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**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C**

**FLIGHT DATA RECORDER (FDR)
GROUP CHARIMAN'S FACTUAL REPORT**

Revision 1(February 15, 2000)

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, D.C. 20594

February 15, 2000

Flight Data Recorder - 10A**Group Chairman's Factual Report-Revision 1
by Dennis R. Grossi****A. ACCIDENT**

Location: East Moriches, N.Y.
Date: July 17, 1996
Time: 2031 local standard time
Aircraft: Trans World Airlines (TWA) Flt. 800, B-747-131, N93119
NTSB Number: DCA96MA070

B. GROUP

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C. SUMMARY

Revision Note: The original Flight Recorder Factual Report stated power was interrupted as the first 2 bits of the 8-bit postamble were being written (to the tape). However, it has been determined that the entire postamble was present and that the last data recorded for Flight 800 was a partial data word, specifically word 4, bits 1-9. This is discussed in detail in Addendum 2 to the FDR Group Chairman's factual report and in Section E of this report.

Also, the FDR recovery software used to produce the tabular listing in the original FDR Factual Report was designed to process a standard 64-word, 1 second data frame, not the 43-word, 0.67188-second data frame used by the TWA800 FDR system. Algorithms added to the software properly addressed the timing of the data frames but introduced timing offsets within each data frame ranging linearly from 0.005 seconds for the 1st word to 0.22 seconds for the 43rd word. The software was revised to correctly define the time of each parameter within each 0.67188-second data frame.

On July 17, 1996, about 2031 eastern daylight time, a Boeing 747-131, N93119, operated as Trans World Airlines Flight 800 (TWA800), crashed into the Atlantic Ocean, about 8 miles south of East Moriches, New York, after taking off from John F. Kennedy International Airport (JFK), Jamaica, New York. All 230 people aboard the airplane were killed. The airplane, which was operated under Title 14 Code of Federal Regulations (CFR) Part 121, was bound for Charles De Gaulle International Airport (CDG), Paris France. The flight data recorder (FDR) and cockpit voice recorder (CVR) ended simultaneously, about 13 minutes after takeoff.

The FDR, a Sundstrand Model UFDR (s/n 10291), was recovered from the Atlantic Ocean on July 24, 1996, and transported to the Safety Board's FDR Laboratory in the custody of the Federal Bureau of Investigation (FBI). The FDR arrived at the Safety Board's Laboratory at approximately 3:00 AM, on July 25, 1996. The damaged recorder was disassembled and the magnetic tape recording medium removed for playback. The initial readout of the recorded data was performed on July 25, 1996.

The following is a brief summary of the data recovered during the accident flight and the prior landing. All times will reference local time unless otherwise noted:

- The data recorded during the approach and landing at JFK prior to the accident flight are consistent with normal operation.
- The FDR operated continuously from the start of the takeoff roll until the recording stopped at 20:31:12, approximately 12 ½ minutes into the flight. The data recorded during this period were consistent with a normal departure and climb.
- The interruption in the recording at 20:31:12 was consistent with the loss of electrical power to the recorder.
- At the time the recording stopped, the data indicate a wings level climb, with the parameters of vertical and longitudinal acceleration indicating normal aircraft loads.
- A correlation of the timing for the last 7 Air Traffic Control (ATC) radio transmissions from flight 800, as recorded by Boston Air Route Traffic Control Center (ARTCC) and the FDR was established.

D. DETAILS OF INVESTIGATION

1. Description of Data

The accident airplane's FDR data were first processed by a Data Acquisition Unit (DAU) and Central Electronics Unit (CEU) before being sent to the FDR via ARINC 563 serial binary data stream. The ARINC 563 data protocol is unique to L1011 and B747 airplanes operated by TWA. The DAU function is to gather and convert analog flight data parameters to digital data for transmission to the CEU. The CEU is a general purpose digital computer with various airplane data functions, one of which is to provide a serial binary data stream to the FDR at a rate of 768 bits/sec.

The ARINC 563 serial binary data input to the FDR is time division multiplexed, with parameter identification established by means of word slot and bit position. The data stream is composed of "frames," which are groupings of 43 separate words with each word 12-bits in length. The first word in each frame is a 12-bit synchronization (sync) word. Because the CEU produces 768 bits per second (64 separate 12-bit words), the sync words appear in the data stream every 0.67188 seconds (43 divided by 64)¹. The data stream is "in sync" when the sync words appear at the proper 43-word interval. If the data stream is interrupted or corrupted in some way, the sync word will not be found at the proper interval, and the time reference will be lost until the pattern can be re-established.

The data stream is passed from the CEU to the FDR, where it is held in one of two RAM² buffers until a full 768 bits have been stored. When the FDR's buffer is full, an 8-bit preamble and an 8-bit postamble are added to identify the beginning and the end of each data block. The data are then recorded onto ¼-inch magnetic tape within a crash-protected enclosure. While a completed data block is being transferred from one buffer to the tape, input data from the CEU are stored in the other buffer.

The FDR's 8 track tape moves at 5 inches per second (ips), and records on one track at a time. Data are written on the tape at the rate of 11.4 kilo bits per second; consequently, since the tape is moving at 5 ips, approximately 0.344³ inches of tape are required to record a one second segment of data containing 784 bits. Each one second data segment is written in about .069 seconds.

This model FDR also uses a continuous Checkstroke™ data checking process where it writes 1 second of data to tape, rewinds the tape to the beginning of the 1 second data block it just wrote (reading the tape data while rewinding), compares the tape data to the buffer data, advances the tape slightly past the end of the block it just wrote⁴, and then starts the Checkstroke™ process all over again for the next second of data. If the FDR finds

¹ As a result of the .67 second interval between sync words, the per-second sample rate for each parameter is equal to the number of samples per frame divided by 0.67188. For example, vertical acceleration is sampled 3 times per frame, or $3/0.67188 = 4.47$

² The Random Access Memory (RAM) consist of two static CMOS 256 x 4 chips.

³ The number is a result of the calculation $((784\text{bits}/11400 \text{ bits per second}) * 5\text{ips} = .3438596)$. The Sundstrand Data Control manual reports this value as .36 inches.

⁴ The "no data" area created by the slight tape advance at the end of each data block is referred to as the inter-record gap.

8 consecutive seconds of Checkstroke™ mis-compares, it will send an indication of an FDR fault to the flightcrew.

The oldest FDR data are erased before recording the newest FDR data. End-of-tape sensors at both ends of the tape provide the signal to reverse the drive motor direction and switch the record electronics to the next track. Recording time for one end-to-end pass on the tape track is 3.125 hours. There are 8 tracks, thus the recorder will continuously record and retain the last 25 hours of flight data.

2. Examination of Recorder

The FDR was extensively damaged by impact. However, the crash enclosure remained intact, and the tape recording medium displayed no evidence of mechanical damage or excessive wear. The unspooled portion of the tape showed some discoloration. The tape discoloration and staining was most evident on the portion of the tape that was in contact with the recording and playback heads. There was no evidence of fire damage.

3. Readout and Evaluation

a. Readout

The original magnetic tape recording medium was removed from the damaged FDR, cleaned, dried and mounted on an tape transport for playback. The data were transcribed to a disk file for further processing.

The transcription process utilized the Safety Board's Recovery Analysis and Presentation System (RAPS). RAPS processes the raw analog wave form signal from an original or copy tape. The unshaped Bi-Phase data output produced by the FDR is digitized and decoded into binary data. RAPS also removes the preamble and postamble from the data stream and performs sync detection. When sync is lost the digitized wave form for the problem data are stored for further analysis.

The data were reduced from the recorded decimal values (0 to 4095) to engineering units and discrete values (e.g., feet, degrees, knots, on, off, etc.) by conversion algorithms obtained from the operator. Attachment I contains a listing of all recorded parameters.

b. Evaluation

An examination of the recovered data indicated that the FDR operated normally. However, some parameters recorded anomalous or erratic values.

Two sync losses occurred during the flight. The first loss, which occurred at 20:25:21, was the result of a distortion in the recorded wave form. The second sync loss occurred at 20:26:20 and involved an invalid sync word. In both instances the wave form analysis feature of RAPS was used to recover all of the data from the problem areas.

The recovered data contained some random anomalous values for nearly every parameter. However, the following parameters contained frequent data anomalies during Flight 800 and prior flights:

Aileron Position - The recorded values were noisy and erratic.

Thrust Reverse Engine No. 3 - During the landing at JFK, the “Transit” indication was displayed during the period that the other 3 engines were indicating a “Deployed” condition. The thrust reverser on engine number 3 had been locked out during previous maintenance, and was being carried as a Minimum Equipment List (MEL) item.

Altitude Coarse - Indicated erroneous altitude values and was unusable.

Altitude Fine - Occasionally displayed noisy values.

Leading Edge Flap Left No. 3 Transit - With the flaps retracted, the “Transit” indication remained on. With the flaps in the extend position the “Transit” condition indicated “Extended”. The maintenance log contains the following entry: “July 15th, 3L LE flap Amber Lt. Stays on with LE Flaps Up and Retracted electrically. FWD panel lights ops check O.K.”

Indicated Airspeed - The recorded values were occasionally erratic.

Due to the absence of valid altitude-coarse data, the altitude time history was computed from the parameter altitude-fine. The parameter altitude-fine records values from 0 to 5,000 feet, cycling through zero at 5,000 foot increments. Normally the parameter altitude-coarse is referenced to determine pressure altitude values outside the 0 to 5,000 foot range. The absence of valid altitude coarse values will not affect the quality of the computed pressure altitude time history.

When TWA Flight 800 took the active runway prior to takeoff, the actual pressure altitude at the runway surface was negative 135 feet ($12' \text{ runway elevation} + (-147') \text{ sea level pressure altitude}^5$). The pressure altitude values recorded while on the runway and shortly after liftoff were negative because the barometric pressure was higher than 29.92” Hg.

The altitude fine values ascended through the maximum value (5,000 feet) 3 times during the accident flight, with the first transition occurring shortly after takeoff. In order to derive the FDR pressure altitudes, the altitude fine values (4,895 feet) recorded while the airplane was on the runway and not moving, were converted by subtracting 5,000 feet. This produced a negative 105 feet FDR pressure altitude while on the runway. The FDR altitude-fine values following the first transition required no correction. The altitude-fine values recorded following the next two 5,000 foot transitions were incremented by 5,000 and 10,000 feet, respectively.

⁵ The following barometric pressure observations were recorded at JFK (23:23z, 7/17, 30.07 inches of Hg.) (00:51z, 7/18, 30.08 inches of Hg.). A barometric pressure of 30.08 inches of Hg. = -147 feet at sea level.

All of the FDR-derived pressure altitude values were increased by 127 feet to obtain Mean Sea Level (MSL) altitude values. The altitude in feet MSL were computed as follows:

$$\text{MSL Altitude (ft.)} = \text{FDR pressure altitude (ft.)} + 127 \text{ ft.}$$

Where; 127 feet = 12+10+105

-105 feet (pressure altitude recorded while on runway)

12 feet (runway elevation)

10 feet (approximate elevation of altitude sensor above runway)

E. Boston ARTCC, DFDR & CVR Time Correlation

The local time reference was established through the correlation of the last 7 VHF radio transmissions made by TWA 800 and recorded by the FDR, CVR and Boston ARTCC. The following table displays the correlation point and the corresponding transmission times:

CVR, FDR and Boston Center Time Correlation

CVR (Min:Sec.*)			Boston Center *			FDR Mic Keying (Actual)			FDR Mic Keying (Adjusted)**		
start	end	delta	start	end	delta	open	closed	delta	open	closed	delta
24:41.7	24:48.9	7.20	0024:41.8	0024:49.1	7.30	0024:41.48	0024:49.54	8.06	0024:41.80	0024:49.10	7.30
24:53.4	24:56.7	3.30	0024:53.5	0024:56.8	3.30	0024:52.90	0024:56.93	4.03	0024:53.50	0024:56.80	3.30
25:34.5	25:42.1	7.60	0025:34.6	0025:42.2	7.60	0025:33.88	0025:42.62	8.74	0025:34.60	0025:42.20	7.60
25:47.1	25:53.3	6.20	0025:47.2	0025:53.4	6.20	0025:46.65	0025:53.37	6.72	0025:47.20	0025:53.37	6.17
26:30.3	26:34.3	4.00	0026:30.3	0026:34.3	4.00	0026:29.65	0026:34.35	4.70	0026:30.30	0026:34.30	4.00
28:20.6	28:23.7	3.10	0028:20.8	0028:23.9	3.10	#	#	n/a	#0028:20.80	#0028:23.90	3.10
30:19.2	30:23.7	4.50	0030:19.4	0030:23.9	4.50	0030:18.76	0030:24.13	5.37	0030:19.40	0030:23.90	4.50

* TWA 800 transmissions recorded by Boston Center. Time in UTC (local time 2000 EDT)

** The duration of each ATC transmission made by TWA 800 and recorded by Boston Center was applied to determine the precise start and stop times displayed

This transmission was overlapped by a transmission to TWA's Flight Information Center from a second transmitter. Therefore, the start and termination of this transmission was established from the corresponding transmission recorded by the CVR and Boston Center. This FDR system groups all VHF transmissions into a single discrete parameter. Therefore, overlapping transmissions from any of the 3 VHF transmitters will be recorded by the FDR as a single transmission.

The correlation points all agreed to within a second. The FDR samples microphone keying for $1/768^{\text{th}}$ of a second every 0.671875 seconds. Therefore, if the microphone is keyed just after the microphone discrete is interrogated it will not be recorded until 0.67 second have elapsed when the next sample is taken. If it is keyed for less than a 0.67 seconds it may not be recorded at all. The radio transmission referenced in the ARTCC and CVR transcript, were established by the CVR specialist manually recording the start and stop of each event.

The loss of power to the CVR and FDR are consistent. The CVR factual report places the end of the CVR recording at 20:31:12.5. The time of the last recorded FDR data value (word 4 bit 9 of the last subframe) is 20:31:11.96. The next bit begins the 8 bit postamble, which is recorded in its entirety. In this instance, the power was interrupted after

the 8-bit postamble was written but before the next preamble was started. Since the data record is written in about .069 seconds, there is 0.931 (1-0.069) seconds before the next preamble is written. Therefore, power loss to the FDR occurred sometime between 0 and 0.931 seconds after the final postamble, and the end of the FDR recording can be computed as follows:

$$\begin{array}{l} 20:31:11.96 \text{ (time last FDR data word value recorded – word 4 bit 9)} \\ + (00:00:00.00 – 00:00:00.93) \text{ (range of times between final postamble and next preamble)} \\ \hline (20:31:11.96 – 20:31:12.89) \text{ (range of times during which power loss to FDR occurred)} \end{array}$$

F. Data Printout

Attachment II contains a tabular printout of selected parameters from 20:18:40 to the end of the data recorded for Flight 800:

Local Time	MSL Altitude	IAS (Airspeed)
Roll Angle	Elevator Position Right	Magnetic Heading
Pitch Angle	Longitudinal Acceleration	Vertical Acceleration
EPR Engines (1-4)	Rudder Position (upper)	Angle of Attack
VHF (Microphone Keying)	Pitch Trim Stab Position	

A tabular printout of the remaining parameters recorded during the accident flight, and all parameters for an approximate 3 minute period covering the prior landing at JFK are in an Addendum to this report which is contained in the Public Docket under separate cover. The trailing edge flap parameters (lt. & rt. Inboard) and (lt. & rt. Outboard) have been combined as Inboard and Outboard in the tabular listings.

G. Data Plots

Attachment III contains the following 13 parameters plotted as a function of local time. The data are presented in 8 successive plots starting at 20:18:40 and continuing to the end of the data recorded for Flight 800:

MSL Altitude	VHF (Microphone Keying)	IAS (Airspeed)
Roll Angle	Elevator Position Right	Magnetic Heading
Pitch Angle	Longitudinal Acceleration	Vertical Acceleration
EPR Engines (1-4)	Rudder Position (upper)	Angle of Attack
Pitch Trim Stab Position		



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ATTACHMENT I

Parameter Listing

PARAMETER NAME	RESOLUTION	WORD LOCATION(S)
1. TIME	1/768 SEC.	1
2. PRESSURE ALTITUDE COURSE PRESSURE ALTITUDE FINE	135 FT. 5 FT.	16 17
3. AIRSPEED	.5 KNOT	38
4. VERTICAL ACCELERATION	0.009 "G"	11,29,42
5. LONGITUDINAL ACCELERATION	0.002 "G"	12,30,43
6. ANGLE OF ATTACK	0.15	15,33
7. MAGNETIC HEADING	0.356	18
8. PITCH ATTITUDE	0.356	19
9. ROLL ATTITUDE	0.356	20
10. PITCH TRIM (STAB)	0.045	27
11. AILERON POSITION RT. INBD.	.02	28
12. ELEVATOR POSITION LT. ELEVATOR POSITION RT.	.0549	21,22
13. RUDDER POSITION UPPER. RUDDER POSITION LOWER.	.09	13,31 14,32
14. FLAP POSITION RT. INBOARD FLAP POSITION LT. INBOARD FLAP POSITION LT. OUTBOARD FLAP POSITION RT. OUTBOARD	*	23 24 25 26
15. LEADING EDGE LT. SET 1 LEADING EDGE LT. SET 2 LEADING EDGE LT. SET 3 LEADING EDGE LT. SET 4 LEADING EDGE RT. SET 1 LEADING EDGE RT. SET 2 LEADING EDGE RT. SET 3 LEADING EDGE RT. SET 4	<i>Discrete Values</i> EXT = Extend TRANS = Transit RETRCT = Retract	39 (bits 10-11) 39 (bits 7 - 9) 39 (bits 5 - 6) 39 (bits 2 - 3) 40 (bits 10-11) 40 (bits 7 - 9) 40 (bits 5 - 6) 40 (bits 2 - 3)
16. EPR ENGINE NO. 1 EPR ENGINE NO. 2 EPR ENGINE NO. 3 EPR ENGINE NO. 4	.001	34 35 36 37
17. THRUST REVERSER ENG 1 THRUST REVERSER ENG 2 THRUST REVERSER ENG 3 THRUST REVERSER ENG 4	<i>Discrete Values</i> TRANS = Transit STOW = Stow DEP = Deploy	41 (bits 6 & 11) 41 (bits 5 & 10) 41 (bits 3 & 9) 41 (bits 2 & 7)
18. VHF 1,2&3 Microphone Keying	<i>Discrete Values</i> KEY = Keyed OFF = Not Keyed	39 (bit 1)

* Non linear parameter defined with two unique equations.

ATTACHMENT II

Tabular Data

TWA Flt. 800

B747-131, Takeoff to End of Data
Tabular Data No. 1, Revised December 22, 1999

National Transportation Safety Board

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos (degrees)	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)			
20:18:40	22.00	83	-0.7	0.0	222	-1	4.14 3.96 3.96	-25 -25 -25	1.02	1.01	1.01	1.01	0.00 0.00 0.00 0.01 0.00	0.97 0.97 0.97 0.96 0.97	Off Off		6
20:18:41	22.00 22.00	83	-0.7 -0.7	0.0 0.0	223 223	-1 -1	3.96 3.78 3.65	-25 -25 -25	1.02	1.01	1.01	1.01	1.01 1.01 0.00	0.97 0.97 0.97 0.96 0.97	Off		6 6
20:18:42	22.00	83 83	-0.7	0.0	224	-1	2.86 2.43 1.89	-25 -25 -21	1.02	1.01	1.01	1.01	0.00 0.00 0.01 0.00	0.97 0.96 0.96 0.96	Off Off		6
20:18:43	22.00 22.00	83	-0.7 -0.7	0.0 0.0	224 224	-1 -1	1.53 1.17 0.72	-25 -21 -25	1.02	1.01	1.01	1.01	0.00 0.00 0.01	0.96 0.96 0.95	Off		6 6
20:18:44	22.00	83 83	-0.7	0.0	225	-1	0.27 -0.09 -0.90	-25 -25 -25	1.02	1.01	1.01	1.01	0.00 0.01 0.00	0.96 0.96 0.97	Off Off		6
20:18:45	22.00 22.00	83	-0.7 -0.7	0.0 0.0	224 225	-1 -1	-1.35 -1.53 -1.53	-25 -25 -25	1.02	1.01	1.01	1.01	0.00 0.00 0.01	0.97 0.96 0.95	Off		6 6
20:18:46	22.00	83 83	-0.7	0.0	225	-1	-1.26 -1.08 -0.72	-25 -25 -25	1.02	1.01	1.01	1.01	0.00 0.01 0.01	0.96 0.96 0.97	Off Off		6
20:18:47	22.00 22.00	83	-0.7 -0.7	0.0 0.0	225 225	-1 -1	-0.63 -0.72 -0.72	-25 -25 -25	1.02	1.00	1.01	1.01	0.00 0.01 0.01	0.97 0.97 0.95	Off		6 6
20:18:48	22.00	266 83	-0.7	0.0	225	-1	-0.72 -0.63	-25 -25	1.03	1.01	1.01	1.01	0.01 0.01	0.96 0.95	Off Off		6
20:18:49	22.00 22.00	83	-0.7 -0.7	0.0 0.0	225 226	-1 -1	-0.54 -0.54 -0.63 -0.54	-25 -25 -25 -25	1.04	1.01	1.03	1.03	0.01 0.02 0.02	0.96 0.96 0.97	Off		6 6
20:18:50	22.00	42 42	-0.7	0.0	226	-1	-0.45 -0.18	-25 -25	1.05	1.01	1.04	1.04	0.03 0.03	0.96 0.96	Off Off		6
20:18:51	22.00 22.00	42	-0.7 -0.7	0.0 0.0	226 226	-1 -1	-0.18 -0.18 -0.18 -0.18	-25 -25 -22	1.09	1.03	1.07	1.07	0.04 0.05 0.05 0.06	0.97 0.96 0.96 0.96	Off		6 6
20:18:52	22.00	42 42	-0.7	0.1	226	-1	-0.18 -0.09	-19 -17 -15	1.10	1.04	1.08	1.08	0.06 0.07	0.96 0.97	Off		6
20:18:53	22.00 22.00	42	-0.7 -0.7	-0.1 0.0	226 226	-1 -1	0.00 0.00 0.72 1.62	-10 -12 -13	1.11	1.07	1.10	1.10	0.08 0.08 0.08 0.09	0.97 0.97 0.97 0.96	Off		6 6
20:18:54	22.00	48 42	-0.7	0.0	226	-1	2.34 2.97	-12 -11 -5	1.11	1.09	1.11	1.11	0.09 0.09 0.10	0.97 0.96 0.96	Off Off		6
20:18:55	22.00 22.00	42	-0.7 -0.7	0.0 0.1	226 226	-1 -1	4.05 4.23 4.50	1 1 1	1.13	1.11	1.13	1.13	0.10 0.10 0.11	0.96 0.97 0.96	Off		6 6
20:18:56	27.00	42 54	-0.7	0.0	229	-1	4.68 5.85 6.03	1 1 1	1.15	1.12	1.14	1.15	0.11 0.12 0.12	0.96 0.96 0.97	Off Off		6
20:18:57	22.00 22.00	42	-0.7 -0.7	0.0 0.0	226 226	-1 -1	6.57 6.57 6.75	1 1 2	1.19	1.16	1.18	1.19	0.13 0.13 0.14	0.96 0.96 0.96	Off		6 6
20:18:58	22.00	42 52	-0.7	0.0	226	-1	6.48 5.94 5.31	1 2 2	1.21	1.17	1.19	1.21	0.15 0.15 0.16	0.97 0.96 0.97	Off Off		6
20:18:59	27.00 22.00	48	-0.4 -0.7	-2.3 -3.1	226 226	-1 -1	5.13 5.04 5.13	2 2 2	1.28	1.21	1.24	1.30	0.17 0.17	0.97 0.97	Off		6 6
20:19:00	22.00	42 42	-0.4	-7.7	226	-1	5.22 5.31 5.49	2 2 2	1.31	1.22	1.26	1.33	0.18 0.19 0.20	0.97 0.97 0.95	Off Off		6
20:19:01	22.00 22.00	42	-0.4 -0.4	-6.6 -6.4	226 225	-1 -1	5.49 5.49 5.49	2 2 2	1.35	1.24	1.30	1.35	0.20 0.20 0.19	0.93 0.94 0.99	Off		6 6
20:19:02	22.00	42 44	-0.4	-6.3	226	-1	5.31 5.31 4.95	2 3 3	1.36	1.29	1.31	1.35	0.20 0.20 0.20	0.93 0.96 0.99	Off Off		6
20:19:03	22.00 22.00	54	-0.4 -0.4	-7.9 -8.2	226 226	-1 -1	3.69 0.36 0.45	3 3 3	1.37	1.32	1.32	1.73	0.21 0.21 0.21	0.95 0.98 0.98	Off		6
20:19:04	22.00	46 48	-0.4	-7.8	226	-1	0.00 0.00 -2.43	3 3 3	1.37	1.35	1.32	1.37	0.21 0.21 0.21	0.94 0.98 0.98	Off Off		6 6

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel	Vert. Accel.	VHF	Pitch Trim Pos	Stal Pos
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	(degrees)
20:19:05	22.00 22.00	51	-0.7 -0.7	-7.1 -6.6	226 226	-1 0	-7.29 -9.45 -8.19	4 4 3	1.37	1.38	1.33	1.37	0.21 0.21 0.21 0.21 0.20	0.96 0.96 0.94 0.95 0.94 0.97	Off		6
20:19:06	22.00	53 54	-0.7	-7.1	226	-1	-7.56 -1.71 -1.80	3 4 4	1.37	1.38	1.34	1.37	0.21 0.22 0.21	0.97 0.88 0.94	Off		6
20:19:07	22.00 22.00	56	-0.7 -0.7	-7.6 -6.6	226 226	-1 -1	-3.60 -5.04 -5.76	3 4 3	1.37	1.38	1.34	1.37	0.20 0.21 0.21 0.21 0.20	0.95 0.95 0.94 0.93 0.97	Off		6
20:19:08	22.00	63 60	-0.7	-7.6	226	-1	-5.49 -2.43 -0.45	3 3 4	1.37	1.38	1.34	1.37	0.21 0.21 0.20 0.21	0.98 0.94 0.92 0.98	Off		6
20:19:09	22.00 22.00	64	-0.7 -0.7	-7.4 -7.4	225 225	-1 0	-0.63 -2.34 -5.13	4 3 4	1.36	1.38	1.34	1.37	0.21 0.21 0.20 0.20	0.92 0.97 0.98 1.00	Off		6
20:19:10	22.00	68 70	-0.7	-7.1	225	0	-4.32 -4.59 -3.78	4 3 5	1.36	1.37 1.37	1.34	1.37	0.21 0.20 0.20 0.21	0.92 0.98 0.99 0.94	Off		6
20:19:11	27.00 22.00	70	-0.7 -0.7	-7.0 -7.6	225 225	0	-3.60 -2.16 -1.69	4 6 3	1.36	1.36	1.33	1.37	0.20 0.19 0.20 0.19	0.98 1.00 0.92 0.94	Off		6
20:19:12	22.00	75 89	-0.7	-8.4	225	0	0.00 0.90 2.43	4 4 4	1.35	1.35	1.33	1.37	0.20 0.19 0.20 0.20	0.96 0.96 0.97 0.98	Off		6
20:19:13	22.00 22.00	86	-0.7 -0.7	-8.0	225 225	-1 -1	-0.72 -1.80 -4.32	4 4 4	1.35	1.35	1.34	1.37	0.19 0.19 0.19	0.97 0.96 0.95	Off		6
20:19:14	22.00	82 87	-0.7	-7.1 -5.9	226	-1	-6.12 -7.29 -7.20	3 3 3	1.35	1.35	1.34	1.36	0.19 0.19 0.19	0.95 0.99 0.98	Off		6
20:19:15	27.00 27.00	86	-0.7 -0.7	-5.9	226 226	-1 0	-5.85 -5.13 -3.51	3 3 3	1.35	1.35	1.34	1.37	0.19 0.19 0.19	0.95 0.96 0.95	Off		6
20:19:16	27.00	92 94	-0.7	-6.7 -7.4	226	0	-2.79 0.72 -0.54	3 3 4	1.35	1.35	1.34	1.37	0.19 0.19 0.18 0.19	0.94 0.96 1.00 0.94	Off		6
20:19:17	27.00 27.00	97	-0.7 -0.7	-7.0	225 225	0	-0.90 -0.18 -0.90	3 3 3	1.35	1.35	1.34	1.37	0.19 0.18 0.18	0.93 0.98 0.98	Off		6
20:19:18	27.00	101 102	-0.7	-6.3 -6.5	225	0	-0.36 0.18 -0.18	3 3 3	1.35	1.34	1.34	1.36	0.18 0.19 0.18	0.98 0.95 0.94	Off		6
20:19:19	27.00 27.00	104	-0.7	-6.7	225 225	0	-0.36 -0.18 -0.54	3 3 3	1.35	1.34	1.34	1.36	0.18 0.17 0.19	0.97 0.98 0.94	Off		6
20:19:20	27.00	107 86	-0.7 -0.7	-7.0 -6.6	225	0	-0.54 -2.61 -3.24	3 3 3	1.35	1.34	1.34	1.36	0.18 0.18 0.18	0.94 0.94 0.98	Off		6
20:19:21	27.00 27.00	86	-0.7	-6.2	225	0	-2.79 -2.07 0.00	3 4 3	1.35	1.34	1.34	1.36	0.18 0.18 0.17 0.17	0.98 0.94 0.90 0.98	Off		6
20:19:22	32.00	111 90	-0.7 -0.7	32.9 -6.6	225 228	0 -4	0.18 0.09 -0.81	3 3 3	1.35	1.34	1.34	1.36	0.17 0.17 0.18	0.97 0.96 0.96	Off		6
20:19:23	27.00	110	-0.7	-5.8	225	0	-1.89 -3.51 -3.06	3 3 3	1.35	1.34	1.34	1.36	0.17 0.17 0.18	0.98 0.97 0.94	Off		6
20:19:24	27.00 27.00	88	-0.7 -0.7	-5.5 -4.9	225 225	0	-0.09 0.72 -1.17	3 3 3	1.35	1.33	1.34	1.36	0.17 0.17 0.16	0.93 0.97 0.98	Off		6
20:19:25	27.00	122 124	-0.7	-4.3	225	0	-1.53 -2.61 0.09	3 3 3	1.35	1.33	1.34	1.36	0.17 0.17 0.17	0.94 0.94 0.98	Off		6
20:19:26	27.00 27.00	124	-0.7 -0.4	-4.0 -3.8	225 225	0	0.45 0.18 0.00	3 3 3	1.35	1.33	1.34	1.36	0.16 0.16 0.17	0.95 0.95 0.98	Off		6
20:19:27	32.00	128 130	-0.7	-3.3	228	0	-2.25 -2.25 0.00	3 2	1.35	1.33	1.34	1.36	0.17 0.16 0.16	0.93 0.95 0.98	Om		6
20:19:28	27.00 27.00	99	-0.4 -0.4	-3.7 -3.6	225 225	0	0.00 0.00 0.00	3 3 3	1.35	1.33	1.34	1.36	0.16 0.16 0.16	0.98 0.95 0.96	Off		6
20:19:29	27.00	99 100	-0.4	-2.5	225	0	-1.08 -1.62	3 3	1.34	1.33	1.34	1.36	0.17 0.15	0.95 1.01	Off		6

TWA Flt. 800, B747-131, Takeoff to End of Data
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Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal Pos (degrees)
20:19:30	27.00 27.00	100	-0.4 -0.4	-2.1 -1.6	225 225	0	-1.17 -1.80 -1.71 -1.17	3 3 3 3	1.34 1.34	1.33	1.34	1.36	0.16 0.17 0.16 0.16 0.17 0.16	0.93 0.90 0.94 0.99 0.93 0.95 0.96	Off	6 6	
20:19:31	27.00	104 105	-0.4	-1.9	225	0	0.18 0.36	3 4	1.34	1.33	1.34	1.36	0.16 0.16 0.16 0.15	0.97 0.96 0.95 0.98	Off	6	
20:19:32	27.00 22.00	105	-0.4 -0.4	-1.5 -1.5	227 225	0 1	0.09 -1.26 -1.35 -1.26	3 3 3 3	1.35 1.33	1.33	1.34	1.36	0.16 0.16 0.15 0.16	0.98 0.98 0.96 0.98	Off	6 6	
20:19:33	22.00	106 110	-0.4	-1.2	225	1	-1.53 -2.34	3 3	1.34 1.34	1.33	1.34	1.36	0.16 0.16 0.16 0.16	0.97 0.95 0.95 0.97	Off On	6	
20:19:34	22.00 22.00	110	0.0 0.0	-0.9 0.8	225 225	1 1	-1.17 -1.35 -0.09	3 3 3	1.34	1.33	1.34	1.35	0.16 0.16 0.15	0.96 0.96 0.95	Off	6 6	
20:19:35	22.00	113 150	0.4	3.2	225	1	-0.18 -1.08	3 4 3	1.34 1.34	1.33	1.34	1.36	0.16 0.16 0.16 0.17	0.97 0.95 0.97 0.97	Off Off	6	
20:19:36	22.00 22.00	118	0.7 1.4	3.9 4.6	225 226	1	-1.80 -1.85	4 4	1.34	1.33	1.34	1.36	0.17 0.18	0.98 0.93	Off	6 6	
20:19:37	12.00	120 156	2.5	4.9	226	1	-1.62 -1.62 -1.44 -1.35	4 4 4	1.34 1.34	1.33	1.67 1.34	1.35 1.36	0.18 0.18 0.19 0.19 0.20	0.95 0.96 0.98 0.97 0.95	Off Off	6	
20:19:38	12.00 7.00	156	3.6 4.3	4.8 5.3	226	1	-1.17 -0.99 -1.08	5 6 6	1.34	1.33	1.34	1.36	0.21 0.21 0.22	0.94 0.96 0.94	Off	6 6	
20:19:39	7.00	126 128	5.8	5.8	226	1	-1.08 -1.26 -1.26	7 7 7	1.34 1.34	1.33	1.34	1.35	0.23 0.24 0.24	0.98 0.96 0.97	Off Off	6	
20:19:40	2.00 -3.00	128	6.5 7.9	7.3 7.4	226 226	1 1	-0.99 -0.54 -0.54	8 8 9	1.34	1.33	1.34	1.35	0.25 0.26 0.25 0.26	0.98 0.94 0.98 0.98	Off	6 6	
20:19:41	2.00	134 162	9.7	7.4	229	0	-0.90 -1.35 -1.26	10 10 11	1.34 1.34	1.33	1.34	1.35	0.26 0.28 0.28	1.02 1.05 1.07	Off Off	6	
20:19:42	-3.00 7.00	131	10.8 11.2	7.6 7.8	225 225	0 0	-0.72 -0.36 -0.18	11 11 11	1.34	1.33	1.34	1.35	0.29 0.29 0.29 0.29	1.08 1.06 1.07 1.08	Off	6 6	
20:19:43	12.00	131 136	11.5	7.9	225	0	-0.36 -0.63 -1.08	11 11 11	1.34 1.34	1.33	1.34	1.35	0.29 0.28 0.28	1.07 1.07 1.05	Off Off	6	
20:19:44	27.00 42.00	136	12.2 12.2	7.4 6.9	225 225	-1 -1	-1.35 -1.44 -1.35	11 11 11	1.34	1.33	1.33	1.35	0.28 0.27 0.27 0.27	1.04 1.05 1.04 1.04	Off	6 6	
20:19:45	57.00	134 166	13.3	5.9	225	-1	-1.17 -0.72 -0.72	11 11 12	1.34	1.33	1.33	1.35	0.27 0.28 0.28	1.06 1.07 1.08	Off	6	
20:19:46	72.00 97.00	154	14.8 15.5	4.8 4.5	226 226	-1 -1	-0.90 -1.17 -1.08	12 12 11	1.34	1.33	1.33	1.35	0.28 0.29 0.28 0.28	1.09 1.09 1.08 1.08	Off	6	
20:19:47	127.00	166 167	15.8	4.1	226	-1	-0.72 -0.18 -0.09	11 11 11	1.34 1.33	1.32	1.33 1.33	1.35	0.28 0.28 0.28 0.27	1.07 1.07 1.07 1.06	Off Off	6 6	
20:19:48	152.00 177.00	166	16.6 16.9	3.0 2.3	226 226	-1 -1	-0.36 -0.36 -0.45	11 11 11	1.33	1.32	1.33	1.34	0.27 0.27 0.27	1.06 1.06 1.06	Off	6	
20:19:49	207.00	164 164	16.6	1.7	226	-1	-0.45 -0.54 -0.72	11 11 11	1.33 1.33	1.32	1.33 1.33	1.34	0.27 0.27 0.26	1.04 1.05 1.04	Off Off	6 6	
20:19:50	232.00 262.00	135	16.2 16.9	2.4 2.3	226 226	-2 -3	-0.90 -0.99	10 10	1.33	1.31	1.32	1.34	0.26 0.25 0.25	0.98 0.97 0.95	Off	6	
20:19:51	292.00	150 161	16.9	2.4	226	-5	-0.99 -1.26 -1.35	10 10 10	1.33 1.33	1.32	1.33 1.33	1.34	0.24 0.25 0.24 0.25	0.93 0.92 0.91 0.92 0.93	Off Off	6 6	
20:19:52	322.00 347.00	161	16.9 17.3	2.1 2.1	226 226	-6 -7	-1.26 -1.08 -0.90	10 10 11	1.33	1.32	1.33	1.34	0.25 0.25 0.26	0.93 0.93 0.93	Off	6	
20:19:53	372.00	160 160	17.3	1.6	225	-8	-0.63 -0.54 -0.54	10 11 11	1.33 1.33	1.32	1.33 1.33	1.35	0.25 0.26 0.26 0.26	0.94 0.93 0.92 0.91	Off Off	6 6	

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	WHF	Pitch Trim Pos	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
20:19:54	397.00 422.00	159	16.2 15.8	1.9 1.8	225 224	-9	-0.63 -0.81 -0.72	10 10 10	1.33	1.32	1.33	1.35	0.26 0.26 0.26 0.26 0.26	0.90 0.89 0.89 0.89 0.87	On		6
20:19:55	447.00	156 144	16.6	1.9	224	-10	-0.36 -0.18 0.00	10 10 9	1.33 1.33	1.32 1.32	1.33 1.33	1.34 1.34	0.26 0.26 0.26 0.25 0.25	0.87 0.87 0.86 0.85 0.84	Off Off		6 6
20:19:56	467.00 487.00	156	15.8 15.8	2.1	223 222	-10 -10	0.00 0.18 0.00	9 10 10	1.33	1.32	1.33	1.34	0.25 0.25 0.25 0.25 0.25	0.83 0.83 0.83 0.84 0.84	Off		6
20:19:57	507.00	125 123	15.8	3.0 2.5	222	-10	0.00 0.00 0.00	10 10 10	1.33 1.33	1.32 1.32	1.33 1.33	1.35 1.34	0.25 0.25 0.26 0.26	0.84 0.84 0.84 0.85	Off Off		6 6
20:19:58	522.00 542.00	154	16.2 16.2	2.1	221 220	-10 -11	0.00 0.00 -0.36	11 11 11	1.33	1.32	1.33	1.35	0.27 0.27 0.27 0.28 0.28	0.89 0.89 0.89 0.90 0.92	Off		6
20:19:59	557.00	152 154	15.5	1.7 2.0	219	-12	-0.36 -0.27 -0.18	11 11 10	1.33	1.32	1.33	1.35	0.27 0.27 0.27 0.27 0.27	0.89 0.90 0.89 0.86 0.86	Off Off		6 6
20:20:00	577.00 587.00	144	15.1 15.1	2.5	219 217	-12	0.00 0.00 0.00	11 10 11	1.33	1.32	1.33	1.35	0.27 0.27 0.27 0.27 0.27	0.86 0.88 0.88 0.88 0.87	On		6
20:20:01	607.00	154 152	14.8	2.9 2.9	217	-11 -12	0.00 0.00 -0.18	11 11 11	1.33 1.34	1.32 1.32	1.33 1.33	1.35 1.35	0.27 0.27 0.27 0.28 0.28	0.88 0.89 0.89 0.89 0.89	Off Off		6 6
20:20:02	622.00 637.00	154	14.8	2.9	216 215	-12	-0.54 -0.54 -0.72	11 11 11	1.34	1.32	1.34	1.35	0.28 0.28 0.28 0.28 0.28	0.89 0.90 0.90 0.91 0.92	Off		6
20:20:03	652.00	155 154	14.8 14.8	2.8 2.5	214	-12 -12	-0.72 -0.72 -0.54	11 12 11	1.34 1.34	1.32 1.32	1.33 1.33	1.35 1.35	0.28 0.29 0.29 0.28 0.28	0.93 0.93 0.93 0.94 0.95	Off Off		6 6
20:20:04	667.00 682.00	152	14.8	2.7	213	-13	-0.45 -0.45 -0.36	11 11 11	1.34	1.32	1.34	1.35	0.29 0.29 0.28 0.28	0.94 0.95 0.94 0.94	Off		6
20:20:05	697.00	120 154	14.4 14.4	3.0 2.9	212 211	-13 -12	-0.36 -0.18 -0.18	11 11 11	1.34 1.34	1.32 1.32	1.33 1.34	1.35 1.35	0.28 0.28 0.28 0.27 0.28	0.91 0.91 0.90 0.90 0.89	On		6 6
20:20:06	707.00	154	14.0	2.6	210	-12	-0.36 -0.54 -0.90	11 11 11	1.34	1.32	1.33	1.35	0.28 0.28 0.28 0.28	0.89 0.89 0.91 0.92	On Off		6
20:20:07	722.00 737.00	122	14.0 13.7	2.6 2.6	209 208	-13 -12	-0.63 -0.36 0.00	11 11 11	1.34 1.34	1.32 1.32	1.33 1.33	1.35 1.35	0.28 0.28 0.28 0.28 0.28	0.91 0.91 0.90 0.90 0.90	Off		6 6
20:20:08	747.00	153 154	13.3	2.5	207	-11	0.18 0.54 0.63	11 12 11	1.34	1.32	1.34	1.35	0.28 0.28 0.28 0.27 0.27	0.90 0.90 0.91 0.91 0.92	Off Off		6
20:20:09	757.00 767.00	120	13.3 13.0	2.4 2.4	206 206	-10 -9	0.72 0.72 0.72	11 11 11	1.34 1.34	1.32 1.32	1.33 1.34	1.35	0.28 0.27 0.27 0.27 0.27	0.91 0.91 0.90 0.90 0.88	On		6 6
20:20:10	737.00	138 125	13.0	2.6	207	-8	0.54 0.27 0.00	11 11	1.34	1.32	1.34	1.35 1.35	0.27 0.27 0.27 0.27 0.27	0.86 0.87 0.90 0.91 0.90	Off Off		6
20:20:11	787.00 797.00	128	12.6 12.6	2.5 2.4	204 203	-7 -7	-0.09 -0.09 -0.09	11 11 11	1.34 1.34	1.32 1.32	1.34	1.35	0.27 0.28 0.28 0.28	0.90 0.92 0.94 0.94	Off		6 6
20:20:12	807.00	124 156	12.6	2.5	203	-6	-0.09 -0.18 -0.09	11 11 11	1.34	1.32	1.33 1.33	1.34 1.35	0.28 0.28 0.27 0.28 0.28	0.92 0.91 0.92 0.93 0.93	Off Off		6
20:20:13	812.00 822.00	128	12.6 12.2	2.3 2.1	202 202	-5 -4	0.00 0.00	12 11	1.34 1.33	1.32	1.33	1.35	0.27 0.27 0.28	0.93 0.93 0.93	Off		6 6
20:20:14	832.00	130 159	12.2	2.1	202	-3	0.00 0.00	11 11	1.33	1.32 1.31	1.33 1.33	1.35 1.35	0.27 0.27 0.27 0.27 0.27	0.92 0.92 0.92 0.93 0.93	On On		6
20:20:15	797.00 852.00	160	12.2	1.9 1.7	203 201	-2 -1	0.00 0.00 0.00	11 11 11	1.33	1.31	1.33	1.34	0.27 0.27 0.27 0.27 0.27	0.93 0.93 0.93 0.93 0.93	On		6 6
20:20:16	862.00	160 132	12.2	2.1	201	0	0.18 0.18	11 11	1.34 1.33	1.31 1.31	1.33 1.33	1.35 1.35	0.27 0.27 0.27 0.27	0.94 0.93 0.93 0.93	On On		6
20:20:17	872.00 882.00	161	11.9 11.9	2.2 1.9	201 202	0 0	0.09 0.00 0.00 -0.09	10 10 10	1.34	1.31	1.33	1.35	0.26 0.26 0.26 0.26	0.93 0.92 0.91 0.90	On		6 6
20:20:18	892.00	162 162	11.9	1.6	202	0	-0.18 -0.27	10 11	1.34 1.34	1.31 1.31	1.33 1.33	1.35 1.35	0.26 0.26 0.26 0.26	0.91 0.92 0.92 0.95	On On		6

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	WHF	Pitch Trim Pos (degrees)	Stal
20:20:19	902.00 867.00	162	11.9 11.9	1.2 0.6	202 204	1	0.00 0.09 0.36 0.36	10 10 10	1.34	1.32	1.33	1.35	0.27 0.26 0.26 0.26 0.26	0.95 0.94 0.93 0.93 0.93	Off		6 6
20:20:20	922.00	162 163	11.9	0.4	202	2	0.36 0.18	10 10	1.34 1.34	1.31 1.32	1.33 1.33	1.35 1.35	0.26 0.25 0.25	0.91 0.90	Off Off		6
20:20:21	932.00 942.00	163	11.2 10.8	0.2 0.2	203 203	1	0.09 0.00 0.00	10 10 10	1.34	1.31	1.33	1.35	0.25 0.25 0.25 0.25 0.25	0.89 0.89 0.89 0.89 0.87	Off		6 6
20:20:22	952.00	164 165	10.4	0.1	203	1	-0.09 -0.09 -0.09	9 9 9	1.34	1.31	1.33	1.35	0.24 0.25 0.25	0.87 0.89 0.90	Off Off		6
20:20:23	957.00 967.00	166	9.7 10.1	0.2 0.1	203 204	0 -1	-0.09 -0.18 -0.18	10 10 9	1.33	1.31	1.33	1.35	0.25 0.25 0.25 0.25	0.89 0.90 0.91 0.92	Off		6 6
20:20:24	927.00	168 167	9.4	0.2	206	-1	0.00 0.36 0.72	9 9 8	1.34 1.33	1.31 1.31	1.33 1.33	1.35 1.35	0.25 0.25 0.25 0.24	0.91 0.90 0.90 0.90	Off Off		6
20:20:25	982.00 987.00	168	9.4 9.4	0.2 0.2	204 204	-1 0	1.17 1.35 1.08	9 9 8	1.33	1.31	1.33	1.35	0.24 0.24 0.24	0.89 0.88 0.88	On		6 6
20:20:26	992.00	169 170	8.6	0.2	204	0	0.90 0.72 0.63	9 9 9	1.33 1.34	1.32 1.31	1.33 1.33	1.35 1.35	0.24 0.24 0.24 0.24	0.89 0.89 0.88 0.88	On On		6
20:20:27	997.00 1002.00	170	8.6 8.3	0.1 0.3	204 204	0 -1	0.72 0.63 0.63	9 9 9	1.33	1.32	1.33	1.34	0.24 0.24 1.57 1.24	0.92 0.92 0.91 0.91	On		6 6
20:20:28	1002.00	170 172	7.9	0.9	204	-1	0.54 0.45 0.45	9 9 8	1.33 1.33	1.31 1.31	1.33 1.33	1.35 1.35	0.24 0.24 0.24 0.24	0.90 0.91 0.91 0.91	On Off		6
20:20:29	1012.00	172	8.3	1.0	205	-1	0.45 0.45 0.45	8 8 8	1.33	1.31	1.33	1.35	0.24 0.24 0.24	0.90 0.91 0.91	Off		6
20:20:30	1017.00	173 173	8.3	0.9	204	-1	0.45 0.54 0.72	8 8 8	1.33 1.33	1.31 1.31	1.33 1.33	1.34 1.34	0.24 0.24 0.24 0.24	0.92 0.91 0.91 0.92	Off Off		6 6
20:20:31	1022.00 1022.00	174	8.3 8.3	0.9 0.4	204 204	0 0	0.72 0.81 0.90	8 8 8	1.33	1.31	1.33	1.34	0.24 0.24 0.24	0.93 0.94 0.95	Off		6
20:20:32	1022.00	161 176	7.9	0.2	203	0	0.90 0.90 1.08	8 8 8	1.33 1.33	1.31 1.31	1.33 1.33	1.34 1.34	0.24 0.24 0.24 0.24	0.97 0.97 0.98 0.98	Off Off		6 6
20:20:33	1027.00 1032.00	178	7.6 7.9	0.5 0.9	203 203	1 0	0.90 0.63 0.27	8 8 8	1.33	1.31	1.33	1.34	0.24 0.24 0.23 0.23	0.97 0.97 0.94 0.93	Off		6
20:20:34	1037.00	164 180	8.3	0.7	203	0	0.27 0.27 0.18	8 8 8	1.33 1.33	1.31 1.31	1.33 1.33	1.34 1.34	0.23 0.23 0.23	0.93 0.94 0.94	Off Off		6 6
20:20:35	1037.00 1047.00	180	8.3 8.6	0.9 0.7	203 203	0 0	0.09 0.18 0.18	8 8 8	1.33	1.30	1.33	1.34	0.24 0.23 0.23 0.24	0.96 0.96 0.97 0.97	Off		6
20:20:36	1047.00	180 182	8.6	1.5	203	0	0.18 0.18 0.18	8 8 8	1.33 1.33	1.31 1.31	1.33 1.33	1.34 1.34	0.24 0.24 0.24	0.98 0.98 0.98	Off Off		6 6
20:20:37	1052.00 1062.00	183	9.0 9.0	0.5 0.0	203 203	0 0	0.18 0.00 0.00	8 8 9	1.33	1.31	1.33	1.34	0.24 0.24 0.24 0.24	1.00 1.01 1.04 1.04	Off		6
20:20:38	1067.00	184 155	9.4	0.1	203	0	0.00 0.18 0.36	8 8 8	1.33 1.33	1.31 1.30	1.33 1.33	1.34 1.34	0.24 0.24 0.24 0.24	1.03 1.04 1.04 1.03	Off		6 6
20:20:39	1077.00 1087.00	186	9.4 9.4	0.1	203 203	0 0	0.54 0.54 0.63	7 7 7	1.33	1.31	1.33	1.34	0.23 0.23 0.23 0.22	0.99 0.99 0.99 0.98	Off		6
20:20:40	1102.00	187 173	9.4	0.0 0.0	203	0	0.72 0.54 0.54	7 7 7	1.33 1.33	1.30 1.30	1.33 1.33	1.34 1.34	0.23 0.22 0.23 0.22	0.97 0.97 0.98 0.98	Off Off		6 6
20:20:41	1107.00 1122.00	186	9.7 9.7	0.0	203 203	1 1	0.54 0.45 0.36	7 7 7	1.33	1.30	1.33	1.34	0.23 0.23 0.23	0.98 0.98 0.98	Off		6
20:20:42	1137.00	186 188	9.0	0.0 0.0	204	1	0.27 0.18 0.00	7 7 7	1.33 1.33	1.30 1.31	1.33 1.33	1.34 1.34	0.22 0.23 0.22 0.22	0.98 0.96 0.95 0.94	Off Off		5 5
20:20:43	1147.00 1162.00	177	9.4 9.4	0.0	204 204	0	0.00 0.18	7 7	1.33	1.30	1.33	1.34	0.21 0.22	0.92 0.92	Off		5

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	WHF	Pitch Trim Stal Pos (degrees)
20:20:44	1177.00	188 188	8.6	0.0 0.0	204		0.36 0.54 0.72 0.72	7 7 7 7	1.33 1.33	1.30 1.31	1.33 1.33	1.34 1.34	0.21 0.21 0.21 0.21 0.21 0.21	0.94 0.94 0.94 0.93 0.93 0.92 0.91	Off Off	5 5
20:20:45	1187.00 1202.00	189	8.3	0.0	204		0.54 0.18 0.18	6 6 6	1.33	1.30	1.33	1.34	0.21 0.21 0.21 0.20 0.20 0.20	0.91 0.90 0.88 0.88 0.88 0.88	Off	5
20:20:46	1207.00	189 190	8.3 7.6	0.0 0.2	204		0.45 0.72 0.63	7 6 7	1.33 1.33	1.31 1.31	1.33 1.33	1.34 1.34	0.20 0.20 0.20 0.20 0.20	0.89 0.89 0.88 0.88 0.87 0.86	Off Off	5 5
20:20:47	1217.00 1232.00	177	7.6	0.4	204		0.54 0.36 0.45	6 7 6	1.33	1.30	1.33	1.34	0.20 0.20 0.20 0.20	0.89 0.89 0.88 0.87	Off	5
20:20:48	1237.00	162 194	7.2 7.2	0.7 1.2	204 204		0.36 0.18 0.00	6 6 7	1.33 1.33	1.31 1.30	1.33 1.33	1.34 1.34	0.20 0.20 0.20 0.20	0.89 0.89 0.90 0.92	On	5 5
20:20:49	1242.00	194	7.6	1.2	204	-1	-0.18 -0.18 -0.36	7 7 7	1.33	1.30	1.33	1.34	0.20 0.21 0.21 0.21 0.21	0.94 0.96 0.97 0.98 0.98	On On	5
20:20:50	1252.00 1262.00	195	7.9 7.6	1.2 1.1	204 203	-3 -4	-0.45 -0.45 -0.36	7 7 6	1.33 1.33	1.30 1.30	1.32 1.33	1.34 1.34	0.21 0.21 0.21	0.98 0.98 0.98	On	5 5
20:20:51	1272.00	196 196	8.3	1.1	203	-5	-0.36 -0.36 -0.36	6 6 6	1.33	1.30	1.33	1.34	0.21 0.21 0.21 0.21 0.21	0.98 0.98 0.98 0.97 0.97	On Off	5
20:20:52	1282.00 1292.00	183	8.3	1.1 1.3	203 202	-7 -8	-0.36 -0.18 -0.09	7 6 6	1.33 1.33	1.30 1.30	1.32 1.33	1.34	0.21 0.21 0.21	0.97 0.98 0.98	Off	5 5
20:20:53	1307.00	166 189	8.3	1.1	202	-10	0.00 0.00 0.00	6 6 6	1.33	1.30	1.33	1.34	0.21 0.21 0.21	0.98 0.98 0.99 0.99	Off Off	5
20:20:54	1317.00 1332.00	190	8.6 8.6	0.9 0.8	201 201	-11 -12	0.00 0.00 0.00	6 6 6	1.33 1.33	1.30 1.30	1.33	1.34	0.21 0.21 0.21	0.97 0.97 0.96	Off	5 5
20:20:55	1342.00	190 198	8.6	0.7	200	-13	0.00 0.09 0.00	6 6 6	1.33	1.30	1.32 1.33	1.33 1.34	0.21 0.21 0.21 0.21	0.97 0.97 0.96 0.94	Off Off	5
20:20:56	1352.00 1367.00	194	8.6 8.6	0.9 1.0	199 198	-15 -16	0.09 0.18 0.27	6 7 7	1.33 1.33	1.30	1.33	1.34	0.21 0.21 0.21	0.93 0.92 0.91	Off	5 5
20:20:57	1372.00	198 200	8.3	1.1	197	-17	0.36 0.45	7 7	1.33	1.30	1.32 1.32	1.34 1.34	0.22 0.22 0.22	0.93 0.93 0.94	Off Off	5
20:20:58	1322.00 1387.00	200	8.3 8.3	1.0 0.7	196 195	-18 -19	0.36 0.36 0.36 0.27	6 6 6 6	1.33	1.30	1.32	1.34	0.22 0.22 0.21 0.21 0.21	0.94 0.94 0.93 0.92 0.92	Off	5 5
20:20:59	1397.00	202 196	7.9	0.9	194	-19	0.36 0.45	6 6	1.33 1.33	1.30	1.32 1.32	1.34 1.33	0.22 0.21	0.92 0.94	Off Off	5
20:21:00	1407.00 1417.00	204	7.6 7.2	1.2 1.4	193 192	-20 -21	0.54 0.72 0.90 0.90	6 6 6 6	1.33	1.30	1.32	1.34	0.21 0.21 0.21 0.21 0.21	0.93 0.92 0.91 0.93 0.94 0.95 0.95	Off	5 5
20:21:01	1422.00	204 205	7.2	1.9	191	-21	0.99 46.80	6 6 7	1.33 1.33	1.30 1.30	1.32 1.32	1.34 1.34	0.21 0.21 0.21	0.95 0.95 0.95	Off Off	5
20:21:02	1427.00 1372.00	206	7.2 7.2	1.8 1.7	189 189	-21 -21	0.90 0.90 0.72 0.72	6 6 6 6	1.33	1.30	1.32	1.34	0.21 0.21 0.22 0.22 0.22	0.97 0.98 0.98 0.98	Off	5 5
20:21:03	1437.00	208 208	7.6	1.9	187	-22	0.72 0.72	6 6 6	1.33 1.33	1.29 1.30	1.32 1.32	1.34 1.34	0.22 0.22 0.22	0.98 0.98 0.98	Off Off	5
20:21:04	1442.00 1447.00	209	7.6 7.6	2.0 1.7	185 184	-22 -22	0.72 0.63 0.72	7 6 6	1.33	1.29	1.32	1.32	0.22 0.22 0.23	1.01 1.02 1.03 1.03	Off	5 5
20:21:05	1452.00	209 210	7.6	1.5	183	-23	0.72 0.72 0.72	6 7 7	1.33 1.33	1.30 1.30	1.32 1.32	1.34 1.34	0.22 0.22 0.22	1.02 1.02 1.01	Off Off	5
20:21:06	1457.00 1462.00	211	7.2 7.2	1.5 1.5	181 180	-23 -23	0.72 0.63 0.54	7 7 7	1.33	1.29	1.32	1.34	0.22 0.22 0.22	1.04 1.04 1.04	Off	5 5
20:21:07	1407.00	211 212	7.2	1.7	179	-24	0.54 0.54 0.45 0.54	7 6 6 6	1.33 1.33	1.29 1.29	1.32 1.32	1.34 1.34	0.22 0.22 0.22 0.22	1.03 1.02 1.04 1.03	Off Off	5

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
20:21:08	1472.00 1477.00	212	7.2 7.2	1.4 1.6	177 176	-24 -25	0.36 0.36 0.36	6 6 6	1.33	1.29	1.32	1.34	0.21 0.21 0.21	1.01 1.00 1.00	Off		5
20:21:09	1482.00	214 214	6.8	1.5	174	-26	0.36 0.36 45.90	6 6 6	1.33 1.32	1.30 1.30	1.32 1.32	1.33 1.33	0.21 0.21 0.21 0.21	1.01 1.02 1.02 1.02	Off Off		5
20:21:10	1492.00 1497.00	214	7.2 6.8	1.3 1.4	173 171	-26 -26	0.54 0.54 0.45	6 6 7	1.32	1.29	1.32	1.33	0.21 0.21 0.21	1.01 1.02 1.01	Off		5
20:21:11	1497.00	216 216	6.5	1.3	170	-27	0.54 0.45 0.54	6 6 6	1.32 1.32	1.29 1.29	1.32 1.32	1.33 1.33	0.21 0.21 0.21 0.21	1.03 1.03 1.04 1.04	Off Off		5
20:21:12	1442.00 1512.00	218	6.5 6.5	1.4 1.4	167 167	-27 -27	0.54 0.54 0.72	6 6 6	1.32	1.29	1.32	1.33	0.21 0.21 0.21	1.02 1.03 1.03	Off		5
20:21:13	1517.00	218 219	6.1	1.2	165	-27	0.72 0.72 0.72	6 6 6	1.32 1.32	1.29 1.29	1.32 1.32	1.33 1.33	0.21 0.21 0.21	1.03 1.02 1.02	Off Off		5
20:21:14	1517.00 1522.00	220	6.1 5.8	1.5 1.4	164 162	-27 -27	0.90 0.90 0.90	6 6 6	1.32	1.29	1.32	1.33	0.21 0.21 0.21	1.01 1.02 1.03	Off		5
20:21:15	1527.00	221 222	5.8	1.4	161	-26	0.81 0.81 0.72	6 7 6	1.32 1.32	1.29 1.29	1.32 1.32	1.33 1.33	0.21 0.21 0.21	1.03 1.04 1.05	Off		5
20:21:16	1532.00 1477.00	222	5.8 6.1	1.3 1.2	159 157	-25 -26	0.54 0.63 0.81	6 6 6	1.32	1.29	1.32	1.33	0.21 0.21 0.21	1.02 1.03 1.03	Off		5
20:21:17	1537.00	222 223	5.8	1.1	157	-24	0.90 1.35 1.80	6 6 6	1.32 1.32	1.29 1.29	1.32 1.31	1.33 1.33	0.20 0.21 0.21	1.00 0.99 1.00	Off Off		5
20:21:18	1537.00 1537.00	224	5.8 5.8	1.1 0.9	156 154	-22 -20	2.16 2.16 2.07	6 6 6	1.32	1.29	1.31	1.33	0.21 0.21 0.21	1.02 1.02 1.03	Off		5
20:21:19	1542.00	226 226	5.8	0.7	154	-18	2.07 1.89 1.89	6 6 6	1.32 1.32	1.29 1.29	1.31 1.31	1.33 1.33	0.21 0.20 0.20	1.04 1.03 1.01	Off Off		5
20:21:20	1547.00 1547.00	228	5.8 6.1	0.8 0.8	153 152	-15 -12	2.07 2.16 2.07	7 6 6	1.32	1.29	1.31	1.33	0.20 0.20 0.20	1.00 1.00 1.02	Off		5
20:21:21	1552.00	228 230	6.5	0.7	150	-10	2.07 2.07 2.07	6 6 6	1.32 1.31	1.29 1.28	1.31 1.31	1.33 1.33	0.20 0.20 0.20	1.03 1.02 1.02	Off Off		5
20:21:22	1557.00 1557.00	230	6.8 7.2	0.9	151	-8 -6	1.89 1.80 1.53	6 6 6	1.31	1.28	1.31	1.33	0.20 0.20 0.20	1.02 1.03 1.04	Off		5
20:21:23	1567.00	230 231	7.6	0.9 1.0	151	-4	1.44 1.44 1.35	6 6 6	1.31 1.32	1.28 1.28	1.31 1.31	1.33 1.33	0.21 0.21 0.21	1.06 1.07 1.08	Off Off		5
20:21:24	1577.00 1582.00	232	7.9 8.3	1.2	151	-2 0	1.35 1.17 1.17	6 6 6	1.32	1.28	1.31	1.33	0.21 0.21 0.21	1.07 1.06 1.06	Off		5
20:21:25	1597.00	233 233	8.3	0.9 0.5	151	1	1.08 0.81 0.36	6 7 6	1.32 1.32	1.28 1.28	1.31 1.31	1.33 1.33	0.21 0.21 0.21	1.09 1.10 1.09	Off Off		5
20:21:26	1612.00 1627.00	210	8.6 8.6	0.2	151	2	0.00 0.00 0.00	6 6 6	1.32	1.28	1.31	1.32	0.21 0.20 0.20	1.07 1.06 1.04	Off		5
20:21:27	1647.00	233 233	8.6	0.2 0.0	151	2 2	0.00 0.00 0.00	6 6 6	1.32 1.32	1.28 1.28	1.31 1.31	1.33 1.33	0.20 0.20 0.20	1.00 1.00 1.00	Off Off		5
20:21:28	1662.00 1682.00	234	9.0	0.0	151	2	0.00 0.00 0.00	6 6 6	1.31	1.28	1.31	1.33	0.20 0.19 0.19	0.98 0.98 0.98	Off		5
20:21:29	1697.00	234 233	9.0 18.0	0.0	151	2 1	0.00 -0.27 -0.63	6 6 6	1.31 1.32	1.28 1.28	1.31 1.31	1.33 1.33	0.19 0.19 0.19	0.98 0.98 0.97	Off		5
20:21:30	1717.00 1737.00	233	8.6	0.0	151	0	-0.90 -0.99 -0.90	6 6 6	1.32	1.29	1.31	1.33	0.19 0.19 0.19	0.95 0.95 0.96	Off		5
20:21:31	1757.00	214 234	9.0 9.4	0.0 0.1	151	-1 -2	-0.81 -0.72 -0.72	6 6 6	1.32 1.32	1.28 1.29	1.31 1.31	1.32 1.33	0.19 0.19 0.19	0.96 0.97 0.96	Off		5
20:21:32	1782.00	234	9.4	0.0	150	-3	-0.45 -0.45 -0.27	6 6 6	1.32	1.28	1.31	1.33	0.19 0.19 0.19	0.97 0.97 0.97	Off		5

TWA Flt. 800, B747-131, Takeoff to End of Data
 Tabular Data No. 1, Revised: December 22, 1999, National Transportation Safety Board

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos	Stal
(ref. C.VR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
20:21:33	1797.00 1822.00	234	9.4 9.4	0.0 0.0	150 150	-3 -4	-0.18 -0.18 -0.18	6 6 6	1.32 1.32 1.32	1.28 1.29 1.31	1.31 1.33 1.33	0.19 0.19 0.19 0.19 0.19	0.98 0.98 0.97 0.96 0.94	Off		5 5	
20:21:34	1842.00	234 234	9.4	0.0	150	-4	-0.09 -0.09 0.00	6 6 5	1.32	1.29	1.31 1.33	0.19 0.19 0.19 0.19	0.94 0.94 0.95 0.94	Off Off		5	
20:21:35	1867.00 1887.00	234	8.6 9.0	0.2 0.0	150 150	-4 -4	0.00 0.36 0.63	6 5 5	1.32 1.32	1.29 1.31	1.31 1.33	0.19 0.18 0.19 0.19 0.19	0.94 0.94 0.92 0.91 0.91	Off		4 4	
20:21:36	1907.00	211 234	8.6	0.1	150	-4	0.54 0.54 0.90	5 5 5	1.32	1.29	1.31 1.33 1.33	0.16 0.16 0.18 0.18	0.90 0.89 0.89 0.88	Off Off		4	
20:21:37	1927.00 1947.00	234	8.6 8.3	0.1 0.3	150 150	-3 -2	1.08 1.08 1.08	5 5 5	1.32 1.32	1.29	1.31 1.33	0.18 0.18 0.18 0.18	0.89 0.88 0.88 0.88	Off		4 4	
20:21:38	1967.00	236 236	7.9	0.5	150	-1	0.90 0.90 0.81	5 5 5	1.32	1.51	1.31 1.33	0.18 0.18 0.18 0.18	0.88 0.88 0.88 0.88	Off		4	
20:21:39	1987.00 2002.00	236	7.9 7.9	0.4 0.4	150 150	0	0.90 0.90 0.90	5 6 5	1.32 1.32	1.29	1.31 1.33	0.18 0.18 0.18 0.18	0.90 0.89 0.89 0.89	Off		4 4	
20:21:40	2022.00	236 215	7.6	0.5	150	1	1.08 1.08	5 5	1.31	1.29 1.28	1.31 1.33	0.18 0.18 0.18 0.18	0.89 0.88 0.89 0.89	Off Off		4	
20:21:41	2032.00 2047.00	237	7.6 7.9	0.7 0.8	150 150	1 1	0.99 0.90 0.72	5 5 5	1.31	1.28	1.31 1.32	0.18 0.18 0.18 0.18	0.90 0.91 0.92 0.91	Off		4 4	
20:21:42	2062.00	236 236	8.3	0.7	150	1	0.54 0.45 0.45	6 6 6	1.31 1.31	1.51 1.28	1.31 1.32	0.18 0.18 0.19 0.19	0.92 0.93 0.93 0.96	Off Off		5	
20:21:43	2077.00 2092.00	237	8.3 8.6	0.5 0.2	150 149	1 1	0.45 0.45 0.45	6 6 6	1.31	1.28	1.31 1.33	0.20 0.20 0.20 0.20	1.01 1.02 0.99 0.99	Off		5 5	
20:21:44	2107.00	237 238	8.3	0.4	150	1	0.36 0.36	6 6 6	1.32 1.32	1.29 1.29	1.31 1.33	0.20 0.20 0.19 0.20	0.98 0.98 0.97 0.97	Off Off		4	
20:21:45	2122.00 2102.00	238	8.3 7.9	0.2 0.5	149 147	1 0	0.27 0.27 0.18 0.18	6 6 6 6	1.32	1.28	1.31 1.33	0.20 0.19 0.19 0.19	0.95 0.94 0.94 0.93	Off		4 4	
20:21:46	2157.00	238 238	7.9	0.4	149	0	0.18 0.00	5 5 5	1.32 1.32	1.29 1.28	1.31 1.33	0.19 0.19 0.19 0.19	0.92 0.92 0.92 0.91	Off Off		4	
20:21:47	2172.00 2192.00	240	7.9 7.6	0.4 0.2	149 149	0 -1	0.09 0.18 0.18	5 5 5	1.31	1.28	1.31 1.32	0.19 0.19 0.19 0.19	0.92 0.92 0.92 0.91	Off		4 4	
20:21:48	2207.00	240 240	7.6	0.2	149	-1	0.18 0.18 0.27	5 5 5	1.32 1.31	1.28 1.28	1.31 1.33	0.19 0.19 0.19 0.19	0.92 0.91 0.91 5.19	Off Off		4	
20:21:49	2222.00 2242.00	240	7.2 7.2	0.0 0.2	149 149	-1 -1	0.27 0.27 0.36	5 5 5	1.32	1.28	1.31 1.33	0.19 0.18 0.18 0.19	0.90 0.89 0.88 0.89	Off		4 4	
20:21:50	2222.00	242 241	6.8	0.2	147	-1	0.36 0.45 0.54	5 5 5	1.32 1.31	1.28 1.28	1.31 1.33	0.19 0.19 0.18	0.89 0.89 0.89	Off Off		4	
20:21:51	2267.00 2282.00	242	6.5 6.5	0.2 0.1	149 149	-1 -1	0.54 0.54 0.54	5 5 5	1.31	1.28	1.31 1.33	0.19 0.19 0.19 0.19	0.91 0.91 0.91 0.91	Off		4 4	
20:21:52	2292.00	244 244	6.5	0.1	149	-1	0.54 0.54 0.45	5 5 5	1.31 1.32	1.28 1.28	1.31 1.33	0.19 0.19 0.19 0.19	0.91 0.92 0.92 0.93	Off		4	
20:21:53	2302.00 2312.00	245	6.5 6.5	0.0 0.2	149 149	-2 -2	0.45 0.45 0.45	5 5 5	1.32	1.28	1.31 1.33	0.19 0.19 0.19 0.19	0.94 0.94 0.95 0.96	Off		4 4	
20:21:54	2327.00	245 246	6.5	0.4	149	-1	0.45 0.45 0.45	5 5 5	1.32 1.31	1.28 1.28	1.31 1.33	0.20 0.20 0.19 0.20	0.96 0.97 0.97 0.97	Off Off		4	
20:21:55	2317.00 2352.00	246	6.8 6.8	0.2 0.4	146 149	-1 0	0.45 0.54 0.45	5 5 5	1.29	1.28	1.30 1.32	0.19 0.19 0.19 0.18	0.97 0.97 0.97 0.96	Off		4	
20:21:56	2362.00	247 247	7.2	0.4	149	-1	0.54 0.54 0.54	5 5 5	1.29 1.28	1.27 1.26	1.29 1.31	0.19 0.19 0.19 0.19	0.97 0.98 0.99 0.98	Off Off		4 4	
20:21:57	2377.00 2392.00	247	7.2 7.5	0.5 0.4	146 146	-1 -1	0.54 0.54	5 5	1.27	1.26	1.28 1.30	0.19 0.19	0.99 1.00	Off		4	

TWA Flt. 800, B747-131, Takeoff to End of Data
 Tabular Data No. 1, Revised: December 22, 1999, National Transportation Safety Board

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:21:58	2412.00	248 248	7.6	0.4	148	-1	0.54 0.54 0.54	5 5 5	1.27 1.26	1.26 1.26	1.28 1.28	1.30 1.30	0.19 0.19 0.19 0.19 0.19	1.00 1.00 1.00 1.00 0.99	Off Off		4 4
20:21:59	2427.00 2422.00	248	7.6 7.6	0.2 0.3	148 146	-1	0.54 0.63 0.63	5 5 5	1.26	1.25	1.27	1.30	0.19 0.19 0.19 0.19 0.19	0.98 0.98 0.98 0.98 0.98	Off		4
20:22:00	2457.00	248 248	7.9	0.0	148	-1	0.54 0.54 0.54	5 5 5	1.26 1.25	1.25 1.25	1.27 1.27	1.29 1.29	0.19 0.19 0.19 0.16 0.16 0.16	1.00 1.00 0.99 0.98 0.98 0.98	Off Off		4 4
20:22:01	2477.00 2492.00	248	7.9 7.9	0.0 0.1	148 148	-1	0.54 0.54 0.54	5 5 5	1.25	1.25	1.27	1.29	0.18 0.18 0.18 0.18 0.18	0.98 0.98 0.98 0.98 0.98	Off		4
20:22:02	2512.00	248 248	7.9	0.2	148	-1	0.54 0.54 0.54	5 5 5	1.25 1.25	1.25 1.25	1.26 1.26	1.28 1.28	0.18 0.18 0.18 0.18 0.18	0.98 0.98 0.98 0.98 0.97	Off Off		4 4
20:22:03	2532.00 2557.00	249	7.6 7.2	0.0 0.2	148 148	0 -1	0.54 0.54 0.54	5 5 5	1.25	1.25	1.26	1.28	0.18 0.18 0.18 0.18 0.17	0.97 0.96 0.96 0.94 0.93	Off		4
20:22:04	2572.00	249 250	7.6	0.0	145	-1	0.54 0.54 0.54	4 4 5	1.25 1.25	1.25 1.25	1.26 1.26	1.27 1.27	0.17 0.17 0.17 0.17 0.17	0.92 0.92 0.92 0.92 0.92	Off Off		4 4
20:22:05	2592.00 2612.00	250	7.6 7.6	0.3	147 147	-1	0.54 0.54 0.54	5 5 5	1.25	1.24	1.26	1.26	0.17 0.17 0.17 0.17 0.16	0.92 0.93 0.95 0.96 0.96	Off		4
20:22:06	2627.00	250 250	7.9	0.4 0.4	147	-2	0.54 0.54 0.54	5 5 5	1.25	1.24	1.26	1.26	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.97 0.97 0.97	Off Off		4 4
20:22:07	2652.00 2672.00	250	7.9 7.9	0.4	147 147	-3 -4	0.54 0.54 0.54	5 5 5	1.25	1.24	1.26	1.25	0.16 0.16 0.16 0.16 0.16	0.98 0.98 0.98 0.98 0.98	On		4
20:22:08	2697.00	246 250	7.9	0.5 0.3	147	-5	0.54 0.54 0.63	5 5 5	1.25 1.25	1.24 1.24	1.26 1.26	1.25 1.25	0.18 0.17 0.17 0.17 0.16	0.97 0.97 0.96 0.96 0.96	On On		4 4
20:22:09	2717.00 2737.00	227	8.3 8.3	0.2	147 146	-6	0.72 0.72 0.72	5 4 5	1.25	1.24	1.26	1.25	0.17 0.17 0.17 0.17 0.17	0.96 0.96 0.97 0.97 0.97	On		4
20:22:10	2757.00	250 250	8.3	0.4 0.3	146	-7 -8	0.72 0.72 0.72	4 4 4	1.25 1.25	1.24 1.24	1.26 1.26	1.25 1.25	0.17 0.17 0.17 0.17 0.17	0.97 0.97 0.96 0.95 0.94	On On		4 4
20:22:11	2782.00 2802.00	250	8.3	0.4	145 145	-9	0.72 0.72 0.72	4 4 4	1.25	1.24	1.26	1.25	0.17 0.17 0.17 0.17 0.17	0.93 0.93 0.93 0.93 0.93	Off		4
20:22:12	2822.00	250 250	8.3 8.3	0.4 0.4	144	-10 -10	0.72 0.72 0.72	5 4 4	1.25 1.25	1.24 1.24	1.26 1.26	1.25 1.25	0.17 0.17 0.18 0.18 0.18	0.97 0.97 0.97 0.97 0.97	Off Off		4 4
20:22:13	2842.00 2862.00	250	7.9	0.1	144	-11	0.72 0.72 0.72	5 5 5	1.25	1.24	1.26	1.25	0.17 0.17 0.17 0.17 0.17	0.97 0.97 0.97 0.97 0.97	Off		4
20:22:14	2887.00	228 250	8.3 7.9	0.2 0.1	143 143	-12 -13	0.72 0.63 0.63	4 4 4	1.25 1.25	1.24 1.25	1.26 1.26	1.25 1.25	0.17 0.17 0.17 0.17 0.17	0.96 0.96 0.95 0.94 0.94	Off		4 4
20:22:15	2907.00	250	7.9	0.1	142	-14	0.54 0.54 0.54	4 4 4	1.25	1.25	1.26	1.25	0.17 0.17 0.17 0.17 0.17	0.93 0.93 0.93 0.93 0.93	Off		4
20:22:16	2927.00 2947.00	250	7.6 7.6	0.1 0.0	141 141	-14 -15	0.54 0.54 0.54	4 4 4	1.25 1.25	1.25 1.25	1.26 1.26	1.25 1.25	0.17 0.17 0.17 0.17 0.17	0.93 0.93 0.93 0.93 0.94	Off		4 4
20:22:17	2967.00	250 247	7.6	0.1	140	-15	0.63 0.63 0.63	4 4 5	1.25	1.25	1.26	1.25	0.17 0.17 0.17 0.17 0.17	0.93 0.93 0.93 0.93 0.94	Off Off		4
20:22:18	2987.00 3007.00	250	7.2 7.2	0.4 0.2	139 139	-15 -17	0.63 0.63 0.63	5 4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.17 0.17 0.17 0.17	0.94 0.94 0.94 0.94 0.94	Off		4 4
20:22:19	3027.00	230 250	7.2	0.0	138	-17	0.54 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17 0.17	0.95 0.95 0.96 0.95 0.95	Off Off		4
20:22:20	3042.00 3057.00	251	7.2 6.8	0.1 0.3	137 136	-18 -18	0.63 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17 0.17	0.95 0.95 0.94 0.94 0.94	Off		4 4
20:22:21	3077.00	251 252	6.8	0.1	136	-18	0.54 0.63 0.63	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17 0.17	0.95 0.95 0.95 0.95 0.95	Off Off		4
20:22:22	3092.00	250	6.5	0.3	134	-19	0.63	4	1.25	1.25	1.25	1.25	0.17	0.96	Off		4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:22:23	3107.00 3122.00	250 232	6.1 6.5	0.5 0.6	134 132	-18 -19	0.63 0.63	4 4	1.25 1.25				0.17 0.17 0.17 0.17 0.17	0.96 0.96 0.97 0.98 0.98 0.98	Off Off		4
20:22:24	3132.00 3147.00	253	6.5 6.5	0.5 0.4	131 130	-20 -20	0.54 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17	1.00 1.00 1.01	Off		4
20:22:25	3157.00	254 254	6.5	0.4	130	-21	0.54 0.54 0.54	4 5 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.18 0.18 0.17	1.01 1.02 1.01 1.01	Off Off		4
20:22:26	3172.00 3187.00	254	6.5 6.5	0.3 0.4	129 128	-21 -21	0.54 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17	0.99 0.99 0.99 0.99	Off		4
20:22:27	3197.00	254 255	6.5	0.3	127	-22	0.54 0.54	5 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.17	0.99 0.99	Off Off		4
20:22:28	3212.00 3227.00	237	6.5 6.5	0.4 0.5	126 128	-23 -23	0.54 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17 0.18	1.00 1.01 1.01 1.02 1.03	Off		4
20:22:29	3242.00	256 256	6.5	0.4	123	-23	0.54 0.63	5 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.18	1.04 1.04	Off		4
20:22:30	3257.00 3267.00	256	6.5 6.5	0.4 0.1	122 121	-23 -24	0.63 0.54 0.63	4 4 4	1.25	1.25	1.25	1.24	0.17 0.17 0.17 0.17	1.04 1.04 1.03 1.03	Off		4
20:22:31	3282.00	256 256	6.5	0.4	120	-24	0.63 0.63 0.63	4 4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.17 0.17	1.04 1.04 1.04	Off		4
20:22:32	3297.00 3312.00	257	6.5 6.5	0.4 0.4	119 118	-24 -24	0.54 0.54 0.54	4 5 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17	1.04 1.03 1.03 1.04	Off		4
20:22:33	3327.00	258 258	6.5	0.2	117	-24	0.54 0.54 0.54	4 4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.17 0.17 0.17	1.03 1.03 1.03 1.04	Off		4
20:22:34	3342.00 3357.00	258	6.5 6.5	0.3 0.4	116 114	-24 -25	0.54 0.54	4 4	1.25	1.25	1.25	1.25	0.17 0.17	1.04 1.04	Off		4
20:22:35	3367.00	258 258	6.5	0.4	113	-25	0.54 0.54 0.54	4 4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.24 1.25	0.17 0.17 0.17 0.17	1.04 1.04 1.04 1.05	Off On		5
20:22:36	3387.00 3402.00	259	6.5 6.8	0.5 0.5	112 111	-26 -26	0.54 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17	1.05 1.05 1.06	On		5
20:22:37	3412.00	259 260	6.8	0.5	109	-26	0.54 0.54 0.54	5 4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.17 0.17 0.17 0.18	1.06 1.06 1.08 1.09 1.09	On On		5
20:22:38	3492.00 3447.00	260	6.8 7.2	0.4 0.5	104 107	-26 -27	0.54 0.54 0.54	4 5 4	1.25	1.25	1.25	1.25	0.18 0.18 0.18	1.10 1.09 1.09	On		5
20:22:39	3462.00	260 260	7.2	0.2	106	-27	0.54 0.54 0.54	5 4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.24	0.18 0.18 0.18	1.10 1.10 1.10	On Off		5
20:22:40	3482.00 3497.00	260	7.2 7.2	0.4 0.2	104 103	-27 -27	0.54 0.63 0.63	4 5 4	1.25	1.25	1.25	1.25	0.18 0.18 0.18	1.09 1.10 1.11	Off		5
20:22:41	3517.00	260 259	7.2	0.3	102	-27	0.63 0.63 0.54	5 4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.18 0.18 0.18	1.11 1.10 1.03	Off Off		5
20:22:42	3537.00 3627.00	260	7.2 7.2	0.2 0.4	101 95	-27 -27	0.54 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17	1.10 1.09 1.07 1.05	Off		5
20:22:43	3577.00	262 262	7.6	0.4	98	-27	0.63 0.54	4 4	1.25 1.25	1.25 1.25	1.25 1.25	1.25 1.25	0.17 0.17	1.04 1.06	Off Off		5
20:22:44	3597.00 3617.00	262	7.6 7.6	0.2 0.3	97 95	-27 -26	0.54 0.63 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17	1.08 1.07 1.10 1.11	Off		5
20:22:45	3637.00	262 262	7.6	0.2	94	-26	0.54 0.54	4 4	1.25	1.25	1.25	1.25	0.17 0.18	1.11 1.10	Off		5
20:22:46	3662.00 3682.00	258	7.6 7.6	0.2 0.2	93 92	-26 -26	0.54 0.54 0.54	4 4 4	1.25	1.25	1.25	1.25	0.17 0.17 0.17 0.17	1.08 1.08 1.10 1.09	Off		5

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:22:47	3767.00	258 260	7.6	0.2	86	-26	0.54 0.54 0.54	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.07 1.07 1.07 1.07 1.07	Off Off Off		5 5 5
20:22:48	3727.00 3747.00	261	7.9 7.9	0.3	90 88	-26 -26	0.45 0.54 0.54	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.06 1.07 1.07 1.06 1.08	Off Off Off		5 5 5
20:22:49	3772.00	262 261	8.3	0.4 0.4	87	-26	0.54 0.54 0.54	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.08 1.07 1.07 1.08 1.09	Off Off Off		5 5 5
20:22:50	3797.00 3822.00	261	8.6 8.6	0.5	86 85	-26 -26	0.54 0.54 0.54	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.18 0.18 0.18 0.18 0.18	1.13 1.13 1.13 1.12 1.13	Off Off Off		5 5 5
20:22:51	3847.00	258 260	8.6	0.4 0.2	84	-26	0.54 0.54 0.63	4 5 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.18 0.18 0.18 0.18 0.18	1.13 1.12 1.12 1.12 1.12	Off Off Off		5 5 5
20:22:52	3932.00 3897.00	258	9.0 9.0	0.2	78 81	-26	0.54 0.54 0.54	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.18 0.18 0.18 0.18 0.18	1.11 1.11 1.11 1.11 1.11	Off Off Off		5 5 5
20:22:53	3927.00	261 261	9.4	0.3 0.0	80	-26 -26	0.63 0.54 0.63	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.18 0.18 0.18 0.18 0.18	1.11 1.11 1.11 1.11 1.10	Off Off Off		5 5 5
20:22:54	3957.00 3987.00	260	9.4	0.2	78 77	-26	0.63 0.63 0.63	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.18 0.17 0.17 0.17 0.17	1.11 1.11 1.09 1.07 1.06	Off Off Off		5 5 5
20:22:55	4017.00	258 258	9.4	0.1 0.2	76	-26 -26	0.63 0.63 0.63	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.07 1.07 1.07 1.07 1.06	On On Off		4 4 4
20:22:56	4047.00 4137.00	260	8.6	0.2	75	-25	0.54 0.54 0.54	5 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.16 0.16 0.16 0.16	1.04 1.02 1.02 1.01 1.01	On Off		4 4 4
20:22:57	4107.00	256 260	8.6 8.6	0.2 0.2	70 73	-27 -27	0.54 0.54 0.63	4 4 4	1.26 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.16 0.16 0.16 0.16 0.16	1.00 1.00 1.00 1.00 1.00	Off Off		4 4 4
20:22:58	4137.00	260	8.6	0.4	72	-27	0.63 0.54 0.72	4 4 4	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.16 0.16 0.16 0.16 0.16	1.01 1.02 1.01 1.01 1.02	Off Off Off		4 4 4
20:22:58	4172.00 4197.00	260	8.6 8.6	0.4 0.3	71 69	-27 -27	0.63 0.63 0.63	4 4 4	1.26 1.26 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.16 0.17 0.17 0.17 0.17	1.00 1.01 1.01 1.01 1.01	Off Off		4 4 4
20:23:00	4222.00	260 258	9.0	0.1	68	-26	0.63 0.63 0.63	4 4 5	1.26 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.04 1.06 1.06 1.07 1.06	Off Off		5 5 5
20:23:01	4252.00 4277.00	258	8.6 8.6	0.2 0.4	67 66	-25 -26	0.63 0.63 0.54	5 4 4	1.26 1.26 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.06 1.07 1.07 1.06 1.07	Off Off		4 5 5
20:23:02	4307.00	237 256	8.6	0.2	64	-26	0.54 0.54 0.54	4 4 4	1.26 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.06 1.06 1.06 1.06 1.05	Off Off		5 5 5
20:23:03	4332.00 4362.00	254	9.0 8.6	0.2 0.2	63 62	-26 -24	0.54 0.54 0.54	4 4 4	1.26 1.26 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.16 0.17	1.04 1.09 1.04 1.03 1.03	Off Off		5 5 5
20:23:04	4392.00	259 258	9.0	0.2	61	-23	0.54 0.54 0.54	4 4 4	1.26 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.04 1.04 1.04 1.04 1.04	Off Off		5 5 5
20:23:05	4422.00 4447.00	256	9.4 8.6	0.2 0.2	60 59	-22 -20	0.54 0.54 0.54	4 4 5	1.26 1.26 1.26	1.26 1.26 1.26	1.26 1.26 1.26	1.25 1.25 1.25	0.17 0.17 0.17 0.17 0.17	1.04 1.05 1.03 1.03 1.03	Off Off		5 5 5
20:23:06	4477.00	258 236	9.4	0.3	58	-19	0.54 0.54	5 5	1.26 1.26	1.26 1.26	1.26 1.26	1.25 1.26	0.17 0.17 0.17 0.17 0.17	1.04 1.04 1.04 1.04 1.04	Off Off		5 5 5
20:23:07	4502.00 4532.00	258	9.4 9.4	0.2 0.0	57 57	-18 -17	0.54 0.54 0.45 0.45	5 5 5 5	1.26 1.26 1.26 1.26	1.26 1.26 1.26 1.26	1.26 1.26 1.26 1.26	1.26 1.26 1.26 1.26	0.17 0.17 0.17 0.17 0.17	1.07 1.07 1.07 1.08 1.08	Off Off		5 5 5
20:23:08	4562.00	256 256	9.7	0.0	56	-16	0.36 0.36	5 5	1.26 1.26	1.26 1.26	1.26 1.26	1.26 1.26	0.17 0.18 0.18 0.18 0.18	1.07 1.06 1.06 1.06 1.06	Off Off		5 5 5
20:23:09	4592.00 4627.00	256	9.7 10.1	0.0 0.3	55 55	-16 -14	0.36 0.36 0.36 0.36	4 4 5 5	1.26 1.26 1.26 1.26	1.26 1.26 1.26 1.26	1.26 1.26 1.26 1.26	1.26 1.26 1.26 1.26	0.17 0.17 0.16 0.17 0.17	1.00 0.98 0.99 1.00 1.01	Off Off		5 5 5
20:23:10	4662.00	252 255	9.7	0.0	54	-13	0.36 0.36	5 5 5	1.26 1.26 1.26	1.26 1.26 1.26	1.26 1.26 1.26	1.26 1.26 1.26	0.16 0.17 0.17 0.17 0.17	1.01 1.01 1.01 1.01 1.01	Off Off		5 5 5
20:23:11	4692.00 4727.00	235	10.4 10.8	0.3 0.3	54 54	-13 -12	0.36 0.36 0.36	5 5 5	1.26 1.26 1.26	1.26 1.26 1.26	1.26 1.26 1.26	1.26 1.26 1.26	0.17 0.17 0.17 0.17 0.17	1.02 1.02 1.02 1.02 1.04	Off Off		5 5 5

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Stal Pos (degrees)
20:23:12	4767.00	255 254	10.8	0.1	53	-10	0.36 0.36 0.49	5 5 5	1.26 1.27	1.26 1.26	1.26 1.26	1.26 1.26	0.17 0.17 0.17 0.17 0.17	1.03 1.02 1.02 1.01 1.02	Off Off	5
20:23:13	4807.00 4847.00	254	11.2 11.2	0.0 0.2	53 53	-9 -7	0.54 0.63 0.72	5 5 4	1.27	1.26	1.26	1.26	0.17 0.17 0.17 0.17	1.02 1.02 1.03 1.03	Off	5 4
20:23:14	4882.00	253 250	11.2	0.1	53	-5	0.72 0.81 0.81	5 4 4	1.27 1.27	1.26 1.26	1.26 1.27	1.26 1.26	0.17 0.17 0.17 0.17 0.17	1.00 1.00 1.00 0.98 0.97	Off Off	4
20:23:15	4922.00 4957.00	252	11.2	0.1 0.3	52 52	-3 -3	0.72 0.72 0.72	4 5 4	1.27	1.26	1.27	1.27	0.16 0.16 0.16 0.16	0.96 0.97 0.97 0.97	Off	4 4
20:23:16	4997.00	230 251	11.2	0.0	52	-3	0.63 0.54 0.54	4 4 4	1.27 1.27	1.27 1.27	1.27 1.27	1.27 1.27	0.16 0.16 0.16 0.16	0.92 0.92 0.92 0.93	Off Off	4
20:23:17	5037.00 5077.00	250	11.2 10.8	0.1 0.2	52 52	-3 -3	0.49 0.49 0.49	4 4 4	1.27	1.27	1.27	1.27	0.16 0.16 0.16 0.16	0.93 0.92 0.92 0.92	Off	4 4
20:23:18	5117.00	250 250	10.8	0.0	52	-3	0.54 0.54 0.63	4 4 4	1.27 1.27	1.27 1.27	1.27 1.27	1.27 1.27	0.16 0.16 0.16 0.16	0.91 0.90 0.90 0.90	Off Off	4
20:23:19	5157.00 5192.00	250	10.4 10.4	0.1 0.0	52 52	-2 -2	0.72 0.72 0.72	4 4 4	1.27	1.27	1.27	1.27	0.16 0.16 0.15 0.16 0.16	0.89 0.88 0.87 0.87 0.87	Off	4 4
20:23:20	5227.00	248 22.9	10.1	0.0	52	-1	0.72 0.72 0.72	5 4 4	1.27 1.27	1.27 1.27	1.27 1.27	1.27 1.27	0.15 0.16 0.16 0.16	0.86 0.86 0.86 0.86	Off Off	4
20:23:21	5262.00 5297.00	248	9.7 9.4	0.0 0.2	52 52	-1 -1	0.72 0.72 0.63	4 4 4	1.27	1.27	1.27	1.27	0.16 0.16 0.16 0.16	0.85 0.85 0.86 0.86 0.86	Off	4
20:23:22	5332.00	248 248	9.4	0.4	52	-1	0.72 0.72 0.72	4 4 4	1.27 1.26	1.27	1.27	1.27	0.15 0.15 0.15 0.15	0.84 0.84 0.84 0.85	Off	4 4
20:23:23	5362.00 5387.00	247	9.0 9.0	0.4 0.4	52 52	-1 -1	0.72 0.72 0.72	4 4 4	1.28	1.27	1.27	1.28	0.15 0.15 0.15 0.15	0.84 0.84 0.84 0.85	On	4
20:23:24	5417.00	247 246	8.6	45.7	52	-1	0.72 0.72 0.72	4 4 5	1.28 1.28	1.27 1.27	1.28 1.28	1.28 1.28	0.16 0.16 0.16 0.16	0.86 0.86 0.87 0.87	On On	4 4
20:23:25	5447.00 5447.00	246	8.3 8.3	0.3 0.2	52 49	0 0	0.63 0.63 0.63	4 4 4	1.28	1.28	1.28	1.28	0.16 0.16 0.16 0.16	0.88 0.87 0.87 0.87	On	4
20:23:26	5497.00	246 246	8.3	0.3	52	1	0.72 0.63 0.63	4 4 4	1.28 1.28	1.28 1.28	1.28 1.28	1.28 1.28	0.16 0.16 0.15 0.16 0.16	0.86 0.86 0.85 0.86 0.86	Off Off	4 4
20:23:27	5522.00 5542.00	246	7.9 7.9	0.5 0.5	52 52	1 1	0.63 0.63 0.63	4 4 4	1.28 1.28	1.28 1.28	1.28 1.28	1.27 1.27	0.16 0.16 0.16 0.16	0.87 0.87 0.87 0.87	Off	4
20:23:28	5567.00	246 247	7.6	0.5	52	1	0.63 0.63 0.72	4 4 5	1.28 1.28	1.28 1.28	1.28 1.28	1.28 1.28	0.16 0.16 0.16 0.16 0.16	0.87 0.88 0.89 0.89 0.89	Off Off	4 4
20:23:29	5587.00 5607.00	248	7.6 7.2	0.4 0.4	52	1	0.63 0.63 0.63	4 5 4	1.28	1.28	1.28	1.28	0.16 0.16 0.16 0.16	0.90 0.89 0.89 0.89	Off	4
20:23:30	5592.00	248 248	7.2	0.5	49	2	0.63 0.63 0.63	4 5 4	1.28 1.28	1.28 1.28	1.28 1.28	1.28 1.28	0.16 0.16 0.16 0.16	0.90 0.90 0.89 0.89	Off Off	4 4
20:23:31	5647.00 5662.00	248	7.2 6.8	0.5	53 53	3 4	0.54 0.54 0.54	4 5 4	1.28	1.28	1.28	1.28	0.16 0.16 0.16 0.16	0.89 0.89 0.88 0.88	Off	4
20:23:32	5677.00	248 248	6.5	0.4 0.5	53	4	0.54 0.54 0.54	5 5 4	1.28 1.28	1.28 1.28	1.28 1.28	1.28 1.28	0.16 0.16 0.16 0.16	0.90 0.90 0.91 0.92	Off Off	4 4
20:23:33	5697.00 5712.00	248	6.5 6.1	0.5	53 53	6 7	0.54 0.54 0.54	5 5 5	1.28	1.28	1.28	1.28	0.16 0.16 0.16 0.16	0.91 0.91 0.90 0.90	Off	4
20:23:34	5727.00	246 248	6.1	0.5 0.5	54	8	0.54 0.54 0.54	5 4 4	1.28 1.28	1.28 1.28	1.28 1.28	1.28 1.28	0.16 0.16 0.16 0.16	0.92 0.92 0.92 0.92	Off Off	4 4
20:23:35	5702.00 5762.00	248	5.8 5.8	0.3	51 54	9	0.63 0.63 0.63	4 4 4	1.28	1.28	1.29	1.28	0.16 0.16 0.16 0.15 0.15	0.88 0.88 0.86 0.86 0.85	Off	4
20:23:36	5772.00	248	5.8	0.5	54	10	0.72	4	1.28	1.28	1.29	1.28	0.15	0.85	Off	4

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Stal Pos (degrees)
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)
		248		0.5		12	0.72 0.63	4	1.28	1.28	1.29	1.28	0.15 0.15 0.15	0.86 0.86 0.87	Off	4
20:23:37	5777.00 5787.00	250	5.8	0.5	55 55	13	0.54 0.54 0.36	4 5 5	1.28	1.28	1.29	1.28	0.16 0.16 0.16 0.16	0.88 0.88 0.90 0.90	Off	4
20:23:38	5797.00	250 251	5.4 5.0	0.5 0.6	56	13	0.36 0.36 0.36	5 5 5	1.28 1.28	1.28 1.28	1.29 1.29	1.28 1.28	0.16 0.16 0.16 0.16	0.92 0.92 0.92 0.93	Off Off	4 4
20:23:39	5807.00 5772.00	252	5.0	0.6	57	14	0.36 0.36 0.36	5 4 4	1.28	1.28	1.29	1.28	0.16 0.16 0.16 0.16	0.93 0.93 0.93 0.93	Off	4
20:23:40	5822.00	252 251	5.0 4.7	0.5 0.6	54 58	14 15	0.45 0.54 0.54	4 5 5	1.28 1.28	1.28 1.28	1.28 1.29	1.28 1.28	0.16 0.16 0.16 0.16	0.92 0.91 0.92 0.93	Off	4 28
20:23:41	5832.00	252	4.3	0.5	59	16	0.63 0.63 0.72	4 4 4	1.28	1.28	1.29	1.28	0.16 0.16 0.16 0.16	0.95 0.94 0.94 0.95	Off Off	4
20:23:42	5842.00 5847.00	252	4.3 4.3	0.5 0.7	59 60	17 18	0.81 0.90 0.81	4 4 4	1.28 1.28	1.28 1.28	1.29 1.29	1.28 1.28	0.16 0.16 0.16 0.16	0.96 0.95 0.94 0.94	On	4 4
20:23:43	5847.00	253 254	4.0	0.7	60	19	0.72 0.72 0.63	5 4 5	1.28	1.28	1.29	1.28	0.16 0.16 0.16 0.16	0.93 0.93 0.93 0.93	On On	4
20:23:44	5852.00 5812.00	254	3.6 4.0	0.7 0.6	61 59	19 20	0.63 0.54 0.54	5 4 4	1.28 1.28	1.28 1.28	1.29 1.29	1.28 1.28	0.16 0.16 0.16 0.16	0.93 0.93 0.94 0.94	On	4 4
20:23:45	5857.00	253 254	3.6	0.6	63	21	0.54 0.54 0.54	4 5 5	1.28	1.28	1.29	1.28	0.16 0.16 0.16 0.16	0.94 0.94 0.95 0.95	Off	4
20:23:46	5857.00 5857.00	256	3.6 3.2	0.6 0.5	64 65	21	0.54 0.54 0.54	4 4 4	1.27 1.27	1.28 1.28	1.28 1.28	1.28 1.28	0.16 0.16 0.16 0.16	0.96 0.96 0.96 0.96	Off	4 4
20:23:47	5862.00	257 257	3.2	0.6	66	21	0.54 0.63 0.63	4 4 4	1.27	1.28	1.28	1.28	0.16 0.16 0.16 0.16	0.96 0.97 0.97 0.97	On On	4
20:23:48	5857.00 5857.00	262	2.9 2.9	0.6 0.5	67 68	22	0.72 0.72 0.72	4 4 5	1.27	1.28	1.28	1.28	0.16 0.16 0.15 0.15	0.97 0.98 0.98 0.98	On	4 4
20:23:49	5857.00	257 239	2.9	1.1	69	23	0.72 0.72	4 4	1.27	1.28	1.28	1.28	0.16 0.16 0.16 0.16	0.98 0.98 0.98 0.98	Off Off	4
20:23:50	5852.00 5852.00	258	2.9 2.9	1.2 1.4	70 71	23 24	0.72 0.72 0.72	4 4 5	1.27	1.28	1.28	1.28	0.16 0.16 0.16 0.16	0.98 0.98 1.00 1.03	Off	4 4
20:23:51	5847.00	261 263	3.6	1.4	72	24	0.72 0.72 0.72	5 5 5	1.27 1.27	1.27 1.28	1.28 1.28	1.28 1.28	0.17 0.17 0.17 0.17	1.04 1.07 1.10 1.12	Off Off	4
20:23:52	5842.00 5842.00	264	3.6 4.0	1.4 1.1	73 75	24	0.72 0.72 0.72	5 5 5	1.27	1.28	1.29	1.28	0.16 0.17 0.18 0.18	1.14 1.15 1.15 1.15	Off	4 4
20:23:53	5842.00	270 264	4.0	1.1	76	23	0.72 0.72	5 5	1.27 1.27	1.27 1.27	1.29 1.28	1.28 1.28	0.17 0.17 0.17 0.18	1.14 1.13 1.13 1.16	Off Off	4
20:23:54	5842.00 5842.00	246	4.3 5.0	1.2 1.2	77 78	24	0.72 0.72 0.72 0.72	5 5 5 5	1.28	1.27	1.29	1.28	0.18 0.18 0.18 0.18	1.16 1.16 1.17 1.18	Off	4 4
20:23:55	5847.00	263 266	5.4	1.0	79	23	0.72 0.72	5 5	1.28 1.28	1.27 1.27	1.28 1.28	1.28 1.28	0.18 0.18 0.18 0.18	1.20 1.20 1.19 1.20	Off Off	4
20:23:56	5852.00 5862.00	266	5.8 5.8	1.0 0.4	80 81	23 23	0.72 0.72 0.72	5 5 5	1.28	1.27	1.28	1.28	0.18 0.18 0.18 0.18	1.22 1.22 1.20 1.20	Off	4 4
20:23:57	5877.00	266 274	5.8	0.5	82	23	0.72 0.72	5 5	1.28 1.29	1.27 1.27	1.28 1.28	1.28 1.28	0.18 0.17 0.17 0.17	1.18 1.17 1.15 1.15	Off Off	4
20:23:58	5892.00 5907.00	262	5.8 6.1	0.3 0.2	84 84	22 23	0.72 0.72 0.72	5 5 4	1.29	1.27	1.28	1.28	0.17 0.17 0.17 0.17	1.14 1.13 1.12 1.11	Off	4 4
20:23:59	5922.00	249 267	6.5	0.1	86	23	0.72 0.72 0.72	4 4 4	1.30	1.27	1.28	1.28	0.17 0.17 0.16 0.16	1.11 1.12 1.11 1.10	Off	4
20:24:00	5947.00 5962.00	266	6.5 6.5	0.0 0.1	86 87	23 24	0.63 0.72 0.72	4 4 4	1.29	1.27	1.28	1.28	0.16 0.16 0.16 0.16	1.10 1.10 1.09 1.10	Off	4 4

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos (degrees)	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)			
20:24:01	5982.00	268 268	6.8	0.0	89	24	0.72 0.72 0.72	4 4 4	1.29 1.29 1.29	1.27 1.27 1.28	1.28 1.28 1.28	1.28 1.28 1.28	0.16 0.16 0.16	1.10 1.11 1.10	Off Off Off		4 4 4
20:24:02	6002.00 6022.00	266	6.8 6.8	0.0 0.3	90 90	24 23	0.72 0.72 0.72	4 4 4	1.29	1.26	1.28	1.28	0.16 0.16 0.16	1.11 1.11 1.10	Off		4 4
20:24:03	6042.00	265 250	7.2	0.7	91	24	0.72 0.72 0.63	4 4 4	1.29 1.29	1.27 1.27	1.28 1.28	1.28 1.28	0.16 0.16 0.16	1.09 1.09 1.09	Off Off		4
20:24:04	6062.00 6087.00	268	7.6 7.9	0.8 0.7	93 94	23 23	0.63 0.63 0.63	4 4 4	1.29	1.27	1.28	1.28	0.16 0.17 0.17	1.12 1.13 1.14	Off		4
20:24:05	6107.00	268 268	8.3	0.6	95	23	0.63 0.63 0.63	4 4 4	1.29 1.29	1.27 1.27	1.28 1.28	1.28 1.28	0.16 0.17 0.18	1.15 1.16 1.18	Off Off		4 4
20:24:06	6137.00 6167.00	268	8.6 9.0	0.7 0.4	96 97	22	0.63 0.72	4 4	1.29	1.27	1.28	1.28	0.16 0.17	1.16 1.17	Off		4
20:24:07	6202.00	267 267	9.4	0.2	98	22	0.72 0.72	4 4	1.28 1.29	1.27 1.27	1.28 1.28	1.28 1.28	0.17 0.17 0.17	1.17 1.17 1.16	Off Off		4 4
20:24:08	6237.00 6272.00	252	9.4 9.4	0.1 0.2	99 100	21	0.72 0.72 0.72	4 4 4	1.29	1.27	1.29	1.28	0.16 0.16 0.17	1.11 1.10 1.10	Off		4
20:24:09	6307.00	266 266	9.7	0.0	101	21	0.72 0.72 0.72	4 4 4	1.29 1.29	1.27 1.27	1.29 1.29	1.29 1.29	0.16 0.16 0.16	1.11 1.11 1.09	Off Off		4 4
20:24:10	6342.00 6377.00	266	9.7 10.1	0.2 0.4	102 102	21 20	0.72 0.72 0.72	4 4 4	1.29	1.27	1.29	1.28	0.16 0.16 0.16	1.07 1.07 1.07	Off		4
20:24:11	6417.00	266 265	10.1	0.7	103	19	0.72 0.72 0.72	4 4 4	1.29 1.29	1.27 1.27	1.29 1.29	1.29 1.29	0.16 0.16 0.16	1.07 1.07 1.07	Off Off		4 4
20:24:12	6452.00 6492.00	264	10.8 11.2	0.5 0.5	104 105	19 17	0.72 0.72 0.72	4 4 4	1.29	1.27	1.29	1.29	0.16 0.17 0.17	1.09 1.10 1.11	Off		4
20:24:13	6467.00	264 262	11.2	0.2	102	15	0.72 0.72	4 4	1.29 1.29	1.27 1.28	1.29 1.30	1.29 1.28	0.17 0.17 0.17	1.13 1.13 1.13	Off Off		4 4
20:24:14	6577.00 6622.00	262	11.5 11.5	0.3	106 107	14 12	0.72 0.72 0.72	4 4 4	1.29	1.27	1.30	1.29	0.17 0.17 0.17	1.13 1.10 1.09	Off		4
20:24:15	6667.00	262 261	11.9	0.1 0.0	107	10	0.72 0.72 0.72	4 4 4	1.29	1.28	1.30	1.29	0.17 0.17 0.16	1.08 1.08 1.07	Off Off		4 4
20:24:16	6717.00 6767.00	260	11.9 11.9	0.1	108 108	8 6	0.81 0.90 0.90	4 4 4	1.29	1.28	1.30	1.30	0.16 0.16 0.16	1.03 1.01 1.00	Off		4
20:24:17	6817.00	259 259	11.9	0.0 0.0	108	5	0.90 0.90 0.90	4 4 4	1.29 1.29	1.28 1.28	1.30 1.30	1.30 1.30	0.16 0.16 0.16	0.98 0.98 0.98	Off Off		4 4
20:24:18	6812.00 6922.00	257	12.2 11.9	0.0	104 109	3	0.81 0.81 0.81	4 4 4	1.29	1.28	1.30	1.30	0.16 0.16 0.15	0.97 0.97 0.96	Off		4
20:24:19	6972.00	258 256	11.9	0.0 0.0	109	1 0	0.72 0.72 0.72	4 4 4	1.29 1.29	1.28 1.28	1.31 1.31	1.30 1.30	0.15 0.15 0.15	0.95 0.93 0.92	Off Off		4 4
20:24:20	7022.00 7072.00	256	11.9	0.0	109 109	0	0.72 0.72 0.72	4 4 4	1.29	1.29	1.31	1.31	0.15 0.15 0.15	0.93 0.92 0.92	Off		4
20:24:21	7122.00	256 255	11.9 11.9	0.1 0.0	109	-1 -1	0.72 0.72 0.72	4 4 4	1.30 1.30	1.29 1.29	1.31 1.31	1.31 1.31	0.15 0.15 0.16	0.91 0.91 0.93	Off Off		4 4
20:24:22	7172.00 7187.00	254	11.9	0.0	108	-2	0.72 0.72	4 4	1.30	1.29	1.31	1.31	0.15 0.16	0.93 0.92	Off		4
20:24:23	7272.00	254 252	11.9 11.9	0.0 0.1	104 108	-3 -3	0.63 0.72 0.72	4 4 4	1.30 1.30	1.29 1.29	1.32 1.32	1.31 1.31	0.16 0.16 0.16	0.93 0.93 0.93	Off		4 4
20:24:24	7322.00	252	11.5	0.0	108	-4	0.72 0.63 0.63	4 4 4	1.30	1.29	1.32	1.31	0.15 0.16 0.15	0.91 0.90 0.88	Off Off		4
20:24:25	7372.00 7417.00	252	11.2 11.2	0.0 0.1	108 108	-4 -6	0.72 0.72 0.72	4 4 4	1.30 1.30	1.29 1.29	1.32 1.32	1.32 1.32	0.15 0.15 0.15	0.86 0.86 0.86	Off		4 4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:24:26	7467.00	251 247	11.2	0.1	107	-7	0.63 0.72 0.63	4 4 5	1.31	1.29	1.32	1.32	0.15 0.15 0.15 0.16 0.15	0.86 0.85 0.86 0.88 0.88	Off		4
20:24:27	7512.00 7547.00	250	11.2 10.8	0.2 0.2	107 102	-8 -8	0.63 0.54 0.63	4 4 4	1.31	1.30	1.32	1.32	0.16 0.16 0.16 0.16 0.15	0.88 0.88 0.88 0.88 0.86	Off		4 4
20:24:28	7597.00	249 248	10.8	0.2	107	-9	0.54 0.63 0.63	4 4 4	1.31	1.30	1.33	1.32	0.16 0.16 0.15 0.15 0.15	0.89 0.88 0.87 0.86 0.86	Off		4
20:24:29	7637.00 7682.00	248	10.4 10.1	0.2 -0.1	106 106	-9 -9	0.63 0.63 0.72	4 4 4	1.31	1.30	1.33	1.32	0.15 0.15 0.15 0.15 0.15	0.86 0.84 0.83 0.84 0.83	Off		4 4
20:24:30	7717.00	248 246	9.7	0.0	105	-9	0.72 0.72 0.72	4 4 4	1.31	1.30	1.33	1.32	0.15 0.15 0.15 0.15 0.15	0.84 0.84 0.85 0.83 0.83	Off		4
20:24:31	7757.00 7787.00	246	9.0 8.6	0.1 0.2	105 104	-8 -8	0.72 0.72 0.63	5 4 5	1.31	1.30	1.33	1.32	0.15 0.15 0.15 0.15 0.15	0.83 0.83 0.83 0.83 0.83	Off		4 4
20:24:32	7837.00	246 244	8.6	0.2	100	-9	0.54 0.54	4 4	1.31	1.30	1.33	1.32	0.15 0.15 0.15 0.15 0.15	0.83 0.83 0.84 0.83 0.83	Off		4
20:24:33	7847.00 7877.00	246	8.6 8.3	0.2 0.2	103 103	-9 -9	0.54 0.54 0.45	4 4 4	1.31	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.83 0.83 0.83 0.83 0.83	Off		4 4
20:24:34	7902.00	246 246	7.9	0.0	103	-9	0.36 0.36	4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.83 0.83 0.84 0.84 0.83	Off		4
20:24:35	7932.00 7957.00	246	7.6 6.8	0.2 0.0	103 103	-8 -8	0.36 0.36 0.45 0.45	4 4 5	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.84 0.84 0.83 0.83 0.83	Off		4 4
20:24:36	7982.00	246 246	6.5	0.3	102	-8	0.54 0.54	4 5	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.83 0.83 0.83 0.83 0.83	Off		4
20:24:37	8007.00 8027.00	225	6.9 6.1	0.4 0.5	99 102	-8 -7	0.54 0.63 0.63 0.63	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.83 0.83 0.83 0.83 0.83	Off		4 4
20:24:38	8047.00	245 246	6.1	0.6	102	-7	0.54 0.54	4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.83 0.83 0.85 0.85 0.85	Off		4
20:24:39	8062.00 8077.00	247	6.1 5.8	0.4 0.4	101 101	-6 -6	0.63 0.63 0.54	4 4 4	1.32	1.31	1.33	1.33	0.15 0.16 0.16 0.16 0.16	0.86 0.87 0.88 0.88 0.88	Off		4 4
20:24:40	8092.00	247 246	5.4	0.5	101	-4	0.54 0.54 0.54	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.88 0.89 0.89 0.89 0.89	Off		4
20:24:41	8102.00 8117.00	248	5.0 5.4	0.5 0.6	101 101	-3 -3	0.54 0.54 0.54	5 4 4	1.32	1.31	1.33	1.33	0.16 0.15 0.15 0.15 0.15	0.88 0.88 0.87 0.87 0.87	Off		4 4
20:24:42	8127.00	226 248	5.4	0.7	101	-1	0.54 0.54 0.54	5 5 5	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.87 0.91 0.93 0.94 0.94	On		4
20:24:43	8137.00 8147.00	250	5.8 5.8	0.7 0.5	100 100	-1 0	0.54 0.54 0.54	5 5 5	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.95 0.98 0.98 0.98 0.98	On		4 4
20:24:44	8157.00	250 250	6.1	0.5	100	1	0.54 0.54 0.54	5 5 5	1.32	1.31	1.34	1.33	0.17 0.17 0.17 0.17 1.42	0.98 0.98 0.99 0.99 0.99	On		4
20:24:45	8172.00 8187.00	250	6.1 6.1	0.5 0.5	101 101	1 1	0.54 0.54 0.54	5 5 5	1.32	1.31	1.33	1.33	0.17 0.17 0.17 0.17 0.17	0.98 0.98 0.99 0.99 0.99	On		4 4
20:24:46	8197.00	249 232	6.5	0.3	101	1	0.54 0.63 0.72	5 5 5	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.99 0.99 0.99 0.99 0.99	On		4
20:24:47	8217.00 8232.00	251	6.5 6.5	0.5 0.4	101 101	1 1	0.72 0.72 0.72	5 5 5	1.32	1.31	1.33	1.33	0.17 0.17 0.16 0.16 0.16	0.99 0.98 0.98 0.98 0.98	On		4
20:24:48	8247.00	252 252	6.9	0.2	101	1	0.72 0.72 0.72	5 5 5	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.98 0.98 0.98 0.98 0.98	On		4 4
20:24:49	8267.00 8282.00	252	6.9 6.5	0.2 0.4	101 101	1 0	0.72 0.72 0.81	5 4 4	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.96 0.96 0.96 0.96	Off		4
20:24:50	8297.00	252 250	6.5	0.4	101	0	0.72 0.81	5 4	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.96 0.96 0.96 0.96 0.96	Off		4 4

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
20:24:51	8317.00 8332.00	232	6.8 6.8	0.2 0.3	101 101	0 0	0.72 0.81 0.72 0.72	5 4 4 4	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.95 0.95 0.96 0.97 0.97	Off		4
20:24:52	8352.00	251 250	6.8	0.3	101	0	0.72 0.90 0.81	4 4 4	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.95 0.95 0.97	Off		4
20:24:53	8367.00 8382.00	252	6.8 7.2	0.2 0.2	101 101	-1 -1	0.81 0.72 0.72	5 5 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.96 0.97 0.96	On		4
20:24:54	8402.00	252 250	7.2	0.2	101	-1	0.72 0.72 0.72	5 5 5	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.98 0.97 0.96 0.97 0.97	On On		4 4
20:24:55	8417.00 8437.00	250	7.2 7.2	0.3 0.2	101 101	-2 -3	0.72 0.72 0.72	5 5 5	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.97 0.97 0.97	On		4
20:24:56	8457.00	233 252	7.2	0.2	100	-3	0.72 0.72 0.72	4 4 4	1.32	1.31	1.33	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.98 0.97 0.96	On Off		4 4
20:24:57	8477.00 8497.00	250	7.2 7.2	0.0	100 100	-4 -4	0.81 0.81 0.72	5 5 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.96 0.96 0.96	Off		4
20:24:58	8512.00	252 251	7.2	0.2 0.0	100	-5	0.72 0.72 0.72	5 5 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.96 0.95 0.96 0.96 0.96	Off Off		4 4
20:24:59	8532.00 8552.00	251	7.2 7.2	0.3	100 99	-5 -5	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.95 0.95 0.94 0.94 0.94	Off		4
20:25:00	8572.00	251 251	6.8	0.2 0.0	99	-6	0.72 0.72 0.63	5 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.94 0.94 0.93 0.93 0.92	Off Off		4 4
20:25:01	8592.00 8607.00	251	6.8 6.8	0.4	99 99	-6	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.93 0.93 0.93 0.93 0.93	Off		4
20:25:02	8627.00	251 251	6.8	0.2 0.2	99	-5 -6	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.93 0.93 0.93 0.93 0.93	Off Off		4 4
20:25:03	8642.00 8662.00	251	6.5	0.3	98 98	-5	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.93 0.93 0.93 0.93 0.93	Off		4
20:25:04	8677.00	252 252	6.5 6.5	0.2 0.3	98	-5 -5	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.93 0.93 0.93 0.93 0.93	Off Off		4 4
20:25:05	8697.00 8777.00	252	6.5	0.2	98	-4	0.72 0.72 0.72 0.72	5 4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.92 0.93 0.93 0.93 0.92	Off		4
20:25:06	8727.00	252 252	6.5 6.1	0.2 0.4	93 97	-4 -3	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.92 0.92 0.91 0.91 0.91	Off		4 4
20:25:07	8747.00	252	5.8	0.3	97	-3	0.63 0.72 0.63	4 4 4	1.32	1.31	1.34	1.32	0.15 0.15 0.15 0.15 0.15	0.92 0.91 0.91 0.90 0.88	Off Off		4
20:25:08	8757.00 8772.00	252	5.8 5.8	0.4 0.5	97 97	-3 -2	0.63 0.63 0.54	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.88 0.88 0.89 0.90 0.91	Off		4 4
20:25:09	8787.00	250 252	5.8	0.5	97	-1	0.54 0.54 0.54	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.91 0.91 0.92 0.93 0.93	Off Off		4
20:25:10	8797.00 8877.00	254	5.8 5.8	0.5 0.5	97 92	-1 -1	0.54 0.54 0.54	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.95 0.96 0.96 0.96 0.97	Off		4 4
20:25:11	8822.00	253 254	6.1	0.5	97	0	0.54 0.63 0.63	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.97 0.97 0.97	Off Off		4
20:25:12	8837.00 8852.00	254	6.1 6.1	0.5 0.5	97 97	0 0	0.72 0.63 0.63	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.98 0.98 0.98	Off		4 4
20:25:13	8867.00	254 253	6.5	0.0	97	1	0.72 0.63 0.72	4 4 4	1.63	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.98 0.98 0.98 0.98 0.97	Off Off		4
20:25:14	8877.00 8892.00	252	6.5 6.5	0.1 0.1	97 97	1 1	0.72 0.72 0.72	5 4 5	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16 0.16	0.97 0.97 0.97 0.97 0.97	Off		4 4
20:25:15	8977.00	254	6.5	0.1	93	1	0.72	4	1.32	1.31	1.34	1.33	0.16	0.97	Off		4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	WHF	Pitch Trim Pos (degrees)	Stal
		254					0.72			1.31	1.34	1.33	0.16 0.15 0.15 0.16	0.97 0.96 0.96 0.96	Off		
20:25:16	8927.00 8937.00	255	6.5 6.5	0.3 0.1	97 97	1 1	0.72 0.72 0.72 0.72	4 4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.16	0.94 0.94 0.96 0.96	Off		4 4
20:25:17	8957.00	254 255	6.5	0.2	97	1	0.72 0.72	4 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.15 0.15 0.15 0.15	0.94 0.94 0.94 0.94	Off Off		4
20:25:18	8972.00 8987.00	255	6.5 6.1	0.2 0.1	97 97	1 1	0.72 0.72 0.72 0.72	4 4 4 5	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15	0.95 0.95 0.95 0.94	Off		4 4
20:25:19	8997.00	258 255	6.1	0.1	97	0	0.72 0.72	4 5 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.15 0.15 0.15 0.15	0.96 0.96 0.96 0.97	Off Off		4
20:25:20	9077.00 9032.00	258	6.5 6.5	0.0 0.2	93 97	0	0.72 0.72	4 4	1.32	1.31	1.34	1.33	0.15 0.15	0.96 0.96	Off		4 4
20:25:21	9047.00	252 258	6.5	0.2	97	0	0.72 0.72	4 4 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.15 0.15 0.15 0.15	0.96 0.96 0.96 0.96	Off Off		4
20:25:22	9062.00 9082.00	256	6.5	0.0	97	0	0.72 0.72	4 4	1.32	1.31	1.34	1.33	0.15 0.15	0.95 0.95	Off		4
20:25:23	9097.00	255 258	6.5	0.2	97	0	0.72 0.72 0.72	4 5 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.15 0.15 0.15 0.15	0.95 0.95 0.95 0.94	Off Off		4
20:25:24	9112.00 9127.00	253	6.1 6.5	0.0 0.2	97 97	0	0.72 0.72 0.72	5 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15	0.95 0.94 0.95 0.95	Off		4 4
20:25:25	9142.00	238 254	6.5	0.1	97	0	0.72 0.72 0.72	4 4 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.15 0.15 0.15	0.96 0.94 0.93	Off Off		4
20:25:26	9157.00 9172.00	259	6.5 6.8	0.2 0.4	97 97	-1 -1	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15	0.94 0.95 0.96 0.97	Off		4 4
20:25:27	9187.00	256 254	6.8	0.5	97	-1	0.72 0.72	4 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.15 0.16 0.16	0.98 0.98 0.98	Off Off		4
20:25:28	9207.00 9222.00	259	6.8 6.8	0.5 0.2	97 97	-1 -1	0.72 0.72 0.72	5 4 5	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16	0.98 0.98 0.98 0.98	Off		4 4
20:25:29	9237.00	254 235	7.6	0.2	97	-1	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16	0.98 0.98 0.98 0.98	Off		4
20:25:30	9257.00 9277.00	258	7.6 7.6	0.2 0.2	97 97	-1 -2	0.72 0.72 0.72	4 5 5	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16	0.98 0.99 0.99 1.00	Off		4
20:25:31	9292.00	254 256	7.6	0.0	97	-2	0.72 0.72 0.72	4 4 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.16 0.16 0.16 0.16	0.99 0.98 0.99 0.99	Off Off		4 4
20:25:32	9317.00 9337.00	255	7.6 7.6	0.1 0.2	97 97	-2 -2	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.15	0.98 0.98 0.97 0.97	Off		4
20:25:33	9357.00	254 252	7.6	0.3	97	-3	0.72 0.72 0.81	4 5 5	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.15 0.16 0.16 0.15	0.97 0.97 0.98 0.98	Off Off		4 4
20:25:34	9382.00 9402.00	236	7.6 7.3	0.4 0.3	96 96	-3 -2	0.81 0.81 0.72	4 4 5	1.32	1.31	1.34	1.33	0.16 0.16 0.16 0.16	0.98 0.98 0.98 0.98	On		4
20:25:35	9422.00	252 252	7.6	0.2	96	-2	0.72 0.72 0.72	4 4 4	1.32 1.32	1.31 1.31	1.33 1.33	1.33 1.33	0.16 0.16 0.15 0.15	0.98 0.98 0.97 0.96	On On		4 4
20:25:36	9447.00 9472.00	252	7.6 7.6	0.3 0.4	96	-2	0.72 0.72 0.72	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15	0.95 0.95 0.95 0.94	On		4
20:25:37	9492.00	254 252	7.6	0.3	96	-2	0.72 0.63 0.72	4 4 5	1.32 1.32	1.31 1.30	1.33 1.33	1.33 1.33	0.15 0.15 0.15 0.15	0.94 0.94 0.94 0.94	On On		4 4
20:25:38	9512.00 9537.00	256	7.6 7.6	0.4 0.3	96 96	-1 -2	0.72 0.63 0.72	4 5 4	1.32	1.30	1.33	1.33	0.15 0.15 0.15 0.15	0.94 0.94 0.94 0.94	On		4
20:25:39	9557.00	234 252	7.6	0.2	96	-2	0.72 0.72 0.72	4 4 4	1.32 1.32	1.31 1.30	1.33 1.33	1.33 1.33	0.15 0.15 0.15 0.15	0.94 0.93 0.93 0.94	On On		4 4

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel	Vert. Accel.	VHF	Pitch Trim Pos	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
20:25:40	9582.00 9602.00	252	7.6 7.6	0.2	95 95	-2 -2	0.72 0.63 0.63	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.95 0.95 0.94 0.95 0.95	On		4
20:25:41	9622.00	254 246	7.6	0.2 0.3	93	-2	0.54 0.63 0.63	4 4 4	1.32	1.30	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.95 0.95 0.95 0.95 0.92	On On		4 4
20:25:42	9652.00 9662.00	254	7.2 7.2	0.3	94 95	-1 -1	0.63 0.72 0.63	5 5 5	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.96 0.95 0.94 0.94 0.93	Off		4
20:25:43	9687.00	250 232	7.2	0.1 0.0	95	0	0.72 0.72 0.72	5 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.93 0.93 0.94 0.95 0.93	Off Off		4 4
20:25:44	9707.00 9727.00	250	7.2 7.2	0.2	95 95	0	0.63 0.72 0.63	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.95 0.95 0.95 0.95 0.94	Off		4
20:25:45	9747.00	250 252	7.2	0.1 0.0	95	0	0.63 0.63 0.63	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.93 0.93 0.94 0.95 0.93	Off Off		4 4
20:25:46	9772.00 9787.00	253	7.2	0.0	95 95	0	0.63 0.63 0.63	4 5 5	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.94 0.92 0.92 0.92 0.92	Off		4
20:25:47	9807.00	251 249	7.2 7.2	0.3 0.3	96	0	0.63 0.72 0.63	5 4 5	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.96 0.96 0.97 0.96 0.96	On On		4 4
20:25:48	9832.00 9877.00	251	6.8	0.4	96	0	0.63 0.63 0.72	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15	0.92 0.91 0.90	On		4
20:25:49	9877.00	252 252	6.5 6.5	0.2 0.3	96 96	0	0.72 0.72 0.81	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.14 0.14	0.90 0.89 0.88 0.88 0.88	On		4 4
20:25:50	9897.00	232	6.5	0.3	96	0	0.90 0.81 0.72	4 4 4	1.32	1.31	1.33	1.33	0.15 0.14 0.15	0.87 0.88 0.91	On On		4
20:25:51	9927.00 9942.00	235	6.9 6.9	0.4 0.3	91 92	0	0.72 0.63 0.63	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.93 0.94 0.95 0.96 0.92	On		4 4
20:25:52	9947.00	253 254	6.1	0.2	96	0	0.63 0.54 0.63	4 5 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.92 0.92 0.93 0.93 0.93	On		4
20:25:53	9967.00 9997.00	252	6.1 6.1	0.0 0.0	96 92	1 1	0.63 0.63 0.63	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.91 0.91 0.91 0.91 0.90	Off Off		4 4
20:25:54	10007.00	251 254	6.1	0.3	96	2	0.72 0.81 0.90	4 4 4	1.32	1.31	1.34	1.33	0.14 0.14 0.14 0.14 0.14	0.89 0.89 0.88 0.88 0.89	Off Off		4
20:25:55	10022.00 10037.00	255	5.8 6.1	0.5 0.4	96 96	2 2	0.90 0.90 0.81	4 4 4	1.32	1.31	1.34	1.32	0.15 0.15 0.15 0.14	0.90 0.91 0.91 0.92	Off		4 4
20:25:56	10052.00	254 252	6.1	0.2	96	2	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.92 0.92 0.92 0.91 0.92	Off Off		4
20:25:57	10067.00 10077.00	253	6.1 6.1	0.4 0.3	96 96	1 1	0.63 0.63 0.63	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.94 0.94 0.93 0.93 0.93	Off		4 4
20:25:58	10097.00	255 254	6.1	0.3	92	0	0.63 0.63 0.72	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.95 0.95 0.95 0.96 0.97	Off Off		4
20:25:59	10107.00 10127.00	256	6.1 5.8	0.2 0.4	96 97	1 0	0.72 0.72 0.72 0.72	4 4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.97 0.96 0.96 0.97 0.96	Off		4 4
20:26:00	10137.00	256 254	5.8	0.4	96	0	0.72 0.72	4 4	1.64 1.32	1.31 1.31	1.33 1.33	1.33 1.33	0.15 0.15 0.15 0.15 0.15	0.97 0.96 0.96 0.94 0.93	Off Off		4
20:26:01	10157.00 10172.00	254	5.8 5.8	0.2 0.3	96 97	1 1	0.72 0.72 0.72 0.72	4 4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15 0.15	0.94 0.93 0.93 0.91 0.91	Off		4 4
20:26:02	10187.00	258 254	5.8	0.3	96	1	0.72 0.72	4 5	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.33	0.14 0.14 0.14 0.14	0.88 0.90 0.90 0.90	Off Off		4
20:26:03	10192.00 10212.00	258	5.8 5.8	0.3 0.2	92 96	2 2	0.72 0.72 0.72 0.63	4 4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.14 0.15	0.97 0.95 0.90 0.91 0.93	Off		4 4
20:26:04	10222.00	255 255	5.8	0.3	96	1	0.63 0.63	5 4	1.32 1.32	1.31 1.31	1.34 1.34	1.33 1.34	0.15 0.15	0.97 0.98	Off Off		4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:26:05	10242.00 10252.00	256	5.8 5.8	0.2 0.5	96 96	1 1	0.63 0.63	4 4 5	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15 0.15	0.96 0.94 0.93 0.92 0.94 0.97	Off		4 4
20:26:06	10267.00	252 254	5.8	0.4	97	1	0.72 0.72	4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15	0.97 0.96 0.96	Off		4
20:26:07	10282.00 10287.00	254	5.8 5.8	0.3 0.4	97 93	1 1	0.72 0.72 0.72	4 4 4	1.32	1.31	1.33	1.33	0.15 0.15 0.15 0.15	0.95 0.95 0.94 0.94	Off		4 4
20:26:08	10312.00	258 256	5.8	0.5	97	1	0.72 0.72 0.81	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.15	0.98 0.96 0.96 0.97	Off Off		4
20:26:09	10322.00 10327.00	259	6.1 6.1	0.4 0.2	97 94	1 1	0.72 0.72 0.72	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15	0.98 0.99 0.98	Off		4 4
20:26:10	10332.00	248 230	6.1	0.2	91	1	0.63 0.63 0.54	4 4 4	1.32	1.31	1.34	1.33	0.15 0.15 0.15 0.14	0.98 0.95 0.92 0.92	Off Off		4
20:26:11	10367.00 10382.00	254	5.8 5.8	0.2 0.2	97 97	0	0.54 0.54	5 4	1.32	1.31	1.34	1.33	0.15 0.15	0.96 0.95	Off		4 4
20:26:12	10377.00 258	257 258	6.1	0.5	93	0	0.63 0.63 0.72	4 4 4	1.32	1.31	1.34	1.34	0.15 0.15 0.15 0.15	0.97 0.99 0.98 0.98	Off Off		4
20:26:13	10412.00 10432.00	254	6.1 6.5	0.5 0.3	97 97	-1 -1	0.72 0.72	4 4	1.33	1.31	1.34	1.34	0.15 0.15 0.15	0.96 0.95 0.94	Off		4
20:26:14	10452.00	255 257	6.5	0.5	97	-1	0.72 0.72 0.72	4 4 4	1.33	1.31	1.34	1.34	0.15 0.15 0.15	0.94 0.96 0.97	Off Off		4 4
20:26:15	10462.00 10482.00	256	6.5 6.5	0.4 0.3	97 97	0	0.81 0.81	4 4	1.33	1.31	1.34	1.34	0.15 0.15	0.99 1.00	Off		4
20:26:16	10492.00	258 253	6.5	0.2	97	0	0.81 0.72 0.72	5 5 4	1.33	1.31	1.34	1.34	0.15 0.15 0.15	0.98 0.98 0.98	Off Off		4 4
20:26:17	10512.00 10532.00	238	6.5 6.8	0.4 0.2	97 97	0	0.72 0.72 0.72	5 5 4	1.33	1.31	1.34	1.34	0.15 0.15 0.15	0.98 0.98 0.99	Off		4
20:26:18	10547.00	254 256	6.8	0.2	97	0	0.63 0.72 0.72	5 4 5	1.32	1.31	1.34	1.34	0.15 0.15 0.15	1.00 0.99 0.99	Off Off		4 4
20:26:19	10567.00 10587.00	258	6.8 6.8	0.5 0.4	97 97	0	0.72 0.72 0.63	5 4 4	1.32	1.31	1.34	1.34	0.15 0.15 0.15	0.99 0.98 0.98	Off		4
20:26:20	10607.00	235 262	7.2	0.7	97	0	0.72 0.72	4 5	1.33	1.31	1.34	1.33	0.15 0.15	1.01 1.01	Off Off		4 4
20:26:21	10627.00 10647.00	256	7.2 7.6	0.5 0.5	97 97	0	0.72 0.72 0.63	5 5 4	1.33	1.31	1.34	1.34	0.15 0.15 0.15	1.01 1.00 1.02	Off		4
20:26:22	10672.00	240 263	8.3	0.5	97	0	0.63 0.63 0.72	4 5 5	1.33	1.31	1.34	1.33	0.15 0.15 0.16	1.05 1.04 1.04	Off		4 4
20:26:23	10697.00 10722.00	262	8.3 8.3	0.1	97 97	1 1	0.72 0.72	5 5	1.33	1.31	1.34	1.34	0.16 0.16 0.16	1.07 1.07 1.06	Off		4
20:26:24	10752.00	259 260	8.3	0.4 0.3	97	1	0.81 0.72 0.72	4 4 4	1.33	1.32	1.34	1.34	0.15 0.15	1.02 1.00	Off Off		4 4
20:26:25	10777.00 10802.00	264	8.3 8.3	0.3	97 97	1 0	0.72 0.72 0.72	5 5 5	1.33	1.32	1.34	1.34	0.15 0.15 0.15	1.00 0.99 1.00	Off		4
20:26:26	10832.00	262 241	8.6	0.3 0.2	97	0	0.72 0.63 0.63	5 4 4	1.33	1.31	1.34	1.34	0.15 0.15 0.15	1.01 1.01 1.01	Off Off		4 4
20:26:27	10867.00 10902.00	258	8.6 8.6	0.0	97 98	-1	0.63 0.63	4 4	1.33	1.32	1.34	1.34	0.15 0.15	1.00 0.99	Off		4
20:26:28	10942.00	256 258	8.6	0.1 0.0	98	-1 -2	0.72 0.72 0.90	4 4 4	1.33	1.32	1.34	1.34	0.15 0.15 0.15	1.00 1.00 0.98	Off Off		4 4
20:26:29	10977.00	258	8.6	0.2	98	-1	0.90	4	1.33	1.32	1.34	1.34	0.14	0.92	Off		4

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel	Vert. Accel.	VHF	Pitch Trim Pos	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
	11012.00					97	0.90 0.99	4 4					0.14 0.14 0.14 0.14	0.92 0.95 0.96 0.95			
20:26:30	11042.00	257 256	8.6 8.6	0.2 0.3	97	-1 0	0.99 1.08 0.99	5 4 5	1.33 1.33	1.32 1.32	1.34 1.34	1.34 1.34	0.15 0.14 0.14 0.15	0.95 0.96 0.96 0.95	On On		4 4
20:26:31	11067.00 11102.00	239	9.0	0.1	96	0	0.90 0.72 0.72	5 4 4	1.33	1.32	1.34	1.34	0.16 0.15 0.15 0.15	1.05 1.06 1.03 1.03			4
20:26:32	11137.00	256 261	8.6 8.6	0.2 0.0	96 96	1 1	0.81 0.72 0.72	4 3 3	1.33 1.33	1.32 1.32	1.34 1.34	1.34 1.34	0.14 0.14 0.14 0.14	0.98 0.98 0.93 0.90	On		4 4
20:26:33	11177.00	262	8.6	0.2	96	0	0.63 0.63 0.54	4 4 4	1.33	1.32	1.34	1.34	0.14 0.13 0.13 0.14	0.87 0.88 0.88 0.90	On On		4
20:26:34	11207.00 11237.00	261	9.0 9.0	0.0 0.2	96 96	0 -1	0.54 0.54 0.45	4 4 4	1.33 1.33	1.32 1.32	1.34 1.34	1.34 1.34	0.14 0.14 0.14 0.14	0.94 0.94 0.94 0.93	Off		4 4
20:26:35	11272.00	260 260	9.4	0.3	96	-2	0.45 0.36 0.36	4 5 4	1.33	1.32	1.35	1.34	0.14 0.14 0.14 0.14	0.93 0.94 0.94 0.93	Off Off		4
20:26:36	11307.00 11342.00	239	9.4	0.2 0.4	96	-3 -3	0.36 0.45 0.54	4 4 4	1.33	1.32	1.34	1.34	0.14 0.14 0.14 0.14	0.93 0.92 0.93 0.92	Off		4
20:26:37	11377.00	256 259	9.4	0.2	97	-3	0.54 0.63 0.81	4 4 4	1.34	1.32	1.35	1.34	0.14 0.14 0.14 0.15	0.95 0.95 0.97 0.98	Off Off		4
20:26:38	11412.00 11447.00	258	9.4 9.4	0.3 0.3	97 97	-3 -1	0.81 0.81 0.90	4 4 4	1.34	1.32	1.35	1.34	0.15 0.14 0.14 0.14	0.98 0.96 0.95 0.94	Off		4 4
20:26:39	11482.00	258 256	9.4	0.1	97	-1	0.90 0.90 0.90	4 4 4	1.34	1.33	1.35	1.35	0.14 0.14 0.14 0.14	0.93 0.93 0.93 0.92	Off Off		4
20:26:40	11517.00 11547.00	256	9.4 9.0	0.2 0.3	96 96	0 0	0.90 0.81 0.81	4 5 4	1.34	1.33	1.35	1.35	0.14 0.14 0.14 0.14	0.92 0.90 0.91 0.91	Off		4 4
20:26:41	11507.00	256 256	9.0	0.2	96	0	0.72 0.63	4 4	1.34	1.33	1.35	1.35	0.14 0.14 0.14	0.92 0.92 0.93	Off Off		4
20:26:42	11607.00 11637.00	254	9.0 8.6	0.3 0.1	96 97	0 0	0.54 0.54 0.54	4 4 4	1.34	1.33	1.36	1.35	0.14 0.14 0.14 0.14	0.93 0.93 0.92 0.92	Off		4 4
20:26:43	11672.00	254 254	8.6	0.0	97	0	0.54 0.63	4 4	1.34	1.33	1.36	1.35	0.14 0.14	0.90 0.90	Off Off		4
20:26:44	11707.00 11742.00	253	8.3 7.9	0.1 0.2	97 97	0 0	0.72 0.72 0.81 0.81	4 4 4 4	1.35	1.33	1.36	1.35	0.14 0.14 0.14 0.14	0.89 0.88 0.86 0.84	Off		4 4
20:26:45	11772.00	254 254	7.6	0.2	97	0	0.81 0.81	4 4	1.35	1.33	1.36	1.35	0.13 0.13 0.13	0.83 0.82 0.82	Off Off		4
20:26:46	11732.00 11822.00	254	7.6 7.2	0.0 0.3	93 97	0 1	0.72 0.72 0.72	4 4 4	1.35	1.33	1.36	1.36	0.13 0.13 0.14	0.83 0.83 0.84	Off		4 4
20:26:47	11847.00	254 253	7.2	0.2	97	1	0.72 0.72	4 4	1.35	1.33	1.36	1.36	0.14 0.14 0.14	0.86 0.86 0.87	Off Off		4
20:26:48	11872.00 11892.00	251	6.8 6.5	0.0 0.1	97 97	1 1	0.63 0.72 0.72	4 4 4	1.35	1.33	1.36	1.36	0.14 0.14 0.14	0.89 0.88 0.87	Off		4 4
20:26:49	11917.00	253 252	6.5	0.4	97	1	0.72 0.63 0.72	4 4 4	1.35	1.33	1.36	1.36	0.14 0.13 0.14	0.86 0.83 0.84	Off Off		4
20:26:50	11937.00 11902.00	256	6.1 5.8	0.3 0.2	97 93	1 1	0.72 0.72 0.81	4 4 4	1.35	1.33	1.36	1.35	0.14 0.14 0.14	0.89 0.88 0.86	Off		4 4
20:26:51	11977.00	256 256	5.8	0.3	97	1	0.90 0.90 0.90	4 4 4	1.35	1.33	1.36	1.35	0.14 0.13 0.13 0.14	0.85 0.85 0.85 0.86	Off Off		4
20:26:52	11992.00 12007.00	256	5.4 5.4	0.4 0.4	97 97	1 1	0.81 0.72 0.72	4 4 4	1.35	1.33	1.36	1.35	0.13 0.13 0.14 0.14	0.86 0.87 0.87 0.87	Off		4 4
20:26:53	12022.00	256 247	5.0	0.5	97	0	0.72 0.63 0.54	4 4 4	1.35	1.33	1.36	1.36	0.14 0.14 0.14	0.86 0.86 0.86	Off Off		4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:26:54	12037.00 12047.00	257	5.0 5.0	0.5 0.4	97 97	0 0	0.63 0.63 0.63	4 4 5	1.35 1.33 1.36	1.33 1.36 1.36	1.36 1.36 1.36	1.36 1.36 1.36	0.14 0.14 0.14 0.14 0.14	0.88 0.89 0.89 0.90 0.91	Off		4 4
20:26:55	12012.00	256 254	5.0	0.3	93	0	0.72 0.72 0.72	4 4 4	1.35 1.35 1.33	1.33 1.33 1.36	1.36 1.36 1.36	1.35 1.36 1.36	0.14 0.14 0.14 0.14 0.14	0.91 0.91 0.90 0.90 0.90	Off		4
20:26:56	12072.00 12087.00	256	4.7 4.3	0.3 0.4	97 97	0 0	0.72 0.72 0.72	4 4 4	1.35 1.33 1.36	1.33 1.33 1.36	1.36 1.36 1.36	1.36 1.36 1.36	0.14 0.14 0.14 0.14 0.14	0.90 0.90 0.90 0.89 0.89	Off		4
20:26:57	12097.00	255 258	4.3	0.2	97	0	0.72 0.72 0.72	4 4 4	1.35 1.35 1.33	1.33 1.33 1.36	1.36 1.36 1.36	1.36 1.36 1.35	0.14 0.13 0.13 0.13 0.13	0.89 0.89 0.89 0.89 0.89	Off		4 4
20:26:58	12107.00 12117.00	258	4.0 4.0	0.4 0.4	97 97	-1 -1	0.72 0.72 0.72	4 4 4	1.35 1.33 1.36	1.33 1.33 1.36	1.36 1.36 1.36	1.35 1.35 1.35	0.14 0.13 0.13 0.13 0.13	0.88 0.88 0.88 0.87 0.87	Off		4
20:26:59	12127.00	256 259	3.6	0.5	97	-1	0.72 0.72 0.72	4 4 4	1.35 1.35 1.33	1.33 1.33 1.36	1.36 1.36 1.36	1.35 1.35 1.35	0.13 0.13 0.13 0.13 0.13	0.89 0.89 0.89 0.89 0.89	Off		4 4
20:27:00	12097.00 12137.00	262	3.6 3.6	0.2 0.3	93 96	-1 -1	0.81 0.72 0.72	4 4 4	1.35 1.33 1.36	1.33 1.33 1.36	1.36 1.36 1.36	1.35 1.35 1.35	0.13 0.13 0.13 0.13 0.13	0.90 0.90 0.90 0.90 0.90	Off		4
20:27:01	12147.00	256 256	3.6	0.6	96	-1	0.72 0.72 0.72	4 4 4	1.35 1.35 1.33	1.33 1.33 1.36	1.36 1.36 1.36	1.35 1.35 1.35	0.14 0.13 0.14 0.14 0.14	0.91 0.92 0.91 0.92 0.92	Off		4 4
20:27:02	12152.00 12152.00	261	3.6 3.6	0.6 0.5	96 96	-2 -2	0.72 0.72 0.72	4 4 4	1.35 1.33 1.36	1.33 1.33 1.36	1.36 1.36 1.36	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.92 0.92 0.92 0.93 0.93	Off		4
20:27:03	12157.00	260 259	3.6	0.5	96	-1	0.72 0.72 0.63	4 4 4	1.34 1.34 1.33	1.33 1.33 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.94 0.93 0.94 0.94 0.93	Off		4 4
20:27:04	12162.00 12167.00	258	3.6 3.6	0.5 0.5	96 96	-1 -1	0.72 0.72 0.72	5 4 4	1.34 1.33 1.36	1.33 1.33 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.13 0.13 0.13 0.13	0.93 0.93 0.93 0.93 0.93	Off		4
20:27:05	12167.00	244 260	3.6	0.5	96	-1	0.72 0.72 0.72	4 4 4	1.34 1.34 1.32	1.33 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.93 0.93 0.93 0.93 0.93	Off		4 4
20:27:06	12172.00 12172.00	259	3.6 3.6	0.2	96 96	-1 -1	0.72 0.72 0.72	4 4 4	1.34 1.33 1.36	1.32 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.94 0.94 0.94 0.95 0.95	Off		4 4
20:27:07	12177.00	264 264	3.6	0.6 0.5	96	-1	0.72 0.72 0.72	4 4 4	1.34 1.34 1.32	1.32 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.96 0.96 0.96 0.96 0.96	Off		4 4
20:27:08	12182.00 12187.00	262	3.6 3.6	0.5	96 95	0 0	0.72 0.72 0.72	4 4 5	1.34 1.35 1.36	1.32 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.96 0.96 0.96 0.96 0.96	Off		4
20:27:09	12192.00	264 247	3.6	0.5 0.5	95	1	0.72 0.63 0.72	4 4 4	1.34 1.34 1.32	1.32 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.96 0.97 0.97 0.97 0.97	Off		4 4
20:27:10	12192.00 12197.00	270	3.6 3.6	0.5	95 95	1 1	0.72 0.72 0.72	4 4 4	1.34 1.33 1.36	1.32 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.97 0.97 0.97 0.97 0.97	Off		4
20:27:11	12202.00	270 266	3.6	0.5 0.4	95	1	0.72 0.72 0.72	4 4 4	1.34 1.34 1.32	1.32 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.14	0.97 0.97 0.97 0.97 0.97	Off		4 4
20:27:12	12207.00 12212.00	266	3.6	0.4	95 96	1	0.72 0.72 0.72	4 4 4	1.34 1.33 1.36	1.32 1.32 1.36	1.35 1.35 1.35	1.35 1.35 1.35	0.14 0.14 0.14 0.14 0.13	0.97 0.98 0.97 0.97 0.97	Off		4
20:27:13	12217.00	263 272	3.6 3.6	0.4 0.2	96	1	0.72 0.72 0.72	4 4 5	1.34 1.34 1.32	1.32 1.32 1.36	1.35 1.35 1.35	1.34 1.34 1.34	0.14 0.13 0.13 0.13 0.13	0.97 0.96 0.96 0.96 0.96	Off		4
20:27:14	12222.00 12227.00	245	3.6	0.2	96	1	0.72 0.72 0.72	4 4 4	1.34 1.33 1.36	1.32 1.32 1.36	1.35 1.35 1.35	1.34 1.34 1.34	0.13 0.13 0.13 0.13 0.13	0.96 0.96 0.95 0.95 0.95	Off		4
20:27:15	12237.00	267 267	3.6 3.6	0.3 0.1	96 96	1 1	0.72 0.72 0.72	4 4 4	1.34 1.34 1.32	1.32 1.32 1.36	1.34 1.35 1.35	1.34 1.34 1.34	0.13 0.13 0.13 0.13 0.13	0.96 0.95 0.95 0.95 0.95	Off		4 4
20:27:16	12242.00	270	3.6	0.3	96	1	0.72 0.72 0.72	4 4 3	1.34 1.33 1.36	1.32 1.32 1.36	1.34 1.34 1.34	1.34 1.34 1.34	0.13 0.13 0.13 0.13 0.13	0.95 0.95 0.94 0.95 0.95	Off		4
20:27:17	12247.00 12252.00	270	3.6 3.6	0.4 0.2	96 96	1 1	0.72 0.72 0.72	3 3 4	1.34 1.34 1.32	1.32 1.32 1.36	1.34 1.34 1.34	1.34 1.34 1.34	0.13 0.13 0.13 0.13 0.13	0.95 0.95 0.95 0.95 0.95	Off		4 4
20:27:18	12257.00	270 270	2.9	0.2	96	1	0.72 0.72 0.72	3 4 3	1.34 1.33 1.36	1.32 1.32 1.36	1.34 1.34 1.34	1.34 1.34 1.34	0.13 0.13 0.13 0.13 0.13	0.94 0.94 0.94 0.94 0.94	Off		4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:27:19	12262.00 12267.00	253	3.2 2.9	0.4 0.3	96 96	1 0	0.72 0.63 0.63	3 3 3	1.34 1.34	1.32 1.32	1.34 1.34	1.34 1.34	0.13 0.13 0.12 0.12 0.12	0.92 0.91 0.91 0.90 0.90	Off		4 4
20:27:20	12272.00 273	272	2.9	0.4	96	0	0.63 0.63	3 3	1.34	1.32	1.34	1.34	0.12 0.12 0.12	0.90 0.90 0.91	Off		4
20:27:21	12277.00 12282.00	274	2.9 2.9	0.5 0.5	96 96	0 0	0.72 0.72 0.72	3 3 3	1.33 1.34	1.32 1.32	1.34 1.34	1.34	0.12 0.12 0.12 0.13 0.12	0.92 0.91 0.92 0.93 0.94	Off		4 4
20:27:22	12282.00	274 274	2.9	0.5	96	1	0.72 0.72 0.81	3 4	1.33	1.32	1.34 1.34	1.34	0.13 0.13 0.13 0.13	0.95 0.95 0.95 0.96	Off		4
20:27:23	12282.00 12287.00	273	2.9 3.2	0.5 0.4	96 96	1 3	0.72 0.72 0.72	3 4 3	1.33 1.33	1.31	1.34	1.34	0.13 0.13 0.13 0.13	0.96 0.97 0.97 0.98	Off		4 4
20:27:24	12287.00 276	256 276	3.6	0.5	96	4	0.72 0.72	4 4	1.33	1.31 1.31	1.34 1.34	1.34 1.34	0.13 0.13 0.13	0.98 0.98 0.99	Off		4
20:27:25	12287.00 12287.00	276	3.6 3.6	0.5 0.4	96 96	4 4	0.72 0.72 0.54	4 3 3	1.33	1.31	1.34	1.34	0.13 0.13 0.13	1.00 1.00 1.00	Off		4 4
20:27:26	12297.00	276 277	3.6	0.4	96	4	0.63 0.63 0.63	4 4 4	1.33 1.33	1.31 1.31	1.34 1.34	1.34 1.34	0.13 0.13 0.13 0.13	1.00 1.00 1.00 1.01	Off		4
20:27:27	12297.00 12307.00	278	4.0 4.0	0.3 0.4	97 97	4 4	0.63 0.63 0.72 0.72	4 4 4	1.33	1.31	1.34	1.34	0.13 0.13 0.13	1.01 1.01 1.01	Off		4 4
20:27:28	12312.00	278 278	4.0	0.2	97	3	0.72 0.72	4 3	1.33 1.33	1.31 1.31	1.34 1.34	1.34 1.34	0.13 0.13 0.13	1.01 1.00 0.99	Off		4
20:27:29	12297.00 12332.00	278	4.0	0.2	98	2	0.72 0.81 0.81	3 3	1.33	1.31	1.34	1.34	0.13 0.13 0.13	0.98 0.98 0.99	Off		4
20:27:30	12337.00	278 278	4.0	0.2	98	1	0.81 0.81	3 3	1.33 1.33	1.31 1.31	1.34 1.34	1.34 1.33	0.13 0.13 0.12	0.98 0.98 0.97	Off		4
20:27:31	12352.00 12357.00	279	3.6 3.6	0.2 0.4	98 98	0 0	0.81 0.72 0.72	3 3 3	1.33	1.31	1.34	1.34	0.12 0.12 0.12	0.95 0.94 0.93	Off		4 4
20:27:32	12367.00	279 280	3.6	0.3	98	-1	0.72 0.72 0.72	3 3 4	1.33 1.33	1.31 1.31	1.34 1.34	1.34 1.34	0.12 0.12 0.12	0.93 0.94 0.93	Off		4
20:27:33	12377.00 12362.00	280	3.6 3.6	0.4 0.4	98 93	-1 -1	0.72 0.72 0.72	3 3 3	1.33	1.31	1.33	1.34	0.12 0.12 0.12	0.91 0.91 0.91	Off		4 4
20:27:34	12397.00	280 281	3.2	0.3	97	-1	0.72 0.72	3 3	1.33 1.33	1.31 1.31	1.34 1.34	1.34 1.34	0.12 0.11	0.91 0.91	Off		4
20:27:35	12407.00 12412.00	281	3.2 2.9	0.4 0.4	97 97	-1 -1	0.72 0.72 0.81	3 3 3	1.33	1.31	1.33	1.34	0.12 0.11 0.12 0.12	0.91 0.91 0.91 0.91	Off		4 4
20:27:36	12417.00	281 282	3.2	0.4	97	0	0.90 0.72 0.72	3 3	1.33 1.32	1.31 1.30	1.33 1.33	1.34 1.33	0.11 0.11 0.11	0.92 0.91 0.91	Off		4
20:27:37	12417.00 12427.00	282	2.9 2.9	0.3 0.3	97 97	-1 -1	0.72 0.72 0.63	3 3 3	1.32	1.30	1.33	1.33	0.11 0.11 0.11	0.92 0.92 0.93	Off		4 4
20:27:38	12412.00	282 283	2.9	0.4	93	-1	0.63 0.63 0.63	3 3 3	1.32 1.32	1.30 1.30	1.33 1.33	1.33 1.33	0.11 0.11 0.11	0.92 0.92 0.92	Off		4
20:27:39	12432.00 12437.00	284	2.9 2.9	0.4 0.5	96 96	-1 -1	0.63 0.63 0.72	3 3 3	1.32	1.30	1.33	1.33	0.11 0.11 0.11	0.93 0.93 0.93	Off		4
20:27:40	12442.00	284 284	3.2	0.4	96	-1	0.72 0.72 0.72	3 3 3	1.32 1.32	1.30 1.30	1.33 1.33	1.33 1.33	0.11 0.12 0.12	0.94 0.95 0.96	Off		4 4
20:27:41	12442.00 12447.00	266	3.2 2.9	0.2 0.2	96 96	0 0	0.72 0.72	3 3	1.32	1.30	1.33	1.33	0.12 0.12	0.98 0.98	Off		4
20:27:42	12452.00	283 286	2.9	0.3	96	1	0.72 0.72 0.72	4 4 3	1.32 1.32	1.30 1.30	1.32 1.33	1.33 1.33	0.11 0.11 0.11	0.98 0.98 0.97	Off		4 4
20:27:43	12442.00	286	2.9	0.4	93	1	0.63	3	1.32	1.30	1.32	1.33	0.11	0.97	Off		4

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos	Stal Pos
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	(degrees)
	12462.00		2.9	0.3	96		0.63 0.63	3 3					0.11 0.11 0.11	0.97 0.97 0.97			
20:27:44	12467.00	287 288	2.9	0.3	96		0.72 0.63 0.63	3 3 3	1.32 1.32	1.30	1.32	1.33	0.11 0.11 0.11 0.11	0.97 0.97 0.97 0.97	Off Off		4 4
20:27:45	12472.00 12482.00	288	2.9 3.2	0.3 0.3	97 97		0.63 0.63 0.72	3 3 3	1.31	1.30	1.32	1.33	0.11 0.11 0.11 0.11	0.98 0.98 0.98 0.97	Off		4
20:27:46	12487.00	288 288	2.9	0.2	97		0.72 0.72 0.72	3 3 3	1.31 1.31	1.29 1.30	1.32 1.32	1.33 1.33	0.11 0.11 0.11 0.11	0.97 0.97 0.97 0.97	Off Off		4 4
20:27:47	12492.00 12487.00	289	2.9 3.2	0.2 0.3	97 92		0.72 0.72 0.72	4 3 3	1.31	1.29	1.32	1.32	0.11 0.11 0.11 0.11	0.97 0.97 0.97 0.97	Off		4
20:27:48	12507.00	289 290	3.6	0.3	97		0.72 0.72 0.72	3 3 3	1.31 1.30	1.29 1.29	1.30 1.29	1.32 1.32	0.11 0.11 0.11 0.11	0.98 0.98 0.98 0.98	Off Off		4 4
20:27:49	12512.00 12517.00	290	3.6 3.6	0.4	97 96		0.72 0.72 0.72	3 3 3	1.28	1.28	1.27	1.30	0.11 0.11 0.11 0.11	0.98 0.98 0.98 0.98	Off		4
20:27:50	12527.00	290 290	3.6	0.2 0.3	97		0.72 0.72 0.72	3 3 3	1.27 1.25	1.26 1.25	1.25 1.23	1.28 1.26	0.10 0.10 0.10	0.98 0.98 0.98	Off Off		4 4
20:27:51	12537.00 12547.00	291	3.6 3.2	0.3	97 97		0.72 0.72 0.72	3 3 4	1.24	1.23	1.23	1.25	0.10 0.10 0.10 0.10	0.98 0.96 0.96 0.96	Off		4
20:27:52	12552.00	292 290	3.6	0.3 0.3	94		0.72 0.72 0.72	3 3 3	1.23 1.22	1.22	1.22	1.24 1.23	0.10 0.09 0.09 0.09	0.96 0.96 0.96 0.96	Off Off		4 4
20:27:53	12562.00 12572.00	291	3.6 3.6	0.4	97 97		0.72 0.72 0.72	3 3 3	1.22	1.21	1.20	1.22	0.09 0.09 0.09 0.09	0.96 0.96 0.96 0.96	Off		4
20:27:54	12582.00	292 292	3.6	0.2 0.5	97		0.72 0.72 0.72	3 3 3	1.21 1.20	1.20	1.20	1.21 1.21	0.09 0.09 0.09 0.09	0.96 0.96 0.95 0.95	Off Off		4 4
20:27:55	12592.00 12597.00	292	3.6	0.2	97 97		0.72 0.72 0.72	3 3 3	1.20	1.19	1.19	1.20	0.09 0.09 0.09	0.95 0.95 0.95	Off		3
20:27:56	12607.00	290 292	3.6 3.2	0.2 0.0	97		0.72 0.72 0.72	3 4 3	1.19 1.19	1.19 1.19	1.19 1.18	1.20 1.20	0.09 0.09 0.09 0.09	0.96 0.95 0.95 0.95	Off Off		3 3
20:27:57	12612.00 12622.00	275	3.6	0.2	97		0.72 0.72 0.72	3 3 3	1.19	1.18	1.18	1.20	0.09 0.09 0.09	0.95 0.95 0.95	Off		3
20:27:58	12632.00	292 292	3.2 3.2	0.3 0.4	97 97		0.72 0.72 0.72	3 3 3	1.19 1.18	1.18 1.18	1.18 1.18	1.20 1.20	0.08 0.08 0.08 0.08	0.94 0.94 0.93 0.92	Off		3 3
20:27:59	12642.00	292	2.9	0.4	97	-1	0.72 0.72	3 3	1.18	1.18	1.18	1.20	0.08 0.08	0.91 0.91	Off		3
20:28:00	12647.00 12652.00	292	2.9 3.2	0.5 0.4	96 96	-1 -1	0.72 0.72 0.72	3 3 3	1.18 1.18	1.18 1.18	1.18 1.18	1.20	0.08 0.08 0.08 0.08	0.94 0.94 0.94 0.95	Off		3 3
20:28:01	12657.00	292 292	2.9	0.3	96		0.72 0.72 0.63	4 3 3	1.18	1.17	1.18	1.19	0.08 0.08 0.08 0.08	0.96 0.96 0.96 0.95	Off Off		3
20:28:02	12667.00 12677.00	276	3.2 2.9	0.3 0.5	96 97		0.63 0.72 0.72	3 3 3	1.18 1.18	1.17 1.17	1.18 1.18	1.19	0.08 0.08 0.08 0.08	0.94 0.94 0.94 0.94	Off		3 3
20:28:03	12682.00	293 293	2.9	0.5	97		0.72 0.72 0.72	3 3 3	1.18	1.17	1.18	1.19 1.19	0.08 0.08 0.08 0.08	0.95 0.95 0.96 0.97	Off Off		3
20:28:04	12687.00 12692.00	293	2.9 2.9	0.3 0.3	97 97		0.72 0.72 0.72	3 3 3	1.17 1.17	1.17 1.17	1.18	1.19	0.08 0.08 0.08 0.08	0.97 0.97 0.97 0.96	Off		3 3
20:28:05	12697.00	293 293	2.9	0.4	97		0.72 0.72 0.72	3 3 3	1.17	1.17	1.17 1.17	1.19 1.19	0.08 0.08 0.08 0.08	0.96 0.95 0.94 0.94	Off Off		3
20:28:06	12707.00 12712.00	293	2.9 2.9	0.2 0.4	96 96		0.72 0.72 0.72	3 4 3	1.17	1.17	1.17	1.19	0.08 0.08 0.08 0.08	0.94 0.94 0.94 0.94	Off		3 3
20:28:07	12717.00	276 293	2.9	0.3	96		0.72 0.63	3 3	1.17	1.16 1.16	1.17 1.17	1.18 1.18	0.08 0.08 0.08 0.08	0.94 0.95 0.95 0.95	Off Off		3

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
20:28:08	12727.00 12732.00	294	2.9 2.9	0.5 0.5	96 96	0	0.63 0.63 0.63	3 3 3	1.17	1.16	1.17	1.18	0.08 0.08 0.08	0.96 0.96 0.96	Off		3
20:28:09	12737.00	294 294	2.9	0.4	97	0	0.72 0.72 0.72	3 3 3	1.17 1.17	1.16 1.31	1.17 1.17	1.18 1.18	0.08 0.08 0.08	0.97 0.97 0.97	Off Off		3
20:28:10	12742.00 12747.00	294	2.9 2.9	0.3 0.3	97 96	0	0.72 0.72 0.72	3 3 3	1.17	1.16	1.17	1.18	0.08 0.08 0.08	0.95 0.95 0.95	Off		3 4
20:28:11	12757.00	294 277	2.9	0.3	97	0	0.72 0.72	4 3	1.17 1.17	1.16 1.16	1.17 1.17	1.18 1.18	0.08 0.08	0.95 0.94	Off Off		3
20:28:12	12762.00 12767.00	294	2.9 2.9	0.3 0.3	96 96	0	0.72 0.72 0.72	3 3 3	1.17	1.16	1.16	1.17	0.08 0.08 0.08	0.94 0.94 0.95	Off		3 3
20:28:13	12777.00	294	2.9	0.2	96	0	0.72	3	1.17	1.15	1.16	1.17	0.08	0.95	Off		3
20:28:14	12782.00 12787.00	294	2.9 2.9	0.2 0.2	96 96	0	0.72 0.72 0.72	3 3 3	1.16	1.15	1.16	1.17	0.08 0.08 0.08	0.95 0.95 0.95	Off		3 3
20:28:15	12792.00	294 294	2.9	0.3	96	0	0.72 0.72 0.63	3 3 4	1.16 1.16	1.15 1.14	1.15 1.14	1.17 1.16	0.08 0.08 0.08	0.94 0.94 0.95	Off Off		3
20:28:16	12797.00 12802.00	280	2.9 2.9	0.1 0.3	96 96	0	0.72 0.72 0.72	3 3 3	1.15	1.14	1.14	1.15	0.07 0.07 0.06	0.94 0.94 0.94	Off		3 3
20:28:17	12807.00	294 294	2.9	0.1	96	0	0.72 0.72 0.72	3 3 3	1.15 1.14	1.13 1.11	1.13 1.12	1.14 1.13	0.07 0.07 0.07	0.94 0.94 0.93	Off Off		3
20:28:18	12812.00 12817.00	294	2.5 2.5	0.3 0.2	97 97	0	0.72 0.72	3 3	1.14	1.10	1.12	1.13	0.07 0.07	0.93 0.93	Off		3 3
20:28:19	12822.00	294 294	2.5	0.2	97	0	0.72 0.81 0.72	3 3 3	1.13 1.13	1.10 1.09	1.12 1.12	1.13 1.13	0.07 0.07 0.07	0.94 0.94 0.93	Off Off		3
20:28:20	12842.00 12827.00	294	2.2 2.2	0.1 0.4	93 96	0	0.72 0.72	3 4 3	1.13	1.09	1.12	1.12	0.07 0.07 0.07	0.95 0.95 0.95	On		3 4
20:28:21	12847.00	294 294	2.2	0.4	92	0	0.72 0.72 0.72	3 3 3	1.13 1.13	1.09 1.09	1.12 1.12	1.12 1.12	0.07 0.07 0.07	0.95 0.95 0.96	On On		4
20:28:22	12832.00 12837.00	294	2.2 2.2	0.5 0.4	96 96	-1 -1	0.63 0.72 0.63	3 3 3	1.13	1.09	1.12	1.12	0.07 0.07 0.07	0.98 0.98 0.98	On		4
20:28:23	12842.00	294 294	2.2	0.3	96	-1	0.63 0.72 0.72	3 3 3	1.12 1.12	1.09 1.09	1.12 1.11	1.12 1.12	0.07 0.07 0.07	0.98 0.98 0.97	On On		4 4
20:28:24	12847.00 12877.00	294	2.2 2.2	0.4 0.5	96 92	-1 -1	0.72 0.72 0.72	3 3 3	1.12	1.08	1.11	1.12	0.07 0.07 0.07	0.96 0.96 0.96	On		4
20:28:25	12862.00	294 294	2.5	0.4	96	-2	0.72 0.72 0.72	3 3 3	1.12 1.12	1.08 1.08	1.10 1.10	1.11 1.11	0.07 0.06 0.06	0.97 0.97 0.97	On Off		4 4
20:28:26	12887.00 12872.00	294	2.5 2.5	0.5 0.5	91 96	-3 -4	0.81 0.72 0.72	3 3 3	1.12	1.08	1.10	1.11	0.07 0.07 0.07	0.97 0.98 0.98	Off		4
20:28:27	12877.00	294 294	2.5	0.5	96	-5	0.72 0.72	3 3	1.12 1.12	1.08 1.08	1.10 1.10	1.11 1.11	0.06 0.07	0.98 0.98	Off Off		4 4
20:28:28	12882.00 12887.00	294	2.9 2.9	0.4 0.5	96 96	-6 -7	0.72 0.72 0.72	3 3 3	1.12	1.08	1.10	1.11	0.07 0.07 0.07	0.98 0.98 0.98	On		4
20:28:29	12897.00	292 288	2.9	0.4	95	-8	0.72 0.81 0.81	3 3 3	1.12	1.08	1.10	1.10	0.07 0.06 0.06	0.98 0.97 0.97	On		4 4
20:28:30	12902.00 12937.00	294	2.9 2.9	0.4 0.5	95 90	-9 -10	0.72 0.72 0.72	3 3 3	1.12	1.08	1.10	1.10	0.06 0.06 0.06	0.97 0.97 0.97	On		4
20:28:31	12917.00	290 294	2.9	0.5	94	-11	0.72 0.72 0.72	3 3 3	1.11 1.12	1.08 1.08	1.10 1.10	1.10 1.10	0.06 0.06 0.06	0.97 0.97 0.97	On On		4 4
20:28:32	12922.00 12927.00	294	2.9 2.9	0.4	94 94	-12 -13	0.72 0.72 0.72	3 3 3	1.11	1.07	1.09	1.10	0.06 0.06 0.06	0.98 0.98 0.98	On		4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Stal Pos (degrees)
20:28:58	13102.00	292 293	0.7	0.2	80	0	0.72	93	1.00	1.00	1.00	1.00	0.01 0.01 0.01	0.83 0.83 0.84	Off	4
20:28:59	13092.00 13082.00	269	0.7 0.4	0.4	80	0	0.72 0.72	3 3	1.00	1.00	1.00	1.00	0.01 0.01	0.86 0.87	Off	4
20:29:00	13072.00	286 286	0.4	0.6	80	1	0.72 0.72 0.72	3 3 3	1.00 1.00	1.01 1.00	1.00 1.00	1.00 1.00	0.01 0.01 0.01	0.88 0.88 0.89	Off	4
20:29:01	13057.00 13042.00	286	0.4 0.4	0.7 0.9	80 80	1	0.72 0.72 0.72	3 3 3	1.00	1.00	1.00	1.00	0.01 0.02 0.02	0.93 0.94 0.95	Off	4
20:29:02	13032.00	286 286	0.7	1.1	80	1	0.72 0.63 0.63	3 3 4	1.00 1.00	1.01 1.00	1.00 1.00	1.00 1.00	0.02 0.02 0.02	0.95 0.97 0.97	Off	4
20:29:03	13017.00 13007.00	285	0.7 1.1	1.0 1.0	80 80	1	0.72 0.72 0.72	4 4 4	1.00	1.01	1.00	1.00	0.03 0.02 0.03	1.00 1.01 1.01	Off	4 4
20:29:04	12997.00	274 284	1.4	0.9	80	1	0.72 0.72	4 4	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	0.03 0.03	1.01 1.01	Off	4
20:29:05	12987.00 12977.00	284	1.4 2.2	1.0 0.9	80 80	1	0.72 0.72 0.72	4 4 4	1.00	1.00	1.00	1.00	0.03 0.03 0.03	1.02 1.03 1.04	Off	4
20:29:06	12967.00	284 282	2.5	0.7	80	0	0.81 0.81	4 4	1.00	1.00	1.00	1.00	0.03 0.04	1.06 1.06	Off	4
20:29:07	12962.00 12957.00	278	2.9 3.2	0.7 0.7	80 80	0	0.72 0.72 0.72	4 4 4	1.00	1.00	1.01	1.00	0.04 0.04 0.04	1.09 1.10 1.09	Off	4
20:29:08	12952.00	282 281	3.6	0.3	80	0	0.72 0.72 0.72	5 4 4	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	0.04 0.04 0.04	1.09 1.09 1.08	Off	4 4
20:29:09	12987.00 12957.00	280	3.6 3.6	0.2 0.3	76 80	0	0.72 0.72 0.72	4 4 4	1.00	1.00	1.00	1.00	0.03 0.03 0.03	1.06 1.04 1.03	Off	4
20:29:10	12962.00	280 280	3.6	0.2	80	0	0.72 0.72 0.72	4 4 3	1.00 1.00	1.00 1.00	1.00 1.00	1.00 1.00	0.03 0.03 0.03	1.01 1.00 0.99	Off	4 4
20:29:11	12967.00 12972.00	280	3.6 3.6	0.2 0.2	80 80	0	0.72 0.72 0.72	4 4 3	1.00	1.00	1.00	1.00	0.03 0.03 0.03	0.98 0.98 0.98	Off	4
20:29:12	12977.00	285 274	3.2	0.1	80	1	0.72 0.72 0.72	3 3 3	1.00 1.00	1.01 1.00	1.00 1.00	1.00 1.00	0.02 0.03 0.02	0.97 0.96 0.95	Off	4 4
20:29:13	12982.00 13017.00	278	3.2 2.9	0.0 0.1	80 76	0	0.72 0.72	3 3	1.00	1.00	1.00	1.00	0.02 0.02	0.92 0.91	Off	4
20:29:14	12987.00	277 278	2.9	0.2	80	0	0.72 0.72	3 3	1.00 1.00	1.01 1.01	1.00 1.00	1.00 1.00	0.02 0.02 0.02	0.88 0.88 0.88	Off	4 4
20:29:15	12992.00 12992.00	278	2.9 2.9	0.3	80 80	-1 -1	0.72 0.72 0.72	3 3 3	1.00	1.00	1.00	1.00	0.02 0.02 0.02	0.88 0.88 0.88	Off	4
20:29:16	12997.00	278 272	2.2	0.2 0.2	80	0	0.72 0.72 0.81	3 3 3	1.00 1.00	1.01 1.00	1.00 1.00	1.00 1.00	0.02 0.02 0.02	0.89 0.89 0.89	Off	4 4
20:29:17	12997.00 12992.00	284	2.2 1.8	0.2	80 80	0	0.72 0.72 0.72	4 3 3	1.00	1.00	1.00	1.00	0.02 0.02 0.02	0.88 0.87 0.89	Off	4
20:29:18	13022.00	278 275	1.8	0.3 0.3	76	0	0.72 0.72	3 3	1.00 1.00	1.00 1.01	1.00 1.00	1.00 1.00	0.02 0.02	0.89 0.90	Off	4 4
20:29:19	12987.00 12982.00	278	1.4 1.4	0.3	80 80	0	0.63 0.63 0.63	3 3 3	1.00	1.01	1.00	1.00	0.03 0.02 0.03	0.90 0.91 0.91	Off	4
20:29:20	12992.00	284 270	1.1	0.3	76	1	0.63 0.63 0.72	3 3 3	1.00	1.01	1.00	1.00	0.03 0.03 0.03	0.90 0.90 0.89	Off	4 4
20:29:21	12982.00 12962.00	262	0.7	0.3	79 80	0	0.63 0.63 0.63	3 3 4	1.00	1.00	1.00	1.00	0.03 0.03 0.03	0.89 0.89 0.88	Off	4

Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos	Stal Pos
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	(degrees)
20:29:22	12957.00	275 276	0.7 0.7	0.5 0.6	80		0 0	0.72 0.72 0.63	3 4 3	1.00 1.00	1.01 1.00	1.00 1.00	1.00 1.00	0.03 0.03 0.03 0.03	0.89 0.89 0.90 0.91	Off Off	4 4
20:29:23	12977.00 12937.00	284	0.7	0.5	76		-1	0.72 0.72 0.72	3 3 3	1.00	1.00	1.00 1.00	1.00 1.00	0.03 0.03 0.03 0.03	0.92 0.93 0.93 0.93	Off	4
20:29:24	12927.00	276 274	0.7 0.7	0.6 0.8	80 80		-1 -1	0.72 0.72 0.72	4 3 3	1.00 1.00	1.01 1.00	1.00 1.00	1.00 1.00	0.04 0.04 0.04 0.04	0.94 0.94 0.94 0.94	Off	4 4
20:29:25	12917.00	280	0.7	0.9	80		-1	0.72 0.72 0.72	3 3 3	1.00	1.00	1.00	1.00	0.04 0.04 0.04 0.04	0.95 0.95 0.95 0.95	Off Off	4
20:29:26	12917.00 12897.00	260	0.7 1.1	0.9 0.7	78 80		-1 -2	0.72 0.72 0.63	3 4 4	1.00 1.01	1.01 1.00	1.01 1.01	1.00 1.00	0.05 0.05 0.05 0.05	0.99 1.00 1.01 1.01	Off	4 4
20:29:27	12887.00	286 279	1.1	0.8	80		-1	0.72 0.72 0.72	4 4 3	1.01 1.01	1.01	1.01	1.01	0.05 0.05 0.05 0.05	1.01 1.01 0.99 0.98	Off Off	4
20:29:28	12907.00 12877.00	277	1.1 1.1	1.0 1.1	76 80		-1 -1	0.72 0.72 0.72	3 3 4	1.01 1.02	1.00	1.01 1.01	1.01	0.05 0.05 0.05 0.05	0.97 0.97 0.97 0.97	Off	4 4
20:29:29	12867.00	277 276	1.1	1.0	80		-1	0.72 0.63 0.72	3 3	1.02	1.00	1.01 1.01	1.01	0.05 0.05 0.05 0.05	0.98 0.98 0.98 0.98	Off	4
20:29:30	12862.00 12852.00	280	1.1 1.4	1.1 1.2	80 80		-1 -1	0.63 0.63 0.63	4 3 3	1.03 1.03	1.00	1.01	1.02	0.05 0.05 0.05 0.05	0.98 0.98 0.98 0.98	Off	4 4
20:29:31	12847.00	282 280	1.4	1.2	80		0	0.63 0.63 0.63	4 4 4	1.03	1.00	1.01 1.01	1.02 1.02	0.06 0.06 0.06 0.06	1.01 1.02 1.04 1.04	Off Off	4
20:29:32	12837.00 12832.00	284	1.8 2.2	1.0 0.7	80 80		0 0	0.63 0.72 0.72	4 4 4	1.03 1.05	1.00	1.01	1.03	0.06 0.06 0.06 0.06	1.05 1.05 1.05 1.05	Off	4 4
20:29:33	12832.00	265 284	2.2	0.4	80		0	0.72 0.72	3 3	1.06	1.01 1.03	1.03 1.04	1.04 1.06	0.06 0.06 0.06 0.06	1.04 1.03 1.02 1.00	Off Off	4
20:29:34	12827.00 12827.00	284	2.2 2.2	0.7 0.9	80 80		1 2	0.72 0.54 0.63	3 3 3	1.08	1.04	1.05	1.07	0.06 0.06 0.06 0.06	0.97 0.97 0.98 0.97	Off	4 4
20:29:35	12827.00	284 285	2.2	0.9	81		3	0.63 0.63 0.54 0.63	3 3 3	1.08 1.09	1.05 1.05	1.05 1.06	1.07 1.08	0.07 0.07 0.07 0.07	0.98 0.98 0.99 1.00 1.01	Off Off	4
20:29:36	12827.00 12827.00	292	2.5 2.2	0.5 0.4	81 81		3	0.63 0.72 0.72 0.72	4 3 4	1.10	1.05	1.06	1.08	0.07 0.07 0.07 0.07	1.00 1.00 0.99 0.98	Off	4 4
20:29:37	12827.00	292 264	2.5	0.4	81		2	0.72 0.72	3 3	1.11 1.11	1.06 1.06	1.06 1.06	1.08 1.09	0.07 0.07 0.07 0.07	0.98 0.97 0.96 0.96	Off Off	4
20:29:38	12827.00 12832.00	282	2.2 2.2	0.4 0.3	81 81		2 1	0.72 0.72 0.72	3 3 3	1.12	1.06	1.07	1.09	0.07 0.07 0.06 0.06	0.95 0.94 0.94 0.94	Off	4 4
20:29:39	12832.00	282 284	2.2	0.2	81		1	0.72 0.72	3 3	1.12 1.12	1.06 1.05	1.07 1.06	1.10 1.11	0.07 0.07 0.07 0.07	0.94 0.94 0.94 0.95	Off Off	4
20:29:40	12832.00 12832.00	284	2.2 2.2	0.4 0.3	81 81		1 1	0.72 0.72	3 3	1.12	1.05	1.07	1.11	0.07 0.07 0.07 0.07	0.96 0.96 0.95 0.95	Off	4 4
20:29:41	12832.00	287 282	2.2	0.3	81		1	0.72 0.72	4 4	1.12 1.12	1.05 1.05	1.07 1.07	1.11 1.11	0.07 0.06 0.06 0.06	0.94 0.94 0.93 0.93	Off Off	4
20:29:42	12832.00 12832.00	275	2.2 2.2	0.4 0.7	81 81		1 1	0.72 0.72 0.81	3 3 3	1.12	1.05	1.06	1.11	0.06 0.06 0.06 0.06	0.92 0.92 0.92 0.92	Off	4 4
20:29:43	12832.00	292 280	2.2	0.7	81		1	0.72 0.72	3 3	1.12	1.05	1.07 1.06	1.11 1.11	0.06 0.07 0.07 0.07	0.93 0.93 0.96 0.97	Off	4
20:29:44	12827.00 12827.00	284	2.9 2.9	0.7 0.4	81 81		1 1	0.72 0.72	3 3	1.12	1.05	1.06	1.11	0.07 0.07 0.07 0.07	0.97 0.98 1.00 1.01	Off	4 4
20:29:45	12822.00	284 278	3.2	0.4	81		1	0.72 0.72 0.72	4 3 3	1.12 1.12	1.06 1.05	1.07 1.07	1.11 1.11	0.08 0.08 0.08 0.08	1.02 1.01 1.02 1.00	Off Off	4
20:29:46	12822.00 12822.00	276	3.2 3.2	0.2 0.0	81 81		1 1	0.72 0.63 0.63	3 4 3	1.11	1.05	1.07	1.11	0.08 0.07 0.07 0.07	1.00 1.00 1.00 1.00	Off	4 4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Stal Pos (degrees)
20:29:47	12822.00	266 282	3.2	0.3	81	0	0.72 0.63 0.63	3 3 3	1.11 1.11	1.09 1.09	1.07 1.06	1.11 1.11	0.07 0.07 0.07 0.07 0.07	0.99 0.98 0.98 0.98 0.98	Off Off	4
20:29:48	12822.00 12827.00	282	3.2 3.6	0.5 0.7	81 82	-1 -1	0.63 0.72	3 3	1.11	1.09	1.06	1.11	0.07 0.07 0.07	0.98 0.98 0.98	Off	4
20:29:49	12827.00	282 282	4.0	0.7	82	-1	0.72 0.72 0.72	3 3 4	1.11 1.11	1.09 1.06	1.07 1.07	1.11 1.11	0.06 0.06 0.06 0.06 0.06	1.00 1.02 1.03 1.04 1.05	Off Off	4 4
20:29:50	12832.00 12837.00	279	4.0 4.3	0.5	81	-1	0.81 0.72 0.72	4 4 3	1.11	1.05	1.07	1.11	0.06 0.06 0.06 0.06 0.06	1.04 1.06 1.06 1.06 1.06	Off	4
20:29:51	12842.00	288 264	4.3	0.4	81	-1	0.72 0.72 0.72	4 4 4	1.11 1.11	1.09 1.09	1.07 1.07	1.11 1.11	0.08 0.08 0.08 0.08 0.08	1.04 1.04 1.03 1.03 1.02	Off Off	4 4
20:29:52	12852.00 12862.00	282	4.0 4.3	0.5 0.3	81 81	-1 0	0.72 0.72 0.72	4 4 4	1.11	1.09	1.07	1.11	0.08 0.08 0.08 0.08	1.01 1.01 1.01 1.01	Off	4
20:29:53	12872.00	281 281	4.3	0.2	81	0	0.72 0.72 0.72	3 3 3	1.11 1.11	1.06 1.06	1.07 1.07	1.11 1.11	0.08 0.08 0.08 0.08	1.01 1.00 1.01 1.01	Off Off	4 4
20:29:54	12882.00 12892.00	281	4.3 4.0	0.1 0.3	81 81	0 0	0.72 0.72 0.72	3 3 3	1.12	1.06	1.07	1.11	0.08 0.08 0.07 0.07	0.99 0.98 0.98 0.98	Off	4
20:29:55	12902.00	280 278	4.0	0.2	81	0	0.63 0.54 0.63	3 3 4	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.07 0.07 0.07	0.96 0.95 0.95	Off Off	4 4
20:29:56	12917.00 12957.00	281	4.0 3.6	0.2 0.2	81 82	0 0	0.63 0.54 0.63	3 3 3	1.12	1.06	1.07	1.11	0.07 0.07 0.07 0.07	0.95 0.94 0.93 0.93	Off	4
20:29:57	12942.00	281 281	3.6	0.2	82	0	0.72 0.72	3 3	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.07 0.07	0.92 0.92	Off Off	4 4
20:29:58	12952.00 12962.00	282	3.6 2.9	0.3	82 82	1 1	0.72 0.72 0.72	3 3 3	1.12	1.06	1.07	1.10	0.06 0.06 0.06 0.06	0.91 0.89 0.88 0.86	Off	4
20:29:59	12972.00	282 280	2.9	0.3 0.0	82	1	0.72 0.72	3 3	1.12	1.06	1.07	1.11	0.06 0.06 0.06	0.84 0.84 0.84	Off	4
20:30:00	12982.00 12982.00	279	2.5 2.5	0.2	82 82	1 1	0.72 0.72 0.72	3 4 3	1.12	1.06	1.07	1.11	0.06 0.06 0.06	0.83 0.84 0.84	Off	4
20:30:01	13022.00	282 282	2.2	0.2 0.2	78	1	0.72 0.63 0.63	3 3 3	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.06 0.06 0.06	0.84 0.84 0.85	Off Off	4 4
20:30:02	12987.00 12992.00	283	2.2 1.8	0.4	82 82	1	0.63 0.63 0.63	3 3 3	1.12	1.06	1.07	1.11	0.06 0.06 0.06	0.85 0.85 0.86	Off	4
20:30:03	12992.00	282 283	1.8	0.5 0.6	82	0 0	0.63 0.72 0.72	3 3 3	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.06 0.06 0.06 0.06	0.87 0.87 0.87 0.88	Off Off	4 4
20:30:04	12992.00 12987.00	278	1.8	0.9	82 82	0	0.72 0.72	3 3	1.12	1.06	1.07	1.11	0.06 0.06	0.89 0.90	Off	4
20:30:05	12987.00	279 282	2.2 2.2	0.6 0.8	82	0 1	0.72 0.72 0.72	3 3 3	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.07 0.07 0.07	0.92 0.93 0.93	Off Off	4 4
20:30:06	13017.00 12982.00	280	2.2	0.7	78	1	0.72 0.72 0.72	3 3 3	1.12	1.06	1.07	1.11	0.07 0.07 0.07	0.97 0.97 0.97	Off	4
20:30:07	12977.00	278 278	2.2 2.2	0.6 0.7	82 82	1 1	0.72 0.72 0.63	3 3 3	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.07 0.07 0.07	0.96 0.96 0.96	Off	4 4
20:30:08	12972.00	282	2.2	0.7	82	1	0.63 0.63 0.63	3 3 3	1.12	1.06	1.07	1.11	0.07 0.07 0.07	0.95 0.95 0.96	Off Off	4
20:30:09	12972.00 12972.00	280	2.9 2.9	0.9 0.9	82 82	0 0	0.63 0.63 0.72	3 4 3	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.07 0.07 0.07	0.97 0.97 0.97	Off	4 4
20:30:10	12967.00	278 282	2.9	0.9	82	0	0.72 0.72 0.72	4 3 3	1.12	1.06	1.07	1.11	0.07 0.07 0.07	0.98 0.98 0.98	Off Off	4
20:30:11	12997.00 12962.00	282	2.9 2.9	0.7 0.7	78 82	0 0	0.72 0.72	3 3	1.12 1.12	1.06 1.06	1.07 1.07	1.11 1.11	0.07 0.07	0.98 0.98	Off	4 4

Local Time (ref. CVR)	MSL Alt. (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel. (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:30:12	12962.00	281 278	2.9	0.9	82		0 0.72 0.72 0.72	3 3 3	1.12	1.06	1.07	1.11 1.11	0.07 0.07 0.07 0.07 0.07	0.98 0.97 0.97 0.97 0.98	Off Off		4
20:30:13	12962.00 12957.00	283	2.9	0.8	82		0 0.72 0.72	3 3 3	1.12	1.06	1.07	1.11	0.07 0.07 0.07 0.07	0.98 0.98 0.98	Off		4
20:30:14	12962.00	282 280	2.9	0.7	82		0 0.72 0.63 0.72	3 4 3	1.12	1.06	1.07 1.07	1.11 1.11	0.07 0.07 0.07 0.07	0.97 0.97 0.97 0.97	Off Off		4
20:30:15	12957.00 12987.00	282	2.9	0.7	82 78		0 0.72 0.72 0.72	3 4 3 3	1.12 1.12	1.06	1.07	1.11	0.07 0.07 0.07 0.07	0.97 0.97 0.97 0.97	Off		4 4
20:30:16	12962.00	278 280	2.9	0.5	82		0 0.72 0.72	3 3 3	1.12	1.06	1.07 1.07	1.11 1.11	0.07 0.07 0.07	0.97 0.97 0.98	Off Off		4
20:30:17	12962.00 12962.00	278	2.9 3.2	0.8 0.7	82 82		0 0.72 0.81 0.72	3 3 3	1.12	1.06	1.07	1.11	0.07 0.08 0.08 0.08	0.98 0.98 0.99 0.99	Off		4 4
20:30:18	12962.00	282 282	3.2	0.7	82	1	0 0.72 0.72 0.72	3 9 3 3	1.12 1.12	1.06	1.07 1.07	1.11 1.11	0.08 0.08 0.08 0.08	1.00 1.00 1.00	Off Off		4
20:30:19	12962.00 12962.00	278	3.2 2.9	0.7 0.7	82 82		0 0.72 0.63 0.72 0.63	3 4 4	1.12	1.06	1.07	1.11	0.08 0.08 0.08 0.07 0.08	0.99 0.99 0.98 0.98	On		4 4
20:30:20	12967.00	281 270	3.2	0.9	82		0 0.72 0.72	3 3 3	1.12	1.06	1.07 1.07	1.11 1.11	0.07 0.07 0.08 0.08	0.98 0.98 0.99 0.98	On		4
20:30:21	12972.00 12977.00	455	3.6 3.6	0.9 0.7	82 82		0 0.72 0.63 0.63 0.72	3 3 3	1.12	1.06	1.07	1.11	0.08 0.08 0.08 0.08 0.08	0.99 0.99 0.99 1.00 1.00	On		4 4
20:30:22	12982.00	278 282	3.6	0.7	82		0 0.63 0.63	4 3 3	1.12 1.12	1.06	1.07 1.07	1.11 1.11	0.08 0.08 0.08 0.08	1.00 0.99 0.99	On On		4
20:30:23	12987.00 12992.00	280	3.6 3.6	0.7 0.6	82 82		0 0.72 0.72 0.72	3 3 4	1.12	1.06	1.07	1.11	0.08 0.08 0.08 0.08	0.98 0.98 0.98	On		4 4
20:30:24	13002.00	288 278	3.6	0.7	82		0 0.72 0.72 0.72	3 4 3	1.13 1.14	1.07 1.09	1.08 1.09	1.12 1.14	0.08 0.08 0.08 0.08	0.98 0.98 0.98	Off Off		4
20:30:25	13012.00 13017.00	269	3.6 4.0	0.6 0.5	82 82		0 0.72 0.72 0.72	3 3 3	1.15	1.10	1.10	1.15	0.08 0.08 0.08	0.98 0.98 0.98	Off		4 4
20:30:26	13027.00	277 280	4.0	0.4	82		0 0.72 0.72 0.72	3 3 3	1.17 1.18	1.11 1.12	1.12 1.12	1.17 1.18	0.08 0.08 0.08 0.09	0.97 0.96 0.95 0.94	Off Off		4
20:30:27	13032.00 13042.00	280	4.0	0.8 0.7	82	-1	0 0.63 0.72 0.72	3 3 3	1.18	1.12	1.14	1.18	0.08 0.09 0.09 0.09	0.94 0.94 0.95	Off		4 4
20:30:28	13047.00	280 278	3.6	0.5	82	-1	0 0.63 0.72 0.72	3 3 4	1.19 1.19	1.12 1.13	1.15 1.16	1.19 1.19	0.09 0.09 0.09 0.09	0.96 0.97 0.97	Off Off		4
20:30:29	13052.00 13062.00	278	3.6 4.0	0.6 0.7	82 82	-1	0 0.72 0.72 0.72	4 4 3	1.19	1.13	1.16	1.19	0.09 0.09 0.09	0.97 0.97 0.97	Off		4 4
20:30:30	13072.00	262 281	4.0	0.6	82	-2	0 0.72 0.72 0.72	3 3 3	1.21 1.24	1.15 1.17	1.19 1.21	1.21 1.24	0.09 0.10 0.10 0.10	0.97 0.97 0.97	Off Off		4
20:30:31	13077.00 13087.00	280	4.0 4.0	0.9 0.9	82 82	-2	0 0.72 0.72 0.72	3 3 3	1.25	1.18	1.22	1.25	0.10 0.10 0.10 0.10	0.98 0.98 0.98 0.98	Off		4
20:30:32	13092.00	280 280	4.3	0.7	82	-2	0 0.72 0.63 0.72	3 3 3	1.26 1.27	1.20 1.23	1.23 1.24	1.26 1.28	0.11 0.11 0.11	0.99 0.99 1.00	Off Off		4 4
20:30:33	13102.00 13112.00	277	4.3 4.3	0.7 0.7	82 82	-2	0 0.63 0.72 0.72	3 4 3	1.28	1.24	1.25	1.29	0.11 0.11 0.11 0.11	1.00 1.00 1.00	Off		4
20:30:34	13127.00	286 260	4.3	0.7	82	-2	0 0.72 0.72	4 3	1.29	1.24	1.25 1.25	1.30 1.31	0.11 0.11 0.11	0.99 0.98 0.98	Off Off		4 4
20:30:35	13137.00 13147.00	275	4.3 4.7	0.5 0.7	81 81	-2 -1	0 0.72 0.72	3 3 3	1.29	1.24	1.25	1.32	0.11 0.11 0.11	0.98 0.98 0.98	Off		4
20:30:36	13162.00	280	4.7	0.5	81	-1	0 0.63	3	1.29	1.24	1.25	1.32	0.11 0.11	0.98 0.98	Off		4

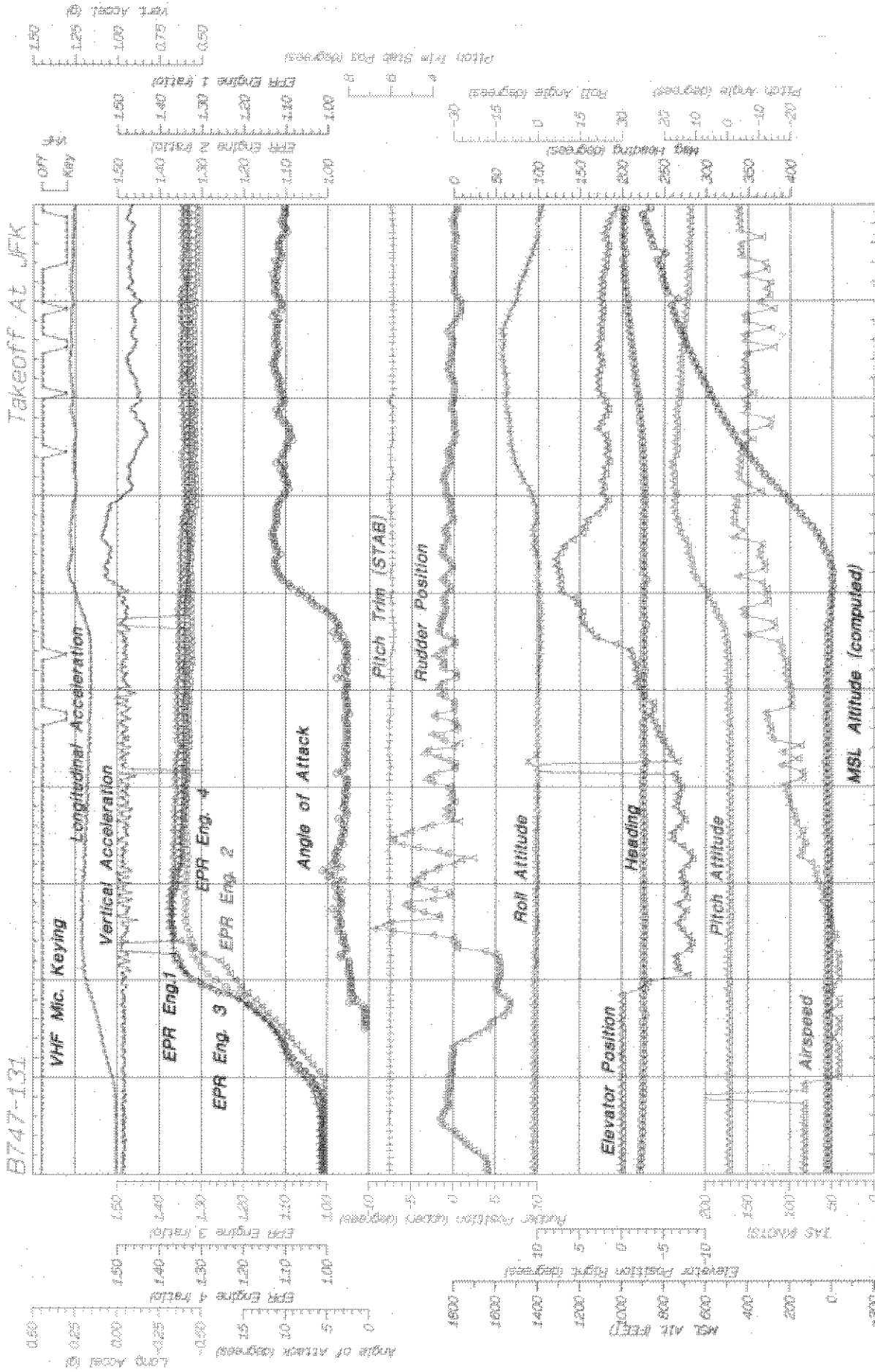
Local Time	MSL Alt.	IAS	Pitch Angle	Elevator Position Right	Mag. Heading	Roll Angle	Rudder Position (upper)	Angle of Attack	EPR Engine 1	EPR Engine 2	EPR Engine 3	EPR Engine 4	Long. Accel.	Vert. Accel.	VHF	Pitch Trim Pos	Stal
(ref. CVR)	(FEET)	(KNOTS)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(degrees)	(ratio)	(ratio)	(ratio)	(ratio)	(g)	(g)		(degrees)	
		280					0.63 0.63	3 3	1.29	1.24	1.26	1.32	0.11 0.11 0.11 0.11	0.98 0.98 0.98 0.98	Off		4
20:30:37	13172.00 13187.00	280	4.7 4.3	0.3 0.2	81 81	-1 0	0.63 0.63 0.63	3 3 3	1.29	1.25	1.27	1.32	0.11 0.11 0.11 0.11	0.98 0.98 0.98 0.97	Off		4
20:30:38	13202.00	277 278	4.3	0.2	81	0	0.54 0.63 0.63	3 4 4	1.29 1.29	1.25 1.26	1.27 1.27	1.32 1.32	0.11 0.11 0.11 0.11	0.94 0.92 0.91 0.89	Off Off		4 4
20:30:39	13217.00 13232.00	259	4.0 3.6	0.1 0.3	81 81	0 0	0.63 0.63 0.72	3 3 3	1.29	1.26	1.28	1.32	0.11 0.11 0.10 0.10	0.88 0.87 0.86 0.86	Off		4
20:30:40	13242.00	278 281	3.6	0.3	81	0	0.72 0.72 0.72	3 3 3	1.29 1.29	1.27 1.27	1.28 1.28	1.32 1.32	0.10 0.10 0.10 0.10	0.86 0.86 0.87 0.86	Off Off		4 3
20:30:41	13257.00 13262.00	282	3.6 3.2	0.3	81 81	0 0	0.63 0.72	3 3	1.29	1.28	1.29	1.32	0.10 0.10	0.86 0.85	Off		3
20:30:42	13272.00	282 282	2.9	0.2 0.3	81	0	0.72 0.72 0.72	3 3 3	1.29 1.29	1.29 1.30	1.29 1.30	1.32 1.32	0.10 0.10 0.10 0.10	0.84 0.84 0.83 0.83	Off Off		3 3
20:30:43	13277.00 13282.00	278	2.9	0.3	81	0	0.72 0.63 0.72	3 4 3	1.29	1.30	1.30	1.32	0.10 0.10 0.10	0.84 0.85 0.86	Off		3
20:30:44	13337.00	282 283	2.5	0.3 0.3	77	0	0.63 0.63 0.72	3 3 3	1.29 1.29	1.30 1.31	1.30 1.30	1.32 1.32	0.10 0.11 0.10 0.10	0.86 0.86 0.87 0.87	Off Off		3 3
20:30:45	13287.00 13292.00	284	2.2 1.8	0.2	81 81	0	0.72 0.63 0.72	3 3 3	1.29	1.31	1.30	1.32	0.11 0.11 0.11 0.11	0.88 0.87 0.88 0.88	Off		3
20:30:46	13292.00	284 284	1.8	0.2 0.6	81	0	0.72 0.63 0.72	3 3 3	1.29 1.29	1.31 1.31	1.29 1.30	1.32 1.32	0.11 0.11 0.11	0.88 0.88 0.88	Off Off		3 3
20:30:47	13287.00 13287.00	284	1.8	0.5	81 81	0	0.72 0.63 0.72	3 3 3	1.29	1.31	1.31	1.32	0.11 0.11 0.11 0.11	0.89 0.90 0.90 0.92	Off		4
20:30:48	13282.00	286 286	2.2 2.2	0.7 0.7	81	1 1	0.72 0.72	4 3	1.29 1.29	1.31 1.31	1.31 1.31	1.32 1.32	0.11 0.11	0.95 0.98	Off Off		4 4
20:30:49	13332.00 13277.00	287	2.5	0.7	77	1	0.72 0.72 0.72	3 3 3	1.29	1.31	1.32	1.32	0.11 0.12 0.12 0.12	0.99 1.00 1.01 1.02	Off		4
20:30:50	13277.00	288 288	2.9	0.7	81	1	0.63 0.72 0.63	3 3 3	1.29 1.29	1.30 1.30	1.31 1.31	1.32 1.31	0.12 0.12 0.12	1.04 1.04 1.05	Off		4
20:30:51	13277.00	288	3.2	0.5	81	1	0.63 0.63 0.72	3 3 3	1.30	1.30	1.31	1.32	0.12 0.12 0.12 0.12	1.07 1.08 1.09 1.09	Off Off		4
20:30:52	13277.00 13282.00	288	3.6 4.0	0.7 0.5	81 81	1 1	0.72 0.63 0.72	3 4 3	1.30 1.31	1.30 1.30	1.32 1.32	1.32 1.32	0.12 0.12 0.12 0.12	1.10 1.09 1.09 1.11	Off		4 4
20:30:53	13292.00	297 288	4.0	0.5	82	1	0.72 0.63 0.72	3 4 4	1.31	1.30	1.32	1.32	0.12 0.12 0.13 0.12	1.11 1.11 1.11 1.11	Off Off		4
20:30:54	13357.00 13312.00	288	4.3 4.3	0.4 0.3	78 82	0 1	0.72 0.72 0.72	3 3 3	1.31 1.31	1.30 1.30	1.32 1.32	1.32	0.12 0.13 0.13 0.12	1.11 1.11 1.11 1.10	Off		4 4
20:30:55	13327.00	290 286	4.7	0.3	82	1	0.72 0.72 0.72	4 3 3	1.31	1.30	1.32	1.32	0.12 0.12 0.12	1.10 1.09 1.09	Off Off		4
20:30:56	13342.00 13362.00	290	5.0 5.0	0.2 0.3	82 82	1 1	0.72 0.72 0.72	3 3 3	1.31 1.31	1.30 1.30	1.31 1.31	1.31 1.31	0.12 0.12 0.12	1.08 1.07 1.06	Off		4 4
20:30:57	13382.00	296 287	5.0	0.2	82	1	0.72 0.72	3 3	1.32	1.30	1.31 1.31	1.31 1.31	0.12 0.12	1.04 1.03	Off Off		4
20:30:58	13402.00 13487.00	286	5.0 5.0	0.0 0.3	82 77	1 1	0.72 0.72 0.72	4 3 3	1.31 1.31	1.29	1.31 1.31	1.31	0.11 0.11 0.11 0.11	1.02 1.00 0.99 0.98	Off		4 4
20:30:59	13447.00	295 288	5.0	0.0	82	1	0.63	3	1.31	1.29	1.31 1.31	1.31 1.31	0.11 0.11	0.97 0.97	Off		4
20:31:00	13467.00 13492.00	286	5.0 5.0	0.2 0.0	82 82	0 0	0.63 0.63 0.63 0.72	3 3 3 3	1.31	1.29	1.31 1.31	1.30	0.11 0.11 0.11 0.11	0.96 0.96 0.95 0.94	Off		4 4

Local Time	MSL Alt. (ref. CVR) (FEET)	IAS (KNOTS)	Pitch Angle (degrees)	Elevator Position Right (degrees)	Mag. Heading (degrees)	Roll Angle (degrees)	Rudder Position (upper) (degrees)	Angle of Attack (degrees)	EPR Engine 1 (ratio)	EPR Engine 2 (ratio)	EPR Engine 3 (ratio)	EPR Engine 4 (ratio)	Long. Accel (g)	Vert. Accel. (g)	VHF	Pitch Trim Pos (degrees)	Stal
20:31:01	13512.00	288 284	4.7	0.2	82	-1	0.63 0.63	3 3	1.31 1.31	1.29 1.29	1.31 1.30	1.30 1.30	0.11 0.10 0.10 0.10	0.92 0.92 0.92 0.92	Off Off		4
20:31:02	13537.00 13557.00	296	4.7 4.3	0.3 0.0	82 82	0	0.72 0.72 0.72	3 3 4	1.31	1.29	1.30	1.29	0.10 0.10 0.10	0.92 0.92 0.93	Off		4 3
20:31:03	13637.00	289 296	4.7	0.1	78	0	0.72 0.72	3 3 3	1.31 1.31	1.29 1.29	1.30 1.30	1.29 1.29	0.10 0.10 0.10 0.10	0.92 0.91 0.90 0.90	Off Off		3
20:31:04	13597.00 13617.00	296	4.3 4.3	0.3 0.2	82 82	0	0.72 0.72 0.72	3 3 3	1.31	1.29	1.30	1.30	0.10 0.10 0.10	0.89 0.89 0.89	Off		3 3
20:31:05	13637.00	287 289	4.3	0.3	82	1	0.72 0.63 0.63	3 3 3	1.31 1.31	1.29 1.29	1.30 1.29	1.29 1.30	0.10 0.10 0.10 0.10	0.89 0.89 0.89 0.89	Off Off		3
20:31:06	13652.00 13667.00	290	4.3 4.3	0.0 0.4	82 82	1	0.63 0.63 0.63	3 3 3	1.31	1.30	1.30	1.29	0.10 0.10 0.10 0.10	0.90 0.91 0.91 0.91	Off		3 3
20:31:07	13682.00	296 287	4.0	0.4	82	1	0.63 0.63 0.63	3 4 3	1.31 1.31	1.30 1.30	1.30 1.29	1.29 1.29	0.10 0.10 0.10 0.10	0.92 0.92 0.92 0.92	Off Off		3
20:31:08	13702.00 13717.00	280	4.0 4.0	0.4 0.4	82 82	1	0.63 0.72 0.63	3 3 3	1.31	1.29	1.29	1.29	0.10 0.10 0.10 0.10	0.91 0.92 0.91 0.91	Off		3 3
20:31:09	13732.00	288 298	4.0	0.3	82	0	0.63 0.72 0.72	3 3 3	1.31 1.31	1.29 1.29	1.29 1.29	1.29 1.29	0.10 0.10 0.10	0.90 0.90 0.90	Off Off		3
20:31:10	13747.00 13757.00	290	3.6 3.6	0.1 0.4	82 82	0	0.63 0.72 0.72	3 3 3	1.31	1.29	1.29	1.30	0.10 0.10 0.10 0.10	0.90 0.90 0.90 0.90	Off		3 3
20:31:11	13772.00	288 288	3.6	0.1	82	0	0.72 0.72	3 3	1.30 1.30	1.29 1.29	1.30 1.29	1.30 1.29	0.10 0.10	0.90 0.90	Off Off		3
20:31:12	End of Flight 800 Data						0.72	3					0.10 0.10 0.10	0.90 0.90 0.90			

ATTACHMENT III

Data Plots

TWA Fit. 800



B747-131

Takeoff At JFK

201840 201850 201900 201910 201920 201930 201940 201950 202000 202010 202020

LOCAL TIME (ref. CVR)

Plot No. 1

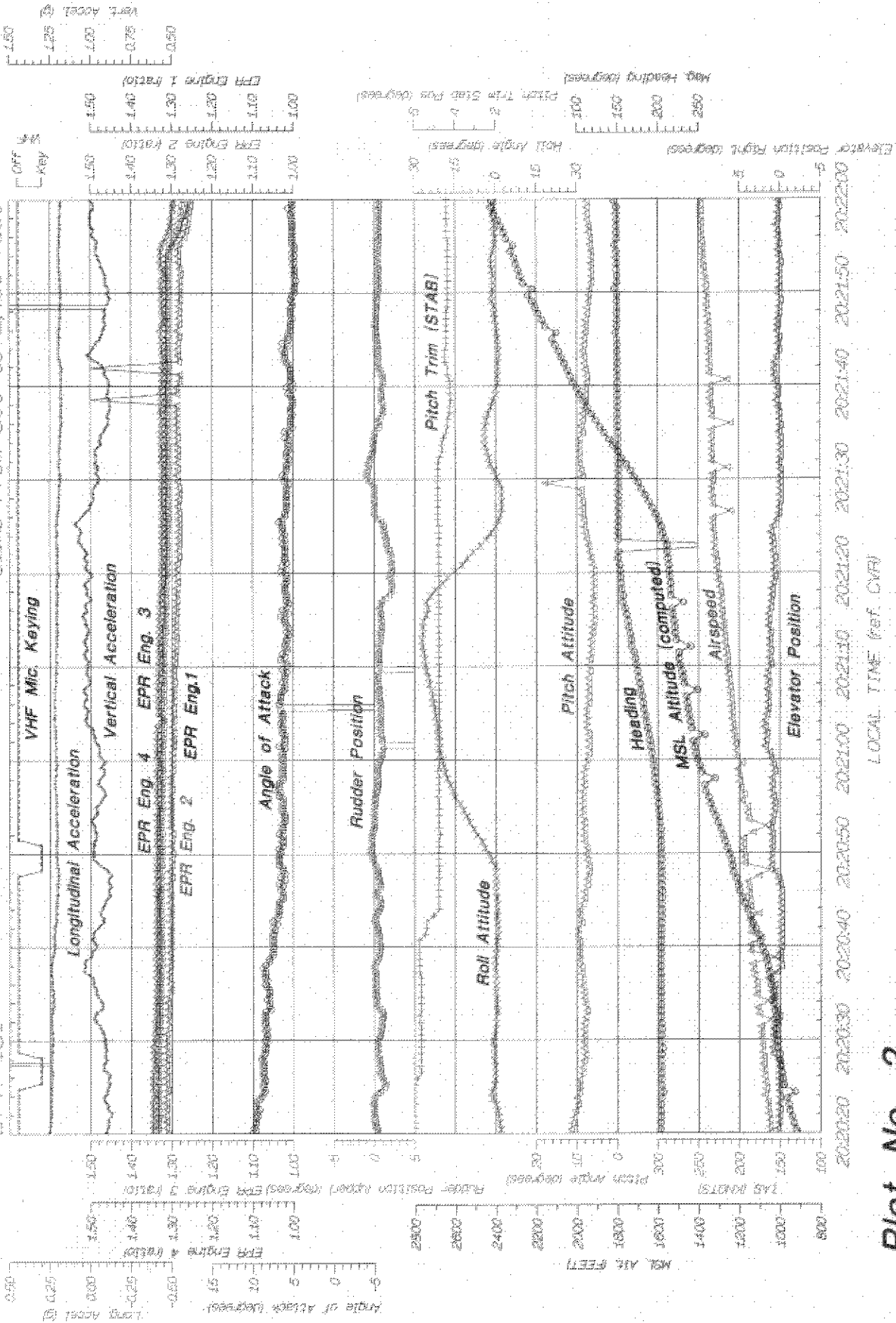
Revised: December 22, 1999

National Transportation Safety Board/ VPD

TWA Flt. 800

8747-131

Climb From 800 to 2400 feet



Plot No. 2

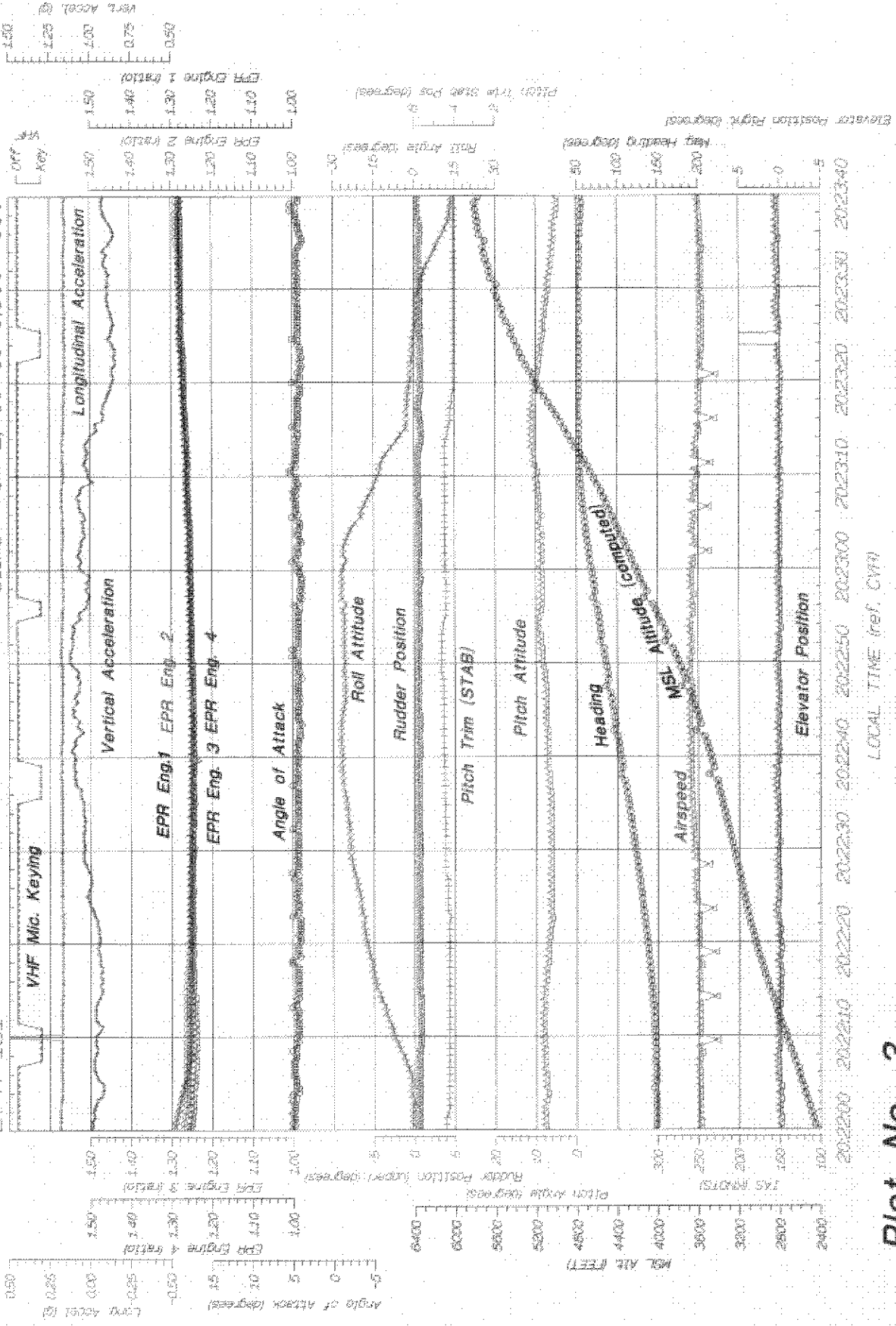
Revised: December 22, 1999

National Transportation Safety Board/ VPD

TWA Fit. 800

Climb From 2,400 to 5,800 feet

8747-131



20:22:00 20:22:10 20:22:20 20:22:30 20:22:40 20:22:50 20:23:00 20:23:10 20:23:20 20:23:30 20:23:40

LOCAL TIME (ref. CVM)

Plot No. 3

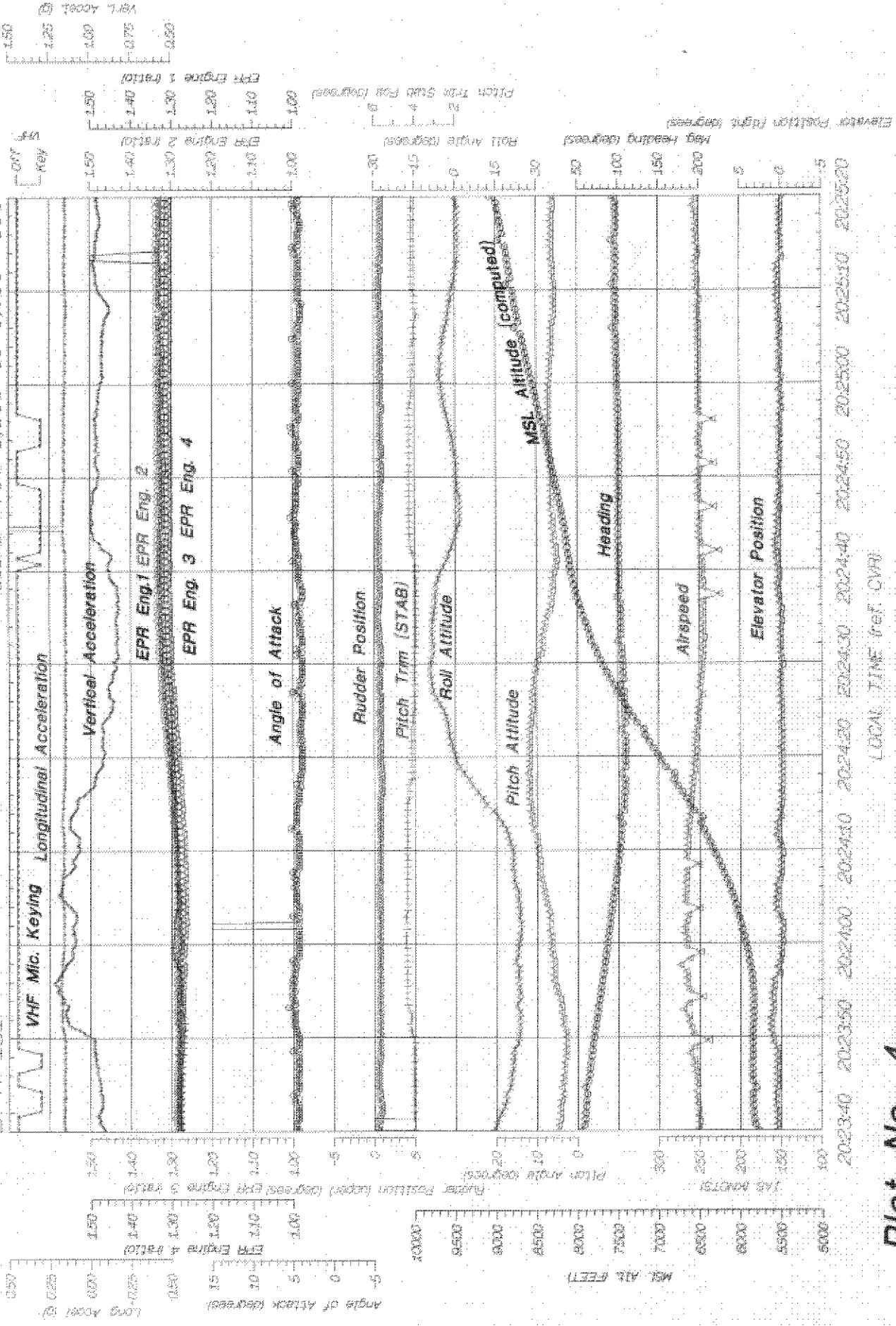
Revised: December 22, 1999

National Transportation Safety Board/ VPD

TWA Flt. 800

Climb From 5,500 to 9,000 feet

B747-131



Plot No. 4

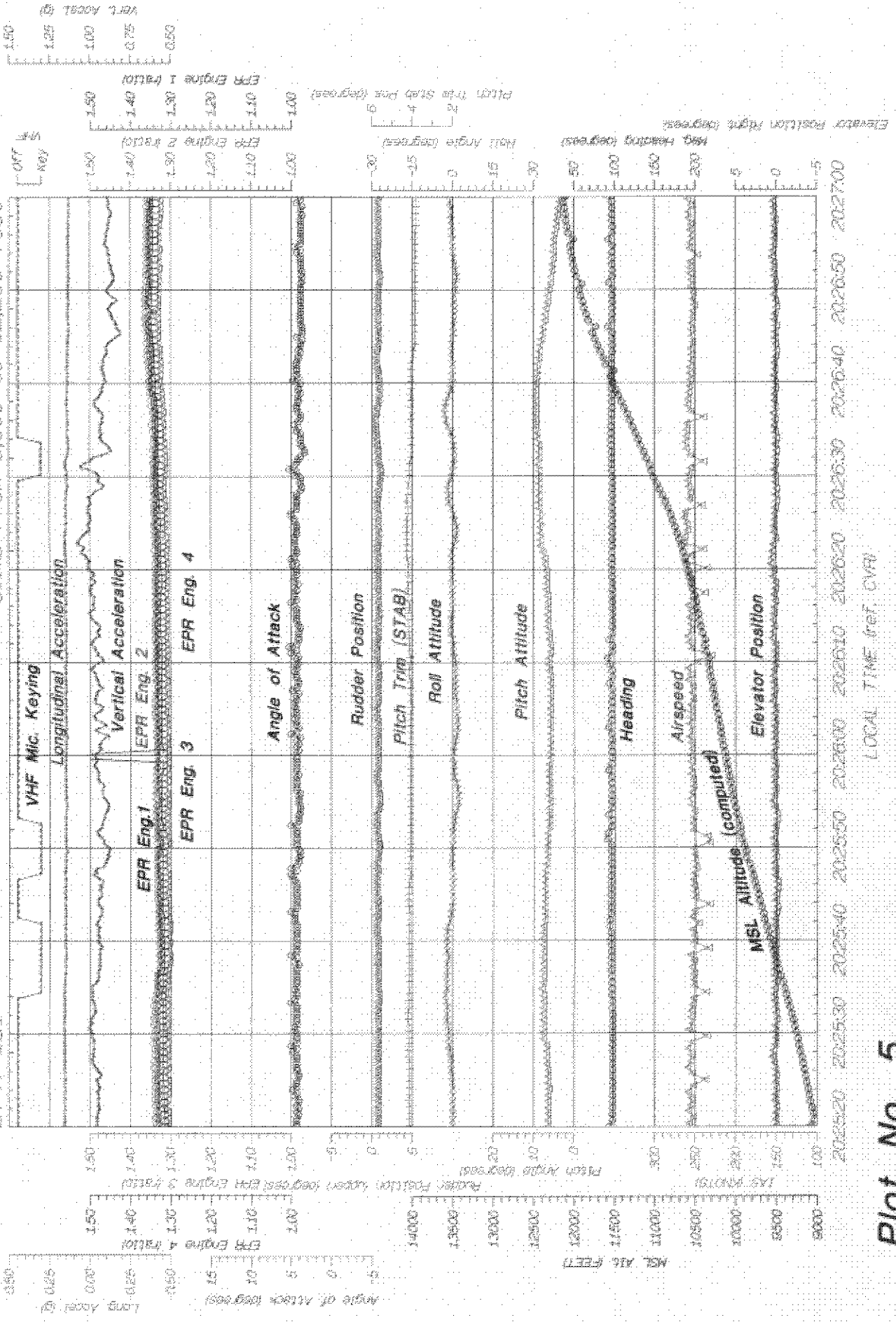
Revised: December 22, 1999

National Transportation Safety Board/ VPD

LOCAL TIME (ref. CWT)

TWA Flt. 800

B747-131 Climb From 9,000 to 12,200 feet



Plot No. 5

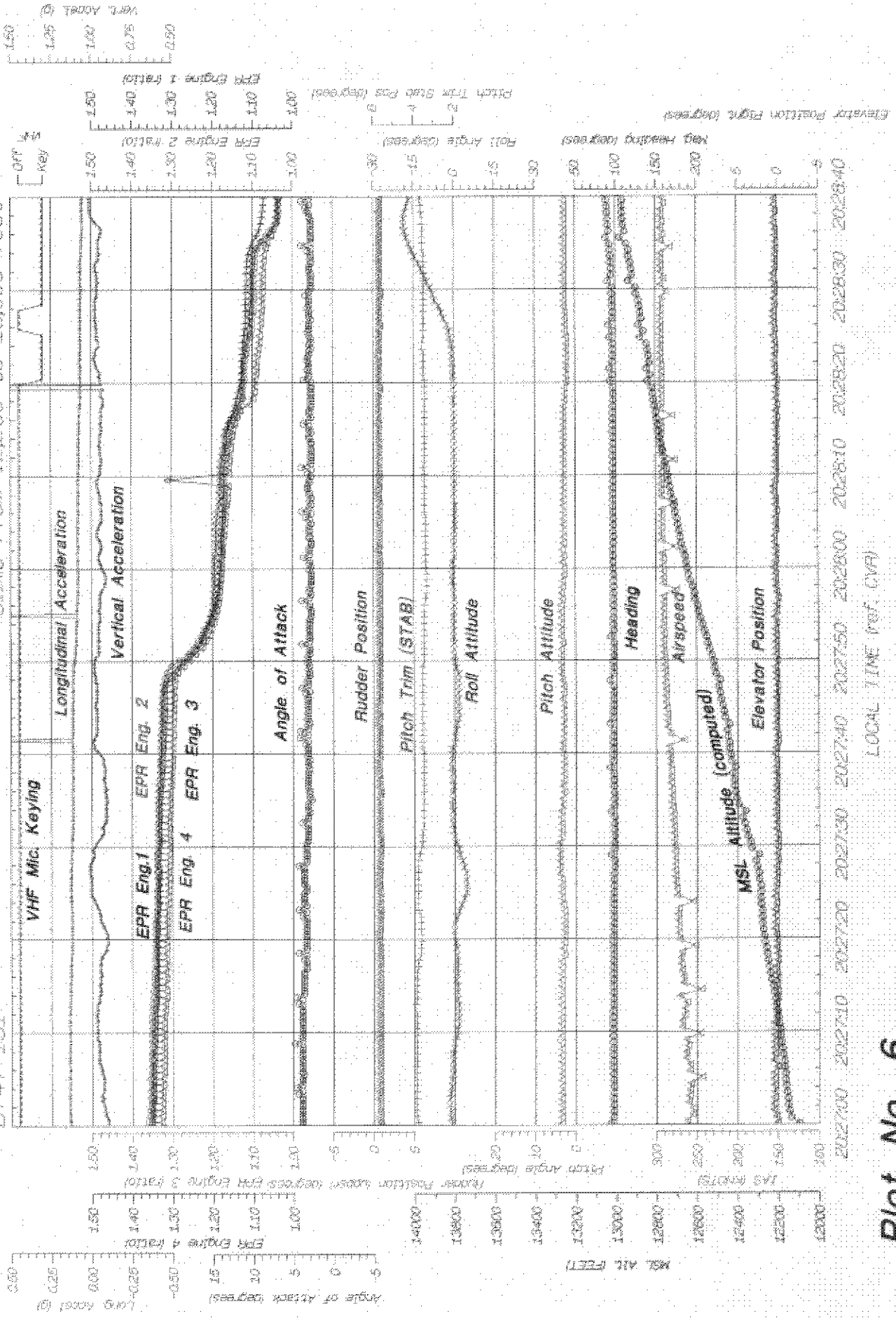
Revised: December 22, 1999

National Transportation Safety Board/ VFD

TWA Flt. 800

Climb From 12,200 to 13,000 feet

B747-131



Plot No. 6

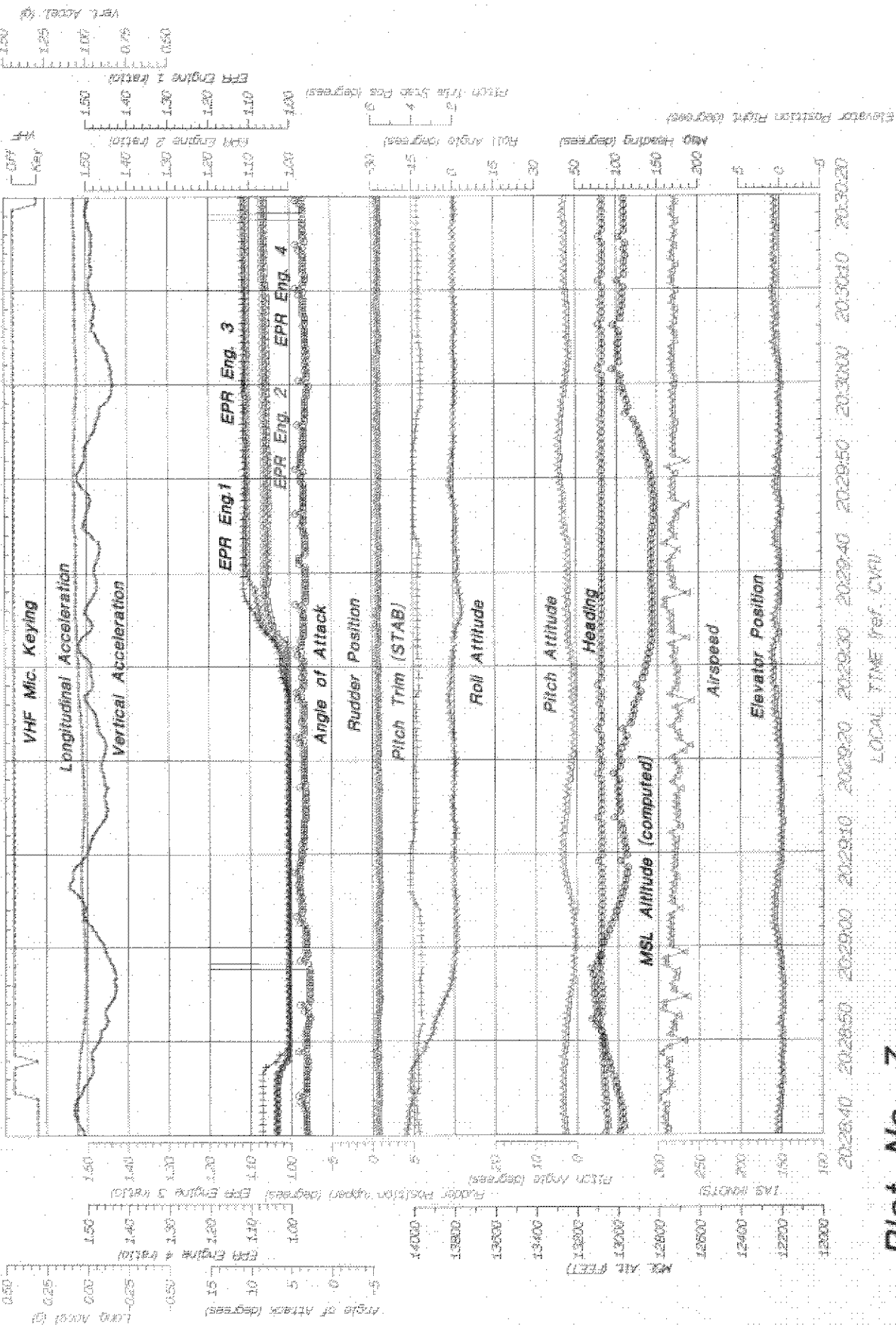
Revised December 22, 1999

National Transportation Safety Board/ VPD

TWA Flt. 800

Level Alt 12,600 to 13,100 feet

B747-131



Plot No. 7

Revised: December 22, 1999

National Transportation Safety Board / VPD

LOCAL TIME / Ref. C/P/N