

QC  
Avro  
C-105  
R-7-0400-34  
Iss-11

QCX  
Avro  
CF105  
R-7-0400-34  
Iss-11

FILE IN VAULT

C-105 MK 2      Report # 7-0400-34  
Prod. A/C      Issue 11  
WEIGHT SUMMARY & C.G. POSITION <sup>19</sup>  
R.C.A.F.      Sept. 1/57

UNCLASSIFIED  
SECRET  
NON CLASSIFIE  
UNCLASSIFIE



National Research Council  
Canada

C.I.S.T.I.

Aeronautical and  
Mechanical

Engineering Library

Conseil national de recherches  
Canada

I.C.I.S.T.

Bibliothèque

d'aéronautique

et de génie mécanique

TO  
A

DATE  
JAN 07 1993  
DEC 7 1992

Report no.: QCX - AVRO - CF105- R-7-0400-34-155-11

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

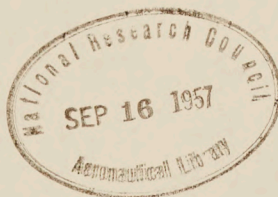
~~UNCLASSIFIED~~  
~~SECRET~~  
Report # 7-0400-34 Iss. 11

I N D E X

<u>Sheet #</u>	<u>Content</u>
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: UNCLASSIFIED  
By authority of: DEDA 7/DARFT 5-8/DAS Eng 6-4-5  
Date: 5 Nov 1992  
Signature: *Laubrey*  
Unit / Rank / Appointment: DSIS 3, Secretary CRAD HQ DRP



~~UNCLASSIFIED~~  
~~SECRET~~  
~~NON CLASSIFIE~~

49133

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

UNCLASSIFIED  
SECRET  
Report # 7-0400-34 Iss. 11  
Sheet # 1-1  
NON CLASSIFIE

### INTRODUCTION

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

All Weight and C.G. changes are relative to Issue 10 of August 1st, 1957.

#### GENERAL:

- a) Orenda PS 13 Engines comprise the Power Plant (4,500 lb each excluding Nose Bullet and Input Frame).
- b) A package containing 4 "semi-submerged" Sparrow II Miissiles (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 3rd July 1957. The Sparrow III Auxiliaries, included in the breakdown, have been deleted, however, the Infra Red Tracker System has been re-instated as a requirement; some Avro installed Antennae have been added. (Total Weight = 2,741.0 lb).

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

The early MK 2 A/C will have the "Astra Minus" System installed (i.e. navigational and communication equipment only)

- d) A considerable number of MK 1 parts, assemblies and equipment have now been weighed. Where these weights apply to the MK 2 Aircraft, they have been recorded in 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 not be as this summary designates, but will be flight test versions with instrument-ation replacing the missile package etc. or for development of Astra I Radar System. etc.

#### 1. STRUCTURE

WEIGHT (lb)

##### a) Wing:

Inner Wing = production drawing estimates of skins and  
centre trailing edge structure

Total Wing Decrease

Ref. 2- 1

= 25  
= 25

##### b) Fin & Rudder

No Weight Change.

UNCLASSIFIED  
SECRET  
NON CLASSIFIE

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

SECRET  
Report # 7-0400-34 Iss. 11  
Sheet # 1-2  
NON CLASSIFIED

### INTRODUCTION

#### 1. STRUCTURE

WEIGHT (Lb)

##### c) Fuselage fwd. Sta. 255"

Radome - due to unsatisfactory electrical properties  
solid laminate will replace the filled honey-  
comb laminate

+ 75

Air Intakes - estimate of MK 2 design

= 3

Fwd. Fuselage Increase

+ 72

Ref. 2-1

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

Production drawing estimates of Formers, armament bay  
roof and C.F. Ducts

= 15

Centre Fuselage Decrease

= 15

Ref. 2-1

##### e) Duct Bay Sta. 485"-591.65"

Floating Duct - estimated to preliminary schemes  
Joint items & H/Exchanger Duct  
included here (were in Engine  
Bay and Engine Group resp.)

+ 47

Total Duct Bay Increase

+ 18

+ 65

Ref. 2-1

##### f) Engine Bay Sta. 591.65"-742.5"

Engine Tunnel - increase in insulation based on MK 1A/C etc + 6  
Joint Engine to Duct - deletion of allowance (see above) = 12

Total Engine Bay Decrease

= 6

Ref. 2-2

##### g) Rear Fuselage Sta. 742.5" Aft.

Fixed section 742.5"-803" - first estimates of formers etc + 15  
Stinger & Tailcones - N155 cobalt based alloy to be used  
with Titanium O/Skin on Tailcones,  
previously weight recorded was for  
an entirely Titanium structure + 168

Total Rear Fuselage Increase + 183

Ref. 2-2

##### h) Fuselage Joints

No Weight Change.

TOTAL STRUCTURAL INCREASE

+ 274

UNCLASSIFIED  
NON CLASSIFIED  
SECRET

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

UNCLASSIFIED  
SECRET  
Report # 7-0400-34 Iss. 11  
Sheet # 13  
NON CLASSIFIE

INTRODUCTION

2. LANDING GEAR WEIGHT (lb)  
No Weight Change
3. POWER PLANT & SERVICES  
Engines - Orenda's earlier estimate did not include inlet frames + 160  
H/Exchanger Duct with floating duct (see above) - 6  
Fire Extinguishing System - Actual Weight of bottles - 5  
Fuel System - Miscellaneous design changes + 23  
TOTAL POWER PLANT & SERVICES INCREASE + 172  
Ref. 2-2
4. FLYING CONTROLS GROUP  
No Weight Change
5. EQUIPMENT GROUP  
Radar System: - Revised Weights from R.C.A. The I.R. Tracker  
System and Radar Homer Antenna, previously  
deleted from this report, have now been re-  
instated as basic requirements + 127  
TOTAL EQUIPMENT GROUP INCREASE + 127  
Ref. 2-2

SUMMARY

Weight Change - Aircraft Basic Weight

Structure	+ 274 lb.
Power Plant	+ 172 lb.
Equipment	+ 127 lb.
	<u>+ 573 lb.</u>

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

<u>Issue 10</u>	<u>Issue 11</u>	
<u>44,516 lb</u>	<u>45,089 lb</u>	= <u>573 lb</u>

UNCLASSIFIED  
NON CLASSIFIE

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

UNCLASSIFIED  
SECRET  
Report # 7-0400-34 Iss 11  
Sheet # 2-1  
NON CLASSIFIED

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

WEIGHT CHANGES

WEIGHT (lb)

Wings:

- 36.70 I/W Skins - now estimated to production drawings, an error was made in the early estimates
  - + 11.71 I/W Centre Trailing Edge - production drawing estimates increases in caps and webs of beams, particularly # 4 and # 5 for rear engine mountings.
- 
- 24.99

Front Fuselage Fwd. 255"

- + 75.50 Radome - solid laminate replaces sandwich construction the electrical properties of the lighter sandwich type are unsatisfactory.
  - 3.26 Air Intakes - estimated to production drawings for MK 2 design
- 
- + 72.24

Centre Fuselage Sta. 255" - 485"

- + 9.63 Formers C.F. - production drawing estimates incorporating minor changes (approx. + 0.5 lb/former)
  - 6.94 Armament Bay Roof - production drawing estimates some design changes.
  - 17.34 Duct C.F. - alterations to allow for ram air duct doors (doors and mechanism are included with Air Conditioning see Equip. Group)
- 
- 14.65

Duct Bay Sta. 485"-591.65"

- + 65.00 Floating Duct - estimated to preliminary scheme drawings - previously only allowances
- 
- + 46.75
- + 12.00 Addition of Joint items (see Engine Bay
  - + 6.25 Addition of H/Exch. Duct (see Engine Group.
- 
- + 65.00

Engine Bay Sta. 591.65 - 742.5

- + 6.02 Engine Tunnel - increase in insulation weight based on tolerances of actual weights of MK 1 insulation
- 
- + 3.38
- + 2.64 Addition of floating duct support structure
- 
- + 6.02

UNCLASSIFIED  
NON CLASSIFIED

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

UNCLASSIFIED  
SECRET  
Report # 7-0100-34 Iss. 11  
Sheet # 2-2  
NON CLASSIFIE

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

WEIGHT CHANGES

WEIGHT (lb)

Engine Bay Sta. 591.65"-742.5" (cont'd.)

- 12.00 Joint Engine to Duct - cancelled, now included with  
floating Duct (see Duct Bay above)  
- 5.98

Rear Fuselage Sta. 742.5" Aft.

- + 13.91 Formers Fixed R.F. - first estimates to MK 2 drawings  
+ 0.84 Engine Doors - two hinge pins previously omitted  
+ 15.27 Parachute Box & Stinger - redesigned, stinger now in  
N155, Cobalt based alloy, was previously  
recorded in Titanium.  
+ 153.15 Tailcones - first estimate to MK 2 lines using prelim-  
inary gauges supplied by Stress Office,  
structure of N155 except O/Skin of Titanium.  
Possible further increases may be expected  
since proposed gauges tend to be too light.

+ 183.17

Power Plant & Services

- 5.00 Fire Extinguishing System - Actual weight of bottles  
as in MK 1 A/C  
+ 154.00 Engines PS13 - Engine C.G. moved forward by 2.00"  
Inlet frames were not included in  
Orenda's previous estimate. + 160.00  
Heat Exchanger Duct now with  
Floating Duct. (see Duct Bay) = 6.00  
+ 154.00  
+ 23.13 Fuel System - filter added between heat exchanger  
and Engine to reduce risk of Engine  
contamination + 9.00  
Fuel no-air valves Actual weight  
= 3.5 lb manufacturer's weight was  
3.0 lb (22 off) + 11.00  
Miscellaneous other changes + 3.13  
+ 23.13

+ 172.13

Equipment Fixed & Removable.

- + 10.00 Radar fixed - Homer Antenna re-instated  
+ 61.50 Radar Remov.- latest R.C.A. estimates, I.R. Tracker system re-inst. (70 lb)  
+ 55.00 Missile Pack Electronics - latest R.C.A. estimate  
for Sparrow II auxiliaries (Sparrow III auxiliaries  
are not carried)

+ 126.50

+ 573.42 TOTAL WEIGHT CHANGES

UNCLASSIFIED  
NON CLASSIFIE  
SECRET

Date: September 1st, 1957  
 Aircraft: C-105 MK2  
 Production A/C

SECRET  
 Report # 0100-34 Iss. 11  
 Sheet # 3-1  
 UNCLASSIFIED

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>	18,876.21	564.52	137.43
Wings	10,003.73	642.74	142.23
Fin & Rudder	1,024.00	754.25	209.28
Fuselage: Fwd. Sta. 255"	2,565.86	182.44	128.41
Sta. 255" - 485"	1,690.10	374.96	130.07
Sta. 485" - 591.65"	1,110.19	538.21	105.40
Sta. 591.65" - 742.5"	1,547.28	661.11	110.57
Sta. 742.5" Aft.	882.72	801.05	129.40
"Marry-up"	52.33	467.60	103.84
<b>UNDERCARRIAGE - Retracted</b>	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
<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>	1,780.64	685.55	140.51
Mechanical Flying Controls	946.48	687.84	148.61
Hydraulic Flying Controls	834.16	682.95	131.31
<b>EQUIPMENT FIXED &amp; REMOVABLE</b>	8,229.95	328.80	112.39
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
M.H. 64 Damping System	139.13	449.26	135.57
Radio & Radar Removable	1,912.00	180.31	103.97
Radio & Radar Fixed	631.00	233.47	115.71

UNCLASSIFIED  
 continued  
 UNCLASSIFIED

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

SECRET  
 Report # 7-0400-34 Iss. 11  
 Sheet # 3 of 2

UNCLASSIFIED  
 NON CLASSIFIE

WEIGHT & C.G. SUMMARY

DESCRIPTION	WEIGHT lb	H. ARM ins.	V. ARM ins.	M.A.C. %	
<u>Equipment (Fixed &amp; Removable) (cont'd.)</u>					
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	198.00	327.96	100.00		
Sparrow Pack Electrics	64.10	362.29	95.00		
Sparrow Pack Air Conditioning	2.64	309.93	104.15		
AIRCRAFT BASIC WEIGHT	42,239.24	546.36	128.40		
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	45,090.00	535.40	126.95	27.46	
	U/C Down		537.52	123.44	28.05
O.W.E. less Missiles	43,362.00	541.22	128.49	29.07	
	U/C Down		543.43	124.84	29.68
Normal Combat Mission Fuel * (2,044 gals. @ 7.8 lb/gal.)	15,940.00	542.03	142.30		
	U/C Up		537.13	130.96	27.94
Normal Combat Weight	61,030.00	538.70	128.37	28.37	
	U/C Down		536.57	128.84	27.78
Half Combat Mission Fuel (1,022 gals. @ 7.8 lb/gal.)	7,970.00	543.18	139.55		
	U/C Up		538.37	125.86	28.28
Combat Weight (half Mission Fuel	53,060.00	538.37	125.86	28.28	
	U/C Down		541.85	144.16	
Maximum Internal Fuel (2,492 gals. @ 7.8 lb/gal.)	19,438.00	537.34	132.13	28.00	
	U/C Up		538.82	129.68	28.41
A.U.W. Maximum Internal Fuel	64,528.00	538.82	129.68	28.41	
	U/C Down		521.84	60.67	
Maximum External Fuel (500 gals. @ 7.8 lb/gal. + Drop Tank	4,248.00	536.38	127.72	27.73	
	U/C Up		537.77	125.42	28.12
A.U.W. Maximum Internal and External Fuel	68,776.00	537.77	125.42	28.12	

N.B. 1) \* New figures are being prepared by Aerodynamics for Mission Fuel in accordance with latest PS 13 data, but these are not yet available.  
 2) Aircraft Datum = 120" above and arbitrarily chosen ground line.

UNCLASSIFIED  
 NON CLASSIFIE

AVRO AIRCRAFT LTD.

MALTON, ONT.

WEIGHT AND C. OF G BY

FUNCTIONAL GROUP  
COMPONENT

PROJECT C-105 MK 2 Production A/C

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. AF
TOTAL WING GROUP	1000000			
OUTER WING	1010000			
100 OUTER WING SKINS	1010001	64	92910706	
100 POSTS AND INTERCOSTALS	1010002	64	2436732	
100 OUTER WING SPARS	1010003	64	39258701	
100 OUTER WING RIBS	1010004	64	13456695	
18 AILERON CONTROL BOX	1010006	64	37920774	
100 RIB 12	1010007	64	7826648	
100 O W AILERON JACK FITTING	1010009	64	1046727	
AILERON JOINTS AND FAIRING	1010010		3293787	
			197945	
AILERON	1020000			
100 AILERON STRUCTURE	1020001	74	33600792	
			33600	
97 ELEVATOR MARRY UP	1030000		1597738	
97 ELEVATOR	1030000	82	44900755	
			46497	
INNER WING	1040000			
79 MAIN U C STRUCTURE	1040001	62	33071577	
27 FRONT SPAR I W	1040002	62	11110484	
27 MAIN SPAR I W	1040003	62	14639565	
27 FWD CENTRE SPAR I W	1040004	62	4245604	
27 AFT CENTRE SPAR I W	1040005	62	3386654	
27 REAR SPAR	1040006	62	7667703	
32 I W STRUCTURE F S TO M S	1040007	62	105918499	
I W STRUCTURE M S TO R S	1040008	62	14979609	
STRUCTURE AFT OF REAR SPAR	1040009	62	31639720	
11 ELEVATOR CONTROL BOX I W	1040010	62	42717725	
25 TRANSP JOINT MARRY UP	1040011		7065636	
74 CENTRE LINE JOINTS	1040012	62	58643661	
INNER WING SKINS	1040013	62	22420462	
STRUT PICK UP FITTINGS	1040014	62	11818615	
31 RIBS 1 TO 9 INNER WING	1040016	62	51204612	
DORSAL FAIRING	1040017	62	954828	
100 RIB 10	1040018	62	10800636	
FUSELAGE HINGE JOINT I W	1040019	62	13812621	
25 TRANSP JOINT	1040020	62	12942630	
FUSELAGE HINGE JOINT	1040021		3740527	
DORSAL FAIRINGS I W	1040023		5629572	
			669323	

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

Sept. 1/57

SHEET 4-1

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	1000000						
	1010000						
	1010001	64	929	1070646	13597	65637199	12632973
LS	1010002	64	2436	73207	13410	1783323	326668
	1010003	64	3925	870118	13636	27526924	5353221
	1010004	64	1345	669506	13650	9352727	1636744
	1010006	64	3792	077409	13508	29353493	5122234
	1010007	64	7626	64873	13832	4947215	1054828
TING	1010009	64	1046	72791	13670	761394	142988
AIRING	1010010		3293	78726	13224	2592447	435466
			197945			141954722	26905122
	1020000						
	1020001	174	33600	79213	13556	26615568	4554816
			33600			26615568	4554816
	1030000		1597	73810	14260	1178746	227732
	1030000	82	44900	75523	14260	33909827	6402740
			46497			35088573	6630472
	1040000						
	1040001	62	33071	57757	13983	19100817	4624318
	1040002	62	11110	48428	14260	5380351	1584286
	1040003	62	14639	56570	14280	8281282	2096449
	1040004	62	4245	60417	14317	2564702	607757
	1040005	62	3386	65494	14446	2217627	489142
	1040006	62	7667	70374	14420	5395575	1105581
M S	1040007	62	1059	1849929	14405	52883798	15257488
R S	1040008	62	14979	60964	14572	9131798	2182740
R SPAR	1040009	62	31639	72041	14887	22793052	4710098
W	1040010	62	42717	72500	14327	30969825	6120065
P	1040011		7065	63621	13876	4494824	980339
	1040012	62	58643	66143	15062	38788239	8832809
	1040013	62	2242	0462440	14472	139992978	32446803
CS	1040014	62	11818	61500	14577	7268070	1722710
NG	1040016	62	5120	461287	14499	31381395	7424068
	1040017	62	9548	28280	16150	45866	15343
	1040018	62	10800	63683	13835	6877764	1494180
I W	1040019	62	13812	62104	13790	8577804	1904675
	1040020	62	12942	63071	13710	8162649	1774348
	1040021		3740	52796	14309	1974570	535157
	1040023		5629	57249	16026	3222546	902104
			669323			409505532	96804460

UNCLASSIFIED  
NON CLASSIFIED

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP  
COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. AR
LEADING EDGE INNER WING	1050000	62	22138468	
			22138	
LEADING EDGE O W	1060000	65	30870630	
			30870	

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-2

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
ING	1050000	62	22138	46841	14423	10369661	3192964
			22138			10369661	3192964
	1060000	65	30870	63013	13561	19452113	4186281
			30870			19452113	4186281

UNCLASSIFIED  
NON CLASSIFIED



EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-3

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
2010000	83	85170	74957	21170	63840877	18030489
2010002		48306	8538	15355	3310385	741647
		90000			67151262	18772136
2020000	84	12400	81325	21438	10084300	2658312
		12400			10084300	2658312

UNCL  
NON CLASSIFIED

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP  
COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
TOTAL FUSELAGE GROUP	3000000			
FUSELAGE BASIC STRUCTURE	3010000			
RADOME	301000151		178.15	31
RADAR NOSE STRUCTURE	301000351		174.44	9
SKIN F F	301000452		80.94	19
7000 SKIN C F	301000554		220.43	36
SKIN D B	301000656		58.80	53
SKIN E B	301000758		164.89	66
4 FORMERS F F	301001152		105.31	18
FORMERS C F	301001254		287.49	37
6 FORMERS D B	301001356		73.31	53
LIGHT FORMERS E B	301001458		103.70	56
8 HEAVY FORMERS E B	301001558		192.14	66
LOWER LONGERONS F F	301001652		68.46	18
INNER LONGERON E B	301001758		71.84	65
LONGERON E B	301001858		69.05	65
TOP LONGERONS E B	301001958		38.66	6
LOWER SHEAR PANEL	301002052		29.88	23
TOP WING LONGERONS D B	301002156		4.98	53
LONGERONS C F	301002252		53.25	3
LONGERONS C F	301002354		138.13	41
LONGERONS D B	301002556		105.69	52
ELECTRONICS BAY STRUCTURE	301002654		45.23	27
59 LONGITUDINAL BEAMS D B	301002756		65.70	52
RADAR ACCESS DOOR C F	301002854		21.08	27
72 MAIN FRAME AT STN 538 77	301002956		59.80	53
DIVE BRAKE ACCOM STRUCTURE	301003056		36.34	50
20 TOP LONGERONS F F	301003152		185.71	19
DUCT C F	301003254		315.52	35
FLOATING DUCT D B	301003356		41.60	55
CANOPY ARCHES	301003452		85.35	22
4 ACCESS PANEL STIFFENERS	301003656		38.65	53
66 NOSE U C SUPPORT STRUCTURE	301003752		33.43	21
3 CREW BULKHEADS	301003852		122.72	20
EQUIPMENT BAY STRUCTURE	301003954		71.11	28
86 WINDSCREEN	301004152		130.03	13
SERV ACCESS DOORS AND PNLS	301004258		59.29	66
DORSAL FAIRING FWD	301004454		27.27	29
INTERMEDIATE FORMERS E B	301004558		48.73	72
ENGINE ACCESS DOORS E B	301004658		107.35	64
SEALING MISSILE BAY	301004754		6.97	32
MISCELLANEOUS ITEMS C F	301004854		3.92	37
ARMAMENT BAY ROOF	301004954		125.22	38
BULKHEAD AT STA 120	301005052		30.60	12
BULKHEAD AT STA 255	301005152		104.29	25
BULKHEAD STA 485	301005254		123.51	48
ENGINE TUNNEL E B	301005458		61.31	65
FUSELAGE FUEL TANK	301005554		209.60	39
COCKPIT FLOOR	301005652		57.43	17
DORSAL OVER FUEL TANK	301006154		50.97	41

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-4

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	3000000						
						UNCLASSIFIED NON CLASSIFIE	
URE	3010000						
	3010001	51	17815	3737	11032	665747	1965351
	3010003	51	17444	9582	11444	1671484	1996291
	3010004	52	8094	19000	12079	1537860	977674
	3010005	54	22043	36727	14417	8095733	3177939
	3010006	56	5880	53407	11155	3140332	655914
	3010007	58	16489	66905	11036	11031965	1819726
	3010011	52	10531	18330	12018	1930332	1265616
	3010012	54	28749	37520	13317	10786625	3828504
	3010013	56	7331	53531	11441	3924358	838740
	3010014	58	10370	66593	11699	6905694	1213186
	3010015	58	19214	66057	10938	12692192	2101627
	3010016	52	6846	18430	9044	1261718	619152
	3010017	58	7184	65234	9213	4686411	661862
	3010018	58	6905	65809	9781	4544111	675378
	3010019	58	3866	6605	13911	424940	88752
B	3010020	52	2988	23420	8900	699790	265932
	3010021	56	498	53899	13550	268417	67479
	3010022	52		5325295	15250	13406	8083
	3010023	54	1381	341112	12289	5678801	1697480
URE	3010025	56	10569	52362	9879	5534140	1044112
B	3010026	54	4523	27443	9164	1241247	414488
	3010027	56	6570	52007	9125	3416860	599513
	3010028	54	2108	27448	8976	578604	189214
77	3010029	56	5980	53877	10383	3221845	620903
UCTURE	3010030	56	3634	50399	9299	1831500	337926
	3010031	52	18571	19286	14750	3581603	2739223
	3010032	54	31552	35839	12969	11307921	4091979
	3010033	56	41600	55137	11719	22936992	4875104
	3010034	52	8535	22798	16050	1945809	1369868
RS	3010036	56	3865	53918	10294	2083931	397863
UCTURE	3010037	52	3343	21049	9186	703668	307088
	3010038	52	12272	20589	12284	2526682	1507492
URE	3010039	54	7111	28363	13518	2016893	961265
	3010041	52	13003	13814	15008	1796234	1951490
D P NLS	3010042	58	5929	66837	9255	3962766	548729
	3010044	54	2727	29126	16400	794266	447228
E B	3010045	58	4873	72976	11295	3556120	550405
E B	3010046	58	10735	64644	9044	6939533	970873
	3010047	54	697	32148	10900	224072	75973
C F	3010048	54	392	37000	12500	145040	49000
	3010049	54	12522	38325	11427	4799057	1430889
	3010050	52	3060	12000	12280	367200	375768
	3010051	52	10429	25500	12027	2659395	1254296
	3010052	54	12351	48500	10396	5990235	1284010
	3010054	58	61318	65674	12016	40269983	7367971
	3010055	54	20960	39311	14506	8239586	3040458
	3010056	52	5743	17640	11575	1013065	664752
	3010061	54	5097	41352	14205	2107711	724029

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP  
COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.			COMP. NO.	WEIGHT	H. A.
DEFLECTOR SHIELD	3010062	54			2000337	
SHEAR PANEL BELOW NAV ARCH	3010063	52			207425	
PACK MOUNTING STRUCTURE	3010064	54			2365292	
ENG ACCESS DOORS FIXED R F	3010065	59			9326773	
TUNNEL FIXED R F	3010066	59			12072771	
SKIN AND INTERCOSTAL R F	3010067	59			5256772	
FAIRING UNDER RUDDER R F	3010068	59			2638781	
FORMERS FIXED R F	3010069	59			10681780	
LONGERONS C BEAM FIXED R F	3010070	59			2690771	
REMOVABLE NACELLES R F	3010071	59			34815822	
CNTR STRUC STING REMOV R F	3010072	59			10794834	
MISC ITEMS STRUCTURE E B	3010073	58			912664	
MTG BRKTS SIDE PANEL D B	3010075	56			213524	
FORMERS LOWER PANEL D B	3010076	56			7416544	
LOWER PANEL D B	3010077	56			5054554	
JOINT F F TO C F	3010078				855255	
JOINT AIR INTAKES TO F F	3010079				952220	
JOINT C F TO D B	3010080				500485	
JOINT D B TO E B	3010081				2508584	
FUS JOINT AT STA 742 50	3010082				418742	
DROP TANK MTG STRUCT D B	3010083	56			853674	
STRUCT AT ENG ACCESS DOORS	3010085	58			6537640	
MISC STRUCTURE F F	3010086	52			552187	
ENG RAILS ATTACHM TO FORM	3010087	58			3624685	
					658059	
96 DIVE BRAKES	3020000	72			11150508	
96 DIVE BRAKES C A	3020001				406487	
					11556	
AIR INTAKES	3030000					
AIR INTAKES	3030100	55			75502210	
					75502	
PILOTS AND NAVIG CANOPIES	3040000					
76 PILOTS CANOPY	3040100	53			24081170	
					24081	
NAVIGATORS CANOPY	3040200	53			15650232	
					15650	

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-5

UNCLASSIFIED  
NON CLASSIFIED

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	301006254		2000	33710	16400	674200	328000
ARCH	301006352		2074	25702	15350	533059	318359
RE	301006454		2365	29226	10254	691195	242507
D R F	301006559		9326	77366	9867	7215153	920196
	301006659		12072	77167	13357	9315600	1612457
R F	301006759		5256	77231	13643	4059261	717076
R F	301006859		2630	78178	15590	2062336	411264
	301006959		10681	78022	13630	8333530	1455820
D R F	301007059		2690	77120	12688	2074528	341307
F	301007159		3481	58228	12900	28646478	4491135
V R F	301007259		1079	48341	13644	9003491	1472733
E B	301007358		912	66401	10278	605577	93735
D B	301007556		213	52402	13330	111616	28393
B	301007656		741	65443	9015	4036677	668552
	301007756		505	45545	8790	2802797	444247
	3010078		855	25500	12000	218025	102600
F F	3010079		952	22000	12000	209440	114240
	3010080		500	48500	9800	242500	49000
	3010081		250	85847	9150	1466628	229482
50	3010082		418	74250	11500	310365	48070
D B	301008356		853	67428	8825	575161	75277
DOORS	301008558		653	76408	9261	4189498	605392
	301008652		552	18750	11500	103500	63480
FORM	301008758		362	46856	11337	2484614	410853
			6580	59		315717103	79360770
	302000072		111	50508	4690	5669329	1010413
	3020001		406	48794	9374	198104	38058
			115	56		5867433	1048471
	3030000						
	303010055		755	02210	7611	15912802	8930377
			755	02		15912802	8930377
PIES	3040000						
	304010053		240	81176	7815	4257039	3832010
			240	81		4257039	3832010
	304020053		156	50232	0016	3630800	2535300
			156	50		3630800	2535300



WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-6

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
POSITION	4000000						
GROUP	4010000						
	401010092		1901625393114100			102556268	26812842
			190162			102556268	26812842
INGS	401020062		291805371013840			15672578	4038512
			29180			15672578	4038512
GROUP	4020000						
	402010091		3338117080	9970		5701475	3328086
			33381			5701475	3328086
IRING	402020052		245416224	8823		398137	216516
			2454			398137	216516

UNCLASSIFIED  
NON CLASSIFIED

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT

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		2396060	
			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			

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-5

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	5000000						
	5010000		917228	68803	12119	631080381	111158861
			917228			631080381	111158861
CESS	5010100		1450	63819	10390	925376	150655
			1450			925376	150655
D B	5020001	56	4524	57875	9607	2618265	434621
E B	5020002	58	23660	60609	10372	14340089	2454015
			28184			16958354	2888636
	5030000						
	5030001	52	1458	16129	12476	235161	181900
	5030002	54	264	30813	11789	81346	31123
	5030003	56	508	49991	13459	253954	68372
	5030004	58	1013	63982	10194	648138	103265
			3243			1218599	384660
BOX	5040000		31545	61598	10524	19431089	3319796
			31545			19431089	3319796
	5050000		7000	58717	11600	4110190	812000
			7000			4110190	812000
ENG	5060000						
B	5060001	58	6400	70381	13414	4504384	858496
	5060002	56	146	55318	13749	80764	20074
			6546			4585148	878570
KETS	5070000						
	5070001		8421	67834	14106	5712301	1187866
S	5070002		4817	64669	12857	3115106	619322
			13238			8827407	1807188
	5080000						

UNCLASSIFIED  
NON CLASSIFIED



EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0100-34 Iss. 11

SHEET 4-8

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
5080001	54	107.13	401.11	140.10	42970.91	15008.91
5080002	56	149.55	540.70	105.58	80861.69	15789.49
5080003	58	68.56	441.41	126.12	44123.6	8639.2
5080004	62	439.00	554.21	144.28	243298.19	63338.92
5080005		626.65	901.95	94	412540	60058
5080006		754.61	525.96	58	463899	72821
		716.33			380307.54	96330.03

UNCLASSIFIED  
NON CLASSIFIE

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP  
COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT	H. A.
FLYING CONTROLS GROUP		6000000			
MECHANICAL CONTROLS		6010000			
	MECHANICAL CONTROLS F F	6010001	52	8759	158
	MECHANICAL CONTROLS C F	6010002	54	8853	339
	MECHANICAL CONTROLS D B	6010003	56	3504	86
	MECHANICAL CONTROLS FIN	6010005	83	12688	787
11	MECHANICAL CONTROLS I W	6010006	62	4088	4717
	MECHANICAL CONTROLS O W	6010007	64	3043	6770
	MECHANICAL CONTROLS C A	6010008		646	709
				946	48
FLYING CONTROLS HYDRAULICS		6020000			
	FLYING CONT HYDRAULICS D B	6020001	56	2332	574
37	FLYING CONT HYDRAULICS E B	6020002	58	3907	647
	FLYING CONT HYDRAULICS R F	6020003	59	487	58
63	FLYING CONT HYDRAULICS I W	6020004	62	244	48703
	HYDRAULICS FLYING CONT O W	6020005	64	1218	1740
61	FLYING CONT HYDRAULICS FIN	6020006	83	533	1761
				834	16

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-9

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	6000000						
	6010000						
F	6010001	52	87.59	158.07	115.43	13845.35	10110.51
F	6010002	54	8.85	339.20	115.26	3001.92	1020.05
B	6010003	56	3.50	486.99	118.80	1704.47	415.80
IN	6010005	83	12.88	787.81	221.76	9995.73	28136.91
W	6010006	62	408.84	717.51	143.75	293346.79	58770.75
W	6010007	64	304.36	770.75	135.61	234585.47	41274.26
A	6010008		6.46	709.82	143.38	4585.44	926.23
			946.48			651026.77	140654.51
ULICS	6020000						
S D B	6020001	56	23.32	574.42	96.68	13395.47	2254.58
S E B	6020002	58	390.76	647.84	111.43	253149.96	43542.39
S R F	6020003	59	48.75	875.10	82.4	364.20	51.96
S I W	6020004	62	244.48	703.31	147.34	171945.23	36021.68
T O W	6020005	64	121.81	740.77	135.76	90233.19	16536.93
S FIN	6020006	83	53.31	761.65	208.75	40603.56	11128.46
			834.16			569691.61	109536.00

UNCLASSIFIED  
NON CLASSIFIED

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP  
COMPONENT

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H. A
FIXED EQUIPMENT GROUP	7000000			
INSTRUMENTS	7010000			
INSTRUMENTS	7010001	52	4407	161
NAVIG TABLE AND STOWAGE	7010004	52	200	220
			4607	
COCKPIT PRESSURE SEALING	7020000	52	500	186
			500	
OXYGEN SYSTEM	7030000			
OXYGEN SYSTEM	7030001	52	2359	253
			2359	
AIR CONDITIONING SYSTEM	7040000			
AIRCONDITIONING SYST F F	7040001	52	12321	224
AIRCONDITIONING SYST C F	7040002	54	57523	292
AIRCONDITIONING SYST D B	7040003	56	2074	514
AIRCONDITIONING SYST C A	7040005		12366	565
AIRCONDITIONING SYST ENG	7040006		1255	670
AIRCONDITIONING SYST I W	7040007	62	615	17
			85600	
HYDRAULICS MAIN SYSTEM	7050000			
14 UTILITY HYDRAULICS F F	7050001	52	8415	200
5 UTILITY HYDRAULICS C F	7050002	54	4162	433
9 UTILITY HYDRAULICS D B	7050003	56	25882	556
21 UTILITY HYDRAULICS E B	7050004	58	7240	606
23 UTILITY HYDRAULICS I W	7050005	62	13311	553
14 UTILITY HYDR NOSE U C	7050006	91	325	190
23 UTILITY HYDR MAIN U C	7050007	92	2980	543
			62315	
CABIN INSULATION	7070000	52	1431	187
			1431	
BRAKE PARACHUTE	7080000			
BRAKE PARACHUTE F F	7080001	52	455	169
BRAKE PARACHUTE R F	7080005	59	5659	820

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0100-34, Iss. 11

SHEET 4-10

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	7000000						
	7010000						
	7010001	52	4407	16112	13909	710056	612970
GE	7010004	52	2002	20000	13000	44000	26000
			4607			754056	638970
ING	7020000	52	500	18600	13000	93000	65000
			500			93000	65000
	7030000						
	7030001	52	2359	25372	15643	598525	369018
			2359			598525	369018
EM	7040000						
F F	7040001	52	12321	22460	11998	2767297	1478274
C F	7040002	54	57523	29290	13798	16848487	7937024
D B	7040003	56	20745	1417	12569	1066389	260681
C A	7040005		12366	56545	13703	6992355	1694513
ENG	7040006		1255	67000	13900	840850	174445
I W	7040007	62	615	1779	15751	31585	9608
			85600			28546963	11554545
M	7050000						
F F	7050001	52	8415	20016	10853	1684346	913280
F	7050002	54	4162	43384	10420	1805642	433680
B B	7050003	56	25882	55639	11046	14400486	2858926
B	7050004	58	7240	60647	10852	4390843	785685
W	7050005	62	13311	55360	14235	7368970	1894821
	7050006	91	325	19033	9521	61857	30943
	7050007	92	2980	54325	14100	1618885	420180
			62315			31331029	7337515
	7070000	52	1431	18748	13200	268284	188892
			1431			268284	188892
	7080000						
	7080001	52	455	16913	12869	76954	58554
	7080005	59	5659	82094	14437	4645699	816990

UNCLASSIFIED  
NON CLASSIFIED

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		12462	
				6238	
	ELECTRICAL SYSTEM	7090000			
	ELECTRICAL WIRING	7091400			
	ELECTRICAL WIRING R N	709140151		129	92
	ELECTRICAL WIRING F F	709140252		2966	199
	ELECTRICAL WIRING C F	709140354		2354	397
	ELECTRICAL WIRING A I	709140455		1274	211
	ELECTRICAL WIRING D B	709140556		9015	527
	ELECTRICAL WIRING E B	709140658		64	595
	ELECTRICAL WIRING I W	709140862		8909	541
	ELECTRICAL WIRING FIN	709140983		352	797
	ELECTRICAL WIRING N U C	709141091		330	186
60	ELECTRICAL WIRING ENG	7091411		2002	607
	ELECTRICAL WIRING C A	7091412		13746	334
				41141	
30	ELECTRICS F F	709150052		15248	15
				15248	
	ELECTRICS C F	709160054		8709	454
				8709	
	ELECTRICS E B	709170058		670	679
	ELECTRICS ENG	7091701		17632	589
	ELECTRICS C A	7091702		71861	11
				19020	
	ELECTRICS FIN	709180083		8389	8
				83	
	ELECTRICS I W	709190062		2336	620
	ELECTRICS C A	7091901		112629	
	ELECTRICS M U C	709190292		74516	
				2522	
	ELECTRICS A I	709200055		5090	220
				5090	
	ELECTRICS D B	709210056		30089	518
				30089	

HEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-11

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
708000662		12462022		14500	76907	17980
		6238			4799560	893524
7090000						
7091400						
709140151		1299285		12000	11978	15480
709140252		296619977		11200	592518	332192
709140354		235439703		11000	934609	258940
709140455		127421984		12000	280076	152880
709140556		901552769		9921	4757125	894378
709140658		6459500		9200	38060	5888
709140862		890954111		13900	4820749	1238351
709140983		35279754		30000	280734	105600
709141091		33018600		9800	61380	32340
7091411		200260683		10000	1214874	200200
7091412		1374633473		11234	4601199	1544226
		41141			17593322	4780475
709150052		1524815464		11095	2357951	1691766
		15248			2357951	1691766
709160054		870945415		10760	3955192	937088
		8709			3955192	937088
709170058		67067944		11597	455225	77700
7091701		1763258919		11516	10388598	2036501
7091702		71861350		12000	440493	86160
		19020			11284316	2194361
709180083		8389550		28840	74327	23937
		83			74327	23937
709190062		233662053		14500	1449558	338720
7091901		11262946		13561	70500	15188
709190292		7451600		13700	38184	10138
		2522			1558242	364046
709200055		509022059		13832	1122803	704049
		5090			1122803	704049
709210056		3008951832		10258	15595730	3086530
		30089			15595730	3086530

UNCLASSIFIED  
NON CLASSIFIED

C

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL  
COMPONE

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
WINDSCREEN DEMISTING	7092200	52	3564	19
			3564	
ELECTRICS R F	7092300	59	1368	0
			136	
SPARROW ELECTRICS F F	7092401	52	254	18
SPARROW ELECTRICS C F	7092402	54	602	27
			314	
L P PNEUMATICS	7100000			
12 L P PNEUMATICS F F	7100001	52	211	719
12 L P PNEUMATICS C F	7100002	54	778	32
12 L P PNEUMATICS D B	7100003	56	418	55
12 L P PNEUMATICS E B	7100004	58	155	765
12 L P PNEUMATICS FIN	7100005	83	504	74
12 L P PNEUMATICS R N	7100006	51	136	6
12 L P PNEUMATICS A P	7100007	94	602	29
			5570	
INTAKE DEICING	7120000	55	5184	19
			5184	
RADOME ANTI ICING	7130000	51	888	5
			888	
RADIO AND RADAR FIXED	7140000			
RADIO AND RADAR FIXED R N	7140001	51	165	009
RADIO AND RADAR FIXED F F	7140002	52	500	018
RADIO AND RADAR C F	7140003	54	190	0026
RADIO AND RADAR FIXED D B	7140004	56	180	0051
RADIO AND RADAR FIXED FIN	7140005	83	320	0076
RADIO AND RADAR FIXED C A	7140006		176	0021
			631	00
29 CANOPY ACTUATION	7160000	52	6492	22
			6492	
CABIN CONSOLES	7170000	52	1745	17
			1745	

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0100-34 Iss. 111

SHEET 4-12

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
709220052		3564	19898	9980	709165	355687
		3564			709165	355687
709230059		13680200	11360		109072	15450
		136			109072	15450
709240152		25418242	11255		48325	28588
709240254		6027300	11255		16280	6753
		314			62715	35341
7100000						
710000152		211719378	12463		410232	263842
710000254		77832842	10747		255511	83612
710000356		41855545	11592		232178	48455
710000458		155765644	9739		1022077	151636
710000583		50474257	24452		374255	123238
710000651		136	6919	10000	9410	13600
710000794		6029800	10400		17880	6240
		5570			2321543	690623
712000055		5184	19702	11800	1021352	611712
		5184			1021352	611712
713000051		888	5149	12500	45723	111000
		888			45723	111000
7140000						
R N 714000151		16500	9755	10000	1609575	1650000
F F 714000252		5000	18160	12000	908000	600000
714000354		19000	26782	10042	5088580	1907980
D B 714000456		1800	51200	10000	921600	180000
FIN 714000583		3200	76180	24600	2437760	787200
C A 7140006		17600	21329	12364	3753904	2176064
		63100			14719419	7301244
716000052		6492	22199	15435	1441159	1002040
		6492			1441159	1002040
717000052		1745	17476	12434	304956	216973
		1745			304956	216973

UNCLASSIFIED  
NON-CLASSIFIED



EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-13

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
718000054		1000	26800	9500	268000	95000
		1000			268000	95000
719000152		363	18744	12200	68041	44286
719000253		64	20218	15900	12940	10176
719000354		1400	37197	12455	520758	174370
719000455		408	22798	12020	93016	49042
719000556		377	53828	11200	202932	42224
719000658		443	66701	11200	295485	49616
719000759		648	80362	13175	520746	85374
719000862		3151	60144	14400	1895137	453744
719000964		1067	70650	13590	753836	145005
719001065		3196	3948	13526	203994	43148
719001174		353	79190	13556	279541	47853
719001282		566	75523	14260	427460	80712
719001383		39	74663	20837	477097	133148
719001484		202	81279	21431	164184	43291
		10000			5915167	1401989

UNCLASSIFIED  
NON-CLASSIFIED

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
REMOVABLE EQUIPMENT GROUP	8000000			
EJECTOR SEATS	8010100	52	28442	20
			28442	
RADAR REMOV GROUP	8020000			
RADAR REMOVABLE	8020100			
RADIO AND RADAR REM R N	8020101	51	102070	9
RADIO AND RADAR REM F F	8020102	52	17860	18
RADIO AND RADAR REM C F	8020103	54	61520	27
RADIO AND RADAR REM D B	8020104	56	5750	51
RADIO AND RADAR REM C A	8020106		4000	55
			191200	
DAMPING SYSTEM	8030000			
DAMPING SYSTEM F F	8030101	52	635	16
DAMPING SYSTEM C F	8030102	54	2180	31
DAMPING SYSTEM E B	8030103	58	369	63
DAMPING SYSTEM I W	8030104	62	5800	52
DAMPING SYSTEM O W	8030105	64	95	74
DAMPING SYSTEM R N	8030106	51	520	8
DAMPING SYSTEM C A	8030107		4314	48
			13913	
SPARROW PACK	8050000			
SPARROW PACK STRUCTURE	8050100	94	87070	38
			87070	
SPARROW PACK MECHANISMS	8050200	94	58257	37
			58257	
SPARROW PACK HYDRAULICS	8050300	94	33194	37
			33194	

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-24

GROUP	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	8000000						
	8010100	52	284.42	202.80	136.25	57680.38	38752.23
			284.42			57680.38	38752.23
	8020000						
	8020100						
N	8020101	51	1020.70	913.81	101.00	93271.57	103090.70
F	8020102	52	178.60	185.24	120.00	33083.86	21432.00
F	8020103	54	615.20	271.03	100.98	166737.66	62122.90
B	8020104	56	57.50	513.88	100.00	29548.10	57500.00
A	8020106		40.00	552.98	160.00	22119.20	64000.00
			1912.00			344760.39	198795.60
	8030000						
	8030101	52	635.16	95.91	119.61	1076.90	759.52
	8030102	54	21.80	319.15	114.03	6957.47	2465.85
	8030103	58	369.63	242.13	43.2	2333.63	495.64
	8030104	62	58.00	521.21	160.00	30230.18	92800.00
	8030105	64	95.74	85.51	40.00	711.12	133.00
	8030106	51	5.20	80.00	102.00	416.00	530.40
	8030107		43.14	481.68	120.00	20779.68	5176.80
			139.13			62504.98	18861.21
	8050000						
E	8050100	94	870.70	389.60	96.00	339224.72	83587.20
			870.70			339224.72	83587.20
MS	8050200	94	582.57	379.30	99.04	220968.80	57697.73
			582.57			220968.80	57697.73
CS	8050300	94	331.94	373.52	99.00	123986.23	32862.06
			331.94			123986.23	32862.06

UNCLASSIFIED  
NON CLASSIFIED





AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT \_\_\_\_\_

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
OPERATIONAL LOAD	9000000			
CREW MEMBERS	901000052		43000	19
			43000	
ENGINE OIL	9020000			
ENGINE OIL DRAINABLE	9020001		9290	65
ENGINE OIL TRAPPED ENG	9020002		1773	63
ENGINE OIL TRAPPED D B	902000356		1925	58
ENGINE OIL TRAPPED E B	902000458		909	59
			13897	
SPARROW MISSILES	903000054		172800	38
			172800	
OXYGEN CHARGE	9040000			
OXYGEN CHARGE F F	904000152			7220
OXYGEN CHARGE C F	904000254		12672	6
			1339	
ALCOHOL FOR RADOME DEICING	905000051		2200	9
			2200	
ENGINE FIRE EXT FLUID	9060000		2500	71
			2500	
RESIDUAL FUEL	9070000			
RESIDUAL FUEL C F	907000154		4680	39
RESIDUAL FUEL I W	907000262		17160	59
			21840	
WATER FOR AIR CONDITIONING	910000054		26000	26
UNUSABLE WATER FOR AIRCOND	910000154		15000	26
			27500	

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. 7-0400-34 Iss. 11

SHEET 4-16

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		9290	65225	11390	6059403	1058131
9020002		17736	3676	11640	1128975	206377
9020003	56	19255	8084	9555	1118117	183934
9020004	58	9095	9928	9704	544746	88209
		13897			8851241	1536651
9030000	54	172800	38929	8830	67269312	15258240
		172800			67269312	15258240
9040000						
9040001	52	7220	493	13200	14755	9504
9040002	54	12672	6280	16150	332968	204621
		1339			347723	214125
CING	9050000	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
NING	9100000	26000	26800	13200	6968000	3432000
COND	9100001	1500	26700	12700	400500	190500
		27500			7368500	3622500

UNCLASSIFIED  
NON CLASSIFIED

HUBBARD  
3558  
MADE IN U.S.A.