

Exhibit 5

is

in

Separate

Folder

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BRIAN D. STARER

HAIGHT, GARDNER, POOR & HAVENS

FEDERAL BAR BUILDING
1819 H STREET, N.W.
WASHINGTON, D. C. 20006

CABLE: MOTOR WASHINGTON

WU: TELEX 892598

TELEPHONE (202) 737-7847

MSM
J. WARD O'NEILL
WILLIAM J. JUNKERMAN
COUNSEL

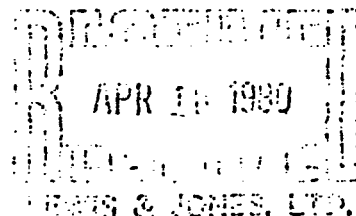
NEW YORK OFFICE
ONE STATE STREET PLAZA
NEW YORK, N. Y. 10004
TEL. (212) 344-6800

CABLE: MOTOR NEW YORK
RCA TELEX: 222974
WUI TELEX: 620362
ITT TELEX: 424674
WU TELEX: 127683

LEWIS, WILSON,

April 18, 1980

BY HAND



RESIDENT PARTNER
CARROLL E. DUBUC
OF COUNSEL
RALPH E. CASEY
JOHN W. McCONNELL, JR.
* ADMITTED TO D. C. BAR

J. Edwards
DJP 4/25/80
Ech 6

Oren R. Lewis, Jr., Esq.
Lewis, Wilson, Lewis & Jones
2054 North 14th Street
Arlington, Virginia 22216

FFAC v. Lockheed Aircraft Corporation
Our file 2041-1278-2S

Zimmerly v. Lockheed Aircraft Corporation
Our file 2041-1278-5B

Dear Oren:

Pursuant to plaintiffs' Notice to Produce Physical Evidence at Trial and subpoena thereon and defendant's Motion to Quash that subpoena and notice, we appeared before the Court on Tuesday, April 15, 1980 to move to quash that subpoena. The judge extended the subpoena through the end of this week and asked that a report be given by Friday of this week on the documents requested in the Notice to Produce.

With respect to those categories, the judge has already ruled in the negative denying requests as to categories (6) and (8). As to the following categories we make the following production:

(1) We hereby provide seven black-and-white slides not pertaining to the crash scene and therefore they are not within your request for production in the surviving orphans cases. These slides appear to have to do with the ramp portion and ramp locking system of the aircraft and do not appear to be taken at the scene of the crash. Nevertheless, we are making them available to you for your review in Court so that if you

April 18, 1980

wish copies made of them you should advise us and we will do so.

(2) Lockheed has no such documents pertaining to autopsies, death certificates, etc. except those produced by the government.

(3) The Collateral Investigation was conducted solely by the Air Force and Lockheed has no documents relating thereto except the Collateral Report itself, which has previously been produced to plaintiffs' counsel.

(4) Except for the document prepared by Lockheed with respect to G-forces which has previously been listed as within attorney work product and except as to G-forces information contained in MADAR data already produced or produced today and John Edwards' formula for G-forces as to which Mr. Edwards was prepared to testify at trial but was not requested to do so, defendant knows of no other documents relating to G-forces generated on or in C-5A 68-218.

(5) Defendant is making available to plaintiff a magnetic tape copy of the MADAR tape from AF 68-218; a total "dumpout" in octal form prepared at the request of trial counsel last week in light of plaintiffs' inquiries concerning MADAR data; and eight pages of computation made by Lockheed from MADAR data on AF 68-218 on April 4, 1975 which we may have already given to you. All other documentation in defendant's possession with respect to MADAR on the April 4, 1975 AF 68-218 flight in issue herein has been produced to defendant's knowledge.

(7) Defendant is making available for inspection at our offices or use in Court only a model of the C-5A aircraft and the model of the C-5A used in the wind-tunnel test conducted by Professor Harper as previously agreed in Court on April 15, 1980.

(9) Other than documents already produced, defendant knows of no documents pertaining to

(a) the manner in which C-5A 68-218 broke apart after the second impact on April 4, 1975 near Saigon, South Vietnam;

(b) the nature of the forces and the expenditure of energy associated with such break-up of C-5A 68-218;

April 18, 1980

(c) the manner in which a C-5A would break up upon a crash landing; and

(d) the nature of the forces in the expenditure of energy associated with the break-up of a C-5A upon a crash landing.

As to categories (c) and (d) defendant knows of no Lockheed documents pertaining to same but is continuing its inquiry.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Carroll E. Dubuc", with a stylized, flowing script.

Carroll E. Dubuc

Enclosures

cc: Honorable Louis F. Oberdorfer
James P. Piper, Esq.

TIME	VA/CG	LAT/CG
5:28:49.55	0.52	-0.37 * MIN
.60	0.16 * (.84)	0.01
.65	1.01	0.38
.70	NR	0.03
.75	0.40	0.02
.80	0.61	0.18
.85	1.37 * (.37)	-0.04
.90	NR	0.13
.95	0.99	0.23
5:28:50.00	0.55	0.45 * MAX
.05	NR	0.28
.10	0.39	0.40
.15	0.54	0.27
.20	0.77	0.12
.25	1.18	0.23
.30	NR	0.15
.35	0.85	NR
.40	0.53	0.25
.45	0.70	0.12
.50	0.98	0.05
.55	1.17	0.23
.60	1.21	0.29
.65	NR	0.13
.70	1.17	0.10
.75	1.03	0.26
.80	0.96	0.30
.85	1.25	0.24
.90		0.50
.95		0.27

TIME	VA/CG	LAT/CG
95	1.13	NR
5:28:51.00	1.05	0.09
.05	0.95	0.18
.10	1.03	0.15
.15	1.33	0.13
.20	NR	NR
.25	0.98	0.20
.30	1.05	0.16
.35	0.91	NR
.40	NR	0.08
.45	1.02	0.14
.50	NR	0.24
.55	1.06	0.17
.60	NR	NR
.65	0.96	0.13
.70	0.92	NR
.75	0.96	NR
.80	NR	NR
.85	1.07	0.10
.90	NR	NR
.95	0.95	NR
5:28:52.00	NR	1.1

NOT SHOWN ON TUE

DECODING OF SLRP (05) MESSAGES ON RECORD 11977

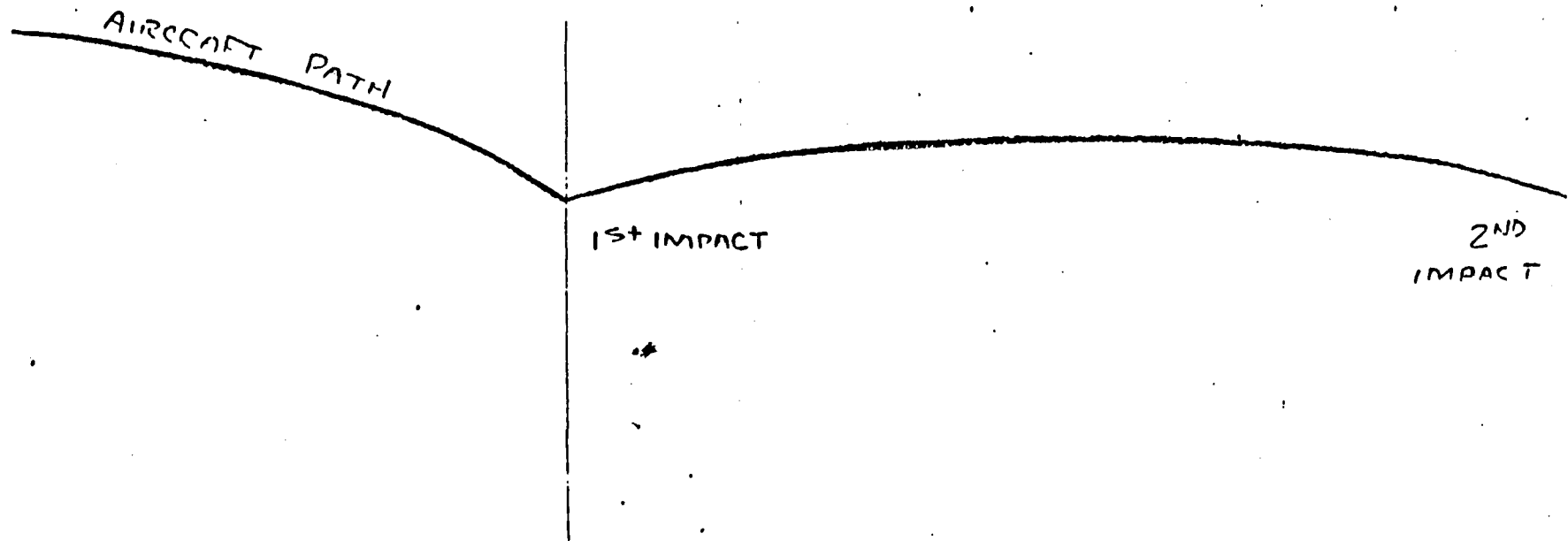
Pg 1 of 2

LOCKHEED GEORGIA COMPANY
A DIVISION OF LOCKHEED AIRCRAFT CORPORATION

OCTAL										(X3 X4) HEX/CON DEC		SEC/20	(X5 X6) HEX/CON DEC		X7 HEX	P CODE	X8 HEX/DEC	(X9 X10) HEX/CON DEC		COUNTS	ENGINEERING INTERPRETATION	PARAMETER	
Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10														
05	34	54	16	24	1C	14	14	2C	22	0	44	E	14	14	10	-22	22, DISENGAGED	IN FLIGHT REFUELING					
05	34	42	56	12	1C	14	14	22	17	2	35	E	14	0A	5	-27	-0.027 RAD/SEC ²	PITCH ACCELERATION					
05	36	14	16	22	1E	15	15	0C	6	0	12	E	14	12	9	-23	1.03 G'S	VA/CG					
05	36	12	24	34	1E	15	15	0A	5	1	10	4	4	1C	14	78	0.24 G'S	LAT/CG					
05	36	42	62	04	1E	15	15	22	17	3	35	2	2	04	2	34	0.034 RAD/SEC ²	PITCH ACCELERATION					
05	40	14	16	02	20	16	16	0C	6	0	12	E	14	02	1	-31	0.96 G'S	VA/CG					
05	40	12	26	17	20	16	16	0A	5	1	10	6	6	0E	0	96	0.30 G'S	LAT/CG					
05	40	06	02	40	20	16	16	06	3	0	6	2	2	20	16	-208	537 FT	PRESS ALTITUDE					
05	40	42	62	34	20	16	16	22	17	3	35	2	2	1C	14	46	0.046 RAD/SEC ²	PITCH ACCELERATION					
05	42	14	20	17	22	17	17	0C	6	1	12	0	0	0E	0	0	1.25 G'S	VA/CG					
05	42	12	24	14	22	17	17	0A	5	1	10	4	4	0C	6	70	0.22 G'S	LAT/CG					
05	42	56	20	64	22	17	17	2E	23	1	46	0	0	34	26	-26	-26, NOT DATA	AIR DROP					
05	42	42	56	66	22	17	17	22	17	2	35	E	14	36	27	-5	-0.005 RAD/SEC ²	PITCH ACCELERATION					
05	44	12	32	50	24	18	18	0A	5	0	10	A2	10	28	20	-265	-0.24 G'S	LAT/CG					
05	44	60	16	74	24	18	18	30	24	0	48	E	14	3C	30	-2	+2, UNKNOWN	FORWARD KNEEL					
05	44	42	52	32	24	18	18	22	17	2	35	A	10	1A	13	-103	-0.103 RAD/SEC ²	PITCH ACCELERATION					
05	46	14	16	46	26	19	19	0C	6	0	12	E	14	26	19	-13	1.13 G'S	VA/CG					
05	46	10	14	12	26	19	19	0B	4	0	8	C	12	0A	5	-59	0.41	MACH NO.					
05	46	42	46	56	26	19	19	22	17	2	34	6	6	2E	23	-137	137, RETRACTED	GROUND STATION					
05	50	14	16	26	28	20	20	0C	6	0	12	E	14	16	11	-21	1.05 G'S	VA/CG					
05	50	12	20	74	28	20	20	0A	5	1	10	0	0	3C	30	30	0.09 G'S	LAT/CG					
05	50	62	16	74	28	20	20	32	25	0	50	E	14	3C	30	-2	2, UNKNOWN	LEVEL KNEEL					
CLOCK MESSAGE										27	175	262	46	SKIP TO NEXT SLRP MESSAGE (05 FLAG)									
05	02	14	16	17	02	1	1	0C	6	0	12	E	14	0E	0	-32	0.95 G'S	VA/CG					
05	02	12	22	62	02	1	1	0A	5	1	10	2	2	32	25	57	0.18 G'S	LAT/CG					
05	02	42	50	70	02	1	1	22	17	2	35	8	8	38	28	-100	-0.100 RAD/SEC ²	PITCH ACCELERATION					
05	04	14	16	22	04	2	2	0C	6	0	12	E	14	12	9	-23	1.23 G'S	VA/CG					
05	04	12	22	48	04	2	2	0A	5	1	10	2	2	14	10	484	0.73 G'S	LAT/CG					
05	04	42	54	46	04	2	2	22	17	2	35	C	12	26	19	-45	-0.045 RAD/SEC ²	PITCH ACCELERATION					
05	06	42	56	66	06	3	3	22	17	2	35	E	14	36	27	-5	-0.005 RAD/SEC ²	PITCH ACCELERATION					
05	06	12	24	34	0A	5	1	10	4	4	10	4	4	04	2	16	0.20 G'S	LAT/CG					

LOCKHEED-GEORGIA COMPANY
A DIVISION OF LOCKHEED AIRCRAFT CORPORATION

OCTAL					(X3 X4) HEX/CON DEC		SEC/20	(X5 X6) HEX/CON DEC		X7 HEX	P CODE	X8 HEX/DEC	(X9 X0) HEX/CON DEC		COUNTS	ENGINEERING INTERPRETATION	PARAMETER	
X1 X2	X3 X4	X5 X6	X7 X8	X9 X0														
05	10	42	60	30	08	4	4	22	17	3	35	0	0	18	12	12	0.018 RAD/SEC ²	PITCH ACCELERATIO.
05	12	14	16	06	0A	5	5	0C	6	0	12	E	14	05	6	-26	1.01 G'S	VA/CG
05	12	12	22	52	0A	5	5	0A	5	1	10	2	2	2A	21	53	0.14 G'S	LAT/CG
05	14	14	16	26	0C	6	6	0C	6	0	12	E	14	16	11	-21	1.05 G'S	VA/CG
05	14	30	26	44	0C	6	6	18	12	1	24	6	6	24	18	114	-14.7 DEG	RT AILERON POSITI
05	16	14	14	70	0E	7	7	0C	6	0	12	C	12	38	28	-36	0.91 G'S	VA/CG
05	16	12	20	62	0E	7	7	0A	5	1	10	0	0	32	25	25	0.08 G'S	LAT/CG
05	20	12	22	30	10	8	8	0A	5	1	10	2	2	18	12	44	0.14 G'S	LAT/CG
05	22	14	16	16	12	9	9	0C	6	0	12	E	14	0E	7	-25	1.02 G'S	VA/CG
05	22	12	24	34	12	9	9	0A	5	1	10	4	4	1C	14	78	0.24 G'S	LAT/CG
05	22	42	60	54	12	9	9	22	17	3	35	0	0	2C	22	22	0.022 RAD/SEC ²	PITCH ACCELERATIO
05	24	12	22	60	14	10	10	0A	5	1	10	2	2	30	24	56	0.17 G'S	LAT/CG
05	26	14	16	30	16	11	11	0C	6	0	12	E	14	18	12	-20	1.06 G'S	VA/CG
05	26	42	56	74	16	11	11	22	17	2	35	E	14	3C	30	-2	-0.002 RAD/SEC ²	PITCH ACCELERATIO
05	30	14	16	16	18	12	12	0C	6	0	12	E	14	0E	7	-25	1.02 G'S	VA/CG
05	30	12	22	24	18	12	12	0A	5	1	10	2	2	14	10	42	0.13 G'S	LAT/CG
05	30	42	56	42	18	12	12	22	17	2	35	E	14	22	17	-15	-0.015 RAD/SEC ²	PITCH ACCELERATIO
05	32	14	16	02	1A	13	13	0C	6	0	12	E	14	02	1	-31	0.96 G'S	VA/CG
05	34	14	14	72	1C	14	14	0C	6	0	12	C	12	3A	29	-35	0.92 G'S	VA/CG
05	36	14	16	02	1E	15	15	0C	6	0	12	E	14	02	1	-31	0.96 G'S	VA/CG
05	40	30	26	60	20	16	16	18	12	1	24	6	6	30	24	120	-15.2 DEG	RT AILERON POSI
05	40	06	20	44	20	16	16	06	3	1	6	0	0	24	18	18	25646 FT	PRESS ALTITUDE
05	42	14	16	32	22	17	17	0C	6	0	12	E	14	1A	13	-19	1.07 G'S	VA/CG
05	42	12	22	17	22	17	17	0A	5	1	10	2	2	0F	0	32	0.10 G'S	LAT/CG
05	42	42	56	06	22	17	17	22	17	2	35	E	14	06	3	-29	-0.029 RAD/SEC ²	PITCH ACCELERATIO.
05	46	14	16	17	26	19	19	0C	6	0	12	E	14	0F	0	-32	0.95 G'S	VA/CG
CLOCK MESSAGE					27	17	52	62	50									



APPENDIX E - RADAR DATA INTERVALS

! (NOTE H-2)

POSSIBLE
DATA LOSS
0.020250
second

2.45

2.28 seconds

(NOTE H-3)

3.6 seconds
(NOTE H-1)

MADAR
DATA

SEE NOTE H-4

RECORDING TIME 3.8 - 4.2 SEC

RECORDING SYSTEM
POWER LOSS

05:28:49.55
MADAR TIME

Telephone: 282-739-3643

June 1, 1978

JPPiper:mg
157-0-91

Richard H. Jones, Esquire
Lewis Wilson, Coles, Lewis
and Jones, Ltd.
Courthouse Square
Arlington, Virginia 22216

Re: In Re Air Crash Disaster Near Saigon,
South Vietnam on April 1975 -

Dear Mr. Jones;

Pursuant to your request for information relative to various altitudes through which the C-5A aircraft proceeded after the rapid decompression, the attached letter signed by A.C. Heath, Jr. dated 18 May 1978 subject MADAR's Data from C-5A 68-218, 4 April 1975 flight is submitted for your information.

In the event that you need further help in analysis of this document, please let me know and we will make Mr. Heath available for you at a mutually convenient time.

Sincerely,

JAMES P. PIPER
Trial Attorney
Aviation Section, Civil Division

Enclosure

cc: Honorable Louis Oberdorfer
United States District Court
Washington, D.C. 20001

Earl J. Silbert
United States Attorney
Washington, D.C. 20001

Chief, Claims & Tort
Litigation Division
HQUSAF/JAG
Washington, D.C. 20314

Carroll E. Dubuc, Esquire
Haight Gardner Poor & Havens
1819 H Street, N.W.
Washington, D.C. 20006

Issac N. Groner, Esquire
Cole & Groner, P.C.
1730 K Street, N.W.
Washington, D.C. 20006

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS SAN ANTONIO AIR LOGISTICS CENTER (AFLC)
KELLY AIR FORCE BASE, TEXAS 78241



REPLY TO: MMSRCT
ATTN OF:

18 May 78

SUBJECT: MADARS Data From C-5A 68-218 4 Apr 75 Flight

TO: AF/JACC
Office of the Judge Advocate General
Mr F. B. Van Nuys
Deputy Chief Claims and Tort Litigation Staff
1900 Half Street, S.W.
Washington D. C. 20324

1. The following information is provided in response to your 16 May telecon request. Comments refer to the computer output, scan by record number data set S218.D75111.D228, Scan C-5 MADARS GPS Program 67220. previously furnished your office.

a. This computer print out list the last value recorded in each MADAR record for the 4 Apr 75 flight of C-5A 68-218.

b. The listing uses two lines to print data for functions shown at the beginning of the printout. Abbreviations used are defined in Atch 1. Equipment-failure messages are shown between record listings under fuel flow, LB/HR column. The four digit number is the MADAR message number and is defined just prior to the flight altitude plot at the end of the listing.

2. The maximum altitude and first indication of a problem is shown in record number 176. At 0513 the altitude recorded was 23424 feet and a speed of 0.610 mach. Record number 189 contains the first recorded altitude below 10000 feet. At 0522 the altitude recorded was 9870 feet and a speed of 0.442 mach. The data shows that nine minutes elapsed between the maximum altitude and first recorded altitude below 10000 feet.

3. Record numbers 176 and 177 show loss of hydraulic power to the pitch, yaw, and Lateral Augmentation Systems MADAR message numbers 5080, 5088, and 5089. These are Auto MADARS computer determined failures with 5080 and 5088 being reported at 0513 and 5089 reported at 0514.

4. Please advise if additional information is desired.

A. C. Heath, Jr.
A. C. Heath, Jr.
Equipment Specialist

1 Atch
Abbreviations

AFLC - Lifeline of the Aerospace Team

ABBREVIATIONS SHOWN IN HEADLINE
FOR SCAN BY RECORD NUMBER PRINTOUT

First Three Columns

REC NO

Record Number

TIME

MADAR Time

ALT

Altitude

First Line

EPR

Engine Pressure Ratio

TIT, DEGC

Turbine Inlet Temperature, Degrees
Centigrade

N1, PCT RPM

Fan Percent Revolutions Per Minute

T2C, DEGF

Compressor Inlet Temperature Degrees
Fahrenheit

Second Line

TA DEG

Throttle Angle in Degrees

Fuel Flow LB/HR

Fuel Flow in Pounds Per Hour

N2, PCT RPM

Core Percent Revolutions Per Minute

VSV, DEG

Variable Stator Vane Degrees

Last Two Columns

STAT Temp Degf

Static Air Temperature in Degrees
Fahrenheit

PTO in HG

Free Stream Total Pressure Inches of
Mercury

120E1	A0050C0A	70C0A0E6	80050C0B	80050C0C	80050C0D	912000B5	80050C0E	80050C0F	80050C10	70C030E5	80050C11	80050C12	80050C13	80050C14	80050C15	80050C16	80050C17	80050C18	80050C19	80050C1A	80050C1B	80050C1C	80050C1D	80050C1E	80050C1F
50C11	90F100DE	A0050B23	70C0F0E6	70C100E1	80050B24	918800BE	70C060E9	70C0D0E5	80050C12	80050C13	80050C14	80050C15	80050C16	80050C17	80050C18	80050C19	80050C1A	80050C1B	80050C1C	80050C1D	80050C1E	80050C1F	80050C10	80050C11	80050C12
50C15	500A0A00	50001B7A	A0050C16	90F200DE	A0050A16	80050B17	80050B19	80050C17	80050C1A	70C080E1	80050C19	80050C1A	80050C1B	80050C1C	80050C1D	80050C1E	80050C1F	80050C10	80050C11	80050C12	80050C13	80050C14	80050C15	80050C16	80050C17
010E5	A0050C1A	90F300DE	912200BE	80050C0C	A0050C0D	912000BE	80050C0E	80050C0F	80050C10	70C030E5	80050C11	80050C12	80050C13	80050C14	80050C15	80050C16	80050C17	80050C18	80050C19	80050C1A	80050C1B	80050C1C	80050C1D	80050C1E	80050C1F
100DE	A0050B23	70C0F0E6	70C100E1	80050B24	80050C1B	80050C1C	70C030E9	70C100E5	80050C1D	80050C1E	80050C1F	80050C10	80050C11	80050C12	80050C13	80050C14	80050C15	80050C16	80050C17	80050C18	80050C19	80050C1A	80050C1B	80050C1C	80050C1D
50C20	70C0A0E1	70C0F0E5	70C110E0	A0050C21																					

NT	5113574	0.990	
NT	5113579	0.940	
NT	51136	0	
NT	51141	0	
NT	5114114	0.930	
NT	51142	0	
NT	51120	0	
NT	5112039	0.980	
NT	51121	0	
NT	51122	0	
NT	51123	0	
NT	51125	0	
NT	5112589	0.940	
NT	51210	0	
NT	5121029	0.980	
NT	51211	0	
NT	5121124	1.020	
NT	51212	0	
NT	51213	0	
H		0.590	
NT	51214	0	
NT	51215	0	
NT	51216	0	
NT	5121614	0.980	
NT	51217	0	
NT	51135	0	
NT	5113574	0.990	
NT	5113579	0.940	
NT	51136	0	
H	5113629	1.020	
NT	5113644	0.980	
NT	51218	0	
NT	51219	0	
NT	51220	0	
NT	51221	0	
NT	51222	0	
NT	51122	0	
NT	51123	0	
NT	51125	0	
NT	51223	0	
NT	51224	0	
NT	5122439	0.940	
NT	51225	0	
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NT	51226	0	
H		22201.699	
NT	51212	0.594	
NT	51213	0	
NT		0.590	
NT	51214	0	
NT	51215	0	
NT	51216	0	
NT	5121614	0.980	
NT	51217	0	
NT		21979.500	
NT	51135	0	
NT	5113574	0.990	
NT	5113579	0.940	
NT	51136	0	
NT	51227	0	
NT	51228	0	
NT	5122814	1.020	
NT	5122879	0.980	
NT	51229	0	
NT	51230	0	
NT	51231	0	
NT	51232	0	
NT	5123249	0.940	
NT	5123274	0.980	
NT	5123284	0.930	
NT	51233	0	

This is the
machine listing of the
Recorded data.

First col shows EVENT, VGH, ALT AND MACH

Second col shows TIME OF RECORDING

Third col show RECORDED VALUE FOR THE FIRST COL ITEM

SPEED
MACH 0.590

21980 feet
0.990 G's

hours
minutes
seconds

Z or Zulu 24 hour clock

TIME WOULD BE 05 11 36

TIME IS ENTERED BY FLIGHT ENGINEER AT AIRCRAFT

DON'T USE THIS NUMBER

This will equate to within 100th of a second or
a 20th of a second depending on Test Point

THE VERTICAL AND HORIZONTAL 'G' ACCELEROMETER

NORMAL READING IS 1.000 LIMITS ARE
0.0000 TO 2.0000.

THIS INDICATES A TREND MESSAGE OR TEST POINT CHANGE
WAS RECORDED AT THIS TIME.

I marked Record 176 and 189
To show when max alt was reached
and 1st Recording below 10000 ft.

ALB-101

522934 MIL. BUKUS 1:120

70C070E4	80050C22	90F400DE	912300DE	70C110E9	80050C23	70C010E8	80080C24	70C090E1	80050C28	80050C26	70C100E5
80050C27	90F500DE	912400DE	70C0A0E1	70C090E5	80050C24	70C0A0E1	80050C29	70C090E8	80080C2A	70C000E1	80050C2A
70C110E5	70C1A0E1	80050C2C	90F600DE	70C120E5	80050C2D	80050C2E	70C110E1	80050C2F	70C000E3	80050C30	80050C31
80050C32	80050C33	80050C34	90F700DE	912600DE	80050C35	80050C36	70C0A0E1	70C120E5	80050C37	70C120E1	80050C3U
90F800DE	70C020E8	70C040E9	70C110E5	80050C39	70C060E9	70C0A0E5	80050C3A	70C030E1	70C100E5	80050C3B	70C090E9
70C110E5	80050D00	90F900DE	70C090E9	80050D01	70C0A0E8	80050D02	80050D03	70C000E9	80050D04	90FA00DE	912700DE
70C000E4	80050D05	70C040E9	70C0H0E5	80050D06	70C070E9	70C0A0E5	80050D07	70C000E8	70C110E6	80050D08	912900DE
80050D09	80050D0A	80050D0B	80050D0C	70C060E8	80050D0D	70C060E7	80050D0E	90FC00DE	912A00DE	70C0F0E8	80050D0F
80050D10	70C0A0E7	70C070E8	70C0A0E7								
VGH	5123309		0.970								
EVENT	51233		0								
ALT		22312.797									
MACH		0.596									
VGH	5123484		1.020								
EVENT	51235		0								
VGH	5123504		0.980								
EVENT	51236		0								
VGH	5123644		0.940								
EVENT	51237		0								
EVENT	51238		0								
VGH	5123879		0.980								
EVENT	51239		0								
ALT		22423.898									
MACH		0.598									
VGH	5123939		0.940								
VGH	5123944		0.980								
EVENT	51240		0								
VGH	5124049		0.940								
EVENT	51241		0								
VGH	5124144		0.980								
EVENT	51242		0								
VGH	5124244		0.940								
EVENT	51243		0								
VGH	5124344		0.980								
VGH	5124349		0.940								
EVENT	51244		0								
ALT		22535.000									
VGH	5124489		0.980								
EVENT	51245		0								
EVENT	51246		0								
VGH	5124684		0.940								
EVENT	51247		0								
VGH	5124754		0.980								
EVENT	51248		0								
EVENT	51249		0								
EVENT	51250		0								
EVENT	51251		0								
EVENT	51252		0								
ALT		22646.098									
MACH		0.602									
EVENT	51253		0								
EVENT	51254		0								
VGH	5125419		0.940								
VGH	5125489		0.980								
EVENT	51255		0								
VGH	5125589		0.940								
EVENT	51256		0								
ALT		22757.199									
VGH	5125609		0.980								
VGH	5125654		1.020								
VGH	5125684		0.980								
EVENT	51257		0								
VGH	5125729		1.020								
VGH	5125739		0.980								
EVENT	51258		0								
VGH	5125814		0.940								
VGH	5125879		0.980								
EVENT	51259		0								
VGH	5125944		1.020								
VGH	5125994		0.980								
EVENT	51300		0								
ALT		22848.297									
VGH	5130044		1.020								
EVENT	51301		0								
VGH	5130149		0.980								
EVENT	51302		0								
EVENT	51303		0								
VGH	5130364		1.020								
EVENT	51304		0								
ALT		22979.398									
MACH		0.604									
VGH	5130459		0.970								
EVENT	51305		0								
VGH	5130519		1.020								
VGH	5130539		0.980								

513

VGH	513049	0.480
EVENT	51307	0
VGH	5130754	1.040
VGH	5130784	0.990
EVENT	51308	0
MACH		0.608
EVENT	51309	0
EVENT	51310	0
EVENT	51311	0
EVENT	51312	0
VGH	5131229	1.040
EVENT	51313	0
VGH	5131329	1.000
EVENT	51314	0
ALT		23201.598
MACH		0.610
VGH	5131474	1.040
EVENT	51315	0
EVENT	51316	0
VGH	5131619	1.000
VGH	5131644	1.040
VGH	5131649	1.000

RECORD	176	NO. WORDS	126
A0050011	A0050012	70C070ED	70C08DF1
70C120D7	70C130C9	70C140C3	80050013
70C040DD	70C0C0E1	70C0D0E8	70C0E0DF
5000130H	5000400E	500013E0	70C010DE
A0050015	70C010E3	70C040E7	70C090E8
70C0H0C3	70C0C0A8	70C0H0E4	70C0E0E8
70C030D7	70C030E8	70C0A0E7	80050011
70C110E5	70C120DE	70C130E3	70C070D5
70C130H9	70C140DD	A005001F	50063004
70C070DD	A0050023	70C030D9	70C100DF
70C0F0D8	A0050026	912A00BE	70C040DC
EVENT	51317		0
EVENT	51318		0
VGH	5131834		1.040
VGH	5131839		1.100
VGH	5131844		1.460
VGH	5131849		1.590
VGH	5131854		0.640
VGH	5131859		0.400
VGH	5131864		0.980
VGH	5131869		1.220
VGH	5131874		1.100
VGH	5131879		0.730
VGH	5131889		0.840
VGH	5131894		0.700
VGH	5131899		0.640
EVENT	51319		0
VGH	5131904		1.060
VGH	5131909		1.160
VGH	5131914		0.840
VGH	5131924		1.040
VGH	5131929		0.930
VGH	5131934		0.820
VGH	5131939		0.920
VGH	5131944		0.960
VGH	5131954		0.400
VGH	5131959		0.940
VGH	5131964		1.010
VGH	5131969		0.920
VGH	5131974		0.820
VGH	5131979		0.910
VGH	5131984		0.980
VGH	5131989		0.910
VGH	5131994		0.960
VGH	5131999		1.080
EVENT	51320		0
VGH	5132004		0.910
VGH	5132014		0.970
VGH	5132029		1.030
VGH	5132039		0.970
VGH	5132054		1.010
VGH	5132069		0.970
VGH	5132079		0.920
VGH	5132084		0.970
VGH	5132089		1.020
EVENT	51321		0
VGH	5132104		0.960
VGH	5132119		1.000
VGH	5132144		1.040
VGH	5132149		1.000
EVENT	51321		0

RECORD 177 NO. WORDS 103

80050129	8005012A	70C100F1	8005012H	9180000H	70C0500D	70C120E1	70C130DD	80050D2C	80050D2D	80050D2E	80060006
80000203	80050002	5000020C	50060004	5000152H	70C030E1	80050D2F	80050D30	90F0000E	912F000F	80050D31	8006001D
50000203	70C100E5	80050032	70C0A0E1	80050133	70C040E5	80050134	80050D35	90FA000E	9138001E	80050D36	80050D37
500A000C	500013E1	80050D3A	70C0A0E0	70C0D0E4	70C0E0E0	70C120E4	80050D39	70C140E9	80050D3A	90F8000E	913D000E
70C050F5	70C070E9	80050D3H	70C010ED	70C0E0E9	80050F00	80050E01	80050E02	80050E03	90F6000E	9141000E	70C100ED
70C110E9	80050E04	80050E05	70C080E0	80050E06	80050E07	90F6000E	9142000E	70C0H0F1	80050F08	70C010ED	70C100ED
80050F09	80050E0A	70C040EC	80050F0H	90FA00DE	9145000E	800632A9	8006021B	70C050F3	70C060F7	70C0A0EB	80050E0C
80060005	5000152A	70C030F1	70C070F5	70C0D0F1	70C0FAF5	70C110F0	80050E0D	70C040F3	70C0E0EE	70C130F2	70C140ED
80050E0E	70C010F2	70C070FD	70C090F3	70C0E0FF	80050E0F	70C0H0F3					
EVENT	51341		0								
EVENT	51342		0								
VGH	5134279		0.940								
EVENT	51343		0								
• MACH			0.616								
VGH	5134324		0.900								
VGH	5134329		0.920								

EVENT	51344	0
EVENT	51345	0
EVENT	51346	0
VGII	5134614	0.940
EVENT	51347	0
EVENT	51348	0
ALT		21112.694
MACH		0.620
EVENT	51349	0
VGII	5134979	0.980
EVENT	51350	0
VGII	5135049	0.940
EVENT	51351	0
VGII	5135114	0.980
EVENT	51352	0
EVENT	51353	0
ALT		22979.398
MACH		0.638
EVENT	51354	0
EVENT	51355	0
EVENT	51356	0
VGII	5135649	0.930
VGII	5135654	0.970
VGII	5135669	0.930
VGII	5135684	0.970
EVENT	51357	0
VGII	5135749	1.020
EVENT	51358	0
ALT		22757.199
MACH		0.648
VGII	5135824	0.980
VGII	5135834	1.020
EVENT	51359	0
VGII	5135904	1.040
VGII	5135969	1.020
EVENT	51400	0
EVENT	51401	0
EVENT	51402	0
EVENT	51403	0
ALT		22535.000
MACH		0.656
VGII	5140379	1.060
VGII	5140384	1.020
EVENT	51404	0
EVENT	51405	0
VGII	5140539	1.060
EVENT	51406	0
EVENT	51407	0
ALT		22423.848
MACH		0.658
VGII	5140754	1.100
EVENT	51408	0
VGII	5140804	1.060
VGII	5140879	1.010
EVENT	51409	0
EVENT	51410	0
VGII	5141029	1.050
EVENT	51411	0
ALT		22312.797
MACH		0.664
VGII	5141124	1.120
VGII	5141139	1.080
VGII	5141149	1.040
EVENT	51412	0
VGII	5141214	1.100
VGII	5141234	1.140
VGII	5141264	1.100
VGII	5141274	1.140
VGII	5141284	1.090
EVENT	51413	0
VGII	5141319	1.120
VGII	5141369	1.070
VGII	5141394	1.110
VGII	5141399	1.060
EVENT	51414	0
VGII	5141404	1.110
VGII	5141434	1.060
VGII	5141444	1.120
VGII	5141469	1.080
EVENT	51415	0
VGII	5141534	1.120

RECORD 174 NO. WORDS 124

70C130P A0050E10 70C020P4 70C080P8 70C0E0P3 70C100P7 70C110P0 80050E11 90F2000E 0149000E 70C060P5 70C000P4
 A0050E12 500A000A 5000130A 70C0F0P8 80050E13 A0050E14 70C060P9 70C100P8 A0050E15 80080E16 90F0000E 914000E

[illegible]

EVENT	51443	0
ALT		21424.000
MACH		0.654
VGH	5144324	1.060
VGH	5144354	1.100
VGH	5144364	1.060
VGH	5144394	1.070
EVENT	51429	0
VGH	5142914	0.940
VGH	5142944	0.970
VGH	5142954	1.010
VGH	5142979	0.970
EVENT	51444	0
VGH	5144409	1.020
EVENT	51445	0
VGH	5144514	1.060
VGH	5144569	1.120
EVENT	51446	0
VGH	5144639	1.080
VGH	5144649	1.120
VGH	5144689	1.070
EVENT	51447	0
VGH	5144779	1.020
EVENT	51448	0
VGH	5144874	1.060
VGH	5144879	1.020
EVENT	51449	0
ALT		21201.797
MACH		0.648
VGH	5144969	1.060
EVENT	51450	0

RECORD 179 NO. WORDS 118

70C0C0E9	80050F33	70C010F5	70C0A0E9	80050E3A	70C010E5	70C0C0E1	70C0F0E5	80050E35	90E9000E	913C00HE	50000000
50001H7A	70C100E9	70C120F5	80050E3A	80050F37	70C010E1	70C0H0E5	70C0F0E9	70C120ED	80050F3A	70C0C0E9	80050E39
50000004	50000201	70C0H0E5	80050E3A	70C0C0E1	70C120E5	80050E3B	90E7000E	9139000E	70C080E9	80050F00	80050F01
70C050E5	80050F02	70C0H0E9	70C090E5	70C0H0E9	70C120E5	80050F03	80050F04	90E5000E	913A00HE	70C010E4	70C130EA
80050F05	80050F0A	80050F07	80050F0A	90E2000E	70C010E4	70C0H0ED	70C130F1	80050F09	70C020F6	70C0A0F1	70C090ED
70C0C0E9	70C100E5	80050F04	70C070E9	70C080E5	80050F0A	70C010E1	70C050E5	70C080E9	80050F0C	90E0000E	913500HE
70C010E5	70C080E9	80050F0D	70C090ED	80050F0E	70C090E9	70C0A0FD	70C0C0F3	70C0F0EF	80050F0F	50000000	5000020F
50000000	50000224	70C010FD	70C030E5	70C070EA	70C0E0F6	70C110EA	70C120E6	70C130FA	70C1A0FA	80050F10	70C0M0E1
80050F11	70C050E5	70C0F0E9	80050F12	90D0000E	913200HE	70C140FD	80050F13	70C090F1	70C0D0ED	70C100F1	70C140FD
80050F14	70C130E7	80050F15	80050F16	70C050ED	80050F17	70C040EF	70C0C0F3	70C0F0F7	80050F1H		
VGH	5145257										
EVENT	51451										
VGH	5145149										
VGH	5145149										
EVENT	51452										
VGH	5145204										
VGH	5145257										
VGH	5145274										
EVENT	51453										
ALT		21090.699									
MACH		0.644									
VGH	5145379										
VGH	5145389										
EVENT	51454										
EVENT	51455										
VGH	5145504										
VGH	5145554										
VGH	5145574										
VGH	5145589										
EVENT	51456										
VGH	5145657										
EVENT	51457										
VGH	5145739										
EVENT	51458										
VGH	5145849										
VGH	5145874										
EVENT	51459										
ALT		20848.400									
MACH		0.640									
VGH	5145939										
EVENT	51500										
EVENT	51501										
VGH	5150124										
EVENT	51502										
VGH	5150239										
VGH	5150244										
VGH	5150264										
VGH	5150289										
EVENT	51503										
EVENT	51504										
ALT		20446.297									
MACH		0.624									

515

VGHI	5150404	1.020
VGHI	5150494	0.970
EVENT	51505	0
EVENT	51506	0
EVENT	51507	0
EVENT	51508	0
ALT		20313.000
VGHI	5150804	1.010
VGHI	5150864	1.060
VGHI	5150894	1.100
EVENT	51509	0
VGHI	5150909	1.150
VGHI	5150939	1.100
VGHI	5150944	1.060
VGHI	5150959	1.020
VGHI	5150979	0.980
EVENT	51510	0
VGHI	5151034	1.020
VGHI	5151039	0.980
EVENT	51511	0
VGHI	5151104	0.940
VGHI	5151124	0.980
VGHI	5151154	1.020
EVENT	51512	0
ALT		20490.797
VGHI		0.632
VGHI	5151214	0.980
VGHI	5151239	1.020
EVENT	51513	0
VGHI	5151344	1.060
EVENT	51514	0
VGHI	5151444	1.020
VGHI	5151449	1.060
VGHI	5151459	1.120
VGHI	5151469	1.080
EVENT	51515	0
VGHI	5151504	1.040
VGHI	5151514	1.070
VGHI	5151534	1.030
VGHI	5151549	0.990
VGHI	5151584	1.030
VGHI	5151589	0.990
VGHI	5151594	1.030
VGHI	5151599	0.940
EVENT	51516	0
VGHI	5151639	0.940
EVENT	51517	0
VGHI	5151724	0.980
VGHI	5151774	1.020
EVENT	51518	0
ALT		19535.301
VGHI		0.626
VGHI	5151899	1.060
EVENT	51519	0
VGHI	5151944	1.100
VGHI	5151964	1.060
VGHI	5151979	1.100
VGHI	5151994	1.060
EVENT	51520	0
VGHI	5152044	1.000
EVENT	51521	0
EVENT	51522	0
VGHI	5152224	1.040
EVENT	51523	0
VGHI	5152319	1.080
VGHI	5152359	1.120
VGHI	5152374	1.160
EVENT	51524	0

RECORD	100	NO. WORDS	117
9004000E	913A000E	70C0C0F3	70C120F0
70C040F5	70C110FA	70C110FA	80050F10
70C040F5	80050F20	70C080F5	70C110F9
70C040F5	70C120F7	70C140F8	80050F24
70C040F5	913A200E	80050F29	70C090F6
70C040F5	80050F2C	70C040F6	80050F2D
70C1A0F7	80050F2F	70C040F6	5000020F
80050F2A	80050F2F	70C040F6	80050F2A
70C120F7	70C140F3	80050F2E	70C020F4
80051001	900E000E	9141007E	70C020FC
ALT			19779.401
VGHI			0.630
VGHI	5152419		1.120
VGHI	5152469		1.060
EVENT	51525		0

EVENT	51527	0
VCH	5152719	1.070
VCH	5152729	1.030
EVENT	51528	0
VCH	5152819	1.090
VCH	5152844	1.140
VCH	5152879	1.190
VCH	5152884	1.150
EVENT	51529	0
ALT		185.15.402
MACH		0.634
VCH	5152919	1.100
VCH	5152979	1.060
EVENT	51530	0
EVENT	51531	0
VCH	5153124	1.100
EVENT	51532	0
VCH	5153234	1.140
VCH	5153284	1.180
EVENT	51533	0
VCH	5153349	1.140
EVENT	51534	0
ALT		183.13.203
VCH	5153409	1.090
EVENT	51534	0
VCH	5153569	1.040
VCH	5153589	1.000
VCH	5153599	1.040
EVENT	51536	0
EVENT	51537	0
VCH	5153744	1.080
EVENT	51538	0
EVENT	51539	0
VCH	5153999	1.130
EVENT	51540	0
ALT		17446.602
MACH		0.630
EVENT	51541	0
VCH	5154144	1.080
VCH	5154164	1.120
VCH	5154169	1.080
VCH	5154184	1.120
VCH	5154189	1.080
VCH	5154194	1.120
VCH	5154199	1.080
EVENT	51542	0
EVENT	51543	0
VCH	5154324	1.120
EVENT	51544	0
VCH	5154444	1.080
EVENT	51545	0
VCH	5154509	1.120
VCH	5154559	1.070
VCH	5154594	1.120
EVENT	51546	0
ALT		17313.301
MACH		0.640
VCH	5154654	1.160
VCH	5154689	1.200
VCH	5154699	1.160
EVENT	51547	0
EVENT	51548	0
EVENT	51549	0
EVENT	51551	0
VCH	5155129	1.160
EVENT	51552	0
VCH	5155269	1.040
VCH	5155289	1.000
VCH	5155299	1.040
EVENT	51556	0
EVENT	51557	0
VCH	5155744	1.080
EVENT	51558	0
EVENT	51559	0
VCH	5155924	1.100
VCH	5155954	1.150
VCH	5155964	1.090
VCH	5155979	1.140
VCH	5155984	1.100
VCH	5155989	1.160
VCH	5155999	1.120
EVENT	51602	0
VCH	5160209	1.150
VCH	5160214	1.140
VCH	5160224	1.250
VCH	5160234	1.300
VCH	5160244	1.200

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VGII	5160279	1.260
VGII	5160284	1.300
VGII	5160274	1.260
VGII	5160279	1.210
VGII	5160289	1.260
EVENT	51603	0
ALT	16313.402	
MACH		0.660
VGII	5160109	1.110
VGII	5160364	1.260
VGII	5160374	1.210
EVENT	51604	0
VGII	5160419	1.170
VGII	5160449	1.210

HYPCORD - 181		NO. WORDS - 117									
70C11101	80051005	70C0A0ED	70C100F9	80051006	80051007	70C060FD	70C090F9	70C0D0FD	8005100A	9000000E	70C090F8
70C000FC	70C0F0FA	70C100FC	80051009	8005100A	70C050F9	70C0F0F5	70C130F9	8005100B	70C130F5	8005100C	900C000E
91A2000E	70C080F1	8005100B	70C020FA	70C0A0FA	8005100E	70C1A0F5	8005100F	70C0A0FB	70C0B0FA	70C110FA	70C120F6
80051010	70C010FA	70C04100	80051011	9130000E	70C110FB	80051012	70C02101	70C09106	80051013	500A3294	5000020E
50000215	70C0E10A	70C0E10A	80051014	70C07101	80051015	50060005	50000201	70C020FD	70C040F9	70C090F3	
70C0C0F1	70C100CH	80051016	70C010EF	70C0A0F3	80051017	912F000E	80051018	500A0004	50000201	70C090ED	70C0A0F1
70C0C0F1	80051014	70C070F1	70C010EF	70C0C0F1	8005101A	70C0A0FB	8005101B	70C020E9	70C060ED	70C080FA	70C0E0FA
70C130FB	8005101C	70C080F7	70C0C0FB	70C110F5	70C1A0F1	8005101D	900E000E	911C008E	70C020EB	70C030E7	70C0A0ED
70C0C0F3	70C080F7	70C100FB	70C11100	8005101E	500A0005	50000201	500A0003	5000020C	70C0A0F9	70C120FD	8005101F
70C030F9	70C070F3	70C080FE	70C010ED	80051020	70C010EF	70C0A0EB	70C0C0E7	80051021			
VGII	5160484		1.260								
EVENT	51605		0								
VGII	5160549		1.220								
VGII	5160579		1.180								
EVENT	51606		0								
EVENT	51607		0								
VGII	5160729		1.220								
VGII	5160744		1.180								
VGII	5160764		1.220								
EVENT	51608		0								
ALT	16202.301										
VGII	5160844		1.170								
VGII	5160864		1.210								
VGII	5160869		1.170								
VGII	5160879		1.210								
EVENT	51609		0								
EVENT	51610		0								
VGII	5161024		1.180								
VGII	5161074		1.140								
VGII	5161094		1.180								
EVENT	51611		0								
VGII	5161194		1.140								
EVENT	51612		0								
ALT	16091.203										
MACH			0.65H								
VGII	5161239		1.100								
EVENT	51613		0								
VGII	5161309		1.150								
VGII	5161329		1.190								
EVENT	51614		0								
VGII	5161409		1.140								
EVENT	51615		0								
VGII	5161549		1.170								
VGII	5161554		1.130								
VGII	5161584		1.190								
VGII	5161589		1.150								
EVENT	51616		0								
VGII	5161604		1.190								
VGII	5161619		1.250								
EVENT	51617		0								
MACH			0.64H								
VGII	5161784		1.200								
EVENT	51618		0								
VGII	5161809		1.260								
VGII	5161844		1.310								
EVENT	51619		0								
VGII	5161904		1.350								
VGII	5161949		1.310								
EVENT	51620		0								
VGII	5162009		1.260								
EVENT	51621		0								
VGII	5162109		1.220								
VGII	5162119		1.180								
VGII	5162144		1.120								
VGII	5162159		1.080								
VGII	5162174		1.040								
EVENT	51622		0								
VGII	5162204		1.080								
VGII	5162249		1.120								
EVENT	51623		0								

VGH	516244A	1.040
VGH	5162449	1.100
VGH	5162469	1.040
EVENT	51625	0
VGH	5162534	1.100
VGH	5162539	1.060
VGH	5162559	1.100
EVENT	51626	0
VGH	5162639	1.040
EVENT	51627	0
VGH	5162707	1.020
VGH	5162729	1.060
VGH	5162754	1.130
VGH	5162769	1.170
VGH	5162794	1.220
EVENT	51628	0
VGH	5162839	1.160
VGH	5162859	1.200
VGH	5162884	1.140
VGH	5162899	1.100
EVENT	51629	0
ALT	16313.402	
MACH		0.502
VGH	5162909	1.040
VGH	5162914	1.000
VGH	5162949	1.060
VGH	5162964	1.120
VGH	5162974	1.160
VGH	5162979	1.200
VGH	5162984	1.250
EVENT	51630	0
VGH	5163029	1.100
VGH	5163049	1.220
EVENT	51631	0
VGH	5163114	1.180
VGH	5163134	1.120
VGH	5163139	1.080
VGH	5163154	1.040
EVENT	51632	0
VGH	5163204	1.080
VGH	5163249	1.040
VGH	5163259	1.000
EVENT	51633	0

RECORD	187	NO. WORDS	111
70C070EC	70C0A0F0	70C130F4	80051022
910C000E	70C0A000	80051024	70C0A00F
80051029	70C0A000	70C0C007	8005102A
8005102E	70C10006	8005102F	70C0000A
80051033	50000000	5000020E	500032AC
70C0A000	70C0F0E1	80051036	70C0000D
70C0A0E1	70C1A00D	8005103A	70C0900D
50000201	70C0A000	80051032	70C0700F
80051111	70C0D0E4	80051112	50003004
80051115	90C2000E	90FC000E	
VGH	5163309		1.050
VGH	5163339		1.070
VGH	5163394		1.130
EVENT	51634		0
VGH	5163434		1.080
VGH	5163444		1.040
VGH	5163454		0.990
VGH	5163464		0.940
VGH	5163484		0.880
VGH	5163489		0.920
EVENT	51635		0
ALT	16757.801		
MACH			0.550
VGH	5163549		0.880
EVENT	51636		0
VGH	5163649		0.920
VGH	5163674		0.880
EVENT	51637		0
EVENT	51638		0
EVENT	51639		0
EVENT	51640		0
ALT	16980.004		
MACH			0.528
VGH	5164079		0.840
EVENT	51641		0
VGH	5164154		0.880
VGH	5164159		0.840
EVENT	51642		0
VGH	5164204		0.800
VGH	5164206		0.760
EVENT	51643		0

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VGII	5172319	1.020
VGII	5172344	0.970
EVENT	51724	0
EVENT	51725	0
VGII	5172509	1.010
EVENT	51726	0
MACH		0.522
VGII	5172654	1.050
VGII	5172694	1.010
EVENT	51727	0
EVENT	51728	0
EVENT	51729	0
EVENT	51730	0
ALT		16202.301
MACH		0.526
EVENT	51731	0
EVENT	51732	0
EVENT	51733	0
EVENT	51734	0
ALT		16091.203
MACH		0.528
VGII	5173464	0.960
EVENT	51735	0
VGII	5173524	1.000
EVENT	51736	0
VGII	5173644	1.040
VGII	5173659	1.000
VGII	5173669	1.040
EVENT	51737	0
VGII	5173734	1.000
EVENT	51738	0
EVENT	51739	0
ALT		15480.102
MACH		0.530
VGII	5173954	1.040
EVENT	51740	0
VGII	5174049	1.000
EVENT	51741	0
EVENT	51742	0
EVENT	51743	0
ALT		15869.004
MACH		0.532
EVENT	51744	0
VGII	5174444	1.040
EVENT	51745	0
EVENT	51746	0
VGII	5174634	0.990
VGII	5174639	1.030
EVENT	51747	0
EVENT	51748	0
ALT		15646.801
MACH		0.536
EVENT	51749	0
EVENT	51750	0
VGII	5175014	1.000
EVENT	51751	0
VGII	5175104	0.960
VGII	5175199	1.000
EVENT	51752	0
EVENT	51753	0
VGII	5175359	0.960
EVENT	51754	0
VGII	5175424	1.000
EVENT	51755	0
EVENT	51756	0
VGII	5175659	0.960
EVENT	51757	0
VGII	5175799	1.000
VGII	5175799	1.040
EVENT	51758	0
ALT		15313.904
MACH		0.530
VGII	5175884	1.000
EVENT	51759	0
EVENT	51800	0
VGII	5180044	1.040
EVENT	51801	0
EVENT	51802	0
VGII	5180249	1.000
EVENT	51803	0
EVENT	51804	0
ALT		15202.402
VGII	5180404	0.960
VGII	5180439	1.000
VGII	5180499	1.040
EVENT	51805	0
EVENT	51833	0

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REF ID	IN	NO. WORDS	102
70C020E7	70C070E1	70C130E5	8005120A
90H200DE	910000DE	8005120H	70C0A0DF
70C0F0E7	8005120F	90H100DE	70C010E3
80051214	90H000DE	90F700DE	70C060E3
70C0A0E4	70C0A0E1	70C1A0DD	8005121A
90A000E	8005121F	70C110DD	70C130E1
70C110E1	80051224	80051225	70C090E5
80051217	8005121R	70C0A0E5	70C0A0E1
90A100DE	90F200DE	80051234	70C110DD
VGII	51R0507	1.000	
VGII	51R0534	0.940	
VGII	51R0594	0.980	
EVENT	51R06	0	
VGII	51R0609	1.020	
EVENT	51R07	0	
VGII	51R0764	0.970	
EVENT	51R08	0	
EVENT	51R09	0	
EVENT	51R10	0	
ALT		14980.203	
MACH		0.526	
EVENT	51R11	0	
VGII	51R1149	0.920	
VGII	51R1174	0.960	
EVENT	51R12	0	
VGII	51R1209	1.000	
EVENT	51R13	0	
VGII	51R1334	1.040	
VGII	51R1344	1.000	
EVENT	51R14	0	
VGII	51R1424	1.040	
VGII	51R1469	1.000	
EVENT	51R15	0	
ALT		14869.102	
MACH		0.518	
VGII	51R1504	0.960	
VGII	51R1559	1.000	
VGII	51R1584	0.960	
EVENT	51R16	0	
EVENT	51R17	0	
EVENT	51R18	0	
EVENT	51R19	0	
VGII	51R1984	0.910	
EVENT	51R20	0	
ALT		14758.004	
MACH		0.50H	
VGII	51R2029	0.960	
VGII	51R2039	0.900	
VGII	51R2044	0.940	
EVENT	51R21	0	
VGII	51R2149	0.900	
VGII	51R2194	0.940	
EVENT	51R22	0	
EVENT	51R23	0	
EVENT	51R24	0	
VGII	51R2419	0.980	
VGII	51R2449	0.940	
VGII	51R2499	0.900	
EVENT	51R26	0	
VGII	51R2604	0.940	
EVENT	51R27	0	
VGII	51R2744	0.980	
EVENT	51R28	0	
VGII	51R2884	0.940	
EVENT	51R29	0	
EVENT	51R30	0	
ALT		14313.602	
MACH		0.502	
EVENT	51R31	0	
VGII	51R3184	0.900	
VGII	51R3194	0.940	
EVENT	51R32	0	
VGII	51R3259	0.900	
VGII	51R3264	0.940	
EVENT	51R33	0	
VGII	51R3399	0.980	
EVENT	51R34	0	
ALT		14091.402	
EVENT	51R35	0	
VGII	51R3584	0.940	
EVENT	51R36	0	
EVENT	51R37	0	
VGII	51R3744	0.980	
EVENT	51R38	0	

EVENT	51910	1253A.004
ALT		0.510
MACH		1.066
VGN	51910A9	
SING	51910A9	
EVENT	51233	0

EVENT	51940	0.482
MACH	5194024	0.960
EVENT	51941	0
EVENT	51942	0
VGII	5194214	1.000
EVENT	51943	0
VGII	5194389	0.960
EVENT	51944	0
ALT	12091.602	
MACH		0.4711
EVENT	51945	0
EVENT	51946	0
EVENT	51947	0
VGII	5194744	0.920
EVENT	51948	0
ALT	11980.504	
MACH		0.476
VGII	5194859	0.000
EVENT	51949	0
VGII	5194944	0.920
VGII	5194959	0.960
VGII	5194984	1.000
EVENT	51950	0
EVENT	51951	0
VGII	5195114	0.960
VGII	5195154	0.920
VGII	5195159	0.960
VGII	5195164	0.920
EVENT	51952	0
ALT	11869.402	
MACH		0.474
EVENT	51953	0
VGII	5195339	0.960
VGII	5195379	0.920
EVENT	51954	0
VGII	5195409	0.960
EVENT	51955	0
EVENT	51956	0
MACH		0.472
EVENT	51957	0
VGII	5195749	1.010
VGII	5195799	0.970
EVENT	51958	0
EVENT	51959	0
VGII	5195909	1.010
EVENT	52000	0
ALT	11647.203	
EVENT	52001	0
VGII	5200119	0.970
VGII	5200189	1.010
EVENT	52002	0
EVENT	52003	0
VGII	5200389	0.960
EVENT	52004	0
VGII	5200434	1.000
VGII	5200449	1.040
VGII	5200469	1.080
EVENT	52005	0
VGII	5200514	1.030
VGII	5200544	0.990
VGII	5200584	1.030
EVENT	52006	0
VGII	5200609	1.000
EVENT	52007	0
EVENT	52008	0
ALT	18313.203	
MACH		0.470
VGII	5220809	1.000
EVENT	52010	0
VGII	5201084	1.000
EVENT	52015	0
VGII	5201559	0.960
EVENT	52016	0
EVENT	51957	0
VGII	5195749	1.010
VGII	5195799	0.970
EVENT	51958	0

PCRDND 1A7 NM. WORDS 108

8005133A	70C020EA	8005141B	8005141C	70C120EB	70C130E7	8005141D	80063004	8000187A	70C020EA	70C030E6	70C080E2
8005141E	90C000DE	90E600HE	70C030DF	70C040E3	8005141F	70C0C0E7	80051420	50000004	500002D1	70C120E8	80051421
70C0C0E7	80051422	70C020EH	70C100E7	70C110EH	70C120E6	80051423	90E600DE	90E900HE	80080800	8000187A	80051424
70C080EB	70C090E7	70C0A0EH	70C130E7	80051425	80051426	70C030EA	80051427	70C0C0E7	80051428	70C000ED	80051429
8005142A	8005142B	8005142C	8005142D	8005142E	8005142F	80051430	80051431	80051432	80051433	80051434	80051435
EVENT	51233										

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VGH	5210194	1.000
EVENT	52102	0
VGH	5210219	0.960
EVENT	52103	0
VGH	52104	0
MACH		0.470
EVENT	52105	0
VGH	5210479	1.000
VGH	5210484	0.960
EVENT	52106	0
VGH	5210619	1.000
VGH	5210684	0.960
VGH	5210694	1.000
EVENT	52107	0

RECORD	104	NO. WORDS	104
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8005150A	70C110E3	80051509	70C0A00F	70C0C0E3	70C130E7	8005150A	70C090E3	70C0A0E7	8005150H	90H500DE	90F200NE
70C110EH	70C120E7	8005150C	70C030F8	70C0C0EF	70C0D0EH	8005150D	8005150E	8005150F	70C110E6	80051510	70C050EH
70C070EF	70C0A0F3	70C0C0F0	80051511	90A400DE	90E300UE	70C040F4	70C110F0	80051512	70C0D0EC	80051513	80051514
500H0022	50000244	500H0002	50000245	500A000A	5000024H	50060004	50000249	70C0A0EF	80051515	70C0H0EH	80051516
80051517	40F4000E	70C0A0F0	80051518	70C0H0EH	80051519	70C040EF	70C0D0EA	8005151A	70C0A0FF	70C0H0EH	8005151B
70C0A0EH	70C140EH	8005151C	70C0A0EF	70C0F0F3	8005151D	90H600DE	90NF00HE	70C0C0F6	8005151E	70C0H0EH	8005151F
70C0H0EH	70C130F3	80051520	70C010EF	70C030F3	70C0D0EF	70C0E0F3	80051522	80051523	90H800DE	90D800DE	70C10UEC
80051524	70C020F0	70C110EF	80051525	70C090F3	80051526	70C020F3	70C0H0EH	70C0F0EF	80051527	70C030F6	70C0E0EA
70C0A0F4	80051528	8005151E	70C0A0F2	8005151F	70C0D0EF	70C130F3	80051520				
EVENT	52108										
VGH	5210884	0.960									
EVENT	52109	0									
VGH	5210932	0.920									
VGH	5210939	0.960									
VGH	5210994	1.000									
EVENT	52110	0									
VGH	5211044	0.960									
VGH	5211049	1.000									
EVENT	52111	0									
ALT		4980.703									
MACH		0.466									
VGH	5211184	1.040									
VGH	5211189	1.000									
EVENT	52112	0									
VGH	5211214	1.040									
VGH	5211259	1.080									
VGH	5211264	1.040									
EVENT	52113	0									
EVENT	52114	0									
EVENT	52115	0									
VGH	5211584	0.940									
EVENT	52116	0									
VGH	5211624	1.040									
VGH	5211634	1.080									
VGH	5211649	1.120									
VGH	5211659	1.170									
EVENT	52117	0									
ALT		4989.602									
MACH		0.468									
VGH	5211719	1.170									
VGH	5211784	1.090									
EVENT	52118	0									
VGH	5211864	1.050									
EVENT	52119	0									
EVENT	52120	0									
VGH	5212029	1.080									
EVENT	52121	0									
VGH	5212132	1.040									
EVENT	52122	0									
EVENT	52123	0									
MACH		0.470									
VGH	5212319	1.090									
EVENT	52124	0									
VGH	5212439	1.040									
EVENT	52125	0									
VGH	5212519	1.080									
VGH	5212564	1.030									
EVENT	52126	0									
VGH	5212649	1.080									
VGH	5212654	1.040									
EVENT	52127	0									
VGH	5212724	1.080									
VGH	5212799	1.040									
EVENT	52128	0									
VGH	5212849	1.080									
VGH	5212874	1.120									
EVENT	52129	0									
ALT		10091.805									
MACH		0.460									
VGH	5212959	1.150									
EVENT	51233	0									

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EVENT	52201	0
VGII	52201A9	0.840
EVENT	52202	0
MACH		0.402
VGII	5220209	0.840
EVENT	52203	0
VGII	5220334	0.840
EVENT	52204	0
EVENT	52205	0
VGII	52205H9	0.840
EVENT	52206	0
VGII	5220619	0.840
VGII	5220624	0.840
VGII	5220634	0.840
VGII	5220679	0.840
VGII	5220694	0.840
VGII	5220699	0.840
EVENT	52207	0
ALT		10758.402
MACH		0.406
VGII	5220749	0.840
VGII	5220789	0.840
EVENT	52208	0
VGII	5220884	0.840
EVENT	52209	0
EVENT	52210	0
EVENT	52211	0
EVENT	52212	0
ALT		10314.004
MACH		0.410
VGII	5221209	0.840
EVENT	52213	0
VGII	5221394	0.920
EVENT	52214	0
VGII	5221479	0.940
EVENT	52215	0
VGII	5221559	1.000
VGII	5221564	0.940
VGII	5221579	1.000
VGII	5221584	0.940
VGII	5221589	1.000
EVENT	52216	0
EVENT	52217	0
VGII	5221724	1.040
EVENT	52218	0
EVENT	52219	0
ALT		9449.402
MACH		0.442
VGII	5221929	1.080
EVENT	52220	0
VGII	5222009	1.120
VGII	5222014	1.080
VGII	5222019	1.120
EVENT	52221	0
VGII	5222129	1.160
EVENT	52222	0
VGII	5222264	1.120
EVENT	52223	0

14. ALTITUDE Recorded Below 10,000 feet
 9976 SUR ALTITUDE AT 05 22 19
 SPEED 0.442 MACH AT 05 22 19

RECORD	190	NO. WORDS	113
70C010F3	8005161A	80051619	9040000E
70C010F3	70C0A0F3	8005161D	70C070F3
80051620	80051621	70C120F3	80051622
70C0A0F3	70C0A0F3	70C000F1	70C110F3
80051620	70C020F3	70C000F1	70C110F3
70C100F7	70C110E3	70C120F7	8005162D
80051624	80051625	70C020F3	70C0F0F3
70C1A0F4	8005162E	8005162F	70C050E1
80051631	70C0C0F1	70C120D0	80051632
80051634	70C000D0	80051635	8005163A
VGII	5222144	1.080	
EVENT	52224	0	
EVENT	52225	0	
ALT		9425.203	
MACH		0.468	
VGII	5222504	1.110	
EVENT	52226	0	
EVENT	52227	0	
VGII	5222730	1.070	
VGII	5222747	1.110	
VGII	5222769	1.070	
EVENT	52228	0	
VGII	5222844	1.120	
VGII	5222849	1.080	
VGII	5222859	0.442	
EVENT	51233	0	

17 May 1953

VGH	5222934	1.120
VGH	5222939	1.080
VGH	5222949	1.120
VGH	5222994	1.160
EVENT	52230	0
VGH	5223039	1.120
EVENT	52231	0
ALT		9091.902
MACH		0.476
EVENT	52232	0
EVENT	52233	0
VGH	5223389	1.080
EVENT	52234	0
VGH	5223484	1.030
EVENT	52235	0
EVENT	52236	0
VGH	5223614	1.000
EVENT	52237	0
ALT		8869.703
MACH		0.472
VGH	5223709	1.040
VGH	5223719	1.080
VGH	5223729	1.120
VGH	5223744	1.170
VGH	5223764	1.100
VGH	5223784	1.050
VGH	5223789	1.000
EVENT	52238	0
VGH	5223804	0.960
EVENT	52239	0
VGH	5223904	1.010
VGH	5223934	1.050
VGH	5223949	1.070
EVENT	52240	0
VGH	5224009	1.040
VGH	5224024	1.000
VGH	5224034	0.960
VGH	5224084	1.000
VGH	5224099	1.040
EVENT	52241	0
VGH	5224104	1.000
VGH	5224114	1.030
VGH	5224179	0.990
EVENT	52242	0
VGH	5224234	0.960
VGH	5224279	1.000
VGH	5224284	0.960
VGH	5224289	1.000
EVENT	52243	0
ALT		8758.602
MACH		0.462
VGH	5224309	1.060
VGH	5224374	1.020
EVENT	52244	0
VGH	5224414	0.980
VGH	5224464	0.940
VGH	5224479	0.980
EVENT	52245	0
VGH	5224504	0.940
VGH	5224599	0.980
EVENT	52246	0
EVENT	52247	0
VGH	5224724	0.940
VGH	5224759	0.900
VGH	5224784	0.940
EVENT	52248	0
VGH	5224804	0.980
VGH	5224819	1.020
VGH	5224834	1.060
VGH	5224874	1.020
VGH	5224889	0.980
EVENT	52249	0
VGH	5224939	0.940
VGH	5224984	0.900
EVENT	52250	0
ALT		8536.402
MACH		0.446
VGH	5225029	0.860
VGH	5225059	0.700
VGH	5225064	0.840
VGH	5225074	0.900
EVENT	52251	0

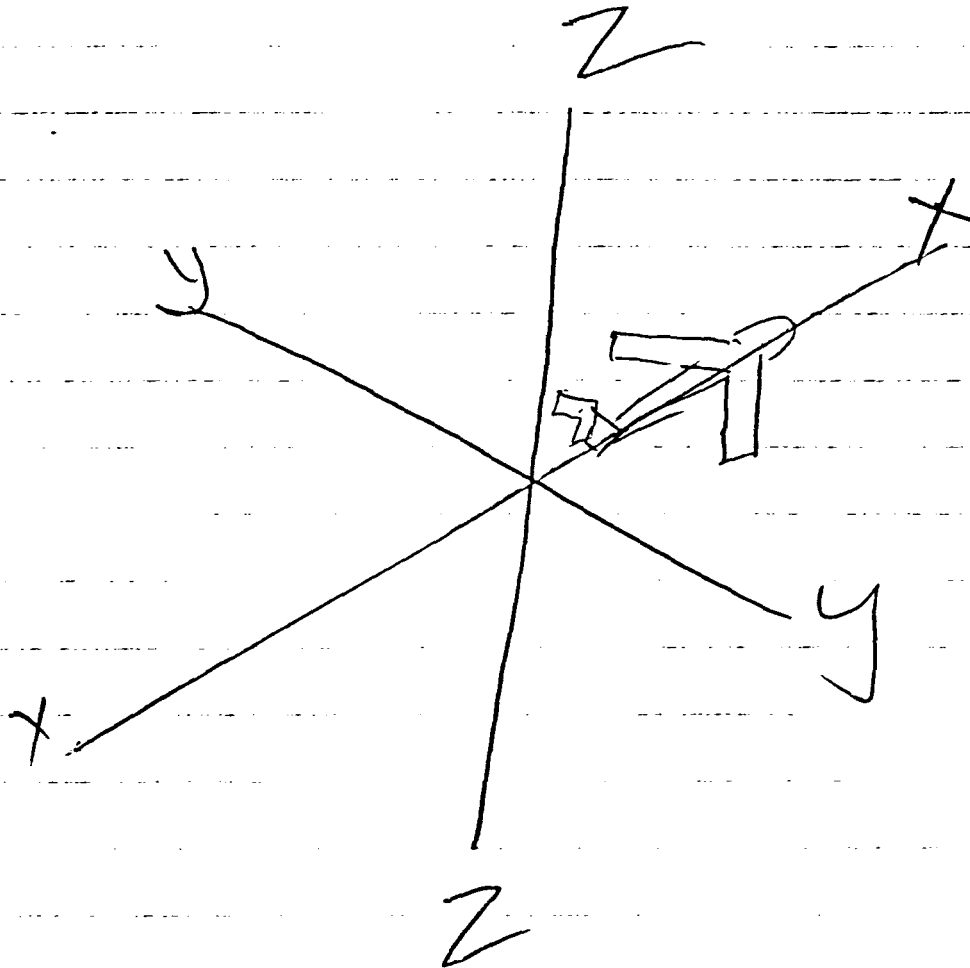
PLAINTIFF'S EXHIBIT LIST

DEPOSITION OF JOHN EDWARDS

April 28, 1980

<u>EXHIBIT NO.</u>	<u>DESCRIPTION</u>	<u>CUSTODY</u>
Ex.1	Edward's drawing of X, Y and Z axes for computation of G forces	SC
Ex. 2	Wreckage diagram with computation of G forces for troop compartment, flight deck and section of the cargo deck.	SC
Ex. 3	Edwards derivation of formulas for computation of G forces for point of second impact to the point of zero velocity.	SC
Ex. 4	Heath MADAR data attached to letter from James P. Piper to Richard H. Jones dated June 1, 1978 (trial exhibit D-43).	SC
Ex. 5	TECH MANUAL 1C-5A-103, Description and Support Manual. C5A Malfunction Detection, Analysis, and Recording System.	SC
Ex. 6	Letter of Carroll E. Dubuc to Oren Lewis, Jr., of April 18, 1980 attaching 4 pages of MADAR computations of VA/CGLAT/CG for times 5:28:48.55 to 5:28:52:00.	SC
Ex. 7	Octol Dump MADAR data from 68-218 on April 4, 1975 from take off at Saigon to point of crash landing.	SC
Ex. 8	Edwards computation sheet "G Loads on Passengers."	SC

P-1
DSC
4-28-80
Edwards D&P



1. $D = VT$

$D = \text{distance}$

$V = \text{Velocity (where } V \text{ is Constant)}$

$t = \text{time}$

2. $D = \frac{V_1 + V_2}{2} T$

for a Velocity that changes.

3. $D = \frac{V_1}{2} \cdot T$

If V_2 is 0 as was this case

4. $T = \frac{2D}{V}$

Also $D = \frac{1}{2} AT^2$

5. or $A = \frac{2D}{T^2}$

substituting #4 into #5

6. $A = \frac{2D}{\left(\frac{2D}{V}\right)^2} = \frac{2D}{\frac{4D^2}{V^2}}$

$A = \frac{2D \times V^2}{4D^2}$

$A = \frac{V^2}{2D}$

7. If g 's are desired you divide A by 32.2

$\left(\frac{A}{32.2}\right) = \frac{V^2}{2D \times 32.2}$

$g's = \frac{V^2}{2D \times 32.2}$

~ 6' loads on Passengers ~

Given: a) Vel = 270 knots

J. EDWARDS DEP
PLTF #8 4/15/80

$$\text{or } (270 \times 1.15 \times \frac{88}{60}) = 455 \text{ Feet per Sec}$$

b). D = Distance = 2012 for Aft Hoop Comp
C, D = = 2209 for Flight Comp

A. Distance = Velocity x time with constant
 $D = V T$

B. Distance = $(V_1 + V_2) \times \text{time}$ for Varying Vel
if $V_2 = 0$
then $D = \frac{V_1}{2} \times T$
 $T = \frac{2D}{V}$

C. for an accelerating (or decelerating) object
 $D = \frac{1}{2} A T^2$
OR $A = \frac{2D}{T^2}$

Substituting equation B into equation C

we get $A = \frac{2D}{(\frac{2D}{V})^2} = \frac{2D}{\frac{4D^2}{V^2}} = \frac{V^2}{2D}$

I for Aft Hoop Comp $A = \frac{V^2}{2D} = \frac{(455)^2}{2 \times 2012} = \frac{51.447}{51.56 \text{ F.P.S.}}$
 $A = 51.56 \text{ F.P.S.}$ $g's = \frac{51.56}{32.2} = 1.597$
 $g's = \frac{51.56}{32.2} = 1.60K$

II for Flight Crew Comp $A = \frac{V^2}{2D} = \frac{(455)^2}{2 \times 2209} = \frac{46.96}{46.85}$
 $A = 46.96$
 $g's = \frac{46.96}{32.2} = 1.46 \checkmark OK$

III for Section of Cargo Floor $\frac{(455)^2}{2 \times 853} = 121.63$ $g's = \frac{121.63}{32.2} = 3.77$

IV for a Car at 70 MPH stopping in 100'
 $A = \frac{V^2}{2D} = \frac{(\frac{70}{60} \times 88)^2}{2 \times 100} = \frac{(1.1666 \times 88)^2}{200} = \frac{(102.66)^2}{200} = 5.27$
 $\frac{52.7}{32.2} = 1.63 g's$

J. Edwards
28 Mar 80

ALTITUDE TIME HISTORY

SHIP 68-218

DATA SOURCE MADAR

4 APRIL 1975

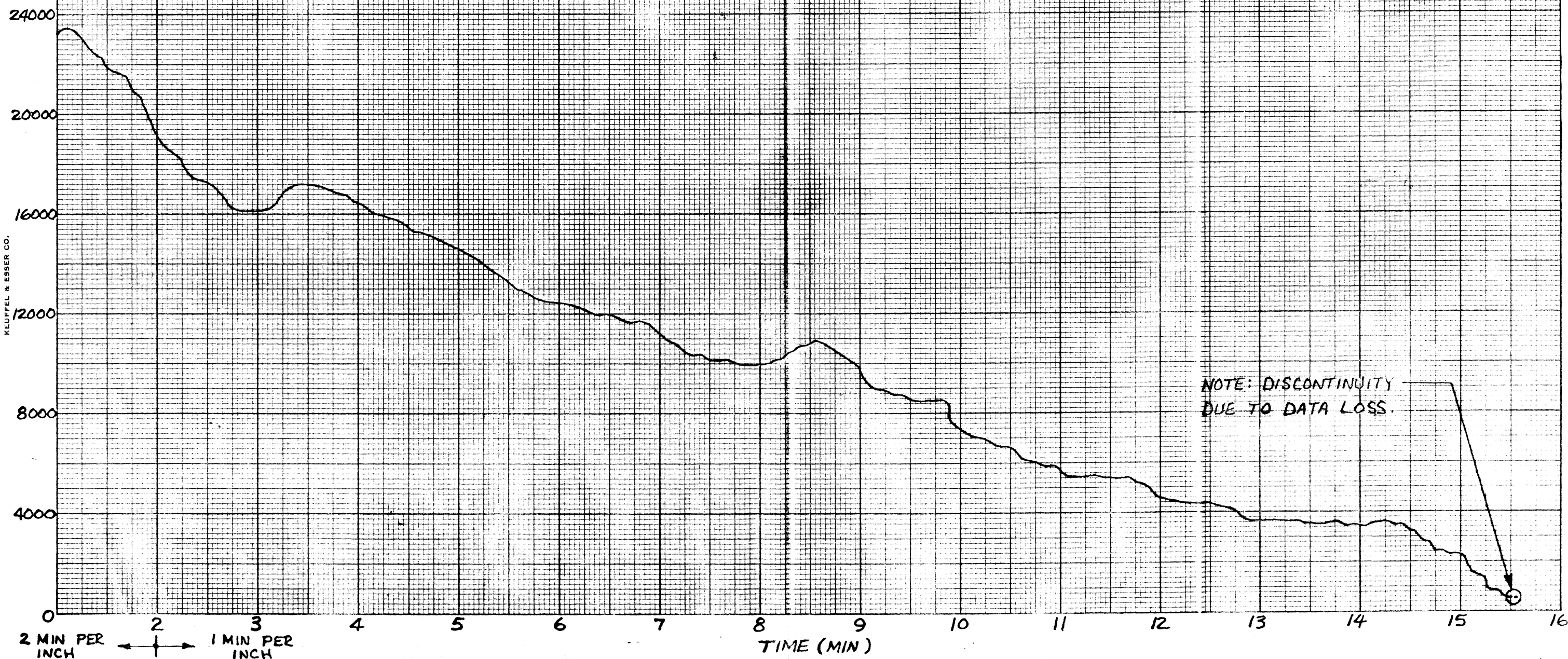
NOTE: TIME "0" IS EQUIVALENT

TO MADAR TIME 5:13:18.39

WHICH WAS RAPID DECOMPRESSION.

SIGNED *J.W. Edwards*

J.W. EDWARDS



C-5A SN 68-218

4 APRIL 1975



WING SECTION

TROOP COMPARTMENT

T-TAN

SECTION OF
CARGO FLOOR

-SAIGON RIVER

RAMP PARTS

SECOND IMPACT

FLIGHT DECK

ENGINE

SMALL WATERWAY

DIKE

BROKEN TREES

LAST EVIDENCE
OF GROUND
CONTACT

546 FIRST CLIPPED TREE

FORMIO-2-1964-11-1

DEFENDANT'S

DEBRIS AREA

BURN AREA

SCALE 1" = 175 yds.
Distances Approximate.

ATTACHMENT 6

DIRE to Migration Section

DIKE + 015853
FLIGHT DEPT 209
FLIGHT 1322

$$0.91 = 5.6$$

DIKE T
% AFT
TROOP COMPT.

543

Williams - 2
2/12/80