QCX
Avro
CF105
R-7-0400-44
Iss-2

FILE IN VAULT

C-105 MK 1 Report # 7-0400-44
J75 P3 Engines ISSUE 2

WEIGHT SUMMARY & C.G. POSITION

N.A.E. UNCLASSIFIED SECRET Feb. 1/57

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Report no.: QCX-AVRO-CF105-R-7-0400-44-Iss-2

has been ☐ downgraded to :

☒ de-classified

by (Name): Michel W. Drapeau

(Dept.): A/DND Coordinator, Access to Information

Date: Dec. 7, 1992

R. Auger
Signature

Classification cancelled / changed to: UNCLASSSIFIED

By authority of: DRDA 7/DARFT 5-8/DAS Eng 6-4-5

Date: 5 Nov 1992

Signature: B. Aubrey

Unit / Rank / Appointment: DSIS 3, Secretary CRAD HQ DRP

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Date: February 1st, 1957
Aircraft: C-105 MK 1 with J75 P3 Engines 1st A/C

Report # 7-0400-44
Sheet # 1 Issue 2
Prepared By: K. Griffin
Checked By: E. Burnett

INTRODUCTION

The following is a Weight & C. G. Summary for the 1st C-105 MK 1 Aircraft with J75 P3 Engines based on the latest weight estimates available on January 31st, 1956. All Weight and C.G. changes are relative to Issue 1 of December 1st 1956.

Note: This Summary does NOT apply for the 2nd and subsequent MK 1 Aircraft - see context below:

GENERAL

a) Pratt & Whitney J75 P3 Engines comprise the Power Plant for the 1st Aircraft. J75 P5 Engines, which are partially redesigned versions of the P3 Engines, are to be installed on the 2nd and subsequent MK 1 Aircraft. (J75 P3 Engines = 6,175 lb each; J75 P5 Engines = 5,950 lb each)

b) An Instrument package carrying Flight Test Instrumentation will be installed, this also varies between first and subsequent aircraft.

c) An interim Radio and Radar System is installed.

1. STRUCTURE

(a) Wing:

		WEIGHT -(lb.)
Transport Joint I/W to O/W - this has now been entirely re-estimated to production drawings - the hardware allowances were previously too high.		- 7.66
Structural provisions for Buzz Dampers - the provisions will be installed in the first A/C as follows:-	Inner Wing	+ 8.60
	Outer Wing	+ 8.70
	Elevator	+ 7.40
	Aileron	+ 6.30

Whether on no the system will be installed is still undecided (see also Flying Controls Group).

I/Wing Skins - Actual weights have been checked and the estimates currently recorded tally with the actual weight at nominal thickness. However, some skins notably in those machined at AVRO are considerably above nominal tolerances, excess weight being of the order of 6 lb/panel. Thus with a set of 12 similarly machined AVRO manufactured skins excess weight could be as much as 70 lb/A/C.

WEIGHT INCREASE WING + 23.34

(b) Fin & Rudder:

Fin -	Addition of dorsal fairing angles	+ 3.96
	AN373 Nut Plates replace K1100 (not available)	+ 4.59
	Misc. Structural & hardware changes	+ 2.98
	Addition of Structural provisions for 'Buzz Dampers'	+ 1.20

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Continued.

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INTRODUCTION

1. STRUCTURE

(b) Fin and Rudder (Continued)

	WEIGHT (lb)
Rudder - Addition of structural provisions for 'Buzz Dampers'	+ 7.80
Joint changes also skin splices added etc.	+ 4.88
WEIGHT INCREASE FIN & RUDDER	+ 25.41

(c) Fuselage Fwd. Sta. 255"

Radar Nose Access Doors - now entirely estimated to production drawings	- 3.38
Radar Nose Structure - previous estimate was to non-stress approved schemes - many design changes - fuller information - also includes radome de-icing tank (see also equipment group)	+ 28.76
Skin F.F. - Material concession allows the use of Al. instead of Mg. on the 1st 5 A/C.	+ 28.55
Shear Panel Aft Nav. Bulkhead - minor changes to stiffeners etc. production drawing re-issues.	+ 1.84
WEIGHT INCREASE FRONT FUSELAGE	+ 55.77

(d) Centre Fuselage Sta. 255" - 485"

Electronics Bay Structure - Doppler mounting structure redundant for Interim Radar System	- 1.56
Equipment Bay Structure - Material concession allows .04 Mg. in lieu of .032 Mg. on 1st. 5 A/C	+ 1.34
WEIGHT DECREASE CENTRE FUSELAGE	- 0.22

(e) Rear Fuselage Sta. 485" Aft.

Engine Access Doors E.B. - Estimated to production drawings previous estimates had insufficient hardware allowance 8% of Structure weight whereas details reveal 15%	+ 14.70
Heavy Formers E.B. - minor production drawing changes	+ 1.83
Engine Tunnel E.B. - O/B Beam was previously omitted	+ 7.70
Service Access Doors - Transducer support added.	+ 0.49
Light Formers E.B. - removal of allowance for some stabilizers which do not exist	- 0.17
Misc. Items E.B. - minor changes to bracketry	+ 0.05
Engine Access Doors R.F. - Production drawing estimates	+ 10.11
Nacelles R.F. - now estimated to production drawings, steel replaces titanium for early aircraft, previously too high an allowance was made	- 10.76
Centre Structure R.F. - Production drawing estimates - previous allowance for steel replacing titanium was too high	- 1.46
WEIGHT INCREASE AFT FUSELAGE	+ 22.49
TOTAL STRUCTURAL WEIGHT INCREASE	+ 126.79

Date: February 1st, 1957
Aircraft: C-105 MK 1 with
J75 P3 Engines
1st A/C

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INTRODUCTION

2. LANDING GEAR

No Weight Change

3. POWER PLANT & SERVICES

	WEIGHT (lb)
Engines† - Miscellaneous alterations to airbleed outlet etc.	+ 4.61
Engine Service Accessories - Pressure switches now in Electrics	- 2.27
Addition of pneumatic lines	+ 3.17
Production drawing estimates of oil breather pipes, nozzle air ejection, oil filler etc.	+ 4.37
Gear Boxes & Starter on Engine - Add pneumatic starter connection	+ 1.64
Engine Mounting Accessories -"Inconel X" sleeve at rear mounting omitted	+ 4.68
Hardware for installation further details available	+ 5.45
Engine Controls - Actual weight of tension regulator and throttle box	+ 1.78
Fuel System φ - Actual weights of bulkhead couplings and revision of pump installation	+ 7.52
Fire Extinguishing System* - Vendors increase in bottle weight	+ 5.00
WEIGHT INCREASE POWER PLANT GROUP	+ 35.95

N.B. 1) † J75 P3 Engines on 1st A/C only, 2nd & subsequent A/C have J75 P5 Engines which are 225 lb/engine lighter than the P3 Version.

2) φ The 1st Aircraft will be fitted with fuel proportioners, 2nd Aircraft may have both proportioners and a selection system fitted, though details of the selection system are not yet finite.

3) * Additional fire protection will be installed in the 1st A/C, the bottles being mounted within the instrument package. For details of the weight involved see Equipment Group.

4. FLYING CONTROLS GROUP

Mechanical Flying Controls - Completely re-estimated to production drawings for the redesigned steel linkage system. Previously weight allowances of 65 lb were carried to cover this redesign. Now, however, there is a further increase of	+ 26.09
Other production drawing changes to system	+ 6.81
N.B. Pending Flight Test requirements a "Buzz Damping" System may be installed on the first aircraft. Provisions for this installation are already included in the Structure Group. The "Buzz Damper" system weights are not currently recorded but they incur a weight penalty of + 134.3 lb. if necessary.	
WEIGHT INCREASE FLYING CONTROLS GROUP	+ 32.90

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INTRODUCTION

5. EQUIPMENT GROUP	WEIGHT (lb)
Instruments - fully detailed to production drawings some panels now included with Electrics Group	- 7.23
Cabin Consoles - first detailed estimates of Navigator's Consoles	- 3.20
Canopy Actuation - addition of recuperators etc.	+ 7.64
Air Conditioning - production drawing estimate of 'S' duct	+ 12.07
Other ducts, couplings etc.	+ 20.83
Valves & Equipment, actual weights etc.	+ 23.10
Radome Anti-icing - Tank weight now included in nose structure	- 5.00
Wiring & detectors in Electrics	- 2.55
Actual weights of valves, Al. tubing replaces Temflex, general allowances too high	- 7.03
Intake De-icing - this report contains weight of boots only, all equipment, wiring etc. included with general electrical circuits weights	- 34.00
Windscreen Demisting - wiring now in electrical reports	- 5.17
Electrical System - the report system has been entirely changed and the electrics completely estimated to production drawings for the first aircraft. Including the 48.95 lb allowances, deleted above, the electrical group shows an increase in weight of	+ 138.64
Previous allowances for connectors were too low, many more details now available etc.	
Interim Radio & Radar - re-estimated in detail	+ 5.68
Additional Fire Protection - fully estimated to drawings	- 0.83
Radar Access Door Actuation - now included in Interim Radar Wt.	- 10.00
WEIGHT INCREASE EQUIPMENT	+ 132.95

SUMMARY

WEIGHT CHANGE - AIRCRAFT WEIGHT EMPTY

Structure	+ 126.79 lb.
Power Plant	+ 35.95 lb.
Flying Controls	+ 32.90 lb.
Equipment	+ 132.95 lb.
	+ 328.59 lb.

WEIGHT CHANGE - OPERATIONAL WEIGHT EMPTY (A/C less fuel)

Issue 1	Issue 2		
44,783.07 lb	45,111.66 lb	=	+ 328.59 lb.

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WEIGHT AND C.G. SUMMARY

DESCRIPTION	WEIGHT lb.	H. ARM ins.	V. ARM ins.
STRUCTURE	18,453.73	563.95	137.60
Wing	10,012.41	643.87	142.09
Fin & Rudder	1,025.37	754.93	209.68
Fuselage Struct. Fwd. Sta. 255"	2,549.18	180.69	128.59
Sta. 255" - 485"	1,664.68	379.06	130.04
Aft. 485"	3,202.09	654.11	111.60
UNDERCARRIAGE - Retracted	2,612.33	488.81	134.66
Main Undercarriage	1,959.62	539.48	141.00
Main U/C Doors & Fairings	294.36	539.29	136.01
Nose Undercarriage	333.81	170.81	99.70
Nose U/C Door & Fairing	24.54	162.24	88.23
POWER PLANT & SERVICES	14,204.48	654.59	120.23
Engines	12,681.91	663.94	119.75
Gear Box Installation on Fuselage	237.06	603.73	104.00
Gear Box & Starter on Engine	151.82	610.53	96.45
Engine Controls	30.97	366.27	119.61
Engine De-icing	70.37	562.80	115.09
Fire Extinguishing System	75.52	703.76	128.23
Engine Mountaings	199.32	635.71	128.02
Fuel System	757.51	543.10	135.69
FLYING CONTROLS GROUP	1,710.72	687.58	140.35
Mechanical Flying Controls	937.30	687.59	148.22
Hydraulic Flying Controls	773.42	687.56	130.81
EQUIPMENT - FIXED & REMOVABLE	7,166.22	384.94	110.52
Instruments	46.07	163.68	138.70
Probe	23.00	9.74	108.00
Cockpit Pressure Sealing	5.00	186.00	130.00
Oxygen System	43.44	227.72	142.18
Air Conditioning System	738.02	336.49	134.76
Surface Finish	100.00	591.52	140.20
Hydraulics Main System	588.36	501.22	117.38
Cabin Insulation	11.91	179.24	130.00
Brake Parachute	69.69	784.88	131.17
Electrical System	1,119.35	419.79	112.94
Low Pressure Pneumatics	39.01	478.47	127.28
Oil & Hydraulic Fluid Cooling	22.00	579.50	92.00
Intake De-icing Boots	51.84	197.02	118.00
Canopy Actuation	62.05	222.11	154.47
Cabin Consoles	17.45	174.76	124.34
Ejector Seats	186.00	201.10	136.25
Interim Radio & Radar	762.38	311.06	122.69
Instrument Pack Structure	670.61	385.90	94.71
Instrumentation - 1st A/C	2,447.00	389.50	95.00
Additional Fire Protection	154.17	425.05	102.89
Radome Anti-icing	8.88	51.49	125.00
AIRCRAFT WEIGHT EMPTY	44,147.48	564.40	127.55

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J75 P3 Engines
1st A/C.

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WEIGHT AND C.G. SUMMARY

DESCRIPTION		WEIGHT lb.	H.ARM ins.	V. ARM ins.	C.G. POSITION % M.A.C.
USEFUL LOAD (less fuel)		964.18	353.79	132.91	
Crew		430.00	194.00	136.50	
Oil		130.39	609.19	117.17	
Alcohol - Radome De-icing		22.00	93.00	138.00	
Engine Fire Extinguisher Fluid		25.00	730.00	129.00	
Residual Fuel		218.40	553.98	134.04	
Oxygen Charge		13.39	259.69	159.91	
Water for Air Conditioning		125.00	268.00	132.00	
Operational Weight Empty	U/C Up	45.111.66	559.87	127.66	34.21
	U/C Down		562.04	124.07	34.81
Max. Internal Fuel (2,544 gals. @ 7.8 lb/gal.)		19,843.00	538.88	144.32	
A.U.W. Max. Internal Fuel	U/C Up	64,954.66	553.46	132.75	32.44
	U/C Down		554.96	130.26	32.86
Max. External Fuel & Tank (500 gals. @ 7.8 lb/gal.)		4,226.00	522.34	60.64	
A.U.W. Max. Internal and External Fuel	U/C Up	69,180.66	551.56	128.35	31.92
	U/C Down		552.97	126.01	32.31

N. B. Above figures are for the Aircraft in the unballasted condition.

If the most Aft point on the C.G. Envelope is to be ballasted to 31% M.A.C. then the 1,382 lb at Sta. 89.16", as currently provided for on Former 68.5 and the Shear Panel, is necessary plus a further 75 lb on the Shear Panel. (i.e. Total of 1,457 lb)

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REPORT NO: 7-0900-44-2

BY: [illegible]

DATE: Feb 1st 1954

HORIZONTAL C.G. ENVELOPE

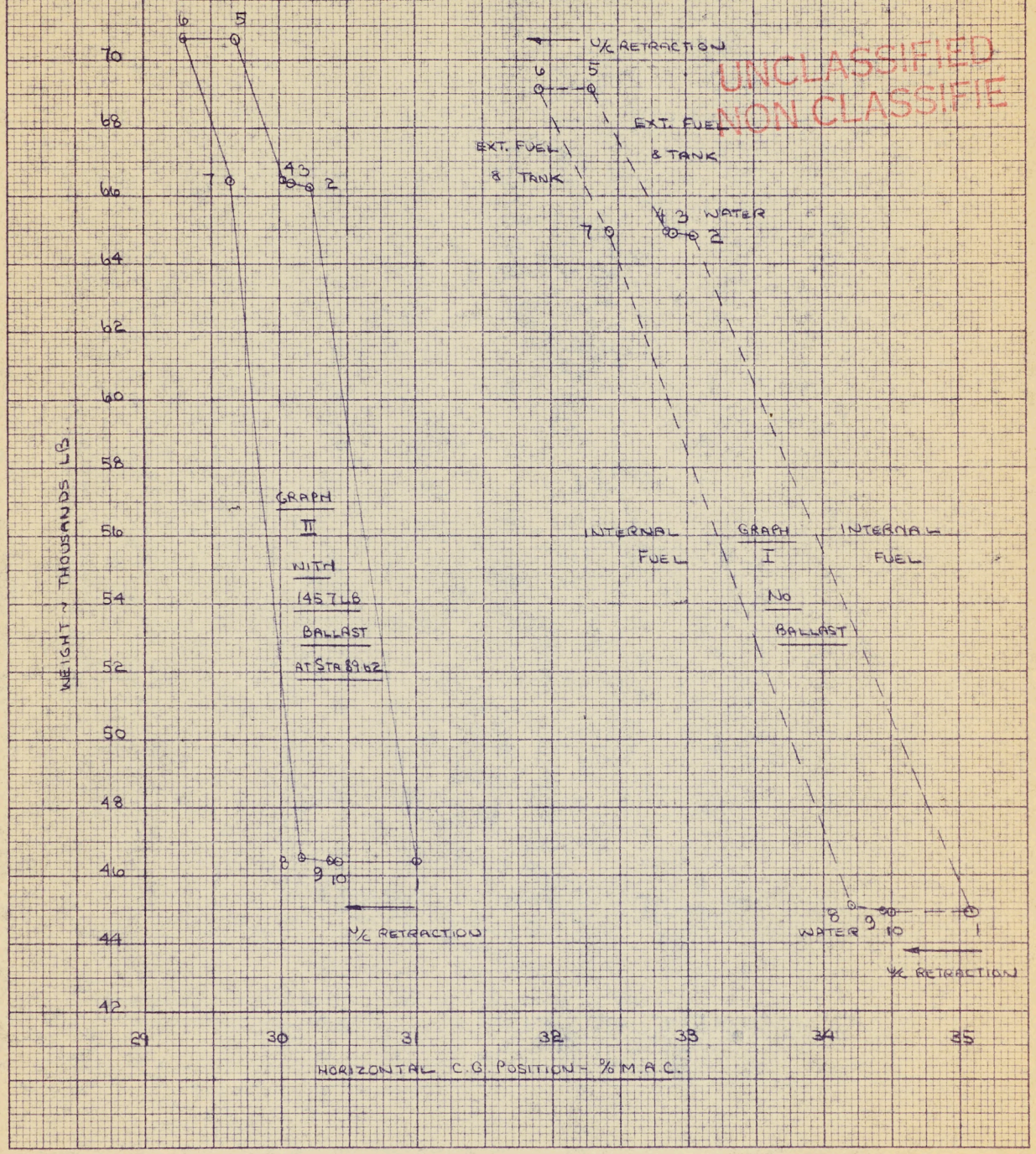
C105 MK1 1ST A/C FLIGHT CONDITIONS

WITH J75P3 ENGINES (2 & 3 SUBSEQUENT A/C HAVE J75P5 ENGINES)

INTERIM RADIO & RADAR

FUEL SYSTEM PROPORTIONERS

INSTRUMENT PACKAGE (WITH EMERGENCY JETTISON)



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K+E 10 X 10 TO THE 1/2 INCH 359-12 KEUFFEL & ESSER CO. MADE IN U.S.A.

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MALTON, ONT.

PROJECT C-105 MK 1

WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	TOTAL WING GROUP	1000000			
	OUTER WING	1010000			
14	OUTER WING SKINS	101000164		928897	0
14	POSTS AND INTERCOSTALS	101000264		24937	1
14	OUTER WING SPAR	101000364		402937	0
14	OUTER WING RIBS	101000464		134566	9
14	AILERON CONTROL BOX	101000664		385947	7
3	RIB 12	101000764		74666	4
14	O W AILERON JACK FITTING	101000964		10467	2
14	AILERON JOINTS AND FAIRING	1010010		32937	8
75	BUZZ DAMP STRUC PROV O W	101001164		8707	5
				200400	
	AILERON	1020000			
17	AILERON STRUCTURE	102000174		348667	9
75	BUZZ DAMP STRUC PROV AIL	102000274		6307	1
				35496	
20	ELEVATOR	103000082		449007	9
20	ELEVATOR MARRY UP	1030000		15977	1
75	BUZZ DAMP STRUC PROV ELEV	103000182		7407	4
				47237	
	INNER WING	1040000			
12	MAIN U C STRUCTURE	104000162		329595	7
12	FRONT SPAR I W	104000262		109854	8
12	MAIN SPAR I W	104000362		154565	6
12	FWD CENTRE SPAR I W	104000462		54105	9
12	AFT CENTRE SPAR I W	104000562		3637	6
12	REAR SPAR I W	104000662		80487	0
12	I W STRUCTURE F S TO M S	104000762		1035814	9
12	I W STRUCTURE M S TO R S	104000862		158866	6
12	STRUCTURE AFT OF REAR SPAR	104000962		319847	7
12	ELEVATORCONTROLBOX I W	104001062		427177	7
16	TRANSP JOINT MARRY UP	104001		70656	6
12	CENTRE LINE JOINTS	104001262		633626	6
12	INNER WING SKINS	104001362		2179806	6
12	STRUT PICK UP FITTINGS I W	104001462		54245	6
12	STRUT PICK UP FITTINGS	104001 5		1446	6
12	RIBS 1 TO 9 INNER WING	104001662		517566	6
12	DORSAL FAIRINGS	104001762		57645	6
12	RIB 10	104001862		110446	6
12	WING TO FUSELAGE JOINT	104001962		138126	6
16	TRANSP JOINT	104002062		131006	6

IGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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SHEET 1

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	1000000						
	1010000						
	101000164		928897	06471	3598	65623292	12631046
S	101000264		249373	2381	3419	1825823	334536
	101000364		402937	00731	3636	28234514	5494353
	101000464		134566	95061	3650	9352727	1836744
	101000664		385947	7411	3540	29876001	5225628
	101000764		74666	4930	3783	4847674	1029039
NG	101000964		10467	2791	3670	761394	142988
RING	1010010		329378	7261	3224	2592447	435466
W	101001164		8707	5700	3810	658590	120147
			200400			143772462	272499947
	1020000						
	102000174		348667	9213	3556	27618405	4726435
IL	102000274		6307	3139	1381	460776	8700
			35496			28079181	4735135
	103000082		449007	5523	4260	33909827	6402740
	103000		159773	8101	4260	1178746	227732
ELEV	103000182		7407	4450	4200	550930	105080
			47237			35639503	6735552
	1040000						
	104000162		329595	7807	3992	19052609	4611623
	104000262		109854	8356	4267	5311907	1567230
	104000362		154565	6570	4280	8743459	2207117
	104000462		541059	9501	4403	3243295	779202
	104000562		3637	5478	4329	2381435	521146
	104000662		8048	7040	4451	5666355	1163016
S	104000762		103581	4986	4391	51652737	14906342
S	104000862		158866	1374	4479	9749874	2300134
SPAR	104000962		319847	1884	5020	22991379	4803997
	104001062		427177	2500	4327	30969825	6120065
	104001		7065	6362	3876	4494824	980339
	104001262		633626	6219	5007	41957683	9508735
	104001362		217980	6250	4461	136244039	31522088
I W	104001462		5424	5684	4324	3083436	776934
	104001 5		144	6101	4300	87862	20592
	104001662		517566	1277	4522	31714524	7516006
	104001762		5764	5824	5971	3356954	920568
	104001862		110446	3683	3835	7033151	1527937
	104001962		138126	2104	3790	8577804	1904675
	104002062		131006	3071	3710	8262301	1796010

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PROJECT C-105 MK 1

WEIGHT AND C. OF G BY FUNCTIONAL C COMPONEI

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
12 WING TO FUSELAGE JOINT	1040021		41265	51
75 BUZZ DAMP STRUC PROV I W	10400226	2	8607	4
			665100	
12 LEADING EDGE INNER WING	1050000	62	22138	46
			22138	
14 LEADING EDGE O W	1060000	65	30870	63
			30870	

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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SHEET 2

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
T	1040021		412651	877143	51	2140445	592122
I W	104002262		86074	000142	00	636400	122120
			665100			407352298	96167998
NG	105000062		22138	468411	4423	10369661	3192964
			22138			10369661	3192964
	106000065		30870	301313	561	19452113	4186281
			30870			19452113	4186281

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT C-105 MK 1

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
24 FIN	201000083		89567	74
75 BUZZ DAMP STRUC PROV FIN	201000183		1208	82
			89687	
25 RUDDER	202000084		120708	1
75 BUZZ DAMP STRUC PROV RUD	202000184		7808	3
			12850	

IGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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SHEET 3

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	201000083		89567	746308	20871	66843852	18693529
FIN	201000183		120	828402	24500	99408	29400
			89687			66943260	18722929
	202000084		120708	1324	21438	9815807	2587567
RUD	202000184		780	832402	24300	649272	189540
			12850			10465079	2777107

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT C-105 MK 1

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	TOTAL FUSELAGE GROUP	3000000			
	FUSELAGE BASIC STRUCTURE	3010000			
3	RADOME	3010001	51	18113	4
3	RADAR NOSE ACCESS DOORS	3010002	51	8002	9
3	RADAR NOSE STRUCTURE	3010003	51	12225	9
3	SKIN F F	3010004	52	10949	18
4	SKIN C F	3010005	54	21048	37
5	SKIN D B	3010006	56	5880	53
5	SKIN E B	3010007	58	17406	66
3	FORMERS F F	3010011	52	9842	18
4	FORMERS C F	3010012	54	27786	37
5	FORMER D B	3010013	56	7457	53
5	LIGHT FORMERS E B	3010014	58	13435	66
5	HEAVY FORMERS E B	3010015	58	21159	66
3	LOWER LONGERONS F F	3010016	52	6791	18
5	LONGITUDINAL MEMBERS E B	3010017	58	11047	0
5	LONGERON E B	3010018	58	8035	64
5	TOP LONGERONS E B	3010019	58	638	66
3	LOWER SHEAR PANEL F F	3010020	52	2958	23
5	TOP WING LONGERONS D B	3010021	56	687	52
3	LONGERONS C F	3010022	52	53	25
3	LONGERONS C F	3010023	54	13813	41
5	LONGERONS D B	3010025	56	10569	52
4	ELECTRONICS BAY STRUCTURE	3010026	54	3570	27
5	LONGITUDINAL BEAMS D B	3010027	56	6342	52
4	RADAR ACCESS DOOR C F	3010028	54	2108	27
5	MAIN FRAME AT STN 538 77	3010029	56	5966	53
5	DIVE BRAKE ACCOM STRUCTURE	3010030	56	3634	50
3	COCKPIT DECKING	3010031	52	17982	19
4	DUCT C F	3010032	54	33286	37
5	DUCT D B	3010033	56	31504	54
3	CANOPY ARCH F F	3010034	52	6485	21
3	CANOPY ARCH C F	3010035	52	1970	26
5	ACCESS PANEL STIFFNERS	3010036	56	3865	53
3	NOSE U C SUPPORT STRUCTURE	3010037	52	2868	21
3	CREW BULKHEADS	3010038	52	12124	20
4	EQUIPMENT BAY STRUCTURE	3010039	54	6150	28
3	WINDSCREEN	3010041	52	12754	13
5	SERV ACCESS DOORS AND PNLS	3010042	58	6454	6
5	TORSION BOX E B	3010043	58	5766	1
4	DORSAL FAIRING AIR OUTLET	3010044	54	2061	29
5	INTERMEDIATE FORMERS E B	3010045	58	5224	9
5	ENGINE ACCESS DOORS E B	3010046	58	14579	62
4	SEALING MISSILE BAY	3010047	54	697	32
4	JOINT STRAPS AND MISC	3010048	54	1553	33
4	FLOOR C F	3010049	54	13189	38
3	BULKHEAD AT STN 120	3010050	52	2868	12
3	BULKHEAD AT STA 255	3010051	52	10418	25
4	BULKHEAD AT STA 485	3010052	54	11129	48
5	ENG TUNNEL E B	3010054	58	4612	8

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	3000000						
RE	3010000						
	3010000151		18113	4121	11034	746437	1998588
S	3010000251		8002	9509	11450	760910	916229
	3010000351		12225	9467	11449	1157341	1399640
	3010000452		109491	18978	12164	2077901	1331836
	3010000554		21048	37610	14296	7916153	3009022
	3010000656		5880	53407	11155	3140332	655914
	3010000758		17406	66997	11026	11661498	1919186
	3010001152		9842	18273	12090	1798429	1189898
	3010001254		27786	37474	13307	10412526	3697483
	3010001356		7457	53710	11315	4005155	843760
	3010001458		13435	66797	11123	8974177	1494375
	3010001558		21159	66233	11007	14014240	2328971
	3010001652		6791	18405	9044	1249884	614178
B	3010001758		1104	70858	9612	782272	106116
	3010001858		8035	64875	9760	5212706	784216
	3010001958		638	66605	13911	424940	88752
	3010002052		2958	23417	8900	692675	263262
	3010002156		687	52417	13259	360105	91089
	3010002252			53252	95152	50	13406	8083
	3010002354		138	13411	12289	5678801	1697480
	3010002556		105	69523	62 9879	5534140	1044112
URE	3010002654		35	70273	59 9197	976716	328333
	3010002756		63	42520	46 9125	3300757	578708
	3010002854		21	08274	48 8976	578604	189214
77	3010002956		59	66538	77 10389	3214302	619808
TURE	3010003056		36	34503	99 9299	1831500	337926
	3010003152		179	82192	85 14750	3467829	2652345
	3010003254		332	86372	56 12919	12401032	4300218
	3010003356		315	04544	64 11815	17158339	3722198
	3010003452		64	85217	68 16002	1411655	1037730
	3010003552		19	70261	40 16191	514958	318963
	3010003656		38	65539	18 10294	2083931	397863
TURE	3010003752		28	68213	64 9132	612720	261906
	3010003852		121	24204	97 12265	2485056	1487009
E	3010003954		61	50283	60 13752	1744140	845748
	3010004152		127	54138	14 15014	1761838	1914886
PNLS	3010004258		64	54	64 72 9241	4290103	596414
	3010004358		57	66	18 79 9054	3567943	522054
LET	3010004454		20	61291	95 16400	601709	338004
B	3010004558		52	24	93 17 10264	3621120	536191
B	3010004658		145	79	62 39 8871	9161298	1293303
	3010004754		6	97	32 14 8 10900	224072	75973
	3010004854		15	53	33 61 4 13118	522025	203723
	3010004954		131	89	38 45 3 11427	5071566	1507107
	3010005052		28	68	120 00 12352	344160	354255
	3010005152		10	41 8	255 00 12064	2656590	1256828
	3010005254		111	29	485 00 10532	5397565	1172106
	3010005458		461	28	66 41 3 11606	30634989	5353616

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	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
4	INTEGRAL FUS FUEL TANK	30100554		20359
3	COCKPIT FLOOR	30100562		5743
5	CENTRE BEAM 697 28 717 36	30100598		509
4	DORSAL OVER FUEL TANK	30100614		5097
4	SHIELD EXHAUST DEFLECTOR	30100624		1965
3	SHEAR PANEL BELOW NAV ARCH	30100632		2074
4	ARMAMENT PROVISIONS	30100644		2657
6	ENG ACCESS DOORS R F	30100659		8390
6	TUNNEL FIXED R F	30100669		11388
6	SKIN AND INTERCOSTAL R F	30100679		5155
6	FAIRING UNDER RUDDER R F	30100689		1352
6	FORMERS FIXED R F	30100699		8777
59	LONGERONS TORQUE BOX R F	30100709		3371
6	NACELLES REMOVABLE R F	30100719		27745
59	CNTR STRUC STING REMOV R F	30100729		11339
5	MISC ITEMS STRUCTURE E B	30100738		917
5	MTG BRKTS SIDE PANEL D B	30100756		213
5	FORMERS LOWER PANEL D B	30100766		7606
5	LOW PANEL D B & JT TO E B	30100776		6287
				61968
9	DIVE BRAKES	302000072		11328
				11328
	AIR INTAKES	3030000		
3	LIP AND RAMP	303010055		73192
				73192
	PILOTS AND NAVIG CANOPIES	3040000		
3	PILOTS CANOPY	304010053		23725
				23725
3	NAVIGATORS CANOPY	304020053		13782
				13782

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	301005554		20359	39339	14536	8009027	2959384
	301005652		5743	17640	11575	1013065	664752
36	301005958		509	71350	11435	363172	58204
	301006154		5097	41352	14205	2107711	724029
OR	301006254		1965	33441	16400	657116	322260
ARCH	301006352		2074	25702	15350	533059	318359
	301006454		2657	30186	10436	802042	277285
	301006559		8390	77280	9910	6483792	831449
	301006659		11388	77090	12724	8779009	1449009
F	301006759		5155	76878	13672	3963061	704792
F	301006859		1352	77541	15800	1048354	213616
	301006959		8777	77801	13690	6828594	1201571
F	301007059		3371	77050	13603	2597356	458557
	301007159		27745	82154	12868	22793627	3570227
R F	301007259		11339	83573	13578	9476342	1539609
B	301007358		917	64191	10272	609062	94194
B	301007556		213	52402	13330	111616	28393
B	301007656		760	65456	5 9005	4150214	684920
E B	301007756		628	75598	3 8860	3519651	557028
			619568			290096415	74342257
	302000072		11328	50799	9082	5754511	1028809
			11328			5754511	1028809
	3030000						
	303010055		73192	21034	12000	15395205	8783040
			73192			15395205	8783040
IES	3040000						
	304010053		23725	17543	15906	4162077	3773699
			23725			4162077	3773699
	304020053		13782	23258	16214	3205418	2234613
			13782			3205418	2234613

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	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	
	UNDERCARRIAGE UP POSITION	4000000			
	MAIN UNDERCARRIAGE GROUP	4010000			
35	MAIN UNDERCARRIAGE	401010092		1959625	
				195962	
12	MAIN U C DOORS FAIRINGS	401020092		294365	
				29436	
	NOSE UNDERCARRIAGE GROUP	4020000			
36	NOSE UNDERCARRIAGE	402010091		333811	
				33381	
3	NOSE U C DOOR AND FAIRING	402020052		24541	
				2454	

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
ION	4000000						
UP	4010000						
	401010092		195962	53948	14100	105717580	27630642
			195962			105717580	27630642
S	401020092		29436	53929	13601	15874540	4003590
			29436			15874540	4003590
UP	4020000						
	402010091		33381	17080	9970	5701475	3328086
			33381			5701475	3328086
ING	402020052		2454	16224	8823	398137	216516
			2454			398137	216516

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	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
	ENGINE GROUP	5000000		
41	ENGINE J 75	5010000		1252426
				1252426
41	J 75 ENGINES SERV ACCESS	5010100		15765
				15765
49	ACC GEAR BOX AND OIL LINES	5020000		23706
				23706
	ENGINE CONTROLS	5030000		
47	ENGINE CONTROLS F F	503000152		14341
47	ENGINE CONTROLS C F	503000254		2653
47	ENGINE CONTROLS D B	503000356		5215
47	ENGINE CONTROLS E B	503000458		877
				3097
43	GEARBOX AND STARTER ON ENG	5040000		15182
				15182
66	ENGINE ANTI ICING	5050000		7037
				7037
	FIRE EXT SYSTEM	5060000		
64	FIRE EXT SYSTEM	5060001		7552
				7552
	ENGINE MTGS AND BRACKETS	5070000		
42	ENGINE MTGS AND BRACKETS	5070001		13877
42	ENGINE MTGS AND BRACKETS	5070002		6055
				19932
	FUEL SYSTEM	5080000		
54	FUEL SYSTEM C F	508000154		12114
54	FUEL SYSTEM D B	508000256		14210

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SHEET 7

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	5000000						
	5010000		1252426	66501	11983	832875814	150078208
			1252426			832875814	150078208
ESS	5010100		15765	57924	11340	9131719	1787751
			15765			9131719	1787751
LINES	5020000		23706	60373	10400	14312023	2465424
			23706			14312023	2465424
	5030000						
	503000152		1434	16201	12473	232322	178863
	503000254		265	31166	11803	82590	31278
	503000356		52	15004	71337	9	69705
	503000458		877	63703	10330	558675	90594
			3097			1134332	370440
N ENG	5040000		15182	61053	9645	92690	66 1464304
			15182			92690	66 1464304
	5050000		7037	56280	11509	3960424	809888
			7037			3960424	809888
	5060000						
	5060001		7552	70376	12823	5314796	968393
			7552			5314796	968393
ETS	5070000						
ETS	5070001		13877	62498	12950	8672847	1797072
ETS	5070002		6055	66031	12463	3998177	754635
			19932			12671024	2551707
	5080000						
	508000154		12114	40225	14187	4872857	1718613
	508000256		14210	53710	10984	7632191	1560826

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DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
54 FUEL SYSTEM E B	50800058		4638
54 FUEL SYSTEM I W	50800046	2	44187
54 FUEL SYSTEM ENG	50800005		602
			75751

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SHEET 8

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
508000358		4638	5604	12071	3042714	559853
508000462		44187	57024	14443	25197195	6381928
508005		602	5704	9592	395538	57744
		75751			41140495	10278964

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	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	FLYING CONTROLS GROUP	6000000			
	MECHANICAL CONTROLS	6010000			
56	MECHANICAL CONTROLS F F	601000152		86511	15
56	MECHANICAL CONTROLS C F	601000254		8853	3
56	MECHANICAL CONTROLS D B	601000356		350	46
56	MECHANICAL CONTROLS FIN	601000583		121267	78
56	MECHANICAL CONTROLS I W	601000662		408847	1
56	MECHANICAL CONTROLS O W	601000764		301887	7
56	MECHANICAL CONTROLS C A	6010008		6467	0
				93730	
	FLYING CONTROLS HYDRAULICS	6020000			
57	FLYING CONT HYDRAULICS D B	602000156		23825	7
57	FLYING CONT HYDRAULICS E B	602000258		35123	65
				37505	
57	HYDRAULICS I W	605000062		235797	0
				23579	
57	HYDRAULICS O W	606000064		116537	4
				11653	
57	RUDDER HYDRAULICS	607000083		46057	6
				4605	

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SHEET 9

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	6000000						
	6010000						
F	601000152		8651	158071	11520	1367464	996595
F	601000254		885	334201	11526	295767	102005
B	601000356		350	486991	11880	170447	41580
N	601000583		12126	787412	22177	9548134	2689183
W	601000662		4088	847175	14375	29334679	5877075
W	601000764		3018	877078	13561	23268307	4093795
A	6010008		646	709821	14338	458544	92623
			93730			64443342	13892856
ULICS	6020000						
S D B	602000156		2382	576	14 9550	1372365	227481
S E B	602000258		3512	3657	15 11144	23081079	3914107
			37505			24453444	4141588
	605000062		23579	702891	4581	16573443	3438054
			23579			16573443	3438054
	606000064		11653	742191	3567	8648740	1580963
			11653			8648740	1580963
	607000083		4605	760402	0778	3501642	956827
			4605			3501642	956827

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	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
	FIXED EQUIPMENT GROUP	7000000		
	INSTRUMENTS	7010000		
69	INSTRUMENTS F F	701000152		44071
	PROBE SERVICES	701000351		800
106	NAVIG TABLE AND STOWAGE	701000452		2002
				5407
3	COCKPIT PRESSURE SEALING	702000052		5001
				500
	OXYGEN SYSTEM	7030000		
63	OXYGEN SYSTEM F F	703000152		22791
63	OXYGEN SYSTEM C F	703000254		20652
				4344
	AIR CONDITIONING SYSTEM	7040000		
65	AIRCONDITIONING F F	704000152		94152
65	AIRCONDITIONING C F	704000254		537023
65	AIRCONDITIONING D B	704000356		74305
65	AIRCONDITIONING E B	704000458		16196
65	AIRCONDITIONING ENG	7040006		15566
12	AIRCONDITIONING I W	704000762		805
				73802
	HYDRAULICS MAIN SYSTEM	7050000		
57	UTILITY HYDRAULICS F F	705000152		80782
57	UTILITY HYDRAULICS C F	705000254		43334
57	UTILITY HYDRAULICS D B	705000356		228295
57	UTILITY HYDRAULICS E B	705000458		73286
57	UTILITY HYDRAULICS I W	705000562		128615
57	UTILITY HYDRAULICS F F	705000691		4571
57	UTILITY HYDR MAIN U C	705000792		29505
				58836
69	CABIN INSULATION	707000052		11911
				1191
	BRAKE PARACHUTE	7080000		

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	7000000						
	7010000						
	701000152		4407	16112	13909	710056	612970
	701000351		800	4700	10800	37600	86400
GE	701000452		200	22000	13000	44000	26000
			5407			791656	725370
ING	702000052		500	18600	13000	93000	65000
			500			93000	65000
	7030000						
	703000152		2279	19625	12578	447254	286653
	703000254		2065	26242	16027	541897	330958
			4344			989151	617611
EM	7040000						
	704000152		9415	21970	11849	2068476	1115583
	704000254		53702	31062	13788	16680915	7404432
	704000356		7430	54185	13163	4025946	978011
	704000458		1619	63063	13506	1020990	218662
	7040006		1556	64017	13900	996105	216284
	704000762		80	51500	15950	41200	12760
			73802			24833632	9945732
M	7050000						
F	705000152		8078	20136	10919	1626586	882037
F	705000254		4333	44019	10386	1907343	450025
B	705000356		22829	55617	10931	12696805	2495438
B	705000458		7328	60572	10793	4438716	790911
W	705000562		12861	55413	14219	7126666	1828706
F	705000691		457	19952	9368	911181	428112
	705000792		2950	54325	14100	1602588	415950
			58836			29489885	6905879
	707000052		1191	17924	13000	213475	154830
			1191			213475	154830
	7080000						

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	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
39	BRAKE PARACHUTE F F	7080001	52	239	10
39	BRAKE PARACHUTE C F	7080002	54	1323	39
39	BRAKE PARACHUTE D B	7080003	56	44	52
39	BRAKE PARACHUTE E B	7080004	58	51	67
39	BRAKE PARACHUTE R F	7080005	59	6503	81
				6969	
	ELECTRICAL SYSTEM	7090000			
	ELECTRICAL WIRING	7091400			
60	ELECTRICAL WIRING R N	7091401	51	129	9
60	ELECTRICAL WIRING F F	7091402	52	2966	19
60	ELECTRICAL WIRING C F	7091403	54	1304	41
60	ELECTRICAL WIRING A I	7091404	55	1274	21
60	ELECTRICAL WIRING D B	7091405	56	6515	53
60	ELECTRICAL WIRING E B	7091406	58	64	59
60	ELECTRICAL WIRING FIN	7091409	83	352	79
60	ELECTRICAL WIRING I W	7091408	62	890	95
60	ELECTRICAL WIRING N U C	7091410	91	330	18
60	ELECTRICAL WIRING ENG	7091411		200	25
60	ELECTRICAL WIRING C A	7091412		1374	63
				3759	
60	ELECTRICS F F	7091500	52	1524	81
				1524	
60	ELECTRICS C F	7091600	54	735	94
				735	
60	ELECTRICS E B	7091700	58	670	67
60	ELECTRICS ENG	7091701		1163	25
				1230	
60	ELECTRICS FIN	7091800	83	83	89
				83	
60	ELECTRICS I W	7091900	62	233	66
60	ELECTRICS C A	7091901		112	62
60	ELECTRICS M U C	7091902	92	74	51
				252	
60	ELECTRICS A I	7092000	55	509	22
				509	

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	708000152		23916199	12011		38716	28706
	708000254		13239692	11683		52393	15422
	708000356		4452745	13606		23208	5987
	708000458		5167727	13406		34541	6837
	708000559		65038182	313181		5320950	857160
			6969			5469808	914112
	7090000						
						UNCLASSIFIED	
						NON CLASSIFIE	
	7091400						
	709140051		129	9285	12000	11978	15480
	709140252		29661	99771	12000	592518	332192
	709140354		13044	18781	10000	546089	143440
	709140455		12742	19841	20000	280076	152880
	709140556		651553	375	9200	3477381	599380
	709140658		6459	500	9200	38080	5888
	709140983		3527	9754	30000	280734	105600
	709140862		8909	5411	13900	4820749	1238351
C	709141091		3301	8600	9800	61380	32340
	709141 1		2002	5858	31000	1172832	200200
	709141 2		13746	33473	11234	4601199	1544226
			37591			15883016	4369977
	709150052		1524	8154	64110	95	2357951	1691766
			15248			2357951	1691766
	709160054		7359	4549	1107	17	3347683	788664
			7359			3347683	788664
	709170058		670	6794	4115	97	455225	77700
	709170 1		11632	5620	7114	72	6537998	1334423
			12302			6993223	1412123
	709180083		83	8955	5028	840	74327	23937
			83			74327	23937
	709190062		2336	6205	3145	00	1449558	338720
	709190 1		112	6294	6135	61	70500	15188
	709190292		74	5160	0137	00	38184	10138
			2522			1558242	364046
	709200055		5090	2205	9138	32	1122803	704049
			5090			1122803	704049

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
60	ELECTRICS D B	709210056		29189	51
				29189	
66	WINDSCREEN DEMISTING	709220052		2551	20
				2551	
	L P PNEUMATICS	7100000			
58	L P PNEUMATICS F F	710000152		1409	20
58	L P PNEUMATICS C F	710000254		1923	4
58	L P PNEUMATICS D B	710000356		3125	4
58	L P PNEUMATICS E B	710000458		1578	65
58	L P PNEUAMTICS FIN	710000583		4107	75
				3901	
	OIL AND HYD FLD COOLING	7110000			
57	OIL AND HYD FLD COOLING DB	711000156		2200	57
				2200	
65	INTAKE DEICING	712000052		5184	19
				5184	
65	RADOME ANTI ICING	713000051		888	5
				888	
61	RADIO RADAR INT SYST R N	715000151		4254	9
61	RADIO RADAR INT SYST F F	715000252		13378	19
61	RADIO RADAR INT SYST C F	715000354		33206	27
61	RADIO RADAR INT SYST I W	715000562		10397	54
61	RADIO RADAR INT SYST O W	715000664		807	1
61	RADIO RADAR INT SYST FIN	715000783		3201	76
61	RADIO RADAR INT SYST C A	7150008		11579	27
61	RADIO RADAR INT SYST D B	715000959		137	4
				76108	
60	CANOPY ACTUATION	716000052		6205	22
				6205	
3	CABIN CONSOLES	717000052		1745	17
				1745	

IGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	709210056		29189	51866	10355	15139167	3022521
			29189			15139167	3022521
	709220052		2551	20102	10400	512802	265304
			2551			512802	265304
	7100000						
	710000152		1409	20246	13016	285266	183395
	710000254		192	34924	12255	67054	23530
	710000356		312	54723	9718	170736	30320
	710000458		1578	65576	9860	1034789	155591
	710000583		410	75289	25292	308685	103697
			3901			1866530	496533
NG	7110000						
NG DB	711000156		2200	57950	9200	127490	202400
			2200			1274900	202400
	712000052		5184	19702	11800	1021352	611712
			5184			1021352	611712
	713000051		888	5149	12500	45723	111000
			888			45723	111000
T R N	715000151		4254	9964	9371	423869	398642
T F F	715000252		13378	19316	12537	2584094	1677200
T C F	715000354		33206	27664	10385	9186108	3448443
T I W	715000562		10397	54826	15861	5700259	1649068
T O W	715000664			8073	9041	37364	591123	11011
T FIN	715000783		3201	76212	25627	2439546	820320
T C A	715000 8		11579	27810	11484	3220120	1329732
T D B	715000959			13745	50158	00	9692	2054
			76108			23622811	9336470
	716000052		6205	22211	15447	1378193	958486
			6205			1378193	958486
	717000052		1745	17476	12434	304956	216973
			1745			304956	216973

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT ~~C-105 MK 1~~

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	
62 SURFACE FINISH F F	7190001	52	3	631
62 SURFACE FINISH CANOPY	7190002	53		642
62 SURFACE FINISH C F	7190003	54	14	003
62 SURFACE FINISH 2NTAKES	7190004	55	4	082
62 SURFACE FINISH D B	7190005	56	3	775
62 SURFACE FINISH E B	7190006	58	4	436
62 SURFACE FINISH R F	7190007	59	6	488
62 SURFACE FINISH FIN	7190013	83	6	397
62 SURFACE FINISH RUDDER	7190014	84	2	028
62 SURFACE FINISH AILERON	7190011	74	3	537
62 SURFACE FINISH ELEVATOR	7190012	82	5	667
62 SURFACE FINISH I W	7190008	62	31	516
62 SURFACE FINISH O W	7190009	64	10	677
62 SURFACE FINISH O W L EDGE	7190010	65	3	196
			100	00

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SHEET 13

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	7190001	52	363	18744	12200	68041	44286
	7190002	53	64	20218	15900	12940	10176
	7190003	54	1400	37197	12455	520758	174370
	7190004	55	408	22798	12020	93016	49042
	7190005	56	377	53828	11200	202932	42224
	7190006	58	443	66701	11200	295485	49616
	7190007	59	648	80362	13175	520746	85374
	7190013	83	639	74663	20837	477097	133148
	7190014	84	202	81279	21431	164184	43291
	7190011	74	353	79190	13556	279541	47853
R	7190012	82	566	75523	14260	427460	80712
	7190008	62	3151	60144	14400	1895137	453744
	7190009	64	1067	70650	13590	753836	145005
DGE	7190010	65	319	63948	13526	203994	43148
			10000			5915167	1401989

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT C-105 MK 1

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
REMOVABLE EQUIPMENT GROUP	8000000			
69 EJECTOR SEATS	801010052		18600	20
			18600	
RADAR REMOV GROUP	8020000			
61 J2 COMPASS O W	802070064		130	70
			130	
111 INSTRUMENT PACK	805080054		67061	38
			67061	
112 INSTRUMENTATION	805090054		244700	38
			244700	
113 FIRE PREVENT FIRST A C CF	805100054		14029	40
			14029	
113 FIRE PREVENT FIRST A C DB	805110056		806	54
			806	
113 FIRE PREVENT FIRST A C EB	805120058		582	62
			582	

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SHEET 14

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
ROUP	8000000						
	8010100	52	18600	201101	36250	3740460	2534250
			18600			3740460	2534250
	8020000						
	8020700	64	130	704001	3200	91520	17160
			130			91520	17160
	8050800	54	67061	385901	9471	25878840	6351347
			67061			25878840	6351347
	8050900	54	244700	389501	9500	95310650	23246500
			244700			95310650	23246500
C CF	8051000	54	14029	409561	9982	5745717	1400375
			14029			5745717	1400375
C DB	8051100	56	806	549401	2883	442816	103837
			806			442816	103837
C EB	8051200	58	582	26341	4095	364530	82033
			582			364530	82033

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT C-105 MK 1

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	
	OPERATIONAL LOAD	9000000			
99	CREW MEMBERS	901000052		43000	1
				43000	
	ENGINE OIL	9020000			
120	ENGINE OIL USABLE	9020001		8816	6
75	ENGINE OIL TRAPPED	9020002		4223	6
				13039	
	OXYGEN CHARGE	9040000			
128	OXYGEN CHARGE F F	904000152		72	2
128	OXYGEN CHARGE C F	904000254		1267	2
				1339	
125	ALCOHOL FOR RADOME DEICING	905000051		2200	
				2200	
132	ENGINE FIRE EXT FLUID	9060000		2500	7
				2500	
	RESIDUAL FUEL	9070000			
74	RESIDUAL FUEL C F	907000154		4680	3
74	RESIDUAL FUEL I W	907000262		17160	5
				21840	
67	WATER FOR AIR CONDITIONING	910000054		12500	2
				12500	

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SHEET 15

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	9000000						
	9010000	52	43000	19400	13650	8342000	5869500
			43000			8342000	5869500
	9020000						
	9020001		8816	61246	12186	5399447	1074318
	9020002		4223	60237	10739	2543809	453508
			13039			7943256	1527826
	9040000						
	9040001	52	7	22049	3132	00 14755	9504
	9040002	54	1267	26280	1615	0 3329	68 204621
			1339			347723	214125
ICING	9050000	51	2200	9300	13800	204600	303600
			2200			204600	303600
	9060000		2500	73000	12900	1825000	322500
			2500			1825000	322500
	9070000						
	9070001	54	4680	39424	12300	1845043	575640
	9070002	62	17160	59755	13705	10253958	2351778
			21840			12099001	2927418
ONING	9100000	54	12500	26800	13200	3350000	1650000
			12500			3350000	1650000

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