

QC  
7-0400-34  
Iss-12

QCX  
AVRO  
CF105  
R7-0400-34  
Iss-12

C-105 MK 2      Report # 7-0400-34  
Production A/C      Issue 12

WEIGHT & C.G. SUMMARY

<sup>N.A.E.</sup>  
N.E.A.      **UNCLASSIFIED**      Oct. 1/57

Date: October 1st, 1957  
Aircraft: C-100 MK 2  
Production A/C

C-105

UNCLASSIFIED

SECRET

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I N D E X

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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.



49776

Date: October 1st, 1957  
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Sheet 1-1

INTRODUCTION & WEIGHT CHANGES

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

All Weight & C. G. changes are relative to issue 11 of September 1st, 1957.

GENERAL:

- a) Orenda PS13 Engines comprise the Power Plant (4,500 lb each 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. 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, some Avro installed Antennae have been added. The Infra Red Tracker System is allowed for in its proposed location at the Fin Tip (Total Weight = 2,741.0 lb).

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

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

- d) A considerable number of MK 1 parts, 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 preceding 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 instrumentation replacing the missile package etc. or for development of Astra I Radar System. etc.

1. STRUCTURE

WEIGHT (lb)

a) Wing:

No Weight Change.

b) Fin & Rudder

No Weight Change.

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INTRODUCTION & WEIGHT CHANGES

1. STRUCTURE

c) Front Fuselage Fwd. Sta. 255"

|                                                                                           |   |               |
|-------------------------------------------------------------------------------------------|---|---------------|
| Cockpit Floor - Production drawing estimates                                              | - | 1.51          |
| Windscreen - alterations to MK 2 glare shield<br>and installation hardware                | - | 0.70          |
| Navigator's Canopy - MK 2 canopy with larger window<br>will be heavier than MK 1 Aircraft | + | 10.00         |
| Bulkhead Sta. 255" - many minor design changes                                            | + | 3.13          |
| Canopy Arches - production drawing estimates simplification<br>of rear arch design.       | - | 3.02          |
| <u>Weight Increase Front Fuselage</u>                                                     |   | <u>+ 7.90</u> |

d) Centre Fuselage Sta. 255-485"

No Weight Change.

e) Duct Bay Sta. 485" - 591.65"

|                                                                                              |   |               |
|----------------------------------------------------------------------------------------------|---|---------------|
| Drop Tank Mounting - production drawing estimates                                            | + | 2.80          |
| Longerons D.B. - hardware changes for MK 2 Aircraft<br>some duplication at Joint Sta. 485"   | - | 0.60          |
| Skins D.B. - hardware changes, diaphs. for shroud<br>pick-ups etc.                           | - | 6.56          |
| Dive Brake Accommodations - redesign refuel and<br>limiter panel.                            | + | 2.55          |
| Longitudinal Beams - alterations to jack beams and<br>jack support brackets                  | + | 0.34          |
| Access Panels D.B. - Production drawing estimates Front<br>Engine mounting door deleted      | + | 0.47          |
| Floating Duct D.B. - alteration to cross section area<br>of seal ring, .064 plate added etc. | - | 6.07          |
|                                                                                              | + | 16.15         |
| <u>Duct Bay Weight Increase</u>                                                              |   | <u>+ 9.08</u> |

f) Engine Bay Sta. 591.65"-742.5"

|                                                                                                                      |   |               |
|----------------------------------------------------------------------------------------------------------------------|---|---------------|
| Light Formers E.B. - production drawing estimates some parts<br>of engine rail attach. now called up<br>with formers | + | 6.71          |
| Heavy Formers E.B. - production drawing estimates                                                                    | + | 6.44          |
| Intermediate Formers E.B. - production drawing estimates                                                             | - | 2.67          |
| Engine Rails & Attach - some attach. brackets with formers                                                           | - | 7.70          |
| Lower Longeron E.B. - production drawing estimates                                                                   | + | 0.14          |
| <u>Weight Increase Engine Bay</u>                                                                                    |   | <u>+ 2.92</u> |

g) Rear Fuselage Sta. 742.5 Aft.

No Weight Change.

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INTRODUCTION AND WEIGHT CHANGES

| <u>1. STRUCTURE</u>                                                                                | <u>WEIGHT (lb)</u> |
|----------------------------------------------------------------------------------------------------|--------------------|
| h) <u>Fuselage "Marry-up"</u>                                                                      |                    |
| No Weight Change                                                                                   |                    |
| <u>TOTAL STRUCTURAL INCREASE</u>                                                                   | <u>+ 19.90</u>     |
| <u>2. LANDING GEAR</u>                                                                             |                    |
| No Weight Change.                                                                                  |                    |
| <u>3. POWER PLANT &amp; SERVICES</u>                                                               |                    |
| No Weight Change                                                                                   |                    |
| <u>4. FLYING CONTROLS GROUP</u>                                                                    |                    |
| Hydraulic Flying Control I/Wing - Actual Weight of elevator actuator assy. as in MK 1 Aircraft     | + 16.66            |
| Hydraulic Flying Control O/Wing - Actual Weight of aileron actuator assy.                          | - 6.30             |
| <u>TOTAL FLYING CONTROLS INCREASE</u>                                                              | <u>+ 10.36</u>     |
| <u>5. EQUIPMENT GROUP</u>                                                                          |                    |
| Low Pressure Pneumatics - rerouting of piping, alterations to fin pitot heads etc.                 | + 1.24             |
| Utility Hydraulics Duct Bay - addition of surge damping accum. some equipment actual weights       | + 3.70             |
| Preliminary estimates of other MK 2 A/C changes, rerouting piping etc.                             | + 1.55             |
| Utility Hydraulics C.F. - Actual weights equipment as in MK 1 Aircraft.                            | + 9.31             |
| Radar Removable - AIC 10A Interphone replace AIC 10 causing deletion of dynamotor                  | + 1.10             |
| I.R. Tracker located at Fin Tip                                                                    | - 4.50             |
| Brake Parachute - Actual Weight quoted by Irving - previously manufacturer's estimate was recorded | + 28.40            |
| <u>TOTAL EQUIPMENT INCREASE</u>                                                                    | <u>+ 40.80</u>     |

SUMMARY

| <u>Weight Change - Aircraft Basic Weight</u> |                   |
|----------------------------------------------|-------------------|
| Structure                                    | + 19.90 lb        |
| Flying Controls                              | + 10.36 lb        |
| Equipment                                    | + 40.80 lb        |
|                                              | <u>+ 71.06 lb</u> |

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

| <u>Issue 11</u>     | <u>Issue 12</u>     |                     |
|---------------------|---------------------|---------------------|
| <u>45,090.00 lb</u> | <u>45,161.06 lb</u> | = <u>+ 71.06 lb</u> |

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WEIGHT & C.G. SUMMARY

| DESCRIPTION                          | WEIGHT<br>lb | H. ARM<br>ins. | V. ARM<br>ins. |
|--------------------------------------|--------------|----------------|----------------|
| STRUCTURE                            | 18,896.11    | 564.39         | 137.41         |
| Wing                                 | 10,003.73    | 642.74         | 142.23         |
| Fin & Rudder                         | 1,024.00     | 754.25         | 209.28         |
| Fuselage: fwd. Sta. 255"             | 2,573.76     | 182.68         | 128.47         |
| Sta. 255"-485"                       | 1,690.10     | 374.96         | 130.07         |
| Sta. 485"-591.65"                    | 1,119.27     | 538.29         | 105.42         |
| Sta. 591.65"-742.5"                  | 1,550.20     | 661.04         | 110.51         |
| Sta. 742.5 Aft.                      | 882.72       | 801.05         | 129.40         |
| "Marry-Up"                           | 52.33        | 467.60         | 103.84         |
| UNDERCARRIAGE - RETRACTED            | 2,551.77     | 487.22         | 134.79         |
| Main Undercarriage                   | 1,901.62     | 539.31         | 141.00         |
| Main U/C Doors & Fairings            | 291.80       | 537.10         | 138.40         |
| Nose Undercarriage                   | 333.81       | 170.80         | 99.70          |
| Nose U/C Door & Fairing              | 24.54        | 162.24         | 88.23          |
| POWER PLANT & SERVICES               | 10,800.67    | 671.41         | 121.32         |
| Engines & Accessories PS 13          | 9,186.78     | 687.95         | 121.16         |
| Gear Box & Drive on Fuselage         | 281.84       | 601.70         | 102.49         |
| Engine Controls                      | 32.43        | 375.76         | 118.61         |
| Gear Box, Starter & Drives on Engine | 315.45       | 615.98         | 105.24         |
| Engine Nose Bullet (Orenda Supplied) | 70.00        | 587.17         | 116.00         |
| Fire Extinguishing System            | 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                | 1,791.00     | 685.52         | 140.59         |
| Mechanical Flying Controls           | 946.48       | 687.84         | 148.61         |
| Hydraulic Flying Controls            | 844.52       | 682.91         | 131.61         |
| EQUIPMENT FIXED & REMOVABLE          | 8,270.75     | 336.93         | 114.21         |
| 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                | 638.81       | 504.18         | 117.70         |
| Cabin Insulation                     | 14.31        | 187.48         | 132.00         |
| Brake Parachute                      | 90.78        | 786.64         | 143.16         |
| Electrical System                    | 1,259.16     | 432.22         | 112.68         |
| Low Pressure Pneumatics              | 56.94        | 421.96         | 128.47         |
| Surface Finish                       | 100.00       | 591.52         | 140.20         |
| Intake De-icing Boots                | 51.84        | 197.02         | 118.00         |
| Radome Anti-icing                    | 8.88         | 51.49          | 125.00         |
| Canopy Actuation                     | 64.92        | 221.99         | 154.35         |
| Cabin Consoles                       | 17.45        | 174.76         | 124.34         |
| Radar Door Actuation                 | 10.00        | 268.00         | 95.00          |
| MH 64 Damping System                 | 139.13       | 449.26         | 135.57         |
| Radio & Radar Removable              | 1,907.50     | 205.72         | 111.19         |
| Radio & Radar Fixed                  | 631.00       | 233.27         | 115.71         |

continued.

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WEIGHT & C.G. SUMMARY

| DESCRIPTION                                                  | WEIGHT<br>lb        | H. ARM<br>ins. | V. ARM<br>ins. | M.A.C.<br>% |
|--------------------------------------------------------------|---------------------|----------------|----------------|-------------|
| <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                                        | 42,310.30           | 547.72         | 128.74         |             |
| USEFUL LOAD (less fuel)                                      | 2,850.76            | 372.91         | 105.43         |             |
| Crew                                                         | 430.00              | 194.00         | 136.50         |             |
| Oil                                                          | 138.97              | 636.92         | 110.57         |             |
| Alcohol                                                      | 22.00               | 93.00          | 138.00         |             |
| Engine Fire Extinguishing Fluid                              | 25.00               | 730.00         | 129.00         |             |
| Residual-Fuel                                                | 218.40              | 553.98         | 134.04         |             |
| Missiles                                                     | 1,728.00            | 389.29         | 88.30          |             |
| Oxygen Charge                                                | 13.39               | 259.68         | 159.91         |             |
| Water for Air Conditioning                                   | 275.00              | 268.00         | 131.75         |             |
| Operational Weight Empty                                     | U/C Up<br>45,161.06 | 536.69         | 127.27         | 27.82       |
|                                                              | U/C Down            | 538.81         | 123.77         | 28.40       |
| Operational Weight Empty                                     | U/C Up<br>43,433.06 | 542.55         | 128.82         | 29.43       |
| Less Missiles                                                | U/C Down            | 544.75         | 125.18         | 30.04       |
| Normal Combat Mission Fuel *<br>(2,044 gals. @ 7.8 lb/gal)   | 15,940.00           | 542.03         | 142.30         |             |
| Normal Combat Weight                                         | U/C Up<br>61,101.06 | 538.08         | 131.19         | 28.20       |
|                                                              | U/C Down            | 539.65         | 128.60         | 28.63       |
| Half Combat Mission Fuel *<br>(1,022 gals. @ 7.8 lb/gal)     | 7,970.00            | 543.18         | 139.55         |             |
| Combat Weight (half<br>mission fuel)                         | U/C Up<br>53,131.06 | 537.66         | 129.11         | 28.09       |
|                                                              | U/C Down            | 539.46         | 126.14         | 28.58       |
| Maximum Internal Fuel (2,492<br>gals. @ 7.8 lb/gal)          | 19,438.00           | 541.85         | 144.16         |             |
| A.U.W. Maximum Internal Fuel                                 | U/C Up<br>64,599.06 | 538.24         | 132.35         | 28.25       |
|                                                              | U/C Down            | 539.72         | 129.91         | 28.65       |
| Maximum External Fuel (500 gal.<br>@ 7.8 lb/gal + Drop Tank) | 4,248.00            | 521.84         | 60.67          |             |
| A.U.W. Maximum Internal and<br>External Fuel                 | U/C Up<br>68,847.06 | 537.23         | 127.93         | 27.97       |
|                                                              | U/C Down            | 538.62         | 125.64         | 28.35       |

N.B. 1) \* New figures are being prepared by Aerodynamics for Mission Fuel in accordance with latest PS 13 date, but these are not yet available. Fuel C.G.'s used here are as if proportioners were installed - until a fuel sequencing can be established, these will be recorded for partial fuel cases.

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

AVRO AIRCRAFT LTD.

MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT C-105 MK 2 Production Aircraft.

| DESCRIPTION      |                            | REFERENCE NO. | COMP. NO. | WEIGHT   |  |
|------------------|----------------------------|---------------|-----------|----------|--|
| TOTAL WING GROUP |                            | 1000000       |           |          |  |
| OUTER WING       |                            | 1010000       |           |          |  |
| 100              | OUTER WING SKINS           | 10100001      | 64        | 9291070  |  |
| 100              | POSTS AND INTERCOSTALS     | 10100002      | 64        | 24367    |  |
| 100              | OUTER WING SPARS           | 10100003      | 64        | 3925870  |  |
| 100              | OUTER WING RIBS            | 10100004      | 64        | 1345669  |  |
| 18               | AILERON CONTROL BOX        | 10100006      | 64        | 3792077  |  |
| 100              | RIB 12                     | 10100007      | 64        | 762664   |  |
| 100              | OW AILERON JACK FITTING    | 10100009      | 64        | 104672   |  |
|                  | AILERON JOINTS AND FAIRING | 10100010      |           | 329378   |  |
|                  |                            |               |           | 197945   |  |
| AILERON          |                            | 1020000       |           |          |  |
| 100              | AILERON STRUCTURE          | 10200001      | 74        | 3360079  |  |
|                  |                            |               |           | 33600    |  |
| 97               | ELEVATOR MARRY UP          | 1030000       |           | 159772   |  |
| 97               | ELEVATOR                   | 10300000      | 82        | 4490075  |  |
|                  |                            |               |           | 46497    |  |
| INNER WING       |                            | 1040000       |           |          |  |
| 79               | MAIN U C STRUCTURE         | 10400001      | 62        | 3307157  |  |
| 27               | FRONT SPAR I W             | 10400002      | 62        | 1111048  |  |
| 27               | MAIN SPAR I W              | 10400003      | 62        | 1463956  |  |
| 27               | FWD CENTRE SPAR I W        | 10400004      | 62        | 424560   |  |
| 27               | AFT CENTRE SPAR I W        | 10400005      | 62        | 338665   |  |
| 27               | REAR SPAR                  | 10400006      | 62        | 766770   |  |
| 32               | I W STRUCTURE F S TO M S   | 10400007      | 62        | 10591849 |  |
|                  | I W STRUCTURE M S TO R S   | 10400008      | 62        | 1497960  |  |
|                  | STRUCTURE AFT OF REAR SPAR | 10400009      | 62        | 3163972  |  |
| 11               | ELEVATOR CONTROL BOX I W   | 10400010      | 62        | 4271772  |  |
| 25               | TRANSP JOINT MARRY UP      | 10400011      |           | 706563   |  |
| 74               | CENTRE LINE JOINTS         | 10400012      | 62        | 5864366  |  |
|                  | INNER WING SKINS           | 10400013      | 62        | 2420462  |  |
|                  | STRUT PICK UP FITTINGS     | 10400014      | 62        | 1181861  |  |
| 31               | RIBS 1 TO 9 INNER WING     | 10400016      | 62        | 5120461  |  |
|                  | DORSAL FAIRING             | 10400017      | 62        | 9548     |  |
| 100              | RIB 10                     | 10400018      | 62        | 1080063  |  |
|                  | FUSELAGE HINGE JOINT I W   | 10400019      | 62        | 1381262  |  |
| 25               | TRANSP JOINT               | 10400020      | 62        | 1294263  |  |
|                  | FUSELAGE HINGE JOINT       | 10400021      |           | 374052   |  |
|                  | DORSAL FAIRINGS I W        | 10400023      |           | 562957   |  |
|                  |                            |               |           | 669323   |  |

WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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|         | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM  | V. ARM | H. MOMENT | V. MOMENT |
|---------|---------------|-----------|--------|---------|--------|-----------|-----------|
|         | 1000000       |           |        |         |        |           |           |
|         | 1010000       |           |        |         |        |           |           |
|         | 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   |
| NG RING | 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        | 1597   | 73810   | 14260  | 1178746   | 227732    |
|         |               |           | 44900  | 75523   | 14260  | 33909827  | 6402740   |
|         |               |           | 46497  |         |        | 35088573  | 6630472   |
|         | 1040000       |           |        |         |        |           |           |
|         | 1040001       | 62        | 33071  | 157757  | 13983  | 19100817  | 4624318   |
|         | 1040002       | 62        | 11110  | 48428   | 14260  | 5380351   | 1584286   |
|         | 1040003       | 62        | 14639  | 56570   | 14280  | 8281282   | 2090449   |
|         | 1040004       | 62        | 4245   | 60417   | 14317  | 2564702   | 607757    |
|         | 1040005       | 62        | 3386   | 65494   | 14446  | 2217627   | 489142    |
|         | 1040006       | 62        | 7667   | 70374   | 14420  | 5395575   | 1105581   |
| S       | 1040007       | 62        | 10591  | 84992   | 14405  | 52883798  | 15257488  |
| S       | 1040008       | 62        | 14979  | 60964   | 14572  | 9131798   | 2182740   |
| SPAR    | 1040009       | 62        | 31639  | 72041   | 14887  | 22793052  | 4710098   |
|         | 1040010       | 62        | 42717  | 72500   | 14327  | 30969825  | 6120065   |
|         | 1040011       |           | 7065   | 63621   | 13876  | 4494824   | 980339    |
|         | 1040012       | 62        | 58643  | 66143   | 15062  | 38788239  | 8832809   |
|         | 1040013       | 62        | 22420  | 462440  | 14472  | 139992978 | 32446803  |
|         | 1040014       | 62        | 11818  | 61500   | 14577  | 7268070   | 1722710   |
|         | 1040016       | 62        | 5120   | 461287  | 14499  | 31381395  | 7424068   |
|         | 1040017       | 62        |        | 9548280 | 16150  | 45866     | 15343     |
|         | 1040018       | 62        | 10800  | 63683   | 13835  | 6877764   | 1494180   |
| 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  |



WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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



WEIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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| REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|---------------|-----------|--------|--------|--------|-----------|-----------|
| 2010000       | 83        | 85170  | 74957  | 21170  | 63840877  | 18030489  |
| 2010002       |           | 4830   | 68538  | 15355  | 3310385   | 741647    |
|               |           | 90000  |        |        | 67151262  | 18772136  |
| 2020000       | 84        | 12400  | 81325  | 21438  | 10084300  | 2658312   |
|               |           | 12400  |        |        | 10084300  | 2658312   |

PROJECT \_\_\_\_\_

|    | DESCRIPTION                | REFERENCE NO. | COMP. NO. | WEIGHT |
|----|----------------------------|---------------|-----------|--------|
|    | TOTAL FUSELAGE GROUP       | 3000000       |           |        |
|    | FUSELAGE BASIC STRUCTURE   | 3010000       |           |        |
|    | RADOME                     | 3010000151    |           | 17815  |
|    | RADAR NOSE STRUCTURE       | 3010000351    |           | 17444  |
|    | SKIN F F                   | 3010000452    |           | 80941  |
|    | SKIN C F                   | 3010000554    |           | 220433 |
|    | SKIN D B                   | 3010000656    |           | 61355  |
|    | SKIN E B                   | 3010000758    |           | 164896 |
| 4  | FORMERS F F                | 3010001152    |           | 105311 |
|    | FORMERS C F                | 3010001254    |           | 287493 |
| 6  | FORMERS D B                | 3010001356    |           | 73315  |
| 8  | LIGHT FORMERS E B          | 3010001458    |           | 110416 |
| 8  | HEAVY FORMERS E B          | 3010001558    |           | 198586 |
|    | LOWER LONGERONS F F        | 3010001652    |           | 68461  |
|    | INNER LONGERON E B         | 3010001758    |           | 71846  |
|    | BOTTOM LONGERONS E B       | 3010001858    |           | 69196  |
|    | TOP LONGERONS E B          | 3010001958    |           | 6386   |
|    | LOWER SHEAR PANEL          | 3010002052    |           | 29882  |
|    | TOP WING LONGERONS D B     | 3010002156    |           | 4985   |
|    | LONGERONS C F              | 3010002252    |           | 532    |
|    | LONGERONS C F              | 3010002354    |           | 138134 |
|    | LONGERONS F D B            | 3010002454    |           | 12584  |
|    | LONGERONS A D B            | 3010002556    |           | 85955  |
|    | ELECTRONICS BAY STRUCTURE  | 3010002654    |           | 45232  |
| 32 | LONGITUDINAL BEAMS D B     | 3010002756    |           | 66175  |
|    | RADAR ACCESS DOOR C F      | 3010002854    |           | 21082  |
| 72 | MAIN FRAME AT STN 538 77   | 3010002956    |           | 59805  |
|    | DIVE BRAKE ACCOMMODATIONS  | 3010003056    |           | 36685  |
| 20 | TOP LONGERONS F F          | 3010003152    |           | 185711 |
|    | DUCT C F                   | 3010003254    |           | 315523 |
|    | FLOATING DUCT D B          | 3010003356    |           | 432155 |
| 23 | CANOPY ARCHES              | 3010003452    |           | 82332  |
|    | ACCESS PANELS              | 3010003656    |           | 32585  |
| 66 | NOSE U C SUPPORT STRUCTURE | 3010003752    |           | 33432  |
| 3  | CREW BULKHEADS             | 3010003852    |           | 122722 |
|    | EQUIPMENT BAY STRUCTURE    | 3010003954    |           | 71112  |
| 59 | WINDSCREEN                 | 3010004152    |           | 129331 |
|    | SERV ACCESS DOORS AND PNLS | 3010004258    |           | 59296  |
|    | DORSAL FAIRING FWD         | 3010004454    |           | 27272  |
|    | INTERMEDIATE FORMERS       | 3010004558    |           | 46067  |
|    | ENGINE ACCESS DOORS E B    | 3010004658    |           | 107356 |
|    | SEALING MISSILE BAY        | 3010004754    |           | 6973   |
|    | MISCELLANEOUS ITEMS C F    | 3010004854    |           | 3923   |
|    | ARMAMENT BAY ROOF          | 3010004954    |           | 125223 |
|    | BULKHEAD AT STA 120        | 3010005052    |           | 30601  |
|    | BULKHEAD AT STA 255        | 3010005152    |           | 107422 |
|    | BULKHEAD STA 485           | 3010005254    |           | 123514 |
|    | ENGINE TUNNEL E B          | 3010005458    |           | 613186 |
|    | FUSELAGE FUEL TANK         | 3010005554    |           | 209603 |
|    | COCKPIT FLOOR              | 3010005652    |           | 55921  |

WIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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|            | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM   | V. ARM | H. MOMENT | V. MOMENT |
|------------|---------------|-----------|--------|----------|--------|-----------|-----------|
|            | 3000000       |           |        |          |        |           |           |
| URE        | 3010000       |           |        |          |        |           |           |
|            | 3010000151    |           | 17815  | 3737     | 11032  | 665747    | 1965351   |
|            | 3010000351    |           | 17444  | 9582     | 11444  | 1671484   | 1996291   |
|            | 3010000452    |           | 8094   | 19000    | 12079  | 1537860   | 977674    |
|            | 3010000554    |           | 22043  | 36727    | 14417  | 8095733   | 3177939   |
|            | 3010000656    |           | 6135   | 53476    | 11175  | 3280753   | 685586    |
|            | 3010000758    |           | 16489  | 66905    | 11036  | 11031965  | 1819726   |
|            | 3010001152    |           | 10531  | 18330    | 12018  | 1930332   | 1265616   |
|            | 3010001254    |           | 28749  | 37520    | 13317  | 10786625  | 3828504   |
|            | 3010001356    |           | 7331   | 53531    | 11441  | 3924358   | 838740    |
|            | 3010001458    |           | 11041  | 66734    | 11662  | 7368101   | 1287601   |
|            | 3010001558    |           | 19858  | 66067    | 10922  | 13119585  | 2168891   |
|            | 3010001652    |           | 6846   | 18430    | 9044   | 1261718   | 619152    |
|            | 3010001758    |           | 7184   | 65234    | 9213   | 4686411   | 661862    |
|            | 3010001858    |           | 6919   | 65825    | 9779   | 4554432   | 676609    |
|            | 3010001958    |           | 638    | 66605    | 13911  | 424940    | 88752     |
|            | 3010002052    |           | 2988   | 23420    | 8900   | 699790    | 265932    |
|            | 3010002156    |           | 498    | 53899    | 13550  | 268417    | 67479     |
|            | 3010002252    |           | 53     | 25295    | 15250  | 13406     | 8083      |
|            | 3010002354    |           | 1381   | 34112    | 12289  | 5678801   | 1697480   |
|            | 3010002454    |           | 1258   | 48717    | 10700  | 612860    | 134606    |
|            | 3010002556    |           | 859    | 552923   | 9761   | 4548732   | 838958    |
| TURE       | 3010002654    |           | 452    | 327443   | 9164   | 1241247   | 414488    |
|            | 3010002756    |           | 661    | 752001   | 9130   | 3440906   | 604132    |
|            | 3010002854    |           | 210    | 827448   | 8976   | 578604    | 189214    |
| 77<br>IONS | 3010002956    |           | 598    | 053877   | 10383  | 3221845   | 620903    |
|            | 3010003056    |           | 366    | 850390   | 9298   | 1848305   | 341051    |
|            | 3010003152    |           | 1857   | 119286   | 14750  | 3581603   | 2739223   |
|            | 3010003254    |           | 315    | 5235839  | 12969  | 11307921  | 4091979   |
|            | 3010003356    |           | 432    | 1555264  | 11717  | 23882338  | 5063502   |
|            | 3010003452    |           | 82     | 322768   | 16053  | 1874489   | 1321643   |
| CTURE      | 3010003656    |           | 325    | 853375   | 9673   | 1738958   | 315146    |
|            | 3010003752    |           | 334    | 321049   | 9186   | 703668    | 307088    |
|            | 3010003852    |           | 1227   | 220589   | 12284  | 2526682   | 1507492   |
| RE         | 3010003954    |           | 711    | 128363   | 13518  | 2016893   | 961265    |
|            | 3010004152    |           | 129    | 3313815  | 15008  | 1786694   | 1940985   |
| PNLS       | 3010004258    |           | 592    | 966837   | 9255   | 3962766   | 548729    |
|            | 3010004454    |           | 272    | 729126   | 16400  | 794266    | 447228    |
|            | 3010004558    |           | 460    | 672947   | 11213  | 3359939   | 516471    |
| B          | 3010004658    |           | 107    | 3564644  | 9044   | 6939533   | 970873    |
|            | 3010004754    |           | 69     | 732148   | 10900  | 224072    | 75973     |
| F          | 3010004854    |           | 39     | 237000   | 12500  | 145040    | 49000     |
|            | 3010004954    |           | 125    | 2238325  | 11427  | 4799057   | 1430889   |
|            | 3010005052    |           | 30     | 6012000  | 12280  | 367200    | 375768    |
|            | 3010005152    |           | 107    | 4225500  | 11980  | 2739210   | 1286892   |
|            | 3010005254    |           | 123    | 5148500  | 10396  | 5990235   | 1284010   |
|            | 3010005458    |           | 61     | 31865674 | 12016  | 40269983  | 7367971   |
|            | 3010005554    |           | 209    | 6039311  | 14506  | 8239586   | 3040458   |
|            | 3010005652    |           | 55     | 9217672  | 11575  | 988218    | 647274    |

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WEIGHT AND C. OF G BY FUNCTIONAL  
COMPONE

PROJECT \_\_\_\_\_

| DESCRIPTION                | REFERENCE NO. | COMP. NO. | WEIGHT | H   |
|----------------------------|---------------|-----------|--------|-----|
| DORSAL OVER FUEL TANK      | 3010061       | 54        | 5097   | 41  |
| DEFLECTOR SHIELD           | 3010062       | 54        | 2000   | 33  |
| SHEAR PANEL BELOW NAV ARCH | 3010063       | 52        | 2074   | 25  |
| PACK MOUNTING STRUCTURE    | 3010064       | 54        | 2365   | 29  |
| ENG ACCESS DOORS FIXED R F | 3010065       | 59        | 9326   | 77  |
| TUNNEL FIXED R F           | 3010066       | 59        | 12072  | 77  |
| SKIN AND INTERCOSTAL R F   | 3010067       | 59        | 5256   | 77  |
| FAIRING UNDER RUDDER R F   | 3010068       | 59        | 2638   | 78  |
| FORMERS FIXED R F          | 3010069       | 59        | 10681  | 78  |
| LONGERONS C BEAM FIXED R F | 3010070       | 59        | 2690   | 77  |
| REMOVABLE NACELLES R F     | 3010071       | 59        | 34815  | 82  |
| CNTR STRUC STING REMOV R F | 3010072       | 59        | 10794  | 83  |
| MISC ITEMS STRUCTURE E B   | 3010073       | 58        | 912    | 66  |
| MTG BRKTS SIDE PANEL D B   | 3010075       | 56        | 213    | 52  |
| FORMERS LOWER PANEL D B    | 3010076       | 56        | 7416   | 54  |
| LOWER PANEL D B            | 3010077       | 56        | 5054   | 55  |
| JOINT F F TO C F           | 3010078       |           | 855    | 25  |
| JOINT AIR INTAKES TO F F   | 3010079       |           | 952    | 22  |
| JOINT C F TO D B           | 3010080       |           | 500    | 48  |
| JOINT D B TO E B           | 3010081       |           | 2508   | 58  |
| FUS JOINT AT STA 742 50    | 3010082       |           | 418    | 74  |
| DROP TANK MTG STRUCT D B   | 3010083       | 56        | 1133   | 58  |
| STRUCT AT ENG ACCESS DOORS | 3010085       | 58        | 6537   | 64  |
| MISC STRUCTURE F F         | 3010086       | 52        | 552    | 18  |
| ENG RAILS ATTACHM TO FORM  | 3010087       | 58        | 2854   | 68  |
|                            |               |           | 6590   | 49  |
| 96 DIVE BRAKES             | 3020000       | 72        | 11150  | 50  |
| 96 DIVE BRAKES C A         | 3020001       |           | 406    | 48  |
|                            |               |           | 1155   | 6   |
| AIR INTAKES                | 3030000       |           |        |     |
| AIR INTAKES                | 3030100       | 55        | 7550   | 221 |
|                            |               |           | 7550   | 2   |
| PILOTS AND NAVIG CANOPIES  | 3040000       |           |        |     |
| 76 PILOTS CANOPY           | 3040100       | 53        | 2408   | 117 |
|                            |               |           | 2408   | 1   |
| NAVIGATORS CANOPY          | 3040200       | 53        | 1665   | 023 |
|                            |               |           | 1665   | 0   |

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|      | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|------|---------------|-----------|--------|--------|--------|-----------|-----------|
|      | 301006154     |           | 50974  | 1352   | 14205  | 2107711   | 724029    |
|      | 301006254     |           | 20003  | 3710   | 16400  | 674200    | 328000    |
| ARCH | 301006352     |           | 20742  | 5702   | 15350  | 533059    | 318359    |
| E    | 301006454     |           | 23652  | 2226   | 10254  | 691195    | 242507    |
| R F  | 301006559     |           | 93267  | 7366   | 9867   | 7215153   | 920196    |
|      | 301006659     |           | 12072  | 77167  | 13357  | 9315600   | 1612457   |
| F    | 301006759     |           | 52567  | 77231  | 13643  | 4059261   | 717076    |
| F    | 301006859     |           | 26387  | 8178   | 15590  | 2062336   | 411264    |
|      | 301006959     |           | 10681  | 78022  | 13630  | 8333530   | 1455820   |
| R F  | 301007059     |           | 26907  | 77120  | 12688  | 2074528   | 341307    |
|      | 301007159     |           | 34815  | 82282  | 12900  | 28646478  | 4491135   |
| R F  | 301007259     |           | 10794  | 83412  | 13644  | 9003491   | 1472733   |
| B    | 301007358     |           | 9126   | 6401   | 10278  | 605577    | 93735     |
| B    | 301007556     |           | 2135   | 52402  | 13330  | 111616    | 28393     |
| B    | 301007656     |           | 7416   | 54432  | 9015   | 4036677   | 668552    |
|      | 301007756     |           | 5054   | 55457  | 8790   | 2802797   | 444247    |
|      | 3010078       |           | 8552   | 25500  | 12000  | 218025    | 102600    |
| F    | 3010079       |           | 9522   | 22000  | 12000  | 209440    | 114240    |
|      | 3010080       |           | 5004   | 8500   | 9800   | 242500    | 49000     |
|      | 3010081       |           | 2508   | 58478  | 9150   | 1466628   | 229482    |
| O    | 3010082       |           | 4187   | 4250   | 11500  | 310365    | 48070     |
| B    | 301008356     |           | 1133   | 58576  | 8848   | 663666    | 100248    |
| OORS | 301008558     |           | 6537   | 64089  | 9261   | 4189498   | 605392    |
|      | 301008652     |           | 5521   | 8750   | 11500  | 103500    | 63480     |
| ORM  | 301008758     |           | 2854   | 68741  | 11362  | 1961868   | 324271    |
|      |               |           | 659049 |        |        | 316370007 | 79437072  |
|      | 302000072     |           | 11150  | 50846  | 9062   | 5669329   | 1010413   |
|      | 3020001       |           | 4064   | 8794   | 9374   | 198104    | 38058     |
|      |               |           | 11556  |        |        | 5867433   | 1048471   |
|      | 3030000       |           |        |        |        |           |           |
|      | 303010055     |           | 75502  | 21076  | 11828  | 15912802  | 8930377   |
|      |               |           | 75502  |        |        | 15912802  | 8930377   |
| IES  | 3040000       |           |        |        |        |           |           |
|      | 304010053     |           | 24081  | 17678  | 15913  | 4257039   | 3832010   |
|      |               |           | 24081  |        |        | 4257039   | 3832010   |
|      | 304020053     |           | 16650  | 23200  | 16200  | 3862800   | 2697300   |
|      |               |           | 16650  |        |        | 3862800   | 2697300   |



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|     | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|-----|---------------|-----------|--------|--------|--------|-----------|-----------|
| ION | 4000000       |           |        |        |        |           |           |
| UP  | 4010000       |           |        |        |        |           |           |
|     | 401010092     |           | 190162 | 53931  | 14100  | 102556268 | 26812842  |
|     |               |           | 190162 |        |        | 102556268 | 26812842  |
| S   | 401020062     |           | 29180  | 53710  | 13840  | 15672578  | 4038512   |
|     |               |           | 29180  |        |        | 15672578  | 4038512   |
| UP  | 4020000       |           |        |        |        |           |           |
|     | 402010091     |           | 33381  | 17080  | 9970   | 5701475   | 3328086   |
|     |               |           | 33381  |        |        | 5701475   | 3328086   |
| ING | 402020052     |           | 2454   | 16224  | 8823   | 398137    | 216516    |
|     |               |           | 2454   |        |        | 398137    | 216516    |

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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       |           |          |    |

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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   | 502000156     |           | 4524   | 57875  | 9607   | 2618265   | 434621    |
| B   | 502000258     |           | 23660  | 60609  | 10372  | 14340089  | 2454015   |
|     |               |           | 28184  |        |        | 16958354  | 2888636   |
|     | 5030000       |           |        |        |        |           |           |
|     | 503000152     |           | 1458   | 16129  | 12476  | 235161    | 181900    |
|     | 503000254     |           | 264    | 30813  | 11789  | 81346     | 31123     |
|     | 503000356     |           | 508    | 49991  | 13459  | 253954    | 68372     |
|     | 503000458     |           | 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   | 506000158     |           | 6400   | 70381  | 13414  | 4504384   | 858496    |
|     | 506000256     |           | 146    | 55318  | 13749  | 80764     | 20074     |
|     |               |           | 6546   |        |        | 4585148   | 878570    |
| TS  | 5070000       |           |        |        |        |           |           |
|     | 5070001       |           | 8421   | 67834  | 14106  | 5712301   | 1187866   |
|     | 5070002       |           | 4817   | 64669  | 12857  | 3115106   | 619322    |
|     |               |           | 13238  |        |        | 8827407   | 1807188   |
|     | 5080000       |           |        |        |        |           |           |



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| REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|---------------|-----------|--------|--------|--------|-----------|-----------|
| 508000154     |           | 10713  | 40111  | 14010  | 4297091   | 1500891   |
| 508000256     |           | 14955  | 54070  | 10558  | 8086169   | 1578949   |
| 508000358     |           | 685    | 64414  | 12612  | 441236    | 86392     |
| 508000462     |           | 43900  | 55421  | 14428  | 24329819  | 6333892   |
| 5080005       |           | 626    | 65901  | 9594   | 412540    | 60058     |
| 5080006       |           | 754    | 61525  | 9658   | 463899    | 72821     |
|               |           | 71633  |        |        | 38030754  | 9633003   |

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WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT \_\_\_\_\_

| DESCRIPTION                |                            | REFERENCE NO. | COMP. NO. | WEIGHT |
|----------------------------|----------------------------|---------------|-----------|--------|
| FLYING CONTROLS GROUP      |                            | 6000000       |           |        |
| MECHANICAL CONTROLS        |                            | 6010000       |           |        |
|                            | MECHANICAL CONTROLS F F    | 601000152     |           | 87591  |
|                            | MECHANICAL CONTROLS C F    | 601000254     |           | 8853   |
|                            | MECHANICAL CONTROLS D B    | 601000356     |           | 3504   |
|                            | MECHANICAL CONTROLS FIN    | 601000583     |           | 126887 |
| 11                         | MECHANICAL CONTROLS I W    | 601000662     |           | 408847 |
|                            | MECHANICAL CONTROLS O W    | 601000764     |           | 304367 |
|                            | MECHANICAL CONTROLS C A    | 6010008       |           | 6467   |
|                            |                            |               |           | 94648  |
| FLYING CONTROLS HYDRAULICS |                            | 6020000       |           |        |
|                            | FLYING CONT HYDRAULICS D B | 602000156     |           | 23325  |
| 37                         | FLYING CONT HYDRAULICS E B | 602000258     |           | 390766 |
|                            | FLYING CONT HYDRAULICS R F | 602000359     |           | 487    |
| 80                         | HYDRAULICS FLYING CONT I W | 602000462     |           | 261147 |
| 75                         | HYDRAULICS FLYING CONT O W | 602000564     |           | 115517 |
| 61                         | FLYING CONT HYDRAULICS FIN | 602000683     |           | 53317  |
|                            |                            |               |           | 84452  |

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|      | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|------|---------------|-----------|--------|--------|--------|-----------|-----------|
|      | 6000000       |           |        |        |        |           |           |
|      | 6010000       |           |        |        |        |           |           |
| F    | 6010001       | 52        | 8759   | 15807  | 11543  | 1384535   | 1011051   |
| F    | 6010002       | 54        | 885    | 33920  | 11526  | 300192    | 102005    |
| B    | 6010003       | 56        | 350    | 48699  | 11880  | 170447    | 41580     |
| N    | 6010005       | 83        | 12688  | 78781  | 22176  | 9995733   | 2813691   |
| W    | 6010006       | 62        | 40884  | 71751  | 14375  | 29334679  | 5877075   |
| W    | 6010007       | 64        | 30436  | 77075  | 13561  | 23458547  | 4127426   |
| A    | 6010008       |           | 646    | 70982  | 14338  | 458544    | 92623     |
|      |               |           | 94648  |        |        | 65102677  | 14065451  |
| LICS | 6020000       |           |        |        |        |           |           |
| D B  | 6020001       | 56        | 2332   | 57442  | 9668   | 1339547   | 225458    |
| E B  | 6020002       | 58        | 39076  | 64784  | 11143  | 25314996  | 4354239   |
| R F  | 6020003       | 59        | 48     | 75875  | 10824  | 36420     | 5196      |
| I W  | 6020004       | 62        | 26114  | 70328  | 14737  | 18365454  | 3848420   |
| O W  | 6020005       | 64        | 11551  | 74074  | 13577  | 8556288   | 1568279   |
| FIN  | 6020006       | 83        | 5331   | 76165  | 20875  | 4060356   | 1112846   |
|      |               |           | 84452  |        |        | 57673061  | 11114438  |

PROJECT \_\_\_\_\_

| DESCRIPTION               | REFERENCE NO. | COMP. NO. | WEIGHT  | H |
|---------------------------|---------------|-----------|---------|---|
| FIXED EQUIPMENT GROUP     | 7000000       |           |         |   |
| INSTRUMENTS               | 7010000       |           |         |   |
| INSTRUMENTS               | 701000152     |           | 440716  |   |
| NAVIG TABLE AND STOWAGE   | 701000452     |           | 20022   |   |
|                           |               |           | 4607    |   |
| COCKPIT PRESSURE SEALING  | 702000052     |           | 50018   |   |
|                           |               |           | 500     |   |
| OXYGEN SYSTEM             | 7030000       |           |         |   |
| OXYGEN SYSTEM             | 703000152     |           | 235925  |   |
|                           |               |           | 2359    |   |
| AIR CONDITIONING SYSTEM   | 7040000       |           |         |   |
| AIRCONDITIONING SYST F F  | 704000152     |           | 1232122 |   |
| AIRCONDITIONING SYST C F  | 704000254     |           | 5752329 |   |
| AIRCONDITIONING SYST D B  | 704000356     |           | 207451  |   |
| AIRCONDITIONING SYST C A  | 7040005       |           | 1236656 |   |
| AIRCONDITIONING SYST ENG  | 7040006       |           | 125567  |   |
| AIRCONDITIONING SYST I W  | 704000762     |           | 6151    |   |
|                           |               |           | 85600   |   |
| HYDRAULICS MAIN SYSTEM    | 7050000       |           |         |   |
| 14 UTILITY HYDRAULICS F F | 705000152     |           | 841520  |   |
| 31 UTILITY HYDRAULICS C F | 705000254     |           | 427243  |   |
| 20 UTILITY HYDRAULICS D B | 705000356     |           | 2733855 |   |
| 21 UTILITY HYDRAULICS E B | 705000458     |           | 724060  |   |
| 23 UTILITY HYDRAULICS I W | 705000562     |           | 1331155 |   |
| 14 UTILITY HYDR NOSE U C  | 705000691     |           | 32519   |   |
| 23 UTILITY HYDR MAIN U C  | 705000792     |           | 298054  |   |
|                           |               |           | 63881   |   |
| CABIN INSULATION          | 707000052     |           | 143118  |   |
|                           |               |           | 1431    |   |
| BRAKE PARACHUTE           | 7080000       |           |         |   |
| BRAKE PARACHUTE F F       | 708000152     |           | 45516   |   |
| BRAKE PARACHUTE R F       | 708000559     |           | 849982  |   |

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|    | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|----|---------------|-----------|--------|--------|--------|-----------|-----------|
|    | 7000000       |           |        |        |        |           |           |
|    | 7010000       |           |        |        |        |           |           |
| E  | 7010001       | 52        | 4407   | 16112  | 13909  | 710056    | 612970    |
|    | 7010004       | 52        | 200    | 22000  | 13000  | 44000     | 26000     |
|    |               |           | 4607   |        |        | 754056    | 638970    |
| NG | 7020000       | 52        | 500    | 18600  | 13000  | 93000     | 65000     |
|    |               |           | 500    |        |        | 93000     | 65000     |
|    | 7030000       |           |        |        |        |           |           |
|    | 7030001       | 52        | 2359   | 25372  | 15643  | 598525    | 369018    |
|    |               |           | 2359   |        |        | 598525    | 369018    |
| M  | 7040000       |           |        |        |        |           |           |
| F  | 7040001       | 52        | 12321  | 22460  | 11998  | 2767297   | 1478274   |
| F  | 7040002       | 54        | 57523  | 29290  | 13798  | 16848487  | 7937024   |
| B  | 7040003       | 56        | 20745  | 14171  | 2569   | 1066389   | 260681    |
| A  | 7040005       |           | 12366  | 56545  | 13703  | 6992355   | 1694513   |
| NG | 7040006       |           | 12556  | 7000   | 13900  | 840850    | 174445    |
| W  | 7040007       | 62        | 6151   | 779    | 15751  | 31585     | 9608      |
|    |               |           | 85600  |        |        | 28546963  | 11554545  |
|    | 7050000       |           |        |        |        |           |           |
|    | 7050001       | 52        | 8415   | 20016  | 10853  | 1684346   | 913280    |
|    | 7050002       | 54        | 4272   | 43480  | 10431  | 1857466   | 445612    |
|    | 7050003       | 56        | 2733   | 855692 | 11077  | 15225079  | 3028230   |
|    | 7050004       | 58        | 7240   | 60647  | 10852  | 4390843   | 785685    |
|    | 7050005       | 62        | 1331   | 155360 | 14235  | 7368970   | 1894821   |
|    | 7050006       | 91        | 325    | 19033  | 9521   | 61857     | 30943     |
|    | 7050007       | 92        | 2980   | 54325  | 14100  | 1618885   | 420180    |
|    |               |           | 63881  |        |        | 32207446  | 7518751   |
|    | 7070000       | 52        | 1431   | 18748  | 13200  | 268284    | 188892    |
|    |               |           | 1431   |        |        | 268284    | 188892    |
|    | 7080000       |           |        |        |        |           |           |
|    | 7080001       | 52        | 455    | 16913  | 12869  | 76954     | 58554     |
|    | 7080005       | 59        | 8499   | 82213  | 14391  | 6987283   | 1223091   |

PROJECT \_\_\_\_\_

| DESCRIPTION              | REFERENCE NO. | COMP. NO. | WEIGHT |
|--------------------------|---------------|-----------|--------|
| BRAKE PARACHUTE I W      | 708000662     |           | 1246   |
|                          |               |           | 9078   |
| ELECTRICAL SYSTEM        | 7090000       |           |        |
| ELECTRICAL WIRING        | 7091400       |           |        |
| ELECTRICAL WIRING R N    | 709140151     |           | 129    |
| ELECTRICAL WIRING F F    | 709140252     |           | 29661  |
| ELECTRICAL WIRING C F    | 709140354     |           | 23543  |
| ELECTRICAL WIRING A I    | 709140455     |           | 12742  |
| ELECTRICAL WIRING D B    | 709140556     |           | 90155  |
| ELECTRICAL WIRING E B    | 709140658     |           | 645    |
| ELECTRICAL WIRING I W    | 709140862     |           | 89095  |
| ELECTRICAL WIRING FIN    | 709140983     |           | 3527   |
| ELECTRICAL WIRING N U C  | 709141091     |           | 3301   |
| 60 ELECTRICAL WIRING ENG | 7091411       |           | 20026  |
| ELECTRICAL WIRING C A    | 7091412       |           | 137463 |
|                          |               |           | 41141  |
| 30 ELECTRICS F F         | 709150052     |           | 152481 |
|                          |               |           | 15248  |
| ELECTRICS C F            | 709160054     |           | 87094  |
|                          |               |           | 8709   |
| ELECTRICS E B            | 709170058     |           | 6706   |
| ELECTRICS ENG            | 7091701       |           | 176325 |
| ELECTRICS C A            | 7091702       |           | 7186   |
|                          |               |           | 19020  |
| ELECTRICS FIN            | 709180083     |           | 838    |
|                          |               |           | 83     |
| ELECTRICS I W            | 709190062     |           | 23366  |
| ELECTRICS C A            | 7091901       |           | 1126   |
| ELECTRICS M U C          | 709190292     |           | 745    |
|                          |               |           | 2522   |
| ELECTRICS A I            | 709200055     |           | 50902  |
|                          |               |           | 5090   |
| ELECTRICS D B            | 709210056     |           | 300895 |
|                          |               |           | 30089  |

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| REFERENCE NO. | COMP. NO. | WEIGHT     | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|---------------|-----------|------------|--------|--------|-----------|-----------|
| 7080006       | 62        | 12462022   | 14500  |        | 76907     | 17980     |
|               |           | 9078       |        |        | 7141144   | 1299625   |
| 7090000       |           |            |        |        |           |           |
| 7091400       |           |            |        |        |           |           |
| 7091401       | 51        | 1299285    | 12000  |        | 11978     | 15480     |
| 7091402       | 52        | 296619977  | 11200  |        | 592518    | 332192    |
| 7091403       | 54        | 235439703  | 11000  |        | 934609    | 258940    |
| 7091404       | 55        | 127421984  | 12000  |        | 280076    | 152880    |
| 7091405       | 56        | 901552769  | 9921   |        | 4757125   | 894378    |
| 7091406       | 58        | 6459500    | 9200   |        | 38080     | 5888      |
| 7091408       | 62        | 890954111  | 13900  |        | 4820749   | 1238351   |
| 7091409       | 83        | 35279754   | 30000  |        | 280734    | 105600    |
| 7091410       | 91        | 33018600   | 9800   |        | 61380     | 32340     |
| 7091411       |           | 200260683  | 10000  |        | 1214874   | 200200    |
| 7091412       |           | 1374633473 | 11234  |        | 4601199   | 1544226   |
|               |           | 41141      |        |        | 17593322  | 4780475   |
| 7091500       | 52        | 1524815464 | 11095  |        | 2357951   | 1691766   |
|               |           | 15248      |        |        | 2357951   | 1691766   |
| 7091600       | 54        | 870945415  | 10760  |        | 3955192   | 937088    |
|               |           | 8709       |        |        | 3955192   | 937088    |
| 7091700       | 58        | 67067944   | 11597  |        | 455225    | 77700     |
| 7091701       |           | 1763258919 | 11516  |        | 10388598  | 2030501   |
| 7091702       |           | 71861350   | 12000  |        | 440493    | 86160     |
|               |           | 19020      |        |        | 11284316  | 2194361   |
| 7091800       | 83        | 8389550    | 28840  |        | 74327     | 23937     |
|               |           | 83         |        |        | 74327     | 23937     |
| 7091900       | 62        | 233662053  | 14500  |        | 1449558   | 338720    |
| 7091901       |           | 11262946   | 13561  |        | 70500     | 15188     |
| 7091902       | 92        | 7451600    | 13700  |        | 38184     | 10138     |
|               |           | 2522       |        |        | 1558242   | 364046    |
| 7092000       | 55        | 509022059  | 13832  |        | 1122803   | 704049    |
|               |           | 5090       |        |        | 1122803   | 704049    |
| 7092100       | 56        | 3008951832 | 10258  |        | 15595730  | 3086530   |
|               |           | 30089      |        |        | 15595730  | 3086530   |

PROJECT \_\_\_\_\_

| DESCRIPTION                 | REFERENCE NO. | COMP. NO. | WEIGHT | H. A. |
|-----------------------------|---------------|-----------|--------|-------|
| WINDSCREEN DEMISTING        | 70922000      | 52        | 3564   | 198   |
|                             |               |           | 3564   |       |
| ELECTRICS R F               | 70923000      | 59        | 1368   | 02    |
|                             |               |           | 136    |       |
| SPARROW ELECTRICS F F       | 70924015      | 2         | 254    | 182   |
| SPARROW ELECTRICS C F       | 70924025      | 4         | 602    | 7     |
|                             |               |           | 314    |       |
| L P PNEUMATICS              | 71000000      |           |        |       |
| 24 L P PNEUMATICS F F       | 71000015      | 2         | 2255   | 19    |
| 18 L P PNEUMATICS C F       | 71000025      | 4         | 671    | 33    |
| L P PNEUMATICS D B          | 71000035      | 6         | 418    | 55    |
| L P PNEUMATICS E B          | 71000045      | 8         | 1526   | 65    |
| L P PNEUMATICS F I N        | 71000058      | 3         | 640    | 75    |
| L P PNEUMATICS R N          | 71000065      | 1         | 124    | 7     |
| L P PNEUMATICS A P          | 71000079      | 4         | 602    | 9     |
|                             |               |           | 5694   |       |
| INTAKE DEICING              | 71200000      | 55        | 5184   | 19    |
|                             |               |           | 5184   |       |
| RADOME ANTI ICING           | 71300000      | 51        | 888    | 5     |
|                             |               |           | 888    |       |
| RADIO AND RADAR FIXED       | 71400000      |           |        |       |
| RADIO AND RADAR FIXED R N   | 71400015      | 1         | 1650   | 9     |
| RADIO AND RADAR FIXED F F   | 71400025      | 2         | 500    | 18    |
| RADIO AND RADAR C F         | 71400035      | 4         | 1900   | 26    |
| RADIO AND RADAR FIXED D B   | 71400045      | 6         | 180    | 51    |
| RADIO AND RADAR FIXED F I N | 71400058      | 3         | 320    | 76    |
| RADIO AND RADAR FIXED C A   | 7140006       |           | 1760   | 21    |
|                             |               |           | 6310   |       |
| 29 CANOPY ACTUATION         | 71600000      | 52        | 6492   | 22    |
|                             |               |           | 6492   |       |
| CABIN CONSOLES              | 71700000      | 52        | 1745   | 17    |
|                             |               |           | 1745   |       |

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|     | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|-----|---------------|-----------|--------|--------|--------|-----------|-----------|
|     | 7092200       | 52        | 3564   | 19898  | 9980   | 709165    | 355687    |
|     |               |           | 3564   |        |        | 709165    | 355687    |
|     | 7092300       | 59        | 1368   | 80200  | 11360  | 109072    | 15450     |
|     |               |           | 136    |        |        | 109072    | 15450     |
|     | 7092401       | 52        | 254    | 18242  | 11255  | 46335     | 28588     |
|     | 7092402       | 54        | 602    | 27300  | 11255  | 16380     | 6753      |
|     |               |           | 314    |        |        | 62715     | 35341     |
|     | 7100000       |           |        |        |        |           |           |
|     | 7100001       | 52        | 2255   | 19158  | 12353  | 432013    | 278560    |
|     | 7100002       | 54        | 671    | 33431  | 11033  | 224322    | 74031     |
|     | 7100003       | 56        | 418    | 55545  | 11592  | 232178    | 48455     |
|     | 7100004       | 58        | 1526   | 65650  | 9737   | 1001819   | 148587    |
|     | 7100005       | 83        | 640    | 75818  | 25515  | 485235    | 163296    |
|     | 7100006       | 51        | 124    | 7431   | 9955   | 9214      | 12344     |
|     | 7100007       | 94        | 602    | 29800  | 10400  | 17880     | 6240      |
|     |               |           | 5694   |        |        | 2402661   | 731513    |
|     | 7120000       | 55        | 5184   | 19702  | 11800  | 1021352   | 611712    |
|     |               |           | 5184   |        |        | 1021352   | 611712    |
|     | 7130000       | 51        | 888    | 5149   | 12500  | 45723     | 111000    |
|     |               |           | 888    |        |        | 45723     | 111000    |
| R N | 7140000       |           |        |        |        |           |           |
| F F | 7140001       | 51        | 16500  | 9755   | 10000  | 1609575   | 1650000   |
|     | 7140002       | 52        | 5000   | 18160  | 12000  | 908000    | 600000    |
|     | 7140003       | 54        | 19000  | 26782  | 10042  | 5088580   | 1907980   |
| D B | 7140004       | 56        | 1800   | 51200  | 10000  | 921600    | 180000    |
| FIN | 7140005       | 83        | 3200   | 76180  | 24600  | 2437760   | 787200    |
| C A | 7140006       |           | 17600  | 21329  | 12364  | 3753904   | 2176064   |
|     |               |           | 63100  |        |        | 14719419  | 7301244   |
|     | 7160000       | 52        | 6492   | 22199  | 15435  | 1441159   | 1002040   |
|     |               |           | 6492   |        |        | 1441159   | 1002040   |
|     | 7170000       | 52        | 1745   | 17476  | 12434  | 304956    | 216973    |
|     |               |           | 1745   |        |        | 304956    | 216973    |

AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENTS

PROJECT \_\_\_\_\_

| DESCRIPTION               | REFERENCE NO. | COMP. NO. | WEIGHT | H.  |
|---------------------------|---------------|-----------|--------|-----|
| RADAR DOOR ACTUATION      | 7180000       | 54        | 1000   | 26  |
|                           |               |           | 1000   |     |
| SURFACE FINISH F F        | 7190001       | 52        | 363    | 18  |
| SURFACE FINISH CANOPY     | 7190002       | 53        | 64     | 20  |
| SURFACE FINISH C F        | 7190003       | 54        | 1400   | 37  |
| SURFACE FINISH 2NTAKES    | 7190004       | 55        | 408    | 22  |
| 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        | 315    | 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    | 75  |
| SURFACE FINISH FIN        | 7190013       | 83        | 639    | 74  |
| SURFACE FINISH RUDDER     | 7190014       | 84        | 202    | 81  |
|                           |               |           | 10000  |     |

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| REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |        |
|---------------|-----------|--------|--------|--------|-----------|-----------|--------|
| 7180000       | 54        | 1000   | 26800  | 9500   | 268000    | 95000     |        |
|               |           | 1000   |        |        | 268000    | 95000     |        |
| 7190001       | 52        | 363    | 18744  | 12200  | 68041     | 44286     |        |
| 7190002       | 53        | 64     | 20218  | 15900  | 12940     | 10176     |        |
| 7190003       | 54        | 1400   | 37197  | 12455  | 520758    | 174370    |        |
| 7190004       | 55        | 408    | 22798  | 12020  | 93016     | 49042     |        |
| 7190005       | 56        | 377    | 53828  | 11200  | 202932    | 42224     |        |
| 7190006       | 58        | 443    | 66701  | 11200  | 295485    | 49616     |        |
| 7190007       | 59        | 648    | 80362  | 13175  | 520746    | 85374     |        |
| 7190008       | 62        | 315    | 160144 | 14400  | 1895137   | 453744    |        |
| 7190009       | 64        | 1067   | 70650  | 13590  | 753836    | 145005    |        |
| EDGE          | 7190010   | 65     | 319    | 63948  | 13526     | 203994    | 43148  |
| N             | 7190011   | 74     | 353    | 79190  | 13556     | 279541    | 47853  |
| OR            | 7190012   | 82     | 566    | 75523  | 14260     | 427460    | 80712  |
|               | 7190013   | 83     | 639    | 74663  | 20837     | 477097    | 133148 |
|               | 7190014   | 84     | 202    | 81279  | 21431     | 164184    | 43291  |
|               |           | 10000  |        |        | 5915167   | 1401989   |        |

PROJECT \_\_\_\_\_

| DESCRIPTION               | REFERENCE NO. | COMP. NO. | WEIGHT  | H. |
|---------------------------|---------------|-----------|---------|----|
| REMOVABLE EQUIPMENT GROUP | 8000000       |           |         |    |
| EJECTOR SEATS             | 801010052     |           | 2844220 |    |
|                           |               |           | 28442   |    |
| RADAR REMOVABLE           | 8020100       |           |         |    |
| RADIO AND RADAR REM R N   | 802010151     |           | 96070   | 9  |
| RADIO AND RADAR REM F F   | 802010252     |           | 19910   | 18 |
| RADIO AND RADAR REM C F   | 802010354     |           | 58020   | 27 |
| RADIO AND RADAR REM D B   | 802010456     |           | 5750    | 51 |
| RADIO AND RADAR REM F IN  | 802010583     |           | 7000    | 85 |
| RADIO AND RADAR REM C A   | 8020106       |           | 4000    | 55 |
|                           |               |           | 190750  |    |
| DAMPING SYSTEM            | 8030000       |           |         |    |
| DAMPING SYSTEM F F        | 803010152     |           | 635     | 16 |
| DAMPING SYSTEM C F        | 803010254     |           | 2180    | 31 |
| DAMPING SYSTEM E B        | 803010358     |           | 369     | 63 |
| DAMPING SYSTEM I W        | 803010462     |           | 5800    | 52 |
| DAMPING SYSTEM O W        | 803010564     |           | 95      | 74 |
| DAMPING SYSTEM R N        | 803010651     |           | 520     | 8  |
| DAMPING SYSTEM C A        | 8030107       |           | 431     | 48 |
|                           |               |           | 139     | 13 |
| SPARROW PACK              | 8050000       |           |         |    |
| SPARROW PACK STRUCTURE    | 805010094     |           | 87070   | 38 |
|                           |               |           | 87070   |    |
| SPARROW PACK MECHANISMS   | 805020094     |           | 58257   | 37 |
|                           |               |           | 58257   |    |
| SPARROW PACK HYDRAULICS   | 805030094     |           | 33194   | 37 |
|                           |               |           | 33194   |    |
| SPARROW PACK ELECTRONICS  | 805040094     |           | 19800   | 32 |
|                           |               |           | 19800   |    |

EIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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| GROUP | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|-------|---------------|-----------|--------|--------|--------|-----------|-----------|
|       | 8000000       |           |        |        |        |           |           |
|       | 8010100       | 52        | 28442  | 20280  | 13625  | 5768038   | 3875223   |
|       |               |           | 28442  |        |        | 5768038   | 3875223   |
|       | 8020100       |           |        |        |        |           |           |
| N     | 8020101       | 51        | 96070  | 9052   | 10100  | 8696256   | 9703070   |
| F     | 8020102       | 52        | 19910  | 18534  | 12000  | 3690119   | 2389200   |
| F     | 8020103       | 54        | 58020  | 27125  | 10122  | 15737925  | 5872784   |
| B     | 8020104       | 56        | 5750   | 51388  | 10000  | 2954810   | 5750000   |
| I     | 8020105       | 83        | 7000   | 85000  | 29000  | 5950000   | 2030000   |
| A     | 8020106       |           | 4000   | 55298  | 16000  | 2211920   | 640000    |
|       |               |           | 190750 |        |        | 39241030  | 21210054  |
|       | 8030000       |           |        |        |        |           |           |
|       | 8030101       | 52        | 635    | 16959  | 11961  | 107690    | 75952     |
|       | 8030102       | 54        | 2180   | 31915  | 11403  | 695747    | 248585    |
|       | 8030103       | 58        | 369    | 63242  | 13432  | 233363    | 49564     |
|       | 8030104       | 62        | 5800   | 52121  | 16000  | 3023018   | 928000    |
|       | 8030105       | 64        | 95     | 74855  | 14000  | 71112     | 13300     |
|       | 8030106       | 51        | 520    | 8000   | 10200  | 41600     | 53040     |
|       | 8030107       |           | 431    | 448168 | 12000  | 2077968   | 517680    |
|       |               |           | 13913  |        |        | 6250498   | 1886121   |
|       | 8050000       |           |        |        |        |           |           |
| E     | 8050100       | 94        | 87070  | 38960  | 9600   | 33922472  | 8358720   |
|       |               |           | 87070  |        |        | 33922472  | 8358720   |
| S     | 8050200       | 94        | 58257  | 37930  | 9904   | 22096880  | 5769773   |
|       |               |           | 58257  |        |        | 22096880  | 5769773   |
| S     | 8050300       | 94        | 33194  | 37352  | 9900   | 12398623  | 3286206   |
|       |               |           | 33194  |        |        | 12398623  | 3286206   |
| S     | 8050400       | 94        | 19800  | 32796  | 10000  | 6493608   | 1980000   |
|       |               |           | 19800  |        |        | 6493608   | 1980000   |





AVRO AIRCRAFT LTD.  
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL COMPONENT

PROJECT \_\_\_\_\_

| DESCRIPTION                | REFERENCE NO. | COMP. NO. | WEIGHT | H.   |
|----------------------------|---------------|-----------|--------|------|
| OPERATIONAL LOAD           | 9000000       |           |        |      |
| CREW MEMBERS               | 9010000       | 52        | 43000  | 19   |
|                            |               |           | 43000  |      |
| ENGINE OIL                 | 9020000       |           |        |      |
| ENGINE OIL DRAINABLE       | 9020001       |           | 9290   | 65   |
| ENGINE OIL TRAPPED ENG     | 9020002       |           | 1773   | 63   |
| ENGINE OIL TRAPPED D B     | 9020003       | 56        | 1925   | 58   |
| ENGINE OIL TRAPPED E B     | 9020004       | 58        | 9095   | 9    |
|                            |               |           | 1389   | 7    |
| SPARROW MISSILES           | 9030000       | 54        | 17280  | 038  |
|                            |               |           | 17280  |      |
| OXYGEN CHARGE              | 9040000       |           |        |      |
| OXYGEN CHARGE F F          | 9040001       | 52        |        | 7220 |
| OXYGEN CHARGE C F          | 9040002       | 54        | 1267   | 26   |
|                            |               |           | 1339   |      |
| ALCOHOL FOR RADOME DEICING | 9050000       | 51        | 2200   | 9    |
|                            |               |           | 2200   |      |
| ENGINE FIRE EXT FLUID      | 9060000       |           | 2500   | 73   |
|                            |               |           | 2500   |      |
| RESIDUAL FUEL              | 9070000       |           |        |      |
| RESIDUAL FUEL C F          | 9070001       | 54        | 4680   | 39   |
| RESIDUAL FUEL I W          | 9070002       | 62        | 1716   | 059  |
|                            |               |           | 2184   |      |
| WATER FOR AIR CONDITIONING | 9100000       | 54        | 2600   | 026  |
| UNUSABLE WATER FOR AIRCOND | 9100001       | 54        | 1500   | 026  |
|                            |               |           | 2750   |      |

WIGHT AND C. OF G BY FUNCTIONAL GROUP COMPONENT

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|              | REFERENCE NO. | COMP. NO. | WEIGHT | H. ARM | V. ARM | H. MOMENT | V. MOMENT |
|--------------|---------------|-----------|--------|--------|--------|-----------|-----------|
|              | 90000000      |           |        |        |        |           |           |
|              | 9010000052    |           | 43000  | 19400  | 13650  | 8342000   | 5869500   |
|              |               |           | 43000  |        |        | 8342000   | 5869500   |
|              | 90200000      |           |        |        |        |           |           |
|              | 90200001      |           | 9290   | 65225  | 11390  | 6059403   | 1058131   |
|              | 90200002      |           | 1773   | 63676  | 11640  | 1128975   | 206377    |
|              | 9020000356    |           | 1925   | 58084  | 9555   | 1118117   | 183934    |
|              | 9020000458    |           | 909    | 59928  | 9704   | 544746    | 88209     |
|              |               |           | 13897  |        |        | 8851241   | 1536651   |
|              | 9030000054    |           | 172800 | 38929  | 8830   | 67269312  | 15258240  |
|              |               |           | 172800 |        |        | 67269312  | 15258240  |
|              | 90400000      |           |        |        |        |           |           |
|              | 9040000152    |           | 72     | 20493  | 13200  | 14755     | 9504      |
|              | 9040000254    |           | 1267   | 26280  | 16150  | 332968    | 204621    |
|              |               |           | 1339   |        |        | 347723    | 214125    |
| CING         | 9050000051    |           | 2200   | 9300   | 13800  | 204600    | 303600    |
|              |               |           | 2200   |        |        | 204600    | 303600    |
|              | 90600000      |           | 2500   | 73000  | 12900  | 1825000   | 322500    |
|              |               |           | 2500   |        |        | 1825000   | 322500    |
|              | 90700000      |           |        |        |        |           |           |
|              | 9070000154    |           | 4680   | 39424  | 12300  | 1845043   | 575640    |
|              | 9070000262    |           | 17160  | 59755  | 13705  | 10253958  | 2351778   |
|              |               |           | 21840  |        |        | 12099001  | 2927418   |
| NING<br>COND | 9100000054    |           | 26000  | 26800  | 13200  | 6968000   | 3432000   |
|              | 9100000154    |           | 1500   | 26700  | 12700  | 400500    | 190500    |
|              |               |           | 27500  |        |        | 7368500   | 3622500   |

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