

QCX
Avro
CF105
R7-0400-34
Iss-26

Arrow 2
Prod. A/C

Report: 7-0400-34
Issue : 26

UNCLASSIFIED

1 Dec/58

209
Arrow 2
R6

CONFIDENTIAL
UNCLASSIFIED

AVRO AIRCRAFT LIMITED
INTER-DEPARTMENTAL MEMORANDUM

Ref: 8521/11/J
Date: 1 December, 1958
To: See Distribution
From: E.F. Burnett - Weight Supervisor
Subject: Arrow 2 Production A/C Weight & C.G. Summary Report: 7-0400-34 Issue 26

Attached is a copy of Weight and C.G. Summary Report: 7-0400-34 Issue 26 dated December 1, 1958, for your retention.

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

Classification cancelled/changed to.....

by authority of.....(date).....

Signature.....Rank.....
E.F. Burnett
E.F. Burnett

EFB/ag

- | | | |
|------------------------|----------------|--------------|
| cc: Messrs. J.C. Floyd | D. Wade | C. Marshall |
| R.N. Lindley | D. Scard | W. Potocki |
| R. Marshall | F. Brame | A. Crust |
| C.V. Lindow | W. Czerwinski | (6 copies to |
| F.P. Mitchell | J. Lucas | R.C.A.F) |
| T. Higgins | S. Kwiatkowski | D. Inglis |
| A.R. Buley | A. Cornish | D. Moore |
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Aircraft: Arrow 2
Prod. A/C
Date : 1 December, 1958

Report: 7-0400-34
Issue : 26

I N D E X

| <u>Sheet</u> | <u>Content</u> |
|--------------|---|
| 1-1 to 1-4 | Introductory notes and explanation of Weight changes. |
| 2-1 to 2-2 | Weight & C.G. Summary |
| 3 | Horizontal C.G. plot showing the fixed points on flight envelope. The possible variations of C.G. with fuel used has been omitted until such time as fully approved fuel sequencing is established. |
| 4-1 to 4-15 | I.B.M. Detail sheet of Weight and C.G.'s. |

Aircraft: Arrow 2
Prod. A/C
Date : 1 December, 1958

Report: 7-0400-34
Issue : 26
Sheet : 1-1

Introduction and Weight Changes

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

All weight and C.G. changes are relative to issue 25 of this report of November 1st, 1958.

Early Arrow 2 Aircraft will not be as this summary designates but will be Flight Test Vehicles with Instrumentation. Reference should be made to the following reports:-

A/C 25206 Weight Report - 7-0400-82 Issue 4
A/C 25207 Weight Report - 7-0400-85 Issue 2

General:

- a) Orenda PS 13 Engines comprise the Power Plant, weight 4835 lb each excluding Nose Bullet, Inlet Frame and Avro installed accessories.
- b) A package containing one GENIE missile (812 lb), four FALCON missiles (131 lb) each, a fixed fuel tank (179 gals) and a removable fuel tank (174 gals) forms the current armament pack. A space exists for the fitment of a second GENIE missile in lieu of the removable fuel tank.
- c) The Hughes MA 1 Electronic System is installed with an estimated weight of the system comprising both removable and fixed equipment of 2406 lb.

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

- d) Where actual weights of Arrow 1 parts that apply to Arrow 2 Aircraft have been obtained, these weights have been recorded in the Arrow 2 records. A considerable number of Arrow 2 components and parts have been weighed.

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

Aircraft: Arrow 2
 Prod. A/C
 Date : 1 December, 1958

Report: 7-0400-34
 Issue : 26
 Sheet : 1-2

| 1. <u>Structure</u> | <u>Weight lb</u> |
|--|------------------|
| a) <u>Wings</u> | |
| Elevator Control Box actual weights incorporated | + 5.60 |
| Centre Trailing Edge actual weights incorporated | + 2.95 |
| Structure M/S to R/S Inner Wing actual weights incorporated | - 1.29 |
| Structure F/S to M/S Inner Wing actual weights incorporated | - 11.91 |
| 1. G.A. U/C Bay | + 6.06 |
| 2. Tank 4 | - 1.92 |
| 3. Tank 3 | - 1.01 |
| 4. Aux Spar | - 0.74 |
| 5. Fuselage Side Rib Aft | - 1.30 |
| 6. Joint U/C Fitting & L/E actual weights incorp. - doubler & hardware now in L/E | - 5.26 |
| 7. Fixed Structure Pivot Door estimate in error | - 9.16 |
| 8. G.A. Inner Wing Fwd Portion re-estimated | + 1.42 |
| Leading Edge actual weights incorporated | - 6.49 |
| Inner Wing Skins M.T.B. actual weights incorporated | + 29.41 |
| <u>Total Wing Increase</u> | <u>+ 18.27</u> |
| b) <u>Fin and Rudder</u> No weight change. | |
| c) <u>Front Fuselage fwd Sta 255 ins</u> No weight change. | |
| d) <u>Centre Fuselage Sta. 255 - 485 ins</u> No weight change. | |
| e) <u>Duct Bay Sta. 485 - 591.65 ins</u> | |
| Floating Duct. actual weight obtained | + 0.72 |
| Dive Brakes re-estimate | - 0.68 |
| <u>Total Duct Bay Increase</u> | <u>+ 0.04</u> |
| f) <u>Engine Bay Sta. 591.65 - 742.50 in</u> | |
| Engine tunnel - re-estimated (approx. 100 titanium parts added) | + 17.85 |
| Bottom Centre Panel fwd addition of minor brackets | + 1.17 |
| Engine Access Doors minor structural changes | - 1.13 |
| Bottom Centre Panel - ctr minor structural changes | + 0.48 |
| Bottom Centre Panel - aft minor structural changes | + 0.53 |
| Bottom Longerons minor structural changes | + 0.32 |
| Panels at Engine Access Doors part of shroud skin now .05Ti was .025 Ti | + 1.55 |
| Side Panel Centre re-estimated | + 0.07 |
| Side Panel Aft re-estimated | + 0.10 |
| Side Panel Fwd re-estimated | - 0.08 |
| <u>Total Engine Bay Increase</u> | <u>+ 20.86</u> |

Aircraft: Arrow 2
 Prod. A/C
 Date : 1 December, 1958

Report: 7-0400-34
 Issue : 26
 Sheet : 1-3

| <u>1. Structure (Cont'd)</u> | <u>Weight lb</u> |
|---|------------------|
| g) <u>Rear Fuselage Sta. 742.5 in - aft.</u> | |
| Tailcones redesigned as per Assign X 74-4216 | + 71.45 |
| Rudder Fairing actual weight obtained of parabrake | + 0.62 |
| <u>Rear Fuselage Increase</u> | <u>+ 72.07</u> |
| h) <u>Fuselage Joint</u> | |
| Joint F.F. to C.F. straps redesigned now in four parts | + 0.08 |
| <u>Total Fuselage Joint Increase</u> | <u>+ 0.08</u> |
| <u>Total Structural Increase</u> | <u>+ 111.32</u> |
| <u>2. Landing Gear</u> No weight change. | |
| <u>3. Power Plant & Services</u> | |
| P.S. 13 Engine Accessories minor change | - 0.05 |
| <u>Total Power Plant Decrease</u> | <u>- 0.05</u> |
| <u>4. Flying Controls Group</u> | |
| Hydraulic Flying Controls Fin act. weight of filter (was alluminum alloy now steel) | + 2.39 |
| Hydraulic Flying Controls Fuselage | - 8.87 |
| 1. Front Fuselage improved booster installation | - 12.93 |
| 2. Centre Fuselage increased pipe diameters and resultant increase in fluid | + 10.61 |
| 3. Duct Bay minor changes | + 1.15 |
| 4. Engine Bay Servos now located - Front Fuselage | - 14.50 |
| clamps added to pumps | + 4.00 |
| heavier piping | + 2.94 |
| 5. Rear Fuselage Misc. changes | - 0.14 |
| <u>Total Flying Controls Group Decrease</u> | <u>- 6.48</u> |

Aircraft: Arrow 2
 Prod. A/C
 Date : 1 December, 1958

Report: 7-0400-34
 Issue : 26
 Sheet : 1-4

UNCLASSIFIED

| <u>5. Equipment Fixed and Removable</u> | <u>Weight lb</u> |
|--|------------------|
| Air Conditioning, Two duct in D.B. were steel now alluminum | - 3.28 |
| addition of air filter | + 1.50 |
| misc | + 0.19 |
| Brake Parachute, Cockpit lever now steel was alluminum alloy | + 1.49 |
| release cable lengthened | |
| Utility Hydraulics Centre Fuselage additional piping (Nose | |
| wheel door sequencing) | + 4.47 |
| brake valves | + 1.70 |
| hardware & filter | + 0.89 |
| Utility Hydraulics Engine Bay addition of adaptors & elbows | + 2.36 |
| Electrics Tailcone Plug Jettison deleted (Ref RCAF letter S36-38-105 | |
| -15) | - 8.09 |
| Canopy Actuation actual weight of actuator obtained | - 1.40 |
| Armament Pack Structure - pack redesigned to accomodate 4 Falcon | - 184.15 |
| 2 Genie capability with subsequent | |
| reduction in fuel tank capacity of | |
| fixed tank. | |
| Armament Pack Mechanisms re-estimated | + 90.00 |
| Armament Pack Removable Fuel Tank initial allowance | + 200.00 |
| <u>Total Equipment Group Increase</u> | <u>+ 105.58</u> |

6. Trapped Fuel No weight change

7. Useful Load No weight change

Summary

Weight Change - Aircraft Basic Weight

| | |
|-----------------|-----------------|
| Structure | + 111.32 |
| Power Plant | - 0.05 |
| Flying Controls | - 6.48 |
| Equipment | <u>+ 105.58</u> |
| <u>Total</u> | <u>+ 210.37</u> |

Weight Change - Operational Weight Empty

Issue 25

45,832.84

Issue 26

46,043.21

+ 210.87 lb

Aircraft: Arrow 2
 Prod. A/C
 Date : 1 December, 1958

Report: 7-0400-34
 Issue : 26
 Sheet : 2-1

Weight & C.G. Summary

UNCLASSIFIED

| Description | Weight lb | H. Arm ins | V. Arm ins |
|--------------------------------------|-----------|------------|------------|
| Structure | 19,449.05 | 566.41 | 137.15 |
| Wings | 10,050.85 | 642.93 | 142.17 |
| Fin & Rudder | 1,030.94 | 754.65 | 208.99 |
| Fuselage Fwd Sta 255 ins | 2,665.59 | 182.40 | 128.31 |
| Sta 255 - 485 ins | 1,734.42 | 374.84 | 129.81 |
| Sta 485 - 591.65 ins | 1,170.69 | 538.71 | 105.53 |
| Sta 591.65 - 742.5 ins | 1,597.06 | 659.08 | 111.66 |
| Sta. 742.5 ins aft | 1,156.32 | 809.83 | 129.05 |
| Marry-Up | 43.18 | 467.77 | 109.69 |
| Landing Gear - Retracted | 2,697.98 | 489.31 | 135.08 |
| Main Landing Gear | 2,048.67 | 538.68 | 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 | 11,450.87 | 675.26 | 121.79 |
| Engines Bare PS 13 | 9,670.00 | 693.16 | 121.25 |
| Engine Accessories (Inlet Frame etc) | 388.00 | 620.58 | 120.47 |
| Engine Controls | 32.32 | 379.90 | 117.49 |
| Gear Boxes & Drives on Fuselage | 291.87 | 608.57 | 103.28 |
| Gear Boxes & Starters on Engine | 146.45 | 601.97 | 113.57 |
| Fire Extinguisher System | 73.58 | 686.35 | 131.21 |
| Engine Mountings | 75.39 | 671.91 | 141.52 |
| Fuel System | 773.26 | 529.49 | 135.09 |
| Flying Controls Group | 1,959.46 | 655.69 | 138.11 |
| Mechanical Flying Controls | 958.44 | 677.70 | 147.52 |
| Hydraulic Flying Controls | 1,001.02 | 634.62 | 129.01 |
| Equipment Fixed & Removable | 8,138.66 | 335.36 | 114.20 |
| Instruments | 34.61 | 167.52 | 138.92 |
| Probe | 14.86 | -34.07 | 108.00 |
| Cockpit Pressure Sealing | 5.00 | 186.00 | 130.00 |
| Cabin Consoles | 17.68 | 175.29 | 124.49 |
| Oxygen System | 21.16 | 259.40 | 156.88 |
| Ejector Seats | 342.94 | 204.50 | 134.11 |
| Cockpit Equipment | 6.00 | 187.50 | 145.00 |
| Air Conditioning System | 886.97 | 344.47 | 136.31 |
| Cockpit Insulation | 14.31 | 187.48 | 132.00 |
| Hydraulics Utilities System | 650.75 | 498.84 | 117.86 |
| Mech. Door Stops Main U/C Doors | 3.02 | 516.00 | 120.00 |
| Anti Skid Controls System | 37.68 | 479.24 | 113.38 |
| Drag Chute | 92.56 | 784.52 | 143.24 |
| Electrical System | 1,228.60 | 432.89 | 113.08 |
| Low Pressure Pneumatics | 50.08 | 394.66 | 126.02 |
| Surface Finish | 100.00 | 572.83 | 140.20 |
| Intake De-icing Boots | 88.00 | 195.82 | 118.00 |
| Canopy Actuation | 63.52 | 209.61 | 154.34 |
| Radar Door Actuation | 10.00 | 268.00 | 95.00 |
| Radio & Radar Removable | 1,857.00 | 179.00 | 106.05 |
| Radio & Radar Fixed | 549.09 | 255.74 | 122.61 |
| MH 64 Damping System | 186.42 | 462.33 | 134.70 |
| Armament Pack Structure | 750.75 | 388.35 | 98.73 |

Aircraft: Arrow 2
 A/C Prod.
 Date : 1 December, 1958

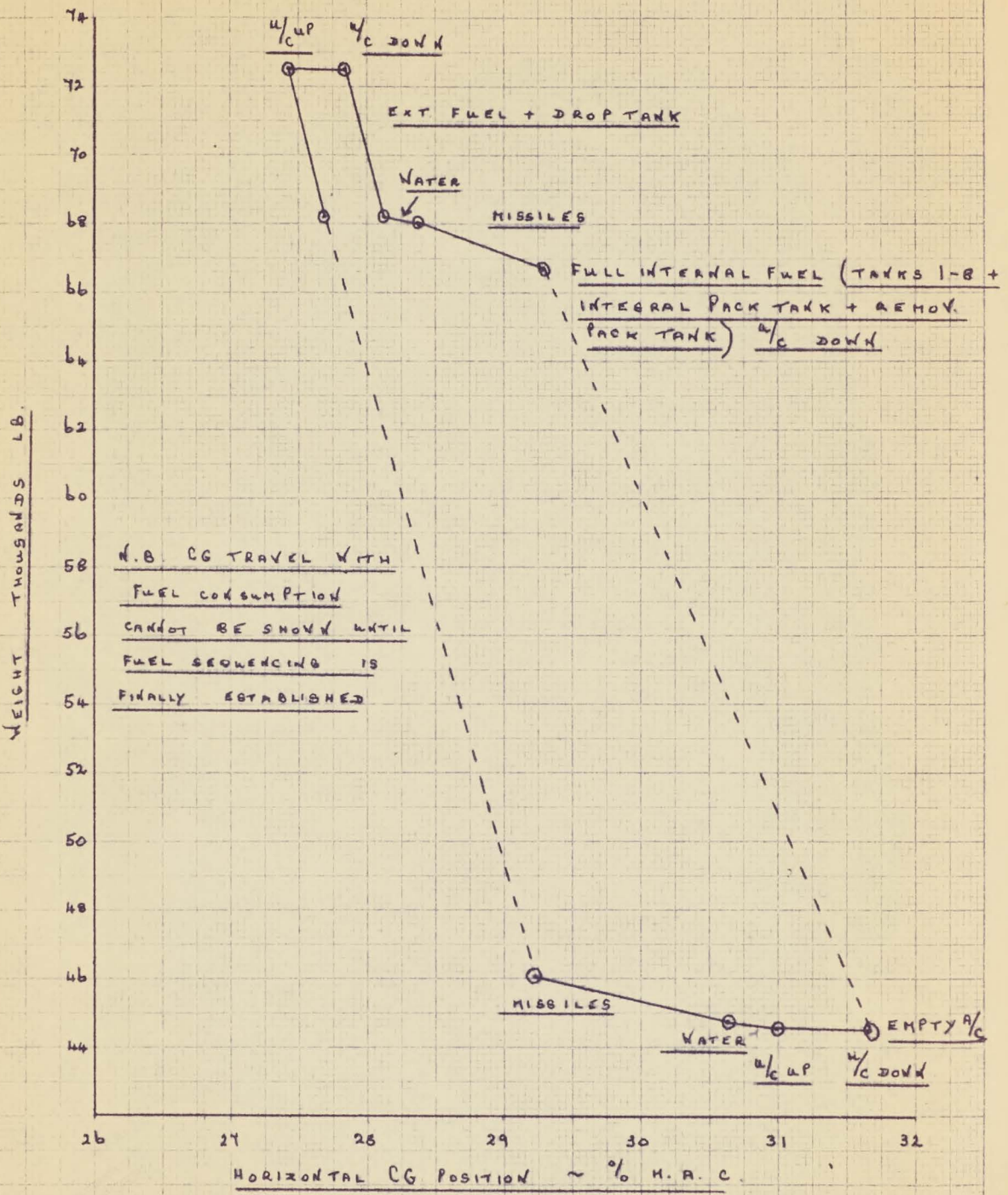
Report: 7-0400-34

UNCLASSIFIED

| Description | Weight lb | H. Arm ins | V. Arm ins | M.A.C.% |
|---|-----------|------------|------------|---------|
| Armament Pack Hydraulics | 180.00 | 385.30 | 98.50 | |
| Armament Pack Mechanisms | 590.00 | 379.95 | 94.33 | |
| Armament Pack Air Conditioning | 5.21 | 305.50 | 102.50 | |
| Armament Pack Pneumatics | 21.45 | 286.92 | 103.50 | |
| Armament Pack Electrics | 108.00 | 367.00 | 101.00 | |
| Armament Pack Fuel System | 20.00 | 478.00 | 98.40 | |
| Removable Tank for Genie Bay | 200.00 | 359.00 | 97.00 | |
| Trapped Fuel | 213.80 | 518.26 | 111.79 | |
| U/C Up | | 551.13 | 128.83 | |
| Aircraft Basic Weight | 43,909.82 | | | |
| U/C Down | | 553.48 | 124.95 | |
| Useful Load (less usable fuel) | 2,151.39 | 351.30 | 109.60 | |
| Crew | 390.00 | 194.00 | 136.50 | |
| Engine Fire Ext. Fluid | 25.00 | 730.00 | 129.00 | |
| Oil | 162.00 | 638.31 | 110.89 | |
| Oxygen Charge | 13.39 | 259.69 | 159.91 | |
| Water for Air Conditioning | 225.00 | 267.91 | 131.56 | |
| Missiles | 1,336.00 | 370.29 | 97.02 | |
| U/C Up | | 541.80 | 127.93 | 29.23 |
| Operational Weight Empty | 46,061.21 | | | |
| U/C Down | | 544.04 | 124.23 | 29.84 |
| Half Max. Int. Fuel | 11,095.69 | - | - | |
| Combat Weight (1/2 Max. Int. Fuel) | 57,156.90 | - | - | |
| Max. Int. Fuel | 22,191.38 | 524.80 | 138.39 | |
| a) Tanks 1-8; 2491 gal @ 7.8 lb/gal | 19,433.00 | 541.85 | 144.16 | |
| b) Arm. Pack 1726 gal @ 7.8 lb/gal | 1,400.38 | 449.00 | 98.40 | |
| c) Arm. Pack Remov. Tank (174 gal @ 7.8 lb/gal) | 1,358.00 | 359.00 | 97.00 | |
| U/C Up | | 536.27 | 131.33 | 27.70 |
| Gross Weight (Max. Int. Fuel) | 68,252.59 | | | |
| U/C Down | | 537.78 | 128.83 | 28.12 |
| Max. Ext. Fuel (500 gal @ 7.8 lb/gal + drop tank) | 4,242.36 | 520.32 | 60.79 | |
| U/C Up | | 535.34 | 127.20 | 27.45 |
| Max. Gross Weight (Int + Ext Fuel) | 72,494.95 | | | |
| U/C Down | | 536.76 | 124.85 | 27.84 |

N.B. 1. Aircraft Datum = 120 ins. above an arbitrarily chosen ground line.

HORIZONTAL CG PLOT OF FIXED POINTS
of ARROW 2 FLIGHT ENVELOPE



10 X 10 TO THE 1/4 INCH 359-12
KUPPEL & BEHR CO
M

AVRO AIRCRAFT LTD.
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL
COMPON

PROJECT _____

| DESCRIPTION | REFERENCE NO. | COMP. No. | WEIGHT | H |
|---------------------------|---------------|-----------|--------|----|
| FIXED EQUIPMENT GROUP | 7000000 | | | |
| | | | | |
| INSTRUMENTS | 7010000 | | | |
| INSTRUMENTS | 7010001 | 52 | 3261 | 1 |
| NAVIG TABLE AND STOWAGE | 7010004 | 52 | 200 | 2 |
| | | | 3461 | |
| COCKPIT SEALING | 7020000 | 52 | 500 | 1 |
| | | | 500 | |
| OXYGEN SYSTEM | 7030000 | | | |
| OXYGEN SYSTEM | 7030001 | 52 | 2116 | 2 |
| | | | 2116 | |
| AIR CONDITIONING SYSTEM | 7040000 | | | |
| AIRCONDITIONING F F | 7040001 | 52 | 4275 | 1 |
| AIRCONDITIONING C F | 7040002 | 54 | 52410 | 2 |
| AIRCONDITIONING D B | 7040003 | 56 | 706 | 5 |
| AIRCONDITIONING C A | 7040005 | | 28326 | 4 |
| AIRCONDITIONING ENG | 7040006 | | 1453 | 6 |
| AIRCONDITIONING I W | 7040007 | 62 | 305 | 6 |
| AIRCONDITIONING FIN | 7040008 | 83 | 1222 | 6 |
| | | | 88697 | |
| HYDRAULICS MAIN SYSTEM | 7050000 | | | |
| 28 UTILITY HYDRAULICS F F | 7050001 | 52 | 9602 | 20 |
| 3 UTILITY HYDRAULICS C F | 7050002 | 54 | 5068 | 4 |
| 19 UTIL&TY HYDRAULICS D B | 7050003 | 56 | 21795 | 5 |
| 67 UTILITY HYDRAULICS E B | 7050004 | 58 | 11075 | 6 |
| 30 UTILITY HYDRAULICS I W | 7050005 | 62 | 14441 | 5 |
| 28 UTILITY HYDR NOSE U C | 7050006 | 91 | 114 | 1 |
| 30 UTILITY HYDR MAIN U C | 7050007 | 92 | 2980 | 5 |
| ANTI SKID SYSTEM C F | 7050008 | 54 | 3134 | 4 |
| ANTI SKID SYSTEM MUC | 7050009 | 92 | 634 | 5 |
| | | | 68843 | |
| MUC DOOR STOPS | 7060000 | 56 | 302 | 5 |
| | | | 302 | |
| CABIN INSULATION | 7070000 | 52 | 1431 | 1 |
| | | | 1431 | |

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 |
|----|---------------|-----------|--------|--------|--------|-----------|-----------|
| | 7000000 | | | | | | |
| | 7010000 | | | | | | |
| GE | 7010001 | 52 | 3261 | 16430 | 13947 | 535782 | 454812 |
| | 7010004 | 52 | 200 | 22000 | 13000 | 44000 | 26000 |
| | | | 3461 | | | 579782 | 480812 |
| | 7020000 | 52 | 500 | 18600 | 13000 | 93000 | 65000 |
| | | | 500 | | | 93000 | 65000 |
| | 7030000 | | | | | | |
| | 7030001 | 52 | 2116 | 25940 | 15688 | 548890 | 331958 |
| | | | 2116 | | | 548890 | 331958 |
| EM | 7040000 | | | | | | |
| | 7040001 | 52 | 4275 | 18020 | 11406 | 770355 | 487607 |
| | 7040002 | 54 | 52410 | 28838 | 13567 | 15113996 | 7110465 |
| | 7040003 | 56 | 706 | 51474 | 12263 | 363406 | 86577 |
| | 7040005 | | 28326 | 43447 | 13798 | 12306797 | 3908421 |
| | 7040006 | | 1453 | 67100 | 14000 | 974963 | 203420 |
| | 7040007 | 62 | 305 | 64176 | 15611 | 195737 | 47614 |
| | 7040008 | 83 | 1222 | 67795 | 20129 | 828455 | 245976 |
| | | | 88697 | | | 30553709 | 12090080 |
| M | 7050000 | | | | | | |
| F | 7050001 | 52 | 9602 | 20241 | 10816 | 1943541 | 1038552 |
| F | 7050002 | 54 | 5068 | 42772 | 10325 | 2167685 | 523271 |
| B | 7050003 | 56 | 21795 | 54920 | 10950 | 11969814 | 2386553 |
| B | 7050004 | 58 | 11075 | 60747 | 11152 | 6727730 | 1235084 |
| W | 7050005 | 62 | 14441 | 55240 | 14254 | 7977208 | 2058420 |
| | 7050006 | 91 | 114 | 18860 | 9320 | 21500 | 10625 |
| | 7050007 | 92 | 2980 | 54325 | 14100 | 1618885 | 420180 |
| | 7050008 | 54 | 3134 | 47200 | 10800 | 1479248 | 338472 |
| | 7050009 | 92 | 634 | 51500 | 14000 | 326510 | 88760 |
| | | | 68843 | | | 34232121 | 8099917 |
| | 7060000 | 56 | 302 | 51600 | 12000 | 155832 | 36240 |
| | | | 302 | | | 155832 | 36240 |
| | 7070000 | 52 | 1431 | 18748 | 13200 | 268284 | 188892 |
| | | | 1431 | | | 268284 | 188892 |

AVRO AIRCRAFT LTD.
MALTON, ONT.

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

PROJECT _____

| DESCRIPTION | REFERENCE NO. | COMP. NO. | WEIGHT | H |
|----------------------------|---------------|-----------|--------|---|
| RADIO AND RADAR FIXED R N | 71400001 | 51 | 500 | |
| RADIO AND RADAR FIXED F F | 71400002 | 52 | 215011 | |
| RADIO AND RADAR FIXED C F | 71400003 | 54 | 84002 | |
| RADIO AND RADAR FIXED F IN | 71400005 | 83 | 32007 | |
| RADIO AND RADAR FIXED C A | 71400006 | | 195002 | |
| RADIO AND RADAR FIXED I W | 71400007 | 62 | 18085 | |
| | | | 54909 | |
| 60 CANOPY ACTUATION | 71600000 | 52 | 63522 | |
| | | | 6352 | |
| CABIN CONSOLES | 71700000 | 52 | 17681 | |
| | | | 1768 | |
| RADAR DOOR ACTUATION | 71800000 | 54 | 10002 | |
| | | | 1000 | |
| SURFACE FINISH R N | 71900001 | 51 | 246 | |
| SURFACE FINISH F F | 71900002 | 52 | 3631 | |
| SURFACE FINISH CANOPY | 71900003 | 53 | 642 | |
| SURFACE FINISH C F | 71900004 | 54 | 9283 | |
| SURFACE FINISH INTAKES | 71900005 | 55 | 4082 | |
| SURFACE FINISH D B | 71900006 | 56 | 3495 | |
| SURFACE FINISH E B | 71900007 | 58 | 4436 | |
| SURFACE FINISH R F | 71900008 | 59 | 4027 | |
| SURFACE FINISH I W | 71900009 | 62 | 31516 | |
| SURFACE FINISH O W | 71900106 | 64 | 10677 | |
| SURFACE FINISH O W L EDGE | 71900116 | 5 | 3196 | |
| SURFACE FINISH DIVE BRAKES | 71900127 | 2 | 2850 | |
| SURFACE FINISH AILERON | 71900137 | 4 | 3537 | |
| SURFACE FINISH ELEVATOR | 71900148 | 2 | 5667 | |
| SURFACE FINISH FIN | 71900158 | 3 | 6397 | |
| SURFACE FINISH RUDDER | 71900168 | 4 | 2028 | |
| SURFACE FINISH ARM PACK | 71900179 | 4 | 4723 | |
| | | | 10000 | |

AVRO AIRCRAFT LTD.
MALTON, ONT.

WEIGHT AND C. OF G BY FUNCTIONAL GROUP
COMPONENT

PROJECT _____

| DESCRIPTION | REFERENCE NO. | COMP. NO. | WEIGHT | H. AR |
|----------------------------|---------------|-----------|--------|-------|
| OPERATIONAL LOAD | 9000000 | | | |
| CREW MEMBERS | 9010000 | 52 | 39000 | 1940 |
| | | | 39000 | |
| ENGINE OIL | 9020000 | | | |
| ENGINE OIL DRAINABLE ENG | 9020001 | | 9290 | 640 |
| ENGINE OIL DRAINABLE E B | 9020002 | 58 | 4110 | 656 |
| ENGINE OIL TRAPPED D B | 9020003 | 56 | 753 | 581 |
| ENGINE OIL TRAPPED E B | 9020004 | 58 | 2047 | 615 |
| | | | 16200 | |
| MISSILES | 9030000 | 94 | 133600 | 370 |
| | | | 133600 | |
| OXYGEN CHARGE | 9050000 | | | |
| OXYGEN CHARGE F F | 9050001 | 52 | | 72204 |
| OXYGEN CHARGE C F | 9050002 | 54 | 1267 | 262 |
| | | | 1339 | |
| ENGINE FIRE EXT FLUID | 9060000 | | 2500 | 730 |
| | | | 2500 | |
| TRAPPED FUEL | 9080000 | | | |
| TRAPPED FUEL C F | 9080001 | 54 | 2430 | 414 |
| TRAPPED FUEL D B | 9080002 | 56 | 690 | 494 |
| TRAPPED FUEL I W | 9080003 | 62 | 18260 | 568 |
| | | | 21380 | |
| WATER FOR AIRCOND | 9100000 | 54 | 20000 | 268 |
| UNUSABLE WATER FOR AIRCOND | 9100001 | 54 | 2500 | 267 |
| | | | 22500 | |

