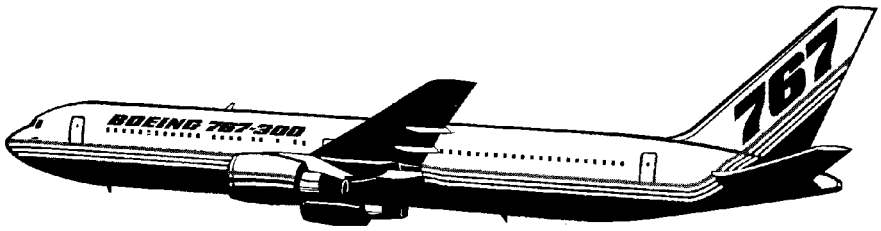
WEIGHT & BALANCE CONTROL AND LOADING MANUAL SUPPLEMENT FOR

BOEING MODEL 767-341

FAA STC ST02040SE / CAAI STC SA218

SPECIAL FREIGHTER



This supplement (IAI 371-08-00-C0510-VAR1) must be attached to the Boeing 767-341 Airplane Weight and Balance Manual, Boeing Document No. D043T530-VAR1 (Revision 3, Jan 25/2016), when the provisions of STC SA218, which converts the Boeing passenger airplane to special freighter are incorporated according to IAI Master Document List Report No. IAI 371-00-00-C0010.

The information contained herein supplements or supersedes the basic manual and any applicable appendices and supplements thereto only in those area listed herein. Weight and Balance information not contained in this supplement, consult the basic Weight and Balance Manual, Operation Manual and applicable appendices and supplements thereto.

ISRAEL AEROSPACE INDUSTRIES LTD
BEN GURION INTERNATIONAL AIRPORT, ISRAEL

IAI 371-08-00-C0510-VAR1

ORIGINALLY ISSUED: MAR 13/2016

REVISION 2: APR 04/2016

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FOREWORD

This supplement Report No. IAI 371-08-00-C0510-VAR1 updates the relevant subject sections of the Boeing 767-300 Weight and Balance Control and Loading Manual, D043T530-VAR1 (revision 3, Jan 25/2016), when a passenger 767-300 is converted into a 767-300SF, Special Freighter, using CAAI STC SA218.

This Supplement report is organized with full compliance to Boeing Weight and Balance Control and Loading Manual, Report No. D043T530-VAR1 as presented in Chapter 1 Control.

All chapters in the table of contents which are marked ALL or SF apply to this Supplement Report No. IAI 371-08-00-C0510-VAR1 for Special Freighter. All other sections do not apply to the SF configuration.

Sections marked “ALL” are not copied into this supplement. Refer to Boeing Document D043T530-VAR1.

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HIGHLIGHTS REVISION NO. 2 SF APR 04/2016

The following chapters were updated:

- TITLE
- TABLE OF CONTENTS
- 1-45-001

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HIGHLIGHTS REVISION NO. 1 SF MAR 13/2016

This revision updates this manual to include the applicable chapters when a passenger configuration 767-300 is converted into 767-300 SF, Special Freighter.

The following chapters were added:

- TITLE
- FOREWORD
- 1-00-002
- 1-02-029
- 1-32-003
- 1-34-002
- 1-45-001
- 1-60-002
- 1-61-001
- 1-62-002
- 1-62-003
- 1-67-001
- 1-67-002
- 1-67-003
- 1-67-004
- 1-67-005
- 1-69-001
- 1-69-007
- 1-84-002

The following chapters were updated:

- TABLE OF CONTENTS
- AIRPLANE CONFIGURATION
- INTERIOR EFFECTIVITY

The following CHP-SEC are not applicable for Special Freighter.

- 1-00-001
- 1-02-026
- 1-02-028
- 1-32-002
- 1-34-001
- 1-44-047
- 1-60-001
- 1-60-401
- 1-60-601
- 1-62-001
- 1-69-002
- 1-69-023
- 1-90-001

NOTE: [1] Airplane Serial No. 27611 was changed to Special Freighter.

[2] Applicable configuration for Chapters 1-00-001, 1-32-002, 1-34-001, 1-44-047, 1-60-001, 1-60-401, 1-60-601, 1-62-001, and 1-90-001 changed from ALL to ALL Except SF.

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TABLE OF CONTENTS

APPLICABLE CONFIGURATIONS

SF

APPLICABLE CONFIGURATIONS

SF

APPLICABLE CONFIGURATIONS

SF

AIRPLANE CONFIGURATION

The engineering and CAAI certification provided by this document are applicable and valid only for the airplane in the list below. With respect to any other modifications, it shall be the responsibility of the buyer to obtain appropriate regulatory agency approval of the data provided by this document.

CONFIGURATION ASSIGNMENT

The table shown below correlates each airplane serial number to the currently allowed configuration(s) for that airplanes. 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 airplanes.

IAI No.	Model Type	LINE NUMBER	SERIAL NUMBER	VARIABLE NUMBER	REGISTRY NUMBER	CONFIGURATION		AIRPLANE REPORT
023	B767-341	291	24753	VN232	N173CR	SF		371-08-00-C8812

CONFIGURATION QUALIFICATIONS

Not applicable for these Airplanes.

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INTERIOR EFFECTIVITY

Main Cargo Deck

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

SERIAL NUMBER	CARGO ARRANGEMENT EFFECTIVITY - MAIN DECK			
	DRAWING	DASH	REV	NOTES
24753	767-300-CLS AAR P/N 59400	-104	J	[1]

NOTE: **According the installed CLS P/N, Refer to the particular Cargo arrangements listed in the Cargo Section of this manual:**

[1] CLS configurations Basic, B and G.

INTERIOR EFFECTIVITY (CONT)

Main Cabin (supernumeraries)

The tabular data shown below correlates each airplane serial number to the cabin arrangement(s) certified for that airplane. Each cabin arrangement is designated by drawing number and revision letter.

SERIAL NUMBER	CABIN ARRANGEMENT EFFECTIVITY - MAIN CABIN	
	DRAWING	REV
24753	371-25-16-C4522	B

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 OF ACRONYMS

Balance Arm (B.A.)	A true measure of distance for 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)	An IAI internal drawing that depicts the interior layout of the upper cabin.
Layout of Passenger Systems (LOPS)	An 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 airplane at time of delivery.
Fleet Empty Weight (FEW)	Average Basic Empty Weight used for a fleet or group of airplane 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 airplane 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.
Operational Items	Personnel, equipment and supplies necessary for a particular operation but not included in Basic Empty Weight. Those items may vary for a particular airplane 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 liquid - Usable fluids other than those in useful load - Life rafts, life vests and emergency transmitters - Airplane unit load devices

GENERAL INFORMATION (CONT)

WEIGHT TERMS (CONT)

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 airplane and not a variation for the same type of airplane. 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.)

GENERAL INFORMATION (CONT)

WEIGHT LIMITATION TERMS

Maximum Landing Weight (MLW)	Maximum weight for landing as limited by airplane strength and airworthiness requirements.
Maximum Takeoff Weight (MTOW)	Maximum weight at brake release as limited by airplane strength and airworthiness requirements.
Maximum Taxi Weight (MTW)	Maximum weight for ground maneuver as limited by airplane strength and airworthiness requirements. (It includes weight of taxi and runup fuel.)
Minimum Flight Weight (MFW)	Minimum weight for flight as limited by airplane strength and air worthiness requirements.
Maximum Zero Fuel Weight (MZFW)	Maximum weight allowed before usable fuel must be loaded in the airplane as limited by 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 airplane is defueled by normal means using the procedures and attitudes specified for draining the tanks.
Usable Fuel	Fuel available for airplane propulsion.
Drainable Usable Fuel	Usable fuel that can be drained from the airplane 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.

GENERAL INFORMATION (CONT)

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.
Loading Schedule	A hardcopy or computerized form used to record the airplane's weight, load distribution and other appropriate information; to calculate and check the weight and balance conditions of the airplane against operational limitations; and to establish the stabilizer trim setting for takeoff.
Operational Empty Weight Variation	Operational margin place within the certified center of gravity limits to compensate for the known variations in the standard and operational items.

GENERAL INFORMATION (CONT)

BALANCE TERMS

Fleet Center-of-Gravity	Average Basic Empty Weight center of gravity used for a fleet or group of airplane 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

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.

GENERAL INFORMATION (CONT)

CARGO TERMS AND DEFINITIONS

Cargo Compartment	The single volume enclose by the cargo floor, the forward cargo partition, the aft cargo partition, the cargo compartment ceiling and the cargo compartment sidewalls.
CERTIFIED ULD	A unit load device that has been manufactured in accordance to and received approval by the appropriate governmental airworthiness authority indicating the airplane ULD meets their safety requirements.
Frangible Cargo	Cargo consisting of items which will readily separate and conform to the airplane contour when subjected to a 9g forward load.
Frangible ULD	Any ULD, when empty or when containing frangible cargo.
g	The expression used to show the magnitude of a force in terms of the standard earth gravitational unit.
NAS 3610	A document which defines test conditions for certification of ULDs.
Non-Certified ULD	A unit load device that has not received approval by the appropriate governmental airworthiness authority indicating the airplane ULD meets their safety requirements.
Rigid Cargo	Cargo consisting of an item or items which will not readily separate or which will not readily conform to the airplane contour when subjected to a 9g forward load. Examples include airplane engines, machine tools, vehicles, automobile engines, pipes, large motors or generators, etc.
Tie-down Fitting	An attachment device designed to transfer forces between a load bearing device (typically a net, strap, rope or bar) and a cargo track.
ULD	Unit Load Device. An assembly of component comprising either of the following: - pallet and pallet net - pallet and pallet net over an igloo - airplane container The purpose of the unit is to enable individual pieces of cargo to be assembled into a standard sized unit to facilitate rapid loading/unloading into the airplane having compatible handling and restraint systems which interface directly with the unit.
Zcg	Vertical center of gravity.

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CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS

CERTIFIED WEIGHT LIMITS - MTW 413000 LB (187334 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)	413000	187334
Maximum Takeoff Weight (MTOW)	412000	186880
Maximum Landing Weight (MLW)	326000	147871
Maximum Zero Fuel Weight (MZFW)	309000	140160
Minimum Flight Weight (MFW)	179000	81193

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 - H37X14-15/22 Ply Rating
  - •Main Gear - H46X18-20/32 Ply Rating

- The Main Landing Gear must have 409,000 LB MTW capability, or better, as defined by an FAA authorized station (see note below).

- Wheel, Tire and brake applicability and interchangability should be based on AMM part 12-15-03-3 and any other service information obtained from OEM.

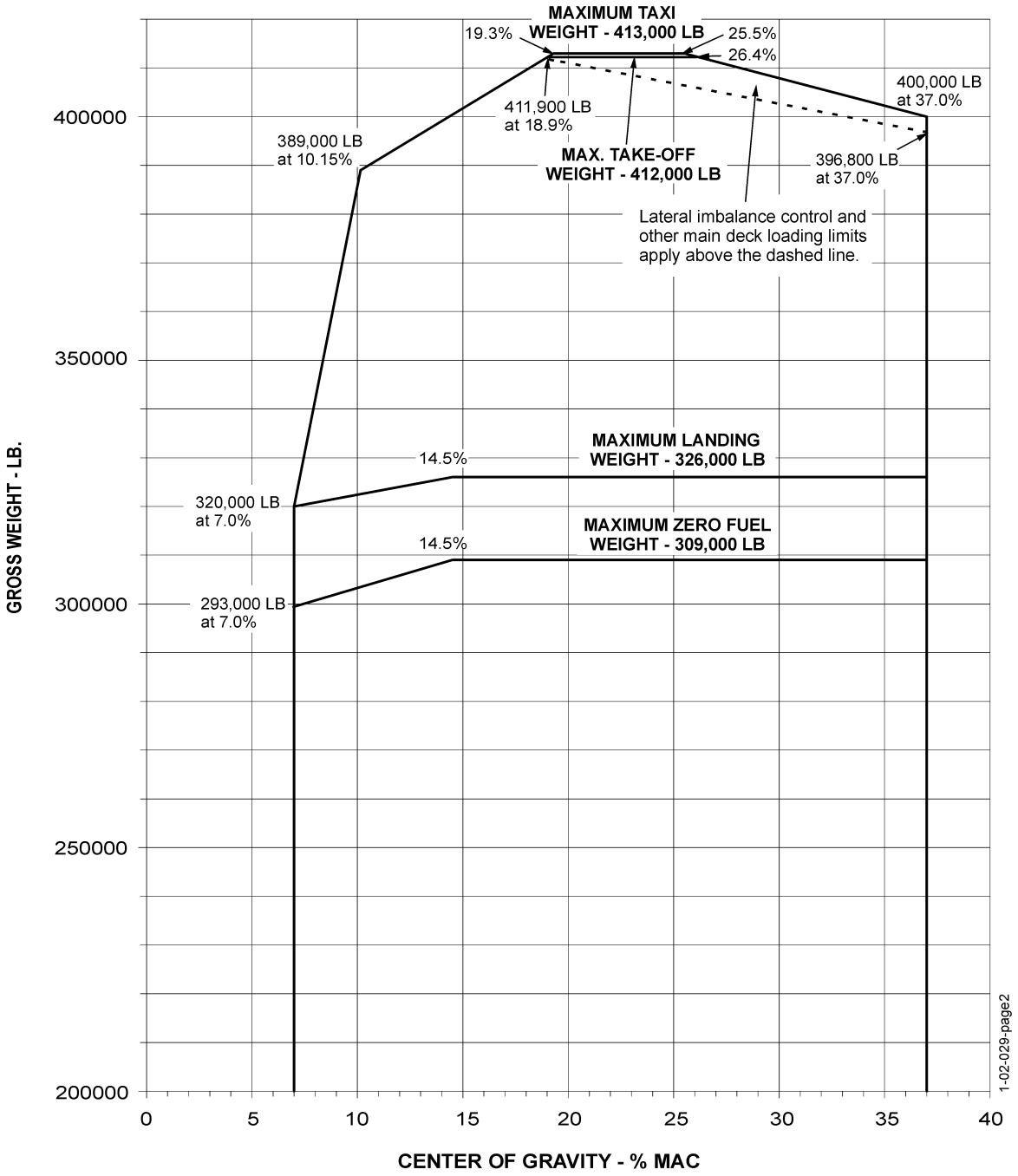
- Refer to the Airplane Maintenance Manual Section 12-15-03 for minimum tire pressure requirements.

NOTE: See CHP-SEC 1-69-007 for Cargo Lateral Imbalance Limitations.

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (CONT)

CERTIFIED WEIGHT LIMITS - MTW 413000 LB, MLW 326000 LB, MZFW 309000 LB

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

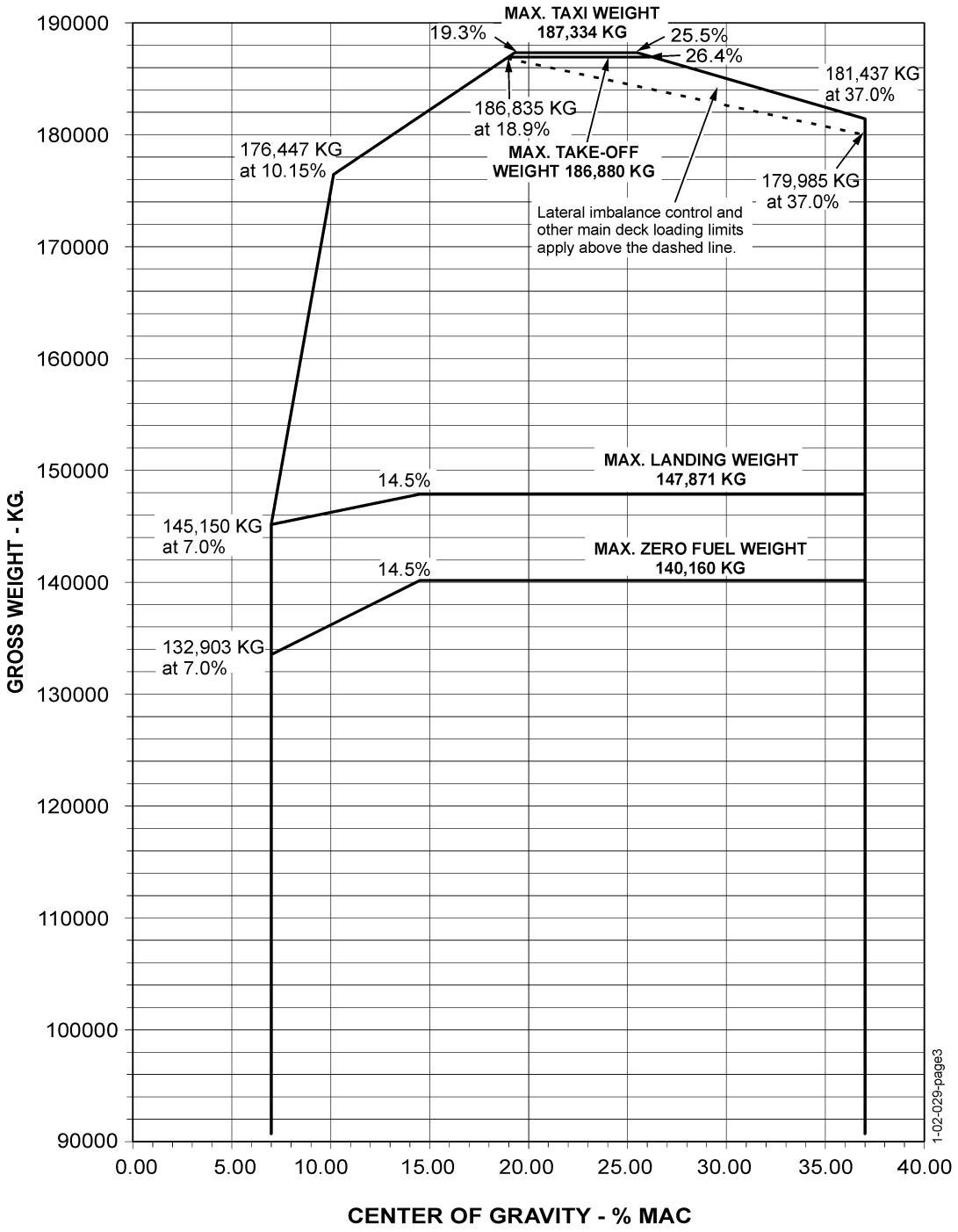


WARNING: **REFER TO PAGE 1 OF THIS SUBJECT FOR LIMITATIONS TO THE C.G. LIMITS.**

CERTIFIED WEIGHT AND CENTER OF GRAVITY LIMITS (CONT)

CERTIFIED WEIGHT LIMITS - MTW 187334 KG, MLW 147871 KG, MZFW 140160 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.**

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POTABLE WATER SYSTEM

TANK QUANTITIES AND LOCATIONS

The drinking and washing rinse water system has one storage tank per airplane. The total usable potable water is listed in the table below.

SYSTEM	VOLUME		WEIGHT		B.A. IN.
	U.S GAL.	L	LB	KG	
Water Tank	2.6	10.0	22.1	10.0	138

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

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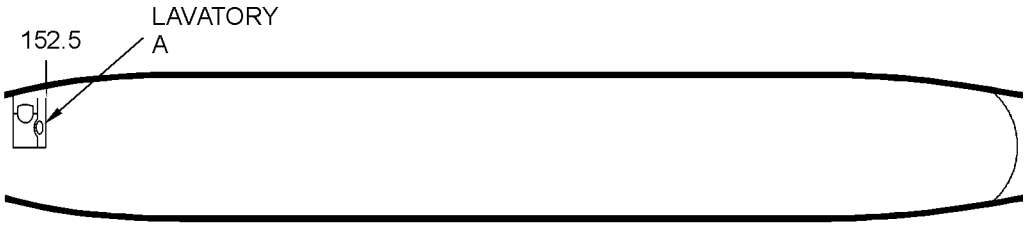
WASTE DISPOSAL SYSTEM

LAVATORY QUANTITIES AND LOCATION - 3 GALLON PRECHARGE

FLUID CATEGORY	VOLUME		WEIGHT	
	US. 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).**

Lavatory location is shown in the following diagram.



1-34-002-page 1

NOTE: **For lavatories position at the supernumerary compartment**
See 1-45-001 Page 1 of 2.

LAVATORY LOCATION	
LAVATORY DESIGNATION	B.A. IN.
A	138

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INTERIOR ARRANGEMENT - MAIN DECK

FLIGHT DECK

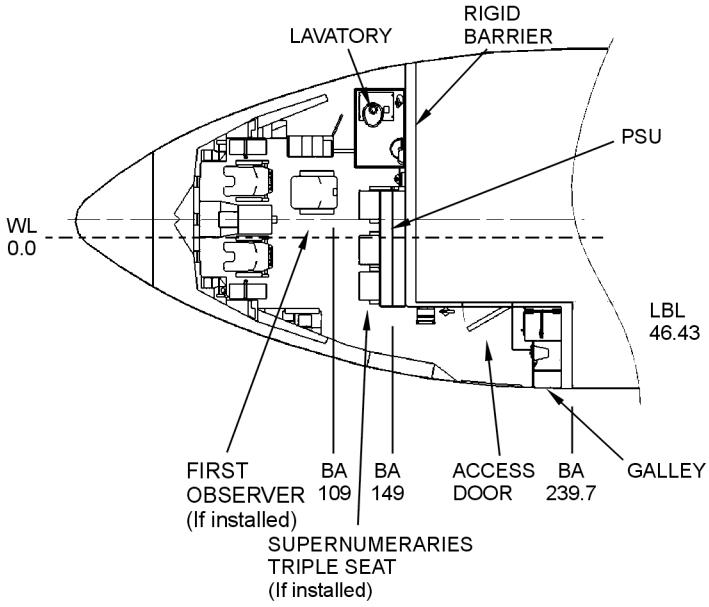
The flight crew balance arms are defined as 6 IN. in front of the Seat Reference Point (SRP). The SRP is defined as the intersection of the seat bottom and the seat back. The crew locations represent the crew seated at takeoff positions.

FLIGHT CREW (ONE OBSERVER)	
LOCATION	**B.A. IN.**
Captain	60.1
First Officer	60.1
First Observer (Track Mounted)	99.0
Supernumeraries	143.0

NOTES: (1) Up to 3 supernumeraries weight (170LB / 77.1KG each) should be considered as part of the payload.

(2) The observer weight (170LB / 77.1KG) should be considered as part of the payload.

Reference Drawing: IAI 371-25-16-C4522



1-45-001-page1

MAIN DECK

For main deck cargo arrangement refer to Chapter 1-67-003.

GALLEY

Only one galley, G1, remains in the airplane.

	WEIGHT		BALANCE ARM
	LB	**KG**	**IN**
Galley G1	257	116.6	227

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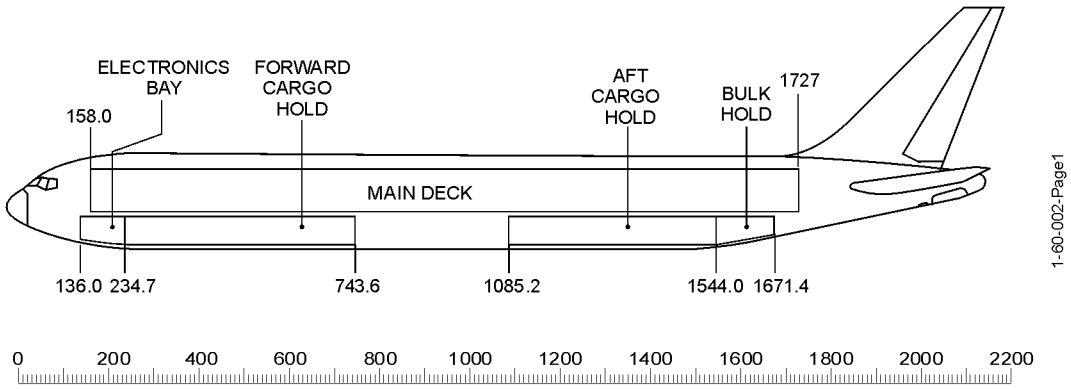
COMPARTMENT LINEAR AND AREA LOAD LIMIT

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.



Four basic structural limitations that must be observed when loading payload are compartment, linear loading, floor loading, and cumulative load limitations. Cumulative load limitations are discussed in CHP-SEC 1-61-001, page 3 (aft body) and CHP-SEC 1-61-001, page 1 (forebody). Maximum allowable compartment weights and maximum allowable linear and floor loading for the 767-300 SF are provided in the following table:

MAXIMUM ALLOWABLE WEIGHT						
COMPARTMENT	TOTAL WEIGHT		LINEAR LOADING		FLOOR LOADING	
	LB	KG	LB/IN.	KG/IN.	LB/SQ FT	KG/SQ FT
MAIN DECK CARGO						
Main Cabin B.A. 158 TO B.A. 247			57.0	25.9	250.0	113.4
Main Cabin B.A. 247 TO B.A. 750			85.0	38.6	250.0	113.4
Main Cabin B.A. 750 TO B.A. 1003			120.0	54.4	250.0	113.4
Main Cabin B.A. 1003 TO B.A. 1637			85.0	38.6	250.0	113.4
Main Cabin B.A 1637 TO B.A. 1727			68.0	30.8	250.0	113.4

COMPARTMENT LINEAR AND AREA LOAD LIMIT (CONT.)

MAXIMUM ALLOWABLE WEIGHT						
COMPARTMENT	TOTAL WEIGHT		LINEAR LOADING		FLOOR LOADING	
	LB	KG	LB/IN.	KG/IN.	LB/SQ FT	KG/SQ FT
Electronics Bay B.A. 136.0 to 234.7	3000	1360				
FWD CARGO HOLD						
Forward Cargo Hold [a] B.A. 234.7 TO B.A. 743.6	45000[b]	20411[b]	134.0[c]	60.7[c]	200.0	90.7
AFT CARGO HOLD						
Aft Cargo Hold [a] B.A. 1085.2 TO B.A. 1544.0	38745[d]	17574[d]	90.0	40.8	200.0	90.7
Bulk Hold B.A. 1544.0 TO B.A. 1671.2	6450[e]	2925[e]	50.0	22.6	150.0	68.0

NOTES:

(a) The lower hold limitations include the weight of cargo and the unit load devices (ULDs).

(b) The maximum load limit is 43200 LB (19595 KG) with non-certified ULD's or bulk cargo (refer to CHP-SEC 1-66-2XX).

(c) Refer to CHP-SEC 1-68-00X for tiedown requirements when loading cargo above 90.0 LB/IN. (40.8 KG/IN.), and the forebody cumulative load limit.

(d) The maximum load limit is 37800 LB (17145 KG) with non-approved ULD's or bulk cargo (refer to CHP-SEC 1-66-6XX).

(e) The bulk cargo net at B.A. 1544 must be installed or the maximum allowable weight is 0 LB (0 KG).

CAUTION: THESE LOADS MAY BE FURTHER LIMITED BY CUMULATIVE LOAD LIMITATIONS

COMPARTMENT LINEAR AND AREA LOAD LIMIT (CONT.)

COMPARTMENT AND FLOOR LIMITS (CONT)

When a unit load device overlaps two linear load zones, the lower of the two linear loads is used for the length of the entire unit load device to determine the allowable unit load device load. An exception is made when a unit load device has less than 11.0 inches in the lower linear load zone in which case the higher linear load may be used for the length of the unit load device.

Maximum Combined (Monocoque) Linear Load Limits

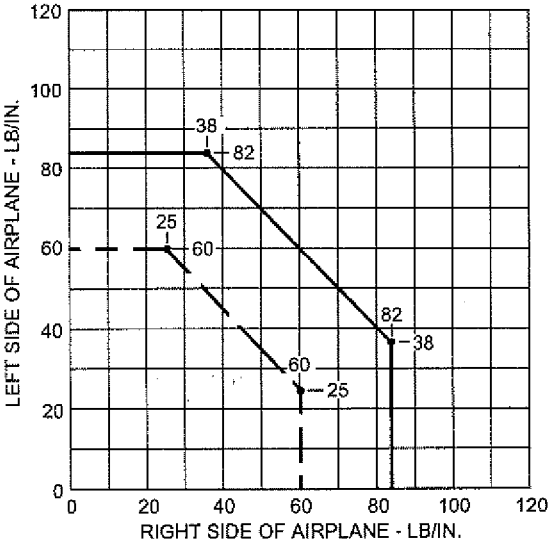
BALANCE ARM INCH		MAXIMUM COMBINED LINEAR LOAD	
FROM	TO	LB/IN	KG/IN
158.0	234.7	57.0	25.9
234.7	743.6	140.0	63.5
743.6	750.0	85.0	38.6
750.0	1003.0	120.0	54.4
1003.0	1085.2	85.0	38.6
1085.2	1544.0	140.0	63.5
1544.0	1624.0	103.3	46.9
1624.0	1637.0	85.0	38.6
1637.0	1727.0	68.0	30.8

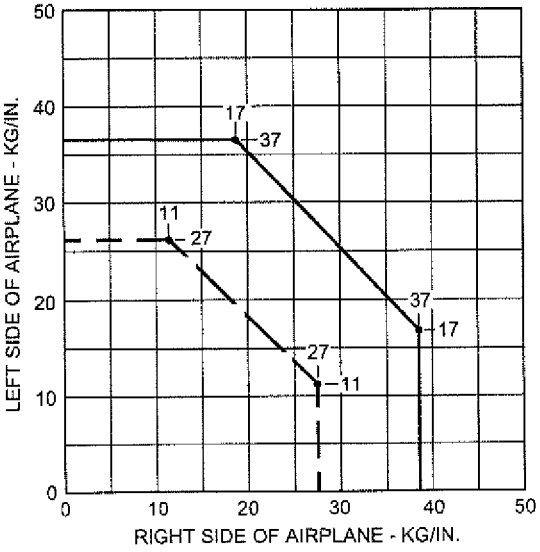
NOTE: **The load limits above include the weight of cargo and the Unit Load Devices.**

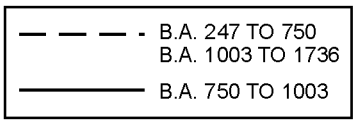
COMPARTMENT LINEAR AND AREA LOAD LIMIT (CONT.)

Main Deck Unsymmetrical Payload - Linear Load Limits

Unit Load Devices located side by side on the main deck must not exceed the unsymmetrical Load Limits shown below - For A and B Configuration







1-60-002-page 4

NOTES: **ULD's located side by side on main deck must be loaded symmetrically as mach as possible.**

FORWARD AND AFT BODY CUMULATIVE LOAD LIMITS

FWD BODY CUMULATIVE LOAD LIMITS FOR CONFIGURATIONS A, B, C, D AND E.

The cumulative total load profile is computed forward to aft in the forebody and must not exceed load shown in the table below.

CONF	SIZE CODE *	ULD SIZE See Note (1)	Units	POSITION						
				1	2	3	4	5	6	7
A	A2 (LONG.)	1 - 88x125 10 - 125x88	lb. kg. BA in.	5000 2268 246.95	23143 10497 372.95	39149 17758 500.95	49077 22261 628.95	59104 26809 754.95	74224 33667 880.95	- - -
B	B (LONG.)	1 - 88x108 10 - 108x88	lb. kg. BA in.	5000 2268 246.95	20942 9499 355.95	42717 19376 546.95	51171 23211 655.95	60304 27353 764.95	73384 33286 873.95	- - -
C	M (LONG.)	1 - 88x125 5 - 125x96	lb. kg. BA in.	5000 2268 246.95	23143 10497 372.95	39149 17758 500.95	49077 22261 628.95	59104 26809 754.95	74224 33667 880.95	- - -
D	A (LAT.)	7 - 88x125	lb. kg. BA in.	5000 2268 246.95	18352 8324 335.95	34927 15842 463.95	44423 20150 568.95	51326 23281 657.95	58251 26422 746.95	68824 31218 835.95
E	M (LAT.)	1 - 88x125 6 - 96x125	lb. kg. BA in.	5000 2268 246.95	19388 8794 343.95	35963 16312 471.95	44423 20150 568.95	51947 23563 665.95	60184 27299 763.95	71824 32579 860.95

NOTES:

(1) The first dimension is along the airplane axis.

(2) BA (IN.) presents the aft edge of a position.

(3) The cumulative load at the specified position consists of the weight of the cargo on the main deck plus the cargo in the hold below.

(4) The ULD limits are defined on page 1-67-004, page 1. the lower hold cargo limits are defined on page 1-60-002, page 2

(5) The total cumulative load at positions aft of B.A. 750 (positions 5 and 6 for configurations A and C, position 6 for configuration B, position 7 for configuration D, and positions 6 and 7 for configuration E) are a function of the center section running load. The existing values in the table are the maximum - for 120 lb/in (54.4 kg/in).

(6) Up to 3 supernumeraries weight (170LB / 77.1KG each), located at STA 143, should be considered as part of the payload).

(7) The observer weight (170LB / 77.1KG), located at STA 99, should be considered as part of the payload.

CAUTION: THE MAXIMUM ALLOWABLE PAYLOAD IN MAIN CARGO DECK IS: MZFW - OEW (PER PARTICULAR AIRPLANE).

FORWARD AND AFT BODY CUMULATIVE LOAD LIMITS (CONT)

FWD BODY CUMULATIVE LOAD LIMITS FOR CONFIGURATION G

The cumulative total load profile is computed forward to aft in the forebody and must not exceed load shown in the table below.

CONF	SIZE CODE *	ULD SIZE See Note (1)	Units	POSITION			
				AC	C2	G	P1
G1	Engine 16-foot (LONG.)	1 - 88x125	lb.	5000	23143	50938	79630
		2 - 125x96	kg.	2268	10497	23105	36120
		1 - 188x96	BA in.	246.95	372.95	652.95	926.00
		1 - 196x96					
				AC	C2	P1	P2
G2	16-foot (LONG.)	1 - 88x125	lb.	5000	23143	51559	79630
		2 - 125x96	kg.	2268	10497	23387	36120
		1 - 196x96	BA in.	246.95	372.95	660.95	926.00

NOTES:

(1) The first dimension is along the airplane axis.

(2) BA (in.) presents the aft edge of a position.

(3) The cumulative load at the specified position consists of the weight of the cargo on the main deck plus the cargo in the hold below.

(4) The ULD limits are defined on page 1-67-004, page 1. the lower hold cargo limits are defined on page 1-60-002, page 2

(5) Up to 3 supernumeraries weight (170LB / 77.1KG each), located at STA 143, should be considered as part of the payload).

(6) The observer weight (170LB / 77.1KG), located at STA 99, should be considered as part of the payload.

CAUTION: THE MAXIMUM ALLOWABLE PAYLOAD IN MAIN CARGO DECK IS: MZFW - OEW (PER PARTICULAR AIRPLANE).

FORWARD AND AFT BODY CUMULATIVE LOAD LIMITS (CONT)

AFT BODY CUMULATIVE LOAD LIMITS FOR CONFIGURATION A, B, C, D AND E

The cumulative total load profile is computed aft to forward in the aftbody and must not exceed load shown in the table below.

CONF	Size Code *	ULD Size	Units	POSITION									
				A7	**A8**	**A9**	**A10**	**A11**	**A12**	**A13**	**-**	**-**	**-**
A	A2 (LONG.)	12 - 125X88	lb.	84026	69260	60443	47153	33864	20575	7253	-	-	-
		1 - 88x125	kg.	38114	31416	27416	21388	15361	9333	3290	-	-	-
			BA in.	881.95	1007.95	1133.95	1259.95	1385.95	1511.95	1637.95	-	-	-
				B7	**B8**	**B9**	**B10**	**B11**	**B12**	**B13**	**B14**	-	-
B	B (LONG.)	14 - 108x88	lb.	84866	71786	64767	53271	41774	30278	18782	7253	-	-
		1 - 88x125	kg.	38495	32562	29378	24163	18949	13734	8519	3290	-	-
			BA in.	874.95	983.95	1092.95	1201.95	1310.95	1419.95	1528.95	1637.95	-	-
				C7	**C8**	**C9**	**C10**	**C11**	**C12**	**A13**	**-**	-	-
C	M (LONG.)	6 - 125x96	lb.	84026	69260	60443	47153	33864	20575	7253	-	-	-
		1 - 88x125	kg.	38114	31416	27416	21388	15361	9333	3290	-	-	-
			BA in.	881.95	1007.95	1133.95	1259.95	1385.95	1511.95	1637.95	-	-	-
				D8	**D9**	**D10**	**D11**	**D12**	**D13**	**D14**	**D15**	**D16**	**A13**
D	A (LAT.)	10 - 88x125	lb.	89426	78746	68922	63607	54220	44833	35446	26059	16670	7253
			kg.	40563	35719	31262	28852	24594	20336	16078	11820	7562	3290
			BA in.	836.95	925.95	1014.95	1103.95	1192.95	1281.95	1370.95	1459.95	1548.95	1637.95
				E8	**E9**	**E10**	**E11**	**E12**	**E13**	**E14**	**E15**	**A13**	**-**
E	M (LAT.)	8 - 96x125	lb.	86426	74786	66938	58439	48208	37977	27747	17516	7253	-
		1 - 88x125	kg.	39202	33922	30363	26507	21867	17226	12586	7945	3290	-
			BA in.	861.95	958.95	1055.95	1152.95	1249.95	1346.95	1443.95	1540.95	1637.95	-

NOTES:

(1) The first dimension is along the airplane axis.

(2) BA (in.) presents the forward edge of a position.

(3) The cumulative load at the specified position consists of the weight of the cargo on the main deck plus the cargo in the hold below.

(4) The ULD limits are defined on page 1-67-004, page 1. the lower hold cargo limits are defined on page 1-60-002, page 2

(5) The total cumulative load at positions aft of B.A. 1003 (position 7 for configurations A and C, positions 7 and 8 for configuration B, D and E) are a function of the center section running load. The existing values in the table are the maximum - for 120 lb/in (54.4 kg/in).

CAUTION: THE MAXIMUM ALLOWABLE PAYLOAD IN MAIN CARGO DECK IS: MZFW - OEW (PER PARTICULAR AIRPLANE).

FORWARD AND AFT BODY CUMULATIVE LOAD LIMITS (CONT)

AFT CUMULATIVE LOAD LIMITS FOR CONFIGURATION G.

Active total load profile is computed aft to forward in the aft body and must not exceed load distribution shown in the table below:

CONF	Size Code *	ULD Size	Units	POSITION			
				P2	P3	P4	A13
G1	Engine 16-foot (LONG.)	3 - 196x96	lb.	78620	61492	40714	7253
		1 - 88x125	kg.	35661	27892	18468	3290
			Arm BA in.	927.00	1124.00	1321.00	1637.95
				P3	P4	P5	A13
G2	16 Foot (LONG.)	3 - 196x96	lb.	78620	61492	40714	7253
		1 - 88x125	kg.	35661	27892	18468	3290
			Arm BA in.	927.00	1124.00	1321.00	1637.95

NOTES: **(1) The first dimension is along the airplane axis.**

(2) BA (in.) presents the forward edge of a position.

(3) The cumulative load at the specified position consists of the weight of the cargo on the main deck plus the cargo in the hold below.

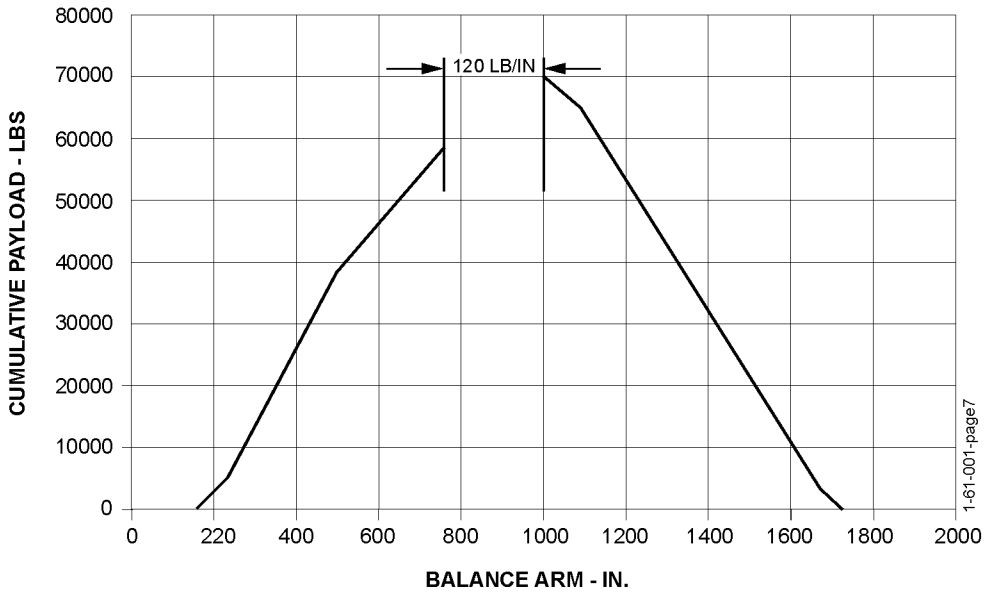
(4) The ULD limits are defined on page 1-67-004, page 1. the lower hold cargo limits are defined on page 1-60-002, page 2

CAUTION: THE MAXIMUM ALLOWABLE PAYLOAD IN MAIN CARGO DECK IS: MZFW - OEW (PER PARTICULAR AIRPLANE).

FORWARD AND AFT BODY CUMULATIVE LOAD LIMITS (CONT)

FUSELAGE MONOCOQUE SHELL LOADING LIMIT

BA in	Payload lbs
158	0
234	5150
490	38300
744	58000
750	58510
1003	69500
1065	66500
1086	65500
1543	17300
1672	3650
1727	0



CAUTION: NO PAYLOAD IS ALLOWED AFT OF BA 1727.0".

1 See Note (5) on Page 3.

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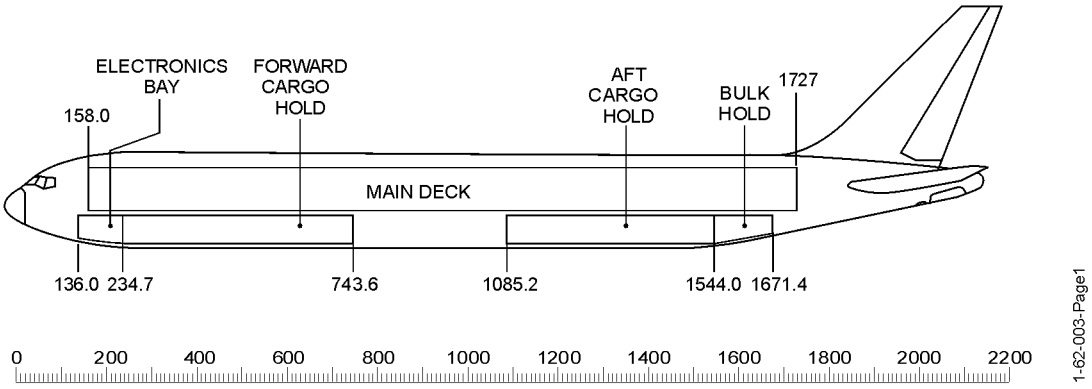
CARGO COMPARTMENT

GENERAL LOCATION AND ARRANGEMENT

The following airplane profile illustrates cargo compartment locations.



BALANCE ARM - IN.

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		
Main Deck	247.0	1624.0	11840	935.5
Forward	234.7	743.6	2500	489.2
Aft	1085.2	1544.0	2270	1314.6
Bulk	1544.0	1671.2	430	1611.2
TOTAL			17040	937.6

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MAIN DECK CARGO COMPARTMENT

MAIN DECK CARGO DOOR DIMENSIONS AND ALLOWABLE PACKAGE SIZES

This section provides dimensions of the maximum package sizes which will pass through the main deck cargo door openings.

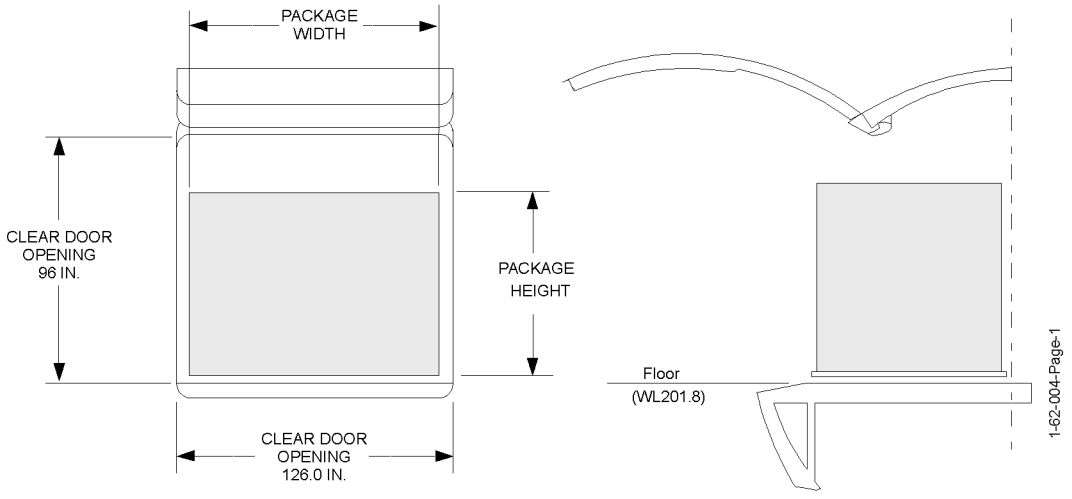
Package sizes are approximate. Tilting, twisting, bending and/or rotating packages through door openings will allow additional lengths in many cases, but should be determined for each situation. A trial loading is recommended for packages with dimensions close to maximum dimensions indicated in the tables.

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.

Bulk cargo can be carried on the main deck provided the cargo is tied down. Refer to CHP-SEC 1-67-00x for tiedown information.

Side Door Dimensions

The following figure provides the side cargo door dimensions.



MAIN DECK CARGO COMPARTMENT (Cont)

MAIN DECK CARGO DOOR DIMENSIONS AND ALLOWABLE PACKAGE SIZES (Cont)

Allowable Package Sizes

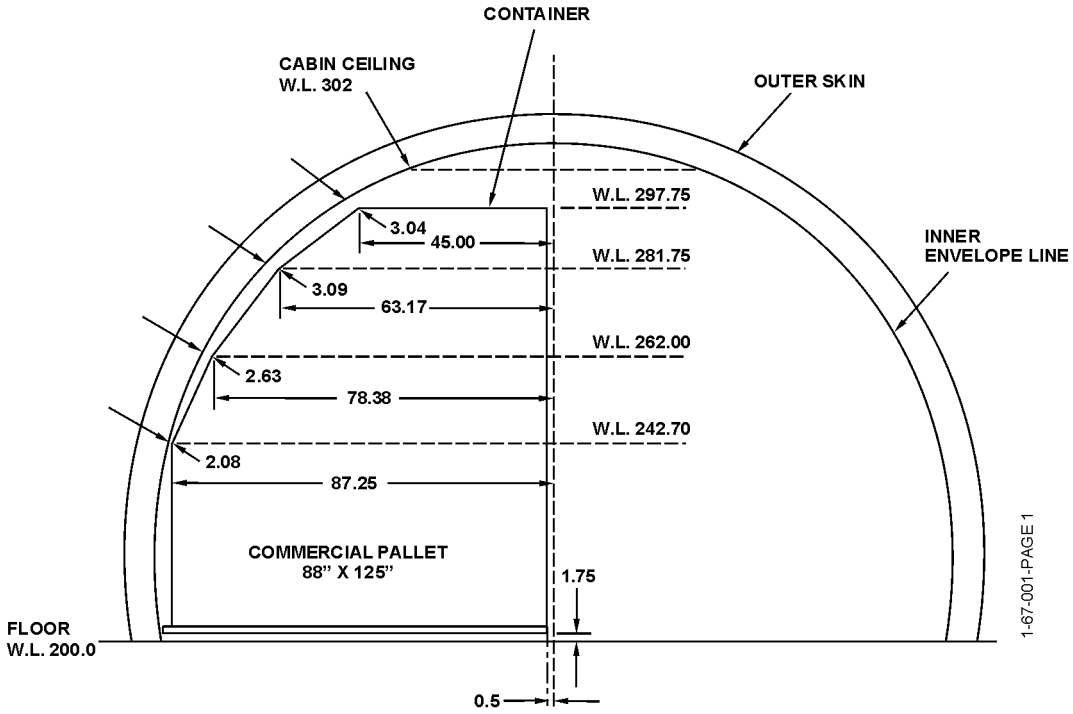
The following table is applicable for packages loaded through the side cargo door (B.A. 441.0 IN.).

MAIN CARGO COMPARTMENT MAXIMUM ALLOWABLE PACKAGE SIZES -SIDE CARGO DOOR													
HEIGHT IN.	WIDTH IN.												
	10	20	30	40	50	60	70	80	90	100	106	116	126
	LENGTH IN.												
96	330 [a]	290 [a]	259 [a]	233 [a][b]	211 [a][b]	192 [a][b]	173 [a] [b]	153 [a] [b]	136 [a] [b]	90 [b]	90 [b]	90 [b]	90 [b]
94	340 [a]	303 [a]	269 [a]	243 [a]	233 [a]	199 [a]	181 [a]	162 [a]	144 [a]	95	95	95	95
92	364 [a]	316 [a]	280 [a]	252 [a]	227 [a]	206 [a]	189 [a]	169 [a]	151 [a]	136 [a]	100	100	100
90	383 [a]	331 [a]	292 [a]	262 [a]	236 [a]	213 [a]	195 [a]	178 [a]	158 [a]	143 [a]	134 [a]	105	105
85	439 [a]	373 [a]	324 [a]	287 [a]	258 [a]	233 [a]	212 [a]	194 [a]	177 [a]	160 [a]	150 [a]	135 [a]	117
80	509 [a]	423 [a]	362 [a]	317 [a]	282 [a]	255 [a]	230 [a]	210 [a]	193 [a]	176 [a]	166 [a]	151 [a]	130
75	560 [a]	458 [a]	388 [a]	338 [a]	299 [a]	268 [a]	242 [a]	220 [a]	201 [a]	186 [a]	176 [a]	156 [a]	136
70	621 [a]	498 [a]	417 [a]	359 [a]	316 [a]	282 [a]	255 [a]	230 [a]	210 [a]	194 [a]	185 [a]	168 [a]	144
65	693 [a]	545 [a]	450 [a]	384 [a]	335 [a]	297 [a]	268 [a]	242 [a]	220 [a]	201 [a]	192 [a]	178 [a]	150
60	779 [a]	599 [a]	488 [a]	411 [a]	355 [a]	313 [a]	281 [a]	254 [a]	230 [a]	209 [a]	199 [a]	184 [a]	158
55	834 [a]	631 [a]	509 [a]	426 [a]	367 [a]	323 [a]	288 [a]	261 [a]	235 [a]	214 [a]	203 [a]	187 [a]	161
50	896 [a]	667 [a]	532 [a]	442 [a]	380 [a]	333 [a]	296 [a]	267 [a]	236 [a]	219 [a]	207 [a]	189 [a]	165
45	967 [a]	707 [a]	556 [a]	461 [a]	394 [a]	343 [a]	304 [a]	274 [a]	247 [a]	223 [a]	210 [a]	190 [a]	169
0-38	1056 [a]	762 [a]	602 [a]	496 [a]	414 [a]	359 [a]	311 [a]	281 [a]	251 [a]	226 [a]	213 [a]	194 [a]	174

NOTE: [a] Packages that are rotated through the door.
[b] Packages should be fully installed AFT STA 636.

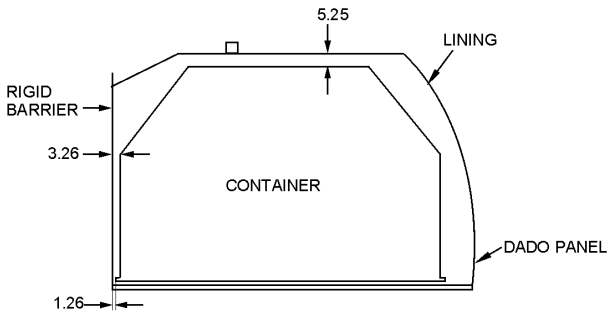
MAIN DECK CARGO COMPARTMENT CROSS SECTIONS

The following drawing shows the typical cross sectional area with the maximum cargo dimensions in the main deck compartment.



NOTES: (1) Ceiling from B.A. 509.3 to B.A. 689.0 is at W.L. 304.5 (i.e. 2.5 Inches Higher).

The following drawing shows the cross sectional area between B.A. 155 to B.A. 242.



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UNIT LOAD DEVICE - MAIN DECK

ALLOWABLE CENTER OF GRAVITY RANGE

A Unit Load Device (ULD) is a device for grouping and retaining cargo for transit. The ULD can refer to a pallet and net, a pallet and net over and igloo, or a container. This Chapter-Section-Subject provides center of gravity limits, dimensions for Size Code A, B, M, R and Engine Pallet ULDs certified in conformance with TSO C90C.

ULD DESIGNATION			ALLOWABLE CENTER OF GRAVITY RANGE (IN)		
CONFIGURATION	SIZE CODE *	ULD SIZE	VERTICAL	LATERAL	LONGITUDINAL
A	A MOD (LONG.)	125x88	(1)	± 8.8	± 12.5
B	B MOD (LONG.)	108x88		± 8.8	± 10.8
C	M (LONG.)	125x96		± 9.6	± 12.5
D	A (LAT.)	88x125		± 12.5	± 8.8
E	M (LAT.)	96x125		± 12.5	± 9.6
G	R	196x96		± 9.6	± 9.8
G	Engine Pallet	188x96		± 5.0	± 9.4

NOTE: (1) The vertical Center of Gravity of the ULD's on the main deck may be up to 42" average, providing the limitation that exists in Chapter 1-69-007 is observed.

For each ULD configuration the ULD position is fixed (See chapter 1-67-003).

The allowable center of gravity range is based on the geometric center of the Unit Load Device base dimension. The vertical center of gravity is measured from the base of the container. Good judgement must be used in distributing the load within the ULD.

Use of ULDs that are not specified in this manual requires tie-downs for the ULD gross weight and the specified load factors.

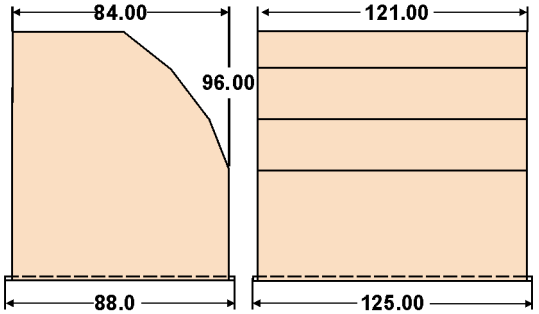
* LONG. - LONGITUDINAL
LAT. - LATERAL

UNIT LOAD DEVICE - MAIN DECK (CONT.)

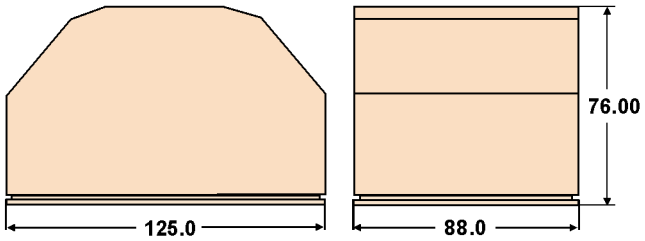
Size Codes A, B, M, R and Engine Pallet - Dimensions and Lateral Positions

The lateral positions and external dimensions of the Size Code A, M & B UNIT LOAD devices on the main deck are shown below.

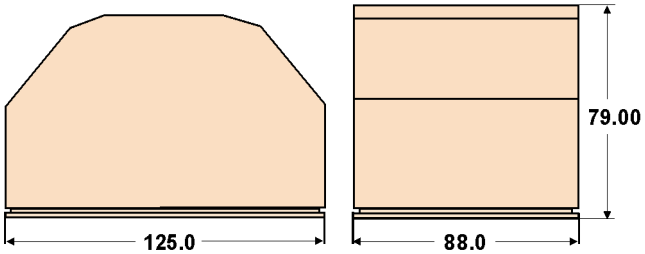
CONFIGURATION "A" - 125 X 88 (See 1-67-003 page 1 of 14)



ULD POSITION A2R/L-A12R/L

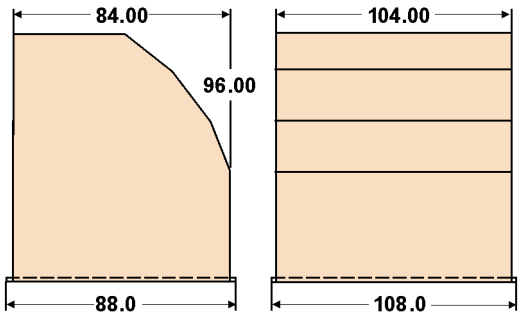


ULD POSITION A1

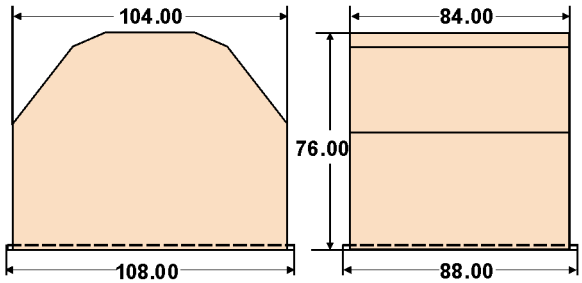


ULD POSITION A13

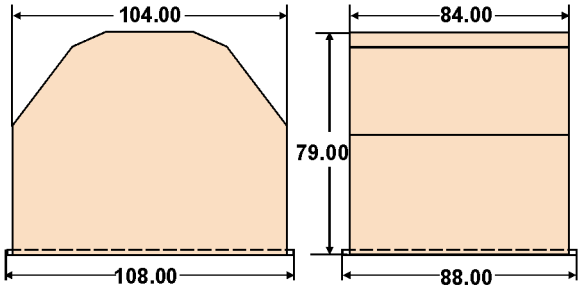
CONFIGURATION "B" - 108 X 88 (OPTIONAL) (See 1-67-003 page 3 of 14)



ULD POSITION B2R/L-B13R/L



ULD POSITION B1



ULD POSITION B14

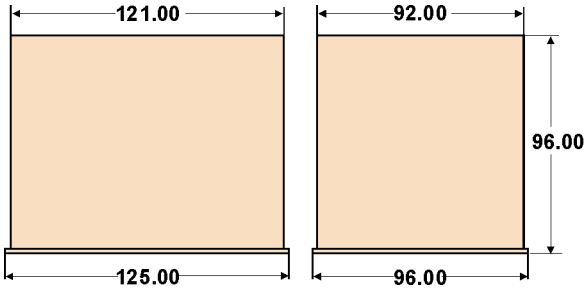
APPLICABLE CONFIGURATIONS

SF

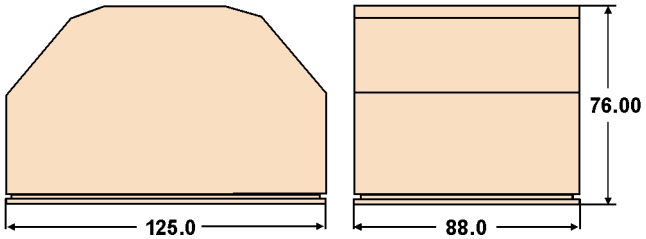
UNIT LOAD DEVICE - MAIN DECK (CONT.)

Size Codes A, B, M, R and Engine Pallet - Dimensions and Lateral Positions (Cont)

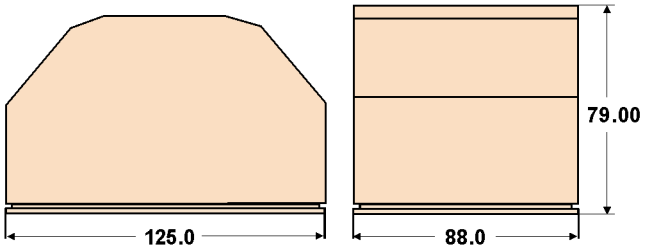
CONFIGURATION "C" - LONGITUDINAL 125X96 (See 1-67-003 page 5 of 14)



ULD POSITION C2 - C12

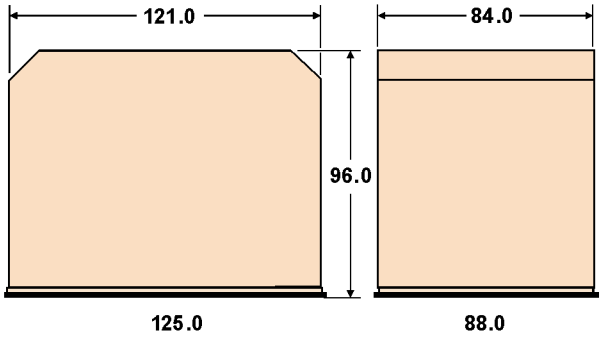


ULD POSITION A1

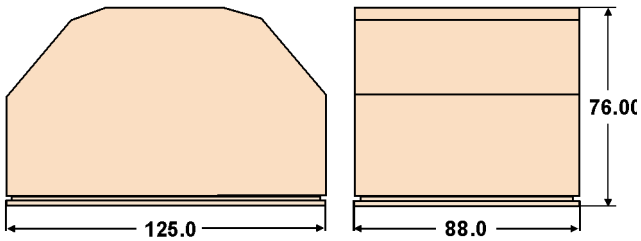


ULD POSITION A13

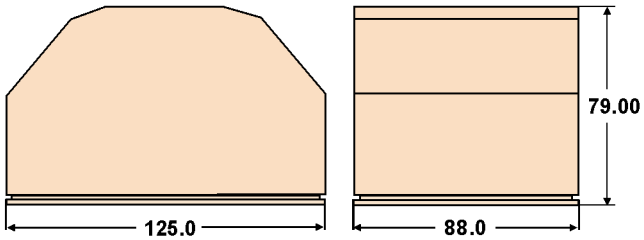
CONFIGURATION "D" - TRANSVERSE 88X125 (See 1-67-003 page 7 of 14)



ULD POSITION D2 - D16



ULD POSITION A1



ULD POSITION A13

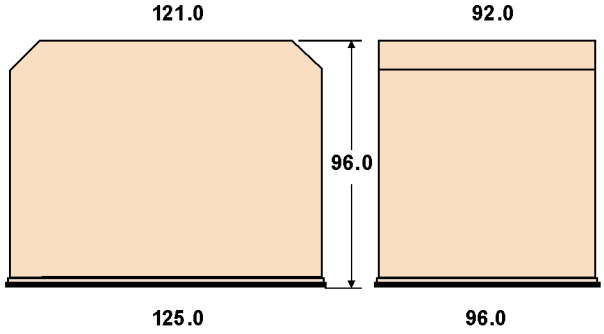
APPLICABLE CONFIGURATIONS

SF

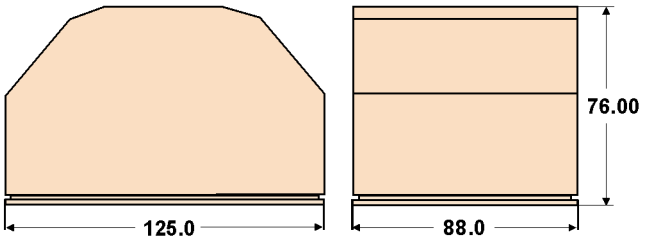
UNIT LOAD DEVICE - MAIN DECK (CONT.)

Size Codes A, B, M, R and Engine Pallet - Dimensions and Lateral Positions (Cont)

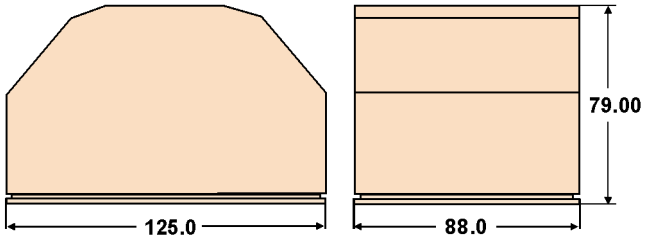
CONFIGURATION "E" - TRANSVERSE 96X125 (See 1-67-003 page 9 of 14)



ULD POSITION E2 - E15

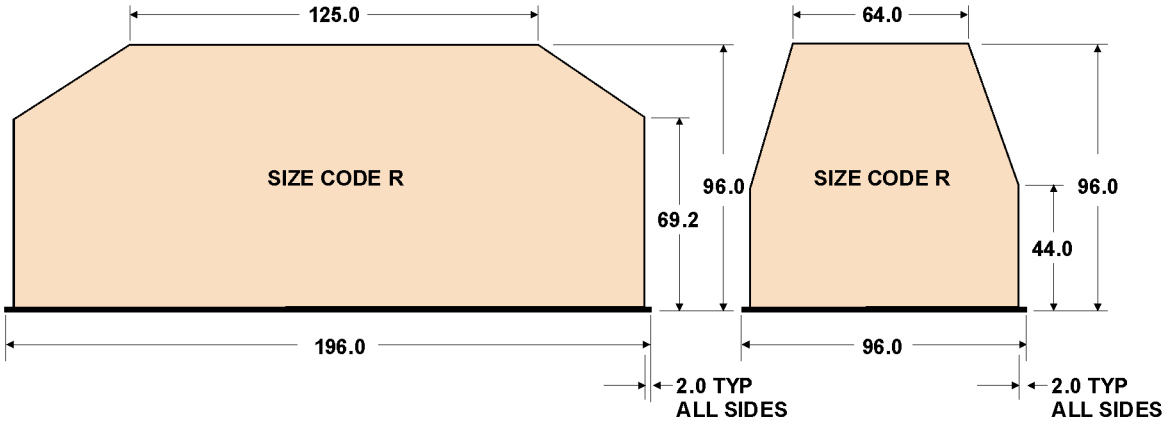


ULD POSITION A1



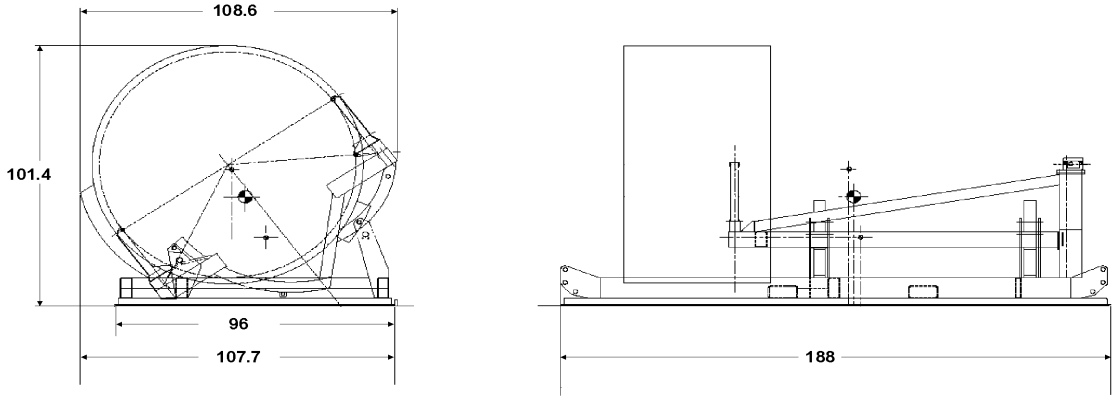
ULD POSITION A13

CONFIGURATION "G2" - 196X96 (See 1-67-003 page 11 of 14)



UNIT LOAD DEVICE - MAIN DECK (CONT.)

CONFIGURATION "G1" - Engine Pallet 96x188 (See 1-67-003 page 13 of 14)



Engine Pallet and Cradle for ENGINE CF6-80A

NOTE: **The Airplane is capable to carry only engine type CF6-80A in the define area, using:**

(1) AGSE Stand AM-2690-300, Assy. Serial number 101

and

(2) AGSE Pallet number 34942-503

WARNING: **ALL ENGINE PALLETS AND/OR 96"X196" ULDS LOADED ONTO THE AIRPLANE FOR CARRIAGE NEED TO HAVE THE RESTRAINT BLOCK HARDWARE REMOVED FROM THE PERIMETER OF THE ULD PRIOR TO BEING LOADED ONTO THE AIRPLANE. SHOULD THE RESTRAINT BLOCK HARDWARE FAIL TO BE REMOVED, PERMANENT DAMAGE MAY OCCUR TO THE CARGO SYSTEM AND/OR FLOOR STRUCTURE OF THE AIRPLANE.**

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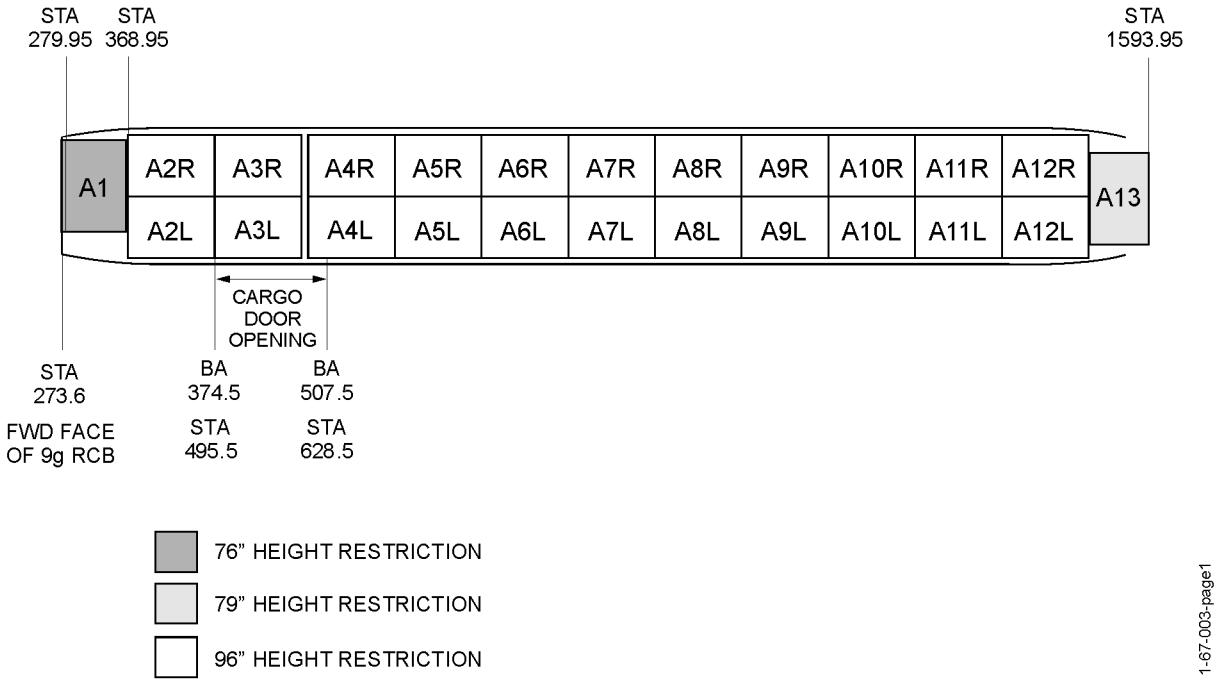
MAIN DECK UNIT LOAD DEVICE LOCATIONS

CONFIGURATION A

SIZE CODE A (125”x88”)

The illustration below shows the positions in the main deck compartment for 24 SIZE CODE A load devices using the delivery restraint hardware configuration.



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MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION A (CONT)

Assuming a uniformly distributed load for the positions shown in the above illustration, the following table tabulates the fwd and aft edge for each individual position in balance ARM (B.A.).

MAIN DECK COMPARTMENT UNIT LOAD DEVICE LOCATION		
ULD POSITION	FWD EDGE	AFT EDGE
	B.A. (IN.)	
A1	158.95	246.95
A2L/A2R	247.95	372.95
A3L/A3R	375.95	500.95
A4L/A4R	503.95	628.95
A5L/A5R	629.95	754.95
A6L/A6R	755.95	880.95
A7L/A7R	881.95	1006.95
A8L/A8R	1007.95	1132.95
A9L/A9R	1133.95	1258.95
A10L/A10R	1259.95	1384.95
A11L/A11R	1385.95	1510.95
A12L/A12R	1511.95	1636.95
A13	1637.95	1725.95

NOTES: (1.) Empty ULD's position are permitted. See note in chapter 1-67-004, Page 2.

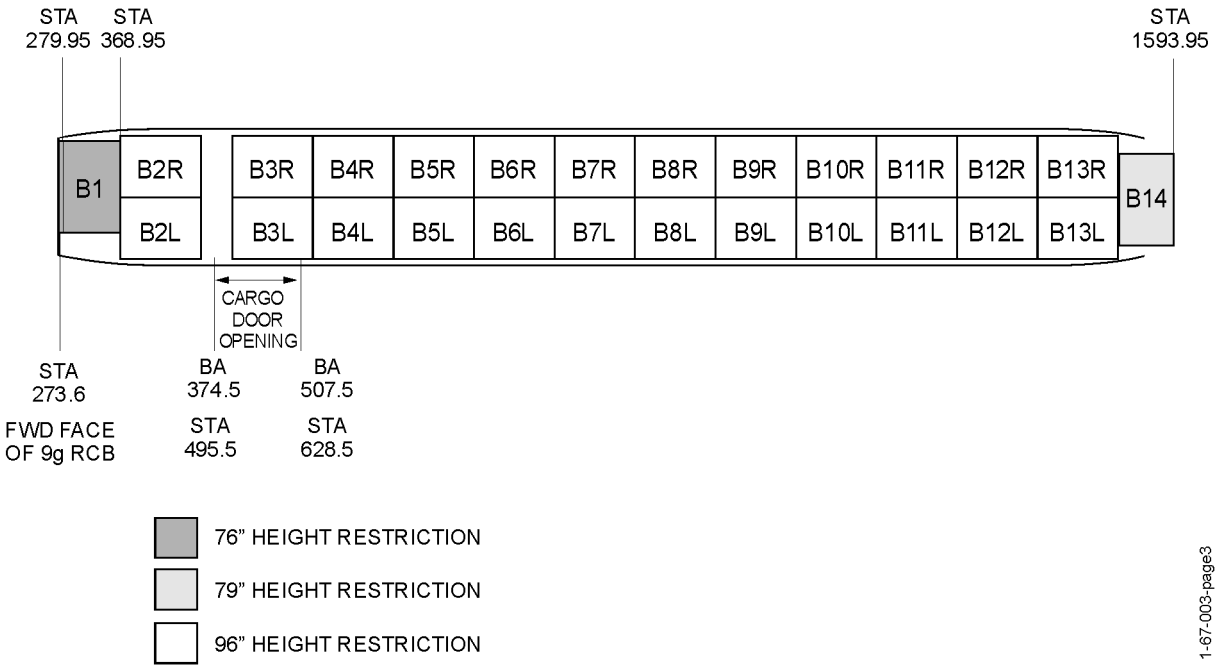
(2.) When carrying rigid cargo on the main deck, at least two cargo positions forward of Rigid Cargo shall contain frangible cargo.

MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION B

Size Code B (108”x88”)

The illustration below shows the positions in the main deck compartment for 26 size code B load devices using the delivery restraint hardware configuration.



MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION B (CONT)

Assuming a uniformly distributed load for the positions shown in the above illustration, the following table tabulates the fwd and aft edge for each individual position in balance ARM (B.A.).

MAIN DECK COMPARTMENT UNIT LOAD DEVICE LOCATION		
ULD POSITION	FWD EDGE	AFT EDGE
	B.A. (IN.)	
B1	158.95	246.95
B2R/B2L	247.95	355.95
B3R/B3L	438.95	546.95
B4R/B4L	547.95	655.95
B5R/B5L	656.95	764.95
B6R/B6L	765.95	873.95
B7R/B7L	874.95	982.95
B8R/B8L	983.95	1091.95
B9R/B9L	1092.95	1200.95
B10R/B10L	1201.95	1309.95
B11R/B11L	1310.95	1418.95
B12R/B12L	1419.95	1527.95
B13R/B13L	1528.95	1636.95
B14	1637.95	1725.95

NOTES: (1.) Empty ULD's position are permitted. See note in chapter 1-67-004, Page 2.

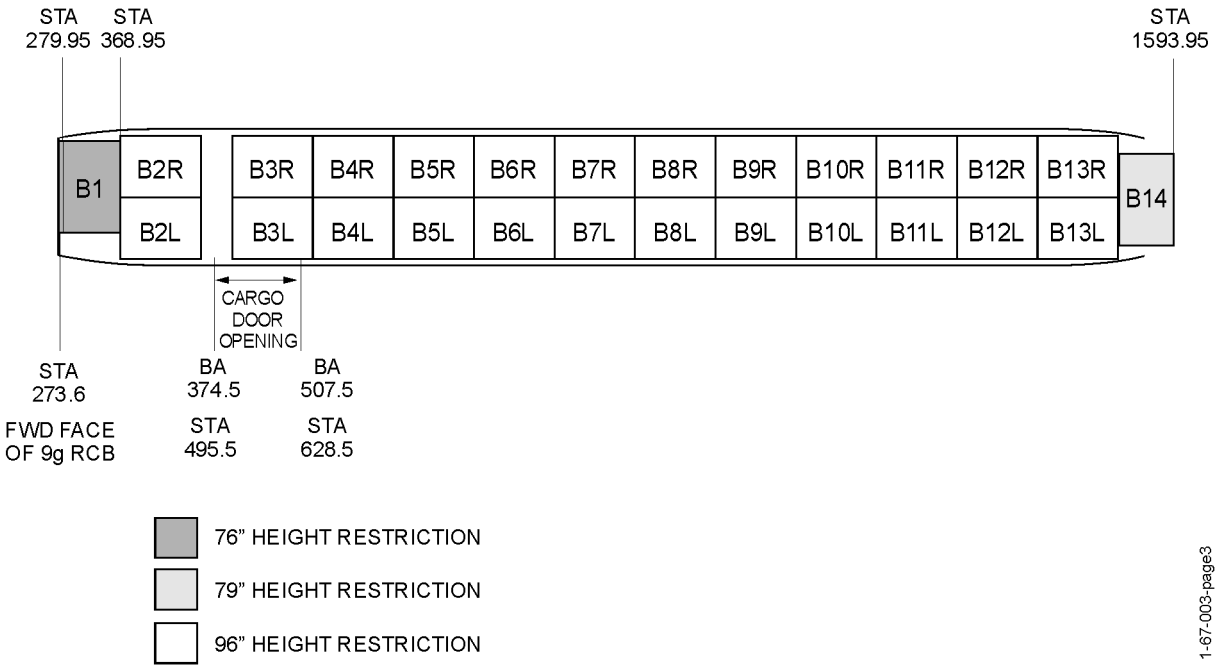
(2.) When carrying rigid cargo on the main deck, at least two cargo positions forward of Rigid Cargo shall contain frangible cargo.

MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION B

Size Code B (108”x88”) Military Pallets (463L Pallets)

The illustration below shows the positions in the main deck compartment for 26 size code B load devices using the delivery restraint hardware configuration.



The following is a procedure to approve the usage of size code B (88” by 108”) pallets - NAS3610 configuration 186P without a TSO-C90 marking.

Requirements:

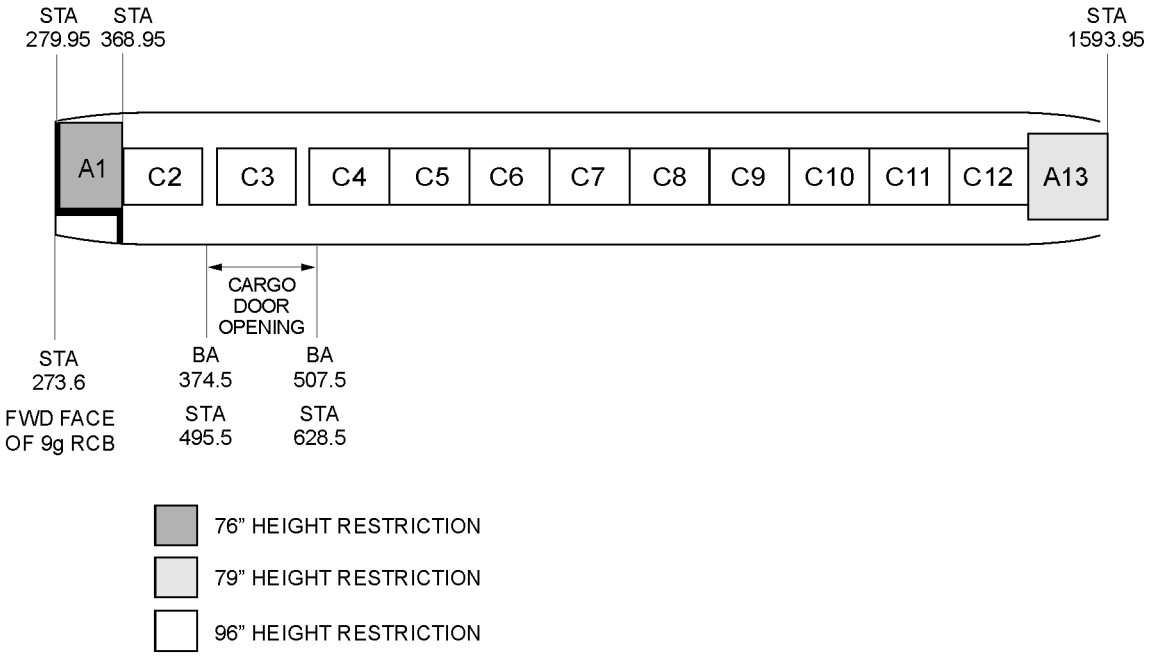
1. Pallet should conform to MIL-DTL-27443/MIL-P-27443 Type 1, when meeting this criteria the pallet is designated as HCU-C/E
2. Pallet Max, vertical Z cg. - height 36”
3. C.G. Max. variation ±10% (8.8” and 10.8”)
4. When using 463L pallet, the cargo must be retrained to the pallet using Net prescribed in MIL-P-27443 for Type 1 pallet.
5. When using NAS3610-1B6P pallet, the cargo must be secured to the pallet using NAS3610-1B6N.
6. Pallet size code B mil (463L) limitations as per W&B existing configuration B limitations.
7. Use of size code B mil (463L) pallets is allowed when CLS military kit P/N 59170-101 is installed.

MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION C

Size Code M (125”x96”)

The illustration below shows the positions in the main deck compartment for 11 size code M and 2 size code A unit load devices using the delivery restraint hardware configuration.



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MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION C (CONT)

Assuming a uniformly distributed load for the positions shown in the above illustration, the following table tabulates the fwd and aft edge for each individual position in balance ARM (B.A.).

MAIN DECK COMPARTMENT UNIT LOAD DEVICE LOCATION		
ULD POSITION	FWD EDGE	AFT EDGE
	B.A. (IN.)	
A1	158.95	246.95
C2	247.95	372.95
C3	375.95	500.95
C4	503.95	628.95
C5	629.95	754.95
C6	755.95	880.95
C7	881.95	1006.95
C8	1007.95	1132.95
C9	1133.95	1258.95
C10	1259.95	1384.95
C11	1385.95	1510.95
C12	1511.95	1636.95
A13	1637.95	1725.95

NOTES: **(1.) Empty ULD's position are permitted. See note in chapter 1-67-004, Page 2.**

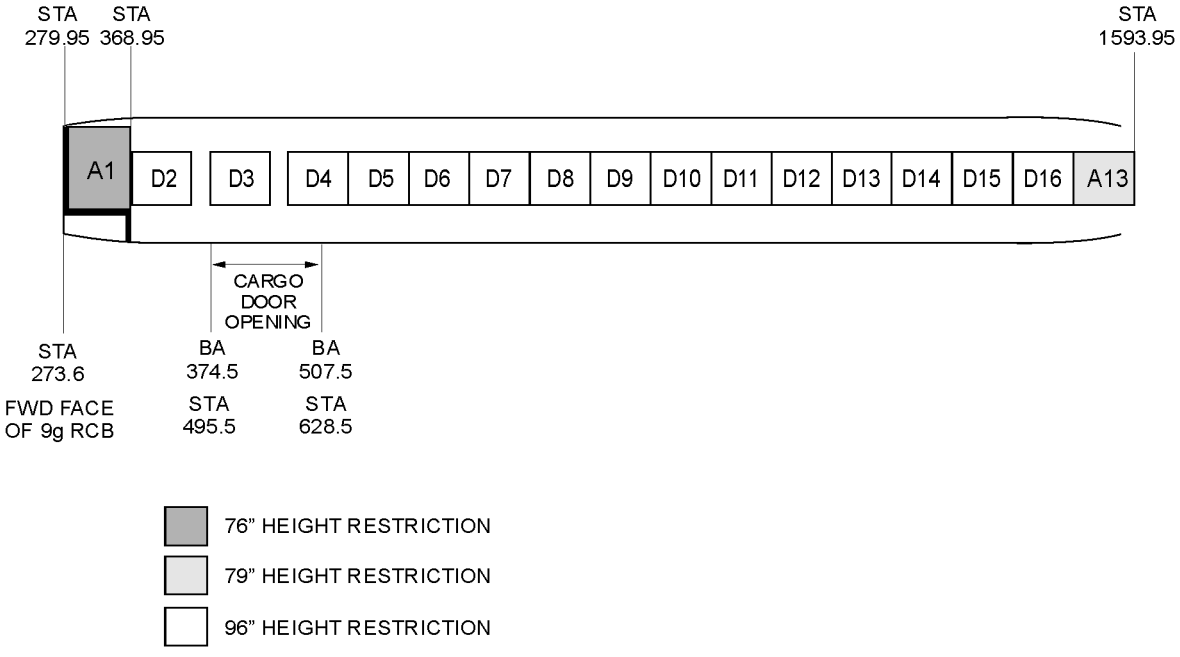
(2.) When carrying rigid cargo on the main deck, at least two cargo positions forward of Rigid Cargo shall contain frangible cargo.

MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION D

SIZE CODE A (88”x125”)

The illustration below shows the positions in the main deck compartment for 17 size Code A load devices using the delivery restraint hardware configuration.



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MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION D (CONT)

Assuming a uniformly distributed load for the positions shown in the above illustration, the following table tabulates the fwd and aft edge for each individual position in balance ARM (B.A.)

MAIN DECK COMPARTMENT UNIT LOAD DEVICE LOCATION		
ULD POSITION	FWD EDGE	AFT EDGE
	B.A. (IN.)	
A1	158.95	246.95
D2	247.95	335.95
D3	375.95	463.95
D4	480.95	568.95
D5	569.95	657.95
D6	658.95	746.95
D7	747.95	835.95
D8	836.95	924.95
D9	925.95	1013.95
D10	1014.95	1102.95
D11	1103.95	1191.95
D12	1192.95	1280.95
D13	1281.95	1369.95
D14	1370.95	1458.95
D15	1459.95	1547.95
D16	1548.95	1636.95
A13	1637.95	1725.95

NOTES: **(1.) Empty ULD's position are permitted. See note in chapter 1-67-004, Page 2.**

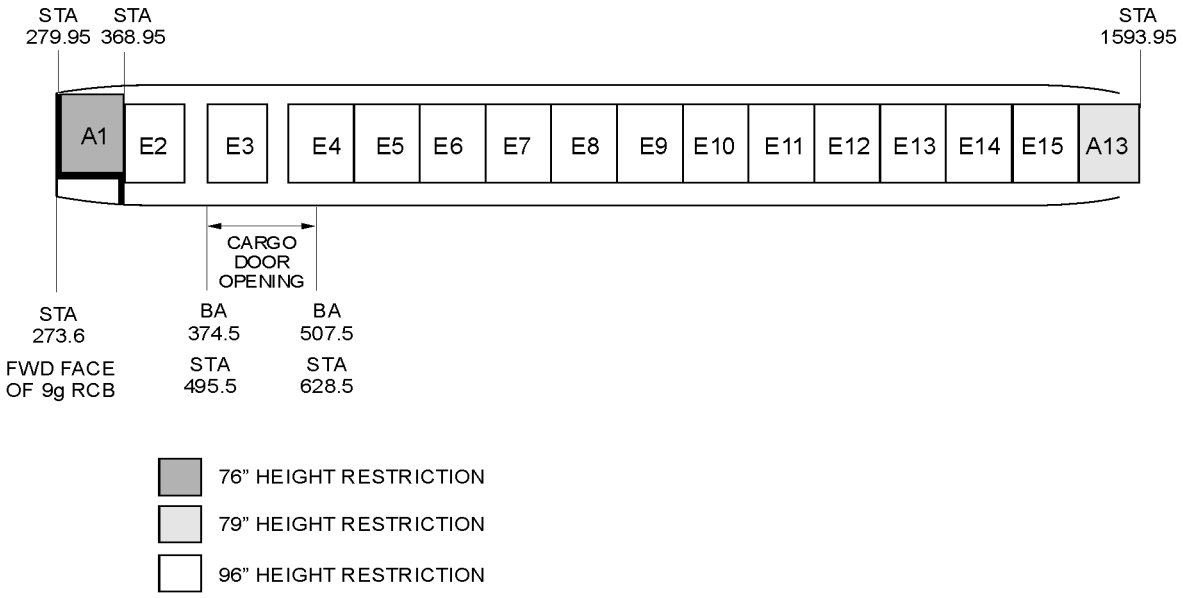
(2.) When carrying rigid cargo on the main deck, at least two cargo positions forward of Rigid Cargo shall contain frangible cargo.

MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION E

SIZE CODE M (96”x125”)

The illustration below shows the positions in the main deck compartment for 14 size code M and two 88”x125” load devices using the delivery restraint hardware configuration.



MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION E (CONT)

Assuming a uniformly distributed load for the positions shown in the above illustration, the following table tabulates the fwd and aft edge for each individual position in balance ARM (B.A.).

MAIN DECK COMPARTMENT UNIT LOAD DEVICE LOCATION		
ULD POSITION	FWD EDGE	AFT EDGE
	B.A. (IN.)	
A1	158.95	246.95
E2	247.95	343.95
E3	375.95	471.95
E4	472.95	568.95
E5	569.95	665.95
E6	667.95	763.95
E7	764.95	860.95
E8	861.95	957.95
E9	958.95	1054.95
E10	1055.95	1151.95
E11	1152.95	1248.95
E12	1249.95	1345.95
E13	1346.95	1442.95
E14	1443.95	1539.95
E15	1540.95	1636.95
A13	1637.95	1725.95

NOTES: (1.) Empty ULD's position are permitted. See note in chapter 1-67-004, Page 2.

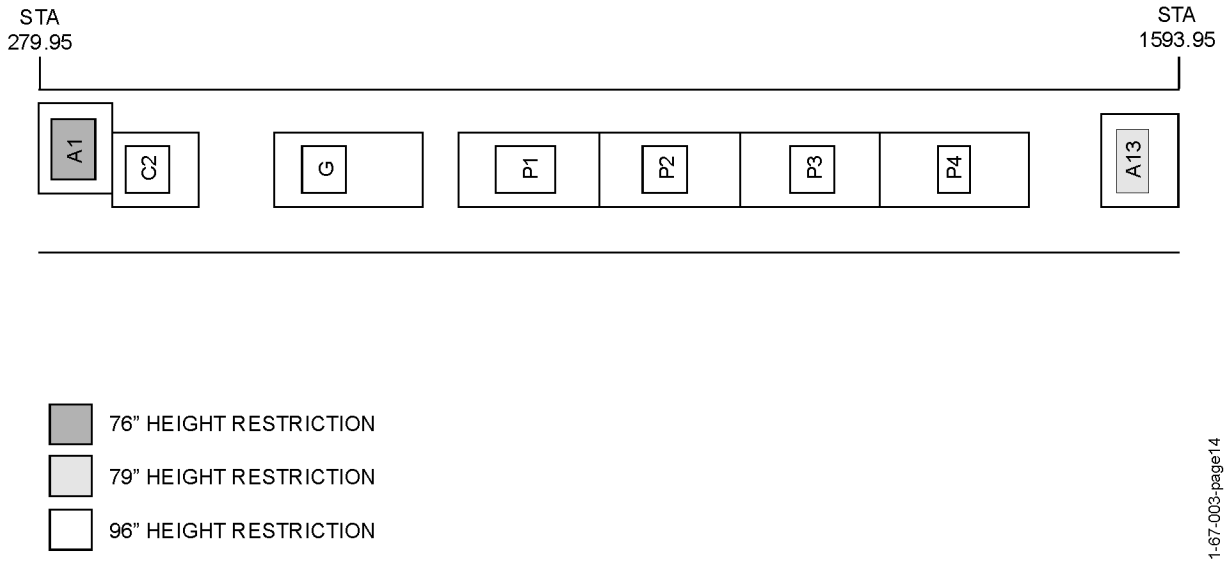
(2.) When carrying rigid cargo on the main deck, at least two cargo positions forward of Rigid Cargo shall contain frangible cargo.

MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION G1

SIZE CODE R

The illustration below shows the positions in the main deck compartment for 4 size code R load devices, 1 engine pallet (188”x96”) and 3 125”x88” load devices using the delivery restraint hardware configuration.



MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION G1 (CONT)

Assuming a uniformly distributed load for the positions shown in the above illustration, the following table tabulates the fwd and aft edge for each individual position in balance ARM (B.A.).

MAIN DECK COMPARTMENT UNIT LOAD DEVICE LOCATION		
ULD POSITION	FWD EDGE	AFT EDGE
	B.A. (IN.)	
A1	158.95	246.95
C2	247.95	372.95
G	464.95	652.95
P1	729.95	925.95
P2	926.95	1122.95
P3	1123.95	1319.95
P4	1320.95	1516.95
A13	1637.95	1725.95

NOTES: **(1.) Empty ULD's position are permitted. See note in chapter 1-67-004, Page 2.**

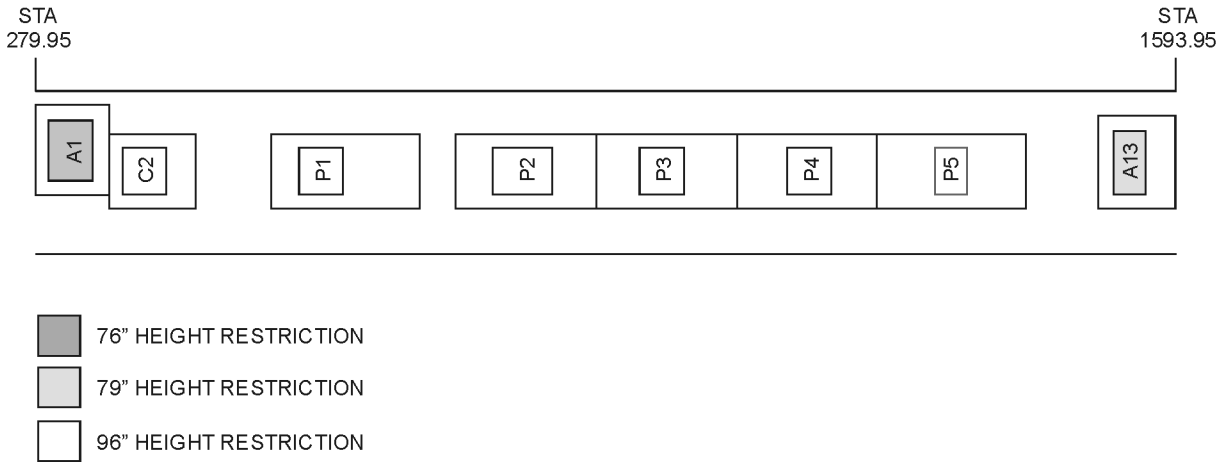
(2.) When carrying rigid cargo on the main deck, at least two cargo positions forward of Rigid Cargo shall contain frangible cargo.

MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION G2

SIZE CODE R (196”x96”)

The illustration below shows the positions in the main deck compartment for 5 size code R and 3 size code 125”x88” load devices using the delivery restraint hardware configuration.



MAIN DECK UNIT LOAD DEVICE LOCATIONS (CONT)

CONFIGURATION G2 (CONT)

Assuming a uniformly distributed load for the positions shown in the above illustration, the following table tabulates the fwd and aft edge for each individual position in balance ARM (B.A.).

MAIN DECK COMPARTMENT UNIT LOAD DEVICE LOCATION		
ULD POSITION	FWD EDGE	AFT EDGE
	B.A. (IN.)	
A1	158.95	246.95
C2	247.95	372.95
P1	464.95	660.95
P2	729.95	925.95
P3	926.95	1122.95
P4	1123.95	1319.95
P5	1320.95	1516.95
A13	1637.95	1725.95

NOTES: **(1.) Empty ULD's position are permitted. See note in chapter 1-67-004, Page 2.**

(2.) When carrying rigid cargo on the main deck, at least two cargo positions forward of Rigid Cargo shall contain frangible cargo.

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MAIN DECK UNIT LOAD DEVICE LOAD LIMITS

SIZE CODE A, B, M, R AND ENGINE PALLET LOAD LIMITS SYMMETRICAL LINEAR LOADS

The load device contents must be loaded in such a manner that it is sufficiently secured to prevent it from becoming a hazard or damaging the airplane structure due to shifting under operational loads.

NOTE 1: Mixed ULD's configuration are permitted on the condition that a position of a particular uld has not changed from the original stations as defined on CHP-SEC 1-67-003

CONFIG	* SIZE CODE	ULD SIZE SEE NOTE (1)	UNITS		POSITION							
					1	2	3	4	5	6	7	8
A	A (LONG)	125x88 ULDs Side by side	lb.	Individual	5,000	7560	7560	7560	7560	10200	10200	7 560
			lb.	l + R		10700	10700	10700	10700	15000	15000	10 700
			kg.	Individual	2268	3429	3429	3429	3429	4627	4627	3429
			kg.	L + R		4853	4853	4853	4853	6804	6804	4853
B	B (LONG)	108x88 ULDs Side by side	lb.	Individual	5,000	6540	6540	6540	6540	8829	8829	6540
			lb.	l + R		9180	9180	9180	9180	12960	12960	9180
			kg.	Individual	2268	2966	2966	2966	2966	4004	4004	2966
			kg.	L + R		4164	4164	4164	4164	5879	5879	4164
C	M (LONG)	Single 125x96 ULDs	lb.	Centered	5,000	10700	10700	10700	10700	15000	15000	10700
			kg.	Centered	2268	4853	4853	4853	4853	6804	6804	4853
D	A (LAT.)	Single 88x125 ULDs	lb.	Centered	5,000	7565	7565	7565	7565	7565	10680	10680
			kg.	Centered	2268	3431	3431	3431	3431	3431	4844	4844
E	M (LAT.)	Single 96x125 ULDs	lb.	Centered	5,000	8245	8245	8245	8245	8245	11600	11600
			kg.	Centered	2268	3740	3740	3740	3740	3740	5262	5262
G1	R	Single 196x96 ULDs	lb.	Centered	5,000	10700	15000	15000	15000	15000	15000	6000
			kg.	Centered	2268	4853	6804	6804	6804	6804	6804	2722
G2	P1	Single 196x96 ULDs	lb.	Centered	5,000	10700	15000	15000	15000	15000	15000	6000
			kg.	Centered	2268	4853	6804	6804	6804	6804	6804	2722

NOTES: (1) The first dimension is along the airplane axis.

(2) Individual - max. load that can be loaded, per pallet position, for asymmetry left/right loading cases.
L+R - The max. allowable load that can be loaded per position.

(3) See CHP-SEC 1-67-003, for combinations with other ULD's.

CAUTION: THE MAXIMUM LOAD INCLUDES THE TARE WEIGHT OF THE UNIT LOAD DEVICE.

*** LONG. - LONGITUDINAL**
LAT. - LATERAL

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE A, B, M, R AND ENGINE PALLET LOAD LIMITS SYMMETRICAL LINEAR LOADS

The load device contents must be loaded in such a manner that it is sufficiently secured to prevent it from becoming a hazard or damaging the airplane structure due to shifting under operational loads.

NOTE 1: Mixed ULD's configuration are permitted on the condition that a position of a particular uld has not changed from the original stations as defined on CHP-SEC 1-67-003

CONFIG	* SIZE CODE	ULD SIZE SEE NOTE (1)	UNITS		POSITION								
					9	10	11	12	13	14	15	16	17
A	A (LONG)	125x88	lb.	Individual	7560	7560	7560	7560	6000	-	-	-	-
		ULDs	lb.	I + R	10700	10700	10700	10700					
		Side by side											
			kg.	Individual	3429	3429	3429	3429					
			kg.	L + R	4853	4853	4853	4853	2722				
B	B (LONG)	108x88	lb.	Individual	6540	6540	6540	6540	6540	6000	-	-	-
		ULDs	lb.	I + R	9180	9180	9180	9180	9180				
		Side by side											
			kg.	Individual	2966	2966	2966	2966	2966				
			kg.	L + R	4164	4164	4164	4164	4164	2722			
C	M (LONG)	Single 125x96	lb.	Centered	10700	10700	10700	10700	6000	-	-	-	-
		ULDs	kg.	Centered	4853	4853	4853	4853	2722				
D	A (LAT.)	Single 88x125	lb.	Centered	7565	7565	7565	7565	7565	7565	7565	7565	6000
		ULDs	kg.	Centered	3431	3431	3431	3431	3431	3431	3431	3431	2722
E	M (LAT.)	Single 96x125	lb.	Centered	11600	8245	8245	8245	8245	8245	8245	6000	
		ULDs	kg.	Centered	5262	3740	3740	3740	3740	3740	3740	2722	
G1	R	Single 196x96	lb.	Centered	-	-	-	-	-	-	-	-	-
		ULDs	kg.	Centered									
G2	P1	Single 196x96	lb.	Centered	-	-	-	-	-	-	-	-	-
		ULDs	kg.	Centered									

NOTES: (1) The first dimension is along the airplane axis.

(2) Individual - max. load that can be loaded, per pallet position, for asymmetry left/right loading cases.
L+R - The max. allowable load that can be loaded per position.

(3) See CHP-SEC 1-67-003, for combinations with other ULD's.

CAUTION: THE MAXIMUM LOAD INCLUDES THE TARE WEIGHT OF THE UNIT LOAD DEVICE.

*** LONG. - LONGITUDINAL**
LAT. - LATERAL

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE A, B, M, R AND ENGINE PALLET LOAD LIMITS WITH MISSING/INOPERATIVE RESTRAINTS (CONT)

Allowable weight includes the weight of the ULD. Any load in excess of the allowables specified in this Chapter-Section must be restrained by additional tie-downs.

For ULD's Size Code A, B and M, only one missing/inoperative restraint is allowed per pallet.

For ULD's Size Code R and for Engine Pallet NO missing/inoperative restraint is allowed.

NOTE 1: **Adjacent pallets may not have a common missing/inoperative restraints at a common edge or corner are not allowed.**

The following equipment malfunctions do not constitute a load limit restriction:

- Jammed or missing sill and capstan rollers
- Jammed or missing balls in a ball mat
- Jammed or missing rollers in a roller tray
- Missing side guide rail
- Jammed or missing impact rollers at positions first or last.

A lock is considered to be fully effective at the corner of a ULD if the centerline of the lock head lines up with the tangency point of the ULD corner radius.

NOTE 1: **An empty ULD can be carried in any position provided at least one restraint is operable in each (forward, aft, left and right) direction. In addition, one vertical restraint on each edge (forward, aft, left and right) must be operable.**

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

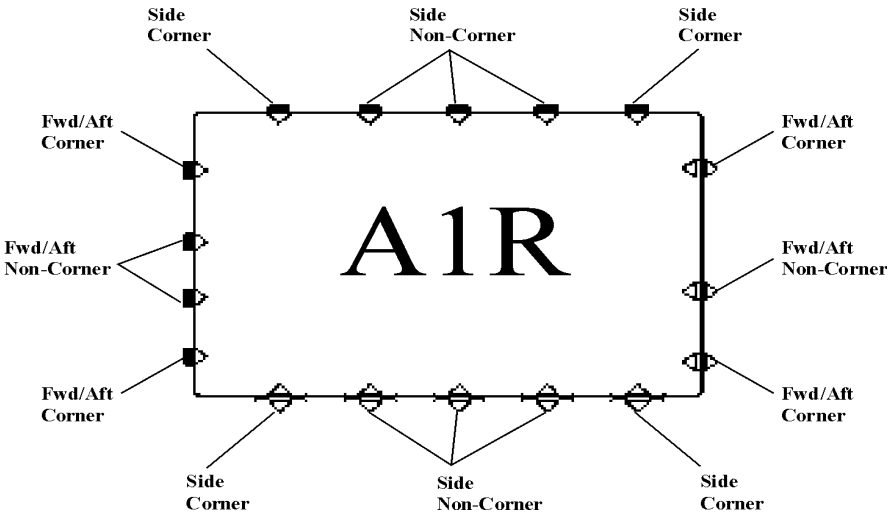
SIZE CODE A, B, M LOAD LIMITS WITH MISSING/INOPERATIVE RESTRAINTS (CONT)

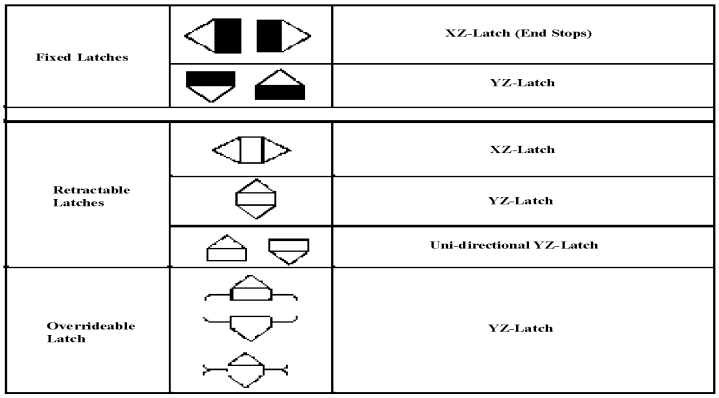
Size Code A Longitudinal (125x88 inches)

Under the following conditions reduced or no loads are required with certain equipment missing/inoperable.

Restraint systems are defined as side restraint, forward/aft restraints and vertical restraints. Each restraint direction is considered separately when missing/inoperative restraint equipment exists, (i.e. forward, aft, side left, side right and vertical loading).

Restraint symbols used in the schematic illustrations that follow are described below:





CAUTION: CARE MUST BE EXERCISED DURING LOADING AND UNLOADING OF UNIT LOAD DEVICES WHEN EQUIPMENT IS MISSING/INOPERABLE TO PREVENT DAMAGE TO AIRPLANE STRUCTURE. IT IS ADVISABLE THAT MALFUNCTIONING EQUIPMENT BE REPAIRED OR REPLACED TO PREVENT DAMAGE TO OPERATIVE EQUIPMENT.

CAUTION: WHEN A RESTRAINT IS COMMON TO RESTRAIN MORE THAN ONE ULD, THE MISSING RESTRAINT LIMIT MUST BE APPLIED TO ALL AFFECTED ULDS.

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE A, B, M LOAD LIMITS WITH MISSING/INOPERATIVE RESTRAINTS (CONT)

Size Code A Longitudinal (125x88 inches)

The following table is for one (1) missing or inoperative restraint per ULD only. This table shows the reduced maximum weight of a particular ULD depending on the missing or inoperable restraint and its location relative to the ULD.

PALLET TYPE	POSITION	NOMINAL WEIGHT		SIDE NON-CORNER		SIDE CORNER		FWD/AFT NON-CORNER		FWD/AFT CORNER	
		Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
88125	A1	5000	2268	5000	2268	4853	2201	4087	1854	4046	1835
12588	A2R	7560	3429	7073	3208	5332	2418	5359	2431	4093	1857
12588	A3R	7560	3429	5199	2358	4348	1972	5275	2393	4518	2049
12588	A4R	7560	3429	5820	2640	6471	2935	6235	2828	4515	2048
12588	A5R	7560	3429	7560	3429	7123	3231	7560	3429	4543	2061
12588	A6R	10200	3627	7527	3414	8043	3648	8014	3635	5043	2287
12588	A7R	10200	3627	5884	2669	7235	3282	7191	3262	5410	2454
12588	A8R	7560	3429	6381	2895	4089	1855	6891	3126	3131	1420
12588	A9R	7560	3429	6036	2738	4466	2026	6723	3049	3282	1489
12588	A10R	7560	3429	5307	2407	6304	2859	6310	2862	3651	1656
12588	A11R	7560	3429	5220	2368	6052	2745	6074	2755	3967	1799
12588	A12R	7560	3429	5222	2369	4359	1977	5597	2539	3021	1370
12588	A2L	7560	3429	7235	3282	5103	2315	5041	2286	3315	1504
12588	A3L	7560	3429	6595	2992	5269	2390	5707	2589	4956	2248
12588	A4L	7560	3429	7317	3319	7030	3189	5633	2555	4515	2048
12588	A5L	7560	3429	7560	3429	7560	3429	7560	3429	4544	2061
12588	A6L	10200	3627	7335	3327	8282	3757	8014	3635	5028	2281
12588	A7L	10200	3627	5884	2669	7235	3282	7191	3262	5410	2454
12588	A8L	7560	3429	6381	2895	4089	1855	6891	3126	3131	1420
12588	A9L	7560	3429	6036	2738	4466	2026	6723	3049	3282	1489
12588	A10L	7560	3429	5307	2407	6304	2859	6310	2862	3651	1656
12588	A11L	7560	3429	5220	2368	6052	2745	6074	2755	3967	1799
12588	A12L	7560	3429	5222	2369	4359	1977	5091	2309	3021	1370
88125	A13	6000	2722	3744	1698	2315	1050	3495	1585	2968	1346

NOTE: For missing restraint schematic illustration see 1-67-004 (page 4).

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE A, B, M LOAD LIMITS WITH MISSING/INOPERATIVE RESTRAINTS (CONT)

Size Code B Longitudinal (108x88 inches)

The following table is for one (1) missing or inoperative restraint per ULD only. This table shows the reduced maximum weight of a particular ULD depending on the missing or inoperable restraint and its location relative to the ULD.

PALLET TYPE	POSITION	NOMINAL WEIGHT		SIDE NON-CORNER		SIDE CORNER		FWD/AFT NON-CORNER		FWD/AFT CORNER	
		Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
88108	B1	5000	2268	4076	1849	3090	1402	3545	1608	2479	1125
10888	B2R	6540	2966	4619	2096	4649	2109	4638	2104	3236	1468
10888	B3R	6540	2966	4043	1834	2140	971	5581	2532	3465	1572
10888	B4R	6540	2966	5218	2368	4400	1996	5581	2532	3396	1541
10888	B5R	6540	2966	4878	2213	4181	1897	6092	2764	3396	1541
10888	B6R	8829	4005	6542	2968	4414	2003	5825	2643	3407	1546
10888	B7R	8829	4005	6015	2729	4687	2127	5825	2643	3568	1619
10888	B8R	6540	2966	5101	2314	3395	1540	5797	2630	2753	1249
10888	B9R	6540	2966	4688	2127	3044	1381	5456	2475	2626	1191
10888	B10R	6540	2966	4678	2123	3328	1510	5295	2402	2552	1158
10888	B11R	6540	2966	5281	2396	3219	1461	5150	2336	2461	1117
10888	B12R	6540	2966	4749	2154	2853	1294	4914	2229	2383	1081
10888	B13R	6540	2966	4115	1867	2680	1216	3892	1766	2397	1088
10888	B2L	6540	2966	4612	2093	2806	1273	4360	1978	2867	1301
10888	B3L	6540	2966	3909	1774	2140	971	5539	2513	3397	1541
10888	B4L	6540	2966	5178	2349	4400	1996	5551	2519	3401	1543
10888	B5L	6540	2966	4878	2213	4181	1897	6038	2740	3401	1543
10888	B6L	8829	4005	6542	2968	4414	2003	5825	2643	3407	1546
10888	B7L	8829	4005	6015	2729	4687	2127	5825	2643	3568	1619
10888	B8L	6540	2966	5101	2314	3395	1540	5797	2630	2753	1249
10888	B9L	6540	2966	4688	2127	3044	1381	5456	2475	2626	1191
10888	B10L	6540	2966	4678	2123	3328	1510	5295	2402	2552	1158
10888	B11L	6540	2966	5218	2396	3219	1461	5150	2336	2461	1117
10888	B12L	6540	2966	4749	2154	2853	1294	4914	2229	2383	1081
10888	B13L	6540	2966	4115	1867	2680	1216	3892	1766	2397	1088
88108	B14	6000	2722	4073	1848	2315	1050	3266	1482	2611	1185

NOTE: **For missing restraint schematic illustration see 1-67-004 (page 4).**

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE A, B, M LOAD LIMITS WITH MISSING/INOPERATIVE RESTRAINTS (CONT)

Size Code M Longitudinal (125x96 inches)

The following table is for one (1) missing or inoperative restraint per ULD only. This table shows the reduced maximum weight of a particular ULD depending on the missing or inoperable restraint and its location relative to the ULD.

PALLET TYPE	POSITION	NOMINAL WEIGHT		SIDE NON-CORNER		SIDE CORNER		FWD/AFT NON-CORNER		FWD/AFT CORNER	
		Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
88125	A1	5000	2268	5000	2268	4853	2201	4087	1854	4046	1835
12596	C2	10700	4853	7350	3334	5278	2394	8228	3732	4821	2187
12596	C3	10700	4853	8484	3848	5268	2390	5952	2700	5207	2362
12596	C4	10700	4853	7127	3233	6208	2816	8228	3732	4821	2187
12596	C5	10700	4853	10700	4853	8986	4076	10632	4823	6230	2826
12596	C6	15000	6804	9578	4344	7987	3623	10632	4823	6231	2826
12596	C7	15000	6804	10644	4828	8133	3689	10632	4823	4704	2134
12596	C8	10700	4853	10395	4715	8069	3660	10632	4823	4704	2134
12596	C9	10700	4853	9922	4500	6941	3149	9449	4286	6230	2826
12596	C10	10700	4853	9442	4283	7300	3311	10004	4538	6230	2826
12596	C11	10700	4853	9359	4245	7340	3329	9812	4450	6230	2826
12596	C12	10700	4853	7390	3352	5882	2668	8620	3910	6230	2826
88125	A13	6000	2722	3744	1698	2315	1050	3495	1585	2968	1346

NOTE: **For missing restraint schematic illustration see 1-67-004 (page 4).**

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE A, B, M LOAD LIMITS WITH MISSING/INOPERATIVE RESTRAINTS (CONT)

Size Code A Lateral (88x125 inches)

The following table is for one (1) missing or inoperative restraint per ULD only. This table shows the reduced maximum weight of a particular ULD depending on the missing or inoperable and restraint and its location relative to the ULD.

PALLET TYPE	POSITION	NOMINAL WEIGHT		SIDE NON-CORNER		SIDE CORNER		FWD/AFT NON-CORNER		FWD/AFT CORNER	
		Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
88125	A1	5000	2268	5000	2268	4853	2201	4087	1854	4046	1835
88125	D2	7565	3431	7565	3431	6200	2812	6458	2929	6220	2822
88125	D3	7565	3431	5923	2687	4550	2064	5454	2474	4772	2165
88125	D4	7565	3431	7565	3431	5793	2628	7265	3431	5403	2451
88125	D5	7565	3431	7565	3431	7565	3431	6462	2931	5713	2591
88125	D6	7565	3431	7565	3431	7565	3431	6401	2903	5049	2290
88125	D7	10680	4844	8438	3827	9634	4370	6488	2943	5180	2350
88125	D8	10680	4844	7322	3321	10501	4763	8378	3800	5834	2646
88125	D9	7565	3431	7565	3431	7565	3431	7459	3383	4404	1998
88125	D10	7565	3431	7565	3431	7271	3298	7045	3196	4404	1998
88125	D11	7565	3431	7157	3246	6369	2889	7299	3311	4396	1994
88125	D12	7565	3431	6779	3075	5709	2589	6987	3169	4113	1865
88125	D13	7565	3431	6481	2940	5138	2330	6732	3053	3869	1755
88125	D14	7565	3431	6264	2841	4699	2132	6516	2956	3661	1660
88125	D15	7565	3431	5957	2702	4306	1953	5921	2686	3342	1516
88125	D16	7565	3431	5727	2598	3993	1811	5685	2579	3250	1474
88125	A13	6000	2722	3744	1698	2315	1050	3495	1585	2968	1346

NOTE: **For missing restraint schematic illustration see 1-67-004 (page 4).**

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE A, B, M LOAD LIMITS WITH MISSING/INOPERATIVE RESTRAINTS (CONT)

Size Code M Lateral (96x125 inches)

The following table is for one (1) missing or inoperative restraint per ULD only. This table shows the reduced maximum weight of a particular ULD depending on the missing or inoperable and restraint and its location relative to the ULD.

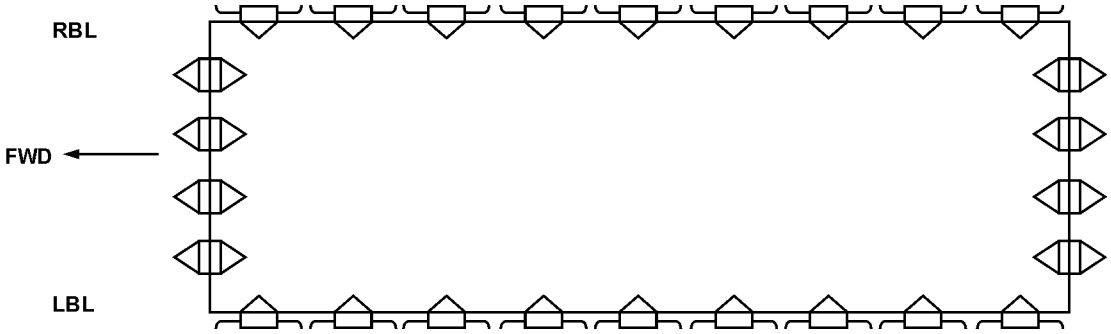
PALLET TYPE	POSITION	NOMINAL WEIGHT		SIDE NON-CORNER		SIDE CORNER		FWD/AFT NON-CORNER		FWD/AFT CORNER	
		Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.	Lbs.	Kg.
88125	A1	5000	2268	5000	2268	4853	2201	4087	1854	4046	1835
96125	E2	8245	3740	8245	3740	6447	2924	6687	3033	6547	2970
96125	E3	8245	3740	6399	2903	4550	2064	5455	2474	4772	2165
96125	E4	8245	3740	8055	3654	5731	2599	8245	3740	5561	2522
96125	E5	8245	3740	8245	3740	8245	3740	8245	3740	5834	2646
96125	E6	8245	3740	8245	3740	8245	3740	6774	3073	4704	2134
96125	E7	11600	5262	8961	4065	9860	4472	6650	3016	5481	2486
96125	E8	11600	5262	7534	3417	9574	4343	8499	3855	5420	2458
96125	E9	11600	5262	9040	4101	9754	4424	8140	3692	5555	2520
96125	E10	8245	3740	7832	3552	6761	3067	7678	3483	4264	1934
96125	E11	8245	3740	7651	3471	5928	2689	7320	3320	3978	1804
96125	E12	8245	3740	7576	3437	5279	2394	7065	3205	4227	1917
96125	E13	8245	3740	6760	3066	8245	3740	6755	3064	5834	2646
96125	E14	8245	3740	7032	3189	4354	1975	6045	2742	3921	1779
96125	E15	8245	3740	6580	2985	6166	2797	5736	2602	4404	1998
88125	A13	6000	2722	3744	1698	2315	1050	3495	1585	2968	1346

NOTE: **For missing restraint schematic illustration see 1-67-004 (page 4).**

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE R AND ENGINE PALLET LOAD LIMITS

Size code R (196x96 inches)



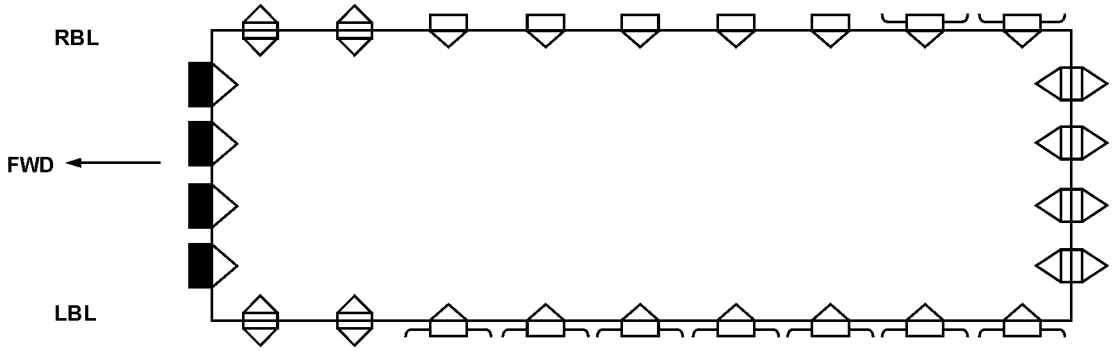
MAXIMUM ALLOWABLE LOADS AS LIMITED BY RESTRAINT			
RESTRAINT		UNITS	POSITION
DIRECTION	NUMBER		STA 805.95 - 1001.95
Maximum Load		LB	15000
		KG	6803
Vertical	26	LB	15000
		KG	6803
SIDE	9	LB	15000
		KG	6803
FWD	4	LB	15000
		KG	6803
AFT	4	LB	15000
		KG	6803

CAUTION: NO MISSING OR INOPERATIVE RESTRAINT IS ALLOWED.

MAIN DECK UNIT LOAD DEVICE LOAD LIMITS (CONT)

SIZE CODE R AND ENGINE PALLET LOAD LIMITS

Engine Pallet (188x96 inches)



MAXIMUM ALLOWABLE LOADS AS LIMITED BY RESTRAINT			
RESTRAINT		UNITS	POSITION
DIRECTION	NUMBER		STA 585.95 - 773.95
Maximum Load		LB	15000
		KG	6803
Vertical	26	LB	15000
		KG	6803
SIDE	9	LB	15000
		KG	6803
FWD	4	LB	15000
		KG	6803
AFT	4	LB	15000
		KG	6803

CAUTION: NO MISSING OR INOPERATIVE RESTRAINT IS ALLOWED.

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MAIN DECK CARGO TIEDOWN LIMITATIONS

Tiedown locations on the main deck are located only at the seat tracks at:

- RBL 73.80 & LBL 76.80 in sections 41/43 (STA 266.5 - STA 764)
- RBL & LBL 74.75 in section 45 (STA 742 - STA 1109)
- RBL & LBL 77.50 in section 46 (STA 1087 - STA 1582)
- RBL & LBL 88.50, 54.75, 33.00, 11.00 along the airplane.

General Information

Cargo loaded on or in a netted pallet or under a certified net installation will require additional tiedowns if one of the following conditions exist:

- When the shape or density of the cargo loaded could become a hazard to or damage the airplane structure.
- For restraint of non-unitized cargo.
- For certified Unit Load Devices that are limited by restraint configurations, the weight in excess of the lock hardware capability must be restrained by use of tiedowns.

Good judgement must be used in selecting the location and number of tiedowns to give sufficient safety margin for uneven strap and net stretch, strap and cargo slippage, and for varying allowables of rings used in combination. To prevent overloading of hardware, ring loops should be correctly oriented as closely as possible to the strap direction.

Tiedown Requirements

The required tiedown load for each basic direction, fwd, aft, side & up is determined from the following equation:

Applied load (for a given direction) =
(applicable load factor) x (weight of cargo to be tied down)

The sum of the restraint capability in each of the five basic restraint directions must be equal to or greater than the computed applied load in that direction.

CAUTION: UNEVEN MASS DISTRIBUTION MUST BE ACCOUNTED FOR IN DETERMINING STRAP LOADS AND SELECTING TIEDOWN POINTS.

WARNING: DO NOT MIX DIFFERENT STIFFNESSES OF TIEDOWN STRAPS (FOR EXAMPLE: KEVLAR AND NYLON WEBS) WHEN RESTRAINING CARGO. MIXING STRAP STIFFNESSES MAY CAUSE PREMATURE FAILURE OF THE STIFFER STRAP.

The use of chains for tiedowns is not recommended.

MAIN DECK CARGO TIEDOWN LIMITATIONS (CONT)

Tiedown Load Factors

The load factors shown in the table below must be used to determine the applied load:

FROM BS TO BS	VERTICAL	LATERAL	FWD/AFT
203.5 - 945.0	2.30	0.80	1.50
945.0 - 1683.0	2.30 to 3.30	0.80 to 2.15	1.50

Tiedown Fitting Load Limits

The table below shows the allowable tiedown loads for use of double tension stud fittings at:

- RBL 73.80 & LBL 76.80 in sections 41/43 (STA 266.5 - STA 764)
- RBL & LBL 74.75 in section 45 (STA 742 - STA 1109)
- RBL & LBL 77.50 in section 46 (STA 1087 - STA 1582)
- RBL & LBL 54.75, 33.00, 11.00 along the airplane.

22 Inch minimum spacing between any two tiedowns or between a tiedown and an end lock being used to restrain a ULD.

	FLOOR ANGLE (°)	SIDEWALL ANGLE (°)			
		0	30	60	90
		ALLOWABLE LOAD			
		LB	LB	LB	LB
Fwd/Aft	0	3330	1420	580	0
	30	2780	1320	560	0
	60	2110	1150	520	0
	90	0	0	0	0
Side	0	0	820	1010	1120
	30	0	760	970	1080
	60	0	660	900	1010
	90	0	0	0	0
Up	0	0	0	0	0
	30	1310	880	650	620
	60	3650	2310	1800	1750
	90	5000	5000	5000	5000

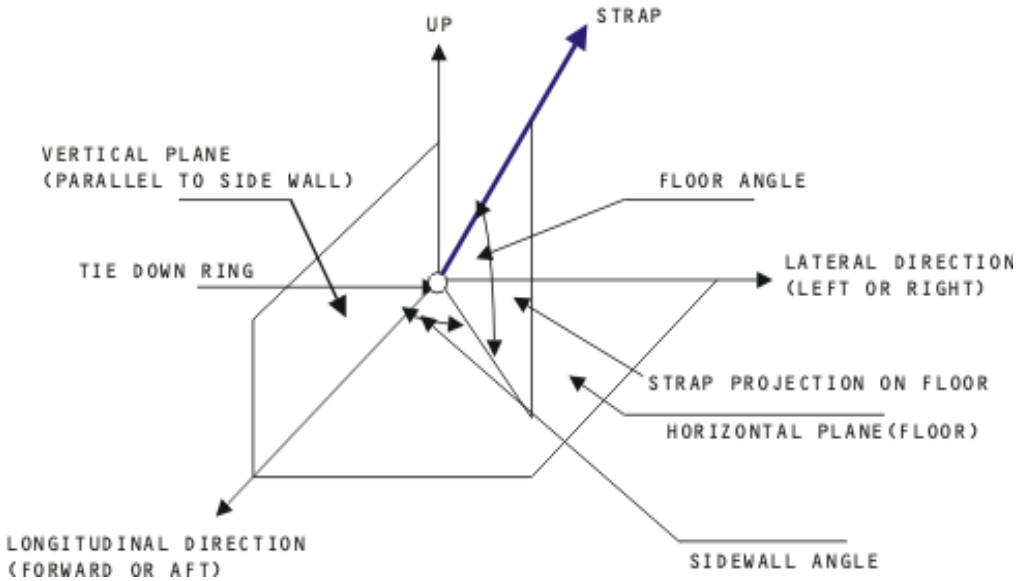
MAIN DECK CARGO TIEDOWN LIMITATIONS (CONT)

Tiedown Fitting Load Limits (Cont)

The table below shows the allowable Tie down loads for use of double tension stud fittings for BBL 88.50-22” minimum spacing between any two Tie downs or between a Tie down and an end lock being use to restrain a ULD.

	FLOOR ANGLE (°)	SIDEWALL ANGLE (°)			
		0	30	60	90
		ALLOWABLE LOAD			
		LB	LB	LB	LB
Fwd/Aft	0	3330	1420	580	0
	30	2780	1320	560	0
	60	1540	1150	520	0
	90	0	0	0	0
Side	0	0	820	1010	1120
	30	0	760	970	1080
	60	0	660	900	1010
	90	0	0	0	0
Up	0	0	0	0	0
	30	1610	880	650	620
	60	2670	2310	1800	1750
	90	3000	3000	3000	3000

TIE DOWN ANGLES



MAIN DECK CARGO TIEDOWN LIMITATIONS (CONT)

Tiedown Fitting Load Limits (Cont)

Tiedown Example

The size code M pallet shown below is located on the main deck in position E2 and has a weight of 8245 lb. (See section 1-67-004 page 1).

In addition 1 side restraint is missing/inoperative.

The missing/inoperative restraint reduces the allowable load that can be restrained by the existing hardware to 7233 lb. (See section 1-67-004 page 16).

All other locks are present and are able restrain 8245 lb in the applicable directions.

The cargo mass is evenly distributed.

The weight that is in excess of the value given in section 1-67-004 must be restrained by the use of tiedowns. In this example that weight is:

8245 - 7233 = 1012 lb

The sidewall angle is assumed to be 90°. Double stud fittings are used.

The calculation requires as follows:

Check tiedown for side load:

(applicable load factor, see page 2 of this section) X (excess weight of cargo to be tied down) = applied load (for a given direction)

0.800 X 1012 = 809.60 lb

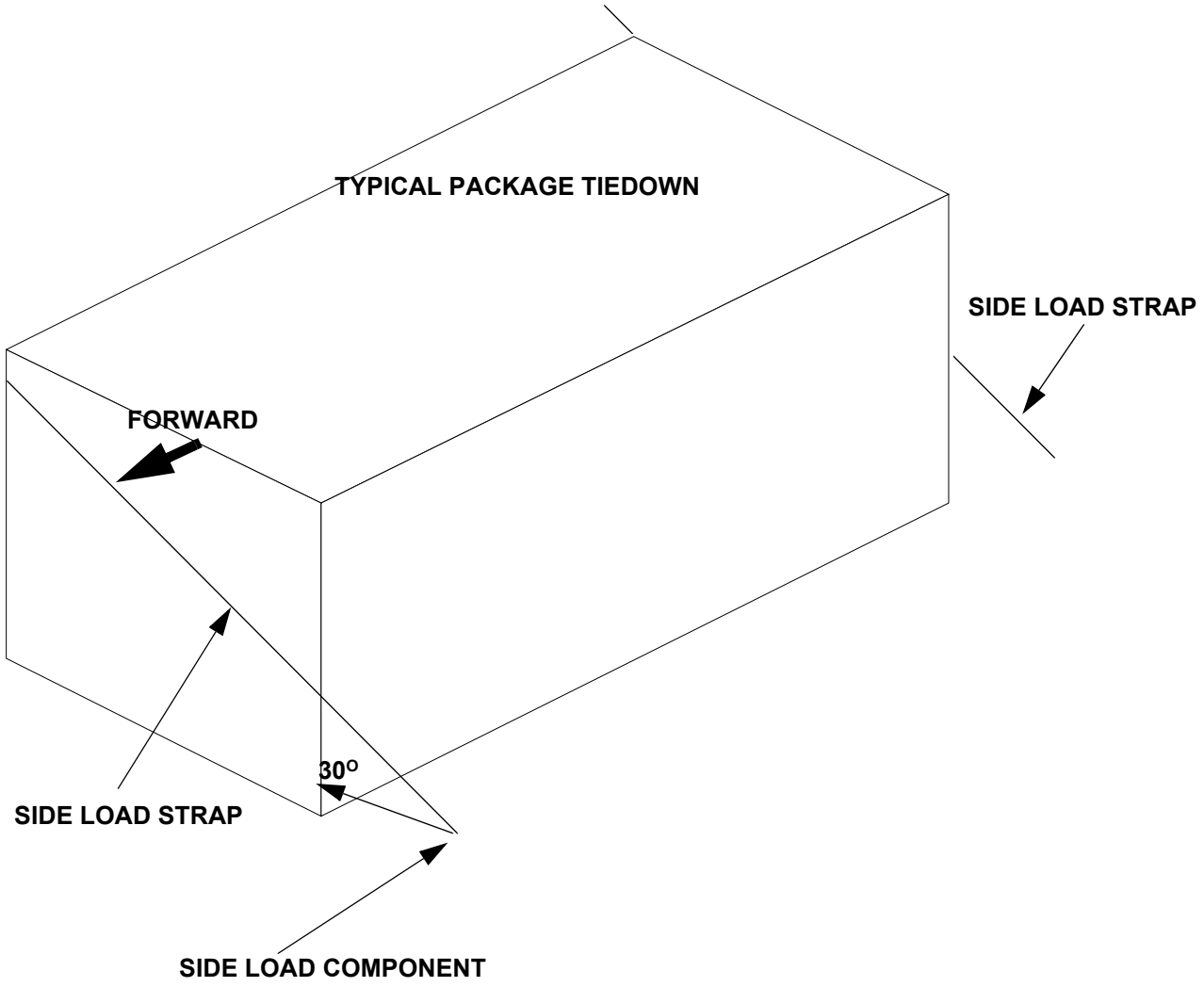
The tiedown in the above configuration supplies a restraint load of
2 X 1080 lb = 2160 lb which is higher than 809.60 lb, thus the drawn tiedown strap is acceptable.

The value of 1080 lb is for floor angle of 30° and a sidewall angle of 90°.

See page 2 in this section.

MAIN DECK CARGO TIEDOWN LIMITATIONS (CONT)

Tiedown Fitting Load Limits (Cont)



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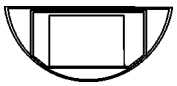
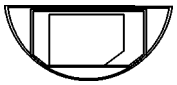
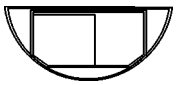
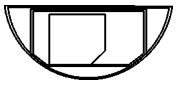
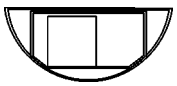
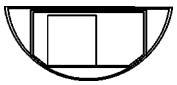
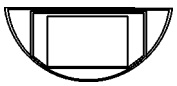
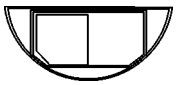
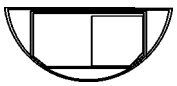
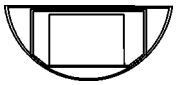
CARGO LATERAL IMBALANCE AND MAIN DECK ULD'S CONTROL

Allowable B.B.L.'s for cargo loaded into unit load devices in the lower decks are shown in the following table.

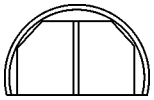
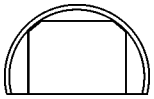
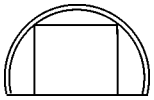
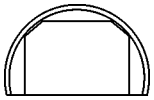
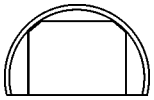
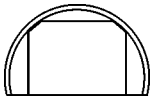
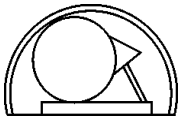
UNIT LOAD DEVICE LATERAL CENTER OF GRAVITY RANGE					
SIZE CODE	COMMON NAME	ORIENTATION REAR VIEW	ALLOWABLE LATERAL C.G		
			LEFT MOST B.B.L. - IN.	NOMINAL B.B.L. - IN.	RIGHT MOST B.B.L. - IN.
A	P1 LD-7 LD-9		-12.8	-4.0	+4.8
K	LD-1		-23.4	-17.2	-11.0
	LD-3		-23.4	-17.2	-11.0
			-23.4	-17.2	-11.0
L	LD-5 LD-10 LD-11		-23.2	-17.2	-11.2
	Half Pallet		-23.2	-17.2	-11.2
M	P6		-9.6	0.0	+9.6
P	LD-2		-28.8	-24.1	-19.4
			+19.4	+24.1	+28.8

UNIT LOAD DEVICE LATERAL CENTER OF GRAVITY RANGE					
SIZE CODE	COMMON NAME	ORIENTATION REAR VIEW	ALLOWABLE LATERAL C.G		
			LEFT MOST B.B.L. - IN.	NOMINAL B.B.L. - IN.	RIGHT MOST B.B.L. - IN.
Q	LD-4		-9.6	0.0	+9.6
	LD-8		-9.6	0.0	+9.6

CAUTION: THE ADDITIONAL CENTER OF GRAVITY ENVELOPE RESTRICTIONS PROVIDED IN CHAP-SEC 1-63-0XX MUST BE OBSERVED FOR ALL UNIT LOAD DEVICES.

CARGO LATERAL IMBALANCE AND MAIN DECK ULD'S CONTROL (CONT)

Allowable B.B.L.'s for cargo loaded in the main deck are shown in the following table.

UNIT LOAD DEVICE LATERAL CENTER OF GRAVITY RANGE							
CONF	SIZE CODE *	ULD SIZE (1)	ORIENTATION REAR VIEW	ALLOWABLE LATERAL C.G			
				B.B.L. CG - IN	CG TOL. IN	RIGHT ±CG B.B.L. - IN	LEFT ±CG B.B.L. - IN
A	A (LONG)	125" X 88"		±44.5	±8.8	+53.3/ +35.7	-35.7/ -53.3
B	B (LONG)	108" X 88"		0	±8.8	+8.8	-8.8
C	M (LONG)	125" X 96"		0	±9.6	+9.6	-9.6
D	A (LAT)	88" X 125"		0	±12.5	+12.5	-12.5
E	M (LAT)	96" X 125"		0	±12.5	+12.5	-12.5
G1	R	196" X 96"		0	±9.6	+9.6	-9.6
G2	P	196" X 96"		0	±9.6	+9.6	-9.6

CAUTION: THE ADDITIONAL CENTER OF GRAVITY ENVELOPE RESTRICTIONS MUST BE OBSERVED FOR ALL UNIT LOAD DEVICES, SEE SAMPLE 2.

NOTES: (1) The first dimension is along the aircraft axis.

(2) Cargo may be loaded into unit load devices, or loaded on pallets with the allowable B.B.L. for each position.

***LONG. - LONGITUDINAL**
LAT. - LATERAL

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CARGO LATERAL IMBALANCE LIMITATIONS

GROSS WEIGHT LIMITATIONS VERSUS CLIM AND MAIN DECK LOADING

The following charts show the allowable taxi weight with cargo lateral imbalance moment (CLIM) and main deck loadings. For immediate values, use straight line interpolation. The values are for Zcg 42 in (average).

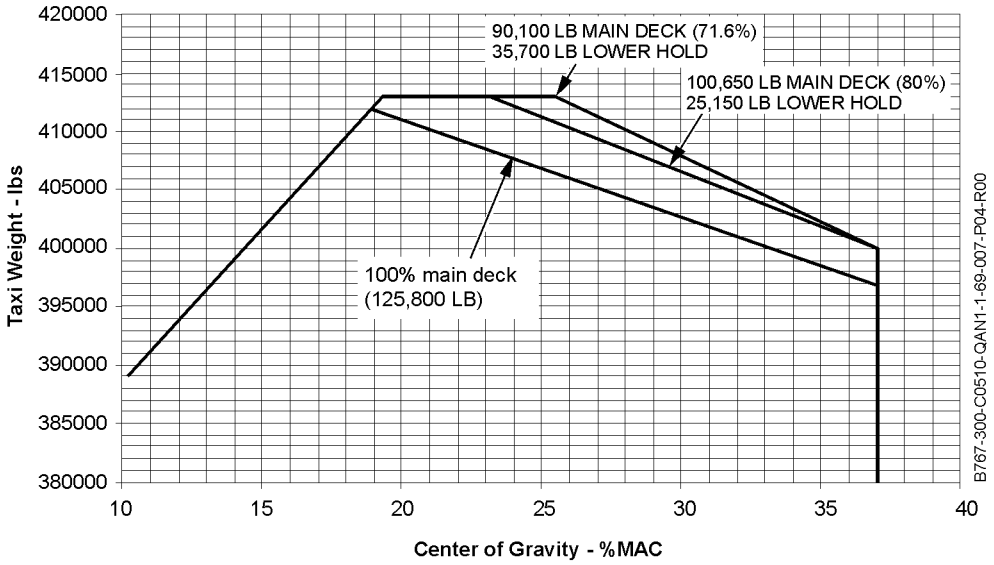
Data points defining lines of constant CLIM are provided in the following tables. Intermediate values may be determined by using linear interpolation.

CARGO LATERAL IMBALANCE LIMITATIONS

GROSS WEIGHT LIMITATIONS VERSUS CLIM AND MAIN DECK LOADING

Cargo Lateral Imbalance Moment (Gross Weight in LB) for Vertical C.G. up to 42 INS

Required Lower Hold Payload



Loading Limits with 42 inch ULD Zcg

CLIM (IN-LB)	MINIMUM LOWER DECK PAYLOAD REQUIRED (LBS)	GROSS WEIGHT (LBS)	CG (%MAC)
1570000	25150	413000	23.10
1570000	25150	400000	37.00
1570000	0	411900	18.88
1570000	0	396800	37.00
1570000	35700	413000	25.50

NOTES:

(1) The cargo lateral imbalance moment (CLIM) must not exceed 1570000 lb-in, including the lateral imbalance moment from the asymmetric positioning of pallet A1.

(2) The cargo lateral imbalance moment (CLIM) must not exceed 1480000 lb-in if the lateral imbalance from the asymmetric positioning of pallet A1 is ignored.

(3) Zero lateral fuel imbalance (FLIM=0) is required.

(4) Lower cargo hold payload required for any aircraft gross weight and center of gravity position above the 100% main deck payload line shown.

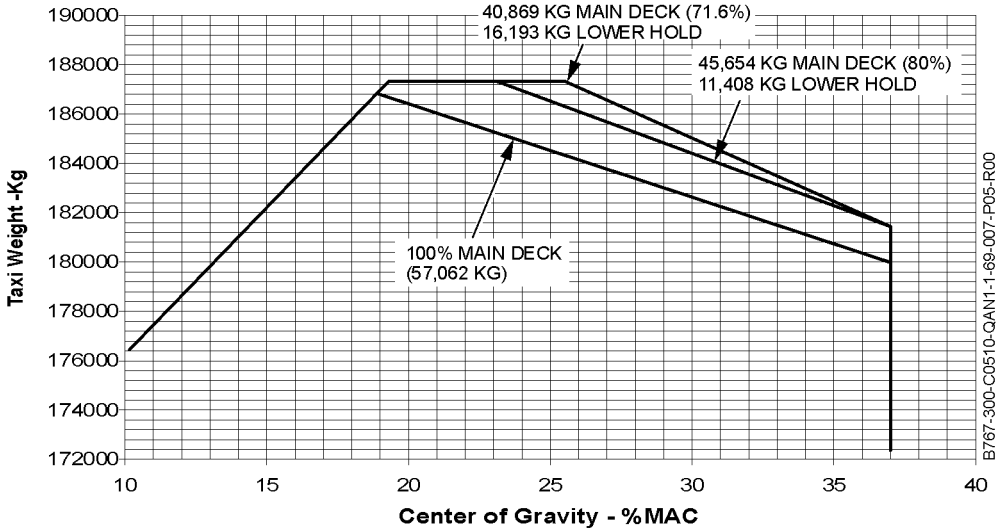
(5) The maximum payload on the main deck cargo is 125,000 lb.

CARGO LATERAL IMBALANCE LIMITATIONS (CONT)

GROSS WEIGHT LIMITATIONS VERSUS CLIM AND MAIN DECK LOADING

Cargo Lateral Imbalance Moment (Gross Weight in KG) for Vertical C.G. up to 42 INS

Required Lower Hold Payload



Loading Limits with 42 inch ULD Zcg

CLIM (IN-KG)	MIMINUM LOWER DECK PAYLOAD REQUIRED (KG)	GROSS WEIGHT (KG)	CG (%MAC)
712140	11408	187334	23.10
712140	11408	181437	37.00
712140	0	186835	18.88
712140	0	179985	37.00
712140	16193	187334	25.50

NOTES:

(1) The cargo lateral imbalance moment (CLIM) must not exceed 712140 kg-in, including the lateral imbalance moment from the asymmetric positioning of pallet A1.

(2) The cargo lateral imbalance moment (CLIM) must not exceed 671317 kg-in if the lateral imbalance from the asymmetric positioning of pallet A1 is ignored.

(3) Zero lateral fuel imbalance (FLIM=0) is required.

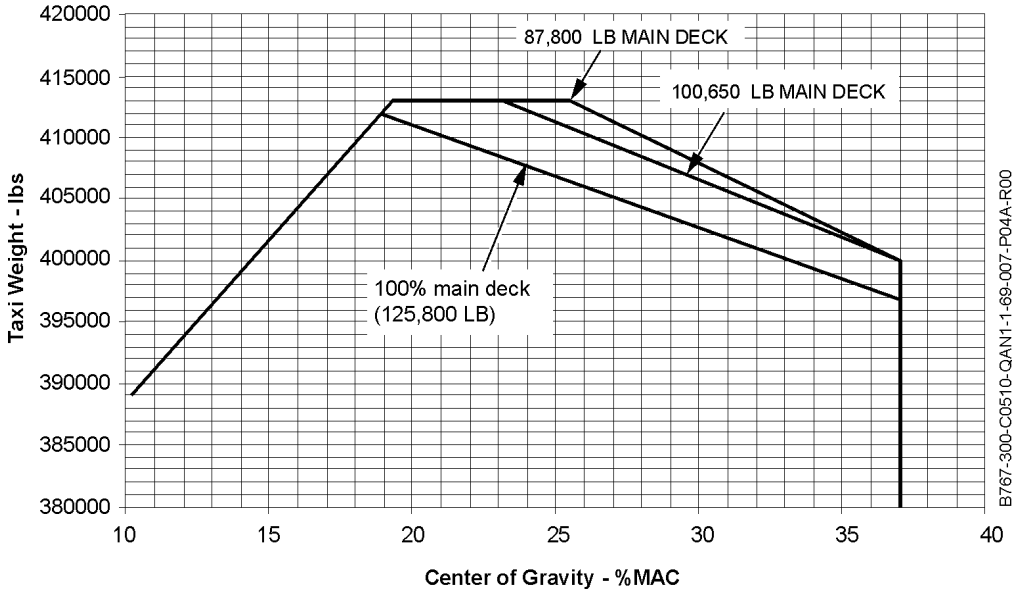
(4) Lower cargo hold payload required for any aricraft gross weight and center of gravity position above the 100% main deck payload line shown.

(5) The maximum payload on the main deck cargo is 56,700 kg

CARGO LATERAL IMBALANCE LIMITATIONS (CONT)

GROSS WEIGHT LIMITATIONS VERSUS CLIM AND MAIN DECK LOADING

Cargo Lateral Imbalance Moment (Gross Weight in LB) for Vertical C.G. up to 42 INS Without Lower Cargo Hold Loading



Loading Limits with 42 inch ULD Zcg

CLIM (IN-LB)	MIMINUM LOWER DECK PAYLOAD REQUIRED (LBS)	GROSS WEIGHT (LBS)	CG (%MAC)
1570000	0	413000	23.00
1570000	0	400000	37.00
1570000	0	411900	18.88
1570000	0	396800	37.00
1570000	0	413000	25.50

NOTES:

(1) The cargo lateral imbalance moment (CLIM) must not exceed 1570000 lb-in, including the lateral imbalance moment from the asymmetric positioning of pallet A1

(2) The cargo lateral imbalance moment (CLIM) must not exceed 1480000 lb-in if the lateral imbalance from the asymmetric positioning of pallert A1 is ignored.

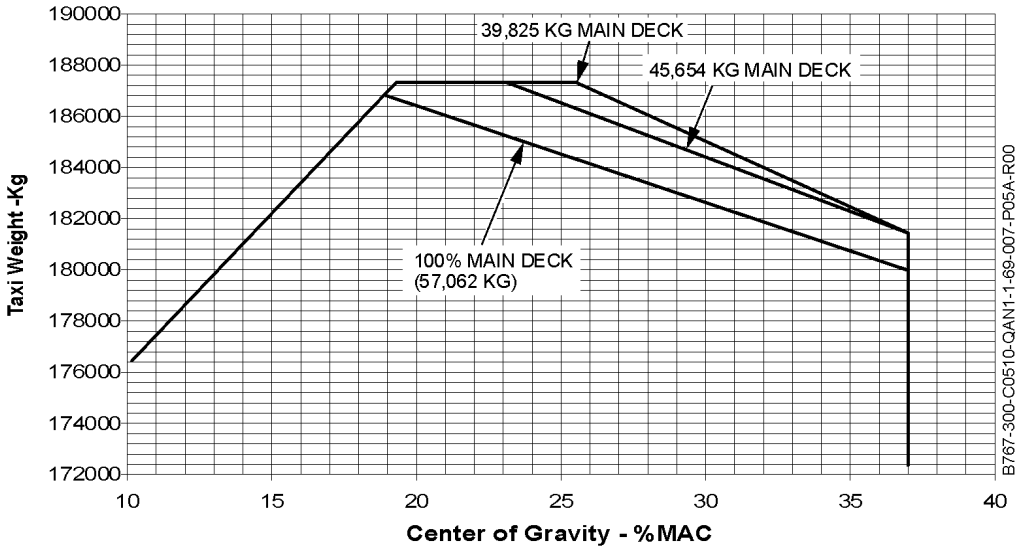
(3) Zero lateral fuel imbalance (FLIM=0) is required.

(4) The maximum payload on the main deck cargo is 125,000 lb.

CARGO LATERAL IMBALANCE LIMITATIONS (CONT)

GROSS WEIGHT LIMITATIONS VERSUS CLIM AND MAIN DECK LOADING

Cargo Lateral Imbalance Moment (Gross Weight in LB) for Vertical C.G. up to 42 INS Without Lower Cargo Hold Loading



Loading Limits with 42 inch ULD Zcg

CLIM (IN-KG)	MIMINUM LOWER DECK PAYLOAD REQUIRED (KG)	GROSS WEIGHT (KG)	CG (%MAC)
712140	0	187334	23.00
712140	0	181437	37.00
712140	0	186835	18.88
712140	0	179985	37.00
712140	0	187334	25.50

NOTES:

(1) The cargo lateral imbalance moment (CLIM) must not exceed 712140 kg-in, including the lateral imbalance moment from the asymmetric positioning of pallet A1

(2) The cargo lateral imbalance moment (CLIM) must not exceed 671317 kg-in if the lateral imbalance from the asymmetric positioning of pallert A1 is ignored.

(3) Zero lateral fuel imbalance (FLIM=0)is required.

(4) The maximum payload on the main deck cargo is 56,700 kg

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TIPPING LIMITATION - TAIL JACK

CRITERIA FOR PUTTING TAIL JACK IN PLACE.

CAUTION: IF AT ANY STAGE DURING THE GROUND LOADING OF THE AIRPLANE, THE TOTAL PAYLOAD AFT OF BA 1065 EXCEEDS 25,000 LB (11,340 KG), THE TAIL JACK MUST BE IN PLACE.

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