

ARROW 2  
Prod. A/C

Report # 7-0400-34  
Issue 16

**UNCLASSIFIED**  
**SECRET**

WEIGHT & C.G. SUMMARY

RCAF

Feb. 1/58

AVRO AIRCRAFT LIMITED  
INTER-DEPARTMENTAL MEMORANDUM

Ref. 5865/11/J  
Date February 1st, 1958  
To See Distribution  
From Mr. E. F. Burnett  
Subject ARROW 2 PRODUCTION A/C WEIGHT & C.G. SUMMARY - Report # 7-0400-34 Iss. 16

Attached is a copy of Weight and C.G. Summary Report # 7-0400-34 Issue 16, dated February 1st, 1958 for your retention.

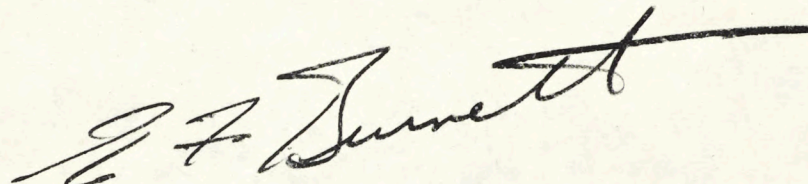
This report is revised monthly and is issued complete on the 1st of each month.

Classification cancelled/changed to

**UNCLASSIFIED**

by authority of \_\_\_\_\_ (date) \_\_\_\_\_

Signature \_\_\_\_\_ Rank \_\_\_\_\_



amc.

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A. Cornish  
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A.D. Crust (5) for RCAF  
N. Ring  
D. Inglis  
D. Moore  
K. Wreghitt  
R. Cairns  
G. Eves

Date: February 1st, 1958  
Aircraft: ARROW 2  
PRODUCTION A/C

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I N D E X

<u>Sheet #</u>	<u>Content</u>
1-1 to 1-4	Introductory notes and explanation of Weight Changes.
2-1 to 2-2	Weight & C.G. Summaries
3	Horizontal C.G. plot showing basic fixed points on flight envelope. The variation of C.G. with fuel used has been omitted until such time as a fully approved fuel sequencing is established.
4-1 to 4-15	I.B.M. Detail Sheets of Weights and C.G.'s.

Date: February 1st, 1958  
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Report # 7-0400-34 Iss. 16  
Sheet # 1-I

INTRODUCTION & WEIGHT CHANGES

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

All Weight & C.G. changes are relative to issue 15 of January 1st, 1958.

The early Arrow 2 Aircraft # 25206 etc. will not be as this summary designates, but will be flight test aircraft with Instrumentation, Astra Minus Radar, Missile Pack Trial Installation and various equipment Trial Installations. Weight statements for these aircraft will be issued at a later date.

GENERAL:

- a) Orenda PS 13 Engines comprise the Power Plant (4,500 lb each, brochure weight, excluding Nose Bullet and Input Frame).
- b) A package containing 4 "semi-submerged" Sparrow II Missiles (432 lb each) forms the current Armament.
- c) The R.C.A. Astra I Radar System is installed. The basis for the weight and C.G. breakdown is from the latest information received from R.C.A., dated October 4th, 1957. No Sparrow III Auxiliaries are carried in the production aircraft.

Where later weights have been received from Minneapolis-Honeywell these have been incorporated. Allowances have also been added for the missile firing system, junction boxes and some AVRO installed antennae.

Initially it was understood that the R.C.A. weight was for the complete system installed, now, however, it appears that only intercompartment cables were allowed for by R.C.A. not junction boxes etc.

The Infra-red Tracker System seeker head is allowed for in its Fin Pod location. (Total weight of installed system = 3,249.5 lb, including missile actuation and firing system).

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

Arrow 2 Aircraft # 25206 to # 25208 and # 25211 will have the "Astra Minus" System (Navigational and Communication equipment only).

- d) A considerable number of Arrow 1 parts, assemblies and equipment have now been weighed. Where these weights apply to the Arrow 2 Aircraft, they have been recorded in the Arrow 2 records.

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

1. STRUCTURE

WEIGHT (lb)

a) Wings:

No Weight Change.

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Sheet # 1-2

INTRODUCTION & WEIGHT CHANGES

<u>1. STRUCTURE (Continued)</u>	<u>WEIGHT (lb)</u>
b) <u>Fin &amp; Rudder:</u>	
Fin I. R. Pod - Initial allowance made for seeker mounting pod	+ 10.75
<u>Weight Increase Fin</u>	<u>+ 10.75</u>
c) <u>Front Fuselage fwd. Sta. 255"</u>	
Radome - new design approx. 12" shorter and walls .348" thick, were .38" thick.	- 18.71
Radar Nose Structure - addition of thrust angles on frame Sta. 82.25" to 84.25" for ballast installation	+ 0.42
Top Longerons - incorporation of E.C.N's and production drawing estimate of transverse beam Sta. 246.24"	+ 0.98
Aft. Upper Shear Panel - Arrow 2 production drawing estimates	- 0.73
Air Intakes - Actual weight of tip support casting and incorporation of design for production split	+ 3.84
<u>Front Fuselage Decrease</u>	<u>- 14.20</u>
d) <u>Centre Fuselage Sta. 255" to 485"</u>	
Bulkhead Sta. 485" - Actual weight obtained of Vickers release mechanism for drop tank	+ 1.10
Fuselage Fuel Tank - miscellaneous production drawing changes, alterations to dished panel assys. etc.	+ 2.34
<u>Centre Fuselage Increase</u>	<u>+ 3.44</u>
e) <u>Duct Bay Sta. 485"-591.65"</u>	
Dive Brake Accommodations - addition of stiffeners etc to Refuel and Limiter Access Door	+ 0.51
Dive Brakes - modifications to inner skin	+ 0.34
modifications to main lever design	+ 0.66
O/Skin and doublers - aluminum were magnesium	+ 5.40
<u>Duct Bay Increase</u>	<u>+ 6.91</u>
f) <u>Engine Bay Sta. 591.65" to 742.5"</u>	
No Weight Change	
g) <u>Rear Fuselage Sta. 742.5 Aft.</u>	
O/Skins fixed R.F. - production drawing estimates made	+ 3.23
Formers Fixed R.F. - production drawing estimates of "U" bolt assys. etc.	- 2.35
Tailcones - production drawings of some components now estimated, buttstraps at Sta. 814" were omitted in error when scheme drawing estimates were made	+ 14.22
<u>Rear Fuselage Increase</u>	<u>+ 15.10</u>





Date: February 1st, 1958  
 Aircraft ARROW 2  
 Production A/C

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Report # 7-0400-34 Iss. 16  
 Sheet # 2-1

WEIGHT & C.G. SUMMARY

<u>DESCRIPTION</u>	<u>WEIGHT</u> <u>lb</u>	<u>H. ARM</u> <u>ins.</u>	<u>V. ARM</u> <u>ins.</u>
<b>STRUCTURE</b>	19,066.88	567.04	137.43
Wings	10,012.03	642.54	142.22
Fin & Rudder	1,034.75	754.31	209.80
Fuselage - fwd. Sta. 255"	2,559.40	184.19	128.60
Sta. 255"-485"	1,695.27	375.45	130.63
Sta. 485"-591.65"	1,125.95	538.12	105.32
Sta. 591.65"-742.5"	1,550.20	661.04	110.51
Sta. 742.5" Aft.	1,036.95	805.24	128.71
"Marry-Up"	52.33	467.60	103.84
<b>LANDING GEAR - RETRACTED</b>	2,575.63	487.91	134.86
Main Landing Gear	1,934.94	539.49	141.00
Main Gear Doors & Fairings	282.34	537.60	138.37
Nose Landing Gear	333.81	170.80	99.70
Nose Gear Door & Fairing	24.54	162.24	88.23
<b>POWER PLANT &amp; SERVICES</b>	10,800.67	671.41	121.32
Engines & Accessories PS 13	9,186.78	687.95	121.16
Gear Box & Drives 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	65.46	700.45	134.21
Engine Mountings	132.38	666.82	136.52
Fuel System	716.33	530.91	134.48
<b>FLYING CONTROLS GROUP</b>	1,792.80	683.95	140.43
Mechanical Flying Controls	944.53	684.69	148.25
Hydraulic Flying Controls	848.27	683.13	131.72
<b>EQUIPMENT FIXED &amp; REMOVABLE</b>	8,855.26	332.16	113.98
Instruments	46.07	163.68	138.70
Probe	15.25	-23.71	108.00
Cockpit Pressure Sealing	5.00	186.00	130.00
Oxygen System	26.07	240.54	156.70
Ejector Seats	339.06	204.43	134.10
Air Conditioning System	856.00	333.49	134.98
Hydraulics Main System	640.81	504.22	117.77
Cockpit Insulation	14.31	187.48	132.00
Drag Chute	91.07	786.68	143.19
Electrical System	1,276.26	434.44	112.66
Low Pressure Pneumatics	56.94	421.96	128.47
Surface Finish	100.00	591.52	140.20
Intake De-icing Boots	88.00	195.82	118.00
Canopy Actuation	64.92	221.99	154.35
Cabin Consoles	17.38	174.63	124.32
Radar Door Actuation	10.00	268.00	95.00
MH 64 Damping System	180.15	471.27	135.69
Radio & Radar Removable	2,079.90	207.28	108.22
Radio & Radar Fixed	767.00	231.73	116.90
Sparrow Pack Structure	890.19	381.67	97.60
Sparrow Pack Mechanisms	551.12	374.40	99.12
Sparrow Pack Hydraulics	331.94	373.52	99.00
Sparrow Pack Electronics Removable	185.50	331.91	100.00
Sparrow Pack Electric & Electronics fixed	217.11	335.24	110.00
Sparrow Pack Air Conditioning	5.21	305.50	102.50

Date: February 1st, 1958  
 Aircraft: ARROW 2  
 Production A/C

~~SECRET~~  
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 Sheet # 2-2

WEIGHT & C.G. SUMMARY

<u>DESCRIPTION</u>	<u>WEIGHT</u> lb	<u>H. ARM</u> ins.	<u>V. ARM</u> ins.	<u>M.A.C.</u> %
AIRCRAFT BASIC WEIGHT				
U/C Up	43,091.24	545.07	128.54	
U/C Down		547.31	124.83	
USEFUL LOAD (less fuel)	2,788.76	377.69	104.73	
Crew	390.00	194.00	136.50	
Oil	138.97	636.92	110.57	
Engine Fire Extinguisher 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	45,880.00	534.90	127.09	27.32
U/C Down		537.01	123.61	27.91
Operational Weight Empty Less Missiles				
U/C Up	44,152.00	540.60	128.61	28.90
U/C Down		542.80	124.99	29.50
Normal Combat Mission Fuel * (2,237 gal. @ 7.8 lb/gal.)	17,450.00	-	-	-
Normal Combat Weight *	63,330.00	-	-	-
Half Combat Mission Fuel * (1,118.5 gal. @ 7.8 lb/gal.)	8,725.00	-	-	-
Combat Weight (half Mission Fuel)*	54,605.00	-	-	-
Maximum Internal Fuel (2,492 gal. @ 7.8 lb/gal.)	19,438.00	541.85	144.16	
A.U.W. Maximum Internal Fuel				
U/C Up	65,318.00	536.97	131.98	27.89
U/C Down		538.45	129.53	28.30
Maximum External Fuel (500 gals. @ 7.8 lb/gal + drop tank)	4,248.00	521.84	60.67	
A.U.W. Maximum Internal and External Fuel				
U/C Up	69,566.00	536.05	127.63	27.64
U/C Down		537.44	125.33	28.02

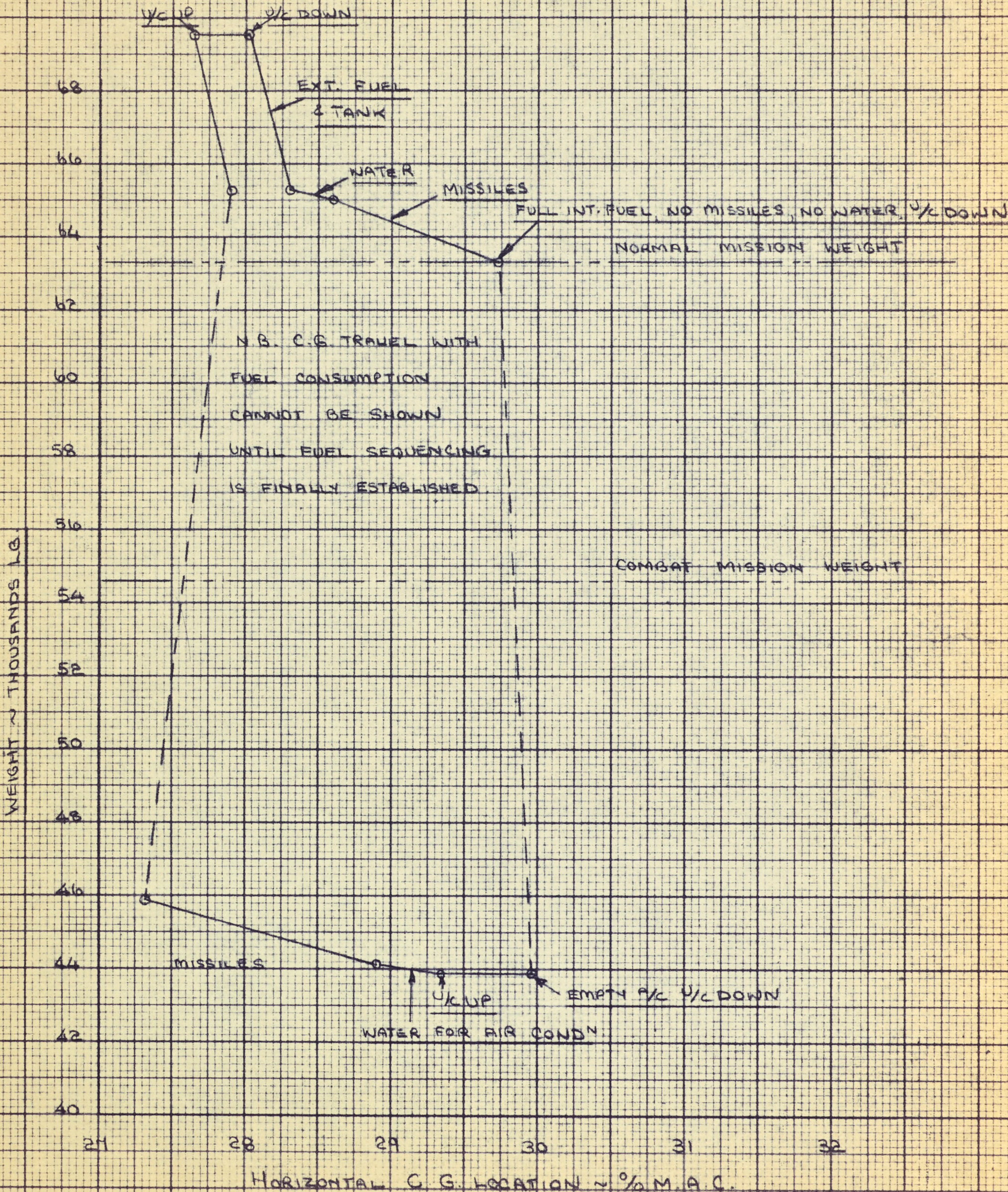
- N.B. 1) Aircraft Datum = 120" above an arbitrarily chosen ground line.
- 2) \* Fuel weights in accordance with latest data issued by Aerodynamics November 19th, 1957. Centres of Gravity have temporarily been omitted until a fuel sequencing system is finally established.
- 3) With the increase of 270 lb in Operational Weight Empty the Normal Combat Mission fuel has increased by a further 80 lb.

REPORT: 7-0400-34-110

BY: Kathleen Lyffe

DATE: Feb 1st 1958

HORIZONTAL C.G. PLOT OF  
FIXED POINTS ON ARROW 2  
FLIGHT ENVELOPE



G9-12  
10 X 10 TO THE 1/2 INCH  
MADE IN CANADA

AVRO AIRCRAFT LTD.

MALTON, ONT.

WEIGHT AND C. OF G BY

FUNCTIONAL CO

PROJECT Arrow 2 Prod. A/C

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT
TOTAL WING GROUP		10000000		
OUTER WING		10100000		
100	OUTER WING SKINS	1010000164		929
100	POSTS AND INTERCOSTALS	1010000264		24
100	OUTER WING SPARS	1010000364		392
100	OUTER WING RIBS	1010000464		134
18	AILERON CONTROL BOX	1010000664		379
100	RIB 12	1010000764		76
100	O W AILERON JACK FITTING	1010000964		10
AILERON JOINTS AND FAIRING		10100010		32
				1979
AILERON		10200000		
100	AILERON STRUCTURE	1020000174		336
				336
97	ELEVATOR MARRY UP	10300000		15
97	ELEVATOR	1030000082		449
				464
INNER WING		10400000		
79	MAIN U C STRUCTURE	1040000162		330
16	INNER WING SPARS	1040000262		410
	I W STRUCTURE F S TO M S	1040000762		1074
	I W STRUCTURE M S TO R S	1040000862		149
	STRUCT AFT OF REAR SPAR	1040000962		316
40	ELEVATOR CONTROL BOX I W	1040001062		428
25	TRANSP JOINT MARRY UP	10400011		70
36	CENTRE LINE JOINTS	1040001262		590
	INNER WING SKINS	1040001362		2242
17	STRUT PICK UP FITTINGS	1040001462		127
8	RIBS 1 TO 9 INNER WING	1040001662		486
74	DORSAL FAIRINGS I W	1040001762		
100	RIB 10	1040001862		108
	FUSELAGE HINGE JOINT I W	1040001962		138
25	TRANSP JOINT	1040002062		129
	FUSELAGE HINGE JOINT	10400021		37
74	DORSAL FAIRINGS C A	10400023		60
				6701
LEADING EDGE INNER WING		1050000062		221
				221

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 16

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SHEET 4-1 to 4-1

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
1000000						
1010000						
1010001	64	92910	70646	13597	65637199	12632973
1010002	64	2436	73207	13410	1783323	326668
1010003	64	39258	70118	13636	27526924	5353221
1010004	64	13456	69506	13650	9352727	1836744
1010006	64	37920	77409	13508	29353493	5122234
1010007	64	7626	64873	13832	4947215	1054828
1010009	64	1046	72791	13670	761394	142988
1010010		3293	78726	13224	2592447	435466
		197945			141954722	26905122
1020000						
1020001	74	33600	79213	13556	26615568	4554816
		33600			26615568	4554816
1030000						
1030000	82	15977	73810	14260	1178746	227732
		44900	75523	14260	33909827	6402740
		46497			35088573	6630472
1040000						
1040001	62	33071	57757	13983	19100817	4624318
1040002	62	41010	58072	14318	23815327	5871812
1040007	62	107498	49924	14406	53667302	15486162
1040008	62	14979	60964	14572	9131798	2182740
1040009	62	31639	72041	14887	22793052	4710098
1040010	62	42838	72470	14328	31044699	6137829
1040011		7065	63621	13876	4494824	980339
1040012	62	59069	66246	15029	39130850	8877480
1040013	62	22420	46244	14472	139992978	32446803
1040014	62	12740	61711	14584	7861981	1858002
1040016	62	48618	61173	14513	29741089	7055930
1040017	62	9548	280	16150	45866	15343
1040018	62	10800	63683	13835	6877764	1494180
1040019	62	13812	62104	13790	8577804	1904675
1040020	62	12942	63071	13710	8162649	1774348
1040021		3740	52796	14309	1974570	535157
1040023		6033	57025	16034	3440318	967331
		670153			409853688	96922547
1050000	62	22138	46841	14423	10369661	3192964
		22138			10369661	3192964







AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

REFERENCE NO.				COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT		V. MOMENT	
2010000	000	000	83		85170	74957	21170	63840	877	18030	489
2010000	002				4830	68538	15355	33103	85	7418	47
2010000	038				1075	76000	25950	817000		2789	63
					91075			67968	262	19051	099
2020000	000	000	84		12400	81325	21438	10084	300	26583	12
					12400			10084	300	26583	12

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP  
COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.			COMP. NO.	WEIGHT		H. ARM
TOTAL FUSELAGE GROUP	3	000000	00				
FUSELAGE BASIC STRUCTURE	3	010000	00				
RADOME	3	010000	01	51	159	44	395
RADAR NOSE STRUCTURE C A	3	010000	02		263		1200
RADAR NOSE STRUCTURE R N	3	010000	03	51	169	99	958
SKIN F F	3	010000	04	52	82	64	1929
SKIN C F	3	010000	05	54	220	43	3672
SKIN D B	3	010000	06	56	61	35	5347
SKIN E B	3	010000	07	58	164	89	6690
FORMERS C F	3	010000	12	54	287	49	3752
6 FORMERS D B	3	010000	13	56	73	31	5353
8 LIGHT FORMERS E B	3	010000	14	58	110	41	6673
8 HEAVY FORMERS E B	3	010000	15	58	198	58	6600
LOWER LONGERONS F F	3	010000	16	52	67	72	1849
INNER LONGERON E B	3	010000	17	58	71	84	6523
BOTTOM LONGERONS E B	3	010000	18	58	69	19	6582
TOP LONGERONS E B	3	010000	19	58	6	38	6660
LOWER SHEAR PANEL	3	010000	20	52	31	54	2342
TOP WING LONGERONS D B	3	010000	21	56	4	98	5389
LONGERONS C F	3	010000	22	52		53	2529
LONGERONS C F	3	010000	23	54	138	13	4111
LONGERONS F D B	3	010000	24	54	12	58	4871
LONGERONS A D B	3	010000	25	56	85	95	5292
ELECTRONICS BAY STRUCTURE	3	010000	26	54	50	48	2749
32 LONGITUDINAL BEAMS D B	3	010000	27	56	66	17	5200
RADAR ACCESS DOOR C F	3	010000	28	54	21	08	2744
72 MAIN FRAME AT STN 538 77	3	010000	29	56	59	80	5387
DIVE BRAKE ACCOMMODATIONS	3	010000	30	56	37	19	5035
38 TOP LONGERONS F F	3	010000	31	52	187	46	1943
DUCT C F	3	010000	32	54	315	52	3583
FLOATING DUCT D B	3	010000	33	56	432	15	5526
23 CANOPY ARCHES	3	010000	34	52	81	53	2269
ACCESS PANELS	3	010000	36	56	32	58	5337
66 NOSE U C SUPPORT STRUCTURE	3	010000	37	52	33	43	2102
CREW BULKHEADS	3	010000	38	52	122	40	2059
EQUIPMENT BAY STRUCTURE	3	010000	39	54	60	05	2851
59 WINDSCREEN	3	010000	41	52	129	33	1381
SERV ACCESS DOORS AND PNLS	3	010000	42	58	59	29	6683
DORSAL FAIRING FWD	3	010000	44	54	29	45	2892
INTERMEDIATE FORMERS	3	010000	45	58	46	06	7294
ENGINE ACCESS DOORS E B	3	010000	46	58	107	35	6464
SEALING MISSILE BAY	3	010000	47	54	5	59	2961
MISCELLANEOUS ITEMS C F	3	010000	48	54	3	74	3700
ARMAMENT BAY ROOF	3	010000	49	54	124	18	3836
BULKHEAD AT STA 120	3	010000	50	52	29	80	1200
BULKHEAD AT STA 255	3	010000	51	52	107	43	2550
12 BULKHEAD STA 485	3	010000	52	54	127	36	4850
ENGINE TUNNEL E B	3	010000	54	58	613	18	6567
FUSELAGE FUEL TANK	3	010000	55	54	225	24	3944
COCKPIT FLOOR	3	010000	56	52	57	96	1768

AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
3000000						
3010000						
3010001	51	15944	3990	11070	636166	1765001
3010002		263	12000	11200	31560	29456
3010003	51	16999	9582	11326	1628844	1925307
3010004	52	8264	19296	12301	1594621	1016555
3010005	54	22043	36727	14417	8095733	3177939
3010006	56	6135	53476	11175	3280753	685586
3010007	58	16489	66905	11036	11031965	1819726
3010012	54	28749	37520	13317	10786625	3828504
3010013	56	7331	53531	11441	3924358	838740
3010014	58	11041	66734	11662	7368101	1287601
3010015	58	19858	66067	10922	13119585	2168891
3010016	52	6772	18493	9045	1252346	612527
3010017	58	7184	65234	9213	4686411	661862
3010018	58	6919	65825	9779	4554432	676609
3010019	58	638	66605	13911	424940	88752
3010020	52	3154	23427	8900	738888	280706
3010021	56	498	53899	13550	268417	67479
3010022	52	53	25295	15250	13406	8083
3010023	54	138	13411	12289	5678801	1697480
3010024	54	1258	48717	10700	612860	134606
3010025	56	8595	52923	9761	4548732	838958
3010026	54	5048	27491	9332	1387746	471079
3010027	56	6617	52001	9130	3440906	604132
3010028	54	2108	27448	8976	578604	189214
3010029	56	5980	53877	10383	3221845	620903
3010030	56	3719	50351	9339	1872554	347317
3010031	52	18746	19435	14763	3643285	2767472
3010032	54	3155	35839	12969	11307921	4091979
3010033	56	432	15552	64117	23882338	5063502
3010034	52	8153	22698	16041	1850568	1307823
3010036	56	3258	53375	9673	1738958	315146
E 3010037	52	3343	21049	9186	703668	307088
3010038	52	12240	20555	12367	2515932	1513721
3010039	54	6005	28510	13540	1712026	813077
3010041	52	12933	13815	15008	1786694	1940985
S 3010042	58	5929	66837	9255	3962766	548729
3010044	54	2945	28920	16400	851694	482980
3010045	58	4606	72947	11213	3359939	516471
3010046	58	10735	64644	9044	6939533	970873
3010047	54	559	29616	11074	165553	61904
3010048	54	374	37000	12500	138380	46750
3010049	54	12418	38364	12193	4764042	1514127
3010050	52	2980	12000	11511	357600	343028
3010051	52	10742	25500	11980	2739210	1286892
3010052	54	12736	48500	10335	6176960	1316266
3010054	58	61318	65674	12016	40269983	7367971
3010055	54	22524	39445	14529	8884592	3272512
3010056	52	5796	17687	11569	1025139	670539

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTION  
COM

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
DORSAL OVER FUEL TANK	301006154		41
DEFLECTOR SHIELD	301006254		20
SHEAR PANEL BELOW NAV ARCH	301006352		20
PACK MOUNTING STRUCTURE	301006454		24
ENG ACCESS DOORS FIXED R F	301006559		93
TUNNEL FIXED R F	301006659		130
SKIN AND INTERCOSTAL R F	301006759		55
FAIRING UNDER RUDDER R F	301006859		27
FORMERS FIXED R F	301006959		105
LONGERONS C BEAM FIXED R F	301007059		25
REMOVABLE NACELLES R F	301007159		491
CNTR STRUC STING REMOV R F	301007259		107
MISC ITEMS STRUCTURE E B	301007358		9
MTG BRKTS SIDE PANEL D B	301007556		1
FORMERS LOWER PANEL D B	301007656		74
LOWER PANEL D B	301007756		50
JOINT F F TO C F	3010078		8
JOINT AIR INTAKES TO F F	3010079		9
JOINT C F TO D B	3010080		5
JOINT D B TO E B	3010081		25
FUS JOINT AT STA 742 50	3010082		4
DROP TANK MTG STRUCT D B	301008356		11
STRUCT AT ENG ACCESS DOORS	301008558		65
MISC STRUCTURE F F	301008652		5
ENG RAILS ATTACHM TO FORM	301008758		28
COCKPIT FORMERS	301009252		102
			6730
DIVE BRAKES	302000072		117
DIVE BRAKES C A	3020001		4
			121
AIR INTAKES	3030000		
AIR INTAKES	303010055		758
			758
PILOTS AND NAVIG CANOPIES	3040000		
76 PILOTS CANOPY	304010053		2420
			2420
NAVIGATORS CANOPY	304020053		166
			166

# WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

	REFERENCE NO.				COMP. NO.	WEIGHT		H. ARM		V. ARM		H. MOMENT		V. MOMENT	
TANK	3010061	54				4138	41310	14206				1709408			587844
	3010062	54				2045	33739	16400				689963			335380
NAV ARCH	3010063	52				2001	25689	15352				514037			307194
STRUCTURE	3010064	54				2470	29234	10308				722080			254608
FIXED R F	3010065	59				9326	77366	9867				7215153			920196
	3010066	59				13054	77180	13177				10075077			1720126
TAL R F	3010067	59				5579	77281	13693				4311507			763932
DER R F	3010068	59				2767	78223	15590				2164430			431375
	3010069	59				10509	77990	13734				8195969			1443306
FIXED R F	3010070	59				2519	77159	12810				1943635			322684
S R F	3010071	59				49147	82589	12761				40590016			6271649
REMOV R F	3010072	59				10794	83412	13644				9003491			1472733
URE E B	3010073	58				912	66401	10278				605577			93735
VEL D B	3010075	56				190	51866	13066				98545			24825
EL D B	3010076	56				7416	54432	9015				4036677			668552
	3010077	56				5054	55457	8790				2802797			444247
	3010078					855	25500	12000				218025			102600
TO F F	3010079					952	22000	12000				209440			114240
	3010080					500	48500	9800				242500			49000
	3010081					2508	58478	9150				1466628			229482
742 50	3010082					418	74250	11500				310365			48070
UCT D B	3010083	56				1133	58576	8848				663666			100248
ESS DOORS	3010085	58				6537	64089	9261				4189498			605392
	3010086	52				552	18750	11500				103500			63480
TO FORM	3010087	58				2854	68741	11362				1961868			324271
	3010092	52				10261	18329	12076				1880739			1239118
						673070						329480571			81301135
	3020000	72				11790	50884	9049				5999224			1066877
	3020001					406	48794	9374				198104			38058
						12196						6197328			1104935
	3030000														
	3030100	55				75886	21057	11831				15979315			8978073
						75886						15979315			8978073
CANOPIES	3040000														
	3040100	53				24208	17686	15915				4281427			3852703
						24208						4281427			3852703
	3040200	53				16650	23200	16200				3862800			2697300
						16650						3862800			2697300



AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
4000000						
4010000						
401010092		193494	53949	14100	104388078	27282654
		193494			104388078	27282654
401020062		28234	53760	13837	15178598	3906739
		28234			15178598	3906739
4020000						
402010091		33381	17080	9970	5701475	3328086
		33381			5701475	3328086
402020052		2454	16224	8823	398137	216516
		2454			398137	216516

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
ENGINE GROUP	5000000			
PS 13 ENGINES	5010000		91722868	
			917228	
PS 13 ENGINES SERV ACCESS	5010100		145063	
			1450	
ACC GEAR BOX ON FUS D B	502000156		452457	
ACC GEAR BOX ON FUS E B	502000258		2366060	
			28184	
ENGINE CONTROLS	5030000			
ENGINE CONTROLS F F	503000152		145816	
ENGINE CONTROLS C F	503000254		26430	
ENGINE CONTROLS D B	503000356		50849	
ENGINE CONTROLS E B	503000458		101363	
			3243	
STARTER AND ENG GEAR BOX	5040000		3154561	
			31545	
ENGINE ANTI ICING	5050000		700058	
			7000	
FIRE EXT SYSTEM	5060000			
55 ENG FIRE EXT SYSTEM ENG	506000158		640070	
55 ENG FIRE EXT SYSTEM D B	506000256		14655	
			6546	
ENGINE MTGS AND BRACKETS	5070000			
ENGINE MOUNTS	5070001		842167	
ENGINE MTG ACCESSORIES	5070002		481764	
			13238	
FUEL SYSTEM	5080000			

OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

ANCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
00000						
10000		917228	68803	12119	631080381	111158861
		917228			631080381	111158861
10100		1450	63819	10390	925376	150655
		1450			925376	150655
2000156		452457875	9607		2618265	434621
2000258		2366060609	10372		14340089	2454015
		28184			16958354	2888636
30000						
3000152		145816129	12476		235161	181900
3000254		26430813	11789		81346	31123
3000356		50849991	13459		253954	68372
3000458		101363982	10194		648138	103265
		3243			1218599	384660
40000		3154561598	10524		19431089	3319796
		31545			19431089	3319796
50000		700058717	11600		4110190	812000
		7000			4110190	812000
60000						
6000158		640070381	13414		4504384	858496
6000256		14655318	13749		80764	20074
		6546			4585148	878570
70000						
70001		842167834	14106		5712301	1187866
70002		481764669	12857		3115106	6193.2
		13238			8827407	1807188
80000						



BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
154	10713	40111	14010	4297091	1500891
256	14955	54070	10558	8086169	1578949
358	685	64414	12612	441236	86392
462	43900	55421	14428	24329819	6333892
5	626	65901	9594	412540	60058
6	754	61525	9658	463899	72821
	71633			38030754	9633003

**AVRO AIRCRAFT LTD.**  
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**WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT**

PROJECT \_\_\_\_\_

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT	H.
FLYING CONTROLS GROUP		6000000			
MECHANICAL CONTROLS		6010000			
68	MECHANICAL CONTROLS F F	6010001	52	9523	16
	MECHANICAL CONTROLS C F	6010002	54	9543	38
70	MECHANICAL CONTROLS F I N	6010005	83	12423	78
70	MECHANICAL CONTROLS I W	6010006	62	40670	71
46	MECHANICAL CONTROLS O W	6010007	64	30237	77
	MECHANICAL CONTROLS C A	6010008		64670	
				94453	
FLYING CONTROLS HYDRAULICS		6020000			
	FLYING CONT HYDRAULICS D B	6020001	56	2332	57
37	FLYING CONT HYDRAULICS E B	6020002	58	39076	64
	FLYING CONT HYDRAULICS R F	6020003	59	4875	
80	FLYING CONT HYDRAULICS I W	6020004	62	26264	70
74	FLYING CONT HYDRAULICS O W	6020005	64	11701	74
60	FLYING CONT HYDRAULICS F I N	6020006	83	54067	6
				84827	

# G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
000						
001	52	9523	16499	11530	1571200	1098002
002	54	954	38948	11764	371564	112229
005	83	12423	78817	22159	9791436	2752813
006	62	40670	71737	14376	29175438	5846719
007	64	30237	77068	13562	23303051	4100742
008		646	70982	14338	458544	92623
		94453			64671233	14003128
001	56	2332	57442	9668	1339547	225458
002	58	39076	64784	11143	25314996	4354239
003	59	487	5875	10824	36420	5196
004	62	26264	70328	14737	18470946	3870526
005	64	11701	74076	13577	8667633	1588645
006	83	5406	76183	20881	4118453	1128827
		84827			57947995	11172891

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT
FIXED EQUIPMENT GROUP	7000000		
INSTRUMENTS	7010000		
INSTRUMENTS	7010001	52	440
NAVIG TABLE AND STOWAGE	7010004	52	20
			460
COCKPIT SEALING	7020000	52	50
			50
OXYGEN SYSTEM	7030000		
OXYGEN SYSTEM	7030001	52	260
			260
AIR CONDITIONING SYSTEM	7040000		
AIRCONDITIONING SYST F F	7040001	52	1232
AIRCONDITIONING SYST C F	7040002	54	5752
AIRCONDITIONING SYST D B	7040003	56	207
AIRCONDITIONING SYST C A	7040005		1236
AIRCONDITIONING SYST ENC	7040006		125
AIRCONDITIONING SYST I W	7040007	62	6
			8560
HYDRAULICS MAIN SYSTEM	7050000		
14 UTILITY HYDRAULICS F F	7050001	52	841
31 UTILITY HYDRAULICS C F	7050002	54	427
20 UTILITY HYDRAULICS D B	7050003	56	2733
21 UTILITY HYDRAULICS E B	7050004	58	724
24 UTILITY HYDRAULICS I W	7050005	62	1351
14 UTILITY HYDR NOSE U C	7050006	91	32
24 UTILITY HYDR MAIN U C	7050007	92	298
			6408
CABIN INSULATION	7070000	52	143
			143
BRAKE PARACHUTE	7080000		
BRAKE PARACHUTE F F	7080001	52	45
BRAKE PARACHUTE R F	7080005	59	852

AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

REFERENCE NO.				COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT			V. MOMENT		
7000000													
7010000													
70100001				52	4407	16112	13909	710056			612970		
70100004				52	200	22000	13000	44000			26000		
					4607			754056			638970		
7020000				52	500	18600	13000	93000			65000		
					500			93000			65000		
7030000													
70300001				52	2607	24054	15670	627088			408517		
					2607			627088			408517		
7040000													
70400001				52	12321	22460	11998	2767297			1478274		
70400002				54	57523	29290	13798	16848487			7937024		
70400003				56	2074	51417	12569	1066389			260681		
70400005					12366	56545	13703	6992355			1694513		
70400006					1255	67000	13900	840850			174445		
70400007				62	61	51779	15751	31585			9608		
					85600			28546963			11554545		
7050000													
70500001				52	8415	20016	10853	1684346			913280		
70500002				54	4272	43480	10431	1857466			445612		
70500003				56	27338	55692	11077	15225079			3028230		
70500004				58	7240	60647	10852	4390843			785685		
70500005				62	13511	55304	14234	7472123			1923156		
70500006				91	325	19033	9521	61857			30943		
70500007				92	2980	54325	14100	1618885			420180		
					64081			32310599			7547086		
7070000				52	1431	18748	13200	268284			188892		
					1431			268284			188892		
7080000													
70800001				52	455	16913	12869	76954			58554		
70800005				59	8528	82205	14394	7010442			1227520		

**AVRO AIRCRAFT LTD.**  
MALTON, ONT.

**WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT**

PROJECT \_\_\_\_\_

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT	H
	BRAKE PARACHUTE I W	708000662		1246	
				9107	
	ELECTRICAL SYSTEM	7090000			
	ELECTRICAL WIRING R N	709000151		129	
	ELECTRICAL WIRING F F	709000252		29661	
	ELECTRICAL WIRING C F	709000354		23543	
	ELECTRICAL WIRING A I	709000455		12742	
	ELECTRICAL WIRING D B	709000556		90155	
	ELECTRICAL WIRING E B	709000658		645	
	ELECTRICAL WIRING I W	709000862		89095	
	ELECTRICAL WIRING FIN	709000983		3527	
	ELECTRICAL WIRING NUC	709001091		3301	
	ELECTRICAL WIRING ENG	7090011		20026	
	ELECTRICAL WIRING C A	7090012		137463	
	ELECTRICS F F	709001352		152481	
	ELECTRICS C F	709001454		87094	
	ELECTRICS E B	709001558		6706	
	ELECTRICS ENG	7090016		186325	
	ELECTRICS C A	7090017		71861	
	ELECTRICS FIN	709001883		838	
	ELECTRICS I W	709001962		23366	
	ELECTRICS CAW	7090020		11262	
	ELECTRICS NUC	709002192		7451	
20	ELECTRICS A I	709002255		49002	
	ELECTRICS D B	709002356		309895	
	ELECTRICS R F	709002459		13680	
	WINDSCREEN DEMISTING	709002552		35641	
	SPARROW ELECTRICS F F	709002652		25418	
	SPARROW ELECTRICS C F	709002754		6027	
				127626	
	L P PNEUMATICS	7100000			
24	L P PNEUMATICS F F	710000152		22551	
18	L P PNEUMATICS C F	710000254		67133	
	L P PNEUMATICS D B	710000356		41855	
	L P PNEUMATICS E B	710000458		152665	
	L P PNEUMATICS FIN	710000583		64075	
	L P PNEUMATICS R N	710000651		1247	
	L P PNEUMATICS S P	710000794		6029	
				5694	
	INTAKE DE ICING	712000055		88001	
				8800	
	RADIO AND RADAR FIXED	7140000			



PROJECT \_\_\_\_\_

SHEET \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
RADIO AND RADAR FIXED R N	714000151		20900	8999	10000	1880791	2090000
RADIO AND RADAR FIXED F F	714000252		12700	18977	10945	2410079	1390015
RADIO AND RADAR FIXED C F	714000354		19000	26782	10042	5088580	1907980
RADIO AND RADAR FIXED D B	714000456		1800	51200	10000	921600	180000
RADIO AND RADAR FIXED F IN	714000583		4700	79123	26004	3718781	1222188
RADIO AND RADAR FIXED C A	7140006		17600	21329	12364	3753904	2176064
			76700			17773735	8966247
29 CANOPY ACTUATION	716000052		6492	22199	15435	1441159	1002040
			6492			1441159	1002040
CABIN CONSOLES	717000052		1738	17463	12432	303507	216068
			1738			303507	216068
RADAR DOOR ACTUATION	718000054		1000	26800	9500	268000	95000
			1000			268000	95000
SURFACE FINISH F F	719000152		363	18744	12200	68041	44286
SURFACE FINISH CANOPY	719000253		642	20218	15900	12940	10176
SURFACE FINISH C F	719000354		1400	37197	12455	520758	174370
SURFACE FINISH 2NTAKES	719000455		408	22798	12020	93016	49042
SURFACE FINISH D B	719000556		377	53828	11200	202932	42224
SURFACE FINISH E B	719000658		443	66701	11200	295485	49616
SURFACE FINISH R F	719000759		648	80362	13175	520746	85374
SURFACE FINISH I W	719000862		315	160144	14400	1895137	453744
SURFACE FINISH O W	719000964		1067	70650	13590	753836	145005
SURFACE FINISH O W L EDGE	719001065		319	63948	13526	203994	43148
SURFACE FINISH AILERON	719001174		353	79190	13556	279541	47853
SURFACE FINISH ELEVATOR	719001282		566	75523	14260	427460	80712
SURFACE FINISH FIN	719001383		639	74663	20837	477097	133148
SURFACE FINISH RUDDER	719001484		2028	12792	1431	164184	43291
			10000			5915167	1401989

**AVRO AIRCRAFT LTD.**  
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**WEIGHT AND C. OF G BY FUNCTIONAL GROUP  
COMPONENT**

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. AR.
RADIO AND RADAR FIXED R N	7140001	51	20900	89
RADIO AND RADAR FIXED F F	7140002	52	12700	189
RADIO AND RADAR FIXED C F	7140003	54	19000	267
RADIO AND RADAR FIXED D B	7140004	56	1800	512
RADIO AND RADAR FIXED FIN	7140005	83	4700	791
RADIO AND RADAR FIXED C A	7140006		17600	213
			76700	
29 CANOPY ACTUATION	7160000	52	6492	221
			6492	
CABIN CONSOLES	7170000	52	1738	174
			1738	
RADAR DOOR ACTUATION	7180000	54	1000	268
			1000	
SURFACE FINISH F F	7190001	52	363	187
SURFACE FINISH CANOPY	7190002	53	64	202
SURFACE FINISH C F	7190003	54	1400	371
SURFACE FINISH 2NTAKES	7190004	55	408	227
SURFACE FINISH D B	7190005	56	377	538
SURFACE FINISH E B	7190006	58	443	667
SURFACE FINISH R F	7190007	59	648	803
SURFACE FINISH I W	7190008	62	315	160
SURFACE FINISH O W	7190009	64	1067	706
SURFACE FINISH O W L EDGE	7190010	65	319	639
SURFACE FINISH AILERON	7190011	74	353	791
SURFACE FINISH ELEVATOR	7190012	82	566	755
SURFACE FINISH FIN	7190013	83	639	746
SURFACE FINISH RUDDER	7190014	84	2028	127
			10000	

WEIGHT AND C. OF G BY

FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

		REFERENCE NO.		COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT		V. MOMENT		
R	N	714000	0151		20900	8999	10000	1880791		2090000		
F	F	714000	0252		12700	18977	10945	2410079		1390015		
C	F	714000	0354		19000	26782	10042	5088580		1907980		
D	B	714000	0456		1800	51200	10000	921600		180000		
F	I	714000	0583		4700	79123	26004	3718781		1222188		
C	A	714000	06		17600	21329	12364	3753904		2176064		
					76700			17773735		8966247		
					716000	0052		6492	22199	15435	1441159	1002040
					6492			1441159		1002040		
					717000	0052		1738	17463	12432	303507	216068
					1738			303507		216068		
					718000	0054		1000	26800	9500	268000	95000
					1000			268000		95000		
					719000	0152		363	18744	12200	68041	44286
					719000	0253		64	20218	15900	12940	10176
S		719000	0354		1400	37197	12455	520758		174370		
		719000	0455		408	22798	12020	93016		49042		
		719000	0556		377	53828	11200	202932		42224		
		719000	0658		443	66701	11200	295485		49616		
		719000	0759		648	80362	13175	520746		85374		
		719000	0862		315	160144	14400	1895137		453744		
EDGE		719000	0964		1067	70650	13590	753836		145005		
N		719000	1065		319	63948	13526	203994		43148		
OR		719000	1174		353	79190	13556	279541		47853		
		719000	1282		566	75523	14260	427460		80712		
		719000	1383		639	74663	20837	477097		133148		
		719000	1484		202	81279	21431	164184		43291		
					10000			5915167		1401989		

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. AR.
REMOVABLE EQUIPMENT GROUP	8000000			
77 EJECTOR SEATS	801010052		33906	204
			33906	
RADAR REMOVABLE	8020100			
RADAR REMOVABLE R N	802010151		103930	88
RADAR REMOVABLE F F	802010252		20910	184
RADAR REMOVABLE C F	802010354		60770	272
RADAR REMOVABLE D B	802010456		7550	514
RADAR REMOVABLE F I N	802010563		3500	730
RADAR REMOVABLE C A	8020106		3830	552
RADAR REMOVABLE E B	802010758		4500	735
RADAR REMOVABLE I #	802010862		3000	550
			207990	
DAMPING SYSTEM	8030000			
DAMPING SYSTEM F F	803010152		784	172
DAMPING SYSTEM C F	803010254		2303	322
DAMPING SYSTEM E B	803010358		3696	32
DAMPING SYSTEM I W	803010462		6070	537
DAMPING SYSTEM O W	803010564			95748
DAMPING SYSTEM R N	803010651			287 73
DAMPING SYSTEM C A	8030107			8107496
			18015	
SPARROW PACK	8050000			
SPARROW PACK STRUCTURE	805010094		89019	381
			89019	
SPARROW PACK MECHANISMS	805020094		55112	374
			55112	
SPARROW PACK HYDRAULICS	805030094		33194	373
			33194	
SP PACK ELECTRONICS FIXED	805040094		21711	335
			21711	

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

GROUP	REFERENCE NO.				COMP. NO.	WEIGHT		H. ARM	V. ARM	H. MOMENT		V. MOMENT	
	8000000												
	8010100	52				33906	20443	13410		6931404		4546795	
						33906				6931404		4546795	
	8020100												
	8020101	51				103930	8855	10100		9203002		10496930	
	8020102	52				20910	18488	12000		3865841		2509200	
	8020103	54				60770	27203	10028		16531263		6094016	
	8020104	56				7550	51447	10000		3884249		755000	
	8020105	53				3500	73000	25930		2555000		907550	
	8020106					3830	55287	16000		2117492		612800	
	8020107	58				4500	73500	14500		3307500		652500	
	8020108	62				3000	55000	16000		1650000		480000	
						207990				43114347		22507996	
	8030000												
	8030101	52				784	17201	12047		134856		94448	
	8030102	54				2303	32213	10949		741865		252155	
	8030103	58				3696	32421	13432		233363		49564	
	8030104	62				6070	53781	15720		3264507		954204	
	8030105	64				95	74855	14000		71112		13300	
	8030106	51				287	7350	9340		21095		26806	
	8030107					8107	49625	13000		4023099		1053910	
						18015				8489897		2444387	
	8050000												
	8050100	94				89019	38167	9760		33975882		8688254	
						89019				33975882		8688254	
	8050200	94				55112	37440	9912		20633933		5462701	
						55112				20633933		5462701	
	8050300	94				33194	37352	9900		12398623		3286206	
						33194				12398623		3286206	
ED	8050400	94				21711	33524	11000		7278396		2388210	
						21711				7278396		2388210	





AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. AF
OPERATIONAL LOAD	90000000			
CREW MEMBERS	9010000052		39000	194
			39000	
ENGINE OIL	90200000			
ENGINE OIL DRAINABLE	90200001		9290	652
ENGINE OIL TRAPPED ENG	90200002		1773	636
ENGINE OIL TRAPPED D B	9020000356		1925	580
ENGINE OIL TRAPPED E B	9020000458		909	599
			13897	
SPARROW MISSILES	9030000094		172800	389
			172800	
OXYGEN CHARGE	90400000			
OXYGEN CHARGE F F	9040000152			72204
OXYGEN CHARGE C F	9040000254		1267	262
			1339	
ENGINE FIRE EXT FLUID	90600000		2500	730
			2500	
RESIDUAL FUEL	90700000			
RESIDUAL FUEL C F	9070000154		4680	394
RESIDUAL FUEL I W	9070000262		17160	597
			21840	
WATER FOR AIR CONDITIONING	9100000054		26000	268
UNUSABLE WATER FOR AIRCOND	9100000154		1500	267
			27500	

# WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. \_\_\_\_\_

SHEET \_\_\_\_\_

	REFERENCE NO.				COMP. NO.	WEIGHT		H. ARM	V. ARM	H. MOMENT		V. MOMENT	
	90000000												
	90100000			52		39000	19400	13650		7566000		5323500	
						39000				7566000		5323500	
	90200000												
ENGINE	90200001					9290	65225	11390		6059403		1058131	
	90200002					1773	63676	11640		1128975		206377	
DB	90200003			56		1925	58084	9555		1118117		183934	
EB	90200004			58		909	59928	9704		544746		88209	
						13897				8851241		1536651	
	90300000			94		172800	38929	8830		67269312		15258240	
						172800				67269312		15258240	
	90400000												
	90400001			52		7220493	13200			14755		9504	
	90400002			54		126726280	16150			332968		204621	
						1339				347723		214125	
DU	90600000					2500	73000	12900		1825000		322500	
						2500				1825000		322500	
	90700000												
	90700001			54		4680	39424	12300		1845043		575640	
	90700002			62		17160	59755	13705		10253958		2351778	
						21840				12099001		2927418	
FUNCTIONING AIRCOND	91000000			54		26000	26800	13200		6968000		3432000	
	91000001			54		1500	26700	12700		400500		190500	
						27500				7368500		3622500	