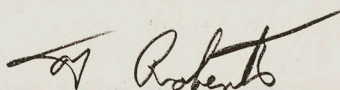


AVRO AIRCRAFT LIMITED
Inter-Departmental Memorandum

Ref 8123/01/J
Date April 15, 1958
To S. E. Harper
From T. Roberts
Subject ARROW 1 - FIRST FLIGHT R.F.T.

Herewith Addendum 6, of R.F.T. 07-5024, giving the flight plan and fuel used for the 4th flight of the initial series of flights.



T. Roberts
Technical Flight
Test Co-ordinator

TR*bb

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W/C G. Waterman (2) AVRO T.S.D. RCAF
for transmittal to
S/L K. Owen C.E.P.E.
Detachment.

Central Files



AVRO AIRCRAFT LIMITED

MALTON, ONTARIO

REQUISITION FOR FLIGHT TEST

R.F.T. NO. 07-5024 Add. 6

SHEET NO. 1 OF

DATE: April 14, 1958

AIRCRAFT 25201

ASSIGNMENT NO.

WORK ORDER NO.

This addendum covers the flight plan and fuel used for the fourth flight of the initial series of flights, and supersedes Addendum 5.

1. INSTRUMENTATION

1.1 Telemetry

Telemetry requirements as for flight number 2 plus AV C output in telemetry trailer receiver, (GRR-7), to be monitored by recording D.C. output, identify trace with comments on signal intelligibility.

1.2 Oscillograph

Requirements as for flight number 2 plus the following:-

Aircraft static pressure.
Differential pressure.
R/H engine flow control unit power lever position.
Yaw emergency solenoid signal.
Yaw normal solenoid signal.
Roll rate normal axis.

1.3 Data Tape

Data tape should be installed to record the following:-

Pilot's voice.
L/H engine fuel flow.
R/H engine fuel flow.

1.4 Temp Sensitive Paint Bars

Temp sensitive paint bars are required on all six hydraulic pump discharge lines and on the three pump suction manifold lines to indicate temp in excess of 240°F and 310°F.

R.F.T. PREPARED BY: Robert

APPROVED BY:

AUTHORIZED BY:

DATE FOR COMPLETION

PRIORITY

ESTIMATED COMPLETION
DATE:



AVRO AIRCRAFT LIMITED

MALTON, ONTARIO

REQUISITION FOR FLIGHT TEST

R.F.T. NO. 07-5024 Add. 6

SHEET NO. 2 OF

DATE: April 14, 1958

AIRCRAFT 25201

ASSIGNMENT NO.

WORK ORDER NO.

2. FLIGHT PLAN

2.1 Take-Off

Prior to take-off inform 'Frank' of RPM, JPT and pressure ratio at military throttle setting. Take-off without afterburner and without damper. Raise landing gear and accelerate to 250 kts. EAS.

2.2 Climb

Climb at 250 kts. EAS. to 10,000 ft. then level out.

2.3 Handling

2.3.1 Engage normal damper gear up mode and assess A/C handling at 250 kts. EAS. Repeat with emergency damper gear up mode, and check damping in pitch with controls free.

2.3.2 Repeat 2.3.1 at 300 kts. EAS.

2.3.3 Engage normal damper gear up mode and accelerate to 350 kts. check A/C handling, and check damping in pitch with controls free.

2.3.4 Repeat 2.3.3. at 400 kts. EAS, and pull $2\frac{1}{2}g$ at 400 kts. EAS, and check effect asymmetric power

2.3.5 Accelerate to 450 kts. EAS, damper off, engage normal damper gear up mode and repeat 2.3.4.

2.4 Climb

Climb at 400 kts. EAS. to the altitude corresponding to $M = 0.9$, (approximately 20,000 ft.), and continue climbing at $M = 0.9$ to 30,000 ft. During climb inform 'Frank' every 5,000 ft. (or as frequent as is practical) of RPM, JPT, and pressure ratio. Light A/B's individually at 30,000' and continue climb at $M = 0.9$ to 40,000 ft.

R.F.T. PREPARED BY:

APPROVED BY:

AUTHORIZED BY: 

DATE FOR COMPLETION

PRIORITY

ESTIMATED COMPLETION
DATE:



AVRO AIRCRAFT LIMITED

MALTON, ONTARIO

REQUISITION FOR FLIGHT TEST

R.F.T. NO. 07-5024 Add. 6

SHEET NO. 3 OF 3

DATE: April 14, 1958

AIRCRAFT 25201

ASSIGNMENT NO.

WORK ORDER NO.

2.5 Test Period

- 2.5.1 Level off at 40,000 ft., disengage the damper and assess effect of asymmetric power and check dive brake operation at $M = 0.9$. Repeat with normal damper gear up mode.
- 2.5.2 Accelerate to $M = 1.1$ normal damper gear up mode and carry out aileron taps, then repeat as for 2.5.1.
- 2.5.3 Disengage damper and accelerate to $M = 1.15$ and repeat as for 2.5.2.
- 2.5.4 Proceed to higher speeds in increments of 0.05 MN in conjunction with ground operations controller, repeating procedure as for 2.5.3.

Ground operations controller should advise '201' when test should be discontinued in as far as fuel remaining is concerned.

If pilot gets garbled transmission at or above 30,000 ft. pilot should depress his tone control button to C.W. position, also interphone should be turned to "hot mic" to check whether his sidetone is garbled.

2.6 Descent

Reduce speed to $M = 0.9$ and descend to approx. 25,000 ft., continuing to descend to circuit height at 350 kts. EAS.

Approach and Land.

3. FUEL USED AND TIME

- 3.1 Attached curve shows an estimate of fuel used and time for the above flight plan.
- 3.2 During taxi the aircraft is estimated to use 1400 lb/hr/engine.
- 3.3 2500 lb. of fuel shall remain unuseable in addition to any fuel used to ballast the aircraft.

R.F.T. PREPARED BY:

APPROVED BY:

AUTHORIZED BY: *[Signature]*

DATE FOR COMPLETION

PRIORITY

ESTIMATED COMPLETION

DATE:

ARROW I AIRCRAFT 25201 FLIGHT No. 4

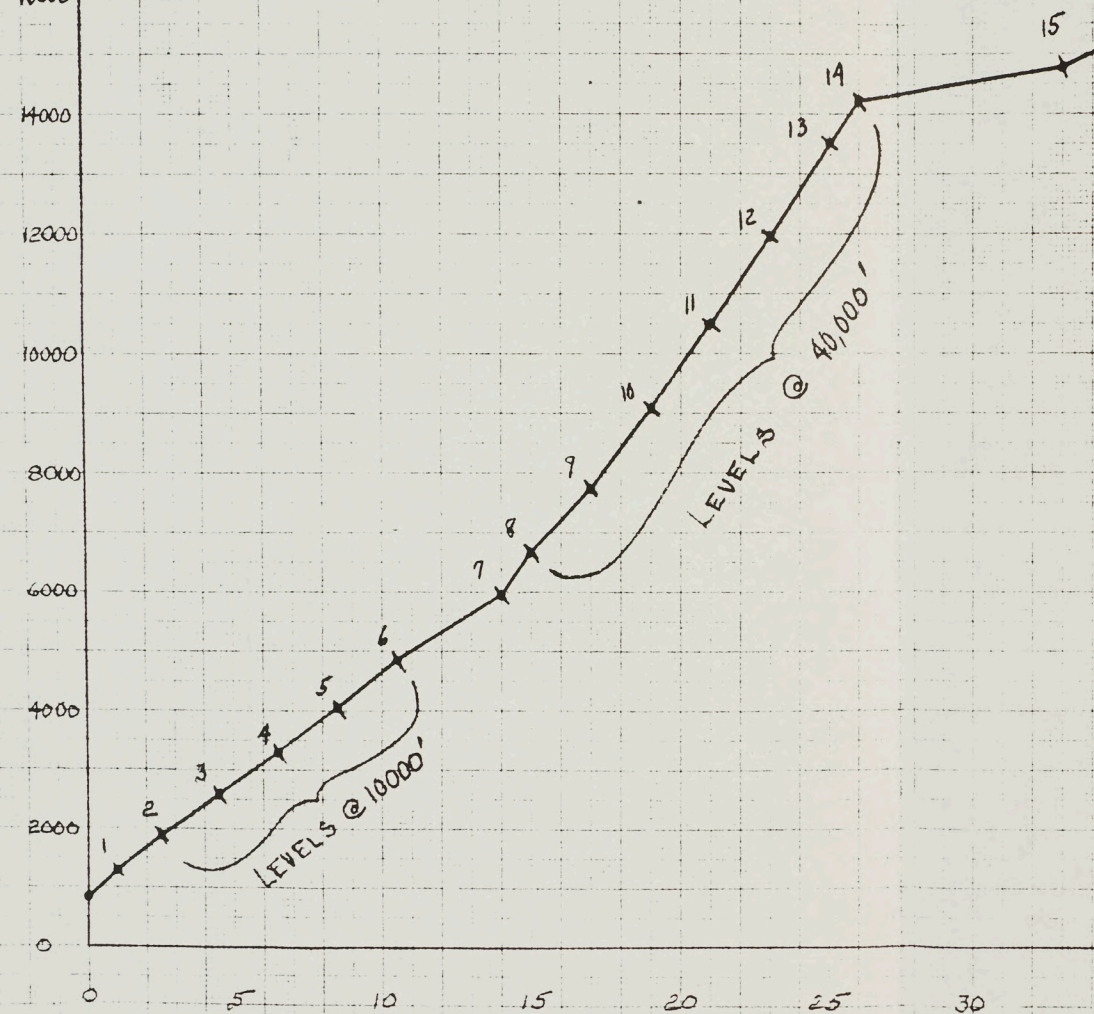
FUEL USED vs TIME

FUEL USED ~ LBS

19843
18000
16000
14000
12000
10000
8000
6000
4000
2000
0

0 5 10 15 20 25 30

TIME ~ M



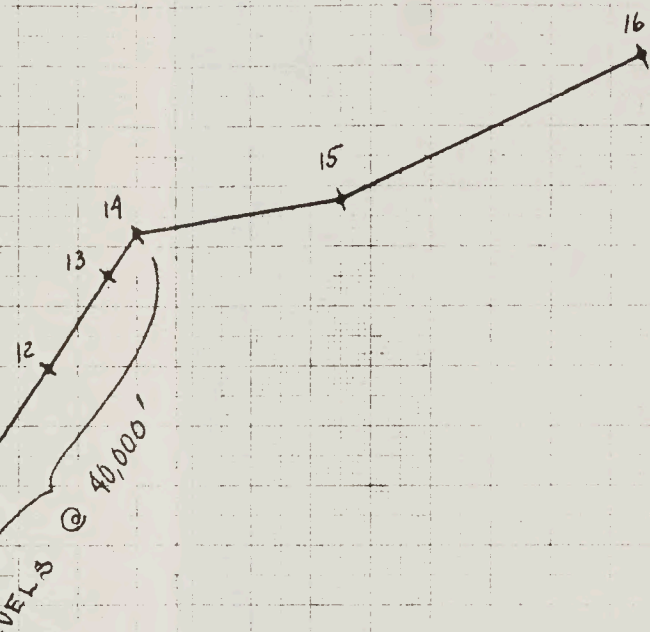
SHEET 55

REPORT NO.

DATE: APRIL 15, 1958

PREP. BY: R.W.

FLIGHT No. 4



No	TIME	CUM TIME	LBS FUEL	CUM FUEL	ACTION
0	—	—	843	843	ENG. START & TAXI
1	1.00	1.00	450	1293	T.O. & ACCEL TO 250 ^K E.A.S.
2	1.50	2.50	600	1893	CLIMB TO 10000' @ 250 ^K E.A.S.
3	2.00	4.50	690	2583	ACCEL. & LEVEL @ 300 ^K E.A.S.
4	2.00	6.50	725	3308	" " " 350 "
5	2.00	8.50	760	4068	" " " 400 "
6	2.00	10.50	800	4868	" " " 450 "
7	3.50	14.00	1100	5968	CLIMB TO 20000' @ 400 ^K E.A.S.
8	1.00	15.00	680	6648	& TO 30000' @ M=0.9, 1/2 OFF
9	2.00	17.00	1100	7748	CLIMB TO 40000' M=0.9, 1/2 ON
10	2.00	19.00	1340	9088	LEVEL @ 40000', M=0.9, 1/2 ON
11	2.00	21.00	1400	10488	" " M=1.10 "
12	2.00	23.00	1480	11968	" " M=1.15 "
13	2.00	25.00	1560	13528	" " M=1.25 "
14	1.00	26.00	820	14348	" " M=1.30 "
15	7.00	33.00	450	14798	DECEL. & DESCEND
16	10.00	43.00	2400	17198	APPROACH, LAND & STOP

25 30 35 40 45 50 55 60

TIME ~ MINUTES