

QCX
Avro
CF105
R-7-0400-34
Iss-17

Classification cancelled / Changed to UNCLASS
ARROW 2 Report # 7-0400-34
Priority of AVRS Issue # 17
2 Sept 56 ANALYZED
Signature [Signature] WEIGHT & G.G. SUMMARY
NAME: [Signature] **SECRET**
Unit Rank / Appointment Mar. 1/58 AVRS

Temple

AVRO AIRCRAFT LIMITED
INTER-DEPARTMENTAL MEMORANDUM

ANALYZED

Ref. 6726/11/J
Date March 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. 17.

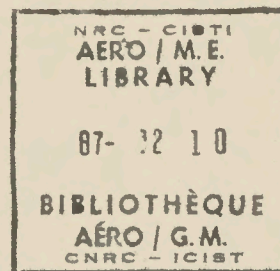
Attached is a copy of Weight and C.G. Summary Report # 7-0400-34 Iss. 17, dated March 1st, 1958 for your retention.

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

E.F. Burnett
PMB

amc.

E. F. Burnett
Weights Supervisor



- | | | |
|-------------|-----------------|-------------------------|
| cc: Messrs. | J.C. Floyd | F. Brame |
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| | D. Hayward | R. Cairns |
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12503793

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

Report # 7-0400-34 Iss. 17

I N D E X

<u>Sheet #</u>	<u>Content</u>
1-2 to 1-4	Introductory notes and explanation of Weight Changes.
2.	Details of Weight changes with reference to report system as listed on I.B.M. Sheets for Engine Bay Structure.
3-1 to 3-2	Weight and C.G. Summaries
4.	Horizontal C.G. plot showing basic fixed points on flight envelopes. The variation of C.G. with fuel used has been omitted until such time as a fully approved fuel sequencing is established.
5-1 to 5-15	I.B.M. Detail Sheets of Weights & C.G.'s.

Classification cancelled / Changed to UNCLASS

By authority of AVES

Date 27 Sept 58

Date: March 1st, 1958

Aircraft: Arrow 2

Signature RBell

Unit / Rank / Appointment AVES

~~SECRET~~

Report # 7-0400-34 Iss. 17

Sheet # 1-1

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 16 of February 1st, 1958.

The early Arrow 2 Aircraft 25206 onwards will not be as this summary designates, but will be flight test aircraft with Instrumentation, 'Astra Minus' or preproduction Astra I Radar, Missile Pack trials 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 = 3,281.9 lb, including missile actuation and firing systems.)

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

Arrow 2 Aircraft 25206 to 25208, and some later Aircraft 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.

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Aircraft: ARROW 2
Production A/C

S E C R E T
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Sheet # 1-2

INTRODUCTION & WEIGHT CHANGES

<u>1. STRUCTURE</u>	<u>WEIGHT (lb)</u>
a) <u>Wings:</u>	
Structure F/Spar to M/Spar I/W - alterations to pivot door structure	+ 3.15
hardware changes & revised estimates of all skin attachments in area	+ <u>6.71</u>
<u>Wing Weight Increase</u>	+ <u>9.86</u>
b) <u>Fin & Rudder</u>	
No Weight Change	
c) <u>Front Fuselage Fwd. Sta. 255"</u>	
Pilot's Canopy - alterations to castings for MK 2 A/C, addition of step on L.H.S.	+ 2.23
Navigator's Canopy - MK 2 production drawings now estimated	+ 5.23
Canopy Arches - miscellaneous production drawing reissues on Rear Arch	+ 0.29
Centre Arch has window added and correction made to hardware estimate	+ 4.81
Lower Shear Panel - Miscellaneous minor drawing revisions	- 0.18
<u>Front Fuselage Increase</u>	+ <u>12.38</u>
d) <u>Centre Fuselage Sta. 255" - 485"</u>	
Forward Dorsal Fairing - two reinforcing angles now Steel were titanium, production request	+ 0.24
C.F. Radar Access Door - first estimate to MK 2 schemes	+ 5.22
<u>Centre Fuselage Increase</u>	+ <u>5.46</u>
e) <u>Duct Bay Sta. 485"-591.65"</u>	
Dive Brake Accommodations - drawing reissues, alterations to hardware etc.	- 0.67
Longerons & Joints - since former Sta. 485" is now assembled to the D.B. there has been some considerable change to hardware etc. (see also Fuselage "Marry-up").	+ 4.48
Side Formers D.B. - miscellaneous changes to several formers due to production drawing reissues net change negligible	+ 0.03
Floating Duct - Now fully estimated to production drawings machined rings etc. increased in gauge since scheme estimate was made.	+ 21.55
<u>Duct Bay Increase</u>	+ <u>25.39</u>

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INTRODUCTION & WEIGHT CHANGES

<u>1. STRUCTURE</u>	<u>WEIGHT (lb)</u>
f) <u>Engine Bay Sta. 591.65"-742.5"</u>	
With the exception of the Shroud this section has now been entirely re-estimated to production drawings. Due to the advantages of conforming to the drawing office 'call up' system, for record purposes the entire weight reporting of this section has also changed (for details regarding I.B.M. listing etc. see Section 2)	
Resulting weight changes are as follows:	
Inner Longeron - increases to top cap	+ 5.88
No. 1 Engine Door structural increases	+ 5.21
No. 2 Engine Door - structural increase excluding the added section which weighs approx. as before.	+ 7.24
Addition of various diaphragms and miscellaneous other changes	+ 5.57
<u>Engine Bay Increase</u>	<u>+ 23.90</u>
g) <u>Rear Fuselage Sta. 742.5 Aft.</u>	
No Weight Change.	
h) <u>Fuselage "Marry-Up"</u>	
Joint C.F. to D.B. - MK 2 production drawings now estimated changes due to Bulkhead Sta. 485" now being assembled to Duct Bay Joints (see section (e))	- 0.72
<u>Fuselage "Marry-up" Decrease</u>	<u>- 0.72</u>
<u>TOTAL STRUCTURAL INCREASE</u>	<u>+ 76.27</u>
<u>2. LANDING GEAR</u>	
Nose U/C Door & Fairing - minor changes to door structure for ground connectors etc added to fwd. end of fairing	+ 0.36
Main U/C Doors & Fairings - redesign of spring housings pivot door stabilizing arm now included here	+ 2.62
<u>LANDING GEAR INCREASE</u>	<u>+ 1.94</u>
	<u>+ 8.62</u>
<u>3. POWER PLANT & SERVICES</u>	
No Weight Change	
<u>4. FLYING CONTROLS GROUP</u>	
No Weight Change	

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INTRODUCTION & WEIGHT CHANGES

4. FLYING CONTROLS GROUP

In Aircraft # 25201 boosters have been added at the elevator and aileron quadrants to overcome excessive friction within the system. These together with associated valves, filters and piping account for a weight increase of approximately 77 lb. Some similar system of boosters will have to be built into the arrow 2 Flying Control Hydraulic System but no information pertaining to details of the installation is yet available. The probable weight increase will be of the same order as that on Aircraft # 25201.

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INTRODUCTION & WEIGHT CHANGES

<u>5. EQUIPMENT GROUP</u>	<u>WEIGHT (lb)</u>
Cabin Consoles - production drawing issue of L.H. Pilot's Console.	- 0.10
Electric Cables - production drawing estimates of I/W Cables	+ 3.27
Electrics D.B. - production drawing estimates of panels E 20 and E 21, 18 fuses added to E 20	+ 2.94
Electrics E.B. - addition of wiring on Nose Bullet	+ 1.40
Radio & Radar Fixed - addition of mag. amp, dehydrator, sense antenna transformer and flexible waveguide and installation in dorsal	+ 17.08
Radio & Radar Removable - addition of J4 compass flux valve	+ 1.30
I.R. servo amp. - R.C.A. made error in previous weight estimate	+ 14.00
Cockpit Equipment - addition of map case in observer's cockpit, escape ropes and frequency card holders in both cockpits	+ 6.00
Missile Pack Structure - previously no account was taken of installation of hydraulic equipment and routing of lines. Now numerous doublers and stiffeners have been added, resulting in:	
Longitudinal Beams	+ 9.30
Transverse Beams	+ 2.96
Cable duct - added	+ 2.40
Micro Switch Mountings - added	+ 2.82
Hydraulic Equipment mounts - added	+ 2.51
Misc. other changes	+ 1.84
Missile Pack Mechanisms - production drawing estimates of aft launcher	+ 0.23
J4 Al. packing rings at drag link bearing housings	+ 1.02
Flexible conduits added at drag links and tie rods	+ 3.88
Jack attachment bolts at upper end of telescopic links now called up with hydraulics	- 2.93
<u>EQUIPMENT GROUP INCREASE</u>	<u>+ 69.92</u>
<u>6. OPERATIONAL LOAD</u>	
Trapped Water - Specification Weight of water trapped in evaporator is increased from 15 lb to 25 lb. Usable water remains unchanged at 260 lb.	+ 10.00
<u>OPERATIONAL LOAD INCREASE</u>	<u>+ 10.00</u>

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INTRODUCTION & WEIGHT CHANGES

SUMMARY

Weight Change - Aircraft Basic Weight

Structure	+	76.27 lb.
Landing Gear	+	8.62 lb.
Equipment	+	69.92 lb.
		<u>+ 154.81 lb.</u>

Weight Change - Operational Load

Trapped Water + 10.00 lb

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

Issue 16

45,880.00 lb

Issue 17

46,044.81 lb

+ 164.81 lb

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Section 2

DETAILED WEIGHT CHANGES WITH REFERENCE
TO REPORT SYSTEM AS LISTED ON I.B.M.
SHEETS FOR ENGINE BAY STRUCTURE

Due to the Design Office method of 'call-up' in panel sub-
assys. the weight recording system has been changed to
correspond.

		<u>WEIGHT (lb)</u>
Light Formers E. B.	} These items are no longer con- sidered seperately and all these reports have now been DELETED	- 110.41
Inner Longerons E. B.		- 71.84
Miscellaneous Items E.B.		- 9.12
Structure at Engine Doors E.B.		- 65.37
Service Access Doors E.B.		- 59.29
Outer Skins E.B.		- 164.89
Intermediate Formers E.B.	- 46.06	
Panels at Engine Doors	} New reports intro- duced in accord- ance with the drawing system	+ 110.83
Bottom Panel Aft.		+ 46.10
Bottom Panel Centre		+ 41.20
Bottom Panel Fwd.		+ 74.22
Side Panel Fwd.		+ 86.02
Side Panel Centre		+ 74.82
Side Panel Aft	+ 74.54	
Engine Access Doors - increased in size		+ 28.69
Top Longerons - minor changes		+ 0.23
Heavy Formers - some items transferred above		- 2.35
Bottom Longerons - Assy. hardware included here		+ 16.58
		<hr/>
<u>Engine Bay Increase</u>		<u>+ 23.90</u>

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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>
STRUCTURE	19,143.15	566.73	137.36
Wings	10,021.89	642.45	142.22
Fin & Rudder	1,034.75	754.31	209.80
Fuselage - fwd. Sta. 255"	2,571.78	184.33	128.80
Sta. 255"-485"	1,700.73	375.08	130.51
Sta. 485"-591.65"	1,151.34	538.57	105.53
Sta. 591.65"-742.5"	1,574.10	659.88	110.35
Sta. 742.5" Aft.	1,036.95	805.24	128.71
Marry-Up	51.61	466.89	105.41
LANDING GEAR - RETRACTED	2,584.25	487.74	134.82
Main Landing Gear	1,934.94	539.49	141.00
Main Gear Doors & Fairings	287.98	538.52	138.40
Nose Landing Gear	333.81	170.81	99.70
Nose Gear Door & Fairing	27.52	162.22	88.66
POWER PLANT & SERVICES	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
FLYING CONTROLS GROUP	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
EQUIPMENT FIXED AND REMOVABLE	8,925.18	333.27	111.18
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
Cockpit Equipment	6.00	187.50	145.00
Ejector Seats	339.06	204.43	134.10
Air Conditioning System	856.00	333.49	134.98
Hydraulics Main System	640.81	540.22	117.77
Cockpit Insulation	14.31	187.48	132.00
Drag Chute	91.07	786.68	143.19
Electrical System	1,283.87	434.94	112.67
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	17.28	174.66	124.33
Radar Door Actuation	10.00	268.00	95.00
MH 64 Damping System	180.15	471.27	135.69
Radio & Radar Removable	2,095.20	209.73	108.59
Radio & Radar Fixed	784.08	238.57	117.84
Sparrow Pack Structure	912.02	384.10	98.16
Sparrow Pack Mechanisms	553.32	372.85	99.13

continued.

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 Aircraft: ARROW 2
 Production A/C

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WEIGHT & C.G. SUMMARY

		<u>WEIGHT</u> <u>lb</u>	<u>H. ARM</u> <u>ins.</u>	<u>V. ARM</u> <u>ins.</u>	<u>M.A.C.</u> <u>%</u>
Equipment Fixed & Removable (Cont'd.)					
Sparrow Pack Hydraulics		331.94	373.52	99.00	
Sparrow Pack Electronics removable		185.50	331.91	100.00	
Sparrow Pack Electrics & Electronics fixed		217.11	335.24	110.00	
Sparrow Pack Air Conditioning		5.21	305.50	102.50	
AIRCRAFT BASIC WEIGHT	U/C Up		544.83	128.55	
	U/C Down	43,246.05	547.06	124.85	
USEFUL LOAD (less Fuel)		2,798.76	377.29	104.80	
Crew		390.00	194.00	136.50	
Oil		138.97	636.92	110.57	
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		285.00	267.91	131.56	
Operational Weight Empty	U/C Up		534.65	127.11	27.26
	U/C Down	46,044.81	536.76	123.63	27.84
Operational Weight Empty	U/C Up		540.32	128.62	28.82
Less Missiles	U/C Down	44,316.81	542.51	125.01	29.42
Normal Combat Mission Fuel*		17,490.00	-	-	-
Normal Combat Weight *		63,534.81	-	-	-
Half Combat Mission Fuel*		8,745.00	-	-	-
Combat Weight (half * Mission Fuel)		54,789.81	-	-	-
Maximum Internal Fuel (2,492 gal. at 7.8 lb/gal.)		19,438.00	541.85	144.16	
A/U.W. Maximum Internal Fuel	U/C Up		536.79	132.17	27.85
	U/C Down	65,482.81	538.27	129.73	28.25
Maximum External Fuel (500 gal @ 7.8 lb/gal. + drop tank)		4,248.00	521.84	60.67	
A.U.W. Maximum Internal and External Fuel	U/C Up		535.88	127.81	30.35
	U/C Down	69,730.81	537.27	125.52	27.98

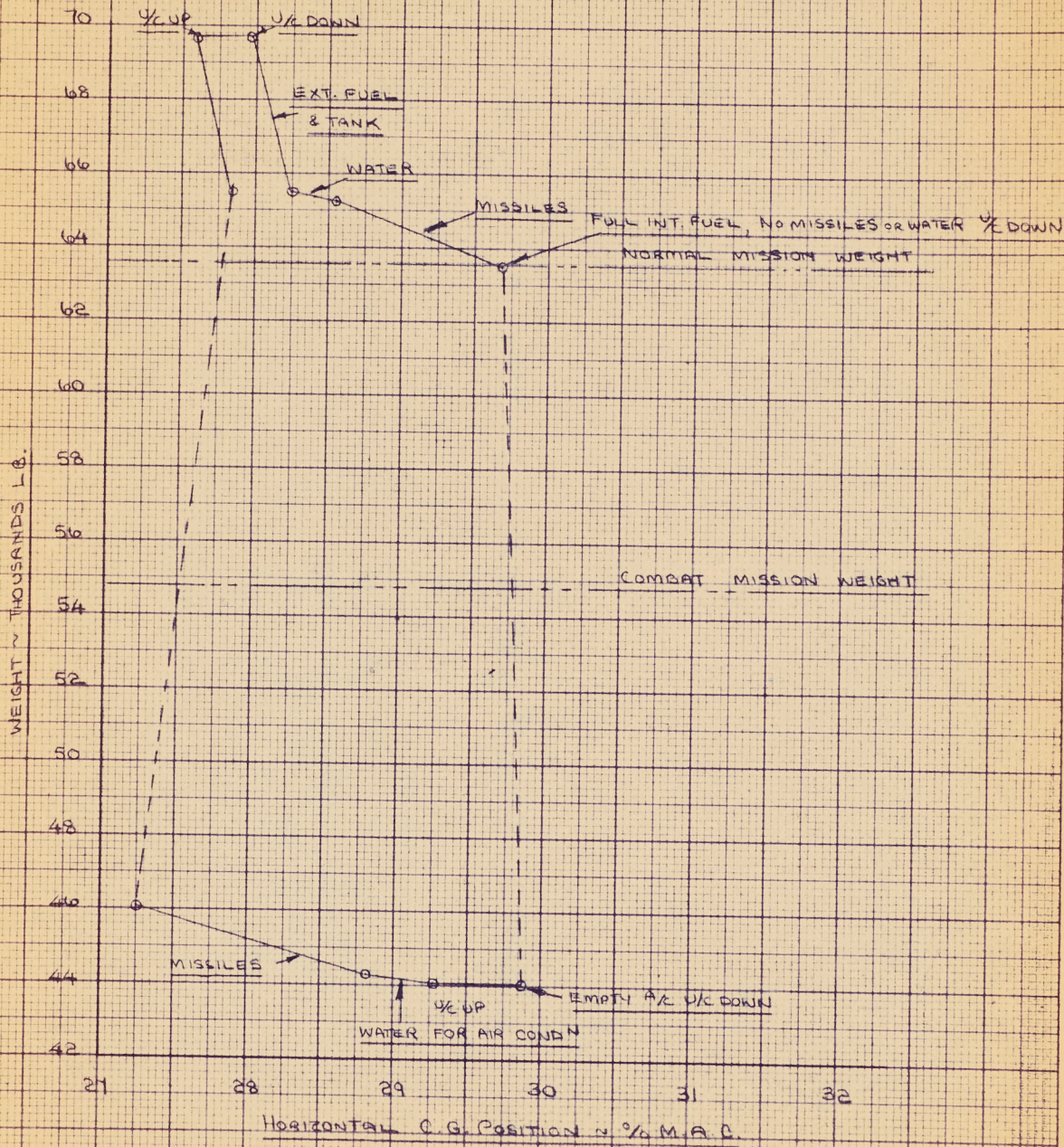
- N.B. 1) Aircraft Datum = 120" above an arbitrarily chosen ground line.
 2) * Fuel weights in accordance with latest data issued by Aerodynamics November 19th, 1957. Centres of Gravity have temporarily been omitted until a fuel sequencing system is finally established.
 3) With the increase of 165 lb in Operational Weight Empty the Normal Combat Mission fuel has increased by a further 50 lb.

REPORT NO: 7-0400-34-17

BY: Kathleen Griffin

DATE: March 15, 1958

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



G9-12
10 X 10 TO THE 35 INCH
MADE IN CANADA

PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
TOTAL WING GROUP	1000000			
OUTER WING	1010000			
100 OUTER WING SKINS	1010001	64	929107	
100 POSTS AND INTERCOSTALS	1010002	64	24367	
100 OUTER WING SPARS	1010003	64	392587	
100 OUTER WING RIBS	1010004	64	134566	
18 AILERON CONTROL BOX	1010006	64	379207	
100 RIB 12	1010007	64	76266	
100 O W AILERON JACK FITTING	1010009	64	10467	
AILERON JOINTS AND FAIRING	1010010		32937	
			197945	
AILERON	1020000			
100 AILERON STRUCTURE	1020001	74	336007	
			33600	
97 ELEVATOR MARRY UP	1030000		15977	
97 ELEVATOR	1030000	82	449007	
			46497	
INNER WING	1040000			
79 MAIN U C STRUCTURE	1040001	62	330715	
16 INNER WING SPARS	1040002	62	410105	
5 I W STRUCTURE F S TO M S	1040007	62	1084844	1
I W STRUCTURE M S TO R S	1040008	62	149796	
STRUCT AFT OF REAR SPAR	1040009	62	316397	
40 ELEVATOR CONTROL BOX I W	1040010	62	428387	
25 TRANSP JOINT MARRY UP	1040011		70656	
36 CENTRE LINE JOINTS	1040012	62	590698	
INNER WING SKINS	1040013	62	2242046	2
17 STRUT PICK UP FITTINGS	1040014	62	127406	
8 RIBS 1 TO 9 INNER WING	1040016	62	486186	
74 DORSAL FAIRINGS I W	1040017	62	954	
100 RIB 10	1040018	62	108006	
FUSELAGE HINGE JOINT I W	1040019	62	138126	
25 TRANSP JOINT	1040020	62	129426	
FUSELAGE HINGE JOINT	1040021		37405	
74 DORSAL FAIRINGS C A	1040023		60335	
			671139	
LEADING EDGE INNER WING	1050000	62	221384	
			22138	

WGT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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SHEET 5-1

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	1000000						
	1010000						
	1010001	64	929.10	706.46	135.97	656371.99	126329.73
	1010002	64	24.36	732.07	134.10	178332.3	3266.68
	1010003	64	392.58	701.18	136.36	275269.24	53532.21
	1010004	64	134.56	695.06	136.50	93527.27	18367.44
	1010006	64	379.20	774.09	135.08	293534.93	51222.34
	1010007	64	76.26	648.73	138.32	49472.15	10548.28
NG RING	1010009	64	10.46	727.91	136.70	7613.94	1429.88
	1010010		32.93	787.26	132.24	2592.447	4354.66
			1979.45			1419547.22	269051.22
	1020000						
	1020001	74	336.00	792.13	135.56	266155.68	45548.16
			336.00			266155.68	45548.16
	1030000		15.97	738.10	142.60	11787.46	2277.32
	1030000	82	449.00	755.23	142.60	339098.27	64027.40
			464.97			350885.73	66304.72
	1040000						
	1040001	62	330.71	577.57	139.83	191008.17	46243.18
	1040002	62	410.10	580.72	143.18	238153.27	58718.12
S	1040007	62	1084.84	499.71	144.05	542105.40	156271.20
S	1040008	62	149.79	609.64	145.72	91317.98	21827.40
R	1040009	62	316.39	720.41	148.87	227930.52	47100.98
W	1040010	62	428.38	724.70	143.28	310446.99	61378.29
	1040011		70.65	636.21	138.76	44948.24	9803.39
	1040012	62	590.69	662.46	150.29	391308.50	88774.80
	1040013	62	2242.04	624.40	144.72	1399929.78	324468.03
	1040014	62	127.40	617.11	145.84	78619.81	18580.02
	1040016	62	486.18	611.73	145.13	297410.89	70559.30
	1040017	62	95.48	280.16	150.00	4586.66	1534.3
	1040018	62	108.00	636.83	138.35	68777.64	14941.80
W	1040019	62	138.12	621.04	137.90	85778.04	19046.75
	1040020	62	129.42	630.71	137.10	81626.49	17743.48
	1040021		37.40	527.96	143.09	19745.70	5351.57
	1040023		60.33	570.25	160.34	34403.18	9673.31
			6711.39			4103969.26	970633.05
G	1050000	62	221.38	468.41	144.23	103696.61	31929.64
			221.38			103696.61	31929.64

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. _____

SHEET _____

REF.	REFERENCE NO.			COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT		V. MOMENT	
	2010000	083			85170	74957	21170	63840877		18030489	
	2010002				4830	68538	15355	3310385		741647	
	2010003	83			1075	76000	25950	817000		278963	
					91075			67968262		19051099	
	2020000	84			12400	81325	21438	10084300		2658312	
					12400			10084300		2658312	

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

PROJECT _____

	DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
	TOTAL FUSELAGE GROUP	3000000			
	FUSELAGE BASIC STRUCTURE	3010000			
	RADOME	3010001	51	15944	
	RADAR NOSE STRUCTURE C A	3010002		2631	
	RADAR NOSE STRUCTURE R N	3010003	51	16999	
	SKIN F F	3010004	52	82641	
	SKIN C F	3010005	54	220433	
	SKIN D B	3010006	56	61355	
	FORMERS C F	3010012	54	287493	
5	SIDE FORMERS D B	3010013	56	73345	
4	HEAVY FORMERS E B	3010015	58	196236	
	LOWER LONGERONS F F	3010016	52	67721	
	BOTTOM LONGERONS E B	3010018	58	85776	
	TOP LONGERONS E B	3010019	58	6616	
	LOWER SHEAR PANEL	3010020	52	31362	
	TOP WING LONGERONS D B	3010021	56	4985	
	LONGERONS C F	3010022	52	532	
	LONGERONS C F	3010023	54	138134	
	LONGERONS A D B	3010025	56	103015	
	ELECTRONICS BAY STRUCTURE	3010026	54	50482	
32	LONGITUDINAL BEAMS D B	3010027	56	66175	
	RADAR ACCESS DOORS C F	3010028	54	26302	
72	MAIN FRAME AT STN 538 77	3010029	56	59805	
	DIVE BRAKE ACCOMMODATIONS	3010030	56	36525	
38	TOP LONGERONS F F	3010031	52	187461	
	DUCT C F	3010032	54	315523	
	FLOATING DUCT D B	3010033	56	453705	
	CANOPY ARCHES	3010034	52	86632	
	ACCESS PANELS	3010036	56	32585	
66	NOSE U C SUPPORT STRUCTURE	3010037	52	33432	
	CREW BULKHEADS	3010038	52	122402	
	EQUIPMENT BAY STRUCTURE	3010039	54	60052	
59	WINDSCREEN	3010041	52	129331	
	DORSAL FAIRING FWD	3010044	54	29692	
	ENGINE ACCESS DOORS	3010046	58	136046	
	SEALING MISSILE BAY	3010047	54	5592	
	MISCELLANEOUS ITEMS C F	3010048	54	3743	
	ARMAMENT BAY ROOF	3010049	54	124183	
	BULKHEAD AT STA 120	3010050	52	29801	
	BULKHEAD AT STA 255	3010051	52	107422	
12	BULKHEAD STA 485	3010052	54	127364	
	ENGINE TUNNEL E B	3010054	58	613186	
	FUSELAGE FUEL TANK	3010055	54	225243	
	COCKPIT FLOOR	3010056	52	57961	
	DORSAL OVER FUEL TANK	3010061	54	41384	
	DEFLECTOR SHIELD	3010062	54	20483	
	SHEAR PANEL BELOW NAV ARCH	3010063	52	20012	
	PACK MOUNTING STRUCTURE	3010064	54	24702	
	ENG ACCESS DOORS FIXED R F	3010065	59	93267	

WIGHT 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						
RE	3010000						
	301000151		15944	3990	11070	636166	1765001
A	3010002		263	12000	11200	31560	29456
N	301000351		16999	9582	11326	1628844	1925307
	301000452		8264	19296	12301	1594621	1016555
	301000554		22043	36727	14417	8095733	3177939
	301000656		61355	3476	11175	3280753	685586
	301001254		28749	37520	13317	10786625	3828504
	301001356		73345	3530	11445	3925890	839376
	301001558		19623	66100	10965	12970803	2151662
	301001652		6772	18493	9045	1252346	612527
	301001858		8577	65912	9961	5653272	854355
	301001958		661	166629	13919	440418	91978
	301002052		31362	3424	8900	734577	279104
	301002156		4985	3899	13550	268417	67479
	301002252		532	5295	15250	13406	8083
	301002354		13813	41112	12289	5678801	1697480
URE	301002556		10301	152236	9914	5380830	1021241
	301002654		5048	27491	9332	1387746	471079
	301002756		6617	52001	9130	3440906	604132
	301002854		2630	27108	9004	712940	236805
77 ONS	301002956		5980	53877	10383	3221845	620903
	301003056		3652	50318	9337	1837613	340987
	301003152		18746	19435	14763	3643285	2767472
	301003254		31552	35839	12969	11307921	4091979
	301003356		45370	55357	11712	25115471	5313734
	301003452		8663	22590	16025	1956972	1388246
TURE	301003656		3258	53375	9673	1738958	315146
	301003752		3343	21049	9186	703668	307088
	301003852		12240	20555	12367	2515932	1513721
E	301003954		6005	28510	13540	1712026	813077
	301004152		12933	13815	15008	1786694	1940985
	301004454		2969	28927	16400	858843	486916
	301004658		1360	464040	9057	8712002	1232114
	301004754		559	29616	11074	165553	61904
F	301004854		374	37000	12500	138380	46750
	301004954		12418	38364	12193	4764042	1514127
	301005052		2980	12000	11511	357600	343028
	301005152		10742	25500	11980	2739210	1286892
	301005254		12736	48500	10335	6176960	1316266
	301005458		6131	865674	12016	40269983	7367971
	301005554		22524	39445	14529	8884592	3272512
	301005652		5796	17687	11569	1025139	670539
	301006154		4138	41310	14206	1709408	587844
	301006254		2045	33739	16400	689963	335380
ARCH	301006352		2001	25689	15352	514037	307194
E	301006454		2470	29234	10308	722080	254608
R F	301006559		9326	77366	9867	7215153	920196

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PROJECT _____

DESCRIPTION	REFERENCE NO.			COMP. NO.	WEIGHT	H
TUNNEL FIXED R F	3010066	59			130547	
SKIN AND INTERCOSTAL R F	3010067	59			55797	
FAIRING UNDER RUDDER R F	3010068	59			27677	
FORMERS FIXED R F	3010069	59			105097	
LONGERONS C BEAM FIXED R F	3010070	59			25197	
REMOVABLE NACELLES R F	3010071	59			491478	
CNTR STRUC STING REMOV R F	3010072	59			107948	
MTG BRKTS SIDE PANEL D B	3010075	56			1905	
FORMERS LOWER PANEL D B	3010076	56			74165	
LOWER PANEL D B	3010077	56			50545	
JOINT F F TO C F	3010078				8552	
JOINT AIR INTAKES TO F F	3010079				9522	
JOINT D B TO E B	3010081				25085	
FUS JOINT AT STA 742 50	3010082				4187	
DROP TANK MTG STRUCT D B	3010083	56			11335	
MISC STRUCTURE F F	3010086	52			5521	
ENG RAILS ATTACHM TO FORM	3010087	58			28546	
COCKPIT FORMERS	3010092	52			102611	
JOINT D B TO C F	3010093				4284	
SIDE PANEL F E B	3010095	58			86026	
SIDE PANEL C E B	3010096	58			74826	
SIDE PANEL A E B	3010097	58			74547	
PANELS ENGINE ACCESS DOORS	3010098	58			110836	
BOTTOM CENTRE PANEL F E B	3010099	58			46106	
					667423	
BOTTOM CENTRE PANEL C E B	3010100	58			41206	
BOTTOM PANEL AFT	3010101	58			74227	
					11542	
DIVE BRAKES	3020000	72			117905	
DIVE BRAKES C A	3020001				4064	
					12196	
AIR INTAKES	3030000					
AIR INTAKES	3030100	55			758862	
					75886	
PILOTS AND NAVIG CANOPIES	3040000					
PILOTS CANOPY	3040100	53			244311	
					24431	

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SHEET _____

	REFERENCE NO.				COMP. NO.	WEIGHT		H. ARM	V. ARM	H. MOMENT		V. MOMENT	
	3010066	59				13054	77180	13177		10075077		1720126	
F	3010067	59				5579	77281	13693		4311507		763932	
F	3010068	59				2767	78223	15590		2164430		431375	
	3010069	59				10509	77990	13734		8195969		1443306	
R F	3010070	59				2519	77159	12810		1943635		322684	
	3010071	59				49147	82589	12761		40590016		6271649	
R F	3010072	59				10794	83412	13644		9003491		1472733	
B	3010075	56				1905	18666	13066		98545		24825	
B	3010076	56				7416	54432	9015		4036677		668552	
	3010077	56				5054	55457	8790		2802797		444247	
	3010078					8552	55500	12000		218025		102600	
F	3010079					9522	22000	12000		209440		114240	
	3010081					2508	58478	9150		1466628		229482	
O	3010082					4187	74250	11500		310365		48070	
B	3010083	56				1133	58576	8848		663666		100248	
	3010086	52				552	18750	11500		103500		63480	
ORM	3010087	58				2854	68741	11362		1961868		324271	
	3010092	52				1026	118329	12076		1880739		1239118	
	3010093					4284	7940	11590		205183		49605	
	3010095	58				8602	61601	11692		5298918		1005746	
	3010096	58				7482	67063	11922		5017654		892004	
	3010097	58				7454	72153	12188		5378285		908494	
OURS	3010098	58				11083	65039	9259		7208272		1026175	
E B	3010099	58				4610	61780	8915		2848058		410982	
						6674	23			324390729		80859172	
E B	3010100	58				4120	67078	9239		2763614		380647	
	3010101	58				7422	72072	9544		5349184		708356	
						11542				8112798		1089003	
	3020000	72				11790	50884	9049		5999224		1066877	
	3020001					4064	48794	9374		198104		38058	
						12196				6197328		1104935	
	3030000												
	3030100	55				75886	21057	11831		15979315		8978073	
						75886				15979315		8978073	
IES	3040000												
	3040100	53				24431	17689	15916		4321600		3888438	
						24431				4321600		3888438	

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. _____

SHEET _____

DESCRIPTION	REFERENCE NO.				COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT		V. MOMENT		
SECTION	4	0	0	0	0								
DUP	4	0	1	0	0								
	4	0	1	0	1	0	0	92	193494	53949	14100	104388078	27282654
									193494			104388078	27282654
SS	4	0	1	0	2	0	62		28798	53852	13840	15508299	3985643
									28798			15508299	3985643
DUP	4	0	2	0	0								
	4	0	2	0	1	0	91		33381	17080	9970	5701475	3328086
									33381			5701475	3328086
RING	4	0	2	0	2	0	52		2752	16222	8866	446429	243992
									2752			446429	243992

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DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
ENGINE GROUP	5000000			
PS 13 ENGINES	5010000		9172286	
			917228	
PS 13 ENGINES SERV ACCESS	5010100		14506	
			1450	
ACC GEAR BOX ON FUS D B	502000156		45245	
ACC GEAR BOX ON FUS E B	502000258		236606	
			28184	
ENGINE CONTROLS	5030000			
ENGINE CONTROLS F F	503000152		14581	
ENGINE CONTROLS C F	503000254		2643	
ENGINE CONTROLS D B	503000356		5084	
ENGINE CONTROLS E B	503000458		10136	
			3243	
STARTER AND ENG GEAR BOX	5040000		315456	
			31545	
ENGINE ANTI ICING	5050000		70005	
			7000	
FIRE EXT SYSTEM	5060000			
55 ENG FIRE EXT SYSTEM ENG	506000158		64007	
55 ENG FIRE EXT SYSTEM D B	506000256		1465	
			6546	
ENGINE MTGS AND BRACKETS	5070000			
ENGINE MOUNTS	5070001		84216	
ENGINE MTG ACCESSORIES	5070002		48176	
			13238	
FUEL SYSTEM	5080000			

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	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	5000000						
	5010000		917228	68803	12119	631080381	111158861
			917228			631080381	111158861
ESS	5010100		1450	63819	10390	925376	150655
			1450			925376	150655
B	5020001	56	4524	457875	9607	2618265	434621
B	5020002	58	23660	60609	10372	14340089	2454015
			28184			16958354	2888636
	5030000						
	5030001	52	1458	16129	12476	235161	181900
	5030002	54	2643	30813	11789	81346	31123
	5030003	56	5084	9991	13459	253954	68372
	5030004	58	1013	63982	10194	648138	103265
			3243			1218599	384660
OX	5040000		31545	61598	10524	19431089	3319796
			31545			19431089	3319796
	5050000		7000	58717	11600	4110190	812000
			7000			4110190	812000
G	5060000						
B	5060001	58	6400	70381	13414	4504384	858496
B	5060002	56	1465	55318	13749	80764	28074
			6546			4585148	878570
TS	5070000						
	5070001		8421	67834	14106	5712301	1187866
	5070002		4817	64669	12857	3115106	619322
			13238			8827407	1807188
	5080000						

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
5080001	54	10713	40111	14010	4297091	1500891
5080002	56	14955	54070	10558	8086169	1578949
5080003	58	6856	44141	12612	441236	86392
5080004	62	43900	55421	14428	24329819	6333892
5080005		6266	5901	9594	412540	60058
5080006		7546	1525	9658	463899	72821
		71633			38030754	9633003

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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 FIN	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 FIN	6020006	83	54067	6
				84827	

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REPORT NO. _____

SHEET _____

	REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
	6000000						
	6010000						
F	6010001	52	9523	16499	11530	1571200	1098002
F	6010002	54	954	38948	11764	371564	112229
I	6010003	83	12423	78817	22159	9791436	2752813
W	6010006	62	40670	71737	14376	29175438	5846719
W	6010007	64	30237	77068	13562	23303051	4100742
A	6010008		646	70982	14338	458544	92623
			94453			64671233	14003128
ULICS	6020000						
S D B	6020001	56	2332	57442	9668	1339547	225458
S E B	6020002	58	39076	64784	11143	25314996	4354239
S R F	6020003	59	487	5875	10824	36420	5196
S I W	6020004	62	26264	70328	14737	18470946	3870526
S O W	6020005	64	11701	74076	13577	8667633	1588645
S FIN	6020006	83	5406	76183	20881	4118453	1128827
			84827			57947995	11172891

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PROJECT _____

DESCRIPTION		REFERENCE NO.	COMP. NO.	WEIGHT	H.
FIXED EQUIPMENT GROUP		7000000			
INSTRUMENTS		7010000			
INSTRUMENTS		7010001	52	4407	16
NAVIC TABLE AND STOWAGE		7010004	52	200	22
				4607	
COCKPIT SEALING		7020000	52	500	18
				500	
OXYGEN SYSTEM		7030000			
OXYGEN SYSTEM		7030001	52	2607	24
				2607	
AIR CONDITIONING SYSTEM		7040000			
AIRCONDITIONING SYST F F		7040001	52	1232	122
AIRCONDITIONING SYST C F		7040002	54	5752	329
AIRCONDITIONING SYST D B		7040003	56	207	451
AIRCONDITIONING SYST C A		7040005		1236	656
AIRCONDITIONING SYST ENG		7040006		1255	67
AIRCONDITIONING SYST I W		7040007	62	615	1
				85600	
HYDRAULICS MAIN SYSTEM		7050000			
14	UTILITY HYDRAULICS F F	7050001	52	8415	20
31	UTILITY HYDRAULICS C F	7050002	54	4272	43
20	UTILITY HYDRAULICS D B	7050003	56	2733	855
21	UTILITY HYDRAULICS E B	7050004	58	7240	60
24	UTILITY HYDRAULICS I W	7050005	62	1351	155
14	UTILITY HYDR NOSE U C	7050006	91	325	19
24	UTILITY HYDR MAIN U C	7050007	92	2980	54
				64081	
CABIN INSULATION		7070000	52	1431	18
				1431	
BRAKE PARACHUTE		7080000			
BRAKE PARACHUTE F F		7080001	52	455	16
BRAKE PARACHUTE R F		7080005	59	8528	82

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REPORT NO. _____

SHEET _____

	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
	7020000	52	500	18600	13000	93000	65000
			500			93000	65000
	7030000						
	7030001	52	2607	24054	15670	627088	408517
			2607			627088	408517
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		12556	7000	13900	840850	174445
I W	7040007	62	6151	1779	15751	31585	9608
			85600			28546963	11554545
M	7050000						
F	7050001	52	8415	20016	10853	1684346	913280
F	7050002	54	4272	43480	10431	1857466	445612
B	7050003	56	27338	55692	11077	15225079	3028230
B	7050004	58	7240	60647	10852	4390843	785685
W	7050005	62	13511	55304	14234	7472123	1923156
	7050006	91	325	19033	9521	61857	30943
	7050007	92	2980	54325	14100	1618885	420180
			64081			32310599	7547086
	7070000	52	1431	18748	13200	268284	188892
			1431			268284	188892
	7080000						
	7080001	52	455	16913	12869	76954	58554
	7080005	59	8528	82205	14394	7010442	1227520

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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		92365	
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		187725	
ELECTRICS C A	7090017		7186	
ELECTRICS FIN	709001883		838	
ELECTRICS I W	709001962		23366	
ELECTRICS CAW	7090020		1128	
ELECTRICS MUC	709002192		745	
20 ELECTRICS A I	709002255		49002	
ELECTRICS D B	709002356		312835	
ELECTRICS R F	709002459		1368	
WINDSCREEN DEMISTING	709002552		35641	
SPARROW ELECTRICS F F	709002652		2541	
SPARROW ELECTRICS C F	709002754		602	
			128387	
L P PNEUMATICS	7100000			
24 L P PNEUMATICS F F	710000152		22551	
18 L P PNEUMATICS C F	710000254		6713	
L P PNEUMATICS D B	710000356		4185	
L P PNEUMATICS E B	710000458		15266	
L P PNEUMATICS FIN	710000583		6407	
L P PNEUMATICS R N	710000651		124	
L P PNEUMATICS S P	710000794		602	
			5694	
INTAKE DE ICING	712000055		88001	
			8800	
RADIO AND RADAR FIXED	7140000			

WGT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. _____

SHEET _____

REFERENCE NO.	COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT	V. MOMENT
708000662		12462022	14500		76907	17980
		9107			7164303	1304054
7090000						
709000151		1299285	12000		11978	15480
709000252		296619977	11200		592518	332192
709000354		235439703	11000		934609	258940
709000455		127421984	12000		280076	152880
709000556		901552769	9921		4757125	894378
709000658		6459500	9200		38080	5888
709000862		923653995	13900		4986978	1283804
709000983		35279754	30000		280734	105600
709001091		33018600	9800		61380	32340
7090011		200260683	10000		1214874	200200
7090012		1374633473	11234		4601199	1544226
709001352		1524815464	11095		2357951	1691766
709001454		870945415	10760		3955192	937088
709001558		67067944	11597		455225	77700
7090016		1877258913	11521		11059148	2162722
7090017		71861350	12000		440493	86160
709001883		8389550	28840		74327	23937
709001962		233662053	14500		1449558	338720
7090020		11262946	13561		70500	15188
709002192		7451600	13700		38184	10138
709002255		490022079	13954		1081871	683746
709002356		3128351842	10252		16217733	3207133
709002459		13680200	11360		109072	15450
709002552		356419898	9980		709165	355687
709002652		25418242	11255		46335	28588
709002754		6027300	11255		16380	6753
		128387			55840685	14466704
7100000						
710000152		225519158	12353		432013	278560
710000254		67133431	11033		224322	74031
710000356		41855545	11592		232178	48455
710000458		152665650	9737		1001819	148587
710000583		64075818	25515		485238	163296
710000651		1247431	9955		9214	12344
710000794		6029800	10400		17880	6240
		5694			2402661	731513
712000055		880019582	11800		1723216	1038400
		8800			1723216	1038400
7140000						

AVRO AIRCRAFT LTD.
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H.
RADIO AND RADAR FIXED R N	7140001	51	20900	8
RADIO AND RADAR FIXED F F	7140002	52	12700	19
RADIO AND RADAR FIXED C F	7140003	54	19000	26
RADIO AND RADAR FIXED D B	7140004	56	1800	51
RADIO AND RADAR FIXED F I N	7140005	83	4700	79
RADIO AND RADAR FIXED C A	7140006		17600	21
RADIO AND RADAR FIXED I W	7140007	62	1708	54
			78408	
29 CANOPY ACTUATION	7160000	52	6492	22
			6492	
CABIN CONSOLES	7170000	52	1728	17
			1728	
RADAR DOOR ACTUATION	7180000	54	1000	26
			1000	
SURFACE FINISH F F	7190001	52	363	18
SURFACE FINISH CANOPY	7190002	53	642	30
SURFACE FINISH C F	7190003	54	1400	37
SURFACE FINISH INTAKES	7190004	55	408	27
SURFACE FINISH D B	7190005	56	377	53
SURFACE FINISH E B	7190006	58	443	66
SURFACE FINISH R F	7190007	59	648	80
SURFACE FINISH I W	7190008	62	3151	160
SURFACE FINISH O W	7190009	64	1067	70
SURFACE FINISH O W L EDGE	7190010	65	319	63
SURFACE FINISH AILERON	7190011	74	353	79
SURFACE FINISH ELEVATOR	7190012	82	566	71
SURFACE FINISH FIN	7190013	83	639	74
SURFACE FINISH RUDDER	7190014	84	202	81
			10000	

WIGHT 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	7140001	51	20900	8999	10000	1880791	2090000
F F	7140002	52	12700	18977	10945	2410079	1390015
C F	7140003	54	19000	26782	10042	5088580	1907980
D B	7140004	56	1800	51200	10000	921600	180000
F I N	7140005	83	4700	79123	26004	3718781	1222188
C A	7140006		17600	21329	12364	3753904	2176064
I W	7140007	62	1708	54579	16000	932209	273280
			78408			18705944	9239527
	7160000	52	6492	22199	15435	1441159	1002040
			6492			1441159	1002040
	7170000	52	1728	17466	12433	301812	214842
			1728			301812	214842
	7180000	54	1000	26800	9500	268000	95000
			1000			268000	95000
	7190000	152	363	18744	12200	68041	44286
	7190000	253	64	20218	15900	12940	10176
	7190000	354	1400	37197	12455	520758	174370
	7190000	455	408	22798	12020	93016	49042
	7190000	556	377	53828	11200	202932	42224
	7190000	658	443	66701	11200	295485	49616
	7190000	759	648	80362	13175	520746	85374
	7190000	862	315	160144	14400	1895137	453744
	7190000	964	106	770650	13590	753836	145005
EDGE	7190000	1065	319	63948	13526	203994	43148
	7190000	1174	353	79190	13556	279541	47853
OR	7190000	1282	566	75523	14260	427460	80712
	7190000	1383	639	74663	20837	477097	133148
	7190000	1484	202	81279	21431	164184	43291
			10000			5915167	1401969

AVRO AIRCRAFT LTD.
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL
COMPON

PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. NO.	WEIGHT	H
REMOVABLE EQUIPMENT GROUP	8000000			
77 EJECTOR SEATS	801010052		339062	
			33906	
RADAR REMOVABLE	8020100			
RADAR REMOVABLE R N	802010151		103930	
RADAR REMOVABLE F F	802010252		209101	
RADAR REMOVABLE C F	802010354		607702	
RADAR REMOVABLE D B	802010456		75505	
RADAR REMOVABLE F I N	802010583		35007	
RADAR REMOVABLE C A	8020106		82305	
RADAR REMOVABLE E B	802010758		45007	
RADAR REMOVABLE I W	802010862		1304	
			209520	
DAMPING SYSTEM	8030000			
DAMPING SYSTEM F F	803010152		78417	
DAMPING SYSTEM C F	803010254		230332	
DAMPING SYSTEM E B	803010358		36963	
DAMPING SYSTEM I W	803010462		607053	
DAMPING SYSTEM O W	803010564		9574	
DAMPING SYSTEM R N	803010651		2877	
DAMPING SYSTEM C A	8030107		810749	
			18015	
SPARROW PACK	8050000			
MISSILE PACK STRUCTURE	805010094		9120238	
			91202	
SPARROW PACK MECHANISMS	805020094		5533237	
			55332	
SPARROW PACK HYDRAULICS	805030094		3319437	
			33194	
SP PACK ELECTRONICS FIXED	805040094		2171133	
			21711	

HEIGHT 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						
	801010052		33906	20443	13410	6931404	4546795
			33906			6931404	4546795
	8020100						
	802010151		103930	8855	10100	9203002	10496930
	802010252		20910	18488	12000	3865841	2509200
	802010354		60770	27203	10023	16531263	6090977
	802010456		7550	51447	10000	3884249	755000
	802010583		3500	73000	25930	2555000	907550
	8020106		8230	55138	16008	4537857	1317458
	802010758		4500	73500	14500	3307500	652500
	802010862		130	44541	14700	57903	19110
			209520			43942615	22748725
	8030000						
	803010152		784	17201	12047	134856	94448
	803010254		2303	32213	10949	741865	252155
	803010358		3696	3242	13432	233363	49564
	803010462		6070	53781	15720	3264507	954204
	803010564		957	4855	14000	71112	13300
	803010651		287	7350	9340	21095	26806
	8030107		8107	49625	13000	4023099	1053910
			18015			8489897	2444387
	8050000						
	805010094		91202	38410	9816	35030688	8952388
			91202			35030688	8952388
	805020094		55332	37285	9913	20630536	5485061
			55332			20630536	5485061
	805030094		33194	37352	9900	12398623	3286206
			33194			12398623	3286206
	805040094		21711	33524	11000	7278396	2388210
			21711			7278396	2388210

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WEIGHT AND C. OF G BY FUNCTIONAL
COMPON

PROJECT _____

DESCRIPTION	REFERENCE NO.	COMP. No.	WEIGHT	H
OPERATIONAL LOAD	9000000			
CREW MEMBERS	9010000	52	39000	1
			39000	
ENGINE OIL	9020000			
ENGINE OIL DRAINABLE	9020001		92906	
ENGINE OIL TRAPPED ENG	9020002		17736	
ENGINE OIL TRAPPED D B	9020003	56	19255	
ENGINE OIL TRAPPED E B	9020004	58	9095	
			13897	
SPARROW MISSILES	9030000	94	172800	3
			172800	
OXYGEN CHARGE	9040000			
OXYGEN CHARGE F F	9040001	52	722	
OXYGEN CHARGE C F	9040002	54	12672	
			1339	
ENGINE FIRE EXT FLUID	9060000		25007	
			2500	
RESIDUAL FUEL	9070000			
RESIDUAL FUEL C F	9070001	54	46803	
RESIDUAL FUEL I W	9070002	62	171605	
			21840	
WATER FOR AIR CONDITIONING	9100000	54	26000	2
UNUSABLE WATER FOR AIRCOND	9100001	54	25002	
			28500	

WIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

REPORT NO. _____

SHEET _____

	REFERENCE NO.				COMP. NO.	WEIGHT	H. ARM	V. ARM	H. MOMENT		V. MOMENT	
	9000000											
	9010000	52			39000	19400	13650		7566000		5323500	
					39000				7566000		5323500	
	9020000											
	9020001				9290	65225	11390		6059403		1058131	
G	9020002				1773	63676	11640		1128975		206377	
B	9020003	56			1925	58084	9555		1118117		183934	
B	9020004	58			909	59928	9704		544746		88209	
						13897			8851241		1536651	
	9030000	94			172800	38929	8830		67269312		15258240	
					172800				67269312		15258240	
	9040000											
	9040001	52				7220493	13200		14755		9504	
	9040002	54			1267	26280	16150		332968		204621	
						1339			347723		214125	
	9060000				2500	73000	12900		1825000		322500	
					2500				1825000		322500	
	9070000											
	9070001	54			4680	39424	12300		1845043		575640	
	9070002	62			17160	59755	13705		10253958		2351778	
						21840			12099001		2927418	
ONING	9100000	54			26000	26800	13200		6968000		3432000	
RCOND	9100001	54			2500	26700	12700		667500		317500	
					28500				7635500		3749500	

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