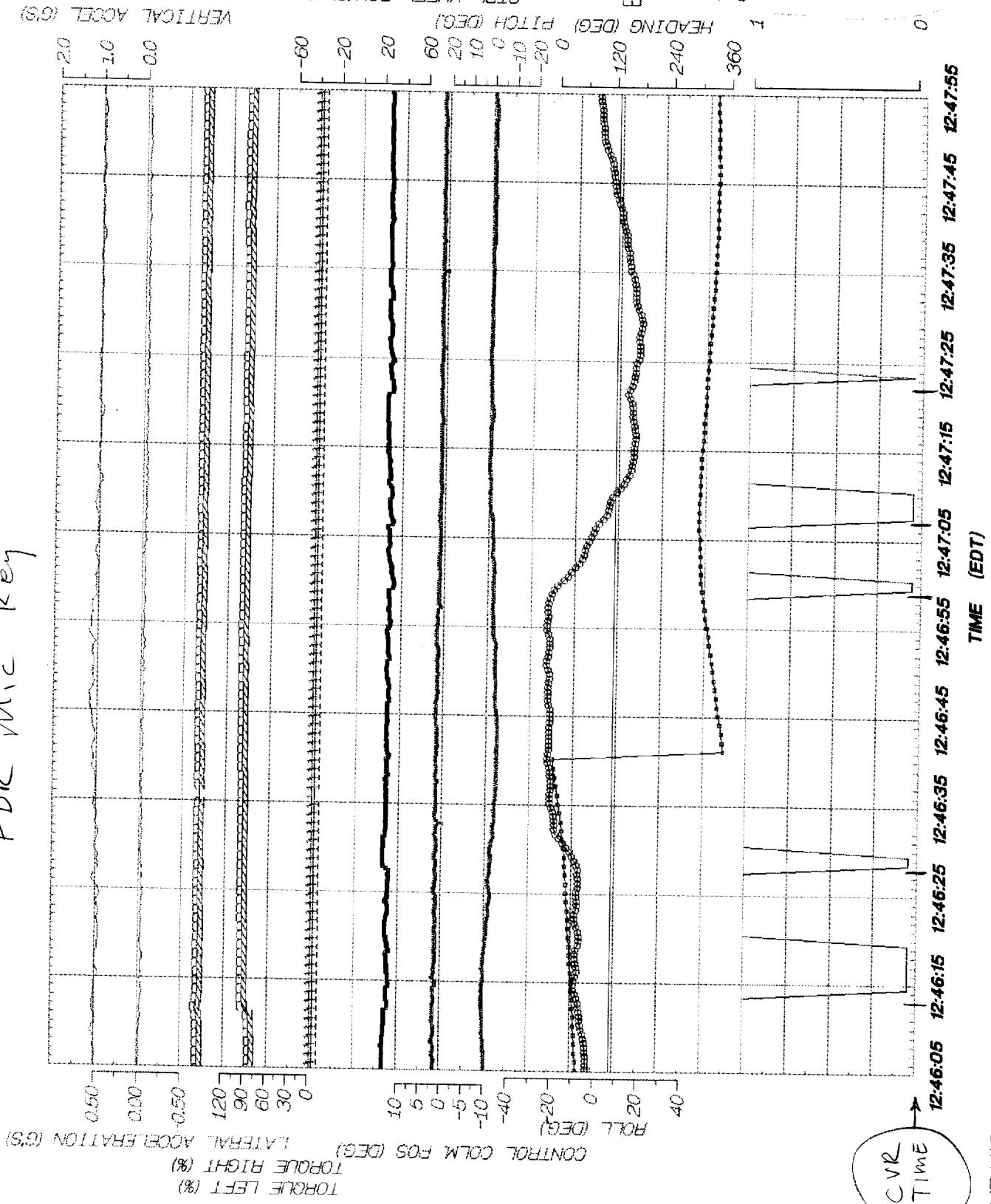


## SECTION IV ATTACHMENTS

Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR) Data Plots

FDR Mic Key



Flight Recorder DFR F800 S/N  
DCA-95-M-A-054

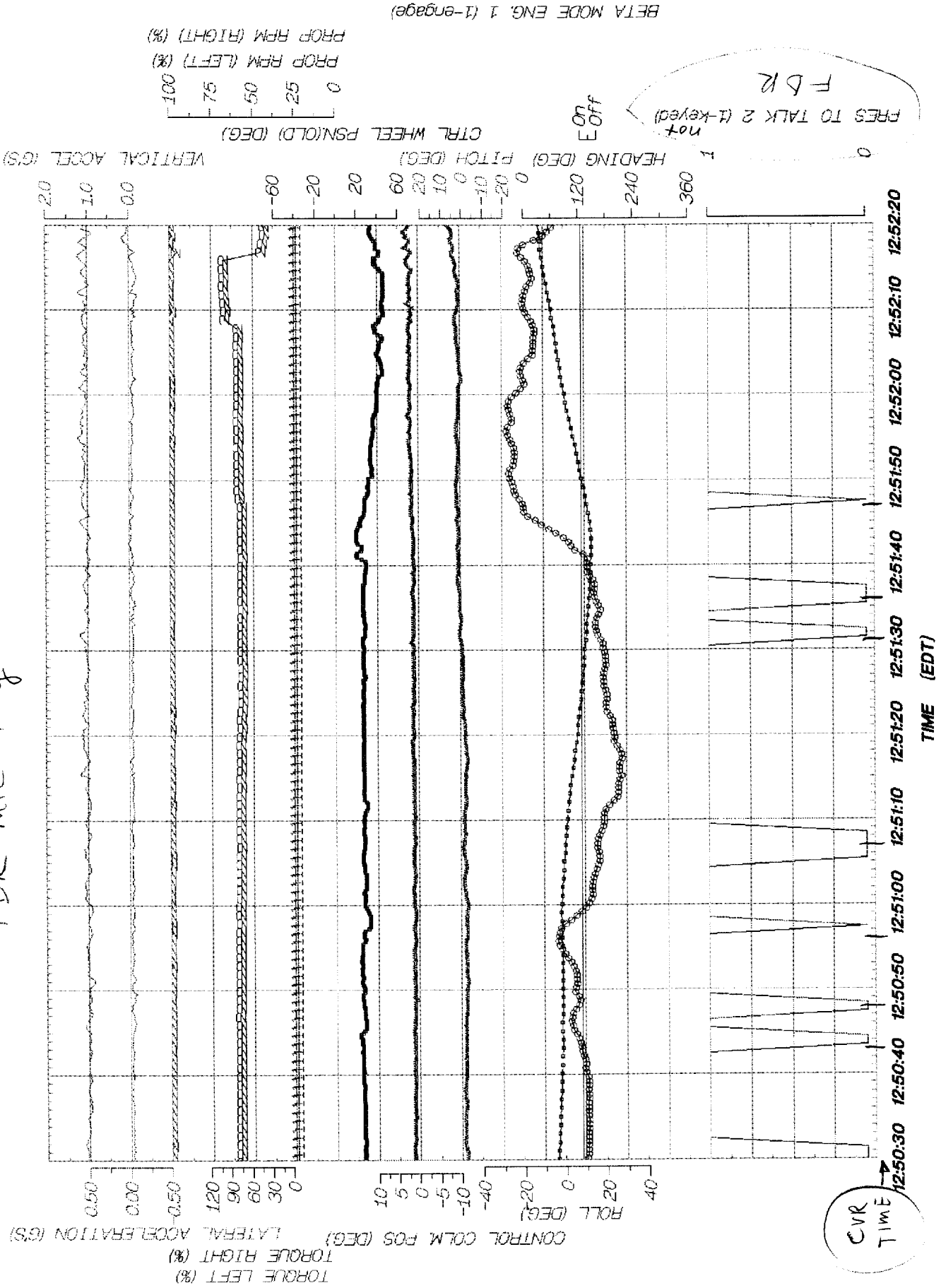
TIME (EDT)

CVR  
TIME

EMB120  
August 21, 1995  
Revised: October 12, 1995

IV-1

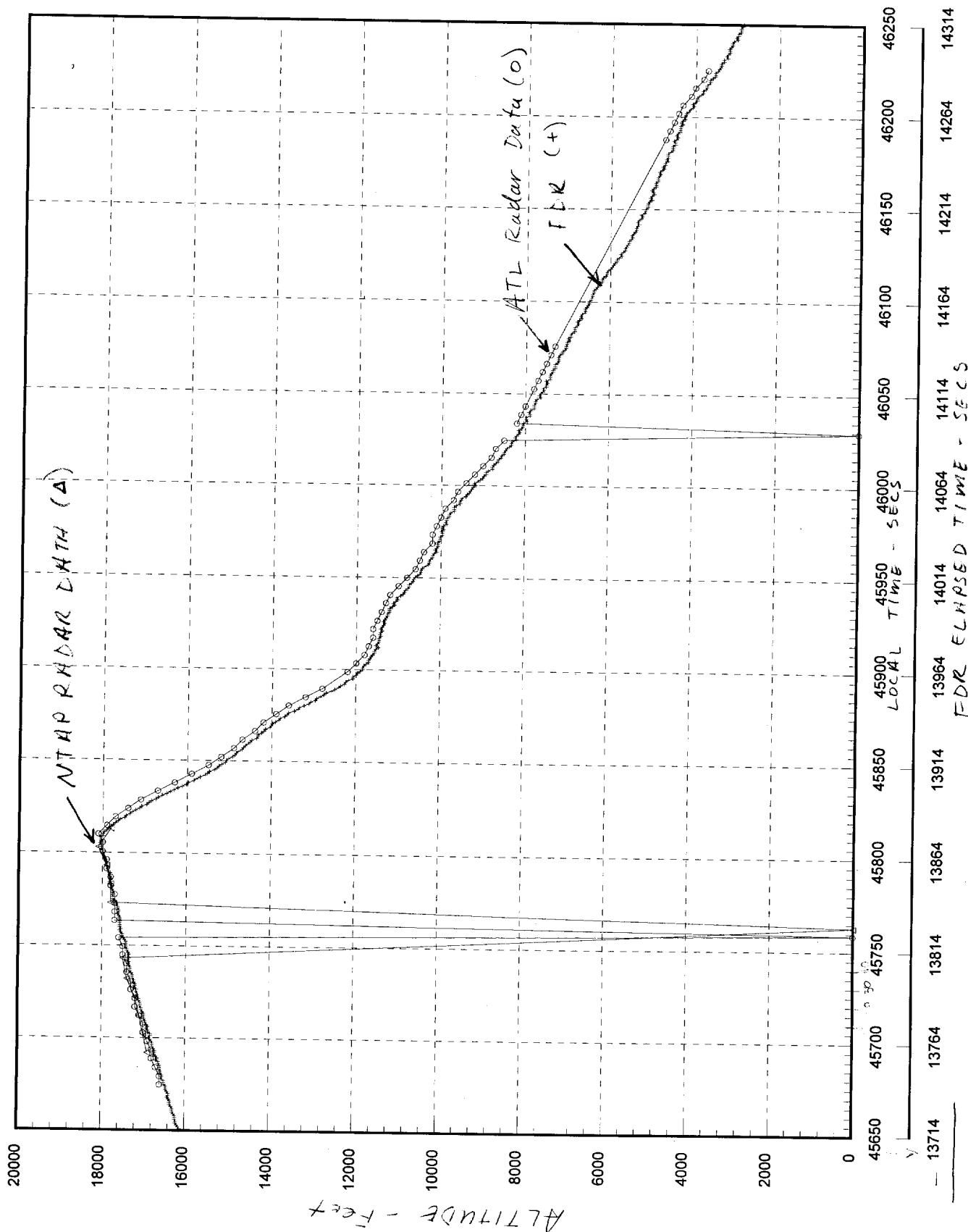
FDR mic key



Flight Recorder DFR F800 S/N  
DCA-95-M-A-054

TIME (EDT)

EMB120  
August 21, 1995  
Revised: October 12, 1995



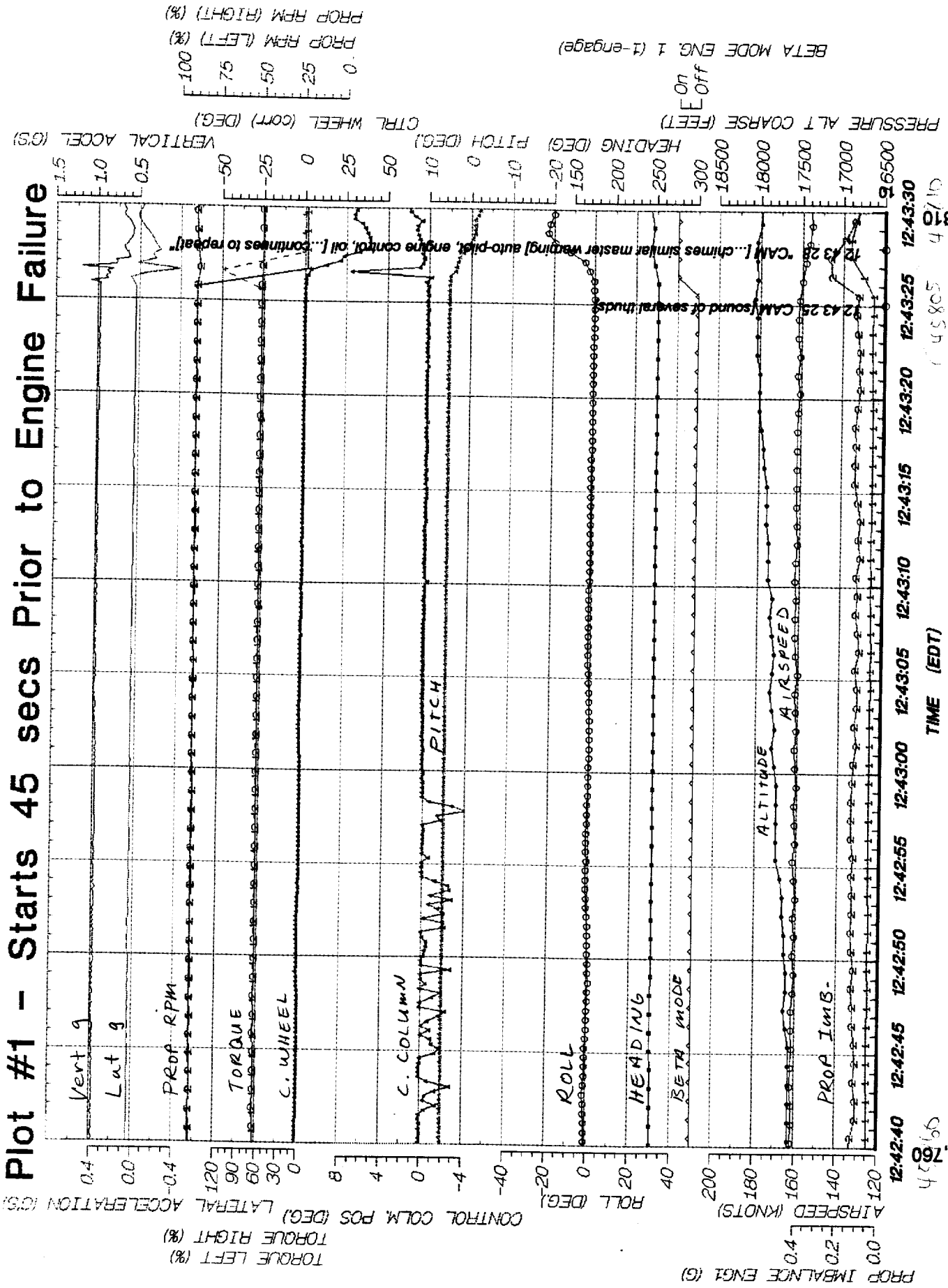
13714  
 -----  
 = 31936 SECS

R-3

## **LISTING OF ALL EMB-120 DFDR PARAMETERS**

| PARAMETER NAME                           | RANGE                  | RESOLUTION | SAMPLING INTERVAL (SECONDS) | WORD LOCATION               |
|--|------------------------|------------|-----------------------------|-----------------------------|
| 1. TIME                                  | 25 HOURS               | 1/768 SEC. | 1/768                       | 1                           |
| 2. PRESSURE ALTITUDE                     | -1000 - 40000 FT.      | 10 FT.     | 1                           | 23 (upper)<br>5 (lower)     |
| 3. AIRSPEED                              | 60 - 450 KNOTS         | 1 KNOT     | 1                           | 18                          |
| 4. VERTICAL ACCELERATION                 | -3 - +6 "G"            | 0.0023 "G" | 1/8                         | 4,12,20,28,36,44,<br>52, 60 |
| 5. LATERAL ACCELERATION                  | -1 - +1 "G"            | 0.0005 "G" | 1/4                         | 8, 24, 40, 56               |
| 6. LONGITUDINAL ACCELERATION             | -1 - +1 "G"            | 0.0005 "G" | 1/2                         | 21, 53                      |
| 7. MAGNETIC HEADING                      | 0° - 360°              | 0.356°     | 1                           | 7                           |
| 8. PITCH ATTITUDE                        | ±75°                   | .087       | 1/4                         | 10, 26, 42, 58              |
| 9. ROLL ATTITUDE                         | ±180°                  | .087       | 1/2                         | 17, 49                      |
| 10. PITCH TRIM                           | -9° - +50°             | .0022      | 1/2                         | 14, 46                      |
| 11. CONTROL COLUMN POSITION              | 8° (FWD),12° (AFT)     | .0058      | 1/4                         | 6, 23, 38, 54               |
| 12. CONTROL WHEEL POSITION               | 52° (LEFT) 52° (RIGHT) | .0549      | 1/4                         | 11, 27, 43, 59              |
| 13. RUDDER PEDAL POSITION                | 16° (LEFT)16° (RIGHT)  | .0078      | 1/4                         | 13, 29, 45, 61              |
| 14. FLAP POSITION                        | 0° - 45°               | .0186      | 1/4                         | 9, 25, 49, 57               |
| 15. STATIC AIR TEMP.                     | -99° - +50° C          | .1576      | 1                           | 37                          |
| 16. FUEL FLOW (LEFT & RIGHT)             | 0 - 1200 (PPH)         | .2930      | 1                           | 50 (lt.), 51 (rt.)          |
| 17. NH (LEFT & RIGHT)                    | 0 - 120%               | .0359      | 1                           | 15 (lt.), 16 (rt.)          |
| 18. NL (LEFT & RIGHT)                    | 0 - 120%               | .0369      | 1                           | 31 (lt.), 32 (rt.)          |
| 19. PROP IMBAL.(LEFT & RIGHT)            | 0. - 1.11 "G"          | .0002      | 1                           | 33 (lt.), 34 (rt.)          |
| 20. PROP RPM (LEFT & RIGHT)              | 25. - 120%             | .1         | 1                           | 47 (lt.), 48 (rt.)          |
| 21. T6 TEMP (LEFT & RIGHT)               | 0 - 1200° C            | .2930      | 1                           | 19 (lt.), 35 (rt.)          |
| 22. ENG. TORQUE (LEFT & RIGHT)           | 0 - 150%               | .0366      | 1                           | 39 (lt.), 55 (rt.)          |
| <b>DISCRETE PARAMETERS</b>               |                        |            |                             |                             |
| 23. AIR/GROUND SWITCH                    | 1 = AIR                | N/A        | 1                           | 30 (bit 7)                  |
| 24. BETA MODE (LEFT & RIGHT)             | 1 = ENGAGED            | N/A        | 1                           | 30 (bit 5 & 6)              |
| 25. BLEED AIR (LEFT & RIGHT)             | 1 = CLOSED             | N/A        | 1                           | 30 (bit11 & 12)             |
| 26. CONDITION LEVER POSITION (Lt. & Rt.) | 1 = ON                 | N/A        | 1                           | 30 (bit 8 & 9)              |
| 27. EVENT MARKER                         | 1 = ON                 | N/A        | 1                           | 30 (bit 10)                 |
| 28. PRESS TO TALK (Ch. 1 THRU 4)         | 1 = TALK               | N/A        | 1                           | 30 (bit 1-4)                |

# Plot #1 - Starts 45 secs Prior to Engine Failure



45,760  
 45,810  
 45,870

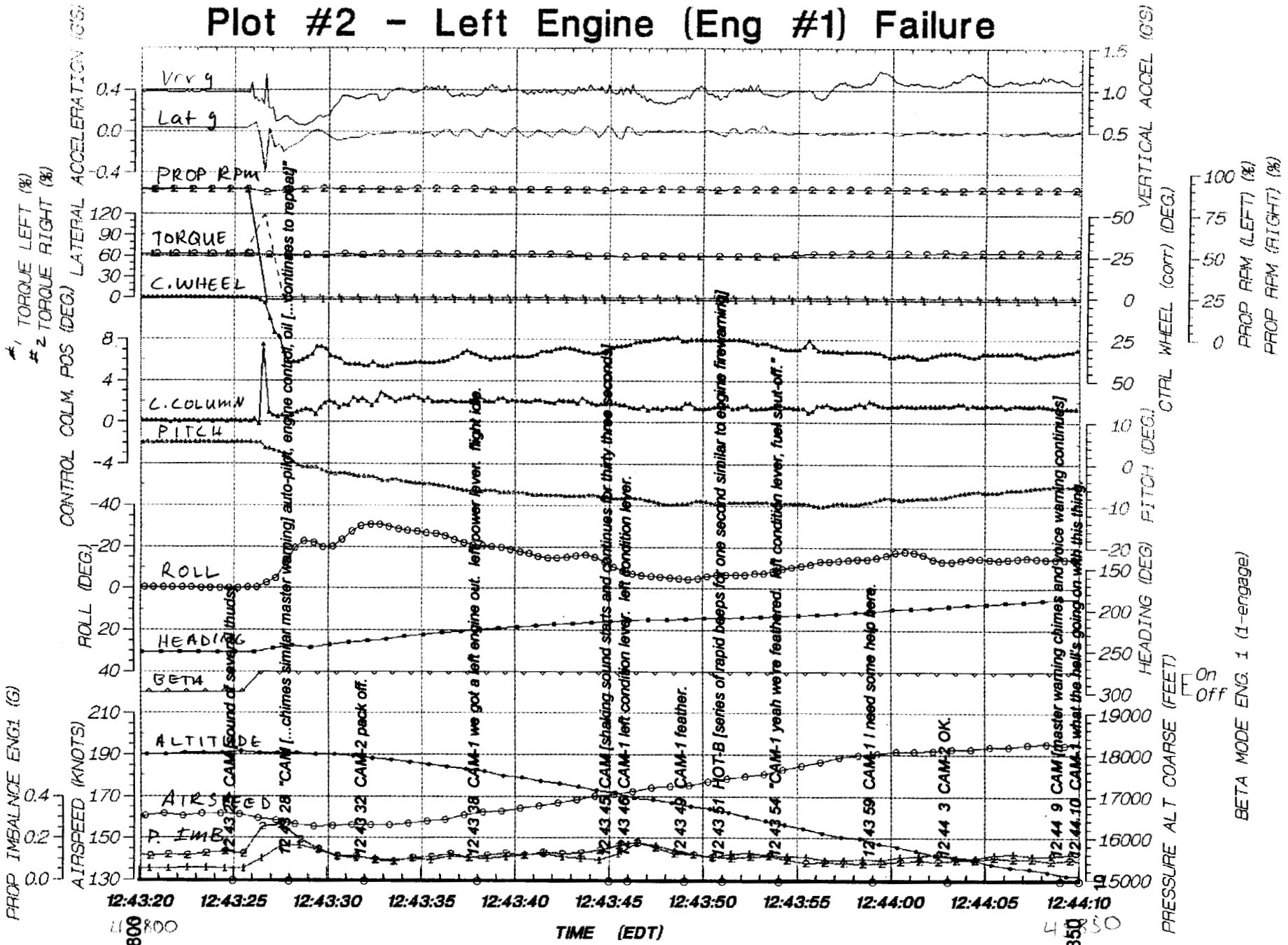
TIME (EDT)

EMB120  
 August 21, 1995  
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5-11

# Plot #2 - Left Engine (Eng #1) Failure



9-11

EMB120

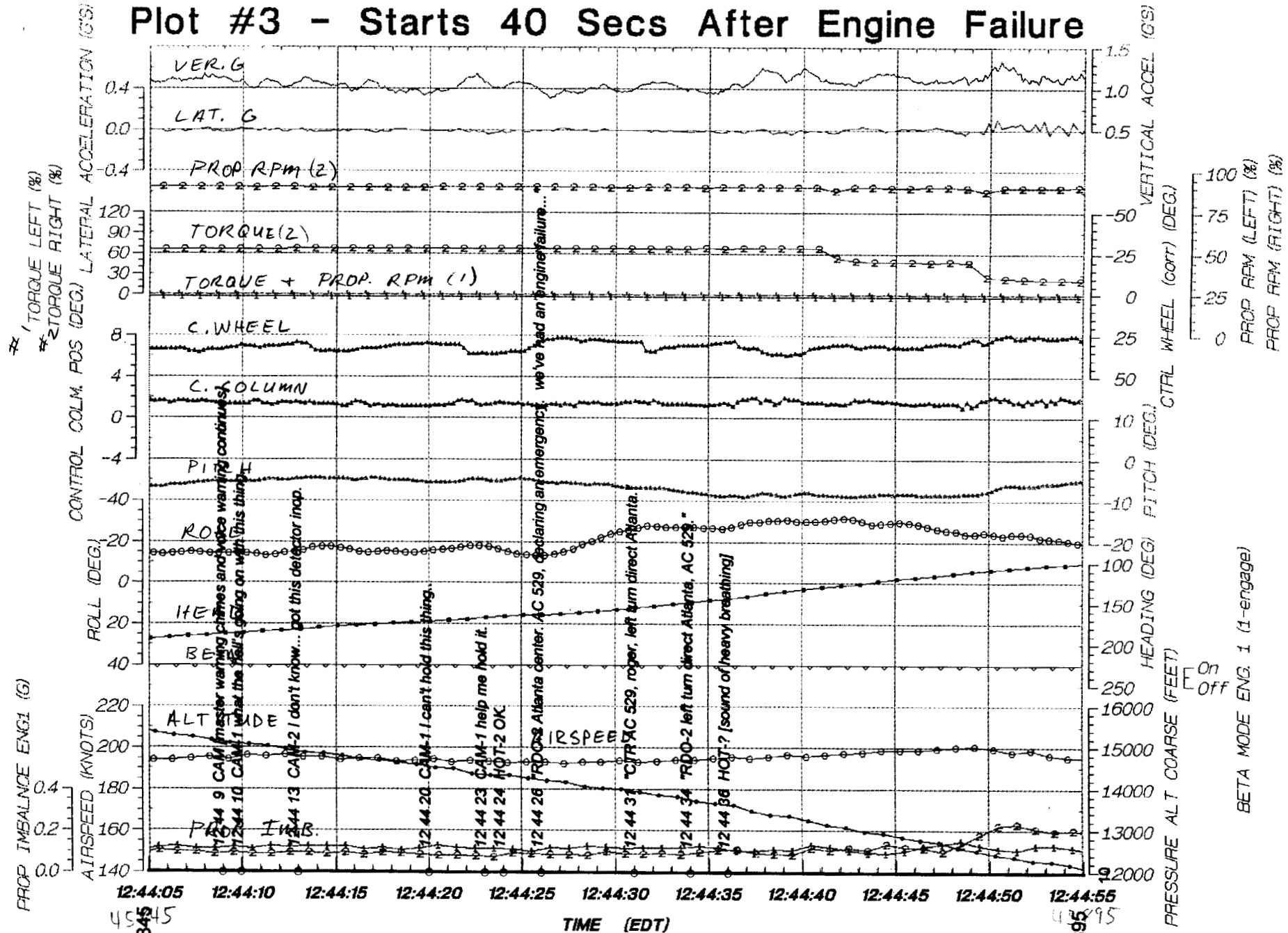
August 21, 1995  
 Revised: November 07, 1995

Flight Recorder DFR F800 S/N  
 DCA-95-M-A-054

45,800

45,850

# Plot #3 - Starts 40 Secs After Engine Failure



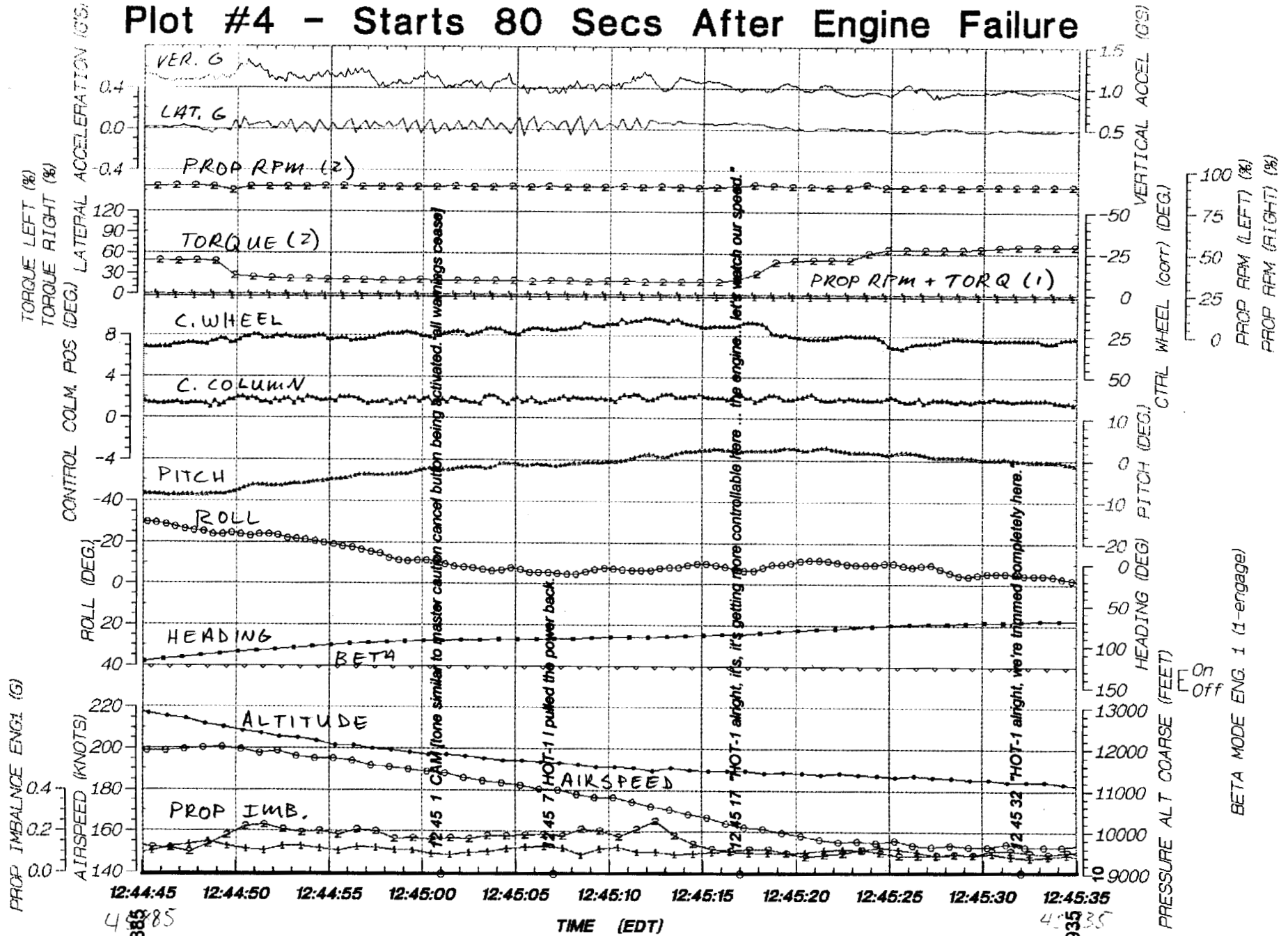
L-11

EMB120  
 August 21, 1995  
 Revised: November 07, 1995

Flight Recorder DFR F800 S/N  
 DCA-95-M-A-054



# Plot #4 - Starts 80 Secs After Engine Failure



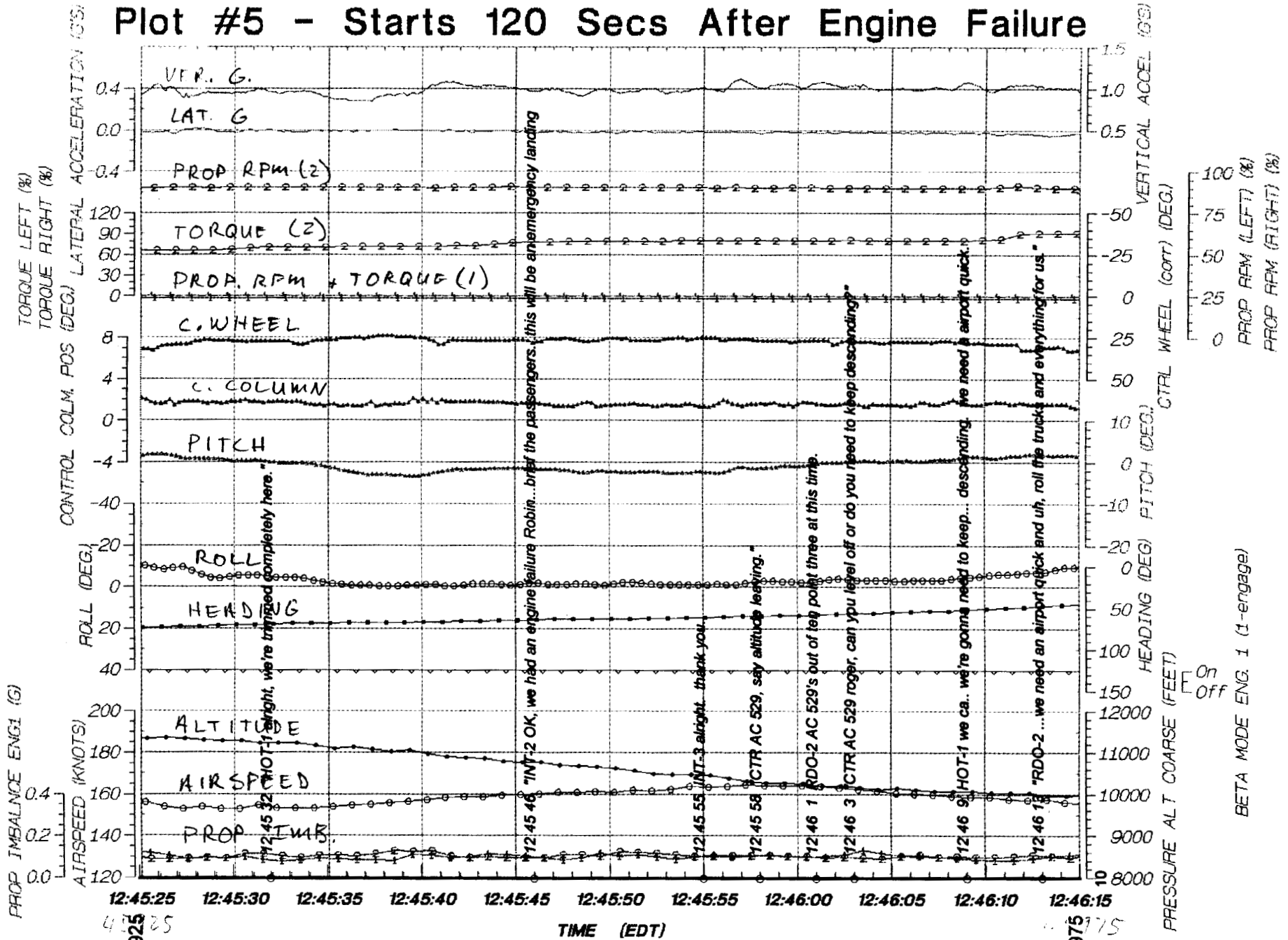
EMB120

August 21, 1995

Revised: November 07, 1995

Flight Recorder DFR F800 S/N  
 DCA-95-M-A-054

# Plot #5 - Starts 120 Secs After Engine Failure



EMB120

August 21, 1995  
 Revised: November 07, 1995

Flight Recorder DFM F800 S/N  
 DCA-95-M-A-054

6-11

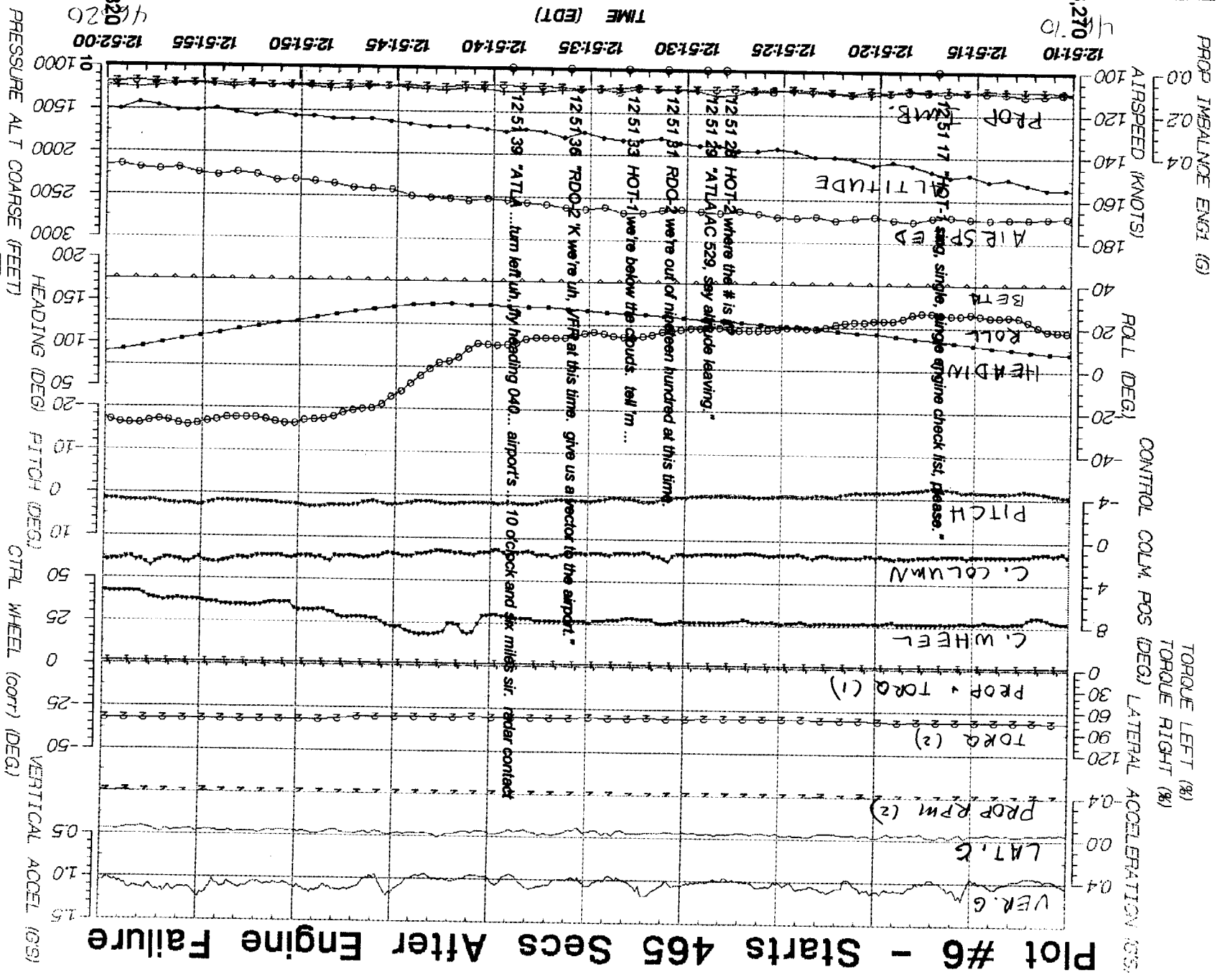
Revised: November 09, 1995

August 21, 1995

Flight Recorder DFH F800 S/N DCA-95-M-A-054

EMB120 46,270  
46,320  
46,320

TIME (EDT)  
12:51:10 12:51:15 12:51:20 12:51:25 12:51:30 12:51:35 12:51:40 12:51:45 12:51:50 12:51:55 12:52:00



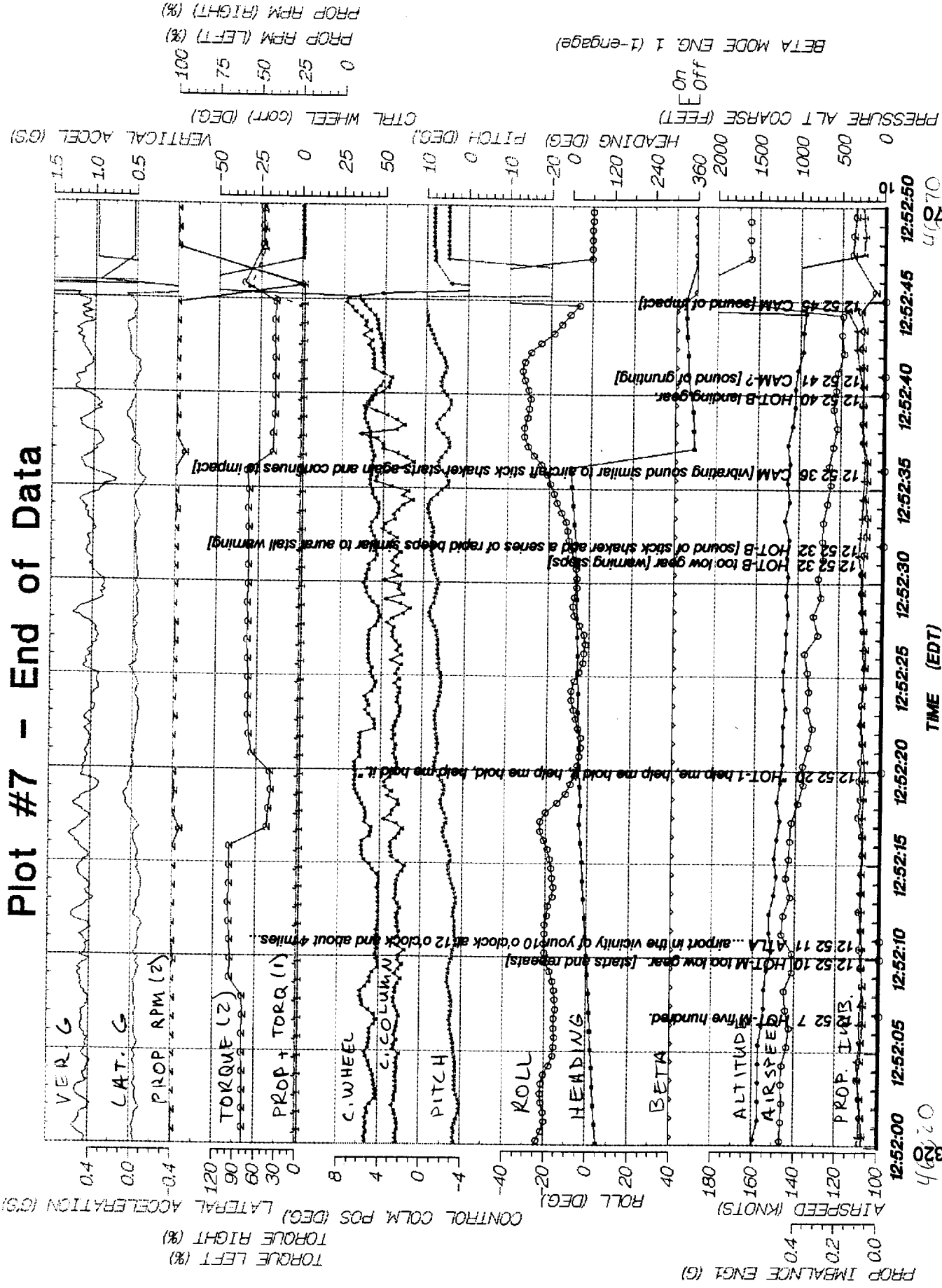
Plot #6 - Starts 465 Secs After Engine Failure

BETA MODE ENG. 1 (4-engage)

PROP RPM (LEFT) (%)  
PROP RPM (RIGHT) (%)

On  
Off

# Plot #7 - End of Data

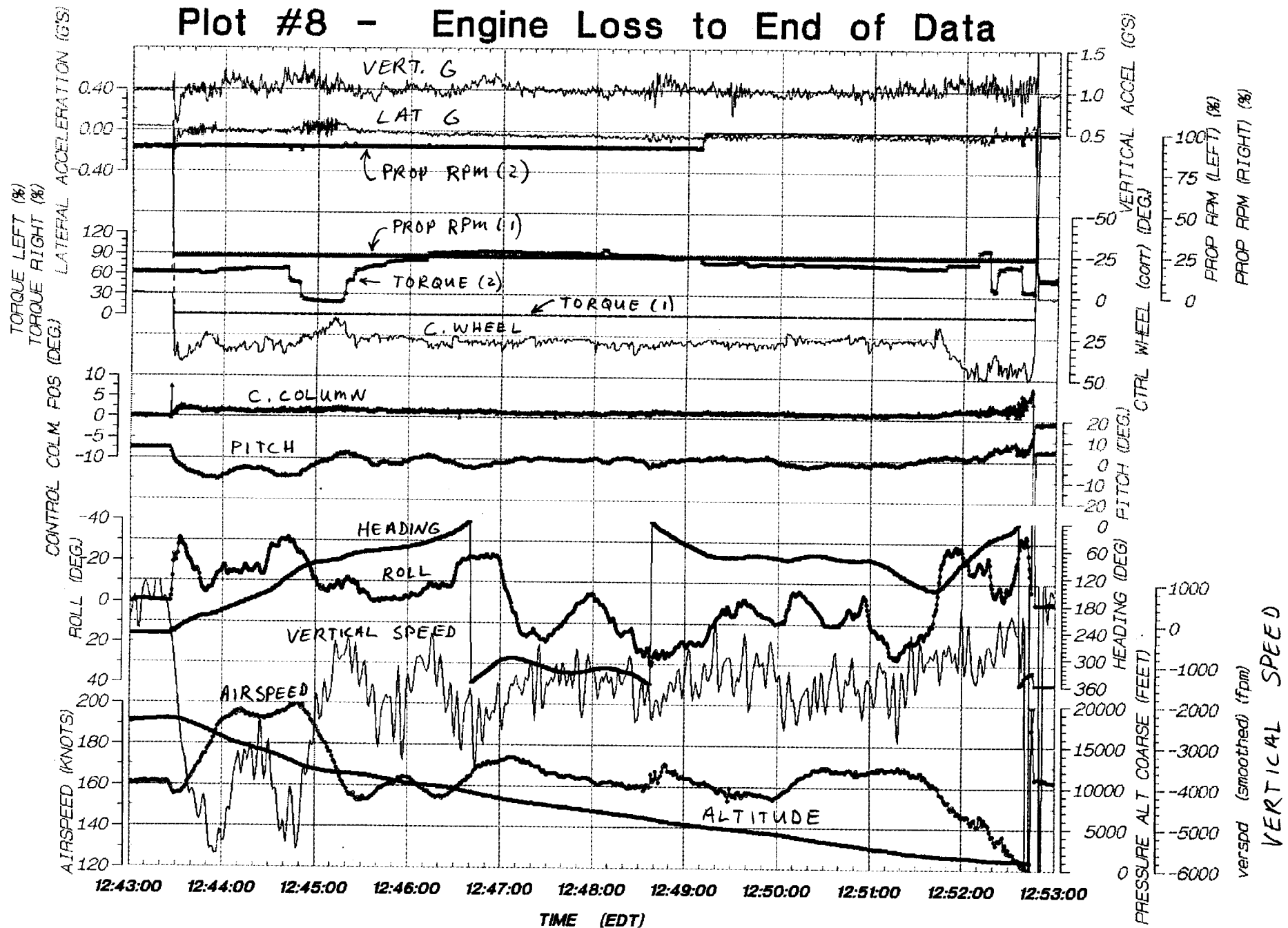


EMB120  
 August 21, 1995  
 Revised: November 07, 1995

Flight Recorder DFR F800 S/N  
 DCA-95-M-A-054

46,370  
 40,000  
 50,000

# Plot #8 - Engine Loss to End of Data



III-12

EMB120  
 August 21, 1995  
 Revised: December 12, 1995

Flight Recorder DFR F800 S/N  
 DCA-95-M-A-054