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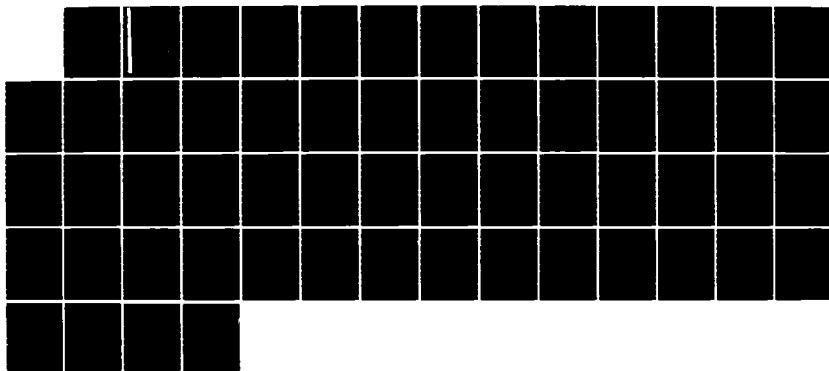
THE CT4 FLIGHT TRIALS TEST PROGRAM(U) AERONAUTICAL  
RESEARCH LABS MELBOURNE (AUSTRALIA) L R GRATZER AUG 86  
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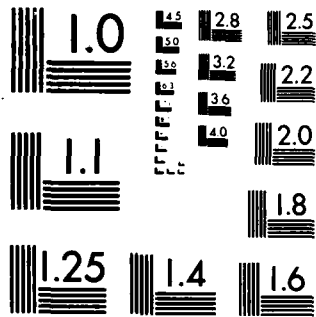
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MELBOURNE, VICTORIA

Structures Technical Memorandum 449

THE CT4 FLIGHT TRIALS TEST PROGRAM

by

LEONARD R. GRATZER

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**ERRATA**

In the Introduction on page 1, paragraph 4 should be ammended to:-

The flight test program, designated ARDU Test Schedule 1649, was developed at ARL by SQNLDR Wurf and refined at ARDU by FLTLT Jones. It required four ARDU pilots to each fly 8 missions covering student and instructor continuation training and special flights for undercarriage load measurement. These 32 sorties were designed to represent a student pilot training syllabus of 60 hours.

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SUMMARY

*Between 1978 and 1980 The Aircraft Research and Development Unit (ARDU) and ARL carried out a series of flight trials in order to determine typical load histories for a CT4 Airtrainer. These supplied representative flight data which provided the basis of load sequences used in the full scale fatigue test.*

*This report describes the parameters measured and lists the transcripts of the pilots' voice records.*



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# CONTENTS

	Page No
1. INTRODUCTION	1
2. INSTRUMENTATION	1
3. STRAIN GAUGE LOCATION	2
4. UNITS OF MEASUREMENTS	2
5. FLIGHT PROFILES	2
6. CONCLUSION	2
7. REFERENCE	2
TABLES	
FIGURES	
APPENDIX	
DISTRIBUTION	
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## 1. INTRODUCTION

The CT4 Airtrainer is a small piston engined twin seater aircraft built by New Zealand Aerospace Limited and used by the RAAF for initial flight training. It is a low wing all metal aircraft with non-retractable undercarriage. The general layout and main characteristics of the CT4 are shown in Figure 1.

ARL was required to determine representative flight loads for use in a full scale fatigue test of a CT4 airframe (Ref. 1). To enable this to be achieved, flight trials commenced in 1978. Eleven flights were carried out in that year and the remainder of the flights was conducted from April to December 1980.

The purpose of the flight trials was three-fold:

- a. Envelope flying to limit conditions;
- b. The creation of histories of typical squadron usage; and
- c. Measurement of other flight parameters.

The flight program, designated ARDU Test Schedule 1649, was developed at ARL by SQNLDR Wurf and refined at ARDU by FLTLT Jones so as to compress a syllabus of 60 student flying hours into 8 flights. They were to be flown by four ARDU pilots. These 8 flights consisted of training missions, undercarriage flights and instructor continuation training.

The flights were carried out on CT4 A19-031. The four pilots each flew the same group of 8 flights. However two flew with full fuel and two with half fuel.

Besides the 32 flights mentioned above, a number of other flights were flown to enable some more specific data such as turbulence and heavy landing measurements to be recorded.

A complete summary of all flights carried out during the flight trials program is shown in Table 1.

## 2. INSTRUMENTATION

During the flight trials, recordings were made on the Leach MTR2400 tape recorder. The data were recorded in a 50 channel multiplexed format at 60 Hz. (This was later increased to 120 and then 240 Hz to measure the high frequency vibrations present in the empennage).

The data consisted of the output from 40 electrical resistance strain gauges and 27 other transducers. This was clearly more than the system maximum of 50 channels, so two configurations were used with each containing the addition of 8 low speed analogue and 4 low speed digital channels multiplexed at 6 (12 and 24) samples per second.

Configuration 1 excluded the undercarriage strains and configuration 2 excluded empennage strains. Tables 2 and 3 list the channel numbers and associated data type on the flight trials aircraft, for each of the two configurations.

### 3. STRAIN GAUGE LOCATIONS

The locations of the forty strain gauges were chosen to enable a load distribution evaluation to be made of the complete airframe. Gauges were placed on the fuselage, wing, horizontal and vertical tails and on the undercarriage legs. Figure 2 shows the location of the strain gauges on the airframe of the flight test aircraft.

### 4. UNITS OF MEASUREMENT

The data were all recorded in *Computer Units* and therefore were required to be converted into *Engineering Units*. The conversion factors used in this process for the normal acceleration and the strain gauge channels are shown in Table 4.

### 5. FLIGHT PROFILES

The flight test aircraft was equipped with a voice recorder which allowed the pilot to describe all manoeuvres and significant events while noting the count indicator of the flight data recorder.

This enabled correlation of all events with flight measurements. To enable any future examination of the events, the Appendix contains a complete transcript of all information obtained from the pilots' voice records. This included descriptions of major manoeuvres, timing intervals, height, weather, barometric conditions and pilot's name.

Some flight voice records were either lost or undecipherable and no information was available. All other flights are listed in the Appendix.

### 6. CONCLUSION

A series of flight trials of a CT4 aircraft was conducted in order to obtain representative flight data. These data subsequently formed the basis for the load sequences used in the CT4 Full Scale Fatigue Test.

### 7. REFERENCE

1. Gratzner, L. R. The test loads sequences applied to the CT4 full scale fatigue test. ARL-STRUC-TM-415. June 1985.



Flight	Date	Description
1	-Apr-78	Low level full fuel test flight
2	-Apr-78	Undercarriage test flight
3	6-Jul-78	Full fuel low level envelope flight
4	10-Jul-78	Aborted flight
5	11-Jul-78	Full fuel high level envelope flight
6	11-Jul-78	Low level half fuel test flight
7	14-Jul-78	Full fuel Mission 1
8	14-Jul-78	Full fuel Mission 2
9	17-Jul-78	Full fuel Mission 3
10	28-Apr-80	Low level full fuel envelope flight
11	28-Apr-80	Undercarriage test flight
12	29-Apr-80	Full fuel Mission 1
13	30-Apr-80	Full fuel Mission 2
14	1-May-80	Full fuel Mission 3
15	2-May-80	Full fuel Mission 4
16	5-May-80	Full fuel Mission 5
17	5-May-80	Full fuel Mission 6
18	7-May-80	High level full fuel envelope flight
19	7-May-80	Low level half fuel envelope flight
20	8-May-80	Full fuel Mission 8 (U/C)
21	8-May-80	Half fuel Mission 7A (Instructor continuation training)
22	14-May-80	Full fuel Mission 7B (Turbulence search and low flying)
23	4-Jun-80	Full fuel Mission 1
24	4-Jun-80	Full fuel Mission 3
25	5-Jun-80	Full fuel mission 2
26	5-Jun-80	Full fuel Mission 4
27	6-Jun-80	Full fuel Mission 6
28	6-Jun-80	Full fuel Mission 5
29	9-Jun-80	Full fuel Mission 8 (U/C)
30	10-Jun-80	Half fuel Mission 1
31	10-Jun-80	Half fuel Mission 2
32	11-Jun-80	Half fuel Mission 3
33	12-Jun-80	Half fuel Mission 4
34	12-Jun-80	Half fuel Mission 5
35	19-Jun-80	High speed sample rate flight 1
36	19-Jun-80	Half fuel Mission 8 (U/C)
37	20-Jun-80	Half fuel Mission 6
38	15-Jul-80	High speed sample rate flight 2
39	17-Jul-80	Airframe overspeed flight 1
40	17-Jul-80	Half fuel Mission 1
41	18-Jul-80	Half fuel Mission 2
42	18-Jul-80	Half fuel Mission 3
43	21-Jul-80	Half fuel Mission 4
44	22-Jul-80	Half fuel Mission 5
45	22-Jul-80	Half fuel Mission 6
46	23-Jul-80	Half fuel Mission 8 (U/C)
47	24-Jul-80	Airframe overspeed flight 2
48	5-Aug-80	Half fuel heavy landing flight
49	19-Nov-80	Pt Cook area - Turbulence
50	20-Nov-80	Pt Cook-Nhill-Edinburgh Manoeuvre and convective Turbulence
51	28-Nov-80	Adelaide Hills, Turbulence
52	1-Dec-80	Adelaide Hills, Turbulence

Table 1 - Summary of CT4 Flights TS.1649

Ch.	Quantity	Ch.	Quantity
1	Vert. Accel	26	Reserved
2	Lat. Accel	27	Reserved
3	Long Accel	28	SC 18CE Wing rear spar WS42
4	Roll Rate	29	SC 20TE Wing rear spar WS42
5	Pitch Rate	30	SC 22SE Wing front spar WS26
6	Yaw Rate	31	SC 24SE Wing rear spar WS24
7	Incidence	32	SC 26SE Wing root rib FS71
8	Sideslip	33	SC 28BE Wing root rib FS93
9	Pt Fwd Accel	34	SC 30SE Wing root rib FS112
10	Pt Aft Accel	35	SC 32RA Wing shear WS25,FS93
11	Stbd Fwd Accel	36	SC 32RB Wing shear WS25,FS93
12	Stbd Aft Accel	37	SC 32RC Wing shear WS25,FS93
13	Nose Accel	38	SC 33TE Fin main spar root
14	Tail Accel	39	SC 34TE Fin main spar root
15	Fin tip Accel	40	SC 36BE Tailplane main spar TS32.3
16	SG 5BE Wing main spar WS72	41	SC 37BE Tailplane main spar TS5.9
17	SG 9BE Wing main spar WS42	42	SC 38BE Tailplane main spar TS5.9
18	SG 21SE Wing front spar WS26	43	SC 55CE Bending pitch input
19	SG 27BE Wing root rib WS93	44	SC 51CE Fuse Long - LH lower
20	SG 2BE Wing main spar WS112	45	SC 52CE Fuse Long - RH lower
21	SG 4BE Wing rear spar WS112	46	SC 53TE Fuse Long - LH upper
22	SG 6BE Wing main spar WS72	47	SC 54TE Fuse Long - RH upper
23	SG 8BE Wing rear spar WS72	48	Digital L.S.M.
24	SG 10BE Wing main spar WS42	49	Analogue L.S.M.
25	SG 12BE Wing rear spar WS14	50	Phase/event Marker

Analogue Low Speed Multiplexer

- 1 Reserved
- 2 I.A.S.
- 3 Altitude
- 4 Aileron Position
- 5 Elevator Position
- 6 Rudder Position
- 7 Flap Position
- 8 Stag. Temp

Digital Low Speed Multiplexer

- 1 J-Tec Airspeed
- 2 Fuel flow
- 3 Engine RPM
- 4 Descent Rate

Table 2 - Channel Numbers and Associated Transducers  
Configuration 1

Ch.	Quantity	Ch.	Quantity
1	Vert. Accel	26	Reserved
2	Lat. Accel	27	Reserved
3	Long Accel	28	SG 18CE Wing rear spar WS42
4	Roll Rate	29	SG 20TE Wing rear spar WS42
5	Pitch Rate	30	SG 22SE Wing front spar WS26
6	Yaw Rate	31	SG 24SE Wing rear spar WS24
7	Incidence	32	SG 26SE Wing root rib FS71
8	Sideslip	33	SG 28BE Wing root rib FS93
9	Pt Fwd Accel	34	SG 30SE Wing root rib FS112
10	Pt Aft Accel	35	SG 32RA Wing shear WS25,FS93
11	Stbd Fwd Accel	36	SG 32RB Wing shear WS25,FS93
12	Stbd Aft Accel	37	SG 32RC Wing shear WS25,FS93
13	Nose Accel	38	SG 43CE U/C axial 2 in. from bolt
14	Tail Accel	39	SG 44CE U/C axial 2 in. from bolt
15	Fin tip Accel	40	SG 45BE U/C Norm Bend 10.8 in. from bolt
16	SG 5BE Wing main spar WS72	41	SG 46BE U/C Norm Bend 10.8 in. from bolt
17	SG 9BE Wing main spar WS42	42	SG 47BE U/C T'verse Bend 10.8 in. from bolt
18	SG 21SE Wing front spar WS26	43	SG 48BE U/C T'verse Bend 10.8 in. from bolt
19	SG 27BE Wing root rib WS93	44	SG 49SE U/C T'verse shear 11.4 in. from bolt
20	SG 2BE Wing main spar WS112	45	SG 50SE U/C T'verse shear 11.4 in. from bolt
21	SG 4BE Wing rear spar WS112	46	SG 53TE Fuse Long - LH upper
22	SG 6BE Wing main spar WS72	47	SG 54TE Fuse Long - RH upper
23	SG 8BE Wing rear spar WS72	48	Digital L.S.M.
24	SG 10BE Wing main spar WS42	49	Analogue L.S.M.
25	SG 12BE Wing rear spar WS14	50	Phase/event Marker

Analogue Low Speed Multiplexer

- 1 Reserved
- 2 I.A.S.
- 3 Altitude
- 4 Aileron Position
- 5 Elevator Position
- 6 Rudder Position
- 7 Flap Position
- 8 Stag. Temp

Digital Low Speed Multiplexer

- 1 J-Tec Airspeed
- 2 Fuel flow
- 3 Engine RPM
- 4 Descent Rate

Table 3 - Channel Numbers and Associated Transducers  
Configuration 2

Channels Common to  
both Configurations

Channel	Cal. Factor
1	-0.005
16	1.105
17	1.395
18	0.598
19	0.579
20	0.728
21	0.729
22	1.058
23	0.719
24	1.447
25	1.663
26	0.057
27	0.057
28	0.212
29	0.706
30	0.600
31	0.554
32	0.584
33	0.585
34	0.596
35	0.594
36	0.606
37	0.600
46	0.218
47	0.217

Additional Channels  
on Configuration 1

Channel	Cal. Factor
38	0.774
39	0.785
40	1.401
41	1.393
42	0.726
43	0.733
44	0.349
45	0.341

Additional Channels  
on Configuration 2

Channel	Cal. Factor
38	0.575
39	0.583
40	1.397
41	1.388
42	0.724
43	1.047
44	0.342
45	0.341

Table 4 - Transducer Calibration Factors  
for Flight Trials Aircraft



- Notes:  
 BE:— Bending bridge, combining tensile & compressive strains.  
 CE, TE:— Separate compressive or tensile strains.  
 SE:— Shear bridge  
 RA, RB, RC:— Rosette

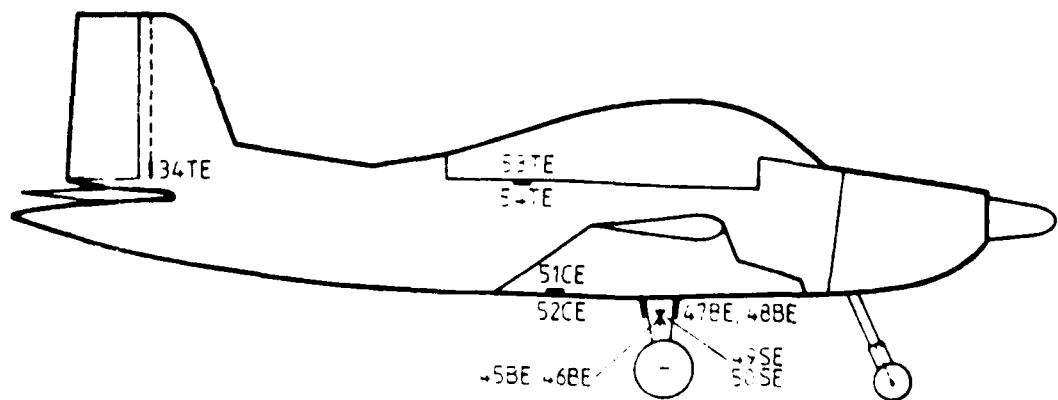
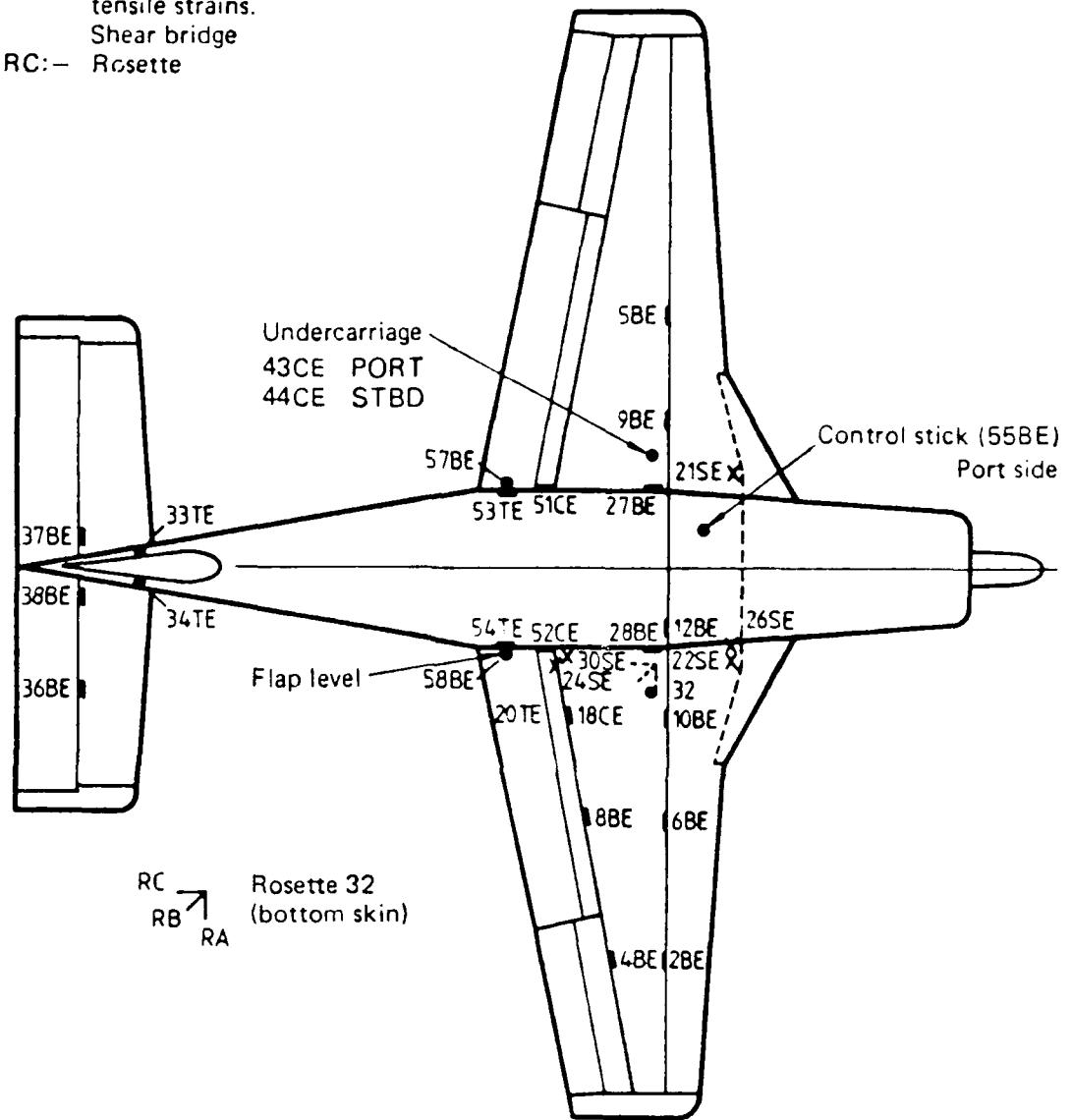


Fig.2 CT4 Airtrainer - Strain gauge positions on flight test aircraft

# APPENDIX

Transcript of Pilots' Voice Records

Flight 1 /04/78 Low level Full Fuel Test Flight

Base: Point Cook

Pilot: F/L T Jones

Weather:

FM: U/S

Fuel Used: unknown

Known Faults Channels 9,10,11,12,13,14 - Not Connected

Fuel Flow - Not Connected

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	40	Ground Run and Calibration for 27/04/80		
9999	2	0	20	Ground Run for 27/04/80		
9999	3	0	25	Ground Run for 27/04/80		
9999	4	0	105	Ground Run for 28/04/80		
9999	5	0	135	Taxiing Right Turn, Left Turn, Right Turn, Left Turn		
9999	6	0	105	Take-off, Climb Out		
9999	7	0	75	2G Left Turn (Too Slow - Near Stall)	2000 85	1800
9999	8	10	70	2G Left Turn	2000 100	90
9999	8	75	150	2G Right Turn	2000 100	100
9999	8	155	220	Increasing Speed 2770 RPM 26"	2000 100	2000 140
9999	8	225	325	2G Left Turn	2000 140	2000 120
9999	8	350	425	2G Right Turn	2000 140	2000 110
9999	8	500	600	3G Pitch Up	2000 135	1800
9999	8	650	750	-1G Pitch Down then 3G pitch Up	2450 90	1900 100
9999	8	755	850	Flat Turn Left through 270 deg	1940 100	1900 100
9999	8	875	975	Flat Turn Right through 270 deg	1900 100	2050 80
9999	8	980	995	Accelerating 26" 2600RPM 85 lb/hr	2000 80	2000 120
9999	8	1000	1050	Max Rate Turn Left	2000 120	100
9999	8	1060	1125	Max Rate Turn Right	2080 120	
9999	8	1150	1225	5.5G Pull Up at 170 Kts	2070 120	1500 110
9999	8	1300	1340	Maximum -ve G -1.5G	2000 120	2000 130
9999	8	1350	1400	-1.5G	2000 130	2000 130
9999	8	1410	1500	Inverted Flight (Power to Idle)	2100 148	
9999	8	1520	1580	Stabilized 0G	2070 130	160
9999	8	1775	1875	3G pull Up to Vertical Climb	4500 85	3900 120
Tape 2						
9999	6	0	330	Return to Base, Circuit and Landing	4000 120	
9999	7	0	40	Ground Run and Calibration		



Flight 7 14/07/78 1225 Full Fuel Mission 1

Base: Edinburgh

Pilot: F/L J Foley

Weather:

FM:

Fuel Used: 32 l.

Known Faults as for flight 1

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	25		
9999	2	0	127		
9999	3	20	60	4000 120	
9999	3	65	100	4050 125	
9999	3	110	160	3930 120	
9999	3	175	215	3800 130	3750 120
9999	3	220	325	3800	3690
9999	3	330	345		
9999	3	350	440	3850 120	
9999	3	450	500	3770 120	
9999	3	500	550	3800 120	
9999	3	600	675		80
9999	3	680	750		80
9999	3	775	820	4500 120	
9999	3	825	875		
9999	3	880	925		
9999	3	930	970	4200 124	4000 120
9999	3	975	1100	4000 120	
9999	3	1115	1150		
9999	3	1150	1225		
9999	3	1230	1325		
9999	3	1330	1715		
				Turning Back to Base, Descent to 1800 ft.	
9999	4	0	475		
9999	4	475	682		
Tape 2					
9999	3	0	360		

Taxiing, Ground Run and Calibration

Flight 8 14/07/78 1400 Full Fuel Mission 2

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1017

FM: U/S

Fuel Used: 63 l.

Known Faults as for flight 1

Calibration File: No

Tape 1				Entry	Exit		
Elapsed	File	Start	Stop	Alt	A/S	Alt	A/S
9999	1	0	9999				
				Ground Run and Calibration			
9999	2	0	410				
				Take-off and Touch and Go			
9999	3	20	75	5000	120		
				Instructor Wing Over Left			
9999	3	90	140				
				Student Wing Over Left			
9999	4	5	125	8000		6500	85
				Instructor Spin Right			
9999	5	25	125	8000		5800	110
				Instructor Spin Left			
9999	6	5	75	8000	100	6300	100
				Student Spin Right			
9999	6	75	120	6500			
				Instructor Nose High U/A			
9999	6	125	175				
				Student Nose High U/A			
9999	6	175	225				
				Student Nose Low U/A			
9999	6	225	270				
				Repositioning Turn Right			
9999	6	275	325				
				Instructor Nose Low U/A			
9999	6	330	380				
				Instructor Vertical U/A			
9999	6	385	425				
				Student Vertical U/A			
9999	6	430	475	5000			
				Instructor Wing Over Left			
9999	6	480	525				
				Student Wing Over Left			
9999	6	530	570				
				Instructor Wing Over Right			
9999	6	575	620				
				Student Wing Over Right			
9999	6	625	1100				
				Instructor General Flying			
9999	6	1100	1677				
				Standard Rejoin, Circuit and Full Stop			

Tape 2

9999	1	0	50	End of Landing			
9999	2	0	30	Ground Run and Calibration			

Flight 9 17/07/78 0930 Full Fuel Mission 3

Base: Edinburgh

Pilot: F/L J Foley

Weather:

FH: U/S

Fuel Used:

Known Faults as for flight 1

Calibration File: No

Tape 1					Entry		Exit	
Elapsed	File	Start	Stop		Alt	A/S	Alt	A/S
9999	1	0	35	Ground Run and Calibration				
9999	2	0	150	Take-off				
9999	2	150	440	Circuit, Touch and Go				
9999	3	25	70	Instructor Wing Over Left	4000	123		
9999	3	75	110	Student Wing Over Right		134		
9999	3	115	175	Instructor Loop from LH Descending Turn	4350	120		
9999	3	180	240	Student Loop from RH Descending Turn	3500	120		
9999	3	270	310	Instructor Wing Over Left	3450	140	3150	125
9999	3	370	420	Instructor Loop from RH Descending Turn			2700	130
9999	3	425	480	Student Loop			2430	127
9999	4	10	65	Student Slow Roll Left	5000	118	4800	115
9999	4	75	125	Instructor Slow Roll Right			4870	115
9999	4	130	180	Instructor Loop from LH Descending Turn			4280	135
9999	4	185	250	Student Loop from RH Descending Turn			3800	
9999	4	260	320	Instructor Idle Power Stall				
9999	4	325	375	Student Idle Power Stall				
9999	4	380	500	Instructor Full Flap Stall	3670	100		
9999	4	505	620	Student Full Flap Stall				90
9999	4	625	675	Instructor Turning Stall Right				
9999	4	680	740	Student Turning Stall Left				
9999	5	25	70	Flick Roll				
9999	5	75	125	Flick Roll				
9999	6	0	110	Practice Forced Landing (Aborted)				
9999	7	0	245	Practice Forced Landing to Full Stop				
9999	8	0	35	Ground Run and Calibration				

Flight 10 28/04/80 Low level Full Fuel Envelope Flight

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1032 Light Southerly

FM: 2804800024003000000403000200 0 1 4 18 3 1 0 0 1.2

Fuel Used: unknown

Known Faults Engine RPM-Intermittent

Channel 14- U/S

Altitude/Airspeed Reversed

Calibration File: No

Tape 1				Entry	Exit	
Elapsed	File	Start	Stop	Alt A/S	Alt A/S	
9999	1	0	40			Ground Run and Calibration for 27/04/80
9999	2	0	20			Ground Run for 27/04/80
9999	3	0	25			Ground Run for 27/04/80
9999	4	0	105			Ground Run for 28/04/80
9999	5	0	135			Taxiing Right Turn, Left Turn, Right Turn, Left Turn
9999	6	0	105			Take-off, Climb Out
9999	7	0	75	2000	85 1800	2G Left Turn (Too Slow - Near Stall)
9999	8	10	70	2000	100 90	2G Left Turn
9999	8	75	150	2000	100 100	2G Right Turn
9999	8	155	220	2000	100 2000 140	Increasing Speed 2770 RPM 26"
9999	8	225	325	2000	140 2000 120	2G Left Turn
9999	8	350	425	2000	140 2000 110	2G Right Turn
9999	8	500	600	2000	135 1800	3G Pitch Up
9999	8	650	750	2450	90 1900 100	-1G Pitch Down then 3G pitch Up
9999	8	755	850	1940	100 1900 100	Flat Turn Left through 270 deg
9999	8	875	975	1900	100 2050 80	Flat Turn Right through 270 deg
9999	8	980	995	2000	80 2000 120	Accelerating 26" 2600RPM 85 lb/hr
9999	8	1000	1050	2000	120 100	Max Rate Turn Left
9999	8	1060	1125	2080	120	Max Rate Turn Right
9999	8	1150	1225	2070	120 1500 110	5.5G Pull Up at 170 Kts
9999	8	1300	1340	2000	120 2000 130	Maximum -ve G -1.5G
9999	8	1350	1400	2000	130 2000 130	-1.5G
9999	8	1410	1500	2100	148	Inverted Flight (Power to Idle)
9999	8	1520	1580	2070	130 160	Stabilized 0G
9999	8	1775	1875	4500	85 3900 120	3G pull Up to Vertical Climb
Tape 2						
9999	6	0	330	4000	120	Return to Base, Circuit and Landing
9999	7	0	40			Ground Run and Calibration

Flight 12 29/04/80 Full Fuel Mission 1

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1030

FM: 2904800024003000000402000200 0 0 0 5 0 0 0 0 1.0

Fuel Used: 40 l.

Known Faults Engine RPM-Intermittent

Channel 45-Zero Signal Level Jumps

Calibration File: No

Tape 1					Entry		Exit	
Elapsed	File	Start	Stop		Alt	A/S	Alt	A/S
9999	1	0	25	Ground Run and Calibration				
9999	2	0	127	Take-off and Climb Out				
9999	3	20	60	Instructor Wing Over Left	4000	120		
9999	3	65	100	Student Wing Over Left	4050	125		
9999	3	110	160	Instructor Wing Over Right	3930	120		
9999	3	175	215	Student Wing Over Right	3800	130	3750	120
9999	3	220	325	Instructor Idle Power Stall	3800		3690	
9999	3	330	345	Repositioning Turn Left				
9999	3	350	440	Student Idle Power Stall	3850	120		
9999	3	450	500	Instructor Wing Over Left	3770	120		
9999	3	500	550	Student Wing Over Right	3800	120		
9999	3	600	675	Instructor Take-off Flap Stall		80		
9999	3	680	750	Student Take-off Flap Stall		80		
9999	3	775	820	Instructor Wing Over Left	4500	120		
9999	3	825	875	Student Wing Over Left				
9999	3	880	925	Instructor Wing Over Right				
9999	3	930	970	Student Wing Over Right	4200	124	4000	120
9999	3	975	1100	Instructor Full Flap Stall	4000	120		
9999	3	1115	1150	Repositioning Turn				
9999	3	1150	1225	Student Full Flap Stall				
9999	3	1230	1325	Instructor Full Flap Stall				
9999	3	1330	1715	Turning Back to Base, Descent to 1800 ft.				
9999	4	0	475	Circuit, Touch and Go				
9999	4	475	682	Circuit, Full Stop				
Tape 2								
9999	3	0	360	Taxiing, Ground Run and Calibration				

Flight 13 30/04/80 1130 Full Fuel Mission 2

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1030

FM: 3004800024003000000402000200 0 3 3 27 12 1 0 0 1.2

Fuel Used: 70 l.

Known Faults Engine RPM-Intermittent

Channel 43- Overloads in Spins

Channel 45- Zero Signal Level Jumps

Calibration File: No

Tape 1				Entry		Exit	
Elapsed	File	Start	Stop	Alt	A/S	Alt	A/S
9999	1	0	9999				
				Ground Run and Calibration			
9999	2	0	410				
				Take-off and Touch and Go			
9999	3	20	75	5000	120		
				Instructor Wing Over Left			
9999	3	90	140				
				Student Wing Over Left			
9999	4	5	125	8000		6500	85
				Instructor Spin Right			
9999	5	25	125	8000		5800	110
				Instructor Spin Left			
9999	6	5	75	8000	100	6300	100
				Student Spin Right			
9999	6	75	120	6500			
				Instructor Nose High U/A			
9999	6	125	175				
				Student Nose High U/A			
9999	6	175	225				
				Student Nose Low U/A			
9999	6	225	270				
				Repositioning Turn Right			
9999	6	275	325				
				Instructor Nose Low U/A			
9999	6	330	380				
				Instructor Vertical U/A			
9999	6	385	425				
				Student Vertical U/A			
9999	6	430	475	5000			
				Instructor Wing Over Left			
9999	6	480	525				
				Student Wing Over Left			
9999	6	530	570				
				Instructor Wing Over Right			
9999	6	575	620				
				Student Wing Over Right			
9999	6	625	1100				
				Instructor General Flying			
9999	6	1100	1677				
				Standard Rejoin, Circuit and Full Stop			
Tape 2							
9999	1	0	50				
				End of Landing			
9999	2	0	30				
				Ground Run and Calibration			

Flight 14 01/05/80 Full Fuel Mission 3

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1032 Light Southerly, 6/8 St. Cu. 5000 ft.

FM: 0105800024003000000402000200 0 0 3 42 12 2 0 0 1.2

Fuel Used: 70 l.

Known Faults Engine RPM-Intermittent

Calibration File: No Gain on Channel 43 changed before Flight

Tape 1					Entry		Exit	
Elapsed	File	Start	Stop		Alt	A/S	Alt	A/S
9999	1	0	35	Ground Run and Calibration				
9999	2	0	150	Take-off				
9999	2	150	440	Circuit, Touch and Go				
9999	3	25	70	Instructor Wing Over Left	4000	123		
9999	3	75	110	Student Wing Over Right		134		
9999	3	115	175	Instructor Loop from LH Descending Turn	4350	120		
9999	3	180	240	Student Loop from RH Descending Turn	3500	120		
9999	3	270	310	Instructor Wing Over Left	3450	140	3150	125
9999	3	370	420	Instructor Loop from RH Descending Turn			2700	130
9999	3	425	480	Student Loop			2430	127
9999	4	10	65	Student Slow Roll Left	5000	118	4800	115
9999	4	75	125	Instructor Slow Roll Right			4870	115
9999	4	130	180	Instructor Loop from LH Descending Turn			4280	135
9999	4	185	250	Student Loop from RH Descending Turn			3800	
9999	4	260	320	Instructor Idle Power Stall				
9999	4	325	375	Student Idle Power Stall				
9999	4	380	500	Instructor Full Flap Stall	3670	100		
9999	4	505	620	Student Full Flap Stall				90
9999	4	625	675	Instructor Turning Stall Right				
9999	4	680	740	Student Turning Stall Left				
9999	5	25	70	Flick Roll				
9999	5	75	125	Flick Roll				
9999	6	0	110	Practice Forced Landing (Aborted)				
9999	7	0	245	Practice Forced Landing to Full Stop				
9999	8	0	35	Ground Run and Calibration				

Flight 15 02/05/80 1215 Full Fuel Mission 4

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1030 Fine Light North Easterly

FM: 0205800024003000000402000200 0 1 2 5 0 0 0 0 1.0

Fuel Used: 40 l.

Known Faults Engine RPM-Intermittent

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	30	Ground Run and Calibration		
9999	2	0	150	Short Take-off		
9999	2	150	360	Circuit, Short Landing		
9999	2	360	490	Normal Take-off		
9999	3	10	75	Loop		
9999	3	80	120	Instructor Slow Roll		
9999	3	125	170	Student Slow Roll		
9999	3	175	225	Instructor Idle Power Stall		
9999	3	230	275	Student Idle Power Stall		
9999	3	275	380	Instructor Land Flap Stall		
9999	3	390	510	Student Land Flap Stall		
9999	3	515	530	Repositioning Turn Left		
9999	3	535	625	Instructor Steep Turn Left only approx. 2G		
9999	3	630	720	Student Steep Turn Right		
9999	4	0	350	Practice forced Landing Touch and Go		
9999	4	355	625	Low Level Circuit Touch and Go		
9999	4	630	900	Flapless Circuit and Full Stop		
9999	5	0	35	Ground Run and Calibration		



Flight 16 05/05/80 Full Fuel Mission 5

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1022 27C Fine Cloud to North 310/10-15

FM: 0505800024003000000402000200 0 0 0 13 0 0 0 0 0.7

Fuel Used: 40 l.

Known Faults Engine RPM-Intermittent

Flaps jammed 3/4 Down After Last Landing

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	35	Ground Run and Calibration		
9999	2	0	185	Take-off		
9999	3	10	80	Wing Over Left	5000	115
9999	3	85	140	Wing Over Right		
9999	3	145	200	Instructor Stall Turn Right from RH Descending Turn		12
			5			
9999	3	205	260	Student Stall Turn Right from RH Desc. Turn		123
9999	3	265	310	Student Stall Turn Left from LH Desc. Turn (flicked out)		
9999	3	315	350	Wing Over Left		
9999	3	350	390	Wing Over Right		
9999	3	395	445	Instructor Stall Turn Left from LH Desc. Turn		
9999	3	450	500	Student Stall Turn Right from RH Desc Turn		130
9999	3	500	1065	Return to Base, Left Initial and Pitch (Rnw 36 - light continuous turbulence		
9999	4	0	40	Ground Run and Calibration		

Flight 17 05/05/80 1545 Full Fuel Mission 6

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1017 19C Calm Overcast 9000 Rain in Area

FM: 0605800024003000000402000100 0 0 0 19 8 2 0 0 0.8

Fuel Used: 40 l. (includes Engine Test Run Before Flight)

Known Faults Engine RPM-Intermittent

Flap Position - U/S

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	40	Ground Run and Calibration	
9999	2	0	125	Take-off	
9999	3	10	70	7000	
				Stall Turn Right from LH Desc. Turn	
9999	3	75	130		
				Stall Turn Left from RH Desc. Turn	
9999	3	200	275		
				Roll Off the Top	
9999	3	280	340		
				Student Roll Off the Top	
9999	3	345	410		
				Idle Power Stall	
9999	3	415	510		
				Land Flap Stall	
9999	3	515	535		
				Repositioning Turn Right	
9999	3	540	590		
				Instructor Barrel Roll Right from LH Desc. Turn	
9999	3	600	645		
				124	
				Student Barrel Roll Left from RH desc. Turn	
9999	3	650	690		126
				Stall Turn Left	
9999	3	700	745		
				Instructor Roll Off the Top	
9999	3	750	800		
				Student Roll Off the Top	
9999	3	810	860		
				Instructor Barrel Roll Left from RH Desc. Turn	
9999	3	865	910		
				Student Barrel Roll Right from LH Desc. Turn	
9999	3	915	950		
				Instructor Break Turn Right	
9999	3	955	995		
				Student Break Turn Left	
9999	3	1000	1060		
				Sustained Max Rate Turn Right	
9999	3	1065	1125	1000	1500
				Climbing	
9999	3	1130	1560	1500	
				Return to Base and Landing	
9999	4	0	10		
				End of Landing	
9999	5	0	45		
				Ground Run and Calibration	

Flight 18 07/05/80 0955 High Level Full Fuel Envelope Flight

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1015 20C 320/15 Rnw 36 Fine St Cu 3000-5000

FM: 0705800024003000000402000100 0 1 2 11 4 2 0 0 1.7

Fuel Used: 130 l. (includes Flight 19)

Known Faults Engine RPM-Intermittent

Flap Position - U/S

Calibration File: No

Tape 1					Entry		Exit	
Elapsed	File	Start	Stop		Alt	A/S	Alt	A/S
9999	1	0	55	Ground Run and Calibration				
9999	2	0	135	Take-off				
9999	3	10	60	2G Left Turn	8000	100		82
9999	3	65	120	2G Right Turn	8000	100		85
9999	3	130	190	Increasing Speed				
9999	3	200	260	2G Left Turn	8000	112		90
9999	3	300	370	2G Right Turn	8000	112		85
9999	3	425	510	3G Pull Up (Stalled with 90 deg bank)	8000	111		
9999	4	10	125	3G Pull Up (Stalled backwards)	10000	100		
9999	4	140	210	-1G at 185 Kts	8000	106	7120	103
9999	5	20	130	Flat Turn Left	8000	110		95
9999	5	140	220	Repositioning Turn Right				
9999	5	230	320	Flat Turn Right	8000	110	7980	79
9999	5	330	430	Repositioning Turn Left				
9999	5	440	510	Max Rate Turn Left (Stalled)			7500	85
9999	6	25	125	8000 Ft 5G (Near Stall - out Left)	10000	100	8000	120
9999	6	140	250	-2.2G then Pull Up			7700	85
9999	7	20	125	Sustained 0G then 2.5G Pull Up	8000	100	6500	
9999	7	130	200	Climbing 85 Kts				
9999	8	20	175	8000 180Kts Vertical then over top	10000	100	7700	
Tape 2								
9999	4	10	120	Spin to Right	10000	95	5700	108
9999	4	125	625	Back to Base 12-15" 1000/Min Landing	5000	120		
9999	5	0	50	Ground Run and Calibration				

Flight 19 07/05/80 Low Level Half Fuel Envelope Flight

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1015 21C 260/10-15 Rnw 36 Fine

FM: 0705800023002000000402000100 0 1 2 11 4 2 0 0 0.7

Fuel Used: 130 l. (includes Flight 18)

Known Faults Engine RPM-Intermittent

Calibration File: No

Tape 1				Entry		Exit	
Elapsed	File	Start	Stop	Alt	A/S	Alt	A/S
9999	1	0	40	Ground Run and Calibration			
9999	2	0	125	Take-off			
9999	3	10	60	2000	100	85	
9999	3	65	125	2000	100	100	
9999	3	130	170	2000	100	2000	132
9999	3	175	240	2000	132		
9999	3	250	325	2000	135	118	
9999	3	330	395	2000	130	2000	120
9999	3	400	440	2000	120	1000	125
9999	3	445	560	Pulling Up into Climb			
9999	3	565	645	Flat Turn Left			
9999	3	650	730	Flat Turn Right			
9999	3	735	825	1950	124	1550	
9999	3	830	940	Climbing to 3100			
9999	3	950	1030	3100		2000	130
9999	3	1030	1100	-2.0G			
9999	3	1105	1220	Climbing Turn Right			
9999	3	1225	1325	Sustained 0G			
9999	3	1330	1540	Straight Climb then Left turn			
9999	3	1550	1640	2000 Vertical (fell out nose forward)			
9999	3	1800	2070	Entry to Circuit (Non-Standard)			
9999	4	0	40	Ground Run and Calibration			

Flight 20 08/05/80 1115 Full Fuel Mission 8 (U/C) Flight

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1023 Calm Runway 36

FM: 0805800024003000000402000100 0 0 0 0 0 0 0 0 1.0

Fuel Used: 90 l. (includes Flight 21)

Known Faults Engine RPM-Intermittent

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	55	Ground Run and Calibration		
9999	2	0	50	Take-off		
9999	2	50	250	Circuit		
9999	2	250	350	Touch and Go Runway 36 (bitumen)		
9999	2	350	525	Circuit		
9999	2	525	565	Touch and Go Runway 04 (grass)		
9999	3	0	25	End of Touch and Go		
9999	3	25	275	Circuit		
9999	3	275	355	Full Stop Landing on 36		
9999	3	355	425	Normal Take-off		
9999	3	425	650	Flapless Circuit		
9999	3	650	750	Flapless Touch and Go on 36		
9999	3	750	925	Flapless Circuit		
9999	3	925	1025	Flapless Touch and Go on 04		
9999	3	1025	1275	Flapless Circuit		
9999	3	1275	1320	Flapless Full Stop Landing on 36		
9999	3	1330	1375	Normal Take-off		
9999	3	1375	1550	Glide Circuit		
Tape 2						
9999	1	0	75	Touch and Go on 36		
9999	1	75	240	Glide Circuit		
9999	1	240	325	Touch and Go on 04		
9999	1	325	525	Glide Circuit		
9999	1	525	610	Full Stop Landing on 36		
9999	1	610	675	Short field Take-off on 36		
9999	1	675	900	Circuit		
9999	1	900	950	Short field Full Stop Landing		
			36			
9999	1	950	1025	Short field Take-off		
9999	1	1025	1175	Circuit		
9999	1	1175	1215	Short field Full Stop Landing on		
			04			
9999	2	0	40	Ground Run and Calibration		

Flight 21 08/05/80 Half Fuel Mission 7A (Instructor Continuation Training Flight)

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1020 22C 210/5-10 Fine

FM: 0805800023002000000402000100 0 7 15 28 11 1 0 0 0.8

Fuel Used: 90 l. (includes Flight 20)

Known Faults Engine RPM-Intermittent

Calibration File: No

Tape 1				Entry		Exit	
Elapsed	File	Start	Stop	Alt	A/S	Alt	A/S
9999	1	0	60				
				Ground Run and Calibration			
9999	2	0	100				
				Take-off			
9999	3	0	45				
				End of Take-off			
9999	4	50	800	10000		1500	
				Continuation Training			
9999	4	805	1010				
				Straight in Approach Runway 22, Landing			
9999	5	0	40				
				Ground Run and Calibration			

Flight 22 14/05/80 Full Fuel Mission 7B (Turbulence Search and Low Flying)

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1027 17C 080/10 Fine High Cloud

FH: 1505800024003000000402000100 0 0 0 0 0 0 0 0 1.3

Fuel Used: unknown

Known Faults Engine RPM-Intermittent

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	50	Ground Run and Calibration		
9999	2	0	120	Take-off and Climb Out		
9999	3	0	1250	Turbulence Light occ. Moderate, Right Turn 2/3 way Through		
9999	4	0	1100	Procedural Low Flying - Flat Country	200	
9999	5	0	410	Normal Circuit		
9999	5	410	475	Landing		
9999	6	0	45	Ground Run and Calibration		

Flight 23 04/06/80 0930 Full Fuel Mission 1

Base: Edinburgh

Pilot: S/L D Knights

Weather: QNH 1022 11C Wind Light and Variable

FH: 0406800024003000000402000200 0 0 0 0 0 0 0 0 1.0

Fuel Used: 40 l.

Known Faults None

Calibration File: No (Altitude and Air Speed back to Correct Channels)

Tape 1					Entry	Exit		
Elapsed	File	Start	Stop		Alt	A/S	Alt	A/S
9999	1	0	30	Ground Run and Calibration				
9999	2	0	110	Take-off to 1000 ft				
9999	3	10	25	Instructor Wing Over Left	5000			
9999	3	25	80	Student Wing Over Left				
9999	3	80	115	Instructor Wing Over Right				
9999	3	115	150	Student Wing Over Right				
9999	3	150	210	Instructor Idle Power Stall				
9999	3	210	260	Student Idle Power Stall				
9999	3	260	295	Instructor Wing Over Left				
9999	3	295	330	Student Wing Over Left				
9999	3	330	375	Student Wing Over Right				
9999	3	375	470	Instructor Take-off Flap Stall				
9999	3	470	530	Student Take-off Flap Stall				
9999	3	530	590	Climb				
9999	3	590	612	Instructor Wing Over Left	6000			
9999	3	612	635	Student Wing Over Left				
9999	3	635	660	Instructor Wing Over Right				
9999	3	660	700	Student Wing Over Right				
9999	3	700	790	Instructor Land Flap Stall				
9999	3	790	875	Student land Flap Stall				
9999	3	875	1000	Instructor Land Flap Stall				
9999	3	1000	1300	Standard Rejoin and Circuit	5500			
9999	3	1300	1400	Touch and Go				
9999	3	1400	1550	Normal Circuit				
9999	3	1550	1680	Full Stop Landing				
9999	4	0	30	Ground Run and Calibration				



Flight 24 04/06/80 1430 Full Fuel Mission 3

Base: Edinburgh

Pilot: S/L D Knights

Weather: QNH 1022 Wind 5 kts S.W. 3/8 Cloud 3000

FH: 0406800024003000000402000200 0 0 3 13 2 0 0 0 1.0

Fuel Used: 50 l.

Known Faults None

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	25	Ground Run and Calibration		
9999	2	0	50	IF Take-off		
9999	2	50	225	Circuit	100	
9999	2	225	300	Flapless Touch and Go		
9999	2	300	360	Climb Out		
9999	3	10	30	Instructor Wing Over Left		
9999	3	30	60	Student Wing Over Right		
9999	3	65	120	Instructor Loop		
9999	3	120	200	Climb		
9999	3	200	250	Student Loop		
9999	4	10	30	Instructor Wing Over		
9999	4	30	50	Student Wing Over		
9999	4	50	100	Instructor Loop		
9999	4	100	170	Student Loop		
9999	4	170	240	Student Slow Roll	3000	125
9999	4	240	290	Instructor Slow Roll Left		
9999	4	290	360	Instructor Slow Roll Right		
9999	5	0	60	Instructor Loop	3000	140
9999	5	60	140	Student Loop		
9999	5	140	220	Instructor Idle Power Stall		
9999	5	220	290	Student Idle Power Stall		
9999	5	300	375	Instructor Land Flap Stall		
9999	5	375	480	Student Land Flap Stall		
9999	5	520	560	Instructor Turning Stall		
9999	5	560	585	Student Turning Stall Right		
9999	5	565	620	Student Turning Stall Left		
9999	6	0	210	Return to Base, Circuit and Landing		
9999	7	0	30	Ground Run and Calibration		
9999	8	0	65	Bad File		

Flight 26 05/06/80 1445 Full Fuel Mission 4

Base: Edinburgh

Pilot: S/L D Knights

Weather: QNH 1021 Overcast Cu 3000

FM: 0506800024003000000402000400 0 0 2 6 0 0 0 0 1.0

Fuel Used: 45 l.

Known Faults None

Calibration File: No

Tape 1						Entry	Exit		
Elapsed	File	Start	Stop			Alt	A/S	Alt	A/S
9999	1	0	20	Ground Run and Calibration					
9999	2	0	50	Start field Take-off					
9999	2	50	200	Circuit					
9999	2	200	275	Aborted Landing (Runway Obstructed)					
9999	3	0	120	Full Stop Landing					
9999	3	120	230	Normal Take-off					
9999	4	0	50	Instructor Turning Stall Left (Aborted - Stalled)					
9999	5	0	70	Instructor Turning Stall Left					
9999	5	70	105	Student Turning Stall Right					
9999	6	5	60	Loop?					
9999	6	60	115	Instructor Slow Roll Left					
9999	6	115	165	Student Slow Roll Right					
9999	6	165	225	Instructor Idle Power Stall					
9999	6	225	280	Student Idle Power Stall					
9999	6	280	360	Instructor Land Flap Stall					
9999	6	360	455	Student Land Flap Stall					
9999	7	0	150	Practice Forced Landing					
9999	7	150	200	Touch and Go					
9999	7	200	325	Low Level Circuit					
9999	7	325	400	Touch and Go					
9999	7	400	550	Circuit					
9999	7	550	675	Full Stop Landing on 22. Ground Run and Calibration					

Flight 27 06/06/80 0915 Full Fuel Mission 6

Base: Edinburgh

Pilot: S/L D Knights

Weather: QNH 1019 Wind 040/5 2/8 Cloud 3000-6000

FM: 0606800024003000000402000100 0 0 0 18 7 0 0 0 0.7

Fuel Used: 60 l. (includes Flight 28)

Known Faults None

Calibration File: No

Tape 1					
Elapsed	File	Start	Stop	Entry	Exit
				Alt A/S	Alt A/S
9999	1	0	20		
9999	2	0	130		
9999	3	10	46		
				5000	
9999	3	46	68		
9999	3	68	110		
9999	3	110	140		
9999	4	0	50		
9999	4	50	110		
9999	4	110	175		
9999	4	175	220		
				4000	
9999	4	220	260		
9999	4	260	310		
9999	4	310	350		
9999	4	350	390		
9999	4	390	430		
9999	4	430	470		
9999	4	470	510		
9999	4	510	530		
9999	4	530	550		
9999	4	550	620		
9999	5	0	150		
9999	5	150	250		
9999	5	250	360		

Flight 28 06/06/80 1140 Full Fuel Mission 5

Base: Edinburgh

Pilot: S/L D Knights

Weather: QNH 1018 Wind 010/8 Overcast High Level Cloud

FH: 0606800024003000000402000100 0 0 0 7 0 0 0 0 0.5

Fuel Used: 60 l. (includes Flight 27)

Known Faults None

Calibration File: No

Tape 1				Entry	Exit	
Elapsed	File	Start	Stop	Alt A/S	Alt A/S	
9999	1	0	25			Ground Run and Calibration
9999	2	0	145			Take-off and Climb Out to 1000
9999	3	5	20			Student Wing Over Right
9999	3	20	40			Wing Over Left
9999	3	40	75			Instructor Stall Turn Right
9999	3	75	95			Instructor Stall Turn Right
9999	3	95	115			Student Stall Turn Left
9999	3	115	140			Wing Over Left
9999	3	140	175			Wing Over Right
9999	3	180	235			Climb?
9999	3	235	275			Instructor Stall Turn Left
9999	3	275	295			Student Stall Turn Right
9999	3	295	325			Wing Over Left
9999	3	325	390			Return to Base
9999	4	0	200			Initial and Pitch, Normal Circuit
9999	4	200	350			Full Stop Landing
9999	4	350	425			Taxiing on Grass Runway
9999	4	425	460			Ground Run and Calibration

Flight 29 09/06/80 1000 Full Fuel Mission 8 (Undercarriage)

Base: Edinburgh

Pilot: S/L D Knights

Weather: QNH ? 15C Wind 360/5 Clear

FM: 0906800024003000000402001200 0 0 0 0 0 0 0 0 0 1.0

Fuel Used: unknown

Known Faults Channel 44- Overloads

Channel 45- Overloads

Calibration File: No

Tape 1				Entry	Exit	
Elapsed	File	Start	Stop	Alt A/S	Alt A/S	
9999	1	0	25			Ground Run and Calibration
9999	2	0	75			Normal Take-off
9999	2	75	225			Circuit
9999	2	225	300			Normal Full Stop Landing
9999	2	300	375			Normal Take-off
9999	2	375	525			Circuit
9999	2	525	600			Normal Touch and Go
9999	3	0	50			Normal Touch and Go
9999	4	0	47			Flapless Full Stop
9999	4	47	145			Normal Take-off
9999	5	0	35			Flapless Touch and Go
9999	6	0	45			Flapless Touch and Go
9999	7	0	60			Practice Forced Landing Touch and Go
9999	8	0	37			Practice Forced Landing Touch and Go
9999	9	0	45			Practice Forced Landing Full Stop
9999	9	45	80			Normal Take-off
9999	10	0	60			Short field Touch and Go
9999	11	0	40			Short field Full Stop
9999	11	40	82			Take-off
9999	12	0	65			Short field Full Stop
9999	12	65	150			Taxiing
9999	12	150	165			Ground Run and Calibration

Flight 30 10/06/80 0940 Half Fuel Mission 1

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1021 12C Wind 210/10-15 2/8 St Cu 1000-2000

FM: 1006800022002000000402000200 0 0 1 9 0 0 0 0 0.7

Fuel Used: 40 l.

Known Faults True Air Speed- U/S

Engine RPM- U/S

Engine Fuel Flow- U/S

Calibration File: No

Tape 1

Elapsed File Start Stop

Entry Exit  
Alt A/S Alt A/S

9999	1	0	20	Ground Run
9999	2	0	110	Take-off
9999	3	0	20	Instructor Wing Over Left
9999	3	20	50	Student Wing Over Left
9999	3	50	75	Instructor Wing Over Right
9999	3	75	100	Student Wing Over Right
9999	3	100	125	Instructor Wing Over Left
9999	3	125	160	Instructor Idle Power Stall
9999	3	160	185	Student Wing Over Right
9999	3	185	225	Student Idle Power Stall
9999	3	260	290	Instructor Wing Over Left
9999	3	290	325	Instructor Take-off Flap Stall
9999	3	325	355	Student Wing Over Right
9999	3	355	390	Student Take-off Flap Stall
9999	4	0	27	Instructor Wing Over Left
9999	4	27	38	Student Wing Over Left
9999	4	38	55	Instructor Wing Over Right
9999	4	55	75	Student Wing Over Right
9999	4	75	100	Instructor Wing Over
9999	4	100	160	Instructor Full Flap Stall
9999	4	160	190	Student Wing Over
9999	4	190	245	Student Full Flap Stall
9999	5	0	160	Instructor Continuation Training
9999	6	0	200	3 Mile Initial
9999	6	200	325	Touch and Go
9999	6	325	400	Circuit
9999	6	400	525	Full Stop Landing
9999	6	525	550	Taxiing on Grass
9999	32	0	135	Taxiing on Taxiway, Ground run and calibration

Flight 31 10/06/80 1230 Half Fuel Mission 2

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1021 14C Wind 240/10 3/8 Cu 3000-7000

FM: 1006800022002000000402000200 0 0 0 18 5 0 0 0 0.9

Fuel Used: 50 l.

Known Faults Channel 43- Overload in 1 Spin

Calibration File: No

Tape 1

Elapsed	File	Start	Stop		Entry		Exit	
					Alt	A/S	Alt	A/S
9999	1	0	25					Ground Run and Calibration
9999	2	0	120					Take-off
9999	3	10	35					Instructor Wing Over Left
9999	3	35	50					Student Wing Over Left
9999	3	50	120					Instructor Spin Left
9999	4	0	20					Student Wing Over
9999	4	20	60					Instructor Spin Right
9999	5	0	20					Student Wing Over Left
9999	5	20	65					Student Spin Right
9999	6	5	60					Instructor Vertical U/A
9999	6	60	115					Student Vertical U/A
9999	6	115	150					Instructor Nose Low U/A
9999	6	150	190					Student Nose Low U/A
9999	6	190	230					Instructor Nose High U/A
9999	6	230	265					Student Nose High U/A
9999	7	5	30					Instructor Wing Over Left
9999	7	30	55					Student Wing Over Left
9999	7	55	75					Instructor Wing Over Right
9999	7	75	100					Student Wing Over Right
9999	8	0	150					Return to Base
9999	8	150	275					Touch and Go
9999	8	275	350					Low Level Circuit
9999	8	350	570					Full Stop Landing
9999	8	570	585					Ground Run and Calibration

Flight 32 11/06/80 1500 Half Fuel Mission 3

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1025 Wind 250/5 Clear

FM: 1106800022002000000402000300 0 0 2 24 7 0 0 0 0.8

Fuel Used: 40 l.

Known Faults None

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	5	Ground Run		
9999	1	5	150	Take-off		
9999	2	0	50	Flapless Circuit		
9999	2	50	175	Flapless Touch and Go		
9999	2	175	215	Climb Out		
9999	3	0	25	Instructor Wing Over Left		
9999	3	25	45	Student Wing Over Right		
9999	3	45	65	Instructor Loop		
9999	3	65	100	Instructor Loop		
9999	3	100	160	Student Loop		
9999	3	165	187	Instructor Wing Over Left		
9999	3	187	210	Student Wing Over Right		
9999	3	210	245	Instructor Loop		
9999	3	245	300	Student Loop		
9999	3	300	340	Student Slow Roll Left		
9999	3	340	375	Instructor Slow Roll Right		
9999	3	375	420	Climbing		
9999	3	420	435	Instructor Wing Over		
9999	3	435	462	Instructor Loop		
9999	3	462	487	Student Wing Over Left		
9999	3	487	512	Student Loop		
9999	4	0	20	Instructor Wing Over Right		
9999	4	20	35	Instructor Wing Over Left		
9999	4	35	75	Instructor Idle Power Stall		
9999	4	75	90	Student Wing Over Left		
9999	4	90	130	Student Idle Power Stall		
9999	4	130	160	Instructor Wing Over Left		
9999	4	160	200	Instructor Take-off Flap Stall		
9999	4	200	225	Student Wing Over Left		
9999	4	225	300	Student Take-off Flap Stall		
9999	4	300	330	Instructor Turning Stall		
9999	4	330	370	Student Turning Stall		
9999	5	0	125	Continuation Training		
9999	6	0	165	Short field Landing from High Key		
9999	6	165	200	Take-off		
9999	6	200	350	Practice Forced Landing, Touch and Go		
9999	6	350	500	Glide Circuit		
9999	6	500	575	Full Stop Landing		
9999	6	575	610	Ground Run		



Flight 33 12/06/80 0915 Half Fuel Mission 4

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1029 Wind Calm 5/8 St Cu 2500-3500

FM: 1206800022002000000402000400 0 0 3 16 8 1 0 0 0.8

Fuel Used: 40 l.

Known Faults None

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	25		
9999	1	25	75		
9999	1	75	225		
9999	1	225	310		
9999	1	310	425		
9999	2	10	70		130
9999	2	70	125		
9999	2	125	150		
9999	2	150	180		
9999	2	180	225		
9999	2	226	265		
9999	2	265	290		
9999	2	290	330		
9999	2	330	360		
9999	2	360	400		
9999	2	400	440		
9999	2	440	500		
9999	2	500	525		
9999	2	525	570		
9999	3	0	130		
9999	4	0	105		
9999	5	0	195		
9999	5	195	240		
9999	5	240	300		
9999	5	300	400		
9999	5	400	550		
9999	5	550	650		
9999	5	650	665		

Flight 34 12/06/80 1500 Half Fuel Mission 5

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1021 Wind 260/7 5/8 Cu 2500-7000

FM: 1206800022002000000402000200 0 0 1 12 2 0 0 0 0.7

Fuel Used: 20 l.

Known Faults None

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	25	Ground Run	
9999	1	25	185	Take-off to 1000 ft	
9999	2	0	20	Instructor Wing Over Left	
9999	2	20	35	Instructor Wing Over Right	
9999	2	35	65	Instructor Stall Turn Right	
9999	2	65	85	Instructor Wing Over Left	
9999	2	85	115	Instructor Stall Turn Right	
9999	2	115	140	Student Wing Over Left	
9999	2	140	175	Student Stall Turn Left	
9999	2	175	200	Wing Over Left	
9999	2	200	225	Instructor Wing Over Right	
9999	2	225	245	Instructor Stall Turn Left	
9999	2	245	268	Student Wing Over Right	
9999	2	268	300	Student Stall Turn Right (Out like a Brick)	
9999	2	300	475	Aerobatics	
9999	32	475	650	Right Initial for 18 2600RPM 26"MP	2600 132
9999	2	650	750	Touch and Go	
9999	2	750	900	Circuit	
9999	2	900	1025	Full Stop Landing	
9999	2	1025	1290	Taxiing in	
9999	3	0	10	Ground Run (Battery Cart)	

Flight J5 19/06/80 High Speed Sample Rate Flight 1

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1031 16C Wind Calm Runway 36

FH: 1906800024003000000402000200 0 2 6 26 5 0 0 0 1.0

Fuel Used: unknown

Known Faults None

Calibration File: No

Tape 1

Elapsed	File	Start	Stop		Entry Alt A/S	Exit Alt A/S
9999	1	0	65	Take-off to 500 ft		
9999	2	0	55	30 deg Left Turn	2000	
9999	2	55	100	26 Steep Turn Left		
9999	2	100	162	Hard Steep Turn (to Buffet)		
9999	3	5	50	Wing Over Left	5000	
9999	3	50	95	Loop		
9999	3	95	137	Slow Roll Left		
9999	3	137	180	Barrel Roll from LH Desc Turn (not very good)		
9999	3	180	210	Barrel Roll from RH Desc Turn		
9999	3	210	255	Stall Turn Left		
9999	4	2	62	Fast Spin Right 10000		
9999	4	62	130	Idle Power Stall (Held in Stall)		
9999	4	130	262	Take-off Flap Stall (Held in Stall)		
9999	4	262	362	Full Flap Stall (Held in Stall)		
9999	4	362	407	Nose High U/A		
9999	4	407	437	Nose Low U/A		
9999	4	437	462	Vertical U/A		
9999	4	462	482	Increase to Max Speed		180
9999	4	482	680	Instructor Continuation Training		
9999	5	0	82	Right Initial Runway 18 (in Mist)	900	

Tape 2

9999	1	0	125	Touch and Go		
9999	1	125	200	Circuit		
9999	1	200	330	Short field Landing (not much Braking)		
9999	2	0	25	Ground Run and Calibration		

Flight 36 19/06/80

Half Fuel Mission 8 (Undercarriage)

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1030 14C Wind Calm 3/8 Cloud 2000-4500

FM: 1906800022002000000402001200 0 0 0 0 0 0 0 0 1.2

Fuel Used: 35 l.

Known Faults None

Calibration File: No

Tape 1						
Elapsed	File	Start	Stop	Entry	Exit	
				Alt A/S	Alt A/S	
9999	1	0	20			Ground Run
9999	2	0	77			Normal Take-off
9999	3	0	200			Instructor Touch and Go
9999	3	200	325			Circuit
9999	3	325	450			Student Touch and Go (1.5G)
9999	4	0	85			Instructor Touch and Go on Grass
9999	5	0	115			Flapless Touch and Go on Grass
9999	6	0	110			Flapless Touch and Go on Grass
9999	7	0	120			Flapless Touch and Go on Grass
9999	8	0	85			Practice Forced Landing Touch and Go
9999	9	0	70			Practice forced Landing Touch and Go
9999	10	0	55			Practice Forced Landing Touch and Go
9999	11	0	75			Short field Full Stop
9999	11	75	120			Short Take-off
9999	12	0	75			Short field Full Stop
9999	12	75	120			Short Take-off
9999	13	0	75			Short field Full Stop
9999	13	75	290			Taxiing (4 by Left,Right - 1 on Grass)
9999	13	290	310			Ground Run

Flight 37 20/06/80 Half Fuel Mission 6

Base: Edinburgh

Pilot: F/L J Foley

Weather: QNH 1032 14C Calm No significant Cloud

FM: 2006800022002000000402000100 0 0 0 15 8 0 0 0 0.6

Fuel Used: unknown

Known Faults Stbd Forward Accelerometer- U/S

Calibration File: No

Tape 1				Entry	Exit	
Elapsed	File	Start	Stop	Alt A/S	Alt A/S	
9999	1	0	20			Ground Run and Calibration
9999	2	0	90			Take-off
9999	3	0	35			Stall Turn
9999	3	35	55			Stall Turn Left
9999	3	55	85			Instructor Roll Off the Top
9999	3	85	101			Student Student Roll Off the Top
9999	3	101	110			Wing Over
9999	3	110	140			Idle Power Stall
9999	3	140	160			Wing Over Left
9999	3	160	200			Land Flap Stall
9999	3	200	230			Instructor Barrel Roll Right
9999	3	230	245			Student Barrel Roll Left
9999	3	245	262			Wing Over?
9999	3	262	285			Stall Turn
9999	3	285	315			Instructor Roll Off the Top
9999	3	315	345			Student Roll Off the Top
9999	3	345	360			Instructor Barrel Roll Left
9999	3	360	390			Wing Over Right
9999	3	390	460			Climbing
9999	3	460	485			Student Barrel Roll Right
9999	3	485	512			Instructor Break Turn Right
9999	3	512	550			Student Break Turn Left
9999	3	550	580			Sustained Max Rate Turn
9999	4	0	170			Visual Approach and Landing on 22(grass)
9999	4	170	350			Taxiing on Grass then Taxiway
9999	4	350	370			Ground Run and Calibration

Flight 38 15/07/80 1420 High Speed Sample Rate Flight 2

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1021 16C Wind 300/10 Runway 36

FH: 1507800024003000000402000300 0 6 8 23 10 2 0 0 1.0

Fuel Used: 80 l.

Known Faults None

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	30	Ground Run and Calibration		
9999	2	0	60	Take-off to 500 ft		
9999	3	0	62	30 deg Left Turn	2000	120
9999	3	62	112	Steep Turn Left		
9999	3	112	162	Hard Steep Turn Left (to Buffet)		
9999	3	162	187	Accelerating		
9999	3	187	230	Wing Over Left		
9999	3	230	287	Loop		
9999	3	287	337	Repositioning Right Turn		
9999	3	337	375	Slow Roll Left		
9999	3	387	425	Barrel Roll from LH Desc Turn		
9999	3	425	475	Stall Turn Left		
9999	4	25	100	Spin Left	10000	
9999	4	137	225	Idle Power Stall (Held in Stall)		
9999	4	225	375	Take-off Flap Stall (Held in Stall)		
9999	4	375	475	Full Flap Stall (Held in Stall)		
9999	4	475	515	Nose High U/A		
9999	4	515	550	Nose Low U/A		
9999	4	550	587	Getting Out of Cloud		
9999	4	587	637	Vertical U/A		
9999	4	637	650	Increase to Max Speed		180
9999	4	650	672	5G Pitch Up		
Tape 2						
9999	1	0	27	End 5G Pitch Up with Vertical U/A		
9999	2	0	255	Touch and Go on 36		
9999	3	0	125	Short field Full Stop Landing		
9999	4	0	45	Ground Run and Calibration		

Flight 39 17/07/80 1030 Airframe Overspeed Flight 1

Base: Edinburgh

Pilot: F/L T Jones

Weather:

FM: 1707800024003000000402000500 0 0 0 3 3 3 1 0 1.2

Fuel Used: unknown

Known Faults Voice Recorder Failed

Calibration File: No

Tape 1				Entry	Exit	
Elapsed	File	Start	Stop	Alt A/S	Alt A/S	
9999	1	0	40			Ground Run and Calibration
9999	2	0	150			Take-off and Climb Out
9999	3	0	100			Take-off Flap Overspeed
9999	3	100	260			Full Flap Overspeed
9999	4	0	70			RH Spiral Dive, Full Left Aileron
9999	4	70	125			LH Spiral Dive, Full Right Aileron
9999	5	0	90			Vertical Dive, Maximum G Pull Up
9999	6	0	150			Maximum Speed Run?
9999	6	150	300			Landing
9999	7	0	30			Ground Run and Calibration

Flight 40 17/07/80 1515 Half Fuel Mission 1

Base: Edinburgh

Pilot: F/L W Spears

Weather: QNH 1020 Wind 250/15

FM: 1707800024002000000401000200 0 0 1 1 0 0 0 0 0.8

Fuel Used: 70 l.

Known Faults None

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	27	Ground Run and Calibration		
9999	2	0	72	Take-off and Climb Out		
9999	3	5	35	Instructor Wing Over Left		
9999	3	35	62	Student Wing Over Left		
9999	3	62	100	Instructor Wing Over Right		
9999	3	100	130	Student Wing Over Right		
9999	4	2	37	Instructor Idle Power Stall		
9999	4	37	85	Student Idle Power Stall		
9999	5	2	30	Instructor Wing Over Left		
9999	5	30	60	Student Wing Over Right		
9999	6	0	50	Instructor Take-off Flap Stall		
9999	7	0	45	Student Take-off Flap Stall		
9999	8	0	25	Instructor Wing Over Left		
9999	8	25	60	Student Wing Over Left		
9999	8	60	90	Instructor Wing Over Right		
9999	8	90	125	Student Wing Over Right		
9999	9	0	22	Instructor Full Flap Stall		
9999	10	0	52	Student Full Flap Stall		
9999	11	0	105	Instructor Full Flap Stall		
9999	12	0	427	Return to Base	4000	100
Tape 2						
9999	1	0	62	Touch and Go?		
9999	2	0	32	Ground Run and Calibration		



Flight 41 18/07/80 1030 Half Fuel Mission 2

Base: Edinburgh

Pilot: F/L W Spears

Weather: QNH 1027 Wind 140/5-10 Mild Turbulence

FH: 1807800024002000000401000200 0 0 2 8 2 0 0 0 0.8

Fuel Used: 25 l.

Known Faults None

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	27		
9999	2	0	25		
9999	2	25	200		
9999	2	200	312		
9999	3	0	30		
9999	3	30	62		
9999	3	62	112		
9999	4	0	50		
9999	5	0	45		
9999	5	45	72		
9999	5	72	95		
9999	5	95	125		
9999	5	125	162		
9999	6	0	50		
9999	6	50	100		
9999	6	100	130		
9999	6	130	160		
9999	6	160	185		
9999	6	185	210		
9999	7	0	125	1000	130
9999	7	125	205		
9999	8	0	30		

Flight 42 18/07/80 Half Fuel Mission 3

Base: Edinburgh

Pilot: F/L W Spears

Weather: QNH 1026 Wind 270/5-10

FM: 1807800024002000000401000200 0 0 2 13 1 0 0 0 0.9

Fuel Used: 20 l.

Known Faults None

Calibration File: No

Tape 1

Elapsed	File	Start	Stop		Entry		Exit	
					Alt	A/S	Alt	A/S
9999	1	0	25	Ground Run and Calibration				
9999	2	0	50	IF Take-off				
9999	2	50	200	Flapless Circuit				
9999	2	200	303	Flapless Touch and Go				
9999	3	0	35	Instructor Wing Over Left				
9999	3	35	65	Student Wing Over Right				
9999	4	0	30	Instructor Loop				
9999	4	30	60	Student Loop				
9999	5	0	30	Instructor Wing Over Left				
9999	5	30	60	Student Wing Over Right				
9999	5	60	85	Instructor Loop				
9999	5	85	107	Student Loop				
9999	6	0	37	Student Slow Roll Left				
9999	7	0	32	Instructor Slow Roll Right				
9999	8	0	30	Instructor Loop				
9999	8	30	60	Student Loop				
9999	9	0	35	Instructor Idle Power Stall				
9999	9	35	75	Student Idle Power Stall				
9999	10	0	85	Instructor Land Flap Stall				
9999	11	0	90	Student Land Flap Stall				
9999	12	0	37	Instructor Turning Stall Right				
9999	12	37	66	Student Turning Stall Left				
9999	13	0	112	Practice Forced Landing				
9999	13	112	155	Full Stop Landing				
9999	14	0	27	Ground Run and Calibration				

Flight 43 21/07/80 Half Fuel Mission 4

Base: Edinburgh

Pilot: F/L W Spears

Weather: QNH 1022 13C Wind South-Westerly 10 kts.

FM: 2107800024002000000401000200 0 0 2 6 0 0 0 0 0.8

Fuel Used: 35 l.

Known Faults None

Calibration File: No

Tape 1					Entry	Exit
Elapsed	File	Start	Stop		Alt A/S	Alt A/S
9999	1	0	25	Ground Run and Calibration		
9999	2	0	145	Short Take-off		
9999	3	0	87	Short field Landing		
9999	3	87	160	Normal Take-off		
9999	4	0	42	Instructor Steep Turn Left		
9999	4	42	76	Student Steep Turn Right		
9999	5	0	27	Loop		
9999	5	27	60	Instructor Slow Roll Left		
9999	5	60	87	Student Slow Roll Right		
9999	6	0	45	Instructor Idle Power Stall		
9999	6	45	92	Student Idle Power Stall		
9999	7	0	85	Instructor Full Flap Stall		
9999	7	85	155	Student Full Flap Stall		
9999	8	0	125	Practice Forced Landing		
9999	8	125	225	Touch and Go		
9999	8	225	337	Low Level Circuit		
9999	8	337	437	Touch and Go		
9999	9	0	75	Flapless Circuit	800	100
Tape 2						
9999	3	0	50	End of Flapless Circuit		
9999	3	50	120	Flapless Full Stop Landing		
9999	4	0	30	Ground Run and Calibration		

Flight 44 22/07/80 0930 Half Fuel Mission 5

Base: Edinburgh

Pilot: F/L W Spears

Weather: QNH 1028 13C Calm Runway 36

FM: 22078000240002000000401000200 0 0 4 24 3 0 0 0 0.7

Fuel Used: 20 l.

Known Faults None

Calibration File: No

Tape 1				Entry		Exit	
Elapsed	File	Start	Stop	Alt	A/S	Alt	A/S
9999	1	0	27				
				Ground Run and Calibration			
9999	2	0	82				
				Take-off			
9999	3	0	27			120	
				Instructor Wing Over Left			
9999	3	27	55				
				Student Wing Over Right			
9999	3	55	80			130	
				Instructor Stall Turn Right (Fell Out)			
9999	3	80	105				
				Instructor Stall Turn Right			
9999	3	105	130			130	
				Instructor Stall Turn Right			
9999	3	130	160				
				Student Stall Turn Left			
9999	3	160	187				
				Instructor Wing Over Left			
9999	3	187	212				
				Student Wing Over Right			
9999	3	212	237				
				Instructor Stall Turn Left			
9999	3	237	267				
				Student Stall Turn Right			
9999	4	0	100	2000	140		
				Return to Base			
9999	4	100	225				
				Initial and Pitch?			
9999	4	225	316				
				Full Stop Landing			
9999	5	0	25				
				Ground Run and Calibration			

Flight 45 22/07/80 1400 Half Fuel Mission 6

Base: Edinburgh

Pilot: F/L W Spears

Weather: QNH 1028 13C Calm Runway 36

FH: 220780002400020000004010200 0 0 0 20 4 0 0 0 0.8

Fuel Used: 40 l.

Known Faults None

Calibration File: No

Tape 1

Elapsed File Start Stop

Entry Exit  
Alt A/S Alt A/S

9999	1	0	25	Ground Run and Calibration		
9999	2	0	62	Take-off		
9999	3	0	30	Stall Turn Right		
9999	3	30	55	Stall Turn Left		
9999	3	55	90	Instructor Roll Off the Top		
9999	3	90	125	Student Roll Off the Top		
9999	3	125	170	Idle Power Stall		
9999	3	170	245	Land Flap Stall		
9999	4	0	30	Instructor Barrel Roll Right		
9999	4	30	50	Student Barrel Roll Left		
9999	5	0	27	Stall Turn		
9999	6	0	30	Instructor Roll Off the Top		
9999	7	0	25	Student Roll Off the Top		
9999	8	0	25	Instructor Barrel Roll Left		
9999	8	25	50	Student Barrel Roll Right		
9999	10	0	15	Instructor Break Turn		
9999	11	0	20	Student Break Turn		
9999	13	0	58	Sustained Max Rate Turn		
9999	14	0	125	Return to Base		
9999	14	125	230	Full Stop Landing		
9999	15	0	25	Ground Run and Calibration		

Flight 46 23/07/80 Half Fuel Mission 8 (Undercarriage)

Base: Edinburgh

Pilot: F/L W Spears

Weather: QNH 1029 9C Wind Light and Variable Runway 36

FM: 2407800024002000000401001300 0 0 0 0 0 0 0 0 1.0

Fuel Used: Unknown

Known Faults None

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	40		
				Normal Take-off 28"MP 2750RPM	
9999	2	0	95		
				Normal Touch and Go on 36	
9999	3	0	85		
				Flapless Touch and Go	
9999	4	0	70		
				Practice Forced Landing Touch and Go	
9999	5	0	95		
				Touch and Go	
9999	6	0	30		
				Taxiing on Grass	
9999	6	30	75		
				Normal Take-off on Grass	
9999	7	0	100		
				Touch and Go on Grass	
9999	8	0	60		
				Flapless Touch and Go on Grass	
9999	9	0	87		
				Practice Forced Landing Full Stop	
9999	9	87	150		
				Short field Full Stop on Grass	
9999	9	150	225		
				Circuit	
9999	9	225	287		
				Short field Full Stop on Grass	
9999	9	287	325		
				Normal Take-off on Grass	
9999	10	0	100		
				Circuit	
9999	10	100	190		
				Normal Touch and Go	
Tape 2					
9999	5	0	50		
				Circuit	
9999	5	50	120		
				Flapless Full Stop On Grass	
9999	6	0	108		
				Practice Forced Landing Touch and Go	
9999	7	0	46		
				End of Touch and Go	
9999	8	0	50		
				Circuit	
9999	8	50	150		
				Short field Full Stop	
9999	8	150	190		
				Taxiing	
9999	9	0	30		
				Ground Run and Calibration	

Flight 47 24/07/80 Airframe Overspeed Flight 2

Base: Edinburgh

Pilot: F/L T Jones

Weather: Fine, Wind Light and Variable

FM: 2407800023002000000401000500 0 0 0 5 4 3 1 0 1.2

Fuel Used: unknown

Known Faults None

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	45		
9999	2	0	70		
9999	3	25	100	7000	120
9999	3	100	220		
9999	3	225	300		
9999	3	300	350		
9999	4	20	100		
9999	5	0	125		
9999	7	0	37		

Flight 48 05/08/80 Half Fuel Heavy Landing Fight

Base: Edinburgh

Pilot: F/L T Jones

Weather: QNH 1031 Wind 040/5-10 Runway 04 (Bitumen Threshold Grass Runway)

FM:

Fuel Used: unknown

Known Faults None

Calibration File: No

Tape 1				Entry	Exit
Elapsed	File	Start	Stop	Alt A/S	Alt A/S
9999	1	0	65		
				Ground Run and Calibration	
9999	2	0	75		
				Normal Landing, Power Off, No Flare, 2.5G Fuel 200lb	
9999	3	0	88		
				Normal Landing, 5kts Too Slow, Smooth	
9999	4	0	80		
				Normal Landing, 5kts Too Slow, Smooth	
9999	5	0	75		
				Normal Landing, Too Slow, Power Off, Drop 1.7G	
9999	6	0	120		
				Normal Landing, 10kts Too Slow, Hold Off High 2.0G Fuel 170lb	
9999	7	0	85		
				Normal Landing, 10kts Too Slow, Hold Off High 2.0G	
9999	8	0	80		
				Short field 60kts, Nose Wheel First 2.0G Fuel 160lb	
9999	9	0	112		
				Short field 60kts, 3 Wheels on 2.0g	
9999	10	0	65		
				Flapless Landing, Nose First 1.8G	
9999	11	0	65		
				Flapless Landing, Smooth	
9999	12	0	80		
				Flapless Landing 1.3G Fuel 140lb	
9999	13	0	95		
				Practice Forced Landing 1.3G	
9999	14	0	62		
				Practice Forced Landing 1.6G	
9999	15	0	62		
				Practice Forced Landing, Held Off	
Tape 2					
9999	1	0	62		
				Practice Forced Landing 1.9G	
9999	2	0	45		
				Practice Forced Landing 1.5G Fuel 120lb	
9999	3	0	85		
				Normal Landing 1.7G	
9999	4	0	65		
				Normal Landing 2.4G	
9999	5	0	110		
				Normal Landing 3.1G	
9999	6	0	82		
				Normal Landing 1.9G Fuel 110lb	
9999	7	0	100		
				Normal Landing 2.3G	



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