DAFTAR PUSTAKA

[1] W&B Hand Book, 2007, U.S. Department of Transportation Federal Aviation Administration Flight Standards Service.

[2] WBM Boeing 737-300 Zhonguan Airlines

[3] Weight and Balance Equipment – Scale.

[4] Kartia, Sukmaprima, 2006, Analisis Kinerja Load Control dalam Penentuan weight and Balance. Yogyakarta: Gapura Angkasa Bandar Udara Internasional.

[5] Desta Fredy, 2017, Jurnal: Analisis Weight And Balance Pesawat Boeing Maskapai Garuda Indonesia Rute Penerbangan Jakarta-Surabaya Dengan Menggunakan Perhitungan Manual

[6] Mantak Fernando P, 2011, Proses Pembuatan Load Sheet Untuk Menentukan Center of Gravity Jika Terjadi Last Minute Changes (LMC) dan Estimasi Take-Off Length Pesawat Boeing 737-400 PK-GZP.

[7] Irsal Firmansyah, 2012, Jurnal : Analisis Penentuan Weight and Balance Angkasa Aviation Service.

[8] Ilmuterbang, 2008, Artikel: Aerodinamika Penerbangan Gaya-Gaya Yang Berkerja Pada Pesawat Terbang.

[9] J. W. Rustenburg, D. Skinn, and Daniel O. Tipps, 1999, An Evaluation of Methods to Separate Maneuver and Gust Load Factors From Measuref Acceleration Time.

[10] Rr.Sukmaprima, 2013, Skripsi: Analisis Load Control dalam Penentuan Weight and Balance Pesawat Boeing 737- 800.

LAMPIRAN

AIRCRAFT WEIGHT REPORT

A/C REG	: PK MYT	DATE	: 29 JULI 2022
A/C TYPE	: B 737 - 300	WEIGHING EQ.	: LOAD CELL
A/C S/N	: 23598	P/N	: M 2000 - 3 - 250 CS
PROPERTY OF	: MY INDO AIRLINES	S/N	: 17 - 11339
PLACE	: BANDUNG	CAL. EXPIRED DATE	: 23 JUNE 2023

REASON OF WEIGHING : AFTER INSPECTION C CHECK

TARE ; RED : 0 CORRECTION ; RED : 0
YELLOW : 0 YELLOW : 0
BLUE : 0 BLUE : 0

MEASUREMENT-1		
POS	CELL	POUND / ~~KG~~
LH	BLUE	33 915
RH	YELL	32 795
NOSE	RED	10 960
		77 670

MEASUREMENT-2		
POS	CELL	POUND / ~~KG~~
LH	YELL	33 825
RH	BLUE	32 855
NOSE	RED	10 945
		77 625

MEASUREMENT-3 (If Req)		
POS	CELL	POUND / KG
LH		
RH		
NOSE		

FUEL : LH TANK : 5010 lb = 2892 ltr RH TANK : 4600 lb = 2613 ltr CENTER TANK : 620 lb = 352 ltr

COLUMN I (-) (ITEM WEIGHED BUT NOT PART OF EMPTY)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

COLUMN II (+) (BASIC ITEMS NOT INCLUDED WHEN WEIGHED)			
1.	APU	432 lb	1217 in
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Convert
1 Kg = 2,204623 Pound
1 Pound = 0,4535924 Kg
1 Meter = 39,37008 Inch
1 Inch = 0,0254 Meter

RECORDED BY,

A. CHAERONI

IAS INDOPELITA
Member of PT Pertamina (Persero)

Kantor Pusat :
Hangar IV Bandara Pondok Cabe
Tangerang Selatan, Banten 15418
Indonesia

Phone : (021) 7429310-13
Fax : (021) 7490634
Website : www.indopelita.co.id

AIRCRAFT WEIGHT AND C.G. DETERMINATION

No. : PE - 005/IAS/WB/VIII/2022
Date : 29 July 2022

AIRCRAFT REGISTRATION	:	PK-MYY
AIRCRAFT TYPE	:	BOEING 737-300F
AIRCRAFT SERIAL NUMBER	:	23598
PROPERTY OF	:	PT. MY INDO AIRLINES
PLACE OF WEIGHING	:	HUSEIN SASTRANEGARA BANDUNG
REASON OF WEIGHING	:	AFTER INSPECTION C CHECK
WEIGHING EQUIPMENT	:	LOAD CELL P/N. M2000-3-250CS S/N. 17-11339 Calibration Due : June 23, 2023

PERFORMED BY	:	GILANG RAMDAHAN
CHECKED BY	:	ACHMAD CHAERONI

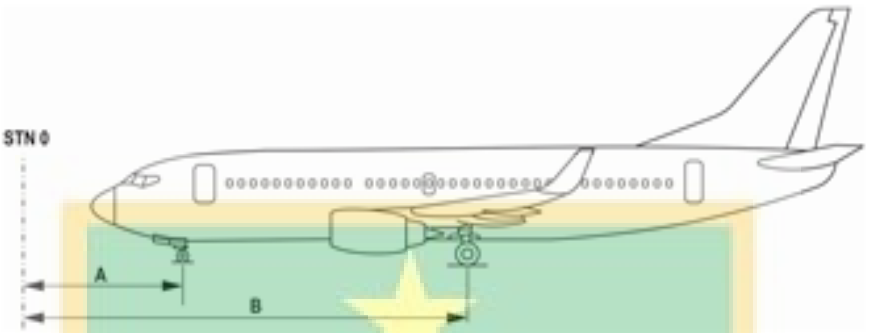
EMPTY WEIGHT	:	**87,818.61 Lbs**
EMPTY C.G.FROM DATUM LINE	:	**633.41 Inch**
MAC %	:	**5.80 %**

COMPANY APPROVAL :

SUHANDI
HSE & QUALITY ASSURANCE VP

AIRCRAFT WEIGHT AND C.G. DETERMINATION

TYPE OF AIRCRAFT
BOEING 737-300F / CARGO TYPE



A = 207.51 Inches
B = 698.11 Inches

REACTION (Wheel Jack Point etc..)	AVERAGE Scale Reading (Lbs)	ARM (Inch)	MOMENT (Lbs.Inch)
LEFT MAIN	33,870.00	698.11	23,644,365.70
RIGHT MAIN	32,825.00	698.11	22,915,460.75
SUB TOTAL	66,695.00	698.11	46,560,446.45
NOSE	10,952.50	207.51	2,272,753.28
TOTAL AS WEIGHED	77,647.50	628.91	48,833,199.73

ITEM INCLUDED IN EMPTY WEIGHT :
1. Aircraft in Cargo Type
2. See Standard Item List
3. Lavatory removed

REMARKS :
Aircraft Weight at : 1. Nose Wheel Jack Point
2. Main Wheel Jack Point

AIRCRAFT WEIGHT AND C.G. DETERMINATION

COLUMN I

ITEM WEIGHED BUT NOT PART OF EMPTY	WEIGHT (Lbs)	LONGITUDINAL ARM (Inch)	LONGITUDINAL MOMENT (Lbs.Inch)
Fuel Main Tank	9,620.00	825.40	8,016,348.00
Fuel Center Tank	620.00	600.90	372,558.00
Plumb Bob	0.99	885.00	876.15
-	-	-	-
-	-	-	-
-	-	-	-
TOTAL	10,240.99	823.92	8,389,584.15

COLUMN II

BASIC ITEMS NOT INCLUDED WHEN WEIGHED	WEIGHT (Lbs)	LONGITUDINAL ARM (Inch)	LONGITUDINAL MOMENT (Lbs.Inch)
APU	432.00	1,217.00	525,744.00
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
TOTAL	432.00	1,217.00	525,744.00

AIRCRAFT WEIGHING RECORD

DESCRIPTION	WEIGHT (Lbs)	ARM (Inch)	MOMENT (Lbs.Inch)
TOTAL AS WEIGHED	77,847.50	828.91	48,833,199.73
WEIGHED FROM COL.. I	10,240.99	823.92	8,389,584.15
SUB TOTAL	67,486.51	829.87	42,443,615.58
WEIGHED FROM COL.. II	432.00	1,217.00	525,744.00
TOTAL	**67,838.51**	**833.41**	**42,969,359.58**

C.G. LIMITATION : FORWARD - %
AFT - %

FROM REFERENCE LINE

FORMULA

$$C.G.\ MAC\ \% = \frac{(ARM - 825.8)}{1.345}$$

$$C.G.\ MAC\ \% = \frac{(833.41 - 825.8)}{1.345}$$

C.G. MAC % = 5.69 %

737-300

ZHONGYUAN AIRLINES

WEIGHT AND BALANCE
CONTROL AND LOADING MANUAL

MODEL 737-37K

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

Boeing Document No. D043A530-ZHO1

BALANCE REFERENCE SYSTEM (Continued)

MEAN AERODYNAMIC CHORD

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

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

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

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

BODY BUTTOCK LINE

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

WATER LINE

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

APPLICABLE CONFIGURATIONS
All

FUEL TANK QUANTITIES AND BALANCE ARMS (Continued)

COMBINED MAIN TANKS 1 AND 2 IN LITERS

The following table provides usable, gauged fuel data in liters. For each of the volumes listed, the volume is split equally between Main Tank 1 and Main Tank 2 (e.g. the 400 liter entry represents 200 liters in Main Tank 1 and 200 liters in Main Tank 2, each at B.A. 606.7).

LITERS

COMBINED MAIN TANKS 1 & 2		COMBINED MAIN TANKS 1 & 2	
VOLUME L	B.A. IN.	VOLUME L	B.A. IN.
400	606.7	6400	627.5
800	609.4	6800	628.3
1200	611.8	7200	629.2
1600	613.8	7600	630.0
2000	615.5	8000	630.9
2400	616.9	8400	631.7
2800	618.4	8800	633.5
3200	619.6	9200	635.7
3600	620.8	9600	638.2
4000	622.0	10000	640.7
4400	623.0	10400	643.5
4800	624.0	10800	646.4
5200	624.9	11200	649.5
5600	625.9	11348	650.7
6000	626.7		

APPLICABLE CONFIGURATIONS
All

COMPONENT WEIGHTS AND BALANCE ARMS (Continued)

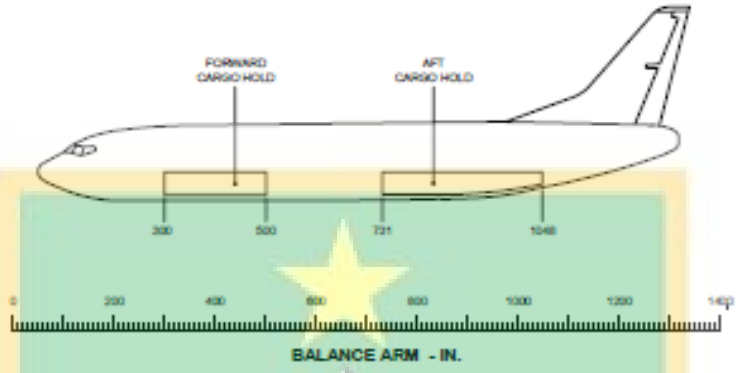
ITEM NO.	NACELLE AND POWER PLANT COMPONENTS (Continued)	WEIGHT		B.A. IN.
		LB/EA	KG/EA	
	POWER PLANT PACKAGE (Includes: Inlet, Primary Exhaust Nozzle, Exhaust Plug, Extension Ring and Systems)			
	CFM56-3-B1 or CFM56-3B-2	5293	2401	554
	AUXILIARY POWER UNIT (NOT SHOWN) (Includes: Exhaust Duct and Generator)	432	196	1217

APPLICABLE CONFIGURATIONS
All

CARGO COMPARTMENTS

GENERAL LOCATION AND ARRANGEMENT

The following airplane profile illustrates cargo compartment locations.



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

CARGO COMPARTMENT	LOCATION - B.A. FROM	TO	USABLE VOLUME CU FT	B. A. IN.
Forward	300	500	425	400.6
Aft	731	1048	643	864.2
Total			1068	679.7

APPLICABLE CONFIGURATIONS
All

BALANCE REFERENCE SYSTEM (Continued)

MEAN AERODYNAMIC CHORD

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

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

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

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

BODY BUTTOCK LINE

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

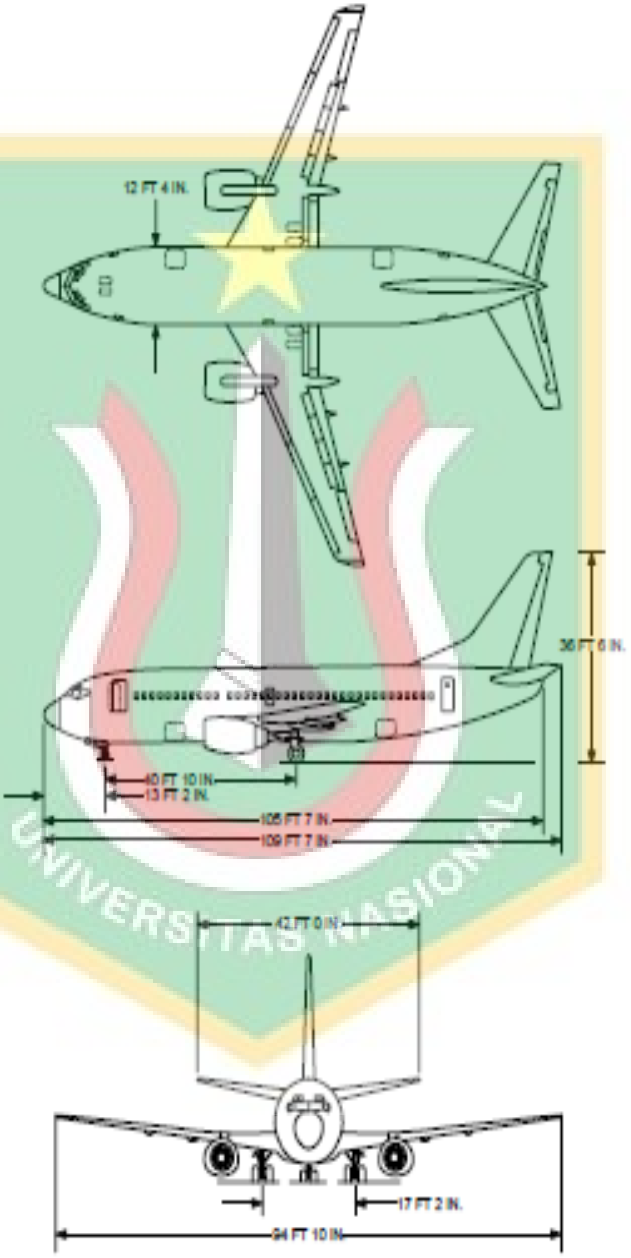
WATER LINE

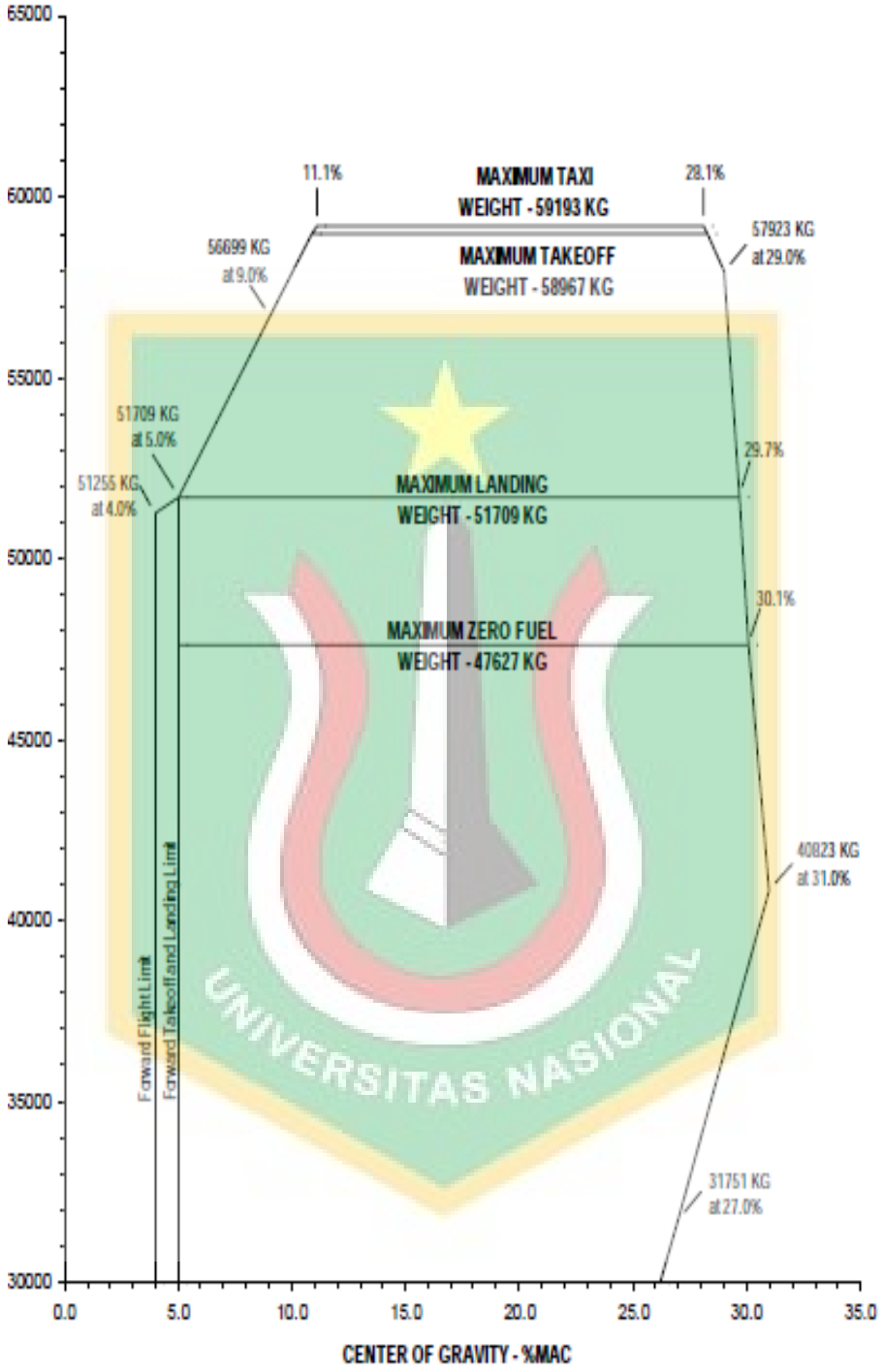
The Water Line is a horizontal reference line or a horizontal plane parallel to the main deck floor used to locate points or planes vertically. The Water Line is measured from the reference datum 208.1 IN. below the top of the main deck floor.

AIRPLANE DIMENSIONS

GENERAL ARRANGEMENT AND PRIMARY DIMENSIONS

The following figure shows the 737-300 general arrangement and primary dimensions.

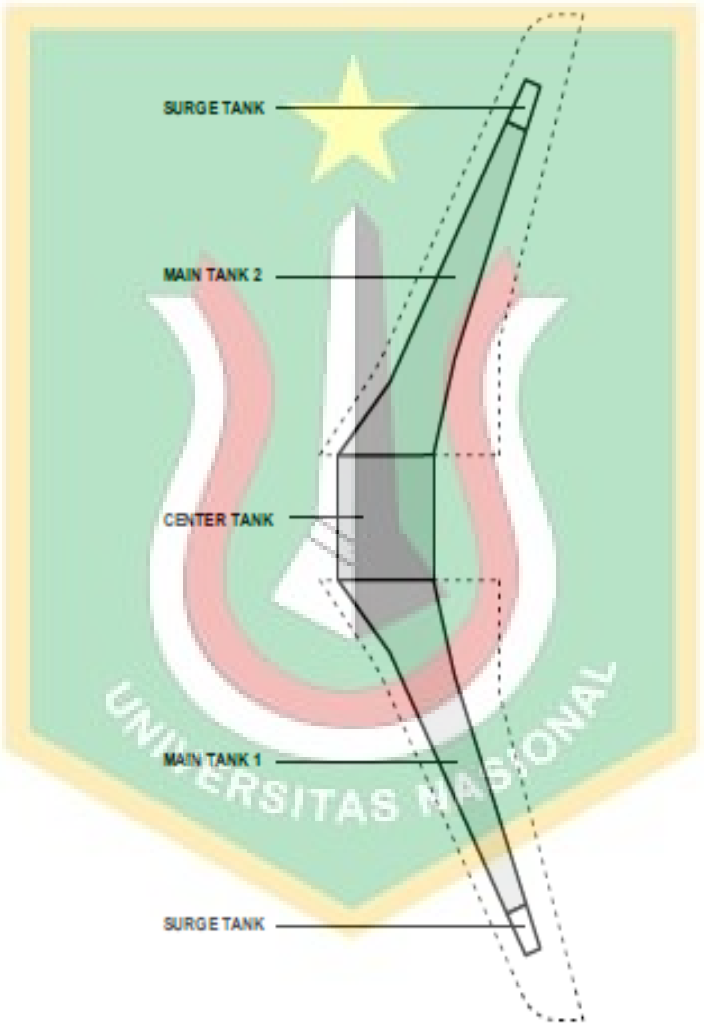



65000
60000
55000
50000
45000
40000
35000
30000
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
CENTER OF GRAVITY - %MAC
11.1%
28.1%
MAXIMUM TAXI
WEIGHT - 59193 KG
MAXIMUM TAKEOFF
WEIGHT - 58967 KG
56699 KG
at 9.0%
57923 KG
at 29.0%
51709 KG
at 5.0%
51255 KG
at 4.0%
29.7%
MAXIMUM LANDING
WEIGHT - 51709 KG
30.1%
MAXIMUM ZERO FUEL
WEIGHT - 47627 KG
40823 KG
at 31.0%
31751 KG
at 27.0%
Forward Flight Limit
Forward Takeoff and Landing Limit

FUEL TANK ARRANGEMENT AND CAPACITIES

FUEL TANK LOCATIONS

The following diagram shows the fuel tank arrangement:



FUEL TANK QUANTITIES AND BALANCE ARMS (Continued)

COMBINED MAIN TANKS 1 AND 2 IN LITERS

The following table provides usable, gauged fuel data in liters. For each of the volumes listed, the volume is split equally between Main Tank 1 and Main Tank 2 (e.g. the 400 liter entry represents 200 liters in Main Tank 1 and 200 liters in Main Tank 2, each at B.A. 606.7).

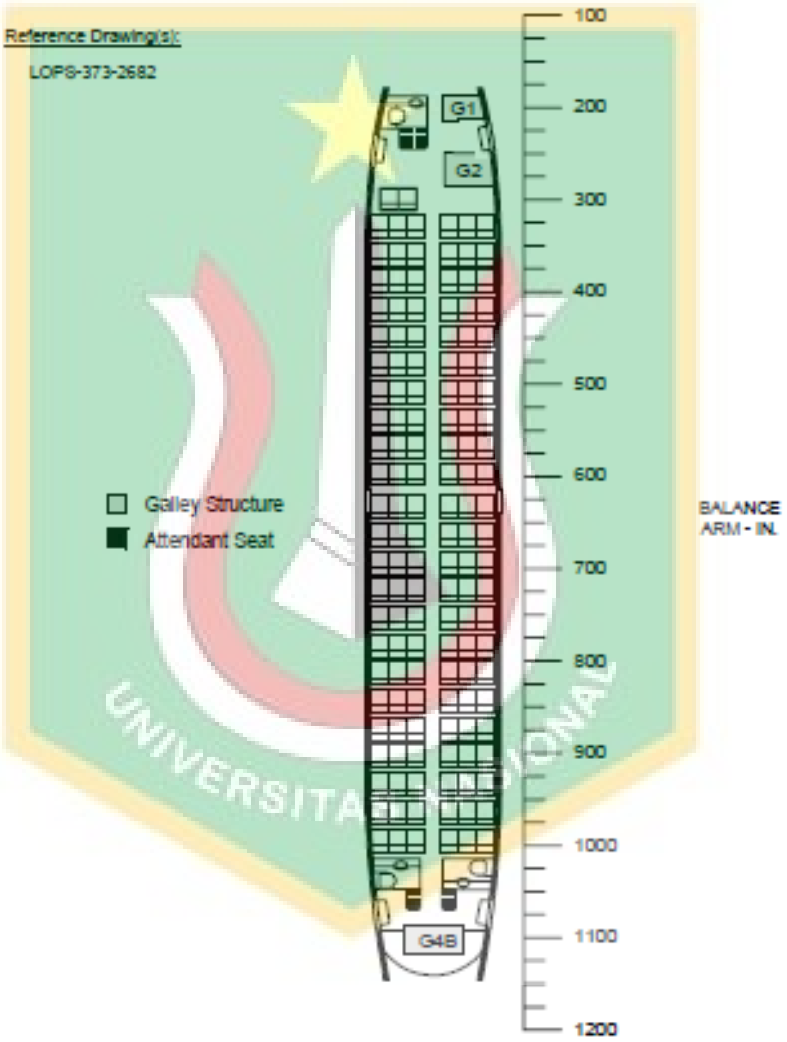
LITERS

COMBINED MAIN TANKS 1 & 2		COMBINED MAIN TANKS 1 & 2	
VOLUME L	B.A. IN.	VOLUME L	B.A. IN.
400	606.7	6400	627.5
800	609.4	6800	628.3
1200	611.8	7200	629.2
1600	613.8	7600	630.0
2000	615.5	8000	630.9
2400	616.9	8400	631.7
2800	618.4	8800	633.5
3200	619.6	9200	635.7
3600	620.8	9600	638.2
4000	622.0	10000	640.7
4400	623.0	10400	643.5
4800	624.0	10800	646.4
5200	624.9	11200	649.5
5600	625.9	11348	650.7
6000	626.7		

INTERIOR ARRANGEMENT - MAIN DECK (Continued)

MAIN CABIN - 140Y ARRANGEMENT

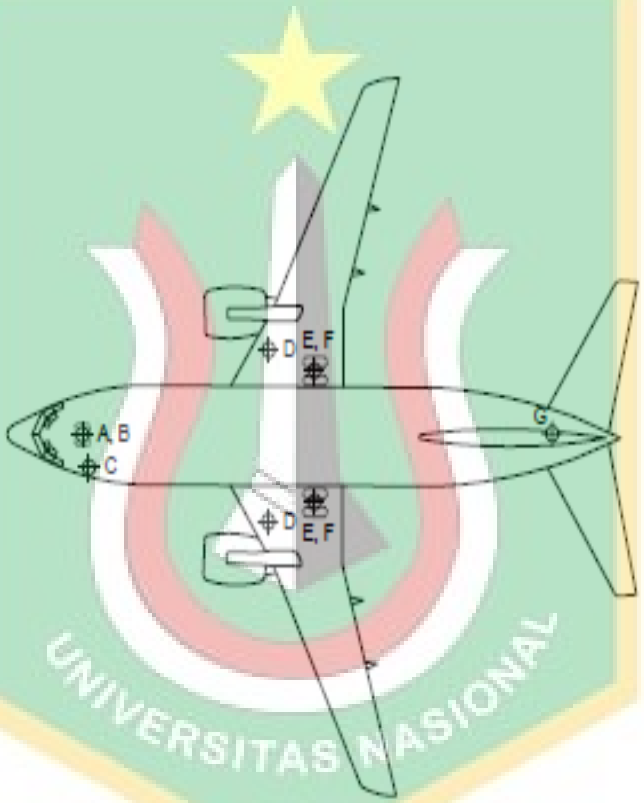
The main cabin 140Y arrangement shown below is the basis for the subsequent passenger and cabin crew center of gravity data, and the maximum allowable galley loads data.



AIRPLANE JACKING

JACK POINT LOCATIONS

The following figure provides jack point locations.



Gilang R

ORIGINALITY REPORT

28%	26%	6%	13%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Universitas Nasional Student Paper	8%
2	es.scribd.com Internet Source	7%
3	text-id.123dok.com Internet Source	2%
4	ejournals.itda.ac.id Internet Source	2%
5	digilib.unila.ac.id Internet Source	1%
6	repository.its.ac.id Internet Source	1%
7	id.wikipedia.org Internet Source	1%
8	vega201024.blogspot.com Internet Source	1%
9	docobook.com Internet Source	1%

10	docplayer.info Internet Source	1 %
11	eprints.ums.ac.id Internet Source	1 %
12	repository.ub.ac.id Internet Source	<1 %
13	idr.uin-antasari.ac.id Internet Source	<1 %
14	www.coursehero.com Internet Source	<1 %
15	Mohammad Erry, Pregiwati Pusporini, Dzakiyah Widyanigrum. "Usulan Perbaikan Proses Produksi Tas Ransel Untuk Meminimalkan Kecacatan Produk Dengan Metode Six Sigma (Studi Kasus: UD Diechi)", JUSTI (Jurnal Sistem dan Teknik Industri), 2020 Publication	<1 %
16	repository.sustech.edu Internet Source	<1 %
17	Submitted to Universitas Pelita Harapan Student Paper	<1 %
18	docplayer.net Internet Source	<1 %
19	repository.ibs.ac.id Internet Source	<1 %

20	eprints.upnjatim.ac.id Internet Source	<1 %
21	etheses.uinmataram.ac.id Internet Source	<1 %
22	www.scribd.com Internet Source	<1 %
23	docslide.us Internet Source	<1 %
24	elib.stta.ac.id Internet Source	<1 %
25	repository.um-palembang.ac.id Internet Source	<1 %
26	fr.scribd.com Internet Source	<1 %
27	kbbi.web.id Internet Source	<1 %
28	repositori.usu.ac.id Internet Source	<1 %
29	repository.ar-raniry.ac.id Internet Source	<1 %
30	repository.unpas.ac.id Internet Source	<1 %
31	repository.upp.ac.id Internet Source	<1 %

32	www.trisakti.ac.id Internet Source	<1 %
33	dspace.uii.ac.id Internet Source	<1 %
34	abdurrozak33.wordpress.com Internet Source	<1 %

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		