QC
AVRO
Rept.
7-0400-05
iss. 21

C-105 With J75 Production Engines

Report # 7-0400-05
ISSUE 21

WEIGHT SUMMARY & C.G. POSITION

N.A.E. Copy No. 2 Dec. 2/55

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Report no.: QCX - AVRO - CF105- R-7-0400-05-Iss-21

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by (Name): Michel W. Drapeau

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

Date: Dec. 7, 1992

R. Auger
Signature

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Date: 1st, December 1955
Aircraft: C-105 with J75 Engines
as Interim Power Plant

Report # 7-0400-05
Sheet # 001-1 Issue 21
Prepared By: K. Griffin
Checked By: E. Burnett

INTRODUCTION

This summary is a revised Weight and C.G. estimate of the C-105 Aircraft, based on the latest design information in being on November 30th, 1955. All Weight and C.G. changes are relative to Issue 20.

GENERAL:

(a) As in Issue 20 Pratt & Whitney J75 Engines comprise the interim Power Plant (6,175 lb each).

(b) The weight of Radio & Radar carried in this issue is 2,908 lb. The system is described as "Integrated Electronic System for C-105 Aircraft with certain deviations". The breakdown into items is given in Weight Summary Issue 14.

(c) As in issues subsequent to 15, the extended leading edge is recorded here.

1. STRUCTURE — WEIGHT (lb).

(a) Wing:

Wing Fairings - Addition of fairings at Aileron links	+	17
I/W Leading Edge - Redesign O/B end rib.	-	10
I/W Structure aft R/Spar - Redesign beams 1-6	+	26
Honeycomb panel added to skins	-	17
Redesign Engine Mounting Brackets	+	21
Miscellaneous changes	+	2
I/W M/Spar to R/Spar Struct. - Addition of Access Panels	+	3
O/W Leading Edge - Initial calcs. on extended L/Edge	+	37
Weight Change Increase	+	79

Ref. 002-1

(b) Fin and Rudder:

No Weight Change 0

(c) Fuselage to Sta. 255"

Miscellaneous minor changes, mainly on production drawings to Intake Ramp, F.F. Formers, Cockpit Floor etc.	-	8
Weight Change Decrease	-	8

Ref. 002-1

(d) Fuselage Sta. 255" to 485"

Radar Access Door - redesign of door	+	4
Misc. minor changes on production drawings to Equip. Bay Struct., Top Inner Longeron, Formers etc.	+	4
Weight Change Increase	+	8

Ref. 002- 1

INTRODUCTION

	WEIGHT (lb)
1. STRUCTURE (Continued)	
(e) Fuselage - Sta. 485" Aft.	
Engine Tunnel E.B. - Complete redesign of Shroud. Cooling System etc.	+ 43
Increased insulation allowance	+ 30
Afterburner Cooling E.B. - System now deleted	- 21
Heavy Formers E.B. - 1st estimate to redesign	- 15
Longerons E.B. - 1st estimate to redesign	+ 15
Fixed R.F. Sta. 742.5 - 803" - Misc. changes to Tunnel, Access Doors, Longerons etc.	- 6
Nacelles Remov. R.F. - Increase in O/Skin gauges etc.	+ 6
Weight Change Increase	+ 53
Ref. 002-2	
TOTAL STRUCTURE WEIGHT INCREASE	+ 132
2. LANDING GEAR	
(a) Nose Undercarriage - Increase in manufacturer's Weights of parts supplied by Jarry	+ 20
(b) Main Undercarriage - Alterations To Goodyear estimates of wheel, brake & tyre Weights	+ 14
Ref. 002-3	
TOTAL LANDING GEAR INCREASE	+ 34
3. POWER PLANT & SERVICES	
Engines - Engine C.G. moved aft 0.36"	
Addition of Oil filler and pressure switch	+ 4
Redesign of Fire Can	+ 38
Ref. 002-3	
TOTAL POWER PLANT & SERVICES INCREASE	+ 42
4. FLYING CONTROLS GROUP	
No Weight Change.	
5. EQUIPMENT	
Brake Parachute - minor alterations only	+ 2
Some C.G. Changes made to Electrical Items	
Ref. 002-3	
TOTAL EQUIPMENT INCREASE	+ 2
6. OPERATIONAL LOAD	
No Weight Change.	

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Date: 1st, December 1955
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Report # 7-0400-05
Sheet # 001-3 Issue 21
Prepared By: K. Griffin
Checked By: E. Burnett

INTRODUCTION

SUMMARY

Weight Change - Aircraft Weight Empty

Structure	+ 132 lb.
Landing Gear	+ 34 lb.
Power Plant & Services	+ 42 lb.
Equipment	+ 2 lb.
	+ 210 lb.

Weight Change Operational Load Less Fuel

Nil.

Weight Change - Operational Weight Empty (A/C less fuel)

Issue 20	Issue 21	
43,663	43,873	= + 210 lb.

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WEIGHT CHANGES TO 7-0400-05 ISSUE 20

WEIGHT CHANGES

- 10.00	I/W Spars - deletion of Engine Mount Supports from R/Spars now with beams in T/Edge Structure.		
+ 42.32	Structure aft of R/Spar - Beams 1 & 2 redesigned for Engine Mountings.		+ 22.32
	Beams 3,4,5 & 6 redesigned		+ 3.78
	Engine Mounting Brackets added		+ 31.34
	Skins redesigned - Honeycomb panel added		- 16.78
	Miscellaneous Items		+ 1.66
			+ 42.32
- 10.00	I/W Leading Edge - O/B End Forged Rib replaced by 2 ribs.		
+ 2.87	I/W M/Spar to R/Spar Struct. - Addition of Access Doors in the top skin panel.		
+ 16.80	Wing Fairings - Addition of Fairings at Aileron linkages.		
+ 37.32	O/W Leading Edge - 1st Estimate to scheme drawings.		
+ 79.31			

Front Fuselage (Fwd. Sta. 255".)

+ 1.42	Cockpit Floor - addition of Centre Stiffeners.		
+ 2.75	Bulkhead Sta. 120 ins. - Alteration to Production Drawings to accommodate Longeron attachments.		
- 2.10	Formers F.F. - Alteration to Former 201.44 for Longerons		+ 0.60
	Allowance for corner brackets at 237.5 & 245 was 1.5 lb each - brackets only .15 lb each		- 2.70
			- 2.10
- 9.92	Intake Ramp - De-icing equipment. Access Door added.		+ 3.77
	Prod. Drawings on ribs # 15, 16, 20 & 21		- 6.95
	Prod. Drawing estimate Former 214.4"		- 6.74
			- 9.92
- 7.85			

Centre Fuselage (Sta. 255" - 485")

+ 3.97	Radar Access Door - redesign - 'step' removed, O/Skin etc. .032 Al. was Mg.		
- 18.97	Longerons C.F. - Top Inner Longeron removed in accordance with Prod. Drawing call-up - extrusion now in Equip. Bay Struct. also cross beams, corner fittings with frames etc.		
+ 20.63	Equip. Bay Structure - Access Panel estimate to Prod. Drawings		+ 0.29
	Beams at 268 & 303.5" from Longeron Report		+ 3.16
	Side Skin lower extrusion replaces .032 Angle		+ 1.46
	Addition of Longeron and fittings		+ 15.72
			+ 20.63
+ 1.63	Formers C.F. - Miscellaneous Production Drawing changes		
+ 0.92	Structure below Lower Longeron - Prod. Drawing estimate side Access Doors, edge and lower members .04 were .032 Al.etc.		
+ 8.18			

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WEIGHT CHANGES TO 7-0400-05 Issue 20

WEIGHT CHANGES

Aft. Fuselage (Sta. 485" Aft.)

+ 73.12	Engine Tunnel E.B. - redesign shroud .02 Al. & .018 Titanium		
	was .016 Titanium	-	18.02
	Addition of Access Seals	+	5.46
	Redesign of Beams	+	24.66
	Insulation - previously inadequate allowance for foil	+	30.00
	Firewall added	+	21.34
	Restrictor added	+	13.00
	Alteration to cooling valve system	-	3.32
		+	73.12
- 21.35	Afterburner Cooling System - now deleted, see also above.		
- 15.44	Heavy Formers E.B. - 1st estimate to current design, an allowance made previously.		
	Former Sta. 591.65"	-	5.40
	Former Sta. 644.43"	-	2.73
	Former Sta. 697.28"	-	1.11
	Former Sta. 742.50"	-	6.20
		-	15.44
+ 15.58	Lower Longeron E.B. - 1st estimate to redesigned longeron with steal splices added at 591.65".		
+ 1.85	Fairing under Rudder R.F. - 1st estimate to scheme drawing.		
+ 5.59	Longerons Fixed R.F. - redesign, addition of Kink members etc.		
- 9.40	Engine Tunnel Fixed R.F. - redesign insulation (5 lb/cu.ft was 10 lb/cu. ft) inadequate allowance previously made for foil	-	0.57
	Deletion of Tunnel Stiffeners	-	21.44
	Tunnel .02 was .016 Titanium	+	9.71
	Flexible joint added at 742.5"	+	2.90
		-	9.40
+ 6.22	Nacelles Remov. R.F. - 1st Estimate of Former Sta. 803"	+	2.98
	O/Skin partly .015 and .012 Tatanium	+	1.29
	Insulation redesign	+	1.95
		+	6.22
- 3.98	Engine Access Doors R.F. - Redesigned O/Skin .04 Mg. was Al. Inner Skin .02 was .016 Titanium, stiffeners deleted. etc.		
+ 52.19			

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WEIGHT CHANGES TO 7-0400-05 ISSUE 20

WEIGHT CHANGES

Undercarriage

+ 20.47	Nose Undercarriage -	Increase in Weight of Jarry Items: Wheels & tyres now manufactured by Dunlop but quoted weights unchanged from previous allowance.	
+ 14.00	Main Undercarriage -	Alterations in Goodyear Weights	
		Wheel & Brake Assys. + 7 lb each	+ 28.00
		Tubeless Tyres - 3.5 lb each	- 14.00
			+ 14.00
+ 34.47			

Power Plant & Services

+ 42.00	Engines -	Engine C.G. moved aft by 0.36".	
		Oil filler and pressure switch added.	+ 3.72
		1st estimate of redesigned fire-can.	+ 38.28
			+ 42.00
+ 42.00			

Equipment - Fixed & Removable

- 0.20	Cabin Consoles -	estimate Pilot's L.H. & R.H. Panels to Prod. Drawings.
0	Electrics Undercarriage -	C.G. changes only.
0	Alternator System -	C. G. changes only.
+ 1.66	Brake Parachute -	general revisions of estimates of release assy. etc.
+ 1.46		

+ 209.76 TOTAL WEIGHT CHANGES

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Report # 7-0400-05
Sheet # 003-1 Issue 21
Prepared By: J. Murphy
Checked By: E. Burnett

WEIGHT AND C. G. SUMMARY

REF. NO.	DESCRIPTION	WEIGHT lb.	H. ARM ins.	V. ARM ins.
	STRUCTURE	16,962.15	564.36	138.63
1000000	Wing	9,621.97	642.21	142.36
2000000	Fin and Rudder	912.02	756.74	211.22
3000000	Fuselage Structure Fwd. 255"	2,191.71	182.11	129.83
	255" to 485"	1,641.83	377.01	129.94
	Aft. 485"	2,594.62	649.49	112.20
4000000	UNDERCARRIAGE - Up Position	2,881.82	482.73	133.46
4010100	Main Undercarriage	1,839.60	540.47	141.00
4010200	Main U/C Doors & Fairings	287.32	539.21	136.40
4010300	Main U/C Hydraulics	295.56	535.95	135.20
4020100	Nose Wheel Undercarriage	314.47	168.91	99.82
4020200	Nose U/C Doors & Fairings	25.92	163.71	89.22
4020300	Nose U/C Hydraulics	118.95	220.34	103.95
5000000	POWER PLANT & SERVICES	13,930.58	654.29	118.77
5010000	Engines J75	12,689.00	662.56	117.87
5020000	Gear Box & Drive	150.00	606.00	94.66
5030000	Engine Controls	25.10	356.68	119.39
5040000	Pneumatic Starting System	70.00	610.00	94.75
5050000	Engine De-Icing	65.75	564.53	114.37
5060000	Fire Extinguishing System	64.27	700.07	123.00
5070000	Engine Mountings & Brackets	221.11	645.29	132.67
5080000	Fuel System	645.35	526.86	139.92
6000000	FLYING CONTROLS GROUP	1,723.76	646.81	139.24
6010000	Mechanical Flying Controls	784.89	671.88	145.39
6030000	Flying Controls Electronics	108.00	222.33	131.43
6000000	Flying Controls Hydraulics	830.87	678.31	134.44
	EQUIPMENT FIXED & REMOVABLE	6,536.54	304.60	114.66
7010000	Instruments	57.30	146.41	137.04
7010003	Probe	15.00	-18.00	108.00
7030000	Oxygen System	46.12	220.36	138.15
7040000	Air Conditioning System	624.95	326.22	134.63
7050000	Hydraulic Main System	215.66	591.04	117.41
7080000	Brake Parachute	69.69	784.88	131.17
7090000	Electrical System	767.74	416.24	119.43
7100000	Low Pressure Pneumatics	16.60	217.17	133.41
7110000	Oil & Hydraulic Fluid Cooling	119.80	567.91	104.22
7120000	Intake De-Icing	101.72	210.14	118.95
7000000	Radio & Radar Fixed, Power Supplies	921.10	220.05	111.00
7160000	Canopy Actuation	47.00	223.43	156.83
7170000	Cabin Consoles	20.65	177.37	125.23
7180000	Radar Door Actuation	10.00	268.00	95.00
7190000	Radome - Anti-Icing	16.80	66.35	124.40
7200000	Cabin Insulation	11.91	179.24	130.00
7210000	Cockpit Pressure Sealing	20.00	186.01	130.00

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Date: 1st. December, 1955
Aircraft: G-105 With J75 Engines

Report # 7-0400-05
Sheet # 003-2 Issue 21
Prepared By: J. Murphy
Checked By: E. Burnett

WEIGHT AND C. G. SUMMARY

REF. NO.	DESCRIPTION	WEIGHT lb.	H. ARM ins.	V. ARM ins.	C.G. POSITION % M.A.C.
	Equipment (Fixed & Remov.) (Cont'd)				
8010100	Ejector Seats	204.00	200.10	136.25	
8010200	Emergency Provisions	16.95	166.01	130.65	
8020000	Radar Removable	1,259.70	143.20	114.53	
8000000	Radio Removable & I.F.F.	276.20	284.51	123.98	
8050100	Missile Pack Structure	676.17	385.26	95.61	
8050200	Missile Pack Mechanisms	410.48	373.88	102.86	
8050300	Missile Pack Hydraulics	293.00	366.29	101.00	
8050400	Missile Pack Electronics	318.00	389.15	101.22	
	AIRCRAFT WEIGHT EMPTY	42,034.85	551.55	127.99	
9000000	USEFUL LOAD	17,165.67	521.91	138.96	
9010000	Crew	430.00	194.00	136.50	
9020000	Oil	85.08	611.71	135.00	
9050000	Alcohol for Radome De-icing	22.00	93.00	138.00	
9060000	Engine Fire Extinguisher Fluid	25.00	730.00	129.00	
9070000	Residual Fuel	219.80	536.70	135.07	
9090000	Fuel For Combat Mission	15,328.00	539.25	142.06	
9030000	Missiles (Armament)	1,042.40	399.12	95.60	
9040000	Oxygen Charge	13.39	259.69	159.91	
	U/C Up		542.96	131.17	29.55
	Normal Combat Mission	59,200.52			
	U/C Down		544.54	129.01	29.98
	Half Combat Mission Fuel 981 @ 7.8 lb/gal.	7,664.00	540.92	139.53	
	U/C Up		543.76	129.18	29.77
	Combat Weight (Half Combat	51,536.52			
	Mission Fuel) U/C Down		545.58	126.70	30.27
	U/C Up		544.26	127.37	29.91
	Operational Weight Empty	43,872.52			
	U/C Down		546.40	124.46	30.50
	U/C Up		547.79	128.14	30.88
	Operational Weight Empty	42,830.12			
	(Less Missiles) U/C Down		549.98	125.16	31.48
	Maximum Internal Fuel 2,544 gal. @ 7.8 lb/gal.	19,843.00	538.88	144.32	
	Water (Air-Conditioning System)	125.00	268.00	95.00	
	U/C Up		542.05	132.58	29.30
	A.U.W. Max. Internal Fuel	63,840.52			
	U/C Down		543.52	130.58	29.70
	Max. External Fuel, 500 gal. @ 7.8 lb/gal. and Drop Tank	4,210.00	528.88	62.00	
	U/C Up		541.24	128.21	29.07
	A.U.W. Max. Internal and	68,050.52			
	External Fuel U/C Down		542.62	126.34	29.45

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REPORT No: T-0400-05 ISSUE 21

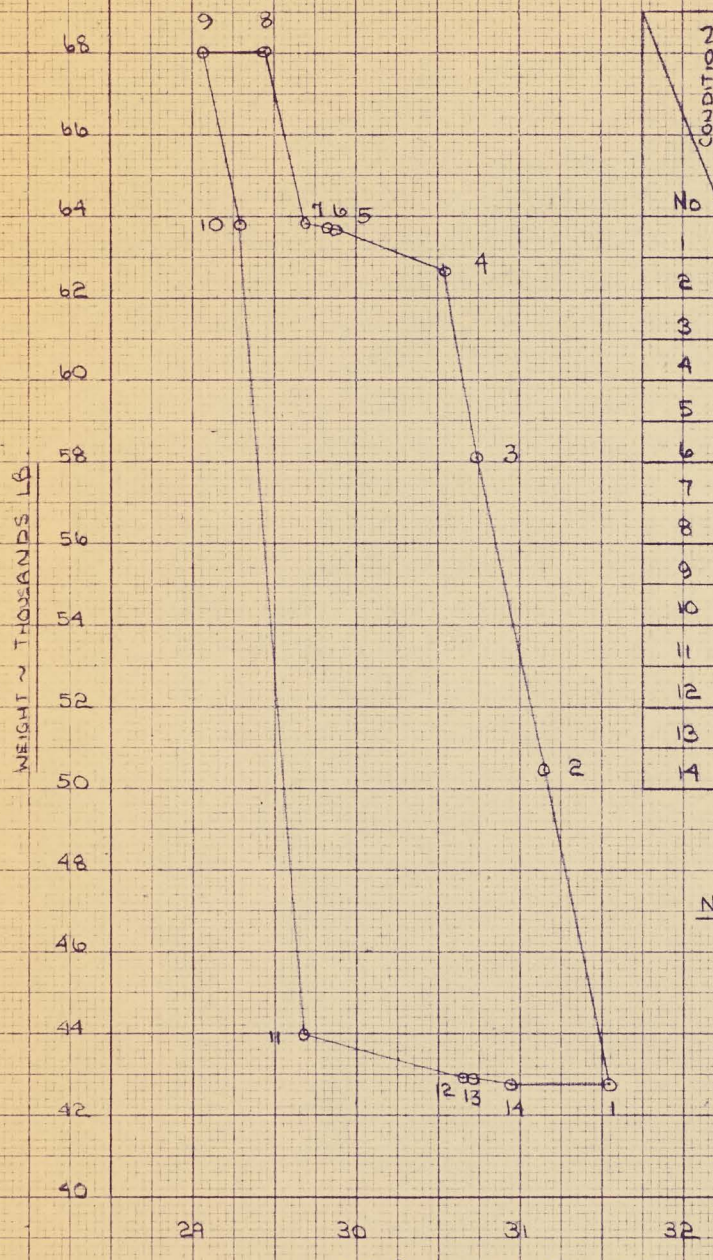
BY: Kathleen Griffin

DATE: Nov 30th 1955

C105 A/C C.G. ENVELOPE

FOR A/C FLIGHT CONDITIONS

WITH J75 A25 ENGINES



No \ CONDITION	COMBAT MISSION FUEL	NORMAL MISSION FUEL	MAX. INTERNAL FUEL	EXT. FUEL & TANK	MISSILES	DEICING FLUID	WATER	U/C UP	U/C DOWN
1									*
2	*								*
3		*							*
4			*						*
5			*		*				*
6			*		*	*			*
7			*		*	*	*		*
8			*	*	*	*	*		*
9			*	*	*	*	*	*	
10			*		*	*	*	*	
11					*	*	*	*	
12						*	*	*	
13							*	*	
14								*	

N.B. IN ORDER TO BRING POINT ① TO THE AFT LIMIT IE 31% MAC 194 LB BALLAST MUST BE INSTALLED AT STA 120 INS.

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

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-05 Issue 21
Dec. 1/55
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	REFERENCE NO.	COMP NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	1000000						
	1010000						
	1010001	64	79800	68900	13600	54982200	10852800
W	1010002	64	12520	69820	13700	8741464	1715240
	1010003	64	39784	70220	13600	27936325	5410624
	1010004	64	13334	69340	13740	9245796	1832092
W	1010006	64	47700	77370	13200	36905490	6296400
	1010007	64	11650	64460	13840	7509590	1612360
			204788			145320865	27719516
	1020000						
	1020001	74	33384	79190	13556	26436790	4525535
S	1020002		8867	8207	13079	692914	115880
			34270			27129704	4641415
	1030000	82	43567	75550	14260	32914869	6212654
			43567			32914869	6212654
	1040000						
	1040001	62	23458	57683	14216	13531278	3334789
	1040002	62	18000	45000	14400	8100000	2592000
	1040003	62	15800	56570	14280	8938060	2256240
	1040004	62	5626	60000	14600	3375600	821396
	1040005	62	4014	65400	14600	2625156	586044
	1040006	62	9000	70200	14500	6318000	1305000
M S	1040007	62	8913	04897	14470	43646961	12897111
R S	1040008	62	27772	66208	14487	172428964	40234166
SPAR	1040009	62	3215	27178	15000	23078706	4822800
I W	1040010	62	41853	72576	14316	30375233	5991675
	1040011		10950	64310	14860	7041945	1627170
	1040012	62	99901	65044	14589	64979606	14574557
			627610			384439509	91042948
	1050000	63	28230	45557	14500	12860741	4093350
			28230			12860741	4093350
	1060000	65	23732	64330	13760	15266796	3265523
			23732			15266796	3265523

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AVRO AIRCRAFT LTD.
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT C-105

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	
24 FIN	201000083		796207	
			79620	
25 RUDDER	202000084		115828	
			11582	

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-05 Issue 21
Dec. 1/55
SHEET 004-2

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REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
201000083		79620	74851	21077	59596366	16781507
		79620			59596366	16781507
202000084		11582	81330	21431	9419641	2482138
		11582			9419641	2482138

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AVRO AIRCRAFT LTD.
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT C-105

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	TOTAL FUSELAGE GROUP	3000000			
	FUSELAGE BASIC STRUCTURE	3010000			
3	RADOME	301000151		14268	4
3	RADAR NOSE ACCESS DOORS	301000251		6550	9
3	NOSE STRUCTURE FWD 120	301000351		9772	9
3	SKIN F F	301000452		67411	19
4	SKIN C F	301000554		130593	37
5	SKIN D B	301000656		83175	3
5	SKIN E B	301000758		116396	7
3	STRINGERS F F	301000852		12801	8
4	STRINGERS C F	301000954		51733	6
5	STRINGERS D B	301001056		5005	0
3	FORMERS F F	301001152		87851	8
4	FORMERS C F	301001254		274413	7
5	FORMERS D B	301001356		123815	3
5	LIGHT FORMERS E B	301001458		106636	6
5	HEAVY FORMERS E B	301001558		154556	6
3	LONGERONS F F	301001652		53111	8
5	LONGERON E B	301001858		75806	5
5	TOP LONGERONS E B	301001958		32056	6
5	TOP WING LONGERONS D B	302100021	56	18905	1
3	LONGERONS 255 485 F F	301002252		5325	
4	LONGERONS 255 485 C F	301002354		142514	1
4	DUCT BAY LONGERONS C F	301002456		4654	8
5	DUCT BAY LONGERONS D B	301002556		91935	2
4	STR BELOW BOTTOM LONGERON	301002654		40532	7
5	LONGITUDINAL BEAMS D B	301002756		50085	1
4	RADAR ACCESS DOOR	301002854		23102	7
5	MAIN FRAME AT STN 53877	301002956		51785	3
5	DIVE BRAKE ACCOM STRUCTURE	301003056		26355	0
3	COCKPIT DECKING	301003152		163391	9
4	DUCT C F	301003254		335123	7
5	DUCT D B	301003356		276395	4
3	CANOPY ARCH F F	301003452		58062	1
3	CANOPY ARCH C F	301003552		15988	6
5	ACCESS PANEL STIFFNERS	301003656		19485	3
3	NOSE U C SUPPORT STRUCTURE	301003752		36802	1
3	CREW BULKHEADS	301003852		105312	0
4	EQUIP BAY STRUCTURE	301003954		57462	8
3	WINDSCREEN R N	301004051		15151	1
3	WINDSCREEN F F	301004152		115241	4
5	SERV ACCESS DOORS AND PNLS	301004258		43166	0
6	FAIRING UNDER RUDDER R F	301004359		12507	7
4	DORSAL FAIRING AIR OUTLET	301004454		21102	9
5	INTERMEDTATE FORMERS E B	301004558		34616	9
5	ENGINE ACCESS DOORS E B	301004658		74676	2
4	SEAL IN MISSILE BAY	301004754		6182	9
4	JOINT STRAPS AND MISC	301004854		15533	3
4	FLOOR C F	301004954		114983	7
3	BULKHEAD AT STN 120	301005052		28391	2

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONI

PROJECT C-105

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
	UNDERCARRIAGE UP POSITION	4000000		
	MAIN UNDERCARRIAGE GROUP	4010000		
35	MAIN UNDERCARRIAGE	401010092		1839605
				183960
12	MAIN U C DOORS FAIRINGS	401020092		287325
				28732
	MAIN U C HYDRAULICS	4010300		
57	MAIN U C HYDRAULICS F F	401030152		7781
57	MAIN U C HYDRAULICS C F	401030254		2943
57	MAIN U C HYDRAULICS I W	401030362		284845
				29556
	NOSE UNDERCARRIAGE GROUP	4020000		
36	NOSE WHEEL UNDERCARRIAGE	402010091		314471
				31447
3	NOSE U C DOOR AND FAIRING	402020091		25921
				2592
	NOSE U C HYDRAULICS	4020300		
57	NOSE U C HYDRAULICS F F	402030152		102762
57	NOSE U C HYDRAULICS C F	402030254		16193
				11895

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WEIGHT AND C. OF G BY FUNCTIONAL COMPON

PROJECT C-105

	DESCRIPTION	REFERENCE NO.	COMP NO.	WEIGHT
	ENGINE GROUP	5000000		
41	ENGINES J 75	5010000		12689006
				12689000
49	GEAR BOX AND DRIVE	5020000		15006
				15000
	ENGINE CONTROLS	5030000		
47	ENGINE CONTROLS F F	5030001	52	11611
47	ENGINE CONTROLS C F	5030002	54	3153
47	ENGINE CONTROLS D B	5030003	56	3365
47	ENGINE CONTROLS E B	5030004	58	6986
				2510
43	PNEUMATIC STARTING SYSTEM	5040000		7006
				7000
66	ENGINE ANTIICING	5050000		65755
				6575
	FIRE EXT SYSTEM	5060000		
64	FIRE EXT SYSTEM	5060001		64277
				6427
42	ENGINE MTGS AND BRACKETS	5070000		221116
				22111
	FUEL SYSTEM	5080000		
54	FUEL SYSTEM C F	5080001	54	104403
54	FUEL SYSTEM D B	5080002	56	77505
54	FUEL SYSTEM E B	5080003	58	41956
54	FUEL SYSTEM I W	5080004	62	421505
				64535

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT C-105

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
	FLYING CONTROLS GROUP	6000000		
	MECHANICAL CONTROLS	6010000		
56	MECHANICAL CONTROLS F F	6010001	52	8881
56	MECHANICAL CONTROLS C F	6010002	54	809
56	MECHANICAL CONTROLS D B	6010003	56	759
56	MECHANICAL CONTROLS FIN	6010004	83	8344
56	MECHANICAL CONTROLS I W	6010005	62	36744
56	MECHANICAL CONTROLS O W	6010006	64	22952
				78489
	FLYING CONTROLS HYDRAULICS	6020000		
57	FLYING CONT HYDRAULICS D B	6020001	56	992
57	FLYING CONT HYDRAULICS E B	6020002	58	30040
				31032
	AUTO PILOT AND TIE IN	6030000		
61	AUTO PILOT AND TIE IN R N	6030001	51	5700
61	AUTO PILOT AND TIE IN F F	6030002	52	2200
61	AUTO PILOT AND TIE IN C F	6030003	54	800
61	AUTO PILOT AND TIE IN D B	6030004	56	2100
				10800
57	ELEVATOR HYDRAULICS	6050000	62	21743
				21743
	AILERONS HYDRAULICS	6060000		
57	AILERON HYDRAULICS E B	6060001	58	886
57	AILERONS HYDRAULICS I W	6060002	62	3885
57	AILERONS HYDRAULICS O W	6060003	64	15229
				20000
57	RUDDER HYDRAULICS	6070000	83	5012
				5012
57	DIVE BRAKE HYDRAULICS	6080000	56	5300
				5300

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WEIGHT AND C. OF G BY FUNCTIONAL COMPON

PROJECT C-105

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
61	RADIO AND RADAR FIXED R N	7140001	51	22500
61	RADIO AND RADAR FIXED F F	7140002	52	17010
61	RADIO AND RADAR FIXED C F	7140003	54	11470
61	RADIO AND RADAR FIXED D B	7140004	56	5720
61	RADIO AND RADAR FIXED FIN	7140005	83	2007
61	RADIO AND RADAR FIXED I W	7140006	62	5107
				57410
	RADAR POWER SUPPLIES	7150000		
61	RADAR POWER SUPPLIES R N	7150001	51	7700
61	RADAR POWER SUPPLIES C F	7150002	54	27000
				34700
60	CANOPY ACTUATION	7160000	52	4700
				4700
3	CABIN CONSOLES	7170000	52	2065
				2065
60	RADAR DOOR ACTUATION	7180000	54	1000
				1000
65	RADOME ANTIICING	7190000	51	1680
				1680
69	CABIN INSULATION	7200000	52	1191
				1191
3	COCKPIT PRESSURE SEALING	7210000	52	2000
				2000

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C-105 Mk 1

Report # 7-0425-20 Issue 10
Sheet # 1
Prepared By: K. Griffin
Checked By: E. Burnett

C. G. ENVELOPES WITH J75 A25 & PS 13 ENGINES

FITTED & FULL MK 1179 RADAR

Radio & Radar allowance carried in 7-0400-05 Issue 21 is as outlined in 7-0400-05 Issue 14 (2,908 lb.)

The effect of installing different Engines is shown on the attached C. G. Envelopes.

Curve (1) - J75 A25 Engines (6,175 lb each). (Engine C.G. at Sta. 664.26 ins.)

Curve (2) - PS 13 Engines (4,500 lb each). (Engine C.G. at Sta. 691.75 ins.)

N.B. The assumption is made that the basic aircraft remains unaltered irrespective of Engine installation.

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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REPORT : 7-0400-20 ISSUE 12

C105 A/C C.G. ENVELOPES

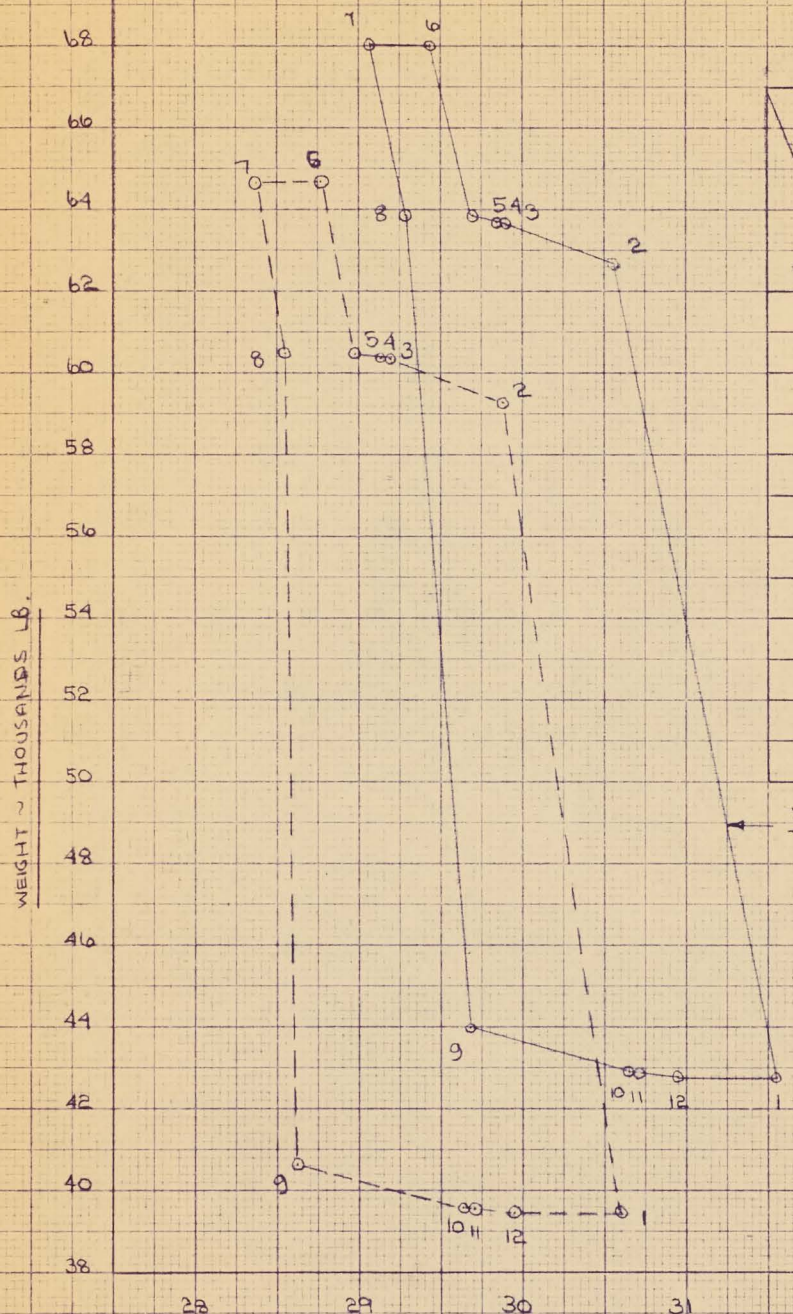
BY: Kathleen Griffin

WITH MX1179 RADAR INSTALLED

DATE : Nov 30th 1955

COMPARISON OF EFFECTS OF POSSIBLE ENGINE INSTALLATIONS

(BASED ON 7-0400-05 ISSUE 21)



No. \ CONDITION	MAX INT. FUEL	EXT FUEL & TANK	MISSILES	DEICING FLUID	WATER	U/C UP	U/C DOWN
1							*
2	*						*
3	*		*				*
4	*		*	*			*
5	*		*	*	*		*
6	*	*	*	*	*		*
7	*	*	*	*	*	*	
8	*		*	*	*	*	
9			*	*	*	*	
10				*	*	*	
11					*	*	
12						*	

J75 A25 ENGINES
(6175 LB EACH)

PS13 ENGINES
(4500 LB EACH)

N.B. WITH J75 A25 ENGINES 194 LB BALLAST AT STA 120 IS NECESSARY TO BRING POINT 1 TO THE AFT LIMIT IE 31% M.A.C.

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K+E 10 X 10 TO THE ½ INCH 359-12 KEUFFEL & ESSER CO. MADE IN U.S.A.