QCX
Avro
CF105
R-7-0400-34
Iss-10

FILE IN VAULT

C-105 MK 2 Report # 7-0400-34
Issue 10

WEIGHT SUMMARY & C.G. POSITION

R.C.A.F. Aug. 1/57

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Report no.: QCX - AVRO - CF105- R-7-0400-34-Iss.10

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

Date: August 1st, 1957
Aircraft: C-105 MK 2
Production A/C

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INTRODUCTION

		WEIGHT (lb)
1.	STRUCTURE	
	b) Fin & Rudder	
	No Weight Change	
	c) Fuselage Fwd. Sta. 255"	
	No Weight Change	
	d) Centre Fuselage Sta. 255"-485"	
	Redesign of Deflector Shield, Fuel tank & skinning for MK 2 Aircraft	+ 16
	Total Centre Fuselage Increase Ref. 2-1	+ 16
	e) Duct Bay Sta. 485"-591.65"	
	No Weight Change	
	f) Engine Bay Sta. 591.65"- 742.5"	
	Production drawings of some formers, tunnel parts etc.	+ 11
	Total Engine Bay Increase Ref. 2-1	+ 11
	g) Rear Fuselage	
	Engine Access Doors - production drawing estimates	+ 1
	Total Rear Fuselage Increase Ref. 2-1	+ 1
	h) Fuselage Joints	
	No Weight Change	
	TOTAL STRUCTURAL INCREASE	+ 76
2.	LANDING GEAR	
	No Weight Change	
3.	POWER PLANT & SERVICES	
	No Weight Change	
4.	FLYING CONTROLS GROUP	
	F/C Hydraulics - Alterations to pump & piping weights also 25 cu. in. accumulater replaces 100 cu. in.	- 21
	TOTAL FLYING CONTROLS DECREASE	- 21

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INTRODUCTION

5. EQUIPMENT GROUP	WEIGHT (lb)
Alternator System - Lucas Rotax oil cooled 40 K.V.A. Alternator System introduced.	+ 25
Damping System - first estimate with vendors proposed weights	+ 79
Hydraulics Main System - 2 X 110 cu. in. accumulators replace 1 X 200 cu. in. etc.	+ 14
Windscreen De-misting - Airesearch Cont. units replace Westinghouse etc.	- 8
Miscellaneous small changes to Probe, Canopy Actuator, Missile Pack Mechanisms etc. etc.	- 3
TOTAL EQUIPMENT INCREASE	+ 107

Ref. 2-2

SUMMARY

Weight Change - Aircraft Basic Weight

Structure	+ 76 lb.
Flying Controls	- 21 lb.
Equipment	+ 107 lb.
	+ 162 lb.

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

Issue 9	Issue 10		
44,354 lb	44,516 lb	=	+ 162 lb.

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DETAILED WEIGHT CHANGES TO I.B.M.
TABULATED DETAILS OF July 1st, 1957

WEIGHT CHANGES		WEIGHT (LB)
Wing:		
- 27.99	I/W Strut Pick-ups - Front Centre Mounting Plates now aluminum & titanium in lieu of steel	- 28.12
	Front I/B Mounting redesign	+ 0.13
		- 27.99
+ 75.94	I/W Skins M/S to R/S - Upper & lower skins rib # 3 to # 5 increased by 0.10", also alterations around front centre engine mounting	
+ 47.95		
Centre Fuselage Sta. 255" to 485"		
+ 0.35	Deflector Shield - redesigned for MK 2 A/C, no inner skins or unsulation, access door added etc.	
+ 6.01	Fuse. Fuel Tank- first scheme drawing estimate of MK 2 redesigned tank.	
+ 9.95	Skin C.F. - estimated to MK 2 Production Drawings, alterations to stiffeners, I/B Skin etc.	
+ 16.31		
Engine Bay Sta. 591.65 to 742.5"		
+ 3.49	Heavy Formers E.B. - some production drawing estimates, minor design changes etc.	
+ 8.04	Engine Tunnel E.B. - production drawing estimates of parts of tunnel assy.	
- 0.05	Structure at Engine Doors - production drawing estimates of tip frames etc.	
+ 11.48		
Rear Fuselage		
+ 0.70	Engine Access Doors - production drawing estimates	
+ 0.70		
Flying Controls Group		
- 20.81	Flying Control Hydraulics - Pumps based on MK 1 actual weight-	+ 18.00
	100 cu. in. Accumulator replaced by 25 cu. in.; alterations to piping pump mounting etc. etc.	- 38.81
		- 20.81
- 20.81		

continued.

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DETAILED WEIGHT CHANGES TO I.B.M.
TABULATED DETAILS OF July 1st, 1957

WEIGHT CHANGES		WEIGHT (lb)
Equipment Fixed & Removable:		
- 3.50	Probe - assumed as on MK 1 A/C which has been redesigned with a shorter boom etc.	
+ 14.06	Hydraulics D.B. - Two 110 cu. in. accumulators replace one 200 cu. in.	+ 10.00
	Alterations to piping (steel repaces aluminum etc)	+ 2.87
	Alterations to valves	+ 1.19
		+ 14.06
- 8.22	Windscreen De-misting - Airesearch control units replace Westinghouse	- 6.40
	Alterations to structural estimates	- 1.82
		- 8.22
- 17.00	Electrics (Duct Bay) - Alteration to weight of Lucas Rotax Transformer rectifier unit (associated with revised alternator system)	
+ 42.00	Electrics (Eng. Bay) - Lucas Rotax proposed weight of oil cooled 40 K.V.A. Alternators	
+ 79.13	Damping System - an allowance of 60 lb was previously recorded for the Minneapolis-Honeywell System, now vendors unit weights are available (approx. 95 lb) and probable wiring estimated.	
+ 2.87	Canopy Actuation - alterations to plumbing and emergency operating mechanisms as in MK 1 A/C	
- 2.19	Missile Pack Mechanisms - production drawing estimates now made for all Fin & Wing door operating mechanisms.	
+ 107.15		
+ 162.78	TOTAL WEIGHT CHANGES	

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WEIGHT & C.G. SUMMARY

DESCRIPTION	WEIGHT lb.	H. ARM ins.	V. ARM ins.
STRUCTURE	18,601.42	564.05	137.70
Wing	10,028.72	642.28	142.24
Fin & Rudder	1,024.00	754.25	209.28
Fuselage : fwd. Sta. 255"	2,493.62	186.93	129.08
Sta. 255" - 485"	1,704.75	377.60	129.87
Sta. 485" - 591.65"	1,045.19	536.96	105.11
Sta. 591.65"-742.5"	1,553.26	660.59	110.64
Sta. 742.5" Aft.	699.55	796.04	129.01
"Marry-up"	52.33	467.60	103.84
UNDERCARRIAGE - Retracted	2,551.77	487.22	134.79
Main Undercarriages	1,901.62	539.31	141.00
Main U/C Doors & Fairings	291.80	537.10	138.40
Nose Undercarriage	333.81	170.80	99.70
Nose U/C Door & Fairing	24.54	162.24	88.23
POWER PLANT & SERVICES	10,628.54	674.64	121.36
Engines & Accessories PS 13	9,032.78	691.67	121.20
Gear Box & Drive on Fuselage	281.84	601.70	102.49
Engine Controls	32.43	375.76	118.61
Gear Box, Starter & Drives on Engine	315.45	615.98	105.24
Engine Nose Bullet (Orenda supplied)	70.00	587.17	116.00
Fire Extinguishing System	70.46	702.44	134.82
Engine Mountings	132.38	666.82	136.52
Fuel System	693.20	530.62	134.87
FLYING CONTROLS GROUP	1,780.64	685.55	140.51
Mechanical Flying Controls	946.48	687.84	148.61
Hydraulic Flying Controls	834.16	682.95	131.31
EQUIPMENT GROUP - Fixed & Removable	8,103.45	329.77	112.68
Instruments	46.07	163.68	138.70
Probe	15.00	-38.14	108.00
Cockpit Pressure Sealing	5.00	186.00	130.00
Oxygen System	23.59	253.72	156.43
Ejector Seats	284.42	202.80	136.25
Air Conditioning System	856.00	333.49	134.98
Hydraulic Main System	623.15	502.78	117.75
Cabin Insulation	14.31	187.48	132.00
Brake Parachute	62.38	769.41	143.24
Electrical System	1,259.16	432.22	112.68
Low Pressure Pneumatics	55.70	416.79	123.99
Surface Finish	100.00	591.52	140.20
Intake De-icing Boots	51.84	197.02	118.00
Radome Anti-icing	8.88	51.49	125.00
Canopy Actuation	64.92	221.99	154.35
Cabin Consoles	17.45	174.76	124.34
Radar Door Actuation	10.00	268.00	95.00
MH 64 Damping System	139.13	449.26	135.57
Radio & Radar removable	1,850.50	178.50	104.46
Radio & Radar fixed	621.00	234.04	116.15

continued.

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WEIGHT & C.G. SUMMARY

DESCRIPTION		WEIGHT lb.	H. ARM ins.	V. ARM ins.	M.A.C. %
Equipment (Fixed & Removable) (cont'd)					
Sparrow Pack Structure		870.70	389.60	96.00	
Sparrow Pack Mechanisms		582.57	379.30	99.04	
Sparrow Pack Hydraulics		331.94	373.52	99.00	
Sparrow Pack Electronics		143.00	332.00	100.00	
Sparrow Pack Electrics		64.10	362.29	95.00	
Sparrow Pack Air Conditioning		2.64	309.93	104.15	
AIRCRAFT BASIC WEIGHT		41,865.82	547.18	128.61	
USEFUL LOAD (less fuel)		2,850.76	372.91	105.43	
Crew		430.00	194.00	136.50	
Oil		138.97	636.92	110.57	
Alcohol		22.00	93.00	138.00	
Engine Fire Extinguishing Fluid		25.00	730.00	129.00	
Residual Fuel		218.40	553.98	134.04	
Missiles		1,728.00	389.29	88.30	
Oxygen Charge		13.39	259.68	159.91	
Water for Air Conditioning		275.00	268.00	131.75	
Operational Weight Empty	U/C Up	44,516.58	536.03	127.12	27.64
	U/C Down		538.18	123.57	28.23
Operational Weight Empty less Missiles	U/C Up	42,788.58	541.96	128.69	29.27
	U/C Down		544.20	125.00	29.89
Normal Combat Mission Fuel* (2,029 gals. @ 7.8 lb/gal.)		15,830.00	542.05	142.30	
Normal Combat Weight	U/C Up	60,346.58	537.61	131.10	28.07
	U/C Down		539.20	128.48	28.51
Half Combat Mission Fuel (1,015 gals. @ 7.8 lb/gal.)		7,915.00	543.20	139.55	
Combat Weight (half Mission Fuel)	U/C Up	52,431.58	537.11	129.00	27.93
	U/C Down		538.93	125.98	28.44
Maximum Internal Fuel (2,492 gals. @ 7.8 lb/gal.)		19,438.00	541.85	144.16	
A.U.W. Max. Internal Fuel	U/C Up	63,954.58	537.80	132.30	28.12
	U/C Down		539.30	129.83	28.54
Maximum External Fuel (500 gals. @ 7.8 lb/gal. + Drop Tank)		4,248.20	521.84	60.67	
A.U.W. Max. Internal and External Fuel	U/C Up	68,202.78	536.81	127.84	27.85
	U/C Down		538.21	125.52	28.24

N. B. 1) * New figures are being prepared by Aerodynamics for Mission Fuel in accordance with latest PS 13 data.

2) Aircraft Datum = 120" above an arbitrarily chosen ground line.

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1-1 to 1-3	Introductory notes and brief explanation of weight changes.
2-1 to 2-2	Detailed explanation of weight changes to weight reports as listed on I.B.M. Sheets.
3-1 to 3-2	Weight & C.G. Summaries.
4-1 to 4-15	I.B.M. Detail Sheets of Weights and C.G.'s.

N. B. The flight C.G. envelopes for the MK 2 Aircraft have been omitted until such time as a fully approved fuel sequencing is established.

Classification ~~cancelled / changed to:~~ confirmed as 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: August 1st, 1957
Aircraft: C-105 MK 2
Production Aircraft

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INTRODUCTION

The following is a Weight & C.G. Summary of the C-105 MK 2 Production Aircraft, based on the latest weight estimates available.

Where no details, of minor changes between MK 1 Aircraft and MK 2 Aircraft are available, allowances have been retained as in MK 1. Some MK 2 estimates are to production drawings, some to schemes and a few only preliminary allowances e.g. Structure Aft of Sta. 803".

All Weight and C.G. changes are relative to Issue 9 of July 1st, 1957.

GENERAL

a) Orenda PS 13 Engines comprise the Power Plant (4,500 lb each)

b) A package containing 4 "semi-submerged" Sparrow II Missiles (432 lb each) forms the current Armament.

c) The R.C.A. Radar Astra I System is installed, Weight & C.G. location being to the latest breakdown received from them, dated Jan. 11th, 1957. However, the Sparrow III Auxiliaries and the Infra-red Tracker System, included in the breakdown, have been deleted and some AVRO installed Antennae added (Total weight 2,614.5 lb).

In addition to above the Minneapolis-Honeywell M.H. 64 Damping System is installed.

The early MK 2 Aircraft will have the "Astra Minus" System installed (i.e. Navigational and Communication Equipment only).

d) A considerable number of MK 1 parts and assemblies have now been weighed. Where these weights apply to the MK 2 Aircraft they have been incorporated into the MK 2 records.

On the I.B.M. Sheets in this report, immediately preceeding the item title, will be found a number varying from 0 to 100. This is the percentage Actual Weight recorded in that report.

N.B. It should be noted that the early MK 2 Aircraft will probably not be as this summary designates, but will be Flight Test versions, with instrumentation replacing the Missile Package etc, or for development of Astra I Radar System etc.

1. STRUCTURE

	WEIGHT (lb)
a) Wing:	
Inner Wing - Front Centre Mounting Plates Aluminum and Titanium, were Steel, skins thickened around mountings. etc.	+ 48
Total Wing Increase	+ 48
Ref. 2-1	

continued.

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WEIGHT AND C. OF G BY FUNCTIONAL G COMPONEN

PROJECT C-105 MK 2

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. A
	TOTAL WING GROUP	1000000			
	OUTER WING	1010000			
100	OUTER WING SKINS	101000164		92910706	
100	POSTS AND INTERCOSTALS	101000264		24367322	
100	OUTER WING SPARS	101000364		39258701	
100	OUTER WING RIBS	101000464		13456695	
18	AILERON CONTROL BOX	101000664		37920774	
100	RIB 12	101000764		7626648	
100	O W AILERON JACK FITTING	101000964		1046727	
	AILERON JOINTS AND FAIRING	101001000		3293787	
				197945	
	AILERON	1020000			
100	AILERON STRUCTURE	102000174		33600792	
				33600	
97	ELEVATOR MARRY UP	1030000000		1597738	
97	ELEVATOR	103000082		44900755	
				46497	
	INNER WING	1040000			
79	MAIN U C STRUCTURE	104000162		33071577	
27	FRONT SPAR I W	104000262		11110484	
27	MAIN SPAR I W	104000362		14639565	
27	FWD CENTRE SPAR I W	104000462		4245604	
27	AFT CENTRE SPAR I W	104000562		3386654	
27	REAR SPAR	104000662		7667703	
32	I W STRUCTURE F S TO M S	104000762		105918499	
	I W STRUCTURE M S TO R S	104000862		14979609	
3	STRUCTURE AFT OF REAR SPAR	104000962		3046872	
11	ELEVATORCONTROLBOX I W	104001062		4271772	
25	TRANSP JOINT MARRY UP	104001100		7065636	
74	CENTRE LINE JOINTS	104001262		5864366	
	INNER WING SKINS	104001362		22787462	
	STRUT PICK UP FITTINGS	104001462		11818615	
31	RIBS 1 TO 9 INNER WING	104001662		5120461	
	DORSAL FAIRING	104001762		95482	
100	RIB 10	104001862		10800636	
	FUSELAGE HINGE JOINT I W	104001962		13812621	
25	TRANSP JOINT	104002062		12942630	
	FUSELAGE HINGE JOINT	104002100		3740527	
	DORSAL FAIRINGS I W	104002300		5629572	
				671822	

EIGHT 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
	1000000						
	1010000						
	101000164		929107	06461	3597	65637199	12632973
S	101000264		24367	3207	13410	1783323	326668
	101000364		39258	70118	13636	27526924	5353221
	101000464		13456	69506	13650	9352727	1836744
	101000664		37920	77409	13508	29353493	5122234
	101000764		7626	64873	13832	4947215	1054828
ING	101000964		10467	2791	13670	761394	142988
IRING	101001000		3293	78726	13224	2592447	435466
			197945			141954722	26905122
	1020000						
	102000174		33600	79213	13556	26615568	4554816
			33600			26615568	4554816
	103000000		15977	3810	14260	1178746	227732
	103000082		44900	75523	14260	33909827	6402740
			46497			35088573	6630472
	1040000						
	104000162		33071	57757	13983	19100817	4624318
	104000262		11110	48428	14260	5380351	1584286
	104000362		14639	56570	14280	8281282	2090449
	104000462		4245	60417	14317	2564702	607757
	104000562		3386	65494	14446	2217627	489142
	104000662		7667	70374	14420	5395575	1105581
M S	104000762		105918	49929	14405	52883798	15257488
R S	104000862		14979	60964	14572	9131798	2182740
SPAR	104000962		30468	72153	14904	21983576	4540951
W	104001062		42717	72500	14327	30969825	6120065
	104001100		7065	63621	13876	4494824	980339
	104001262		5864	66143	15062	38788239	8832809
	104001362		227874	62292	14475	141947272	32984762
S	104001462		11818	61500	14577	7268070	1722710
G	104001662		51204	61287	14499	31381395	7424068
	104001762		9548	2801	61150	45866	15343
	104001862		10800	63683	13835	6877764	1494180
I W	104001962		13812	62104	13790	8577804	1904675
	104002062		12942	63071	13710	8162649	1774348
	104002100		3740	52796	14309	1974570	535157
	104002300		5629	57249	16026	3222546	902104
			671822			410650350	97173272

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	TOTAL FUSELAGE GROUP	3000000			
	FUSELAGE BASIC STRUCTURE	3010000			
	RADOME	301000151		10265	
	RADAR NOSE STRUCTURE	301000351		17444	
	SKIN F F	301000452		80941	1
7000	SKIN C F	301000554		22043	3
	SKIN D B	301000656		58805	5
	SKIN E B	301000758		16489	6
4	FORMERS F F	301001152		105311	1
	FORMERS C F	301001254		27786	3
6	FORMERS D B	301001356		73315	5
	LIGHT FORMERS E B	301001458		103706	6
8	HEAVY FORMERS E B	301001558		192146	6
	LOWER LONGERONS F F	301001652		68461	1
	INNER LONGERON E B	301001758		71846	5
	LONGERON E B	301001858		69056	5
	TOP LONGERONS E B	301001958		6386	6
	LOWER SHEAR PANEL	301002052		29882	2
	TOP WING LONGERONS D B	301002156		4985	1
	LONGERONS C F	301002252		532	5
	LONGERONS C F	301002354		138134	4
	LONGERONS D B	301002556		105695	2
	ELECTRONICS BAY STRUCTURE	301002654		45232	7
59	LONGITUDINAL BEAMS D B	301002756		65705	2
	RADAR ACCESS DOOR C F	301002854		21082	7
72	MAIN FRAME AT STN 538 77	301002956		59805	1
	DIVE BRAKE ACCOM STRUCTURE	301003056		36345	0
20	TOP LONGERONS F F	301003152		185711	1
100	DUCT C F	301003254		332863	7
	DUCT D B	301003356		351005	5
	CANOPY ARCHES	301003452		85352	2
4	ACCESS PANEL STIFFNERS	301003656		38655	5
66	NOSE U C SUPPORT STRUCTURE	301003752		33432	1
3	CREW BULKHEADS	301003852		122722	0
	EQUIPMENT BAY STRUCTURE	301003954		71112	2
86	WINDSCREEN	301004152		130031	1
	SERV ACCESS DOORS AND PNLS	301004258		59296	6
	DORSAL FAIRING FWD	301004454		27272	9
	INTERMEDIATE FORMERS E B	301004558		48737	7
	ENGINE ACCESS DOORS E B	301004658		107356	4
	SEALING MISSILE BAY	301004754		6973	3
	MISCELLANEOUS ITEMS C F	301004854		3923	7
	ARMAMENT BAY ROOF	301004954		132163	8
	BULKHEAD AT STA 120	301005052		30601	2
	BULKHEAD AT STA 255	301005152		104292	2
	BULKHEAD STA 485	301005254		123514	4
	ENGINE TUNNEL E B	301005458		607166	5
	FUSELAGE FUELTANK	301005554		209603	9
	COCKPIT FLOOR	301005652		57431	7
	DORSAL OVER FUEL TANK	301006154		50974	1

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT_____

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
	DEFLECTOR SHIELD	301006254		2000	33
	SHEAR PANEL BELOW NAV ARCH	301006352		2074	25
	PACK MOUNTING STRUCTURE	301006454		2365	29
	ENGINE EXCESS DOORS R F	301006559		9242	77
	TUNNEL FIXED R F	301006659		12072	77
	SKIN AND INTERCOSTAL R F	301006759		5256	77
	FAIRING UNDER RUDDER R F	301006859		2638	78
	FORMERS FIXED R F	301006959		9290	77
	LONGERONS C BEAM FIXED R F	301007059		2690	77
	NACELLES REMOVABLE R F	301007159		19500	82
	CNTR STRUC STING REMOV R F	301007259		9267	83
	MISC ITEMS STRUCTURE E B	301007358		912	66
	MTG BRKTS SIDE PANEL D B	301007556		213	52
	FORMERS LOWER PANEL D B	301007656		741	54
	LOWER PANEL D B	301007756		5054	55
	JOINT F F TO C F	301007800		855	25
	JOINT AIR INTAKES TO F F	301007900		952	22
	JOINT C F TO D B	301008000		500	48
	JOINT D B TO E B	301008100		2508	58
	FUS JOINT AT STA 742 50	301008200		418	74
	DROP TANK MTG STRUCT D B	301008356		853	67
	STRUCT AT ENG ACCESS DOORS	301008558		6537	64
	MISC STRUCTURE F F	301008652		552	18
	ENG RAILS ATTACHM TO FORM	301008758		3624	68
	JOINT ENG TO FLOATING DUCT	301008800		1200	59
				62775	
96	DIVE BRAKES	302000072		11150	50
96	DIVE BRAKES C A	302000100		406	48
				11556	
	AIR INTAKES	3030000			
	AIR INTAKES	303010055		75828	21
				75828	
	PILOTS AND NAVIG CANOPIES	3040000			
76	PILOTS CANOPY	304010053		24081	17
				24081	
	NAVIGATORS CANOPY	304020053		15650	23
				15650	

AVRO AIRCRAFT LTD.
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WEIGHT AND C. OF G BY FUNCTIONAL C
COMPONE

PROJECT_____

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	FLYING CONTROLS GROUP	6000000			
	MECHANICAL CONTROLS	6010000			
	MECHANICAL CONTROLS F F	601000152		8759	15
	MECHANICAL CONTROLS C F	601000254		8853	33
	MECHANICAL CONTROLS D B	601000356		3504	48
	MECHANICAL CONTROLS FIN	601000583		12688	78
11	MECHANICAL CONTROLS I W	601000662		4088	471
	MECHANICAL CONTROLS O W	601000764		3043	677
	MECHANICAL CONTROLS C A	601000800		646	70
				94648	
	FLYING CONTROLS HYDRAULICS	6020000			
	FLYING CONT HYDRAULICS D B	602000156		2332	57
37	FLYING CONT HYDRAULICS E B	602000258		3907	664
	FLYING CONT HYDRAULICS R F	602000359		48	75
63	FLYING CONT HYDRAULICS I W	602000462		2444	870
	HYDRAULICS FLYING CONT O W	602000564		1218	174
61	FLYING CONT HYDRAULICS FIN	602000683		533	176
				83416	

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss 10

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NON CLASSIFIE

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	7000000						
	7010000						
	701000152		4407	161	12	13909	710056	612970
GE	701000452		200	22000	13000	44000	26000
			4607			754056	638970
ING	702000052		500	186	00	13000	93000	65000
			500			93000	65000
	7030000						
	703000152		2359	253	72	15643	598525	369018
			2359			598525	369018
EM	7040000						
F F	704000152		12321	224	60	11998	2767297	1478274
C F	704000254		5752	32	92	13798	16848487	7937024
D B	704000356		207	45	14	12569	1066389	260681
C A	704000500		1236	65	45	13703	6992355	1694513
ENG	7040006 0		125	56	70	13900	840850	174445
I W	704000762		6	15	17	15751	31585	9608
			85600				28546963	11554545
M	7050000							
F	705000152		8415	20	16	10853	1684346	913280
F	705000254		416	24	33	10420	1805642	433680
B	705000356		2588	25	63	11046	14400486	2858926
B	705000458		724	06	47	10852	4390843	785685
W	705000562		1331	15	53	14235	7368970	1894821
	705000691		325	19	33	9521	61857	30943
	705000792		298	05	43	14100	1618885	420180
			62315				31331029	7337515
	707000052		1431	187	48	13200	268284	188892
			1431				268284	188892
	7080000							
	708000152		455	169	13	12869	76954	58554
	708000559		565	98	20	14437	4645699	816990

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT_____

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	BRAKE PARACHUTE I W	708000662		12462	
				6238	
	ELECTRICAL SYSTEM	7090000			
	ELECTRICAL WIRING	7091400			
	ELECTRICAL WIRING R N	709140151		129	9
	ELECTRICAL WIRING F F	709140252		29661	19
	ELECTRICAL WIRING C F	709140354		23543	39
	ELECTRICAL WIRING A I	709140455		12742	21
	ELECTRICAL WIRING D B	709140556		90155	52
	ELECTRICAL WIRING E B	709140658		645	9
	ELECTRICAL WIRING I W	709140862		8909	54
	ELECTRICAL WIRING FIN	709140983		3527	9
	ELECTRICAL WIRING N U C	709141091		3301	8
60	ELECTRICAL WIRING ENG	709141110		20026	0
	ELECTRICAL WIRING C A	709141200		137463	3
				41141	
30	ELECTRICS F F	709150052		15248	15
				15248	
	ELECTRICS C F	709160054		8709	45
				8709	
	ELECTRICS E B	709170058		6706	7
	ELECTRICS ENG	709170110		17632	58
	ELECTRICS C A	709170200		7186	1
				19020	
	ELECTRICS FIN	709180083		83	89
				83	
	ELECTRICS I W	709190062		2336	62
	ELECTRICS C A	709190100		1126	2
	ELECTRICS M U C	709190292		74	51
				2522	
	ELECTRICS A I	709200055		5090	22
				5090	
	ELECTRICS D B	709210056		30089	51
				30089	

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PROJECT

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
WINDSCREEN DEMISTING	709220052		3564	19
			3564	
ELECTRICS R F	709230059		136	80
			136	
SPARROW ELECTRICS F F	709240152		254	18
SPARROW ELECTRICS C F	709240254		60	27
			314	
L P PNEUMATICS	71000000			
12 L P PNEUMATICS F F	710000152		2117	19
12 L P PNEUMATICS C F	710000254		778	32
12 L P PNEUMATICS D B	710000356		418	55
12 L P PNEUMATICS E B	710000458		1557	65
12 L P PNEUMATICS FIN	710000583		504	74
12 L P PNEUMATICS R N	710000651		136	6
12 L P PNEUMATICS A P	710000794		60	29
			5570	
INTAKE DEICING	712000055		518	419
			5184	
RADOME ANTI ICING	713000051		888	5
			888	
RADIO AND RADAR FIXED	71400000			
RADIO AND RADAR FIXED R N	714000151		16500	9
RADIO AND RADAR FIXED F F	714000252		5000	18
RADIO AND RADAR FIXED C F	714000354		18000	27
RADIO AND RADAR FIXED D B	714000456		1800	53
RADIO AND RADAR FIXED FIN	714000583		3200	76
RADIO AND RADAR FIXED C A	714000600		17600	21
			62100	
29 CANOPY ACTUATION	716000052		649	22
			649	
CABIN CONSOLES	717000052		174	517
			174	

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT_____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
RADAR DOOR ACTUATION	718000054		10026	
			1000	
SURFACE FINISH F F	719000152		36318	
SURFACE FINISH CANOPY	719000253		6420	
SURFACE FINISH C F	719000354		14003 7	
SURFACE FINISH 2NTAKES	719000455		4082 2	
SURFACE FINISH D B	719000556		37753	
SURFACE FINISH E B	719000658		44366	
SURFACE FINISH R F	719000759		64880	
SURFACE FINISH I W	719000862		31516 0	
SURFACE FINISH O W	719000964		10677 0	
SURFACE FINISH O W L EDGE	719001065		31963	
SURFACE FINISH AILERON	719001174		35379	
SURFACE FINISH ELEVATOR	719001282		56675	
SURFACE FINISH FIN	719001383		63974	
SURFACE FINISH RUDDER	719001484		2028 1	
			10000	

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONE

PROJECT

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
REMOVABLE EQUIPMENT GROUP	8000000			
EJECTOR SEATS	801010052		28442	20
			28442	
RADAR REMOV GROUP	8020000			
RADAR REMOVABLE	8020100			
RADIO AND RADAR REM R N	802010151		98050	9
RADIO AND RADAR REM F F	802010252		189001	8
RADIO AND RADAR REM C F	802010354		596002	6
RADIO AND RADAR REM D B	802010456		41505	2
RADIO AND RADAR REM C A	802010600		43505	5
			185050	
DAMPING SYSTEM	8030000			
DAMPING SYSTEM F F	803010152		63516	
DAMPING SYSTEM C F	803010254		218031	
DAMPING SYSTEM E B	803010358		36963	
DAMPING SYSTEM I W	803010462		58005	2
DAMPING SYSTEM O W	803010564		9574	
DAMPING SYSTEM R N	803010651		520	8
DAMPING SYSTEM C A	803010700		43144	8
			13913	
SPARROW PACK	8050000			
SPARROW PACK STRUCTURE	805010094		870703	8
			87070	
SPARROW PACK MECHANISMS	805020094		582573	7
			58257	
SPARROW PACK HYDRAULICS	805030094		331943	7
			33194	

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WEIGHT AND C. OF G BY FUNCTIONAL C COMPONEN

PROJECT_____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
SPARROW PACK ELECTRONICS	805040094		14300	33
			14300	
SPARROW PACK ELECTRICS	805050054		6410	36
			6410	
MISSILE AIRCONDITIONING	807000094		264	30
			264	