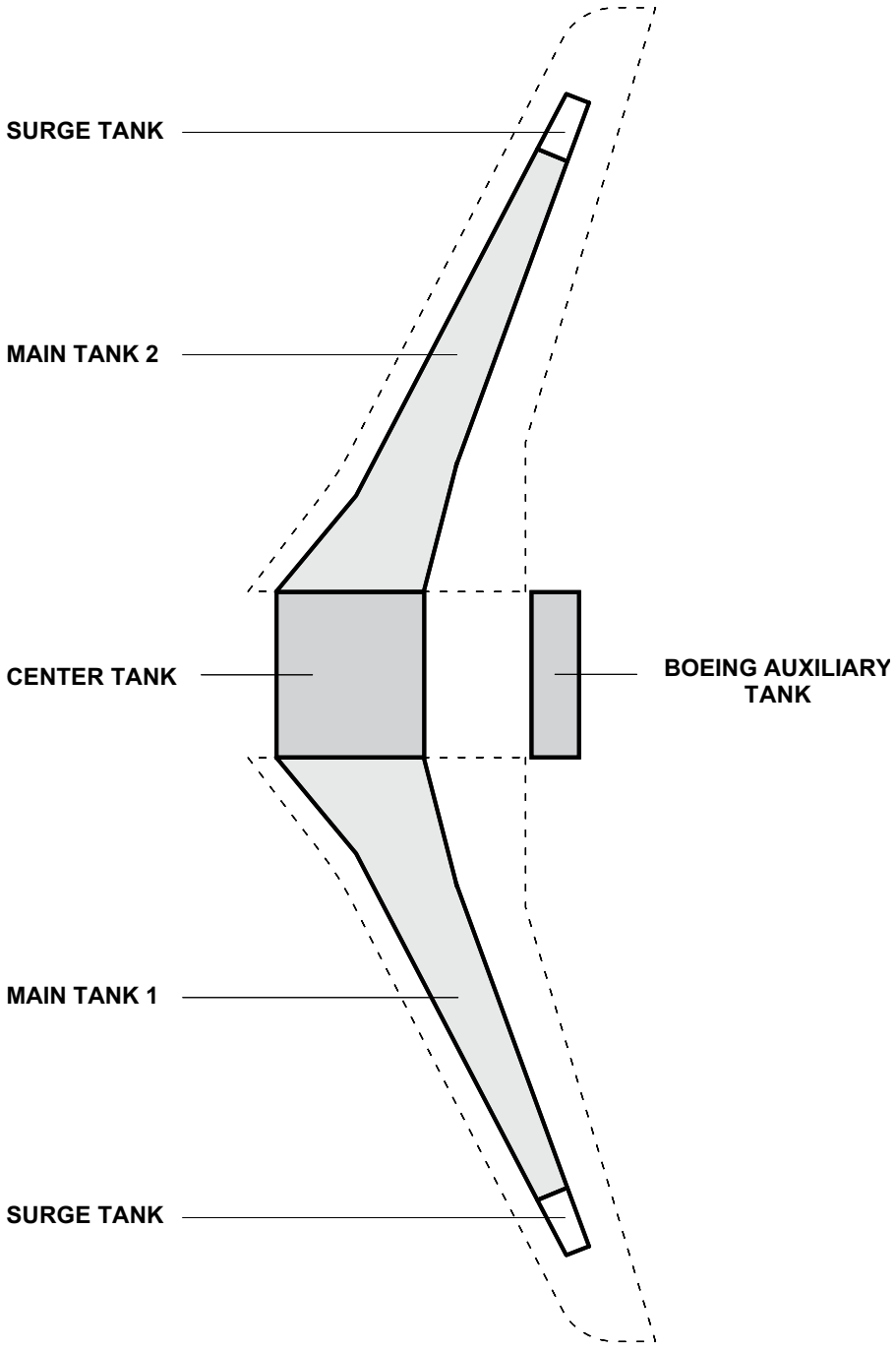
[a] Based on an airplane nominal ground attitude of 0.15 degrees nose down and 0 degrees roll.

[b] All fuel in lines between boost pump check valves and engine pump inlets, bypass valves, defuel valves, and APU fuel control. Pump inlet line volume included in tank volume.

FUEL TANK ARRANGEMENT AND CAPACITIES

FUEL TANK LOCATIONS

The following diagram shows the fuel tank arrangement with the Boeing 391 Gal. auxiliary fuel tank installed:



APPLICABLE CONFIGURATIONS
D, U

FUEL TANK ARRANGEMENT AND CAPACITIES (Continued)

MAXIMUM ALLOWABLE FUEL WEIGHT

The maximum allowable usable tank quantities shown in the following table are based on a fuel density of 7.1 LB/U.S. GAL. (0.8507 KG/L).

LOCATION	MAXIMUM VOLUME		MAXIMUM WEIGHT	
	U.S. GAL.	L	LB	KG
Main Tank 1 or 2	1499.0	5674.3	10643	4827
Center Tank	2313.0	8755.7	16422	7448
Boeing Auxiliary Tank	391.0	1480.1	2776	1259

USABLE FUEL QUANTITIES AND LOCATIONS

The following tables provide volume and center of gravity data for usable fuel. For definitions of “usable”, “drainable usable” and “trapped usable”, refer to General Information (CHP-SEC 1-00-001).

Under Wing Fueling

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Usable	Main Tank 1	1499.0	5674.3	650.7
	Main Tank 2	1499.0	5674.3	650.7
	Center Tank	2313.0	8755.7	600.4
	Boeing Auxiliary Tank	391.0	1480.1	755.0
	Feed Lines[a]	4.6[b]	17.4[b]	603.0
	Engines	1.1[b]	4.2[b]	559.4
TOTAL USABLE		5707.7	21606.0	637.4

[a] All fuel in lines between boost pump check valves and engine pump inlets, bypass valves, defuel valves, and APU fuel control. Pump inlet line volume included in tank volume.

[b] These volumes are not gauged.

Over Wing Fueling

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Usable	Main Tank 1	1494.0	5655.4	650.4
	Main Tank 2	1494.0	5655.4	650.4
TOTAL USABLE		2988.0	11310.8	650.4

APPLICABLE CONFIGURATIONS
D, U

FUEL TANK ARRANGEMENT AND CAPACITIES (Continued)

UNUSABLE FUEL QUANTITIES AND LOCATIONS

The following table provides volume and center of gravity data for unusable fuel. For definitions of “unusable”, “drainable unusable” and “trapped unusable”, refer to General Information (CHP-SEC 1-00-001).

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Unusable[a]	Main Tank 1	4.3	16.3	599.0
	Main Tank 2	4.3	16.3	599.0
	Center Tank	2.3	8.7	600.9
	Boeing Auxiliary Tank	1.9	7.2	755.0
	Total Drainable	12.8	48.5	622.5
Trapped Unusable[a]	Main Tank 1	0.3	1.1	598.0
	Main Tank 2	0.3	1.1	598.0
	Center Tank	5.6	21.2	599.4
	Boeing Auxiliary Tank	0.5	1.9	755.0
	Feed Lines[b]	0.9	3.4	554.9
	Fueling Manifold	1.1	4.2	577.6
	Engines	4.2	15.9	559.3
	Pumps	0.2	0.8	603.0
	Total Trapped	13.1	49.6	587.6
TOTAL UNUSABLE		25.9	98.1	604.9

[a] Based on an airplane nominal ground attitude of 0.15 degrees nose down and 0 degrees roll.

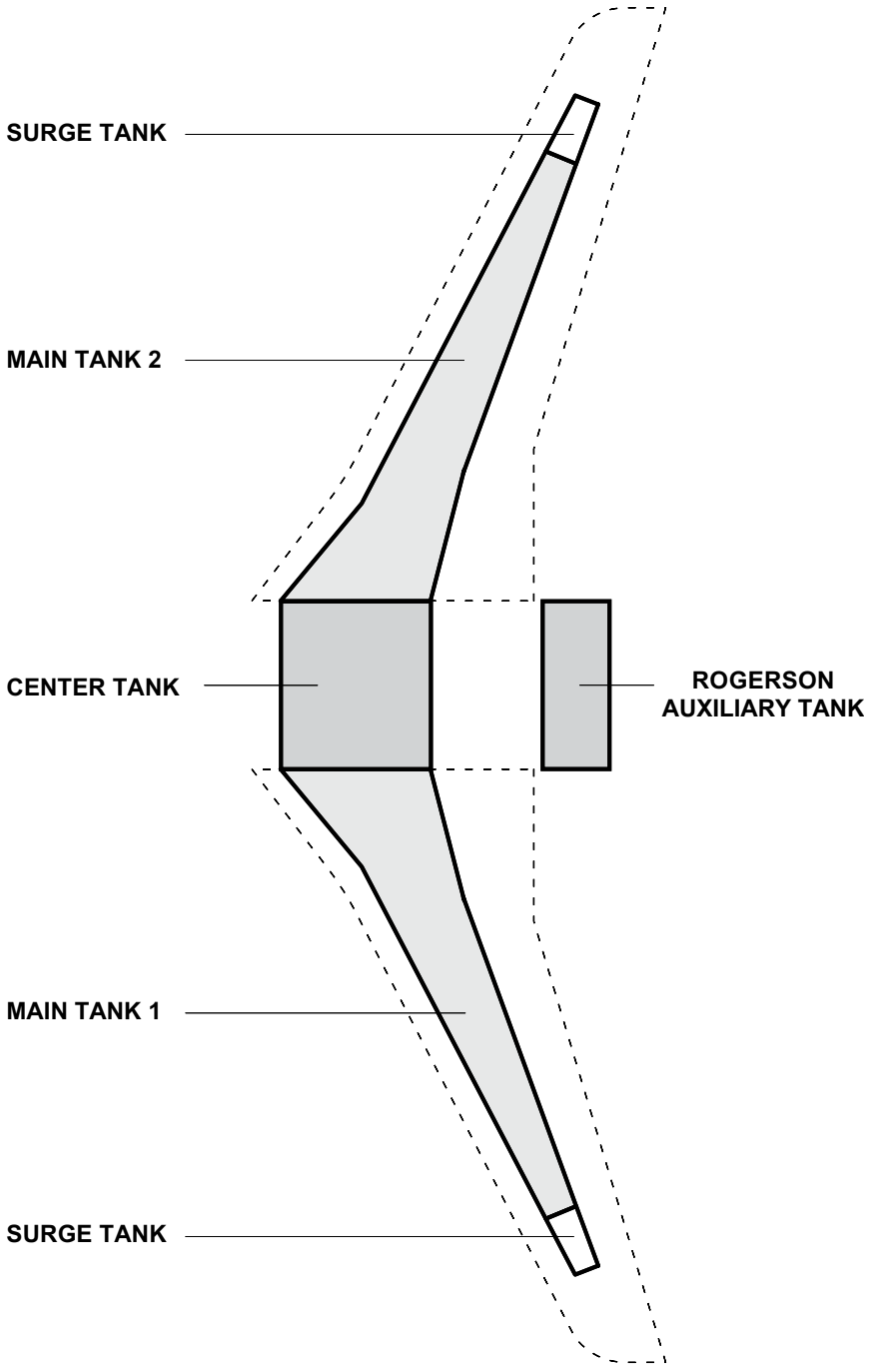
[b] All fuel in lines between boost pump check valves and engine pump inlets, bypass valves, defuel valves, and APU fuel control. Pump inlet line volume included in tank volume.

APPLICABLE CONFIGURATIONS
D, U

FUEL TANK ARRANGEMENT AND CAPACITIES

FUEL TANK LOCATIONS

The following diagram shows the fuel tank arrangement with the Rogerson 500 Gal. auxiliary fuel tank installed:



APPLICABLE CONFIGURATIONS
H

FUEL TANK ARRANGEMENT AND CAPACITIES (Continued)

MAXIMUM ALLOWABLE FUEL WEIGHT

The maximum allowable usable tank quantities shown in the following table are based on a fuel density of 7.1 LB/U.S. GAL. (0.8507 KG/L).

LOCATION	MAXIMUM VOLUME		MAXIMUM WEIGHT	
	U.S. GAL.	L	LB	KG
Main Tank 1 or 2	1499.0	5674.3	10643	4827
Center Tank	2313.0	8755.7	16422	7448
Rogerson Auxiliary Tank	492.0	1862.4	3493	1584

USABLE FUEL QUANTITIES AND LOCATIONS

The following tables provide volume and center of gravity data for usable fuel. For definitions of “usable”, “drainable usable” and “trapped usable”, refer to General Information (CHP-SEC 1-00-001).

Under Wing Fueling

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Usable	Main Tank 1	1499.0	5674.3	650.7
	Main Tank 2	1499.0	5674.3	650.7
	Center Tank	2313.0	8755.7	600.4
	Rogerson Auxiliary Tank	492.0	1862.4	762.0
	Feed Lines[a]	4.6[b]	17.4[b]	603.0
	Engines	1.1[b]	4.2[b]	559.4
TOTAL USABLE		5808.7	21988.3	640.0

[a] All fuel in lines between boost pump check valves and engine pump inlets, bypass valves, defuel valves, and APU fuel control. Pump inlet line volume included in tank volume.

[b] These volumes are not gauged.

Over Wing Fueling

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Usable	Main Tank 1	1494.0	5655.4	650.4
	Main Tank 2	1494.0	5655.4	650.4
TOTAL USABLE		2988.0	11310.8	650.4

APPLICABLE CONFIGURATIONS
H

FUEL TANK ARRANGEMENT AND CAPACITIES (Continued)

UNUSABLE FUEL QUANTITIES AND LOCATIONS

The following table provides volume and center of gravity data for unusable fuel. For definitions of “unusable”, “drainable unusable” and “trapped unusable”, refer to General Information (CHP-SEC 1-00-001).

FUEL CATEGORY	FUEL LOCATION	VOLUME		B.A. IN.
		U.S. GAL.	L	
Drainable Unusable[a]	Main Tank 1	4.3	16.3	599.0
	Main Tank 2	4.3	16.3	599.0
	Center Tank	2.3	8.7	600.9
	Rogerson Auxiliary Tank	0.1	0.4	762.0
	Total Drainable	11.0	41.7	600.9
Trapped Unusable[a]	Main Tank 1	0.3	1.1	598.0
	Main Tank 2	0.3	1.1	598.0
	Center Tank	5.6	21.2	599.4
	Rogerson Auxiliary Tank	4.3	16.3	762.0
	Feed Lines[b]	0.9	3.4	554.9
	Fueling Manifold	1.1	4.2	577.6
	Engines	4.2	15.9	559.3
	Pumps	0.2	0.8	603.0
	Total Trapped	16.9	64.0	627.0
TOTAL UNUSABLE		27.9	105.7	616.7

[a] Based on an airplane nominal ground attitude of 0.15 degrees nose down and 0 degrees roll.

[b] All fuel in lines between boost pump check valves and engine pump inlets, bypass valves, defuel valves, and APU fuel control. Pump inlet line volume included in tank volume.

APPLICABLE CONFIGURATIONS
H

FUEL MANAGEMENT

FUEL LOADING PROCEDURES

Fuel loading limitations and procedures are detailed below.

Loading Procedures

Use the following procedures for loading fuel:

1. Load main tanks 1 and 2 equally to the desired fuel quantity or until full.
2. Load additional fuel in the center tank.

Main tanks 1 and 2 must be scheduled to be full if the center tank contains more than 1000 LB (453 KG) of fuel. With 1000 LB (453 KG) or less of center tank fuel, partial main tank fuel may be loaded provided the effects of balance have been considered.

NOTE Recommended fuel loading reflects the final dispatch fuel distribution, not a loading sequence. Fuel tanks may be loaded individually, simultaneously or in any sequence.

LATERAL FUEL IMBALANCE

The following random lateral imbalance criteria between main tanks 1 and 2 must be observed:

- The lateral fuel imbalance between main tanks 1 and 2 must be scheduled to be zero.
- Random fuel imbalance must not exceed 1000 LB (453 KG) for taxi, takeoff, flight, and landing.

APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

FUEL MANAGEMENT (Continued)

FUEL USAGE PROCEDURES

Fuel usage limitations and procedures are detailed below.

Usage Limitations

Use center tank fuel until depletion; however, a maximum of 1000 LB (453 KG) of fuel may be retained in the center tank, provided that the aircraft center of gravity remains within the center of gravity limitations.

Usage Procedures

Use the following procedures for fuel usage:

- Main Tank Fuel Only: Start engines, taxi and takeoff using respective main tank to engine with all operable main tank boost pumps on and the crossfeed valve closed.[1] Continue through remainder of flight.
- Center Tank Fuel: Start engines, taxi and takeoff using center tank to both engines, with all operable boost pumps on and the crossfeed valve closed.[1] Continue flight until center tank fuel is depleted (however, a maximum of 1000 LB (453 KG) may be retained in the center tank provided the effects of balance have been considered), turn off both center tank boost pumps, then use respective main tank to engine equally through remainder of flight.

Ground Operations

For ground operation, center tank fuel pump switches must not be positioned to “ON” unless the center tank fuel quantity exceeds 1000 LB (453 KG), except when defueling or transferring fuel.

Center tank fuel pump switches must be positioned to “OFF” when both center tank fuel pump low pressure lights illuminate.[2]

Center tank fuel pumps must not be “ON” unless personnel are available in the flight deck to monitor low pressure lights.

NOTE Refer to the Airplane Flight Manual, Section 3 for fuel usage procedure.

[1] The crossfeed valve is open for minimum fuel operation, and may be opened to correct or prevent fuel imbalance.

[2] If a center tank fuel pump LOW PRESSURE light(s) illuminates during takeoff or climb, the center tank pump(s) may remain on until the climb attitude is reduced and the light(s) extinguishes or workload allows for the pump(s) to be positioned “OFF”.

APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

FUEL MANAGEMENT

FUEL LOADING PROCEDURES

Fuel loading limitations and procedures are detailed below.

Loading Procedures

Use the following procedures for loading fuel:

1. Load main tanks 1 and 2 equally to the desired fuel quantity or until full.
2. Load additional fuel in the center tank.
3. Load auxiliary tank fuel (if required), after main tanks 1 and 2 are full and the center tank has a minimum of 10000 LB (4536 KG).

Main tanks 1 and 2 must be scheduled to be full if the center tank contains more than 1000 LB (453 KG) of fuel. With 1000 LB (453 KG) or less of center tank fuel, partial main tank fuel may be loaded provided the effects of balance have been considered.

Main tanks 1 and 2 must be scheduled to be full and the center tank scheduled to contain at least 10000 LB (4536 KG) of fuel, if any auxiliary tank fuel is loaded.

NOTE Recommended fuel loading reflects the final dispatch fuel distribution, not a loading sequence. Fuel tanks may be loaded individually, simultaneously or in any sequence.

LATERAL FUEL IMBALANCE

The following random lateral imbalance criteria between main tanks 1 and 2 must be observed:

- The lateral fuel imbalance between main tanks 1 and 2 must be scheduled to be zero.
- Random fuel imbalance must not exceed 1000 LB (453 KG) for taxi, takeoff, flight, and landing.

APPLICABLE CONFIGURATIONS
D, U

FUEL MANAGEMENT (Continued)

FUEL USAGE PROCEDURES

Fuel usage limitations and procedures are detailed below.

Usage Limitations

Use center tank fuel until depletion; however, a maximum of 1000 LB (453 KG) of fuel may be retained in the center tank, provided that the aircraft center of gravity remains within the center of gravity limitations.

Usage Procedures

Use the following procedures for fuel usage:

- Main Tank Fuel Only: Start engines, taxi and takeoff using respective main tank to engine with all operable main tank boost pumps on and the crossfeed valve closed.[1] Continue through remainder of flight.
- Center Tank Fuel: Start engines, taxi and takeoff using center tank to both engines, with all operable boost pumps on and the crossfeed valve closed.[1] Continue flight until center tank fuel is depleted (however, a maximum of 1000 LB (453 KG) may be retained in the center tank provided the effects of balance have been considered), turn off both center tank boost pumps, then use respective main tank to engine equally through remainder of flight.
- Auxiliary Tank Fuel: Start engines, taxi and takeoff using auxiliary tank to feed engine 1 and center tank to feed engine 2, with all operable boost pumps on and crossfeed valve closed[1]. Continue flight until auxiliary tank fuel is depleted, then turn off auxiliary tank boost pumps. Continue flight using center tank to both engines until center tank fuel is depleted (however, a maximum of 1000 LB (453 KG) may be retained in the center tank provided the effects of balance have been considered). Turn off both center tank boost pumps, then use respective main tank to engine equally through remainder of flight.

NOTE Refer to the Airplane Flight Manual, Section 3 for fuel usage procedure.

[1] The crossfeed valve is open for minimum fuel operation, and may be opened to correct or prevent fuel imbalance.

APPLICABLE CONFIGURATIONS
D, U

FUEL MANAGEMENT

FUEL LOADING PROCEDURES

Fuel loading limitations and procedures are detailed below.

Loading Procedures

Use the following procedures for loading fuel:

1. Load main tanks 1 and 2 equally to the desired fuel quantity or until full.
2. Load additional fuel in the center tank.
3. Load auxiliary tank fuel (if required), after main tanks 1 and 2 and the center tank are full.

Main tanks 1 and 2 must be scheduled to be full if the center tank contains more than 1000 LB (453 KG) of fuel. With 1000 LB (453 KG) or less of center tank fuel, partial main tank fuel may be loaded provided the effects of balance have been considered.

Main tanks 1 and 2 and the center tank must be scheduled to be full if any auxiliary tank fuel is loaded.

NOTE Recommended fuel loading reflects the final dispatch fuel distribution, not a loading sequence. Fuel tanks may be loaded individually, simultaneously or in any sequence.

LATERAL FUEL IMBALANCE

The following random lateral imbalance criteria between main tanks 1 and 2 must be observed:

- The lateral fuel imbalance between main tanks 1 and 2 must be scheduled to be zero.
- Random fuel imbalance must not exceed 1000 LB (453 KG) for taxi, takeoff, flight, and landing.

APPLICABLE CONFIGURATIONS
H

FUEL MANAGEMENT (Continued)

FUEL USAGE PROCEDURES

Fuel usage limitations and procedures are detailed below.

Usage Limitations

Use center tank fuel until depletion; however, a maximum of 1000 LB (453 KG) of fuel may be retained in the center tank, provided that the aircraft center of gravity remains within the center of gravity limitations.

Usage Procedures

Use the following procedures for fuel usage:

- Main Tank Fuel Only: Start engines, taxi and takeoff using respective main tank to engine with all operable main tank boost pumps on and the crossfeed valve closed.[1] Continue through remainder of flight.
- Center Tank Fuel: Start engines, taxi and takeoff using center tank to both engines, with all operable boost pumps on and the crossfeed valve closed.[1] Continue flight until center tank fuel is depleted (however, a maximum of 1000 LB (453 KG) may be retained in the center tank provided the effects of balance have been considered), turn off both center tank boost pumps, then use respective main tank to engine equally through remainder of flight.
- Auxiliary Tank Fuel: Start engines, taxi and takeoff using center tank to both engines, with all operable boost pumps on, auxiliary fuel L and R system switches on, and the crossfeed valve closed[1]. After retraction of landing gear, use auxiliary tank and center tank equally to feed both engines. Continue flight until auxiliary tank fuel is depleted, then turn off auxiliary fuel L and R system switches. Continue flight using center tank to both engines until center tank fuel is depleted (however, a maximum of 1000 LB (453 KG) may be retained in the center tank provided the effects of balance have been considered). Turn off both center tank boost pumps, then use respective main tank to engine equally through remainder of flight.

NOTE Refer to the Airplane Flight Manual, Section 3 for fuel usage procedure.

[1] The crossfeed valve is open for minimum fuel operation, and may be opened to correct or prevent fuel imbalance.

APPLICABLE CONFIGURATIONS
H

FUEL TANK QUANTITIES AND BALANCE ARMS

COMBINED MAIN TANKS 1 AND 2 IN U.S. GALLONS

The following table provides usable, gauged fuel data in U.S. gallons.

U.S. GALLONS

MAIN TANKS 1 & 2	
VOLUME U.S. GAL.	B.A. IN.
100	606.5
200	609.1
300	611.4
400	613.4
500	615.1
600	616.4
700	617.9
800	619.1
900	620.2
1000	621.4
1100	622.4
1200	623.4
1300	624.3
1400	625.2
1500	626.1

MAIN TANKS 1 & 2	
VOLUME U.S. GAL	B.A. IN.
1600	626.8
1700	627.6
1800	628.4
1900	629.2
2000	630.0
2100	630.8
2200	631.6
2300	633.1
2400	635.1
2500	637.3
2600	639.6
2700	642.2
2800	644.9
2900	647.7
2998	650.7

APPLICABLE CONFIGURATIONS
All

FUEL TANK QUANTITIES AND BALANCE ARMS (Continued)

COMBINED MAIN TANKS 1 AND 2 IN LITERS

The following table provides usable, gauged fuel data in liters.

LITERS

MAIN TANKS 1 & 2	
VOLUME L	B.A. IN.
400	606.7
800	609.4
1200	611.8
1600	613.8
2000	615.5
2400	616.9
2800	618.4
3200	619.6
3600	620.8
4000	622.0
4400	623.0
4800	624.0
5200	624.9
5600	625.9
6000	626.7

MAIN TANKS 1 & 2	
VOLUME L	B.A. IN.
6400	627.5
6800	628.3
7200	629.2
7600	630.0
8000	630.9
8400	631.7
8800	633.5
9200	635.7
9600	638.2
10000	640.7
10400	643.5
10800	646.4
11200	649.5
11348	650.7

APPLICABLE CONFIGURATIONS
All

FUEL TANK QUANTITIES AND BALANCE ARMS

CENTER TANK IN U.S. GALLONS

The following table provides usable, gauged fuel data in U.S. gallons.

U.S. GALLONS

CENTER TANK	
VOLUME U.S. GAL.	B.A. IN.
100	600.9
200	601.0
300	601.2
400	601.4
500	601.6
600	601.7
700	601.8
800	601.9
900	601.9
1000	602.0
1100	602.0
1200	602.1
1300	602.1
1400	602.1
1500	602.1

CENTER TANK	
VOLUME U.S. GAL	B.A. IN.
1600	602.2
1700	602.2
1800	602.2
1900	602.2
2000	602.1
2100	601.8
2200	601.3
2300	600.5
2313	600.4

APPLICABLE CONFIGURATIONS
All

FUEL TANK QUANTITIES AND BALANCE ARMS (Continued)

CENTER TANK IN LITERS

The following table provides usable, gauged fuel data in liters.

LITERS

CENTER TANK	
VOLUME L	B.A. IN.
400	600.9
800	601.0
1200	601.2
1600	601.5
2000	601.6
2400	601.7
2800	601.9
3200	601.9
3600	602.0
4000	602.0
4400	602.1
4800	602.1
5200	602.1
5600	602.1
6000	602.1

CENTER TANK	
VOLUME L	B.A. IN.
6400	602.2
6800	602.2
7200	602.2
7600	602.1
8000	601.7
8400	601.1
8755	600.4

APPLICABLE CONFIGURATIONS
All

FUEL TANK QUANTITIES AND BALANCE ARMS

BOEING AUXILIARY FUEL TANK IN U.S. GALLONS

The following table provides usable, gauged fuel data in U.S. gallons.

U.S. GALLONS

AUXILIARY TANK	
VOLUME U.S. GAL.	B.A. IN.
100	755.0
200	755.0
300	755.0
391	755.0

BOEING AUXILIARY FUEL TANK IN LITERS

The following table provides usable, gauged fuel data in liters.

LITERS

AUXILIARY TANK	
VOLUME L	B.A. IN.
200	755.0
400	755.0
600	755.0
800	755.0
1000	755.0
1200	755.0
1400	755.0
1480	755.0

APPLICABLE CONFIGURATIONS
D, U

FUEL TANK QUANTITIES AND BALANCE ARMS

ROGERSON AUXILIARY FUEL TANK IN U.S. GALLONS

The following table provides usable, gauged fuel data in U.S. gallons.

U.S. GALLONS

AUXILIARY TANK	
VOLUME U.S. GAL.	B.A. IN.
100	762.0
200	762.0
300	762.0
400	762.0
492	762.0

ROGERSON AUXILIARY FUEL TANK IN LITERS

The following table provides usable, gauged fuel data in liters.

LITERS

AUXILIARY TANK	
VOLUME L	B.A. IN.
200	762.0
400	762.0
600	762.0
800	762.0
1000	762.0
1200	762.0
1400	762.0
1600	762.0
1800	762.0
1862	762.0

APPLICABLE CONFIGURATIONS
H

SYSTEM FLUIDS

ENGINE SYSTEM OIL

The following table lists total engine system oil (including trapped oil):

FLUID CATEGORY	ENGINE	VOLUME		WEIGHT		B.A. IN.
		U.S. GAL.	L	LB	KG	
Drainable Usable Oil	No. 1	4.0	15.1	33.4	15.1	529.0
	No. 2	4.0	15.1	33.4	15.1	529.0
	Total	8.0	30.2	66.8	30.2	529.0
Drainable Unusable Oil	No. 1	1.3	4.9	10.9	4.9	535.0
	No. 2	1.3	4.9	10.9	4.9	535.0
	Total	2.6	9.8	21.8	9.8	535.0
Trapped Unusable Oil	No. 1	1.0	3.8	8.4	3.8	559.0
	No. 2	1.0	3.8	8.4	3.8	559.0
	Total	2.0	7.6	16.8	7.6	559.0

NOTE Oil density used is 8.35 LB/U.S. GAL. (1.001 KG/L).

CONSTANT SPEED DRIVE OIL

The following table lists the Constant Speed Drive (CSD) system oil:

TANK LOCATION	VOLUME		WEIGHT		B.A. IN.
	U.S. GAL.	L	LB	KG	
No. 1	1.6	6.1	13.4	6.1	512.0
No. 2	1.6	6.1	13.4	6.1	512.0
Total	3.2[a]	12.2[a]	26.7	12.2	512.0

[a] Volume includes 0.4 U.S. GAL. (1.5L) of CSD pad cavity oil.

NOTE Oil density used is 8.35 LB/U.S. GAL. (1.001 KG/L).

HYDRAULIC SYSTEM FLUID

The following table provides the hydraulic system fluid:

LOCATION	VOLUME		WEIGHT		B.A. IN.
	U.S. GAL.	L	LB	KG	
Hydraulic Fluid	33.3	126.1	276.4	125.4	693.6

NOTE Hydraulic fluid density used is 8.3 LB/U.S. GAL. (0.995 KG/L)

APPLICABLE CONFIGURATIONS
All

SYSTEM FLUIDS (Continued)

LANDING GEAR SYSTEM FLUID

The following table lists the landing gear system hydraulic fluid totals:

FLUID LOCATION	VOLUME		WEIGHT		B.A. IN.
	U.S. GAL.	L	LB	KG	
Nose Gear Oleo	0.7	2.6	5.1	2.3	133.5
Main Gear Oleo (Each)	3.4	12.8	24.8	11.2	694.0

NOTE Hydraulic fluid density used is 7.3 LB/U.S. GAL. (0.875 KG/L).

OPERATING SYSTEM FLUID

The following table provides operating systems fluid totals:

SYSTEM	VOLUME		WEIGHT		B.A. IN.
	U.S. GAL.	L	LB	KG	
Pneumatic Starter Oil	0.2	0.8	1.7	0.8	540.0
Aux. Power Unit Oil	2.5	9.5	20.9	9.5	1266.8

NOTE Oil density used is 8.35 LB/U.S. GAL. (1.001 KG/L).

APPLICABLE CONFIGURATIONS
All

POTABLE WATER SYSTEM

TANK QUANTITIES AND LOCATIONS

The drinking and washing water system has one storage tank per airplane. Total potable water and supply line capacities for a 40 gallon tank and standpipe options are listed in the table below.

40 GALLON TANK						
STANDPIPED TO	LOCATION	VOLUME		WEIGHT		B.A. IN.
		U.S. GAL.	L	LB	KG	
40 Gallons	Tank	40.0	151.4	333.6	151.3	1107.0
	Lines	1.8	6.8	15.0	6.8	682.7
	Total	41.8	158.2	348.6	158.1	1088.7
30 Gallons	Tank	30.0	113.6	250.2	113.5	1107.0
	Lines	1.8	6.8	15.0	6.8	682.7
	Total	31.8	120.4	265.2	120.3	1083.0

NOTE Density used is 8.34 LB/U.S. GAL. (0.999 KG/L).

APPLICABLE CONFIGURATIONS
All

WASTE DISPOSAL SYSTEM

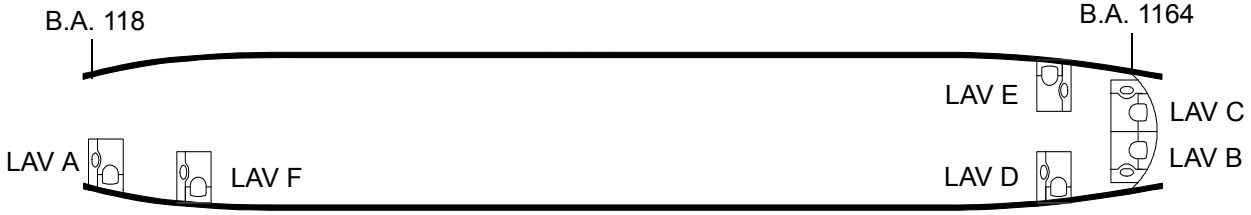
LAVATORY QUANTITIES AND LOCATION - 3 GALLON PRECHARGE

The quantity and location of lavatory fluid will vary with different passenger arrangements. For details on the number and location of lavatories in the airplane, refer to the applicable interior shown in CHP-SEC 1-44-xxx, Personnel.

FLUID CATEGORY	VOLUME		WEIGHT	
	U.S. GAL.	L	LB	KG
Lav. Precharge Fluid	3.0	11.4	25.0	11.3

NOTE Density used is 8.34 LB/U.S. GAL. (0.999 KG/L).

All possible lavatory locations are shown in the following diagram and table so that the B.A. of applicable combinations can be easily determined.



LAVATORY LOCATION	
LAVATORY DESIGNATION	B.A. IN.
A	136.3
B	1162.0
C	1162.0
D	1080.8
E	1080.8
F	234.9

APPLICABLE CONFIGURATIONS
A, B, C, F, G, H, K, L, M, N, P, R, S, W, Y

WASTE DISPOSAL SYSTEM

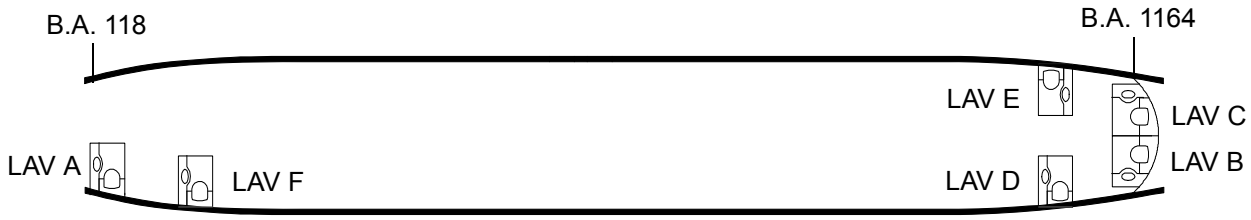
LAVATORY QUANTITIES AND LOCATION - 2 GALLON PRECHARGE

The quantity and location of lavatory fluid will vary with different passenger arrangements. For details on the number and location of lavatories in the airplane, refer to the applicable interior shown in CHP-SEC 1-44-xxx, Personnel.

FLUID CATEGORY	VOLUME		WEIGHT	
	U.S. GAL.	L	LB	KG
Lav. Precharge Fluid	2.0	7.6	16.7	7.6

NOTE Density used is 8.34 LB/U.S. GAL. (0.999 KG/L).

All possible lavatory locations are shown in the following diagram and table so that the B.A. of applicable combinations can be easily determined.



LAVATORY LOCATION	
LAVATORY DESIGNATION	B.A. IN.
A	136.3
B	1162.0
C	1162.0
D	1080.8
E	1080.8
F	234.9

APPLICABLE CONFIGURATIONS
D, E, U, V

PASSENGER AND PERSONNEL WEIGHT ALLOWANCES

FAA ADVISORY CIRCULAR 120-27E ALLOWANCES

The following crew, passenger and baggage weights reflect the Federal Aviation Administration (FAA) Advisory Circular 120-27E, dated June 10, 2005.

Flight Crew

For flight crew members:

- Flight crew member 190 LB (86.2 KG)
- Pilot flight bag 20 LB (9.1 KG)
- Crewmember roller bag 30 LB (13.6 KG)

Cabin Crew

For cabin attendants:

- Cabin attendant 170 LB (77.1 KG)
- Flight attendant kit 10 LB (4.5 KG)
- Crewmember roller bag 30 LB (13.6 KG)

Passengers

The Advisory Circular 120-27E specifies an average passenger weight of 195 LB (88.5 KG) which consists of a 179 LB (81.2 KG) passenger weight plus 16 LB (7.3 KG) carry-on baggage and personal items. The combination of average passenger weight, seat weight and passenger carry-on baggage stowed under the seat must not exceed the main cabin linear loading limits (see CHP-SEC 1-60-00x).

Baggage

The following average weights apply to passenger checked baggage:

- Use an average weight of not less than 30 LB (13.6 KG) for each piece of checked baggage.

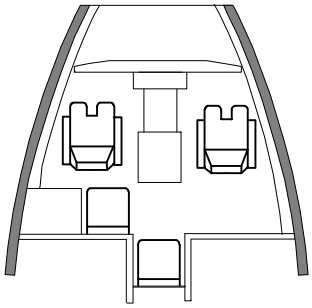
NOTE Use of average passenger and baggage weights is not advisable in computing the weight and balance of charter flights or other special services involving the carriage of special groups (e.g. athletic squads, military groups, etc.). Refer to Advisory Circular 120-27E.

APPLICABLE CONFIGURATIONS
All

INTERIOR ARRANGEMENT - MAIN DECK

FLIGHT DECK

The flight crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The crew locations represent the crew seated at takeoff positions.



FLIGHT CREW (TWO OBSERVERS)	
LOCATION	**B.A. IN.**
Captain	78
First Officer	78
First Observer	113
Second Observer	106

APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

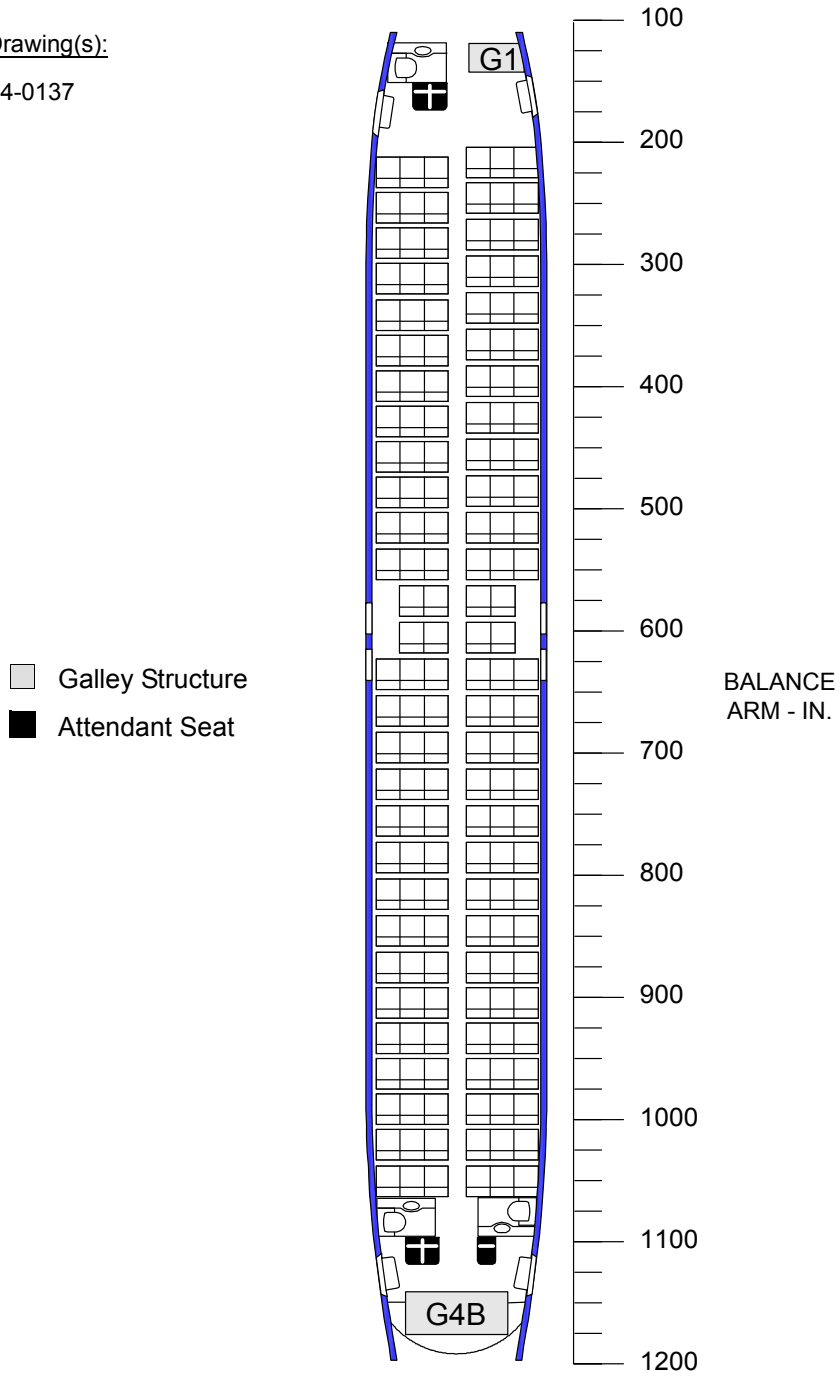
INTERIOR ARRANGEMENT - MAIN DECK (Continued)

MAIN CABIN - 170Y ARRANGEMENT

The main cabin 170Y arrangement shown below is the basis for the subsequent passenger and cabin crew center of gravity data, and the maximum allowable galley loads data.

Reference Drawing(s):

LOPS-374-0137



APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Passenger Locations

The center of gravity of each passenger location for the main cabin arrangement on page 2 is listed in the following table. The class designations are as follows: First Class (F), Business Class (C) and Tourist Class (Y). Unless otherwise noted, the passenger balance arms are defined as 8 IN. behind the forward seat pin, relative to the seat. The balance arms represent the passengers seated in an upright position.

CLASS	ROW	PASSENGERS			
		LEFT		RIGHT	
		NO.	B.A. IN.	NO.	B.A. IN.
Y	1	3	223	3	214
	2	3	252	3	244
	3	3	281	3	274
	4	3	310	3	304
	5	3	340	3	334
	6	3	369	3	364
	7	3	398	3	394
	8	3	427	3	424
	9	3	456	3	454
	10	3	485	3	484
	11	3	514	3	514
	12	3	544	3	544
	13	2	574	2	574
	14	2	604	2	604
	15	3	634	3	634
	16	3	664	3	664
	17	3	694	3	694
	18	3	724	3	724
	19	3	754	3	754
	20	3	784	3	784
	21	3	814	3	814
	22	3	844	3	844
	23	3	874	3	874
	24	3	903	3	903
	25	3	932	3	932
	26	3	961	3	961
	27	3	990	3	990
	28	3	1019	3	1019
	29	3	1049	3	1049

APPLICABLE CONFIGURATIONS

Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Cabin Crew Locations

The cabin crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The cabin crew locations represent the crew seated at takeoff positions for the main cabin arrangement shown on page 2.

CABIN CREW			
GENERAL LOCATION	NUMBER OF ATTENDANTS		B.A. IN.
	LEFT	RIGHT	
Fwd Entry Door	2		162
Aft Entry Door	2	1	1107

Galleys

The galley weights listed in the following table represent the maximum allowable galley loading that can be sustained by the basic monocoque structure for the galley footprints shown in the main cabin arrangement on page 2.

MAXIMUM ALLOWABLE GALLEY WEIGHT[a]		
LOCATION	LB	KG
Galley No. 1	1250	566
Galley No. 4B	2415	1095

[a] These galley weights are based on an average passenger weight of 170 LB (77.1 KG)/Passenger.

NOTE Galleys installed on the aircraft may be further limited by the carrier and contents weight as shown on the galley capacity placards.

APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

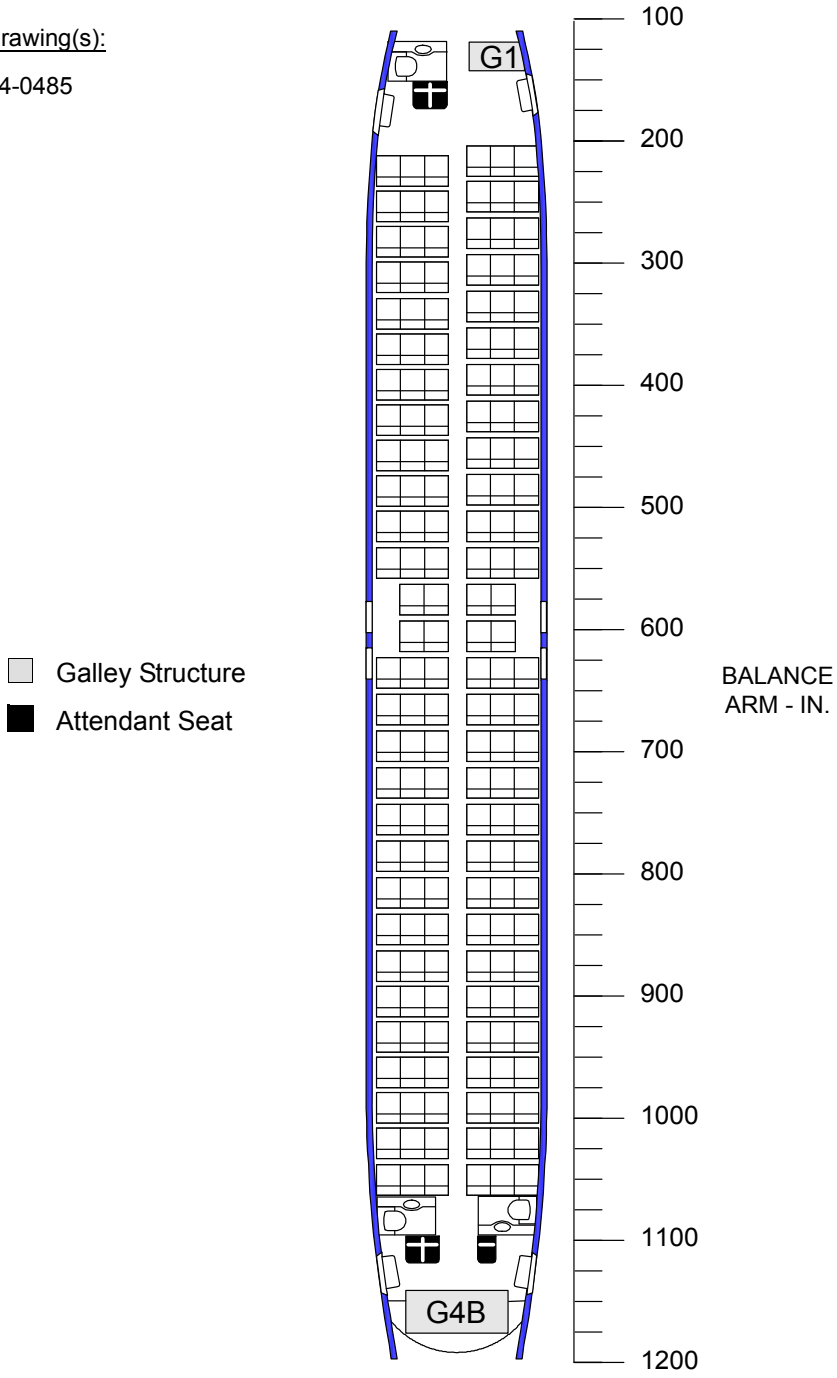
INTERIOR ARRANGEMENT - MAIN DECK (Continued)

MAIN CABIN - 170Y ARRANGEMENT

The main cabin 170Y arrangement shown below is the basis for the subsequent passenger and cabin crew center of gravity data, and the maximum allowable galley loads data.

Reference Drawing(s):

LOPS-374-0485



APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Passenger Locations

The center of gravity of each passenger location for the main cabin arrangement on page 5 is listed in the following table. The class designations are as follows: First Class (F), Business Class (C) and Tourist Class (Y). Unless otherwise noted, the passenger balance arms are defined as 8 IN. behind the forward seat pin, relative to the seat. The balance arms represent the passengers seated in an upright position.

CLASS	ROW	PASSENGERS			
		LEFT		RIGHT	
		NO.	B.A. IN.	NO.	B.A. IN.
Y	1	3	223	3	215
	2	3	252	3	244
	3	3	281	3	274
	4	3	310	3	304
	5	3	340	3	334
	6	3	369	3	364
	7	3	398	3	394
	8	3	427	3	424
	9	3	456	3	454
	10	3	485	3	484
	11	3	514	3	514
	12	3	544	3	544
	13	2	574	2	574
	14	2	604	2	604
	15	3	634	3	634
	16	3	664	3	664
	17	3	694	3	694
	18	3	724	3	724
	19	3	754	3	754
	20	3	784	3	784
	21	3	814	3	814
	22	3	844	3	844
	23	3	874	3	874
	24	3	903	3	903
	25	3	932	3	932
	26	3	961	3	961
	27	3	990	3	990
	28	3	1019	3	1019
	29	3	1049	3	1049

APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Cabin Crew Locations

The cabin crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The cabin crew locations represent the crew seated at takeoff positions for the main cabin arrangement shown on page 5.

CABIN CREW			
GENERAL LOCATION	NUMBER OF ATTENDANTS		B.A. IN.
	LEFT	RIGHT	
Fwd Entry Door	2		162
Aft Entry Door	2	1	1107

Galleys

The galley weights listed in the following table represent the maximum allowable galley loading that can be sustained by the basic monocoque structure for the galley footprints shown in the main cabin arrangement on page 5.

MAXIMUM ALLOWABLE GALLEY WEIGHT[a]		
LOCATION	LB	KG
Galley No. 1	1250	566
Galley No. 4B	2415	1095

[a] These galley weights are based on an average passenger weight of 170 LB (77.1 KG)/Passenger.

NOTE Galleys installed on the aircraft may be further limited by the carrier and contents weight as shown on the galley capacity placards.

APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

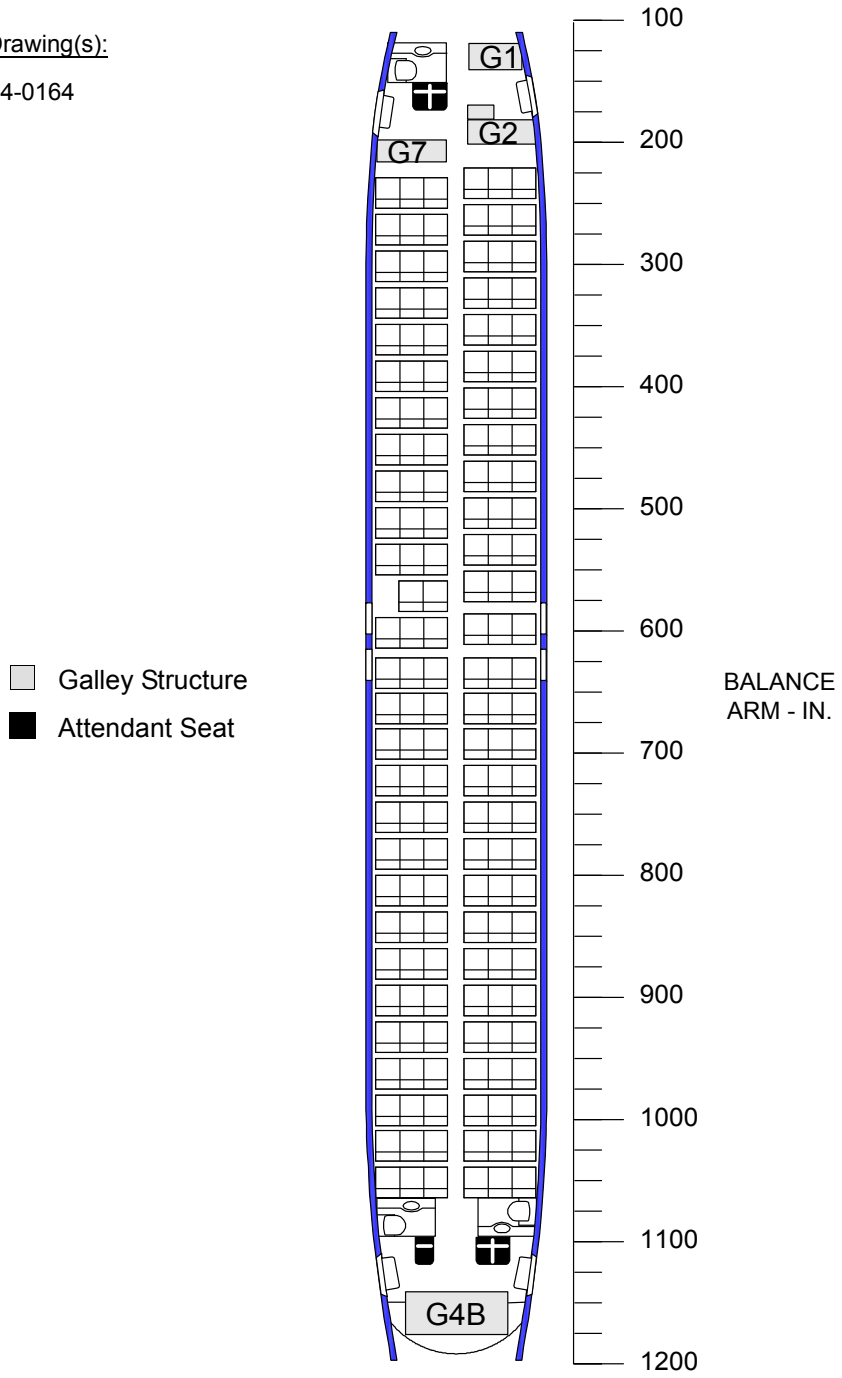
INTERIOR ARRANGEMENT - MAIN DECK (Continued)

MAIN CABIN - 167Y ARRANGEMENT

The main cabin 167Y arrangement shown below is the basis for the subsequent passenger and cabin crew center of gravity data, and the maximum allowable galley loads data.

Reference Drawing(s):

LOPS-374-0164



APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Passenger Locations

The center of gravity of each passenger location for the main cabin arrangement on page 8 is listed in the following table. The class designations are as follows: First Class (F), Business Class (C) and Tourist Class (Y). Unless otherwise noted, the passenger balance arms are defined as 8 IN. behind the forward seat pin, relative to the seat. The balance arms represent the passengers seated in an upright position.

CLASS	ROW	PASSENGERS			
		LEFT		RIGHT	
		NO.	B.A. IN.	NO.	B.A. IN.
Y	1	3	240	3	232
	2	3	270	3	262
	3	3	300	3	292
	4	3	330	3	322
	5	3	360	3	352
	6	3	390	3	382
	7	3	420	3	412
	8	3	450	3	442
	9	3	480	3	472
	10	3	510	3	502
	11	3	540	3	532
	12	2	570	3	562
	13	3	600	3	597
	14	3	633	3	633
	15	3	662	3	662
	16	3	691	3	691
	17	3	721	3	721
	18	3	751	3	751
	19	3	781	3	781
	20	3	811	3	811
	21	3	841	3	841
	22	3	871	3	871
	23	3	901	3	901
	24	3	931	3	931
	25	3	961	3	961
	26	3	991	3	991
	27	3	1020	3	1020
	28	3	1050	3	1050

APPLICABLE CONFIGURATIONS

Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Cabin Crew Locations

The cabin crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The cabin crew locations represent the crew seated at takeoff positions for the main cabin arrangement shown on page 8.

CABIN CREW			
GENERAL LOCATION	NUMBER OF ATTENDANTS		B.A. IN.
	LEFT	RIGHT	
Fwd Entry Door	2		162
Aft Entry Door	1	2	1107

Galleys

The galley weights listed in the following table represent the maximum allowable galley loading that can be sustained by the basic monocoque structure for the galley footprints shown in the main cabin arrangement on page 8.

MAXIMUM ALLOWABLE GALLEY WEIGHT[a]		
LOCATION	LB	KG
Galley No. 1	1250	566
Galley No. 2	1500	680
Galley No. 7	1500	680
Galley No. 4B	2400	1088
COMBINED GALLEYS	**COMBINED WEIGHTS**	
Galleys 1 & 2	2400	1088
Galleys 2 & 7	2800	1270
Galleys 1, 2 & 7	2900	1315

[a] These galley weights are based on an average passenger weight of 170 LB (77.1 KG)/Passenger.

NOTE Galleys installed on the aircraft may be further limited by the carrier and contents weight as shown on the galley capacity placards.

APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

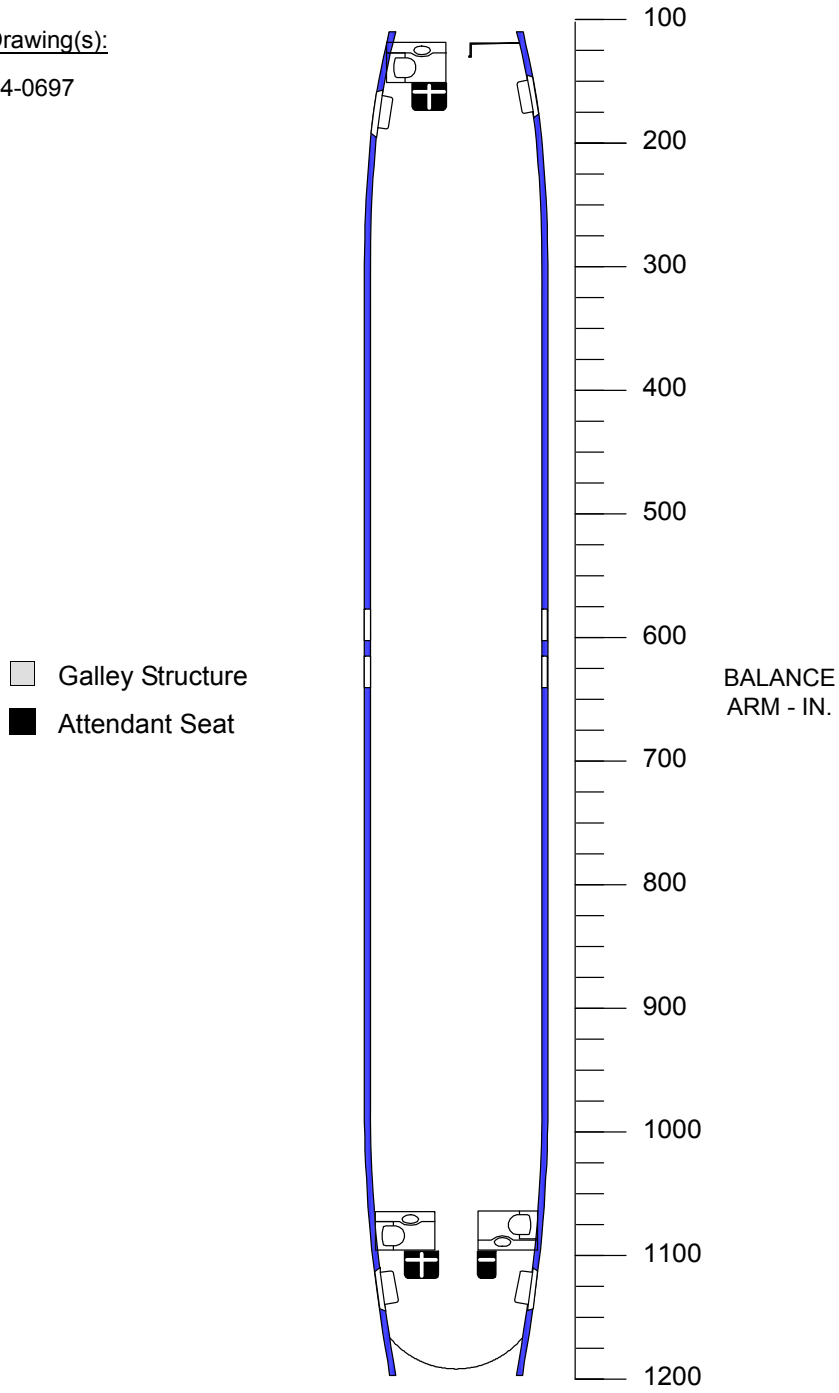
INTERIOR ARRANGEMENT - MAIN DECK (Continued)

MAIN CABIN - ZERO OCCUPANCY ARRANGEMENT

The main cabin zero occupancy arrangement shown below is the basis for the subsequent passenger and cabin crew center of gravity data, and the maximum allowable galley loads data.

Reference Drawing(s):

LOPS-374-0697



APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Passenger Locations

The center of gravity of each passenger location for the main cabin arrangement on page 11 is listed in the following table. The class designations are as follows: First Class (F), Business Class (C) and Tourist Class (Y). Unless otherwise noted, the passenger balance arms are defined as 8 IN. behind the forward seat pin, relative to the seat. The balance arms represent the passengers seated in an upright position.

CLASS	ROW	PASSENGERS			
		LEFT		RIGHT	
		NO.	B.A. IN.	NO.	B.A. IN.
ZERO OCCUPANCY					

Cabin Crew Locations

The cabin crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The cabin crew locations represent the crew seated at takeoff positions for the main cabin arrangement shown on page 11.

CABIN CREW			
GENERAL LOCATION	NUMBER OF ATTENDANTS		B.A. IN.
	LEFT	RIGHT	
Fwd Entry Door	2		162
Aft Entry Door	2	1	1107

Galleys

The galley weights listed in the following table represent the maximum allowable galley loading that can be sustained by the basic monocoque structure for the galley footprints shown in the main cabin arrangement on page 11.

MAXIMUM ALLOWABLE GALLEY WEIGHT[a]		
LOCATION	LB	KG
Galley No. 1	1250	566
Galley No. 4B	2415	1095

[a] These galley weights are based on an average passenger weight of 170 LB (77.1 KG)/Passenger.

NOTE Galleys installed on the aircraft may be further limited by the carrier and contents weight as shown on the galley capacity placards.

APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

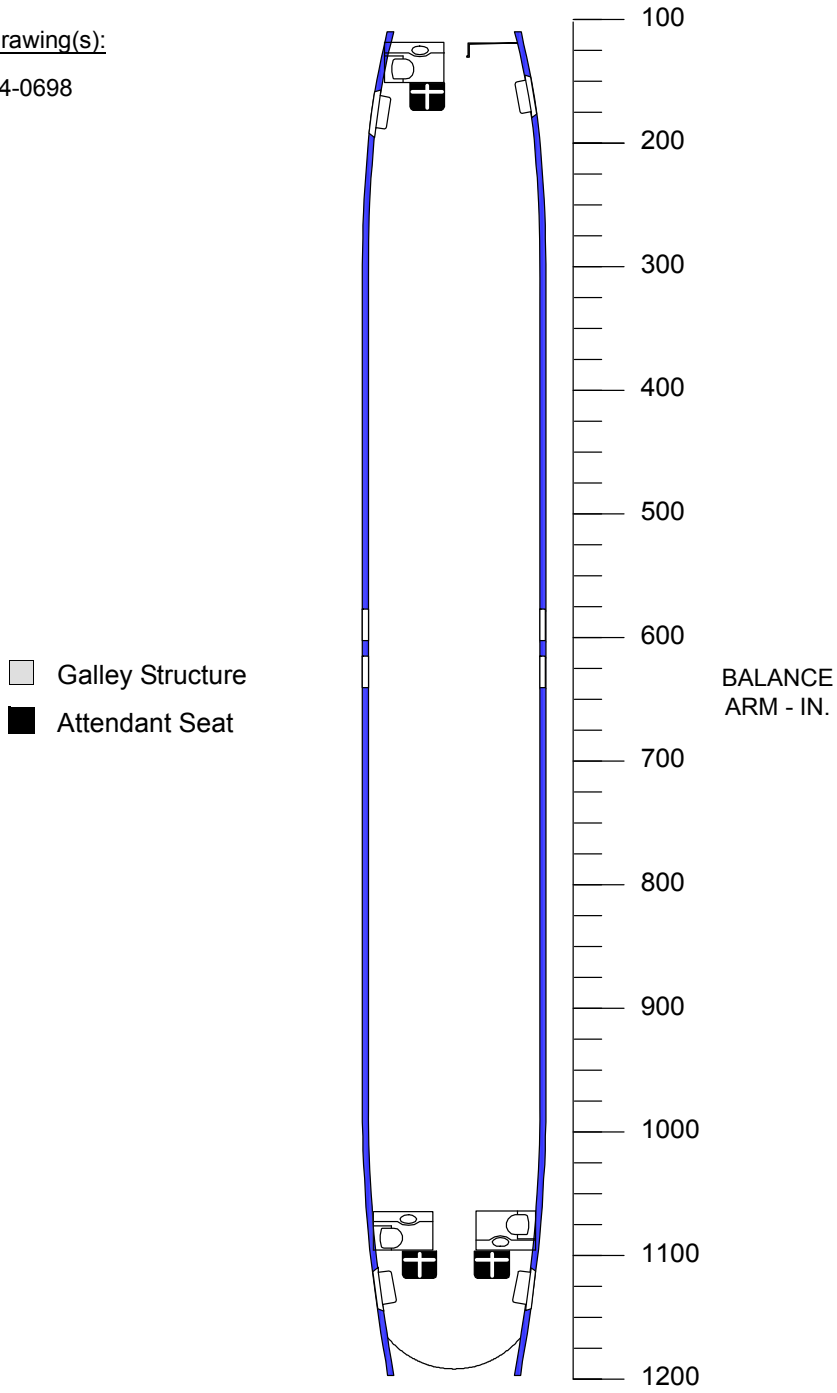
INTERIOR ARRANGEMENT - MAIN DECK (Continued)

MAIN CABIN - ZERO OCCUPANCY ARRANGEMENT

The main cabin zero occupancy arrangement shown below is the basis for the subsequent passenger and cabin crew center of gravity data, and the maximum allowable galley loads data.

Reference Drawing(s):

LOPS-374-0698



APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

Passenger Locations

The center of gravity of each passenger location for the main cabin arrangement on page 13 is listed in the following table. The class designations are as follows: First Class (F), Business Class (C) and Tourist Class (Y). Unless otherwise noted, the passenger balance arms are defined as 8 IN. behind the forward seat pin, relative to the seat. The balance arms represent the passengers seated in an upright position.

CLASS	ROW	PASSENGERS			
		LEFT		RIGHT	
		NO.	B.A. IN.	NO.	B.A. IN.
ZERO OCCUPANCY					

Cabin Crew Locations

The cabin crew balance arms are defined as 7 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The cabin crew locations represent the crew seated at takeoff positions for the main cabin arrangement shown on page 13.

CABIN CREW			
GENERAL LOCATION	NUMBER OF ATTENDANTS		B.A. IN.
	LEFT	RIGHT	
Fwd Entry Door	2		162
Aft Entry Door	2	2	1107

Galleys

The galley weights listed in the following table represent the maximum allowable galley loading that can be sustained by the basic monocoque structure for the galley footprints shown in the main cabin arrangement on page 13.

MAXIMUM ALLOWABLE GALLEY WEIGHT[a]		
LOCATION	LB	KG
Galley No. 1	1250	566
Galley No. 4B	2415	1095

[a] These galley weights are based on an average passenger weight of 170 LB (77.1 KG)/Passenger.

NOTE Galleys installed on the aircraft may be further limited by the carrier and contents weight as shown on the galley capacity placards.

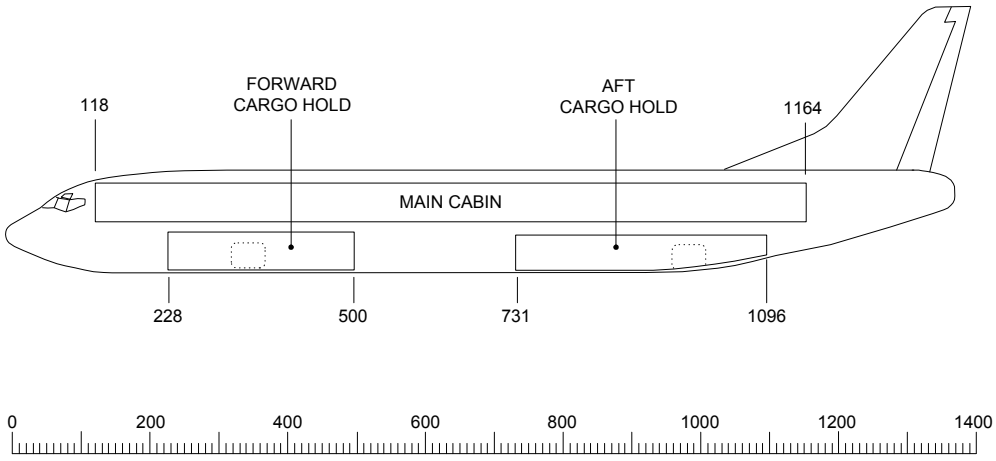
APPLICABLE CONFIGURATIONS
Refer to the Interior Effectivity section of this manual to correlate certified Passenger Arrangements with specific aircraft serial numbers.

CARGO COMPARTMENTS - LOAD LIMITS

MAXIMUM ALLOWABLE WEIGHTS

This section provides main deck and lower deck cargo compartment loading. These values are the maximum allowable weights that can be sustained by the basic monocoque structure.

The following illustration shows the configuration of the cargo compartments. Both the forward and aft cargo compartments use bulk loading at 12 LB/CU FT (5.4 KG/CU FT).



Three basic structural limitations that must be observed when loading payload are compartment, linear loading, and floor loading limitations. Maximum allowable compartment weights, and maximum allowable linear and floor loading are provided in the following table:

MAXIMUM ALLOWABLE WEIGHT						
COMPARTMENT	TOTAL WEIGHT		FLOOR LOADING			
	LB	KG	LB/IN.	KG/IN.	LB/SQ FT	KG/SQ FT
Main Cabin			42.8[a]	19.4[a]	100.0	45.3
Forward Cargo Hold	7288	3304				
B.A. 228 to B.A. 286	1682	762	29.0	13.1	150.0	68.0
B.A. 286 to B.A. 343	1065	483	18.7	8.4	150.0	68.0
B.A. 343 to B.A. 500	4541	2059	28.9	13.1	150.0	68.0
Aft Cargo Hold	9232	4187				
B.A. 731 to B.A. 940	6752	3062	32.3	14.6	150.0	68.0
B.A. 940 to B.A. 997	912	414	16.0	7.2	150.0	68.0
B.A. 997 to B.A. 1096	1568	711	15.8	7.1	150.0	68.0

[a] The main cabin floor loading includes the weight of passengers, passenger seats, and passenger carry-on baggage stowed under the seats.

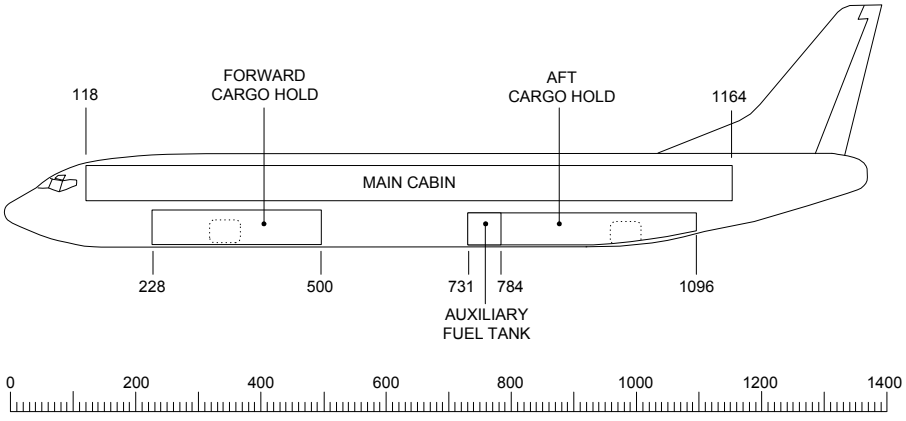
APPLICABLE CONFIGURATIONS
A, B, C, E, K, L, M, P, R, S, V, Y

CARGO COMPARTMENTS - LOAD LIMITS

MAXIMUM ALLOWABLE WEIGHTS

This section provides main deck and lower deck cargo compartment loading. These values are the maximum allowable weights that can be sustained by the basic monocoque structure.

The following illustration shows the configuration of the cargo compartments. The forward cargo compartment uses bulk loading at 12 LB/CU FT (5.4 KG/CU FT). The aft cargo compartment uses bulk loading at 12 LB/CU FT (5.4 KG/CU FT) and contains a Boeing 391 Gal. auxiliary fuel tank.



BALANCE ARM - IN.

Three basic structural limitations that must be observed when loading payload are compartment, linear loading, and floor loading limitations. Maximum allowable compartment weights, and maximum allowable linear and floor loading are provided in the following table:

MAXIMUM ALLOWABLE WEIGHT						
COMPARTMENT	TOTAL WEIGHT		FLOOR LOADING			
	LB	KG	LB/IN.	KG/IN.	LB/SQ FT	KG/SQ FT
Main Cabin			42.8[a]	19.4[a]	100.0	45.3
Forward Cargo Hold	7288	3304				
B.A. 228 to B.A. 286	1682	762	29.0	13.1	150.0	68.0
B.A. 286 to B.A. 343	1065	483	18.7	8.4	150.0	68.0
B.A. 343 to B.A. 500	4541	2059	28.9	13.1	150.0	68.0
Aft Cargo Hold	6400	2901				
B.A. 784 to B.A. 845	1820	825	29.8	13.5	150.0	68.0
B.A. 845 to B.A. 940	2565	1163	27.0	12.2	150.0	68.0
B.A. 940 to B.A. 997	741	336	13.0	5.9	150.0	68.0
B.A. 997 to B.A. 1096	1274	577	12.9	5.8	150.0	68.0

[a] The main cabin floor loading includes the weight of passengers, passenger seats, and passenger carry-on baggage stowed under the seats.

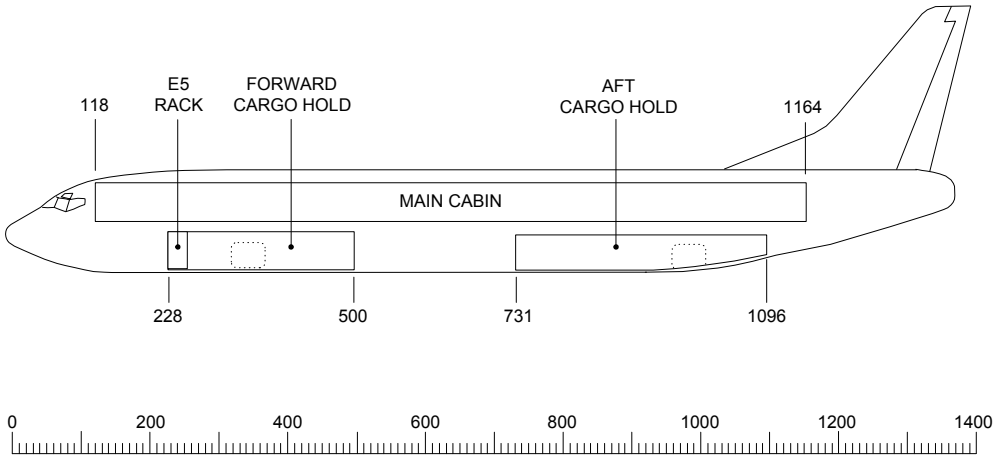
APPLICABLE CONFIGURATIONS
D, U

CARGO COMPARTMENTS - LOAD LIMITS

MAXIMUM ALLOWABLE WEIGHTS

This section provides main deck and lower deck cargo compartment loading. These values are the maximum allowable weights that can be sustained by the basic monocoque structure.

The following illustration shows the configuration of the cargo compartments. The forward cargo compartment uses bulk loading at 12 LB/CU FT (5.4 KG/CU FT) and contains an E5 rack. The aft cargo compartment uses bulk loading at 12 LB/CU FT (5.4 KG/CU FT).



Three basic structural limitations that must be observed when loading payload are compartment, linear loading, and floor loading limitations. Maximum allowable compartment weights, and maximum allowable linear and floor loading are provided in the following table:

MAXIMUM ALLOWABLE WEIGHT						
COMPARTMENT	TOTAL WEIGHT		FLOOR LOADING			
	LB	KG	LB/IN.	KG/IN.	LB/SQ FT	KG/SQ FT
Main Cabin			42.8[a]	19.4[a]	100.0	45.3
Forward Cargo Hold	7144	3240				
B.A. 228 to B.A. 248	436	198	21.8	9.8	150.0	68.0
B.A. 248 to B.A. 286	1102	500	29.0	13.1	150.0	68.0
B.A. 286 to B.A. 343	1065	483	18.7	8.4	150.0	68.0
B.A. 343 to B.A. 500	4541	2059	28.9	13.1	150.0	68.0
Aft Cargo Hold	9232	4187				
B.A. 731 to B.A. 940	6752	3062	32.3	14.6	150.0	68.0
B.A. 940 to B.A. 997	912	414	16.0	7.2	150.0	68.0
B.A. 997 to B.A. 1096	1568	711	15.8	7.1	150.0	68.0

[a] The main cabin floor loading includes the weight of passengers, passenger seats, and passenger carry-on baggage stowed under the seats.

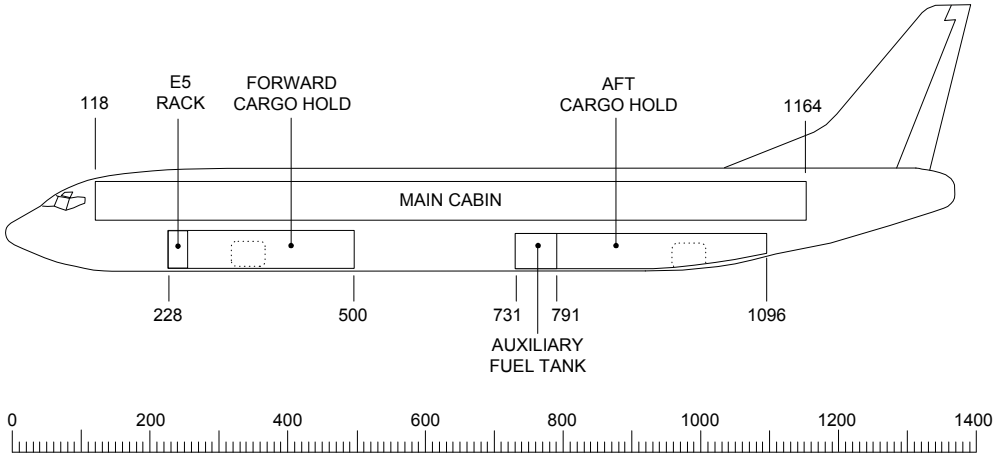
APPLICABLE CONFIGURATIONS
F, G, N, W

CARGO COMPARTMENTS - LOAD LIMITS

MAXIMUM ALLOWABLE WEIGHTS

This section provides main deck and lower deck cargo compartment loading. These values are the maximum allowable weights that can be sustained by the basic monocoque structure.

The following illustration shows the configuration of the cargo compartments. The forward cargo compartment uses bulk loading at 12 LB/CU FT (5.4 KG/CU FT) and contains an E5 rack. The aft cargo compartment uses bulk loading at 12 LB/CU FT (5.4 KG/CU FT) and contains a Rogerson 500 Gal. auxiliary fuel tank.



Three basic structural limitations that must be observed when loading payload are compartment, linear loading, and floor loading limitations. Maximum allowable compartment weights, and maximum allowable linear and floor loading are provided in the following table:

MAXIMUM ALLOWABLE WEIGHT						
COMPARTMENT	TOTAL WEIGHT		FLOOR LOADING			
	LB	KG	LB/IN.	KG/IN.	LB/SQ FT	KG/SQ FT
Main Cabin			42.8[a]	19.4[a]	100.0	45.3
Forward Cargo Hold	7144	3240				
B.A. 228 to B.A. 248	436	198	21.8	9.8	150.0	68.0
B.A. 248 to B.A. 286	1102	500	29.0	13.1	150.0	68.0
B.A. 286 to B.A. 343	1065	483	18.7	8.4	150.0	68.0
B.A. 343 to B.A. 500	4541	2059	28.9	13.1	150.0	68.0
Aft Cargo Hold	6049	2742				
B.A. 791 to B.A. 940	3725	1689	25.0	11.3	150.0	68.0
B.A. 940 to B.A. 997	855	387	15.0	6.8	150.0	68.0
B.A. 997 to B.A. 1096	1469	666	15.0	6.8	150.0	68.0

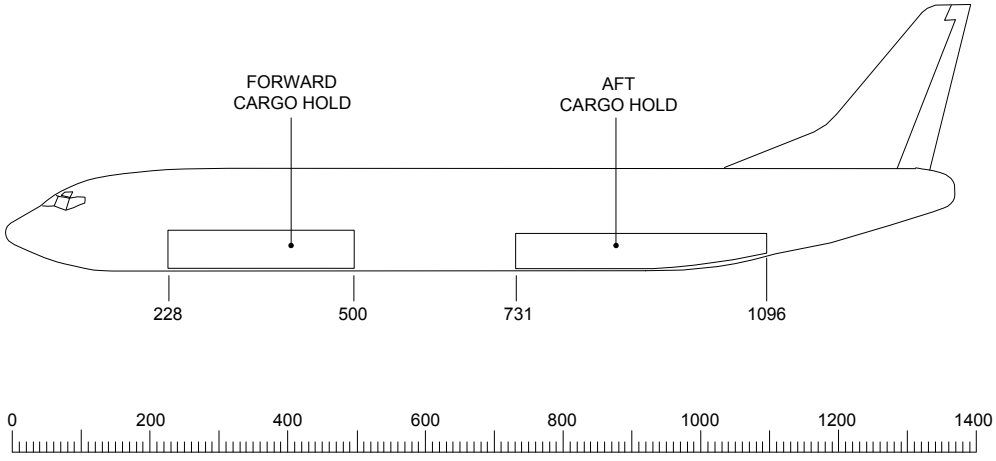
[a] The main cabin floor loading includes the weight of passengers, passenger seats, and passenger carry-on baggage stowed under the seats.

APPLICABLE CONFIGURATIONS
H

CARGO COMPARTMENTS

GENERAL LOCATION AND ARRANGEMENT

The following airplane profile illustrates cargo compartment locations.



The following table provides cargo compartment locations, usable volumes and the corresponding volumetric centroid arms.

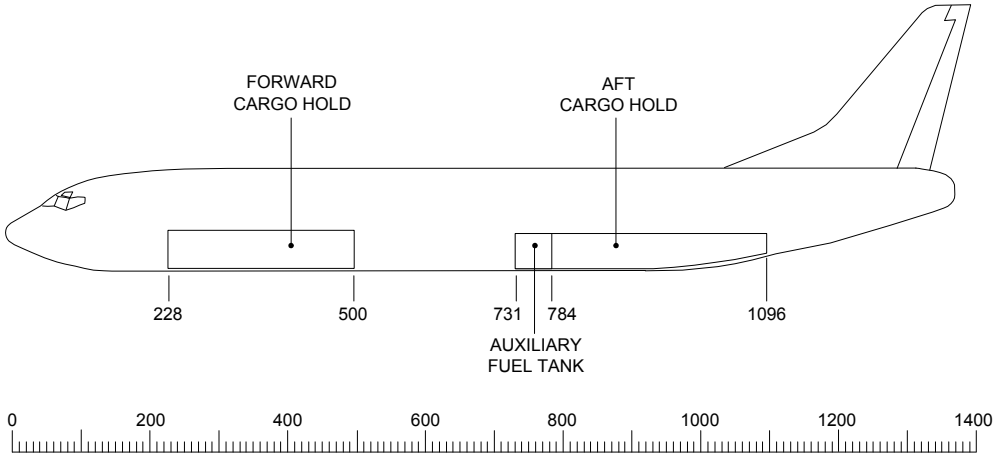
CARGO COMPARTMENT	LOCATION - B.A.		USABLE VOLUME CU FT	B. A. IN.
	FROM	TO		
Forward	228	500	607	368.9
Aft	731	1096	766	886.5
Total			1373	657.7

APPLICABLE CONFIGURATIONS
A, B, C, E, K, L, M, P, R, S, V, Y

CARGO COMPARTMENTS

GENERAL LOCATION AND ARRANGEMENT

The following airplane profile illustrates cargo compartment locations.



The following table provides cargo compartment locations, usable volumes and the corresponding volumetric centroid arms for cargo compartments with a Boeing 391 Gal. auxiliary fuel tank installed.

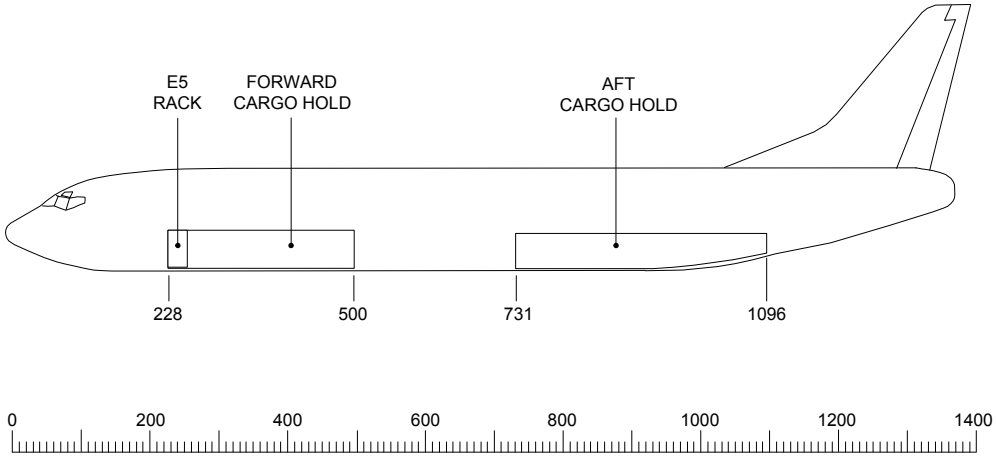
CARGO COMPARTMENT	LOCATION - B.A.		USABLE VOLUME CU FT	B. A. IN.
	FROM	TO		
Forward	228	500	607	368.9
Aft	784	1096	627	915.2
Total			1234	646.5

APPLICABLE CONFIGURATIONS
D, U

CARGO COMPARTMENTS

GENERAL LOCATION AND ARRANGEMENT

The following airplane profile illustrates cargo compartment locations.



The following table provides cargo compartment locations, usable volumes and the corresponding volumetric centroid arms for cargo compartments with an E5 rack installed.

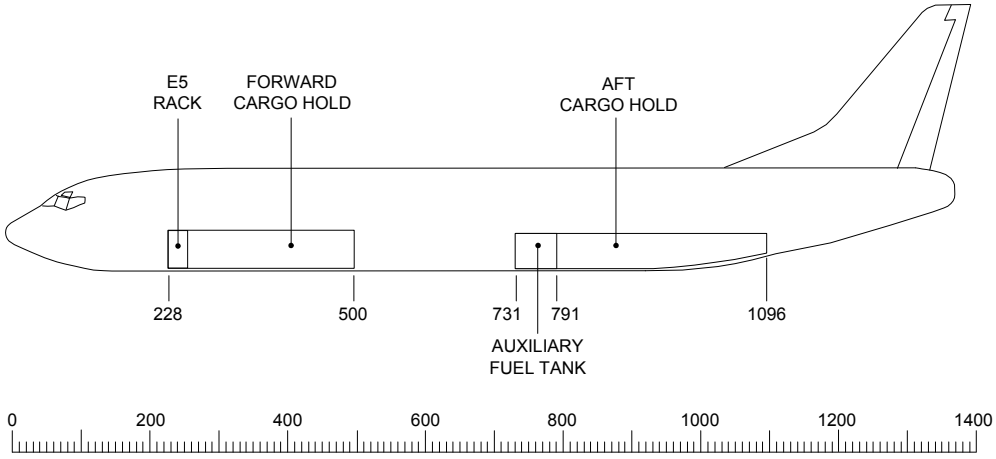
CARGO COMPARTMENT	LOCATION - B.A.		USABLE VOLUME CU FT	B. A. IN.
	FROM	TO		
Forward	228	500	595	371.9
Aft	731	1096	766	886.5
Total			1361	661.5

APPLICABLE CONFIGURATIONS
F, G, N, W

CARGO COMPARTMENTS

GENERAL LOCATION AND ARRANGEMENT

The following airplane profile illustrates cargo compartment locations.



The following table provides cargo compartment locations, usable volumes and the corresponding volumetric centroid arms for cargo compartments with an E5 rack and a Rogerson 500 Gal. auxiliary fuel tank installed.

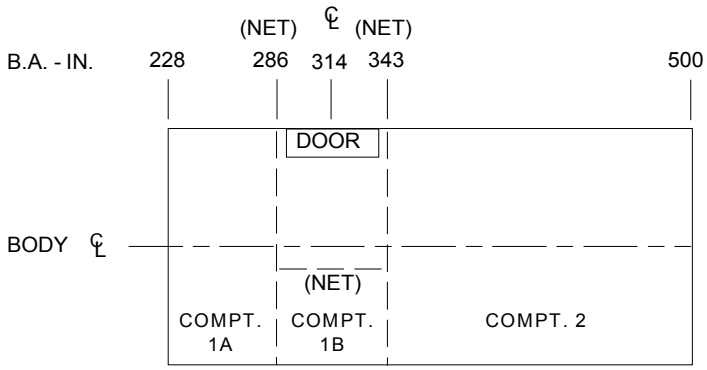
CARGO COMPARTMENT	LOCATION - B.A.		USABLE VOLUME CU FT	B. A. IN.
	FROM	TO		
Forward	228	500	595	371.9
Aft	791	1096	606	919.3
Total			1201	648.1

APPLICABLE CONFIGURATIONS
H

FORWARD CARGO COMPARTMENTS

FORWARD CARGO COMPARTMENT VOLUMES

The following figure shows forward cargo hold compartment boundaries.



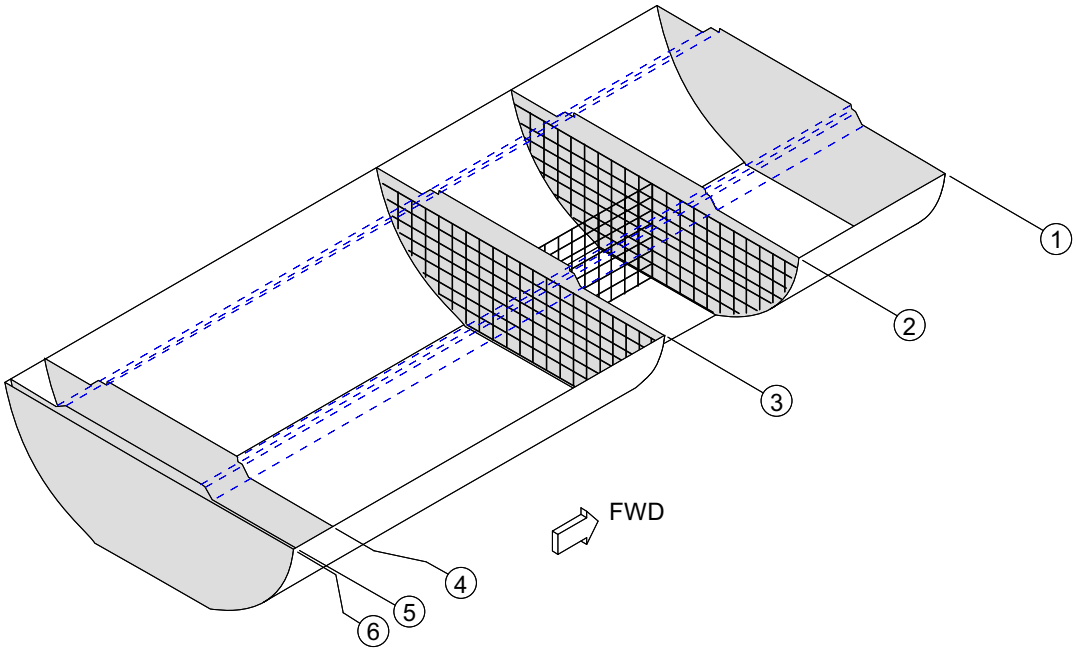
Volumes and centroids for the above figure are provided in the following table.

VOLUMES	COMPARTMENTS		
	1A	1B	2
Forward Compartment Volumes CU FT	152	65	390
Total Forward Hold CU FT	607		
Volumetric Centroids B.A. - IN.	257.0	314.5	421.5
	368.9		

FORWARD CARGO COMPARTMENTS (Continued)

FORWARD CARGO COMPARTMENT CROSS SECTIONS

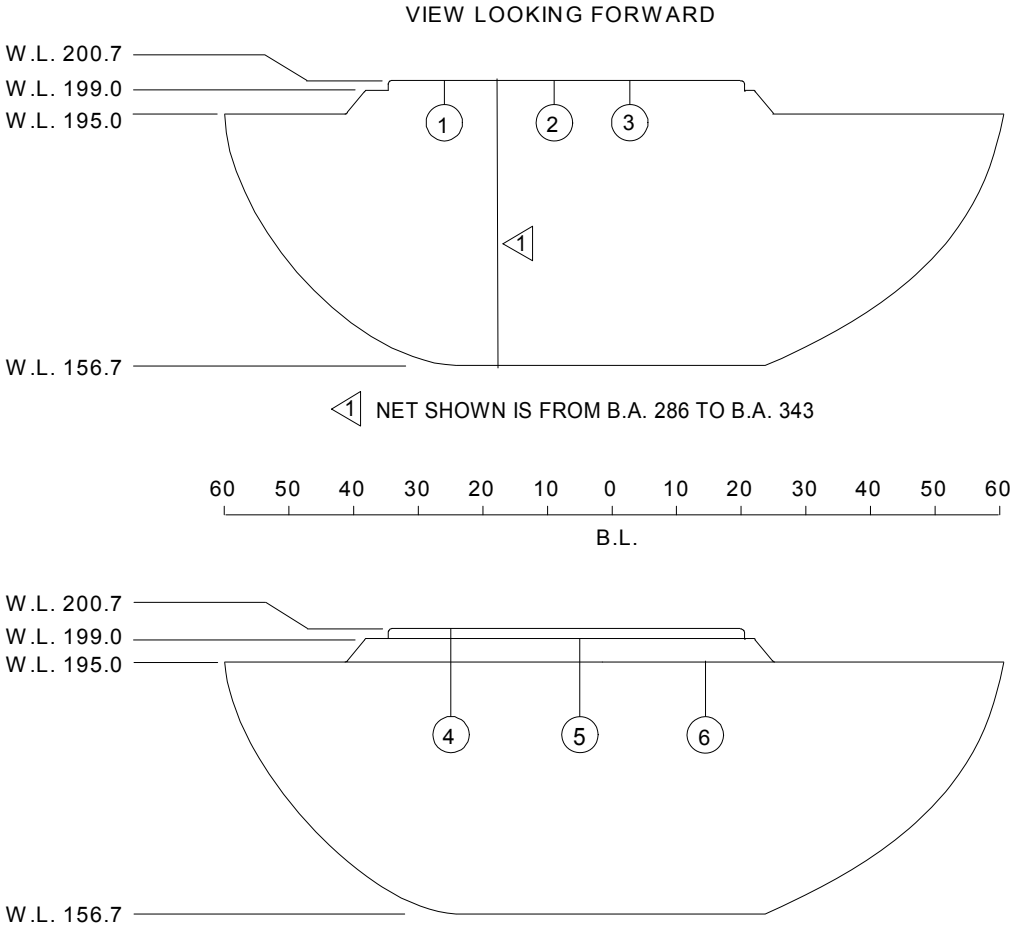
The figure below illustrates the general layout of the forward cargo compartments. The numbered labels and shaded panels correspond to the cross-sections provided on the next page.



APPLICABLE CONFIGURATIONS
A, B, C, D, E, K, L, M, P, R, S, U, V, Y

FORWARD CARGO COMPARTMENTS (Continued)

The following cross-sections for compartments 1 and 2 can be used to determine ceiling clearances at various forward cargo compartment balance arms. The relative location of the cross-sectional cut can be determined by correlating the cross-section number to the general layout on the previous page.



CROSS SECTION NO.	B.A. IN.
1	228.0
2	286.0
3	343.0
4	482.0
5	498.0
6	500.0

APPLICABLE CONFIGURATIONS
A, B, C, D, E, K, L, M, P, R, S, U, V, Y

FORWARD CARGO COMPARTMENTS (Continued)

CARGO DOOR DIMENSIONS AND ALLOWABLE PACKAGE SIZES

This section provides dimensions of the maximum package sizes which will pass through the forward cargo door opening. Individual tables are presented for two types of packages; “Heavy Packages Lift Assisted” and “Light Packages Hand Maneuvered”.

“Heavy Packages Lift Assisted” refers to packages which require the use of a fork lift or other loading device to maneuver them through the door. The maximum length is restricted by the inward curve of the lower cargo sidewall liner opposite the door. The table assumes the packages cannot be elevated to clear this interference.

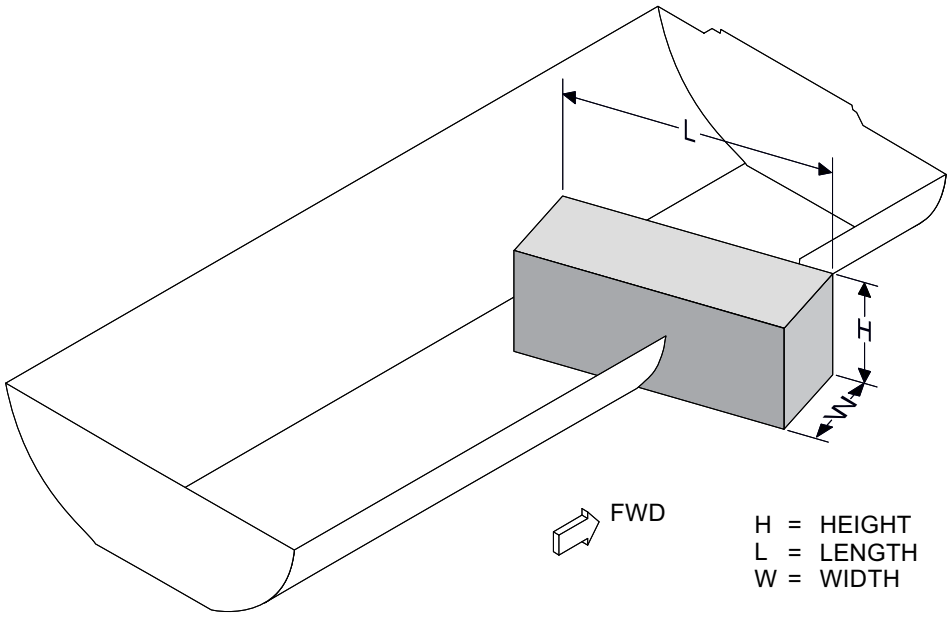
“Light Packages Hand Maneuvered” refers to packages which may be elevated to clear the inward curve of the cargo sidewall liner opposite the door.

Package sizes are approximate. Tilting, twisting, bending and/or rotating packages through door openings will allow additional lengths in many cases, but should be determined for each situation. A trial loading is recommended for packages with dimensions close to maximum dimensions indicated in the tables.

The height dimensions do not include allowances for items increasing package height such as fork lift tyne thicknesses, pallet depths, skid tub heights, etc. Any such devices must be accounted for in the total height.

Package Size Illustration

The following illustration shows package dimensioning used in the allowable package size tables.

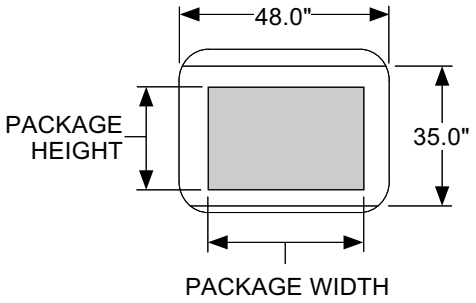


APPLICABLE CONFIGURATIONS
A, B, C, D, E, K, L, M, P, R, S, U, V, Y

FORWARD CARGO COMPARTMENTS (Continued)

Door Dimensions

The following figure provides the forward cargo door clearance dimensions.



Allowable Package Sizes

The following table is applicable for packages loaded aft of the forward cargo door (B.A. 314 IN.).

HEAVY PACKAGES LIFT ASSISTED										
HEIGHT IN.	WIDTH IN.									
	5	10	15	20	25	30	35	40	45	48
	LENGTH IN.									
5	156	128	109	95	85	75	65	55	46	46
10	138	119	106	95	85	75	65	55	46	46
12	134	118	105	95	85	75	65	55	46	46
14	132	116	105	95	85	75	65	55	46	46
16	130	116	105	95	85	75	65	55	46	46
18	128	115	105	95	85	75	65	55	46	46
20	127	115	105	95	85	75	65	55	46	46
22	127	115	105	95	85	75	65	55	46	46
24	126	115	105	95	85	75	65	55	46	46
26	126	115	105	95	85	75	65	55	46	46
28	125	115	105	95	85	75	65	55	46	46
30	125	115	105	95	85	75	65	55	46	46
32	125	115	105	95	85	75	65	55	46	46
34	125	115	105	95	85	75	65	55	46	46

APPLICABLE CONFIGURATIONS
A, B, C, D, E, K, L, M, P, R, S, U, V, Y

FORWARD CARGO COMPARTMENTS (Continued)

The following table is applicable for packages loaded aft of the forward cargo door (B.A. 314 IN.).

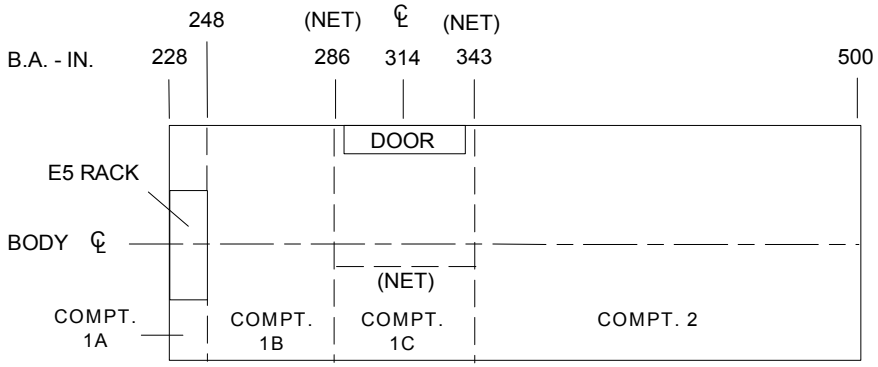
LIGHT PACKAGES HAND MANEUVERED										
HEIGHT IN.	WIDTH IN.									
	5	10	15	20	25	30	35	40	45	48
	LENGTH IN.									
5	216	213	211	209	180	160	149	137	123	116
10	215	212	210	199	175	154	143	131	118	111
12	215	212	210	193	174	152	141	129	116	109
14	215	212	207	187	169	148	137	125	112	106
16	215	212	203	184	156	145	134	122	109	103
18	215	212	200	175	151	140	129	117	105	99
20	215	207	188	166	146	135	124	113	100	95
22	215	203	177	157	141	130	120	108	96	91
24	206	188	166	147	136	126	115	104	92	87
26	199	174	155	139	129	118	108	97	85	81
28	181	160	140	128	117	107	97	86	75	72
30	160	146	130	120	110	99	89	79	68	66
32	149	136	125	114	104	94	84	74	63	62
34	134	122	112	102	92	82	72	62	53	53

APPLICABLE CONFIGURATIONS
A, B, C, D, E, K, L, M, P, R, S, U, V, Y

FORWARD CARGO COMPARTMENTS

FORWARD CARGO COMPARTMENT VOLUMES

The following figure shows forward cargo hold compartment boundaries with an E5 rack installed.



Volumes and centroids for the above figure are provided in the following table.

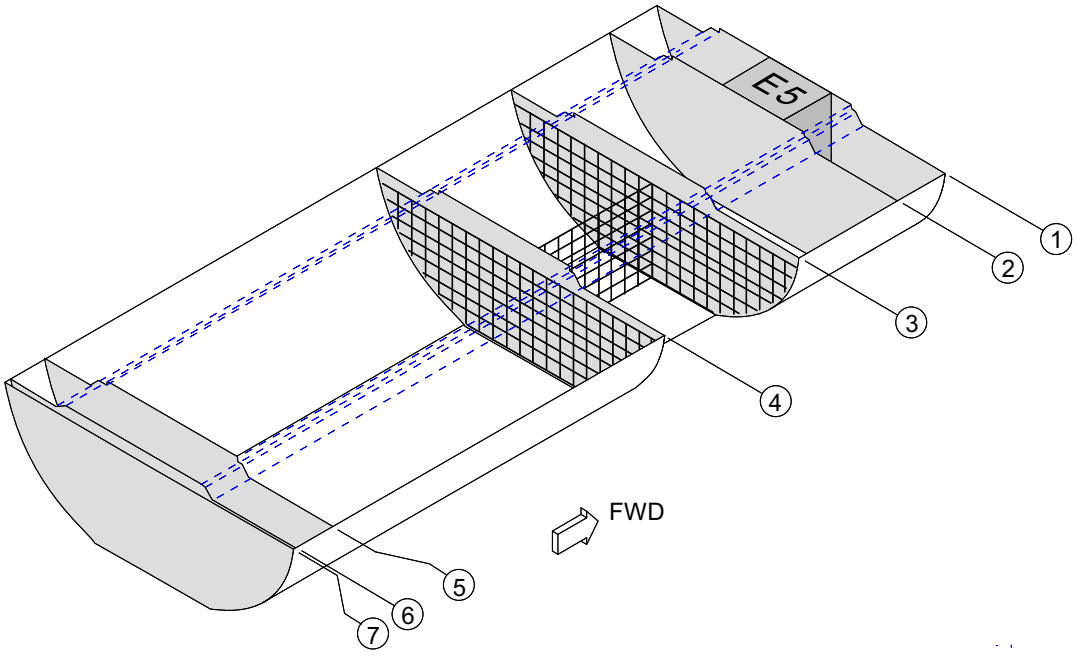
VOLUMES	COMPARTMENTS			
	1A	1B	1C	2
Forward Compartment Volumes CU FT	32	108	65	390
Total Forward Hold CU FT	595			
Volumetric Centroids B.A. - IN.	238	267	314.5	421.5
	371.9			

APPLICABLE CONFIGURATIONS
F, G, H, N, W

FORWARD CARGO COMPARTMENTS (Continued)

FORWARD CARGO COMPARTMENT CROSS SECTIONS

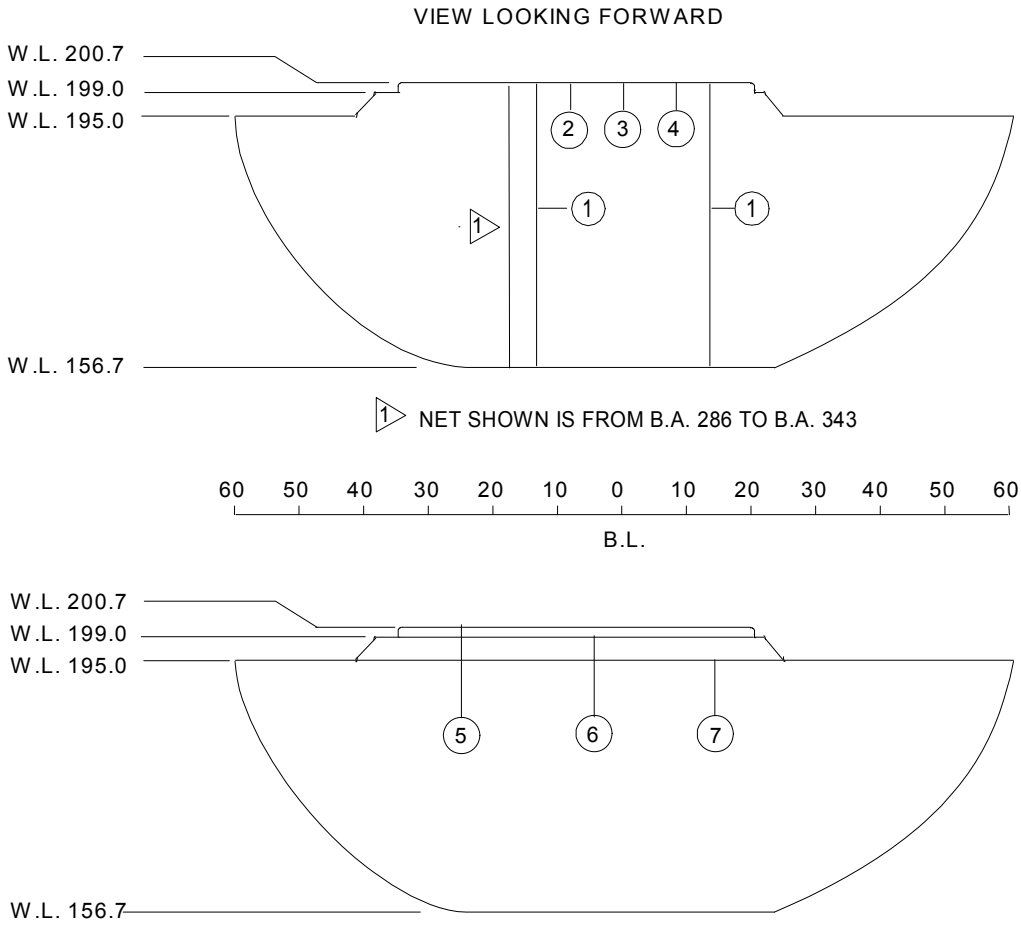
The figure below illustrates the general layout of the forward cargo compartments. The numbered labels and shaded panels correspond to the cross-sections provided on the next page.



APPLICABLE CONFIGURATIONS
F, G, H, N, W

FORWARD CARGO COMPARTMENTS (Continued)

The following cross-sections for compartments 1 and 2 can be used to determine ceiling clearances at various forward cargo compartment balance arms. The relative location of the cross-sectional cut can be determined by correlating the cross-section number to the general layout on the previous page.



CROSS SECTION NO.	B.A. IN.
1	228.0
2	248.0
3	286.0
4	343.0
5	482.0
6	498.0
7	500.0

APPLICABLE CONFIGURATIONS
F, G, H, N, W

FORWARD CARGO COMPARTMENTS (Continued)

CARGO DOOR DIMENSIONS AND ALLOWABLE PACKAGE SIZES

This section provides dimensions of the maximum package sizes which will pass through the forward cargo door opening. Individual tables are presented for two types of packages; “Heavy Packages Lift Assisted” and “Light Packages Hand Maneuvered”.

“Heavy Packages Lift Assisted” refers to packages which require the use of a fork lift or other loading device to maneuver them through the door. The maximum length is restricted by the inward curve of the lower cargo sidewall liner opposite the door. The table assumes the packages cannot be elevated to clear this interference.

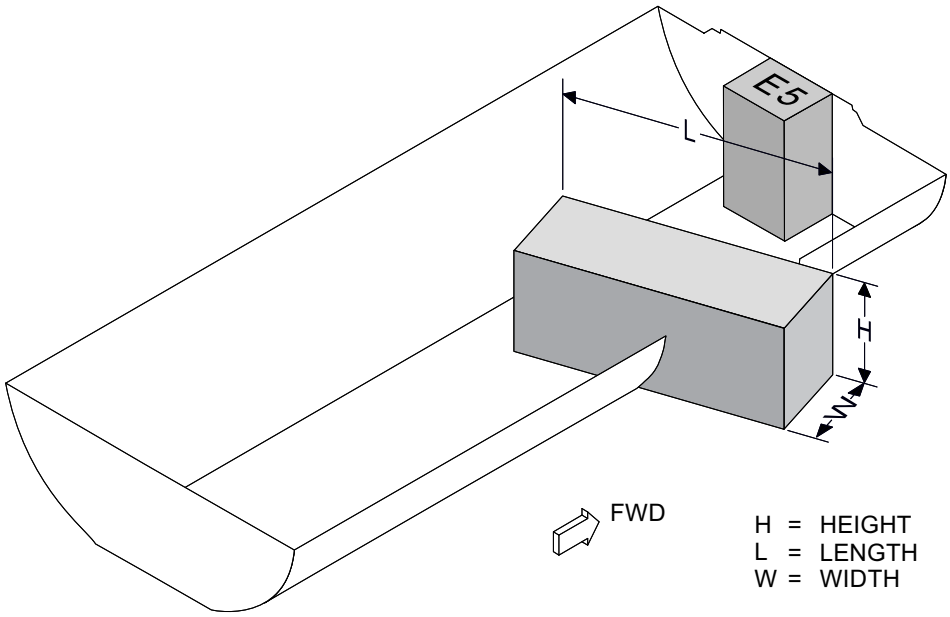
“Light Packages Hand Maneuvered” refers to packages which may be elevated to clear the inward curve of the cargo sidewall liner opposite the door.

Package sizes are approximate. Tilting, twisting, bending and/or rotating packages through door openings will allow additional lengths in many cases, but should be determined for each situation. A trial loading is recommended for packages with dimensions close to maximum dimensions indicated in the tables.

The height dimensions do not include allowances for items increasing package height such as fork lift tyne thicknesses, pallet depths, skid tub heights, etc. Any such devices must be accounted for in the total height.

Package Size Illustration

The following illustration shows package dimensioning used in the allowable package size tables.

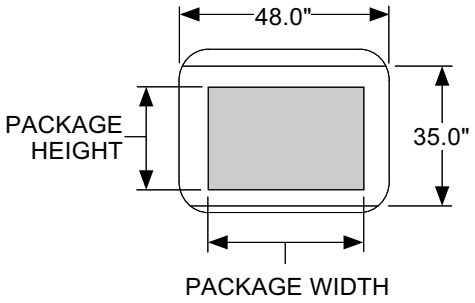


APPLICABLE CONFIGURATIONS
F, G, H, N, W

FORWARD CARGO COMPARTMENTS (Continued)

Door Dimensions

The following figure provides the forward cargo door clearance dimensions.



Allowable Package Sizes

The following table is applicable for packages loaded aft of the forward cargo door (B.A. 314 IN.).

HEAVY PACKAGES LIFT ASSISTED										
HEIGHT IN.	WIDTH IN.									
	5	10	15	20	25	30	35	40	45	48
	LENGTH IN.									
5	156	128	109	95	85	75	65	55	46	46
10	138	119	106	95	85	75	65	55	46	46
12	134	118	105	95	85	75	65	55	46	46
14	132	116	105	95	85	75	65	55	46	46
16	130	116	105	95	85	75	65	55	46	46
18	128	115	105	95	85	75	65	55	46	46
20	127	115	105	95	85	75	65	55	46	46
22	127	115	105	95	85	75	65	55	46	46
24	126	115	105	95	85	75	65	55	46	46
26	126	115	105	95	85	75	65	55	46	46
28	125	115	105	95	85	75	65	55	46	46
30	125	115	105	95	85	75	65	55	46	46
32	125	115	105	95	85	75	65	55	46	46
34	125	115	105	95	85	75	65	55	46	46

APPLICABLE CONFIGURATIONS
F, G, H, N, W

FORWARD CARGO COMPARTMENTS (Continued)

The following table is applicable for packages loaded aft of the forward cargo door (B.A. 314 IN.).

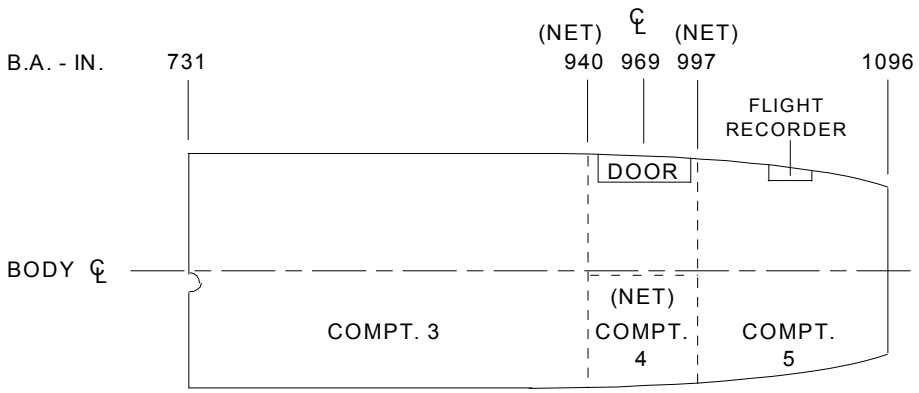
LIGHT PACKAGES HAND MANEUVERED										
HEIGHT IN.	WIDTH IN.									
	5	10	15	20	25	30	35	40	45	48
	LENGTH IN.									
5	216	213	211	209	180	160	149	137	123	116
10	215	212	210	199	175	154	143	131	118	111
12	215	212	210	193	174	152	141	129	116	109
14	215	212	207	187	169	148	137	125	112	106
16	215	212	203	184	156	145	134	122	109	103
18	215	212	200	175	151	140	129	117	105	99
20	215	207	188	166	146	135	124	113	100	95
22	215	203	177	157	141	130	120	108	96	91
24	206	188	166	147	136	126	115	104	92	87
26	199	174	155	139	129	118	108	97	85	81
28	181	160	140	128	117	107	97	86	75	72
30	160	146	130	120	110	99	89	79	68	66
32	149	136	125	114	104	94	84	74	63	62
34	134	122	112	102	92	82	72	62	53	53

APPLICABLE CONFIGURATIONS
F, G, H, N, W

AFT CARGO COMPARTMENTS

AFT CARGO COMPARTMENT VOLUMES

The following figure shows aft cargo hold compartment boundaries.



Volumes and centroids for compartments 3, 4 and 5 in the above figure are provided in the following table.

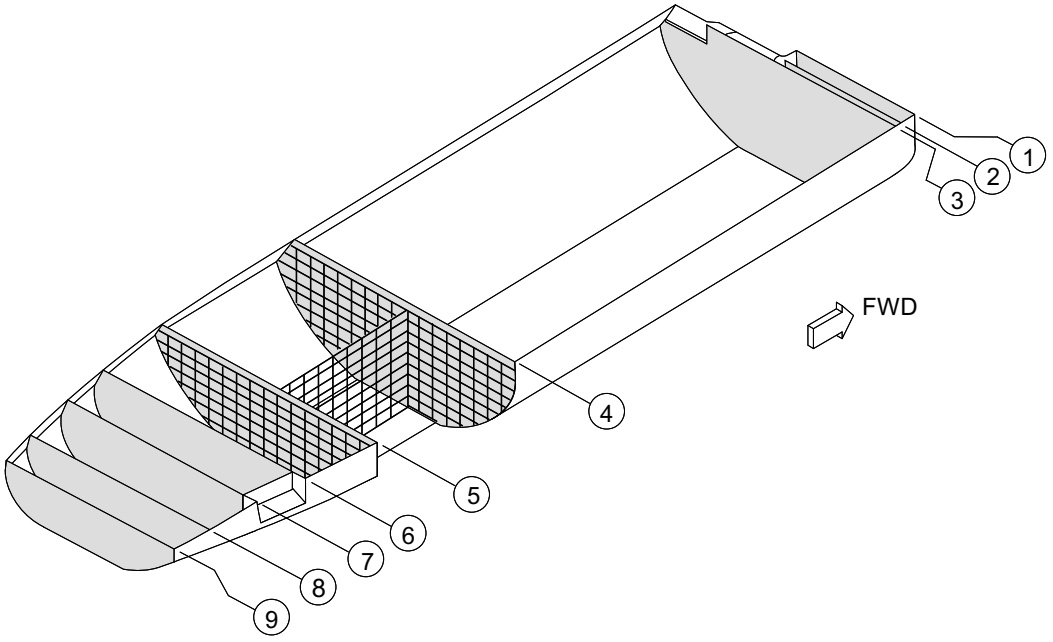
VOLUMES	COMPARTMENTS		
	3	4	5
Aft Compartment Volumes CU. FT.	550	64	152
Total Aft Hold CU. FT.	766		
Volumetric Centroids B.A. - IN.	835.5	968.5	1036.7
	886.5		

APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

AFT CARGO COMPARTMENTS (Continued)

AFT CARGO COMPARTMENT CROSS SECTIONS

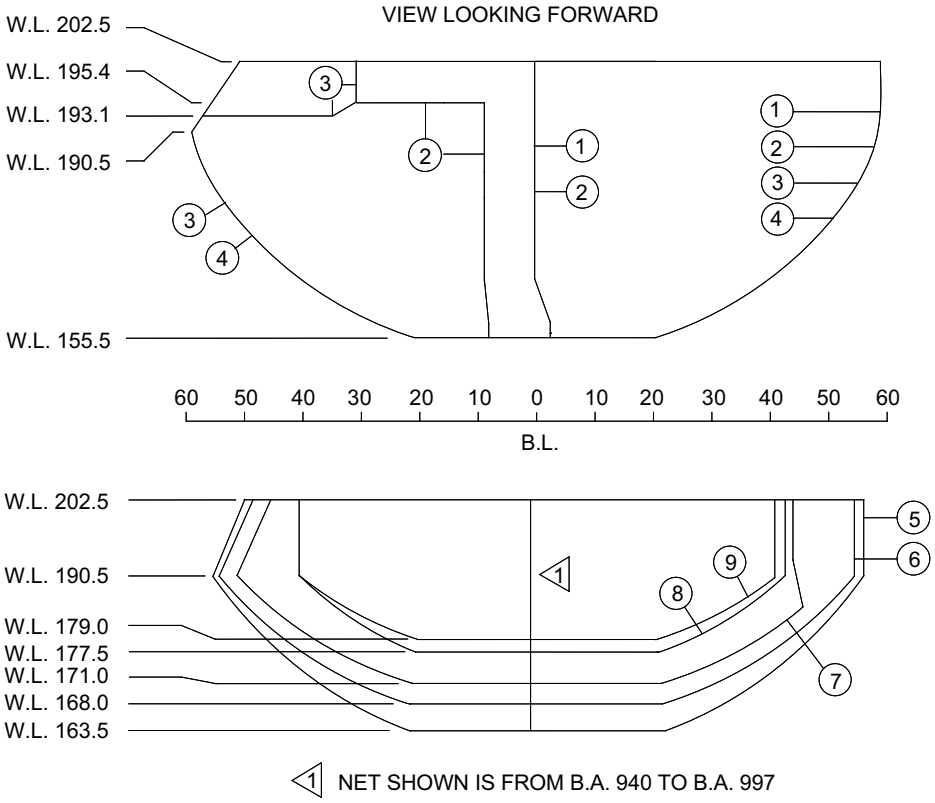
The figure below illustrates the general layout of the aft cargo compartments. The numbered labels and shaded panels correspond to the cross-sections provided on the next two pages.



APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

AFT CARGO COMPARTMENTS (Continued)

The following cross-sections for compartments 3, 4 and 5 can be used to determine ceiling clearances at various aft cargo compartment balance arms. The relative location of the cross-sectional cut can be determined by correlating the cross-section number to the general layout on the previous page.



CROSS SECTION NO.	B.A. IN.
1	731.0
2	732.0
3	741.0
4	940.0
5	997.0
6	1033.0
7	1056.0
8	1079.0
9	1096.0

APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

AFT CARGO COMPARTMENTS (Continued)

CARGO DOOR DIMENSIONS AND ALLOWABLE PACKAGE SIZES

This section provides the dimensions of maximum package sizes which will pass through the aft cargo door opening. Individual tables are presented for two types of packages; “Heavy Packages Lift Assisted” and “Light Packages Hand Maneuvered”.

“Heavy Packages Llift Assisted” refers to packages which require the use of a fork lift or other loading device to maneuver them through the door. The maximum length is restricted by the inward curve of the lower cargo sidewall liner opposite the door. The table assumes the packages cannot be elevated to clear this interference.

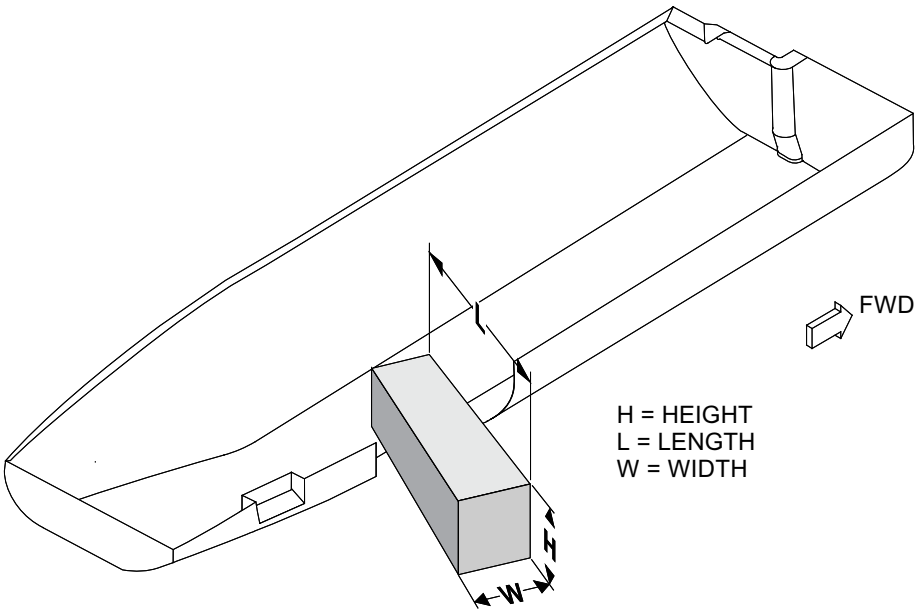
“Light Packages Hand Maneuvered” refers to packages which may be elevated to clear the inward curve of the cargo sidewall liner opposite the door.

Package sizes are approximate. Tilting, twisting, bending and/or rotating packages through door openings will allow additional lengths in many cases, but should be determined for each situation. A trial loading is recommended for packages with dimensions close to maximum dimensions indicated in the tables.

The height dimensions do not include allowances for items increasing package height such as fork lift tyne thicknesses, pallet depths, skid tub heights, etc. Any such devices must be accounted for in the total height.

Package Size Illustration

The following illustration shows package dimensioning used in the allowable package size tables.

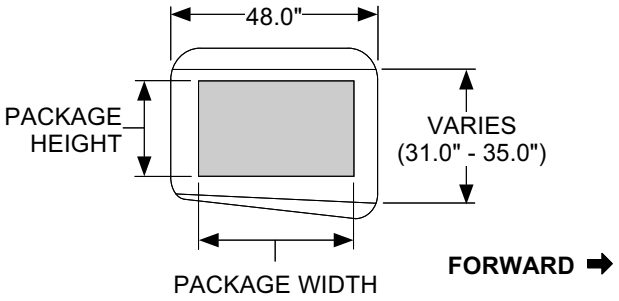


APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

AFT CARGO COMPARTMENTS (Continued)

Door Dimensions

The following figure provides the aft cargo door dimensions.



Allowable Package Sizes

The following table is applicable for packages loaded forward of the aft cargo door (B.A. 969 IN.).

HEAVY PACKAGES LIFT ASSISTED									
HEIGHT IN.	WIDTH IN.								
	5	10	15	20	25	30	35	40	45
	LENGTH IN.								
5	165	127	105	89	79	69	59	50	43
10	137	116	101	89	79	69	59	50	43
12	133	114	99	89	79	69	59	50	43
14	129	113	99	89	79	69	59	50	43
16	127	112	99	89	79	69	59	50	43
18	125	112	99	89	79	69	59	50	43
20	123	112	99	89	79	69	59	50	43
22	121	112	99	89	79	69	59	50	43
24	121	112	99	89	79	69	59	50	43
26	121	112	99	89	79	69	59	50	43
28	121	112	99	89	79	69	59	50	43
30	121	112	99	89	79	69	59	50	43
32	101	91	83	72	62	52			
34	74	64							

AFT CARGO COMPARTMENTS (Continued)

The following table is applicable for packages loaded forward of the aft cargo door (B.A. 969 IN.).

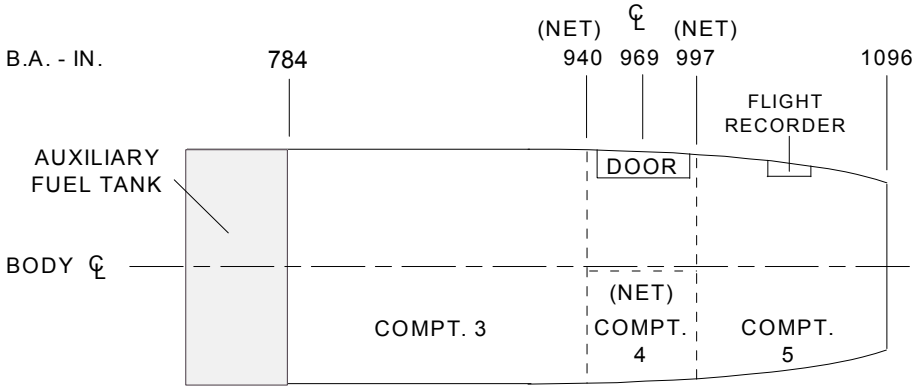
LIGHT PACKAGES HAND MANEUVERED										
HEIGHT IN.	WIDTH IN.									
	5	10	15	20	25	30	35	40	45	48
	LENGTH IN.									
5	271	269	267	240	202	175	154	137	122	115
10	270	268	264	219	188	154	140	128	115	108
12	269	267	242	211	182	151	135	123	110	104
14	268	266	234	199	174	148	132	121	108	102
16	267	263	220	189	167	144	128	117	104	98
18	266	246	207	180	151	140	123	112	100	94
20	264	227	194	171	146	135	118	107	95	90
22	250	210	182	162	141	130	112	101	89	85
24	227	194	171	145	135	124	107	94	84	79
26	207	180	160	138	127	117	99	88	77	74
28	188	166	149	129	119	108	90	80	72	67
30	170	153	129	118	108	98	79	70	58	57
32	154	140	122	112	102	80	70	61		
34	139	120	110	100						

APPLICABLE CONFIGURATIONS
A, B, C, E, F, G, K, L, M, N, P, R, S, V, W, Y

AFT CARGO COMPARTMENTS

AFT CARGO COMPARTMENT VOLUMES

The following figure shows aft cargo hold compartment boundaries with the Boeing 391 Gal. auxiliary fuel tank installed.



Volumes and centroids for compartments 3, 4 and 5 in the above figure are provided in the following table.

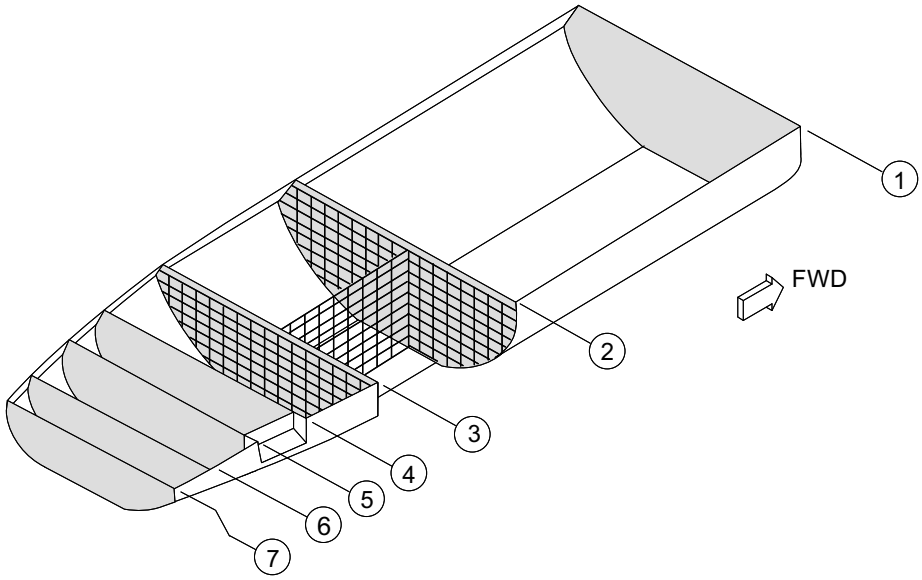
VOLUMES	COMPARTMENTS		
	3	4	5
Aft Compartment Volumes CU FT	411	64	152
Total Aft Hold CU FT	627		
Volumetric Centroids B.A. - IN.	862.0	968.5	1036.7
	915.2		

APPLICABLE CONFIGURATIONS
D, U

AFT CARGO COMPARTMENTS (Continued)

AFT CARGO COMPARTMENT CROSS SECTIONS

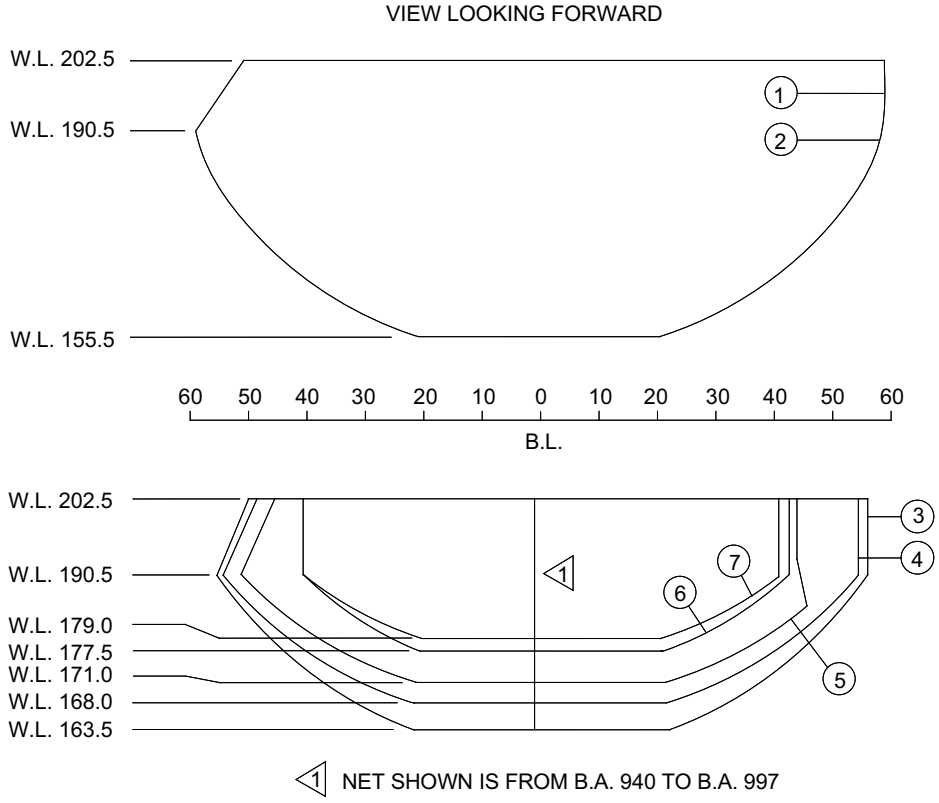
The figure below illustrates the general layout of the aft cargo compartments. The numbered labels and shaded panels correspond to the cross-sections provided on the next page.



APPLICABLE CONFIGURATIONS
D, U

AFT CARGO COMPARTMENTS (Continued)

The following cross-sections for compartments 3, 4 and 5 can be used to determine ceiling clearances at various aft cargo compartment balance arms. The relative location of the cross-sectional cut can be determined by correlating the cross-section number to the general layout on the previous page.



CROSS SECTION NO.	B.A. IN.
1	784.0
2	940.0
3	997.0
4	1033.0
5	1056.0
6	1079.0
7	1096.0

APPLICABLE CONFIGURATIONS
D, U

AFT CARGO COMPARTMENTS (Continued)

CARGO DOOR DIMENSIONS AND ALLOWABLE PACKAGE SIZES

This section provides the dimensions of maximum package sizes which will pass through the aft cargo door opening. Individual tables are presented for two types of packages; “Heavy Packages Lift Assisted” and “Light Packages Hand Maneuvered”.

“Heavy Packages Lift Assisted” refers to packages which require the use of a fork lift or other loading device to maneuver them through the door. The maximum length is restricted by the inward curve of the lower cargo sidewall liner opposite the door. The table assumes the packages cannot be elevated to clear this interference.

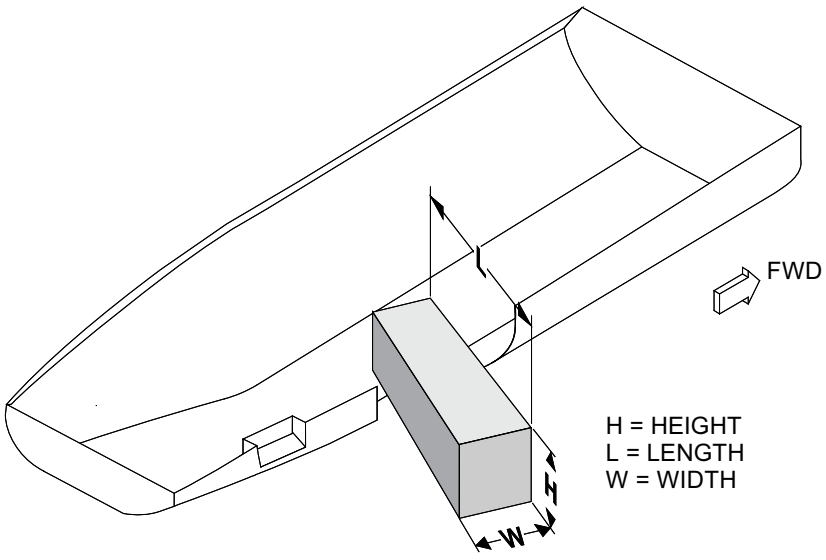
“Light Packages Hand Maneuvered” refers to packages which may be elevated to clear the inward curve of the cargo sidewall liner opposite the door.

Package sizes are approximate. Tilting, twisting, bending and/or rotating packages through door openings will allow additional lengths in many cases, but should be determined for each situation. A trial loading is recommended for packages with dimensions close to maximum dimensions indicated in the tables.

The height dimensions do not include allowances for items increasing package height such as fork lift tyne thicknesses, pallet depths, skid tub heights, etc. Any such devices must be accounted for in the total height.

Package Size Illustration

The following illustration shows package dimensioning used in the allowable package size tables.

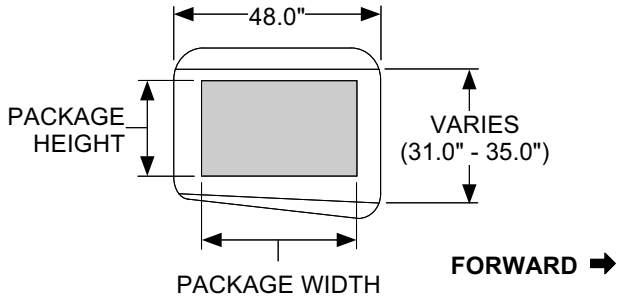


APPLICABLE CONFIGURATIONS
D, U

AFT CARGO COMPARTMENTS (Continued)

Door Dimensions

The following figure provides the aft cargo door clearance dimensions.



Allowable Package Sizes

The following table is applicable for packages loaded forward of the aft cargo door (B.A. 969 IN.).

HEAVY PACKAGES LIFT ASSISTED									
HEIGHT IN.	WIDTH IN.								
	5	10	15	20	25	30	35	40	45
	LENGTH IN.								
5	165	127	105	89	79	69	59	50	43
10	137	116	101	89	79	69	59	50	43
12	133	114	99	89	79	69	59	50	43
14	129	113	99	89	79	69	59	50	43
16	127	112	99	89	79	69	59	50	43
18	125	112	99	89	79	69	59	50	43
20	123	112	99	89	79	69	59	50	43
22	121	112	99	89	79	69	59	50	43
24	121	112	99	89	79	69	59	50	43
26	121	112	99	89	79	69	59	50	43
28	121	112	99	89	79	69	59	50	43
30	121	112	99	89	79	69	59	50	43
32	101	91	83	72	62	52			
34	74	64							

APPLICABLE CONFIGURATIONS
D, U

AFT CARGO COMPARTMENTS (Continued)

The following table is applicable for packages loaded forward of the aft cargo door (B.A. 969 IN.).

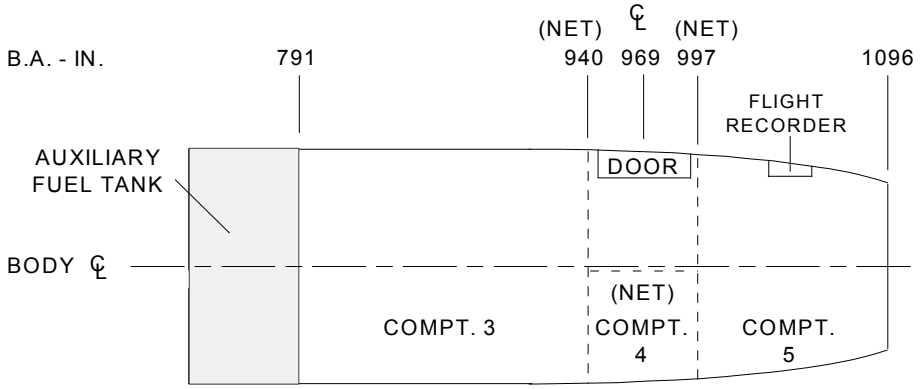
LIGHT PACKAGES HAND MANEUVERED										
HEIGHT IN.	WIDTH IN.									
	5	10	15	20	25	30	35	40	45	48
	LENGTH IN.									
5	219	217	215	213	202	175	154	137	122	115
10	218	216	214	212	188	154	140	128	115	108
12	217	215	213	211	182	151	135	123	110	104
14	216	214	212	199	174	148	132	121	108	102
16	215	213	211	189	167	144	128	117	104	98
18	214	212	207	180	151	140	123	112	100	94
20	213	211	194	171	146	135	118	107	95	90
22	212	210	182	162	141	130	112	101	89	85
24	211	194	171	145	135	123	107	94	84	79
26	207	180	160	138	127	117	99	88	77	74
28	188	166	149	129	119	108	90	80	72	67
30	170	153	129	118	108	98	79	70	58	57
32	154	140	122	112	102	80	70	61		
34	139	120	110	100						

APPLICABLE CONFIGURATIONS
D, U

AFT CARGO COMPARTMENTS

AFT CARGO COMPARTMENT VOLUMES

The following figure shows aft cargo hold compartment boundaries with the Rogerson 500 Gal. auxiliary fuel tank installed.



Volumes and centroids for compartments 3, 4 and 5 in the above figure are provided in the following table.

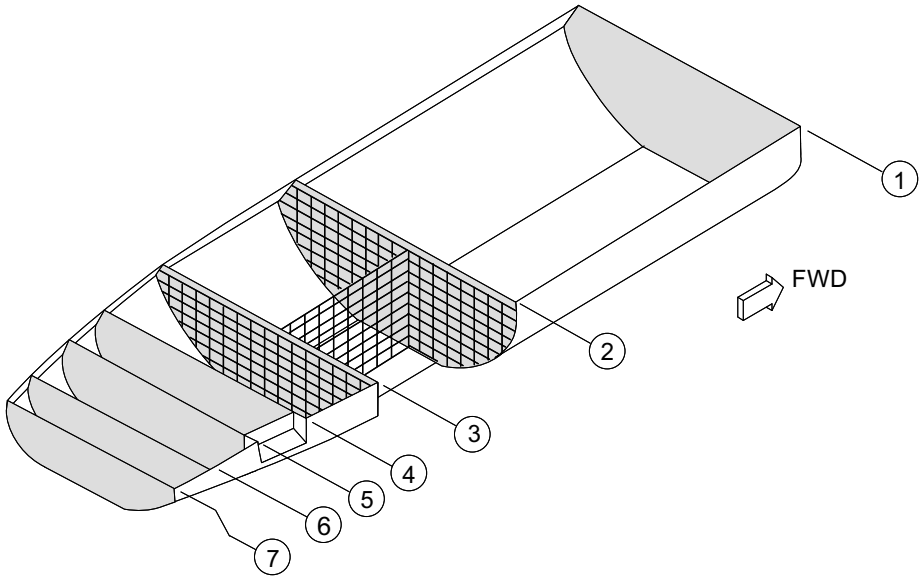
VOLUMES	COMPARTMENTS		
	3	4	5
Aft Compartment Volumes CU FT	390	64	152
Total Aft Hold CU FT	606		
Volumetric Centroids B.A. - IN.	865.5	968.5	1036.7
	919.3		

APPLICABLE CONFIGURATIONS
H

AFT CARGO COMPARTMENTS (Continued)

AFT CARGO COMPARTMENT CROSS SECTIONS

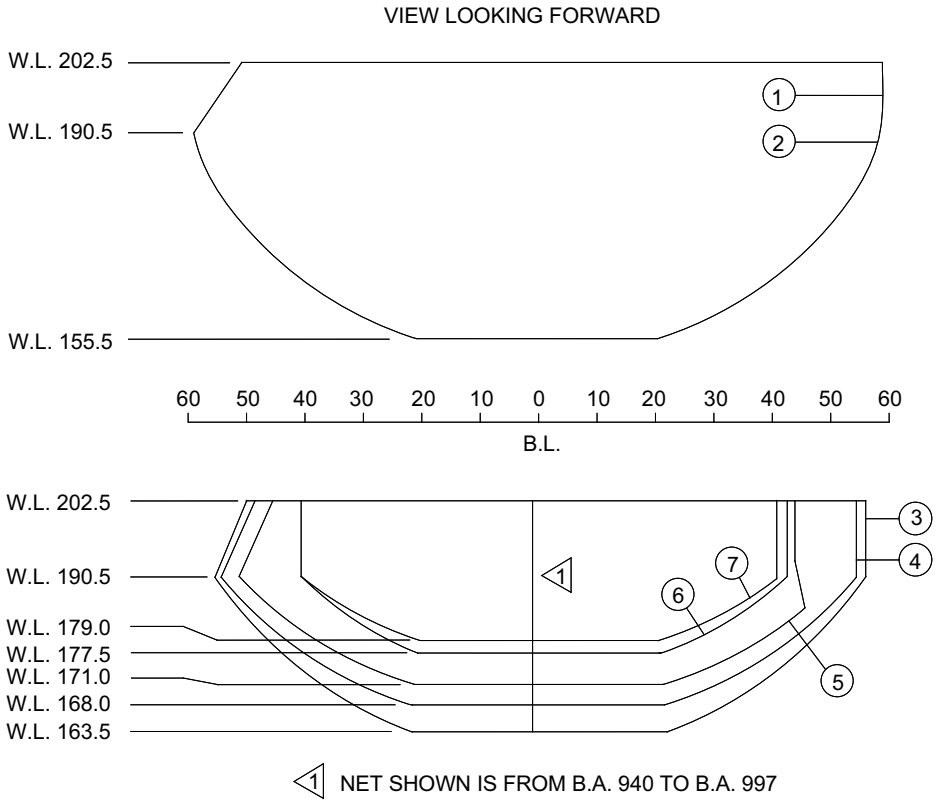
The figure below illustrates the general layout of the aft cargo compartments. The numbered labels and shaded panels correspond to the cross-sections provided on the next page.



APPLICABLE CONFIGURATIONS
H

AFT CARGO COMPARTMENTS (Continued)

The following cross-sections for compartments 3, 4 and 5 can be used to determine ceiling clearances at various aft cargo compartment balance arms. The relative location of the cross-sectional cut can be determined by correlating the cross-section number to the general layout on the previous page.



CROSS SECTION NO.	B.A. IN.
1	791.0
2	940.0
3	997.0
4	1033.0
5	1056.0
6	1079.0
7	1096.0

APPLICABLE CONFIGURATIONS
H

AFT CARGO COMPARTMENTS (Continued)

CARGO DOOR DIMENSIONS AND ALLOWABLE PACKAGE SIZES

This section provides the dimensions of maximum package sizes which will pass through the aft cargo door opening. Individual tables are presented for two types of packages; “Heavy Packages Lift Assisted” and “Light Packages Hand Maneuvered”.

“Heavy Packages Lift Assisted” refers to packages which require the use of a fork lift or other loading device to maneuver them through the door. The maximum length is restricted by the inward curve of the lower cargo sidewall liner opposite the door. The table assumes the packages cannot be elevated to clear this interference.

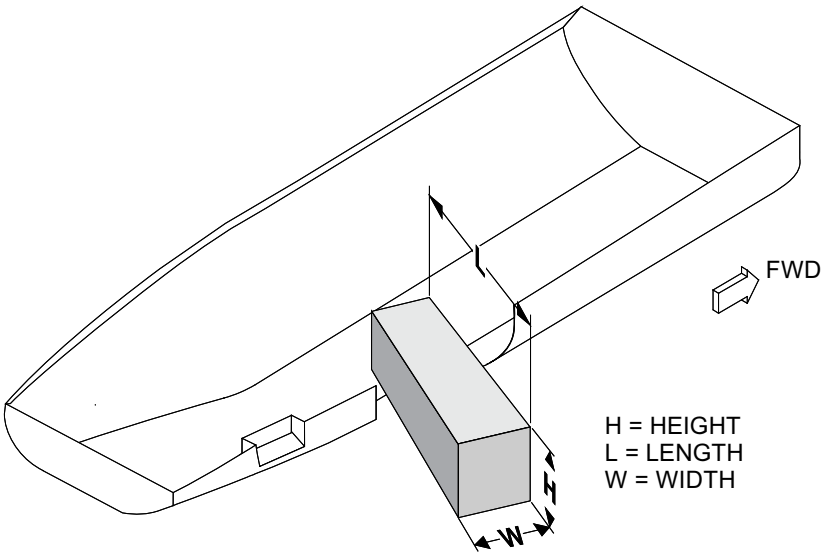
“Light Packages Hand Maneuvered” refers to packages which may be elevated to clear the inward curve of the cargo sidewall liner opposite the door.

Package sizes are approximate. Tilting, twisting, bending and/or rotating packages through door openings will allow additional lengths in many cases, but should be determined for each situation. A trial loading is recommended for packages with dimensions close to maximum dimensions indicated in the tables.

The height dimensions do not include allowances for items increasing package height such as fork lift tyne thicknesses, pallet depths, skid tub heights, etc. Any such devices must be accounted for in the total height.

Package Size Illustration

The following illustration shows package dimensioning used in the allowable package size tables.

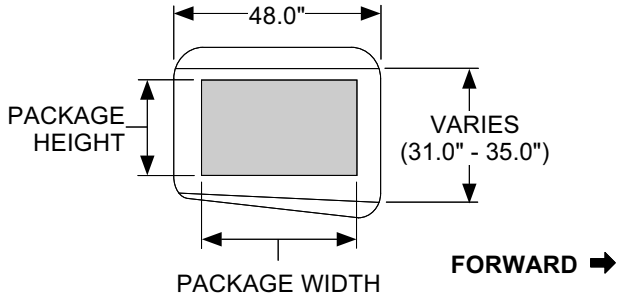


APPLICABLE CONFIGURATIONS
H

AFT CARGO COMPARTMENTS (Continued)

Door Dimensions

The following figure provides the aft cargo door clearance dimensions.



Allowable Package Sizes

The following table is applicable for packages loaded forward of the aft cargo door (B.A. 969 IN.).

HEAVY PACKAGES LIFT ASSISTED									
HEIGHT IN.	WIDTH IN.								
	5	10	15	20	25	30	35	40	45
	LENGTH IN.								
5	165	127	105	89	79	69	59	50	43
10	137	116	101	89	79	69	59	50	43
12	133	114	99	89	79	69	59	50	43
14	129	113	99	89	79	69	59	50	43
16	127	112	99	89	79	69	59	50	43
18	125	112	99	89	79	69	59	50	43
20	123	112	99	89	79	69	59	50	43
22	121	112	99	89	79	69	59	50	43
24	121	112	99	89	79	69	59	50	43
26	121	112	99	89	79	69	59	50	43
28	121	112	99	89	79	69	59	50	43
30	121	112	99	89	79	69	59	50	43
32	101	91	83	72	62	52			
34	74	64							

APPLICABLE CONFIGURATIONS
H

AFT CARGO COMPARTMENTS (Continued)

The following table is applicable for packages loaded forward of the aft cargo door (B.A. 969 IN.).

LIGHT PACKAGES HAND MANEUVERED										
HEIGHT IN.	WIDTH IN.									
	5	10	15	20	25	30	35	40	45	48
	LENGTH IN.									
5	213	211	209	207	202	175	154	137	122	115
10	212	210	208	205	188	154	140	128	115	108
12	211	209	207	202	182	151	135	123	110	104
14	210	208	206	199	174	148	132	121	108	102
16	209	207	204	189	167	144	128	117	104	98
18	208	206	202	180	151	140	123	112	100	94
20	207	205	194	171	146	135	118	107	95	90
22	206	204	182	162	141	130	112	101	89	85
24	205	194	171	145	135	124	107	94	84	79
26	204	180	160	138	127	117	99	88	77	74
28	188	166	149	129	119	108	90	80	72	67
30	170	153	129	118	108	98	79	70	58	57
32	154	140	122	112	102	80	70	61		
34	139	120	110	100						

APPLICABLE CONFIGURATIONS
H

CARGO TIEDOWNS

TIEDOWN LIMITATIONS

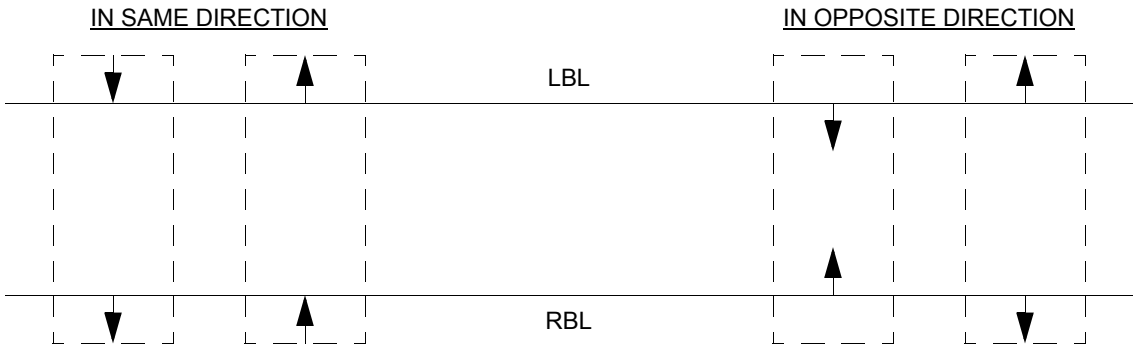
Tiedown limitations for the forward and aft hold floor tiedowns are shown in the following table for various load directions in the tiedown points.

TIEDOWN RINGS IN FLOOR TIEDOWN POINTS							
LOAD DIRECTION ON TIEDOWN POINTS							
UP		FWD OR AFT		CROSS LOAD[a]			
				IN SAME DIRECTION		IN OPPOSITE DIRECTIONS	
MAXIMUM LOAD PER FITTING[b]							
LB	KG	LB	KG	LB	KG	LB	KG
3500	1587	4000	1814	900	408	900	408
4000	1814	0	0	0	0	0	0

[a] Cross Loads are defined in the figure below.

[b] Values are ultimate loads.

The following figure illustrates cross load definitions:



Cargo tiedown fittings are provided in the floor and sidewalls and are to be used in conjunction with cargo restraint straps, nets or the airplane's transverse nets for the restraint of cargo. Restraint of cargo may also be accomplished through the use of crushable cargo (passenger baggage) or additional items of cargo which prevent or reduce the motion of cargo within the compartment.

Door surround nets, including transverse portions, are capable of ultimate flight and ground loads.

APPLICABLE CONFIGURATIONS
All

CARGO TIEDOWNS (Continued)

Net tiedown buttons located on the cargo compartment sidewalls of the forward and aft holds are designed for a maximum load of 800 LB (362 KG) in any direction. The net stanchion supports are designed for a maximum load of 1500 LB (680 KG) in any horizontal direction. These values are ultimate loads.

CAUTIONS

- CARGO, AN ITEM OR GROUP(S) OF ITEMS, MUST NOT BECOME A HAZARD TO THE AIRPLANE STRUCTURE, SYSTEMS OR BALANCE AS A RESULT OF SHIFTING UNDER OPERATIONAL LOADS. SHARP EDGED[1] OR DENSE CARGO[1] MUST EITHER BE LOCATED SO THAT CRUSHABLE TYPE CARGO ACTS AS A BUFFER TO PREVENT HAZARD, OR BE RESTRAINED TO PREVENT SHIFTING. SEE TIEDOWN LIMITATIONS ABOVE FOR THE MEANS OF CARGO RESTRAINT. CRITERIA COVERING DENSE CARGO APPLIES ANYTIME A NET IS MISSING OR DAMAGED AND THE COMPARTMENT IS NOT AT LEAST 90% FULL BY VOLUME.
- INTERNAL RESTRAINT MUST BE USED WHEN LOADING COMPARTMENTS CONTAINING ROLLERS, BALLS OR OTHER DEVICES DESIGNED TO ASSIST IN MOVING OBJECTS WITHIN THE COMPARTMENT.
- IT IS THE RESPONSIBILITY OF THE AIRLINE OPERATOR TO USE GOOD JUDGEMENT WHEN LOADING CARGO THAT COULD CAUSE DAMAGE TO THE AIRPLANE IF NOT PROPERLY RESTRAINED DURING AIRCRAFT OPERATIONS.

[1] Sharp edged and dense cargo are defined as follows:

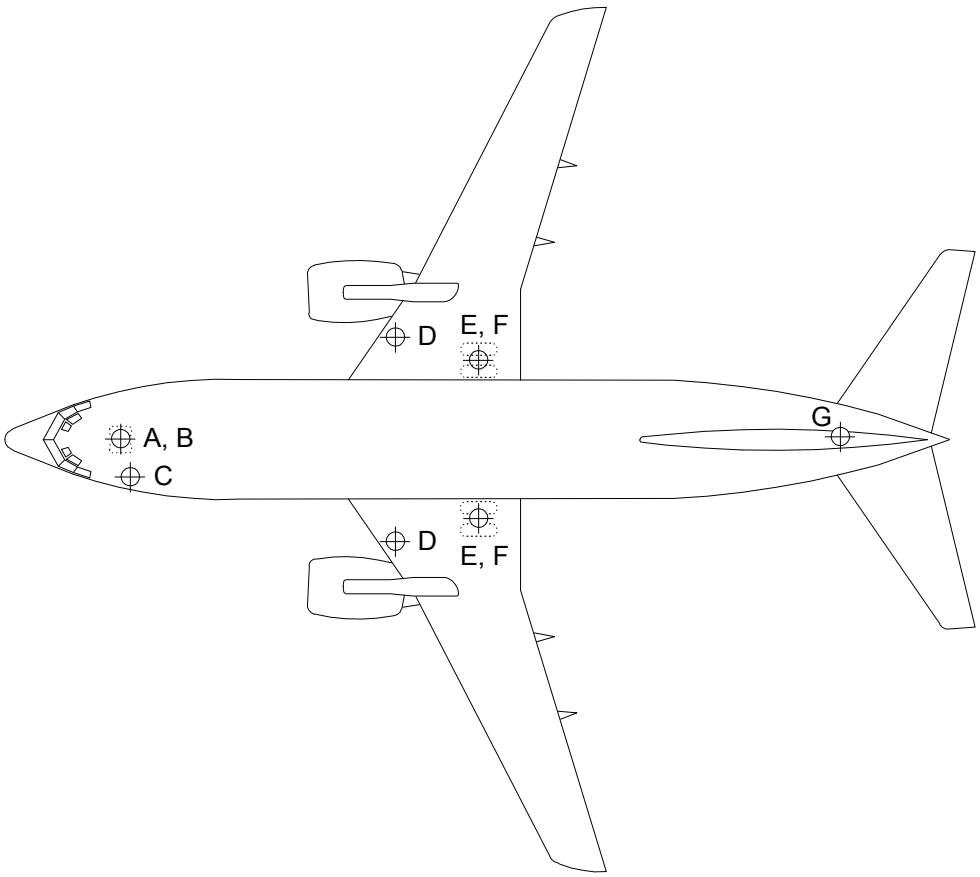
- Weighs 100 LB (45 KG) or more with the smallest end having height and width dimensions both less than 6 IN.
- Slender tubing or rods with a density equal to or greater than 20 LB (9 KG)/CU FT
- Weighs 500 LB (226 KG) or more
- Weighs 300 LB (136 KG) or more with a density equal to or greater than 20 LB (9 KG)/CU FT
- Weighs 100 LB (45 KG) or more and due to package shape (cylindrical, spherical, etc.) is likely to topple or roll during airplane operation

APPLICABLE CONFIGURATIONS
All

AIRPLANE JACKING

JACK POINT LOCATIONS

The following figure provides jack point locations.



APPLICABLE CONFIGURATIONS
A, P, Y

AIRPLANE JACKING (Continued)

MAXIMUM ALLOWABLE JACKING LOADS

The following allowable jacking loads and envelopes are based on the structural limits of the airplane.

JACK POINT		MAXIMUM JACKING LOAD		LOCATION		
		LB	KG	B.A. IN.	B.B.L.[a] IN.	W.L. IN.
Nose Gear[b]	A	16330	7407	135.7[c]	0.0	Varies
Nose Gear Wheels	B			135.8[c]	0.0	Varies
Forward Body	C	13890	6300	142.9	-47.7	170.5
Wing Panel	D	51020	23142	579.8	-114.5	174.9
		51020	23142	579.8	+114.5	174.9
Main Gear[d]	E	67080	30426	698.1[c]	-101.8	Varies
		67080	30426	698.1[c]	+101.8	Varies
Main Gear Wheels	F			698.0[c]	-101.8	Varies
				698.0[c]	+101.8	Varies
Aft Body	G	15720	7130	1235.1	+10.9	208.5

[a] Negative values represent jack points on the left hand side of the airplane and positive values represent jack points on the right hand side of the airplane.

[b] Nose gear jack pad is 2.2 IN. below axle center line at B.A. 135.7 when gear is fully compressed.

[c] Balance arms are for gears in the fully compressed position. Balance arms for nose and main gear jack points and wheels will vary with different oleo extensions.

[d] Main gear jack pad is 4.1 IN. below axle center line at B.A. 698.1 when gear is fully compressed.

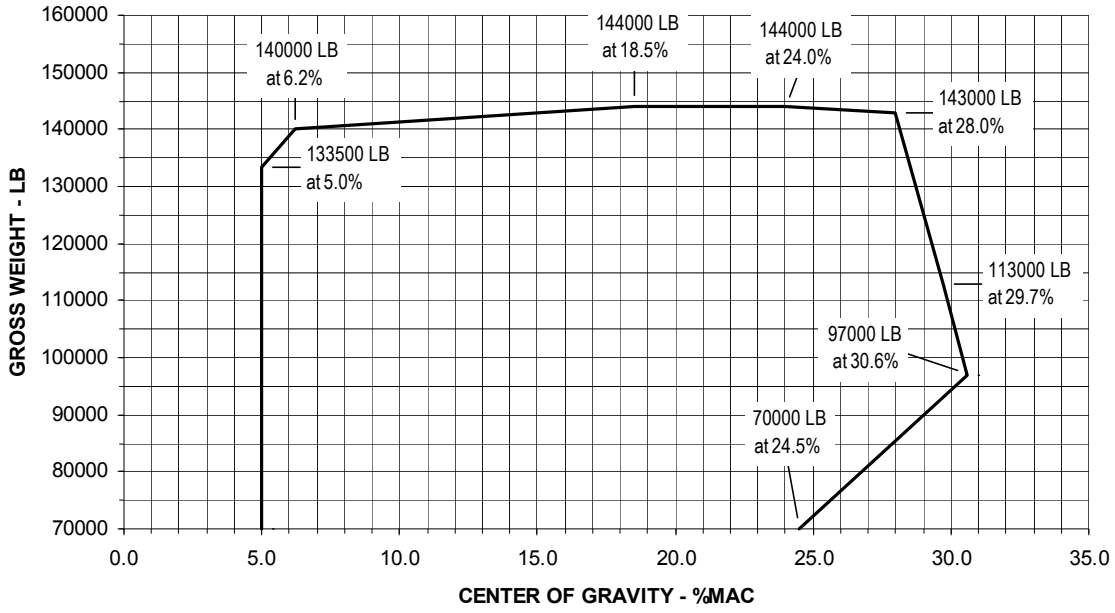
APPLICABLE CONFIGURATIONS
A, P, Y

AIRPLANE JACKING (Continued)

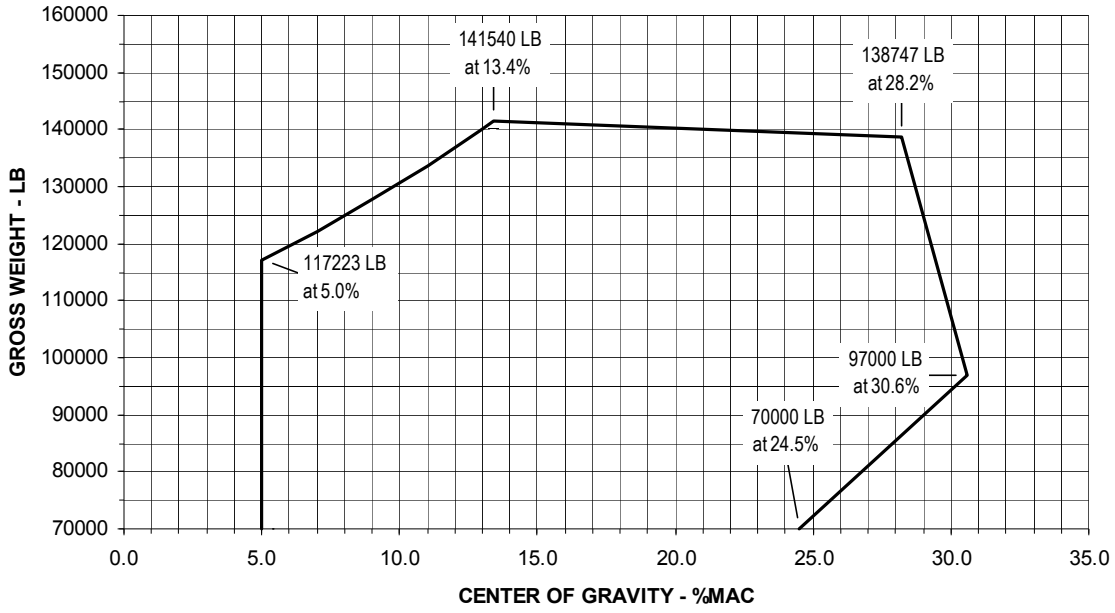
LIMITATIONS ENVELOPES

During the airplane raising and lowering operation the airplane must be within the weight and balance limits shown. Refer to CHP-SEC 1-00-04x for conversion formulas between %MAC and Balance Arms.

Main Gear (E, F) and Nose Gear (A, B) Jack Points (Gross Weight in LB)



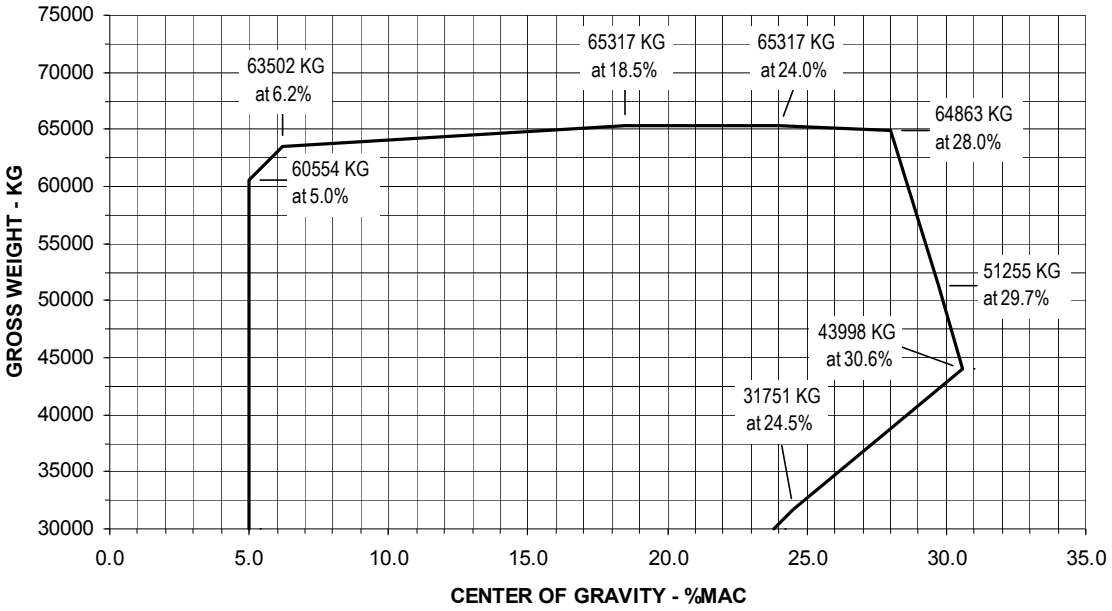
Main Gear (E, F) and Forward Body (C) Jack Points (Gross Weight in LB)



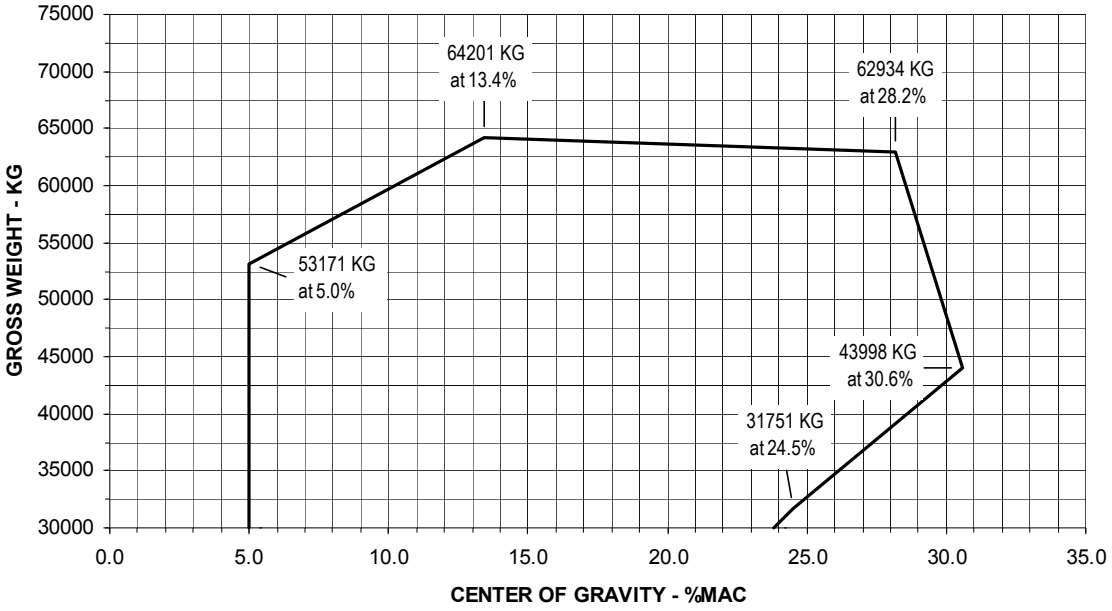
APPLICABLE CONFIGURATIONS
A, P, Y

AIRPLANE JACKING (Continued)

Main Gear (E, F) and Nose Gear (A, B) Jack Points (Gross Weight in KG)



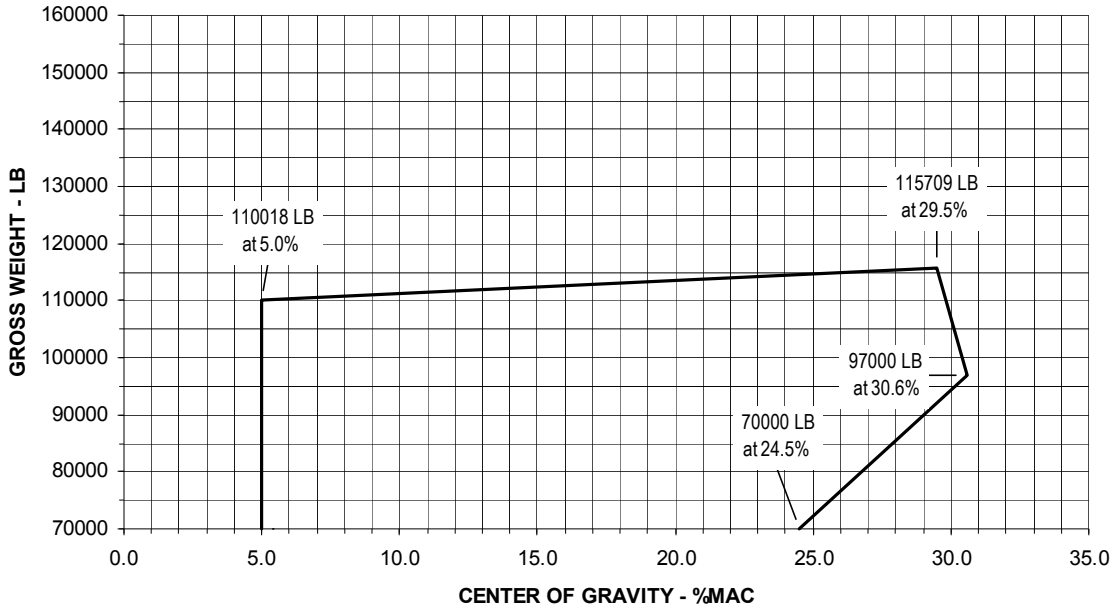
Main Gear (E, F) and Forward Body (C) Jack Points (Gross Weight in KG)



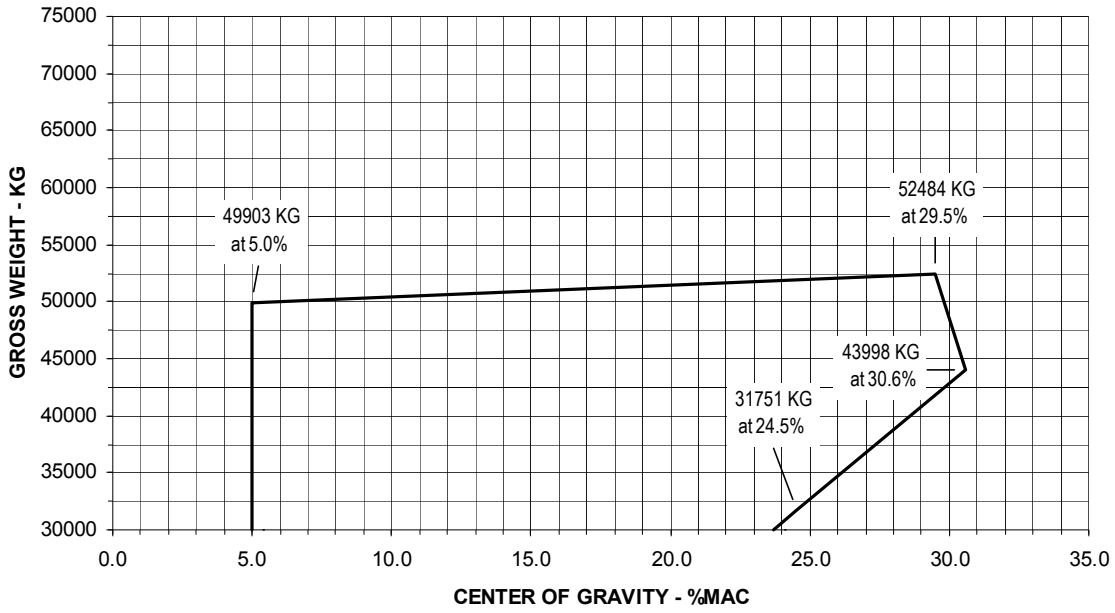
APPLICABLE CONFIGURATIONS
A, P, Y

AIRPLANE JACKING (Continued)

Wing Panel (D) and Aft Body (G) Jack Points (Gross Weight in LB)



Wing Panel (D) and Aft Body (G) Jack Points (Gross Weight in KG)

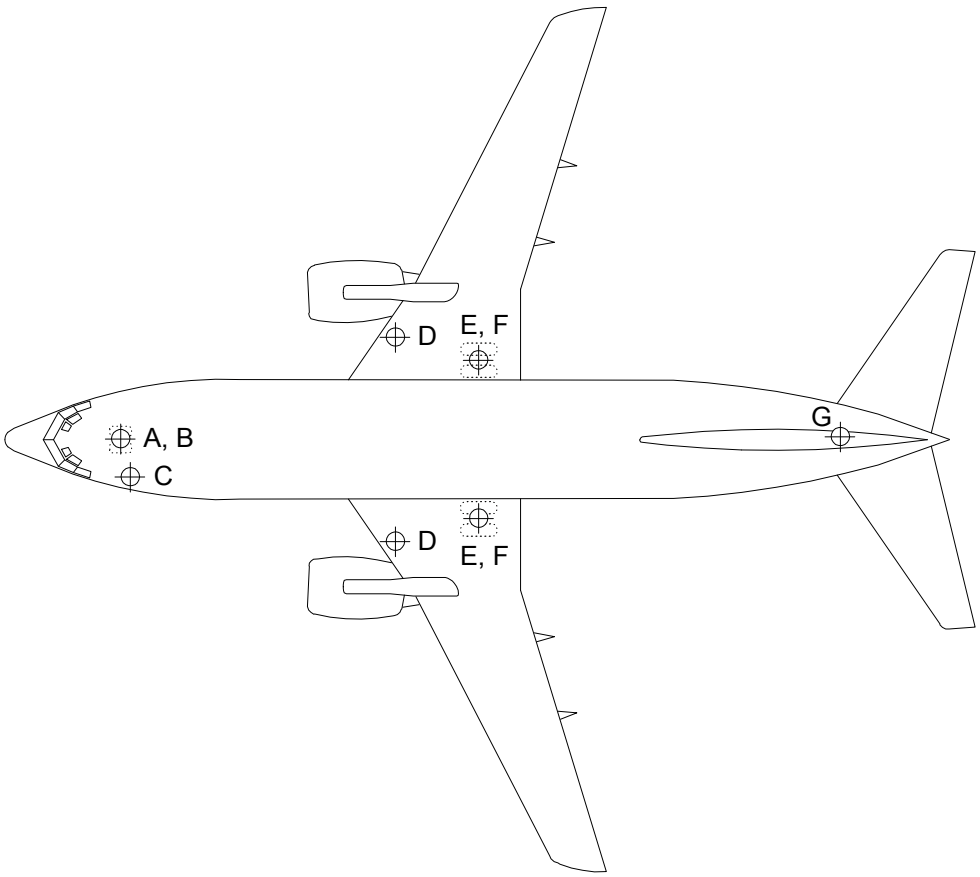


APPLICABLE CONFIGURATIONS
A, P, Y

AIRPLANE JACKING

JACK POINT LOCATIONS

The following figure provides jack point locations.



APPLICABLE CONFIGURATIONS
B, C, D, E, F, G, H, K, L, M, N, R, S, U, V, W

AIRPLANE JACKING (Continued)

MAXIMUM ALLOWABLE JACKING LOADS

The following allowable jacking loads and envelopes are based on the structural limits of the airplane.

JACK POINT		MAXIMUM JACKING LOAD		LOCATION		
		LB	KG	B.A. IN.	B.B.L.[a] IN.	W.L. IN.
Nose Gear[b]	A	16500	7484	135.7[c]	0.0	Varies
Nose Gear Wheels	B			135.8[c]	0.0	Varies
Forward Body	C	13890	6300	142.9	-47.7	170.5
Wing Panel	D	51020	23142	579.8	-114.5	174.9
		51020	23142	579.8	+114.5	174.9
Main Gear[d]	E	70560	32005	698.1[c]	-101.8	Varies
		70560	32005	698.1[c]	+101.8	Varies
Main Gear Wheels	F			698.0[c]	-101.8	Varies
				698.0[c]	+101.8	Varies
Aft Body	G	15720	7130	1235.1	+10.9	208.5

[a] Negative values represent jack points on the left hand side of the airplane and positive values represent jack points on the right hand side of the airplane.

[b] Nose gear jack pad is 2.2 IN. below axle center line at B.A. 135.7 when gear is fully compressed.

[c] Balance arms are for gears in the fully compressed position. Balance arms for nose and main gear jack points and wheels will vary with different oleo extensions.

[d] Main gear jack pad is 4.1 IN. below axle center line at B.A. 698.1 when gear is fully compressed.

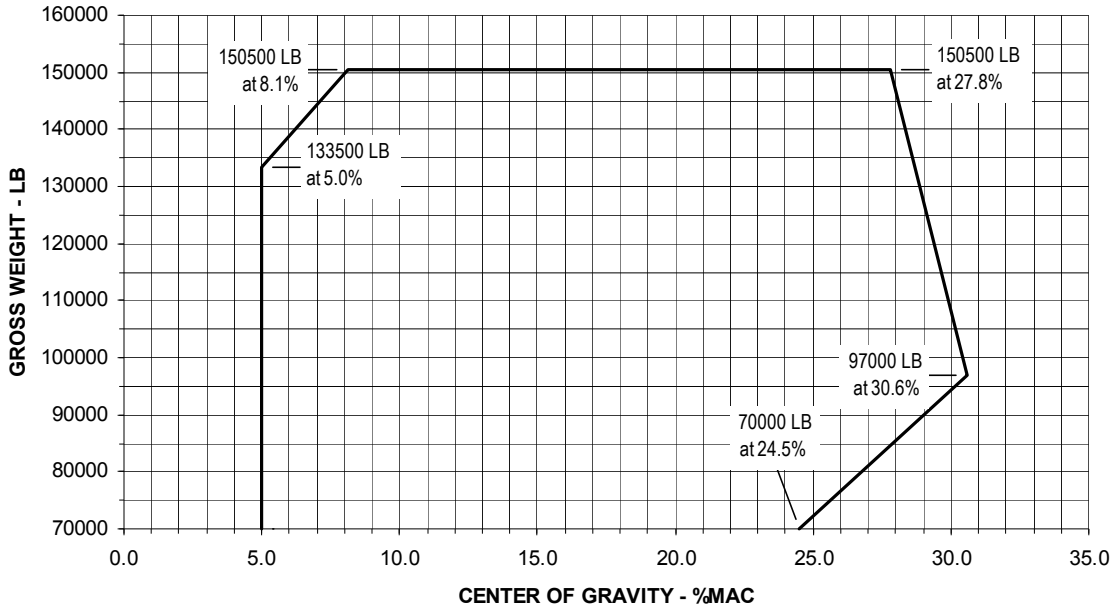
APPLICABLE CONFIGURATIONS
B, C, D, E, F, G, H, K, L, M, N, R, S, U, V, W

AIRPLANE JACKING (Continued)

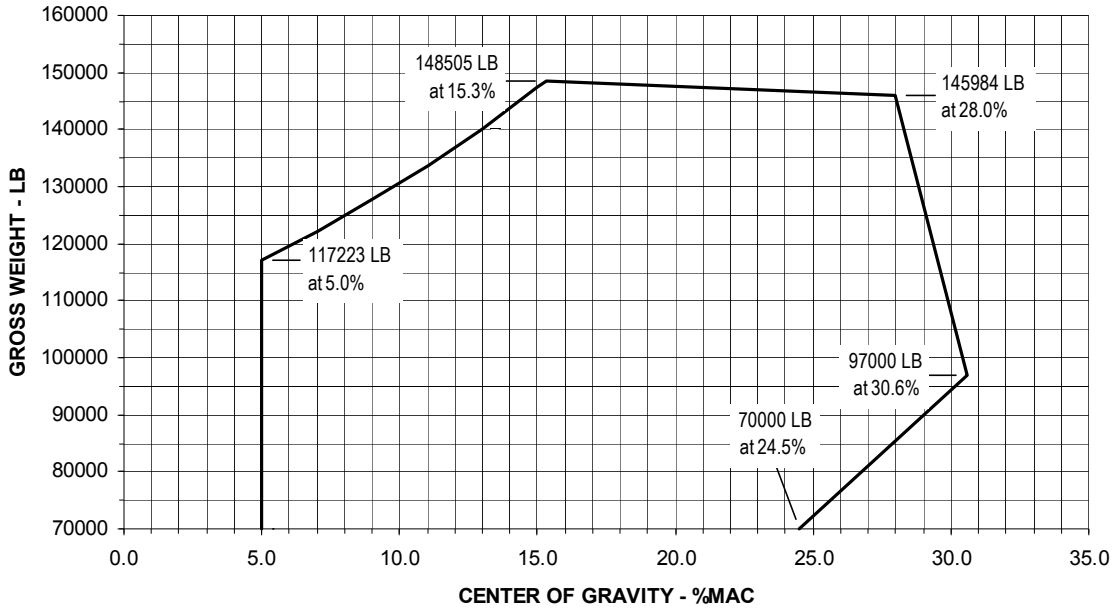
LIMITATIONS ENVELOPES

During the airplane raising and lowering operation the airplane must be within the weight and balance limits shown. Refer to CHP-SEC 1-00-04x for conversion formulas between %MAC and Balance Arms.

Main Gear (E, F) and Nose Gear (A, B) Jack Points (Gross Weight in LB)



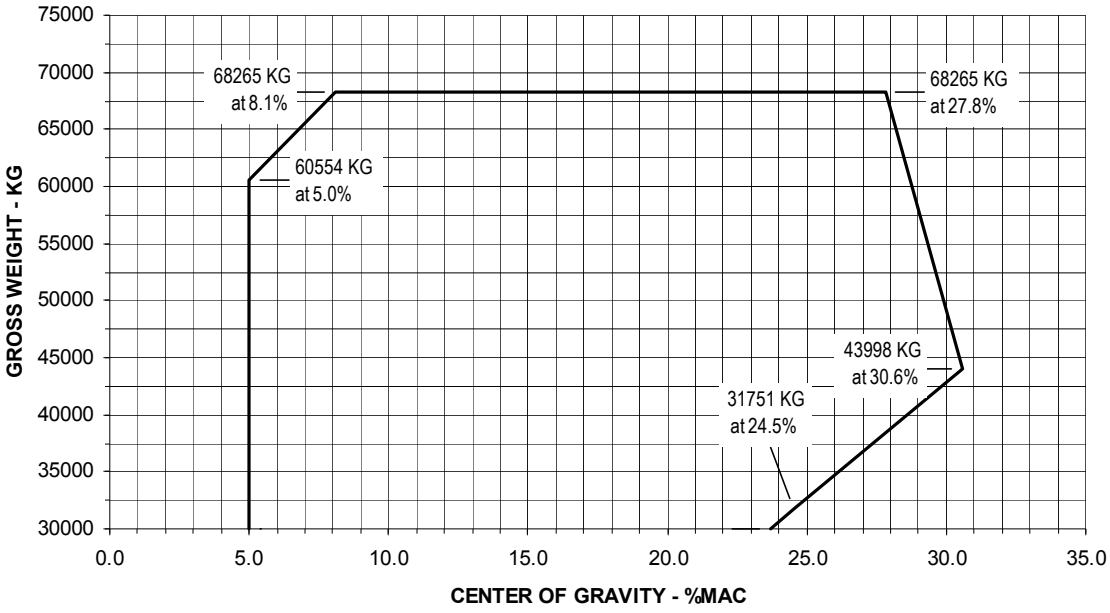
Main Gear (E, F) and Forward Body (C) Jack Points (Gross Weight in LB)



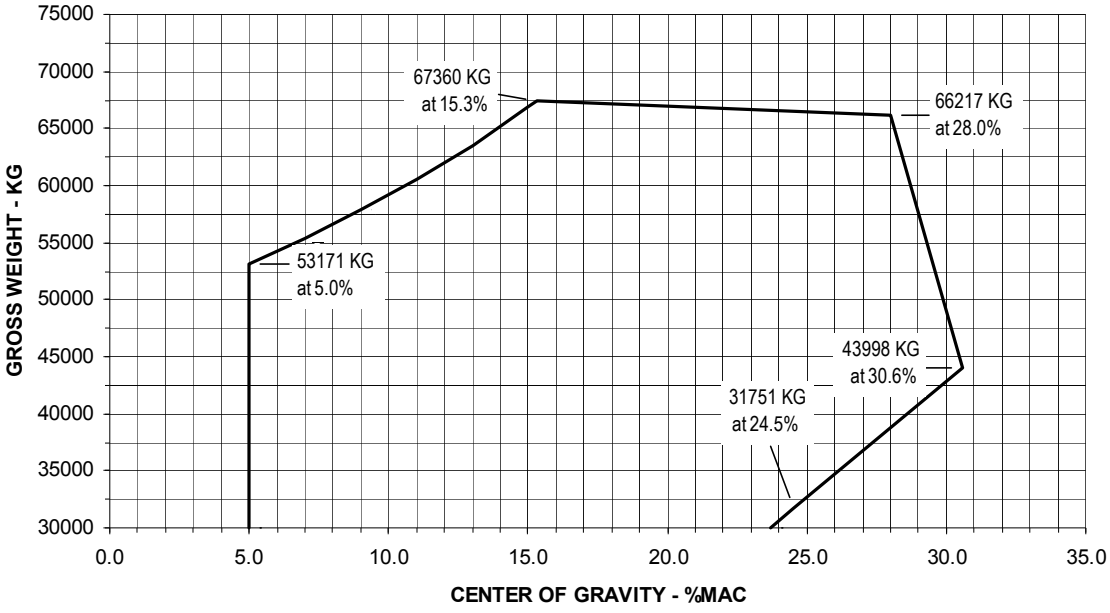
APPLICABLE CONFIGURATIONS
B, C, D, E, F, G, H, K, L, M, N, R, S, U, V, W

AIRPLANE JACKING (Continued)

Main Gear (E, F) and Nose Gear (A, B) Jack Points (Gross Weight in KG)



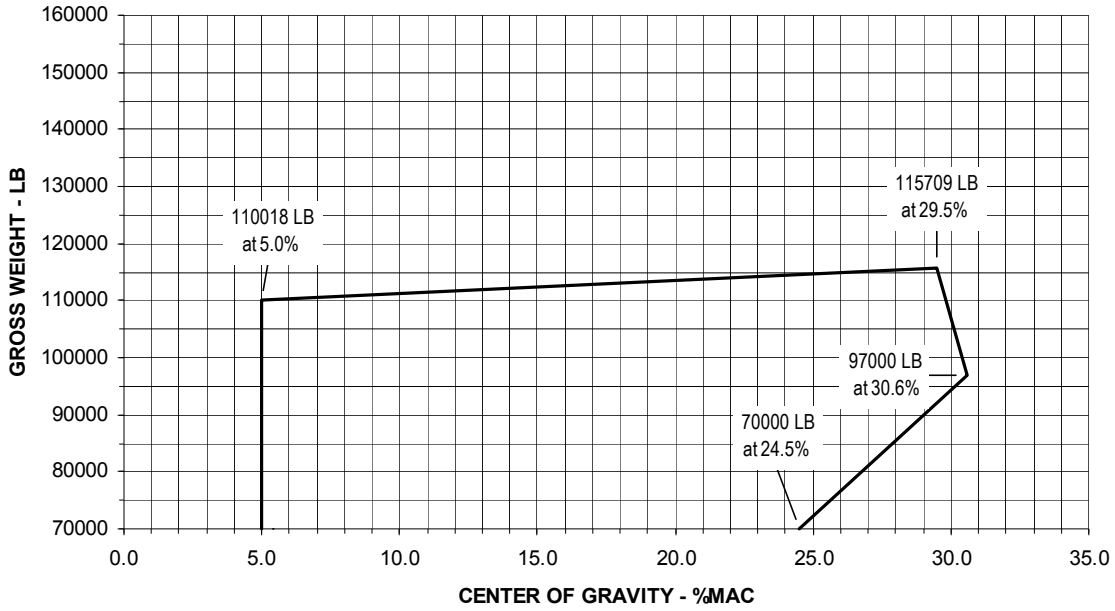
Main Gear (E, F) and Forward Body (C) Jack Points (Gross Weight in KG)



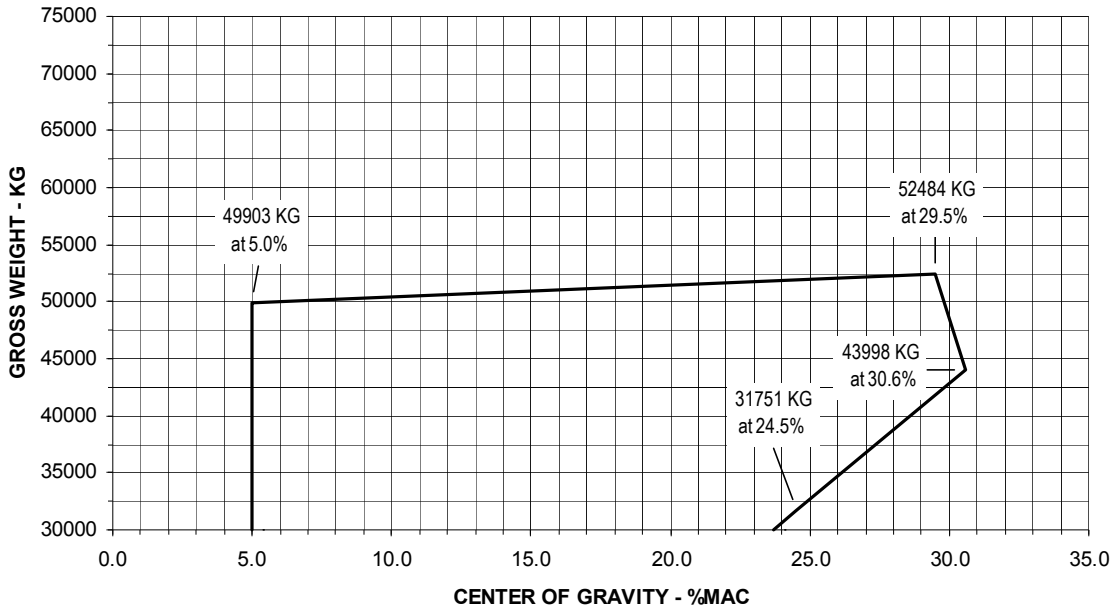
APPLICABLE CONFIGURATIONS
B, C, D, E, F, G, H, K, L, M, N, R, S, U, V, W

AIRPLANE JACKING (Continued)

Wing Panel (D) and Aft Body (G) Jack Points (Gross Weight in LB)



Wing Panel (D) and Aft Body (G) Jack Points (Gross Weight in KG)

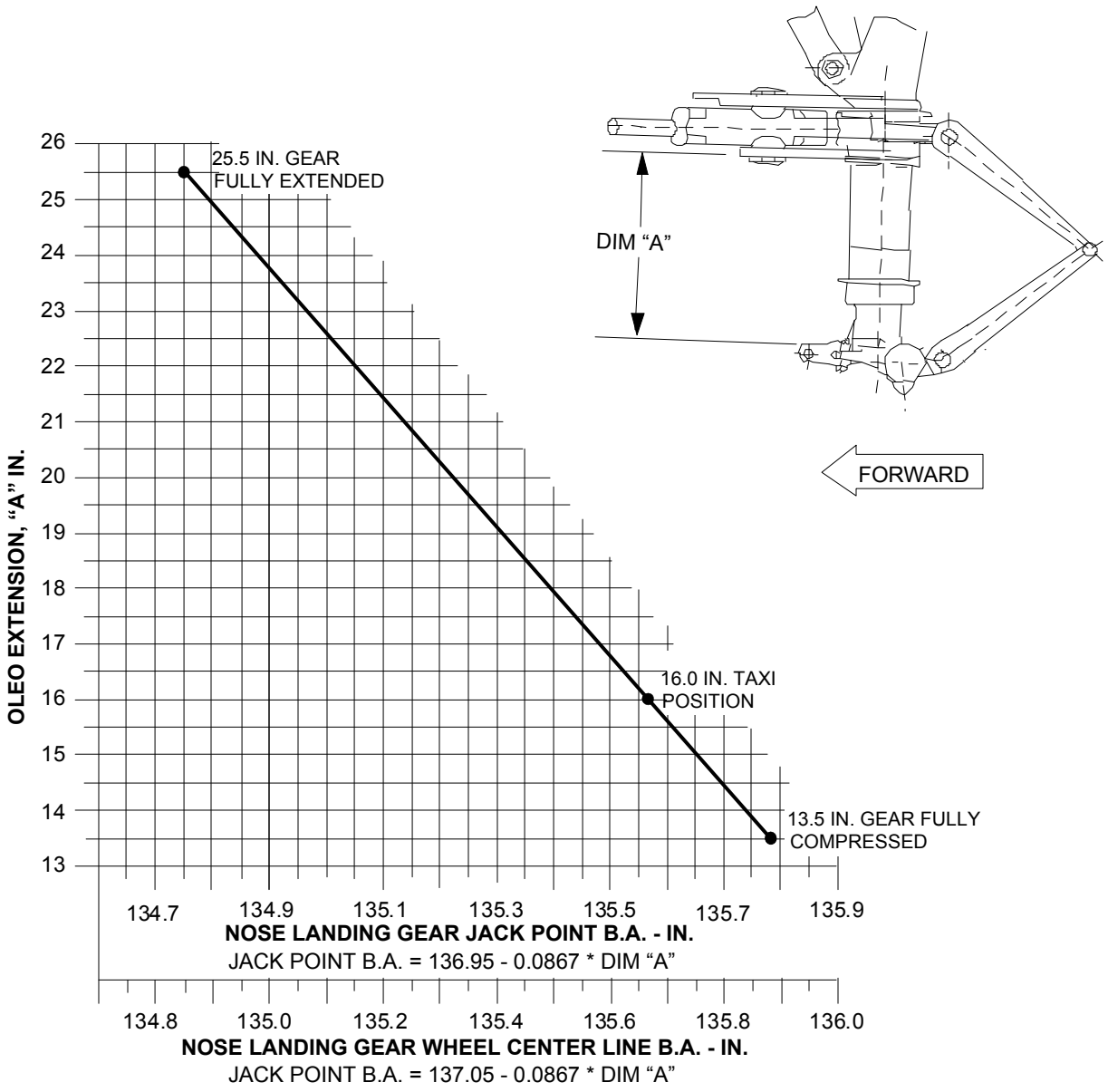


APPLICABLE CONFIGURATIONS
B, C, D, E, F, G, H, K, L, M, N, R, S, U, V, W

NOSE GEAR JACK POINTS FOR VARIOUS OLEO EXTENSIONS

JACK POINT BALANCE ARMS VERSUS OLEO EXTENSION

The following nose gear figure shows how to determine the amount of oleo extension (Dimension “A”). The corresponding chart diagrams the relationship between the nose landing gear jack point and wheel center line balance arms and the nose landing gear oleo extension (Dimension “A”).

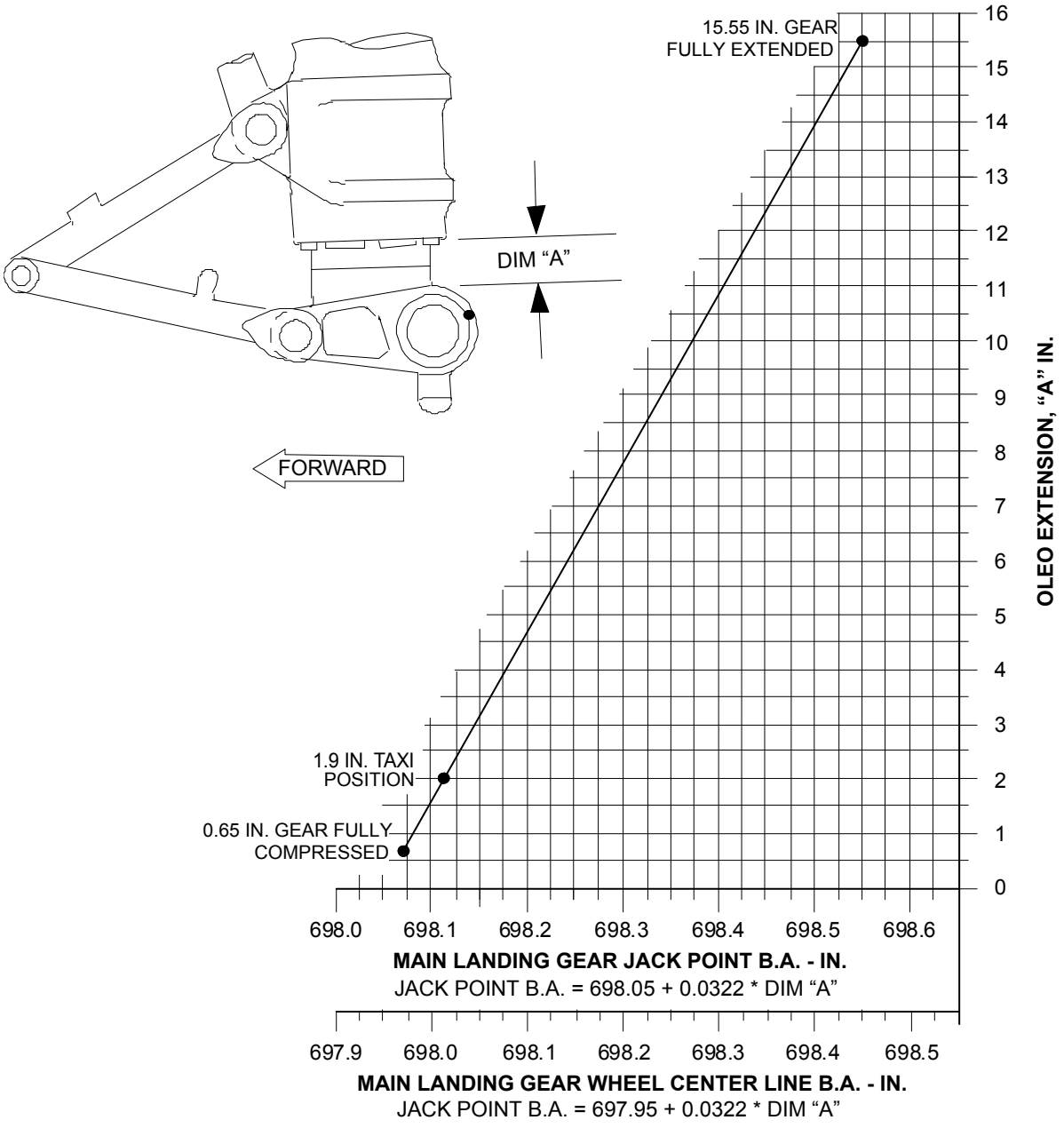


APPLICABLE CONFIGURATIONS
All

MAIN LANDING GEAR JACK POINTS FOR VARIOUS OLEO EXTENSIONS

JACK POINT BALANCE ARMS VERSUS OLEO EXTENSION

The following main landing gear figure shows how to determine the amount of oleo extension (Dimension "A"). The corresponding chart diagrams the relationship between the main landing gear jack point and wheel center line balance arms and the main landing gear oleo extension (Dimension "A").



APPLICABLE CONFIGURATIONS
All

AIRPLANE WEIGHING PROCEDURE

GENERAL INFORMATION

This section describes the recommended procedures for preparation and weighing of the model 737-400 airplane. Weighing facilities, weighing equipment and leveling provisions required for weighing the airplane are also discussed. Useful information concerning the procedures for establishing aircraft initial weight, fleet weights, re-establishing fleet weights, periodic weighing requirements, etc. may be found in FAA Advisory Circular 120-27E.

Airplane weighing may be accomplished by:

- The use of platform scales.
- The use of electronic load cells by jacking the airplane at the landing gear axle jack points.
- The use of electronic load cells by jacking the airplane at the primary jacking points.

CAUTION FOR SAFETY REASONS, WEIGHING THE AIRPLANE BY JACKING AT THE PRIMARY JACKING POINTS IS NOT RECOMMENDED, AND SHOULD ONLY BE USED WHEN OTHER PROCEDURES ARE NOT AVAILABLE.

WEIGHING FACILITIES AND EQUIPMENT

The airplane should be weighed in still air, preferably inside a closed facility that will:

- Exclude all wind and drafts.
- Permit shutdown of air conditioning during the weighing operation.
- Maintain a relatively constant temperature.
- Provide a level weighing surface and sufficient overhead clearance.

The required equipment for weighing an airplane consists of:

- Certified electronic or mechanical weighing equipment.
- Hydraulic jacks and adapters, if necessary.
- Landing gear oleo locks, if necessary.
- Plumb bob.

PREPARATION FOR AIRPLANE WEIGHING

The airplane configuration is of extreme importance in the derivation of a defined airplane operating weight from an actual scale weight. The interior and exterior of the airplane must be as complete as possible. All fluid levels (fuel, oil, water, hydraulic) must be known quantities. The weighing area and equipment usage must be controlled to avoid errors and minimize variation in scale readings.

Fuel

Fuel from all tanks is drained to the trapped (usable and unusable) fuel condition. Trapped fuel is defined as the quantity of fuel which cannot be removed through the production sump tank drains.

To obtain trapped fuel condition:

1. Pump off all usable fuel to sump level.

APPLICABLE CONFIGURATIONS
All

AIRPLANE WEIGHING PROCEDURE (Continued)

2. Adjust and maintain airplane attitude at .15 degrees nose down.
3. Drain the remaining fuel through sump drain valves.

System Fluids

System fluids must be drained or at a known quantity as follows:

- Drain all waste tanks.
- Drain potable water system.
- The following systems must be at a known quantity (serviced for flight is preferred):
  - Engine Oil
  - Hydraulic Fluids
  - Oxygen
  - Landing Gear Oleo Oil
  - Fire Extinguisher Charge
  - Miscellaneous Subsystem Fluids

Airplane Configuration

The condition of the airplane at the time of weighing must be one that is well defined and can be easily repeated. Each of the following steps must be completed prior to weighing:

- Inventory the airplane using an approved inventory list.
- Remove all shop equipment, tools, and trash.
- Stow all loose equipment items in their proper locations.
- Dry the airplane thoroughly.
- Close all doors and access panels.
- Extend or retract the flaps fully (CHP-SEC 1-08-00x of this document for gear and flap retraction moments).
- Set the horizontal stabilizer, control surfaces, and spoilers to their neutral positions.
- Inflate landing gear tires to specified operating pressures.

WEIGHING OPERATION

The airplane should be weighed in a level longitudinal attitude when possible. If the airplane cannot be leveled for weighing, the longitudinal attitude must be within ± 2 degrees from level during the actual weighing operation, and the measured center of gravity must be arithmetically corrected to an equivalent “level” center of gravity. This requires application of the correction factors from the table in the “Non-Level Weighing” section on page 5.

The recommended method of determining the longitudinal attitude of the aircraft is to attach a plumb bob to the plumb bob fitting located in the right main gear wheel well and to read the longitudinal attitude from the corresponding scale.

When the airplane is being weighed on platform scales or the main landing gear jacking points, it is necessary to measure the main landing gear and nose gear oleo extensions since the balance arm of the weight

APPLICABLE CONFIGURATIONS
All

AIRPLANE WEIGHING PROCEDURE (Continued)

reaction point varies with the extension of the oleo struts. (Refer to CHP-SEC 1-80-08x of this document for further information.)

WEIGHING PROCEDURE USING PLATFORM SCALES

The following procedure outlines the method for weighing the airplane on portable or floor level platform scales. The scales may be mechanical beam or electronic. Follow weighing equipment manufacturer's operating instructions.

1. Zero the platform scales prior to putting the airplane on the scales. All undesirable tare should be off the scales.
2. Position the airplane on the scales. The approach should be straight and the airplane should be brought slowly and smoothly to a stop, without applying airplane brakes.
3. Inflate or deflate landing gear oleos as required to obtain the desired longitudinal attitude. Check the attitude with the plumb bob.
4. Record landing gear oleo extensions.
5. Record weight reading obtained from each airplane weight reaction point.
6. Remove the airplane from the scales.
7. Check the scales for zero load condition.
8. Repeat weighing procedure as needed to verify airplane weight.

WEIGHING PROCEDURE USING ELECTRONIC LOAD CELLS

The airplane can be weighed using individual electronic load cells with adapters to interface with ground support equipment jacks and airplane jack points. It is most important that the weighing kit be adequately warmed up and that the airplane, ground support equipment, and weighing cells attain the same even temperature prior to weighing the airplane. Load cells require care in placement to prevent side loads. When using jacks, it is imperative to remove all weighing cell misalignment due to uneven floors or airplane structural deflection.

The maximum jacking loads shown in CHP-SEC 1-80-00x of this document must not be exceeded during jacking operations.

The following procedures outline the method for weighing the airplane with electronic load cells at either of the following:

- Landing gear axle jack points.
- Primary jacking points.

Landing Gear Axle Jack Points

Follow these procedures when weighing the airplane with electronic load cells at the landing gear axle jack points:

1. Follow weighing equipment manufacturer's operating instructions.
2. Inflate or deflate landing gear oleos as required to obtain the desired longitudinal attitude. Check the attitude with plumb bob.
3. Record landing gear oleo extensions.

APPLICABLE CONFIGURATIONS
All

AIRPLANE WEIGHING PROCEDURE (Continued)

4. Zero electronic weighing equipment prior to raising the airplane.
5. Center the jacks, with load cells installed, under the jack points. Proper alignment must be made between load cells and jack points.
6. Jack all positions at an even rate, maintaining a level attitude, until tires clear the floor.
7. Check airplane level attitude with the plumb bob. If necessary, jack individual points to obtain the desired attitude.
8. Record weight reading obtained from each airplane weight reaction point.
9. Lower airplane gently to the floor, maintaining a level attitude, until load cells are completely clear of the jack points.
10. Check the load cells for zero load condition.
11. Repeat weighing procedure as needed to verify airplane weight.

Primary Jacking Points

Follow these procedures when weighing the airplane with electronic load cells at the primary jacking points:

1. See CHP-SEC 1-80-00x of this document for balance arms and load limits for primary jacking points.
2. Follow weighing equipment manufacturer's operating instructions.
3. Bleed all air from the nose and main landing gear oleos and install oleo uplocks to prevent the oleos from extending.

WARNING ALL AIR MUST BE REMOVED FROM THE LANDING GEAR OLEOS IF UPLOCKS ARE INSTALLED. IMPROPER OLEO DEFLATION MAY CAUSE OLEO UPLOCK FAILURE.

4. Level the airplane prior to jacking so the airplane may be raised and lowered evenly on jack points, and minimize side loads. If the airplane attitude is nose down prior to jacking, an optional method of leveling the airplane is to inflate the nose gear oleo. The nose gear oleo would then be allowed to fully extend during the jacking operation.
5. Secure the main landing gear trucks, if required, by rope to prevent rotation during the jacking operation.
6. Zero electronic weighing equipment prior to raising the airplane.
7. Center the jacks, with load cells installed under the jack points. Proper alignment must be made between load cells and jack points.
8. Jack all positions at an even rate, maintaining a level attitude, until tires clear the floor.
9. Check airplane level attitude with the plumb bob. If necessary, jack individual points to obtain the desired attitude.
10. Record weight reading obtained from each airplane weight reaction point.
11. Lower airplane gently to the floor, maintaining a level attitude, until load cells are completely free of the airplane.
12. Check the load cells for zero load condition.

APPLICABLE CONFIGURATIONS
All

AIRPLANE WEIGHING PROCEDURE (Continued)

13. Repeat weighing procedure as needed to verify airplane weight.

NON-LEVEL WEIGHING

When the airplane is weighed in a non-level condition, the calculated C.G. must be corrected to the level condition. The attitude of the airplane must be known at the time of weighing. Determine the C.G. of the airplane in this non-level condition, and then use the following tables to correct the C.G. to the level condition.

ANGLE DEGREES		C.G. CORRECTION IN.
Nose down	-2	2.9
	-1 7/8	2.7
	-1 3/4	2.6
	-1 5/8	2.4
	-1 1/2	2.2
	-1 3/8	2.0
	-1 1/4	1.8
	-1 1/8	1.6
	-1	1.5
	-7/8	1.3
	-3/4	1.1
	-5/8	0.9
	-1/2	0.7
	-3/8	0.5
	-1/4	0.4
	-1/8	0.2
Level	0	0.0

ANGLE DEGREES		C.G. CORRECTION IN.
Level	0	0.0
	1/8	-0.2
	1/4	-0.4
	3/8	-0.5
	1/2	-0.7
	5/8	-0.9
	3/4	-1.1
	7/8	-1.3
	1	-1.5
	1 1/8	-1.6
	1 1/4	-1.8
	1 3/8	-2.0
	1 1/2	-2.2
	1 5/8	-2.4
	1 3/4	-2.6
	1 7/8	-2.7
Tail down	2	-2.9

Non-Level Weighing Example

As an example, if an airplane was weighed in a 1/2 degree tail down angle, the airplane C.G. would be determined by subtracting 0.7 inches from the calculated center of gravity.

APPLICABLE CONFIGURATIONS
All

TOWING AND TIPPING LIMITATIONS

TOWING AND TIPPING CONSIDERATIONS

Tipping is generally not a concern for 737-400 airplanes if good judgement is exercised in maintaining airplane stability during ground operations. Effects of towing and ground operations on the airplane center of gravity must be taken into account. The absolute tipping limit for the 737-400 airplane is at 53.8% MAC, considerably aft of the ground stability limit. Some of the major factors affecting the airplane tipping and stability limits will include, but are not limited to the following items:

- Airplane Empty Weight
- Airplane Attitude
- Fuel Loading
- Passenger Loading
- Cargo Loading
- Ramp Slope
- Runway Surface Condition
- Snow Loads
- Wind Loads

The ground stability limit takes into account the effects of the following:

- 3% Ramp slope
- Towing forces
- 40 knot headwind

By ensuring that the airplane center of gravity during towing is more forward than the ground stability limit, a tipping situation will be avoided.

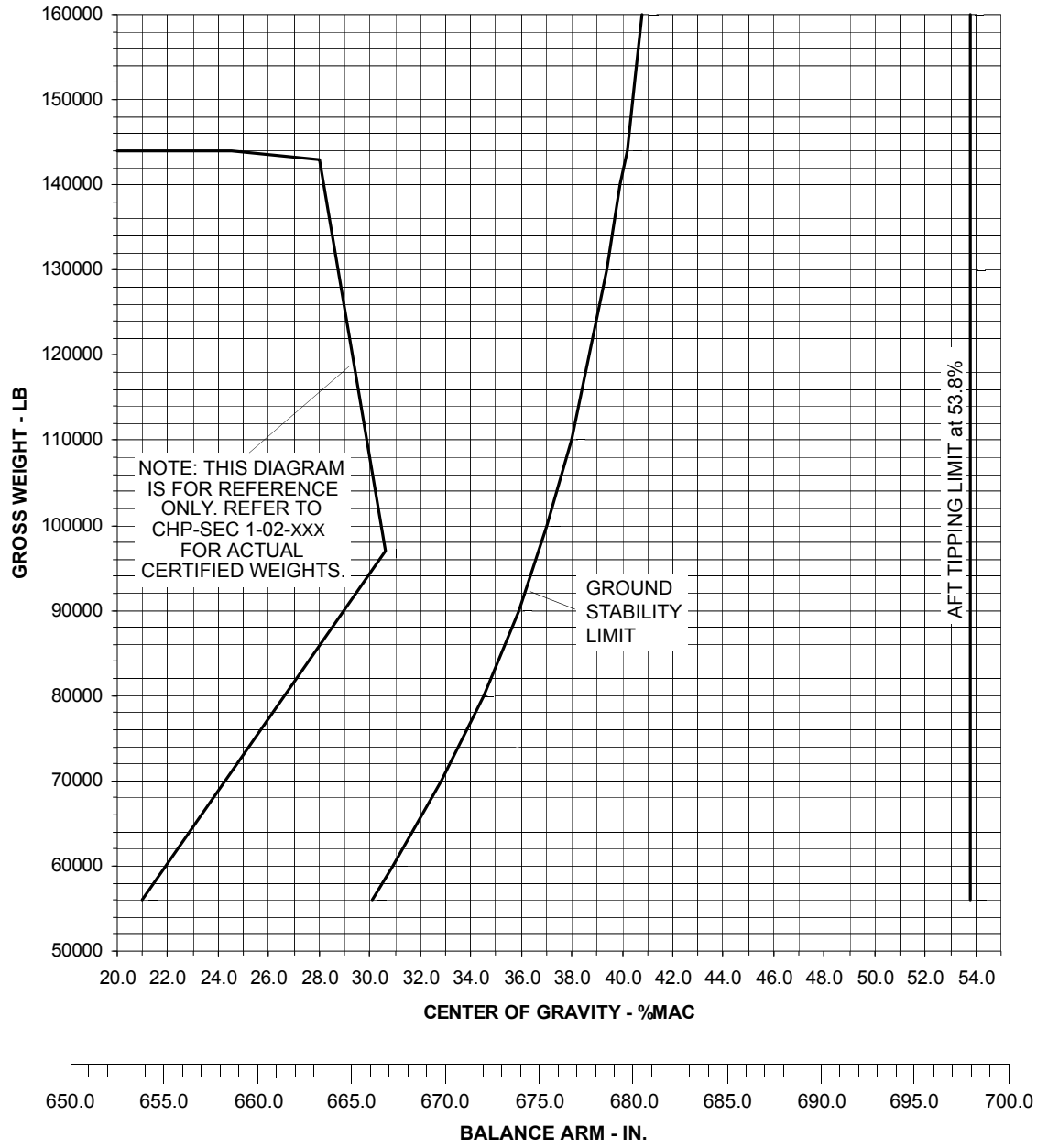
NOTE See the Maintenance Manual for towing procedures and ground stability limits during maintenance.

APPLICABLE CONFIGURATIONS
All

TOWING AND TIPPING LIMITATIONS (Continued)

TOWING AND TIPPING LIMITS (ENGLISH)

The following diagram shows the towing and tipping limits in english units:

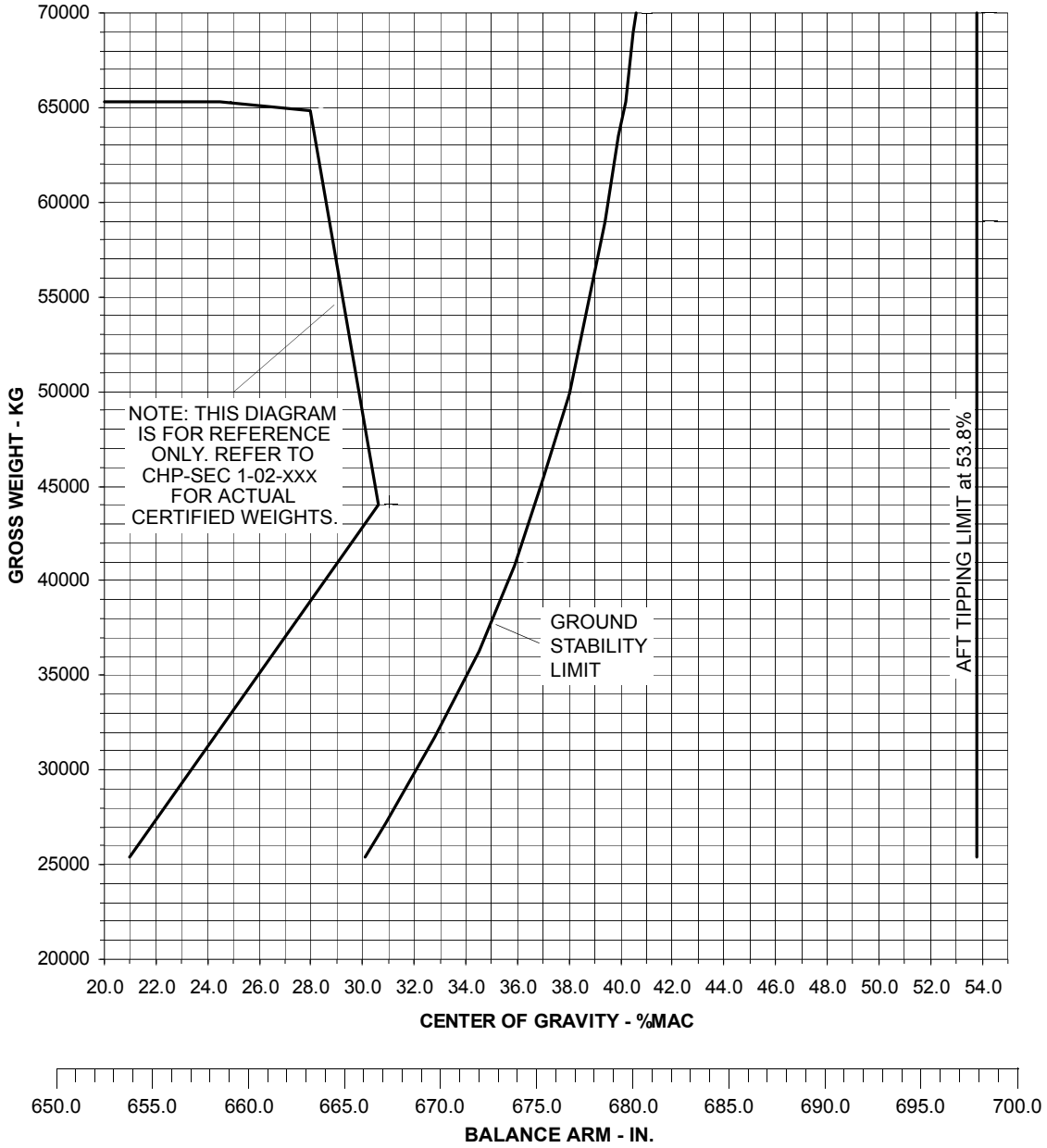


APPLICABLE CONFIGURATIONS
All

TOWING AND TIPPING LIMITATIONS (Continued)

TOWING AND TIPPING LIMITS (METRIC)

The following diagram shows the towing and tipping limits in metric units:

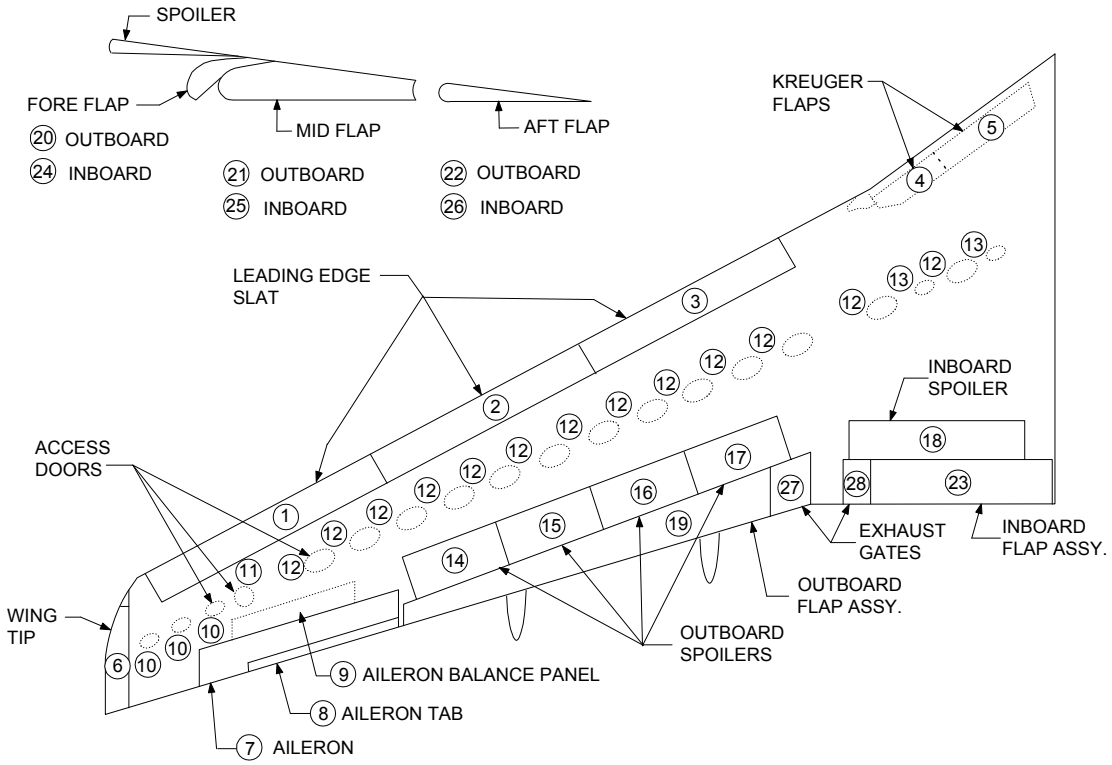


APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS

WING COMPONENTS

Some of the removable wing components are illustrated in the following figure:



The following table provides nominal weights and balance arms for wing components from the above illustration. Values from this table should only be used to determine approximate weight and balance for specialized types of maintenance.

ITEM NO.	WING COMPONENTS [a]	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
1	Leading Edge Slat No. 1	88	40	763
2	Leading Edge Slat No. 2	92	42	702
3	Leading Edge Slat No. 3	88	40	645
4	Krueger Flap No. 1	32	15	585
5	Krueger Flap No. 2	69	31	557
6	Wing Tip	16	7	838
7	Aileron Assembly[b]	63	29	813
8	Aileron Tab	3	1	821
9	Aileron Balance Panel	5	2	804
10	Access Door (3)	3	1	Varies
11	Surge Vent Access Door	2	1	796
12	Fuel Tank Access Door (13)	5	2	Varies

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS (Continued)

ITEM NO.	WING COMPONENTS (Continued)[a]	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
13	Boost Pump Access Door (2)	1	1	Varies
14	Ground Spoiler No. 0	16	7	779
15	Ground Spoiler No. 1	16	7	761
16	Flight Spoiler No. 2	16	7	743
17	Flight Spoiler No. 3	16	7	725
18	Ground Spoiler No. 4	26	12	719
19	Outboard Trailing Edge Flap Assembly	438	199	754
20	Outboard Fore Flap	59	27	748
21	Outboard Mid Flap	319	145	754
22	Outboard Aft Flap	38	17	769
23	Inboard Trailing Edge Flap Assembly	291	132	722
24	Inboard Fore Flap	30	14	713
25	Inboard Mid Flap	188	85	720
26	Inboard Aft Flap	54	24	730
27	Outboard Exhaust Gate	14	6	745
28	Inboard Exhaust Gate	12	5	739

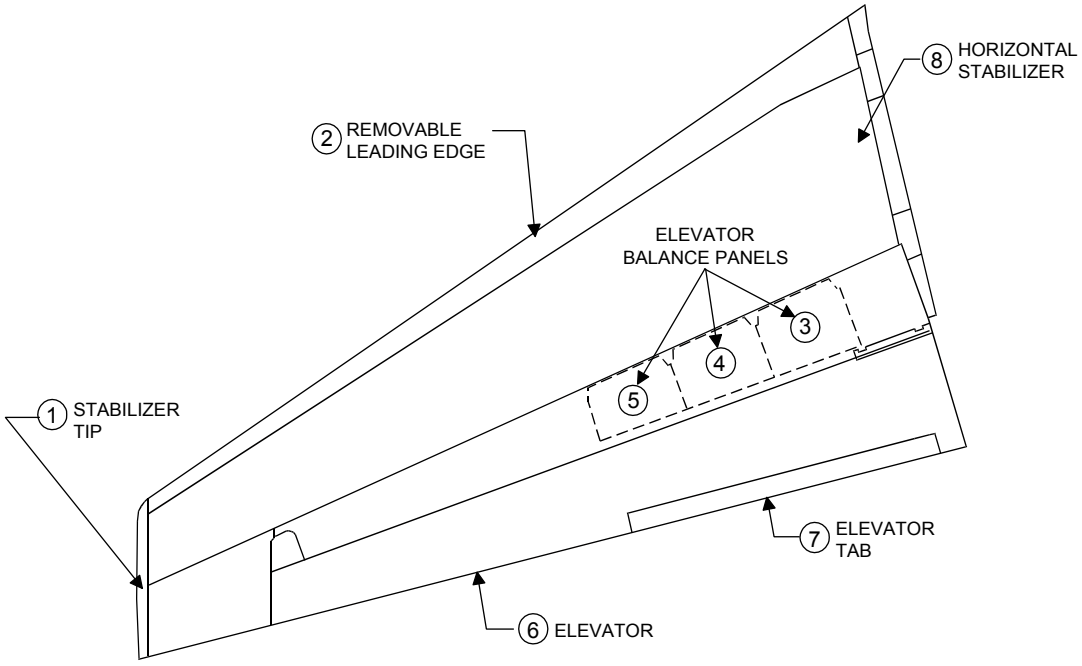
[a] Quantities are shown in parentheses ( ) if greater than one. Weights, however, are listed for single components.
[b] This does not include aileron balance tab or balance panels.

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS

HORIZONTAL STABILIZER COMPONENTS

Some of the removable horizontal stabilizer components are illustrated in the following figure:



The following table provides nominal weights and balance arms for horizontal stabilizer components from the above illustration. Values from this table should only be used to determine approximate weight and balance for specialized types of maintenance.

ITEM NO.	HORIZONTAL STABILIZER COMPONENTS [a]	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
1	Stabilizer Tip	4	2	1396
2	Removable Leading Edge	23	10	1306
3	No. 2 Elevator Balance Panel & Hinge Half	6	3	1325
4	No. 3 Elevator Balance Panel & Hinge Half	5	2	1336
5	No. 4 Elevator Balance Panel & Hinge Half	5	2	1346
6	Elevator[b]	160	73	1354
7	Elevator Tab	5	2	1364
8	Horizontal Stabilizer[c]	500	227	1313

[a] Quantities are shown in parentheses ( ) if greater than one. Weights, however, are listed for single components.

[b] This does not include elevator tab or balance panels.

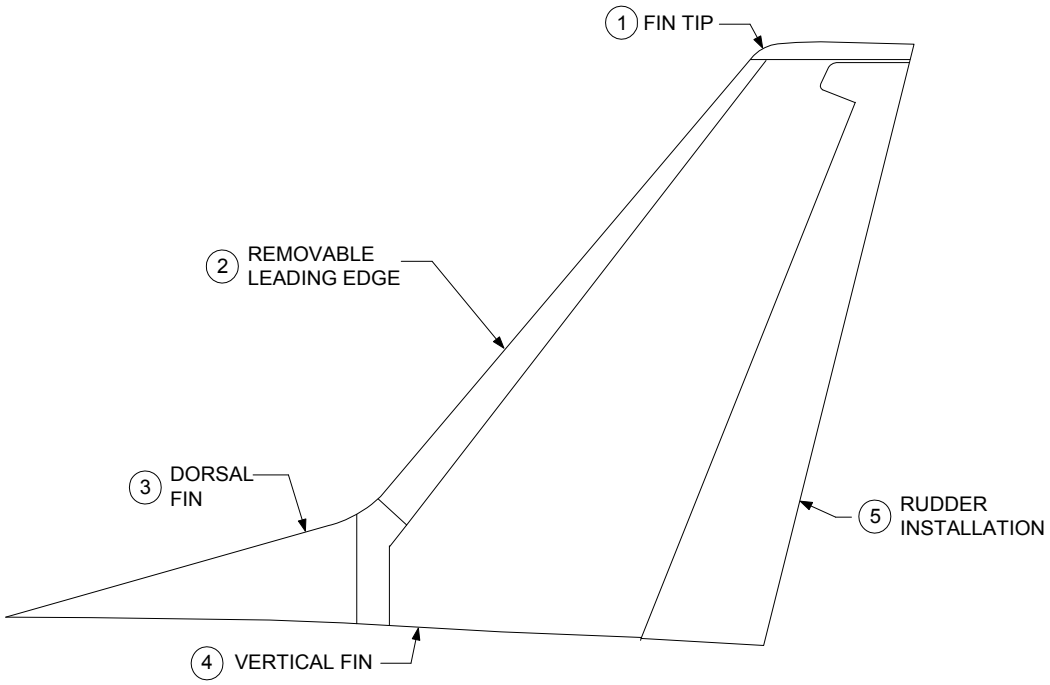
[c] This includes the total stabilizer installation less the other components listed in this table and less the center section structure (“Texas Star”).

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS

VERTICAL FIN COMPONENTS

Some of the removable vertical fin components are illustrated in the following figure:



The following table provides nominal weights and balance arms for vertical fin components from the above illustration. Values from this table should only be used to determine approximate weight and balance for specialized types of maintenance.

ITEM NO.	VERTICAL FIN COMPONENTS	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
1	Fin Tip	9	4	1357
2	Removable Leading Edge	36	16	1228
3	Dorsal Fin	52	24	1106
4	Vertical Fin[a]	779	353	1252
5	Rudder Installation	170	77	1311

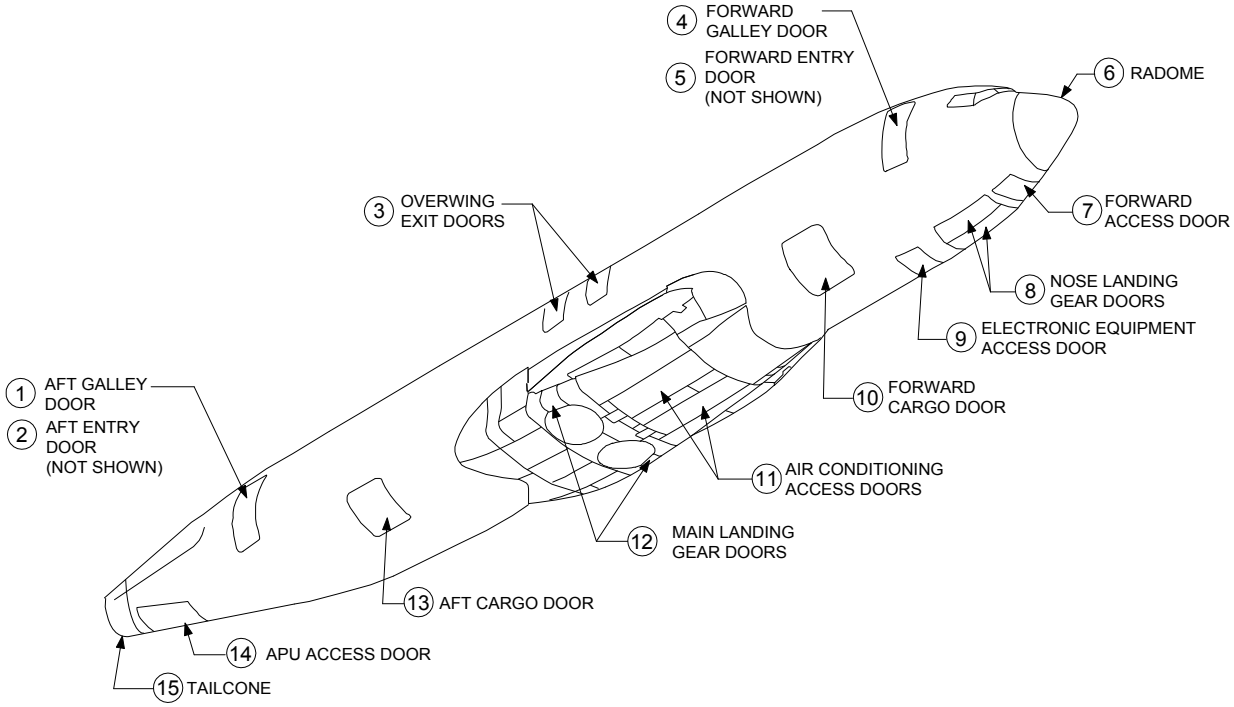
[a] This includes the total fin installation less the other components listed in this table.

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS

BODY COMPONENTS

Some of the removable body components are illustrated in the following figure:



The following table provides nominal weights and balance arms for body components from the above illustration. Values from this table should only be used to determine approximate weight and balance for specialized types of maintenance.

ITEM NO.	BODY COMPONENTS [a]	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
1	Aft Galley Door	136	62	1123
2	Aft Entry Door	143	65	1123
3	Overwing Exit Doors (4)	46	21	609
4	Forward Galley Door	138	63	162
5	Forward Entry Door	165	75	176
6	Radome	58	26	10
7	Forward Access Door	14	6	61
8	Nose Landing Gear Doors (2)	34	15	109
9	Electronic Equipment Access Door	20	9	185
10	Forward Cargo Door	100	45	315

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS (Continued)

ITEM NO.	BODY COMPONENTS (Continued)[a]	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
11	Air Conditioning Access Doors (2)	84	38	591
12	Main Landing Gear Doors (2)	92	42	684
13	Aft Cargo Door	100	45	968
14	APU Access Door	40	18	1274
15	Tail Cone	35	16	1331

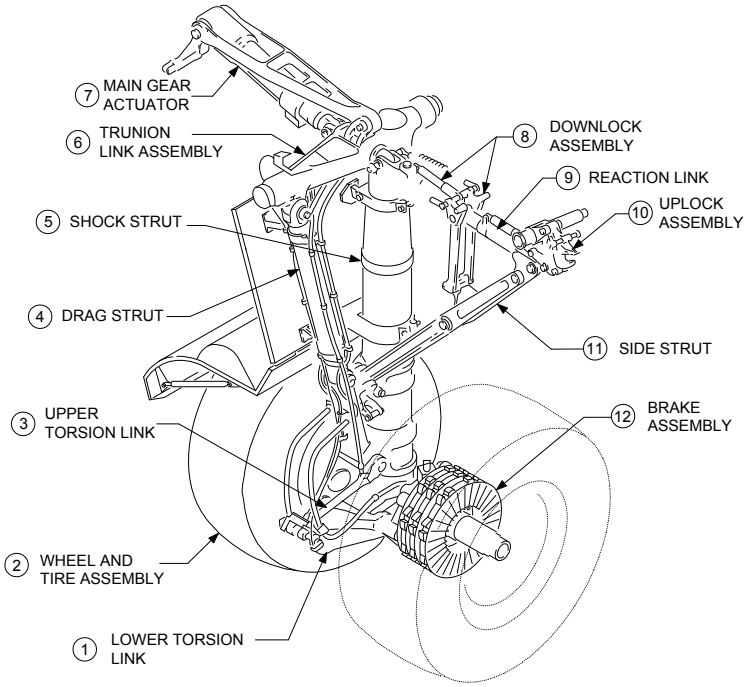
[a] Quantities are shown in parentheses ( ) if greater than one. Weights, however, are listed for single components.

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS

MAIN GEAR COMPONENTS

Some of the removable main gear components are illustrated in the following figure:



The following table provides nominal weights and balance arms for main gear components from the above illustration. Values from this table should only be used to determine approximate weight and balance for specialized types of maintenance.

ITEM NO.	MAIN GEAR COMPONENTS [a]	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
1	Lower Torsion Link	12	5	688
2	Wheel and Tire Assembly (2)[b]	526	239	698
3	Upper Torsion Link	12	5	687
4	Drag Strut	63	29	683
5	Shock Strut	361	164	695
6	Trunnion Link Assembly	62	28	680
7	Main Gear Actuator	38	17	688
8	Downlock Assembly	19	9	687
9	Reaction Link	34	15	688
10	Uplock Assembly	38	17	687
11	Side Strut	55	25	688
12	Brake Assembly (2)	443	201	698
-	Wheel Hub Cap Assembly - Not Shown (2)	10	5	698

[a] Quantities are shown in parentheses ( ) if greater than one. Weights, however, are listed for single components.

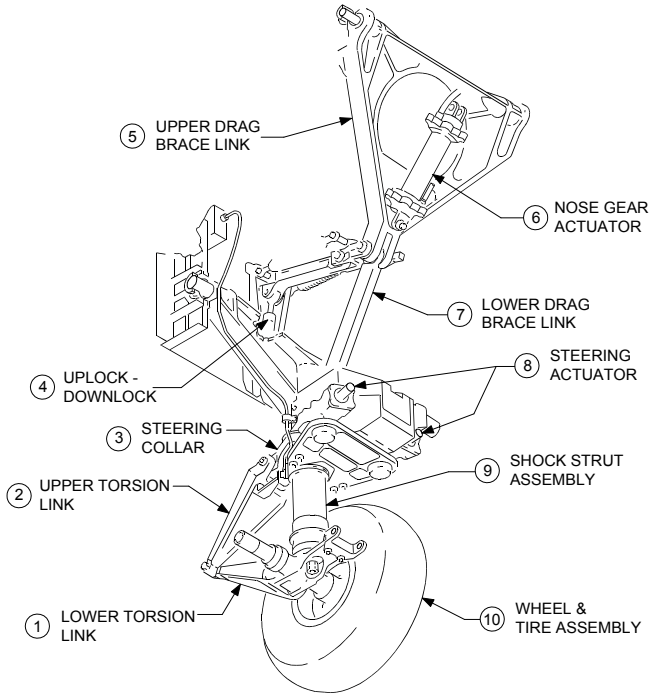
[b] Nitrogen charge is included.

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS

NOSE GEAR COMPONENTS

Some of the removable nose gear components are illustrated in the following figure:



The following table provides nominal weights and balance arms for nose gear components from the above illustration. Values from this table should only be used to determine approximate weight and balance for specialized types of maintenance.

ITEM NO.	NOSE GEAR COMPONENTS [a]	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
1	Lower Torsion Link	11	5	141
2	Upper Torsion Link	8	4	142
3	Steering Collar	17	8	133
4	Uplock - Downlock	9	4	133
5	Upper Drag Brace Link	23	10	103
6	Nose Gear Actuator	17	8	113
7	Lower Drag Brace Link	9	4	127
8	Steering Actuators (2)	32	15	124
9	Shock Strut Assembly	158	72	136
10	Wheel and Tire Assembly (2)[b]	138	63	135

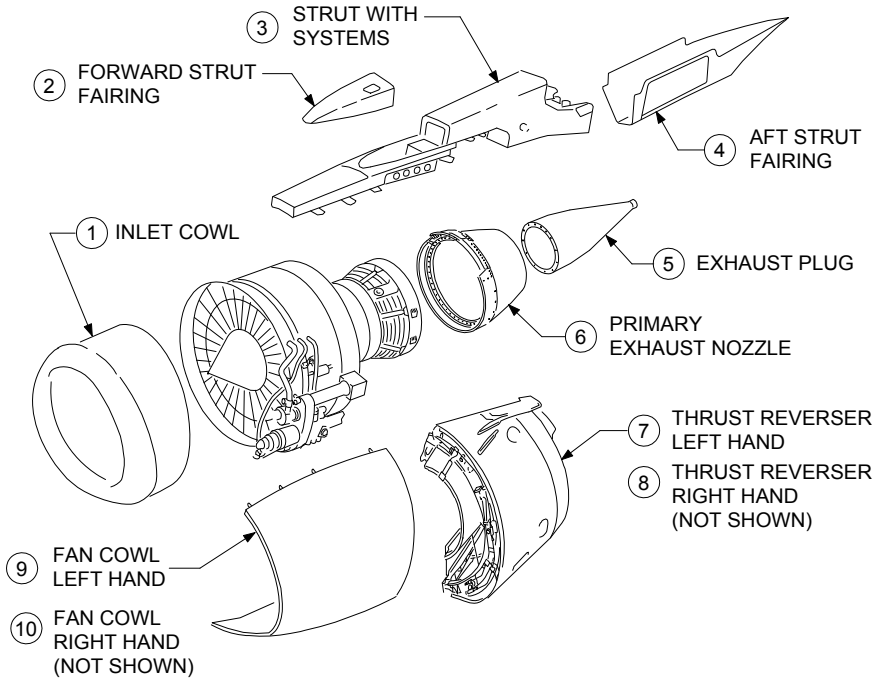
[a] Quantities are shown in parentheses ( ) if greater than one. Weights, however, are listed for single components.
[b] Nitrogen charge is included.

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS

NACELLE AND POWER PLANT COMPONENTS

Some of the removable nacelle and power plant components are illustrated in the following figure:



The following table provides nominal weights and balance arms for nacelle and power plant components from the above illustration. Values from this table should only be used to determine approximate weight and balance for specialized types of maintenance.

ITEM NO.	NACELLE AND POWER PLANT COMPONENTS	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
	NACELLE COMPONENTS			
1	Inlet Cowl	246	112	490
2	Forward Strut Fairing	6	3	534
3	Strut with Systems	854	387	586
4	Aft Strut Fairing	68	31	673
5	Exhaust Plug	49	22	623
6	Primary Exhaust Nozzle	62	28	616
7	Thrust Reverser - Left Hand	478	217	571
8	Thrust Reverser - Right Hand	478	217	572
9	Fan Cowl - Left Hand	86	39	517
10	Fan Cowl - Right Hand	104	47	518

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS (Continued)

ITEM NO.	NACELLE AND POWER PLANT COMPONENTS (Continued)	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
	POWER PLANT PACKAGE (Includes: Inlet, Primary Exhaust Nozzle, Exhaust Plug, Extension Ring and Systems)			
	CFM56-3-B1 or CFM56-3B-2	5293	2401	554
	CFM56-3-C1	5318	2412	554
	AUXILIARY POWER UNIT (NOT SHOWN) (Includes: Exhaust Duct and Generator)	432	196	1265

APPLICABLE CONFIGURATIONS
All

LOADING SCHEDULE DEVELOPMENT

INTRODUCTION

Federal Aviation Regulations Part 121 states that the airplane shall be operated in accordance with a loading schedule which ensures that the airplane gross weight and center of gravity limitations are not exceeded.

A loading schedule is generally comprised of two parts: the substantiation of the loading schedule development, and a manifest / load sheet which is the form used to manifest the aircraft and check the balance condition of an aircraft prior to its flight. The manifest is generally a tabular form used to document the aircraft load. The load sheet includes operational center of gravity limits along with a method to calculate the balance effect of loaded items. Operational center of gravity limits are derived by applying curtailments to the certified center of gravity limits to ensure that all loading situations will fall within the certified center of gravity limits.

Example Loading Schedule

The example loading schedule document describes the method of developing a loading schedule using a generic airplane configuration. This document's function is to provide an example of loading schedule development and substantiation. It contains the following:

- An example loading problem to assist in understanding airplane loading procedures
- Equations used to develop a loading schedule
- Passenger cabin zones and cargo compartment definitions
- Cargo load limits
- Incremental load item index development methodology
- Horizontal stabilizer trim settings
- Development and application of curtailments to the structural center of gravity limits
- Sample manifest / load sheet construction using the data developed in the document

This document will be delivered with the first publication of the airline WBM Chapter 1. It may also be ordered from Data and Services Management as described in "Ordering Instructions" section on page 2.

Customized Loading Schedule

A customized loading schedule is completely tailored to the specific customer requirements. In certain cases, multiple aircraft configurations may be substantiated within one document, along with one or more manifest / loadsheets. Other features which can be customized include, but are not limited to, the following:

- Customer specified passenger and baggage weight allowances
- Customer specified manifest / load sheet format and content
- Revisions may be purchased (requires a Technical Assistance Contract)

The amount of customizing generally requires a significant amount of coordination between a knowledgeable airline representative and the loading schedule developer. A customized loading schedule may be purchased using a Technical Assistance Contract as described below.

APPLICABLE CONFIGURATIONS
All

LOADING SCHEDULE DEVELOPMENT (Continued)

ORDERING INSTRUCTIONS

An example loading schedule or a copy of an existing customized loading schedule, may be ordered from Data and Services Management as follows:

DOCUMENT TYPE	DOCUMENT TITLE	CATALOG NUMBER
Example (Two Types)	Loading Schedule Substantiation Document: TYPE[a]	D043A640-TBCyy
Customized	Loading Schedule Substantiation Document: NAME[b]	D043A640-xxxyC[c]

[a] "TYPE" is either Example Alignment Type System, and "yy" = 01; or Example Universal Index Type System, and "yy" = 02

[b] Replace "NAME" with the Airline Name

[c] Replace the "xxx" with the airline three-letter code, and replace the "y" with the document serial no.

Direct your order to:

ORDERS BY TELEX/FAX

Fax: 206-544-9077

Attn: Data and Services Management
P.O. Box 3707
Seattle, Washington 98124-2207

ORDERS BY TELEPHONE

Call the Boeing Operator
at 206-655-2121 and
ask for Data and Services
Management

Development of a customized loading schedule can be arranged using a Technical Assistance Contract. For further information, please contact:

Boeing Commercial Airplane Group
Attn: Contracts Director, Fleet Support
P.O. Box 3707
Seattle, Washington 98124-2207
Boeing Operator Phone: 206-655-2121
(ask for Contracts Director)
Telex: 32-9430
TWX: 910-423-1563

APPLICABLE CONFIGURATIONS
All