

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, D.C. 20594

November 21, 2016

Flight Data Recorder – Addendum 1

Specialist's Factual Report
By Bill Tuccio, Ph.D.

1. EVENT SUMMARY

Location: Wood, South Dakota
Date: August 11, 2016
Aircraft: Airbus A320-232
Registration: N632JB
Operator: JetBlue Airways, Flight Number 429
NTSB Number: DCA16IA215

On August 11, 2016, about 2009 central daylight time, an Airbus A320-232, N632JB, registered to and operated by JetBlue Airways Corporation, as flight 429, a Title 14 *Code of Federal Regulations* (CFR) Part 121 domestic passenger flight from Boston, Massachusetts, to Sacramento, California, encountered turbulence while maneuvering in cruise flight at FL320, to avoid convective weather. The crew declared an emergency and the flight diverted to and landed in Rapid City, South Dakota. The airplane received minor damage. The airline transport-rated pilot, first officer, and 122 passengers were not injured. Three flight attendants and 24 passengers received minor injuries.

2. PURPOSE OF ADDENDUM

This Addendum 1 to the Flight Data Recorder Specialist's Report adds parameters related to the speed brake lever and spoilers.

2.1. FDR Plots and Corresponding Tabular Data

Figures in this report contain FDR data recorded during the event on August 11, 2016. All the parameters listed in table A-1 are plotted.

Figures 1 and 2 show spoiler-related parameters for the entire flight and an expanded scale starting just before the upset, respectively. The speed brake lever position did not change during the upset, but was actuated about 10 minutes after the upset during the descent.

The corresponding tabular data used to create these figures are provided in electronic comma separated value (*.csv) format as attachment 1 to this addendum.

Figure 1. Spoiler-related parameters for the entire flight.

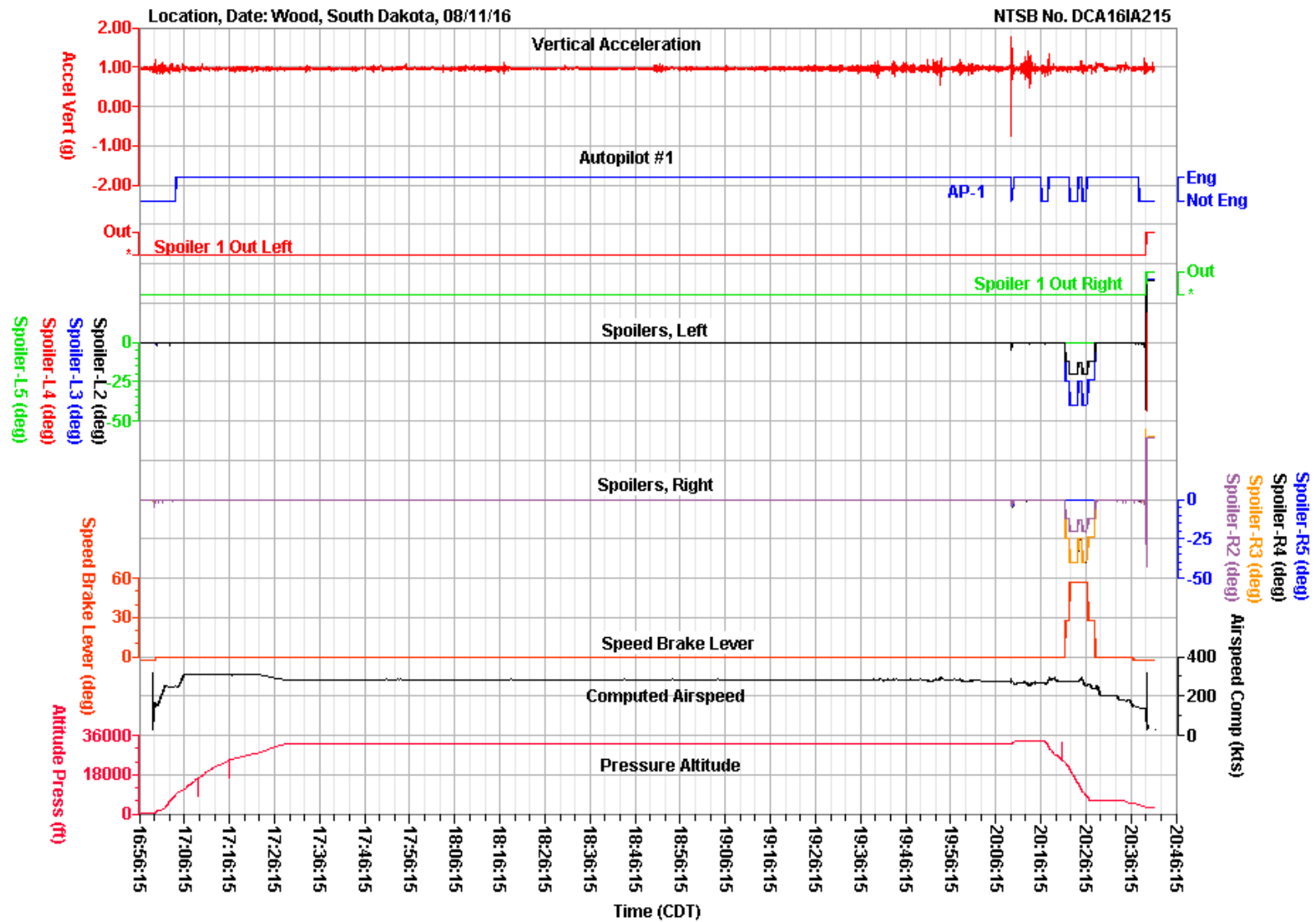
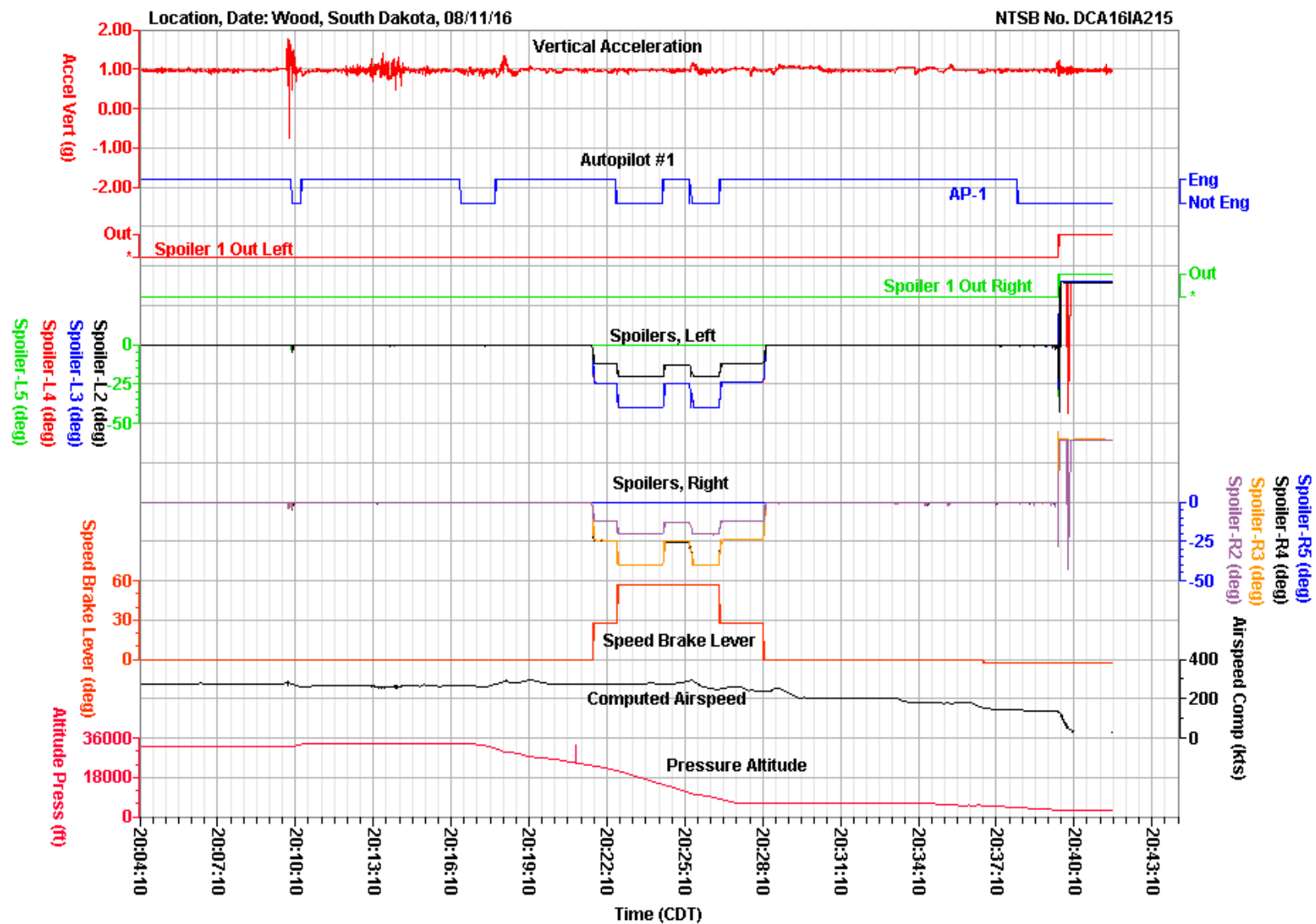


Figure 2. Spoiler-related parameters from just before the upset until the end of the accident flight.



APPENDIX A

This appendix describes the parameters provided and verified in this addendum. Table A-1 lists the parameter names, and descriptions. Additionally, table A-2 describes the unit abbreviations used in this report.

Table A-1. Verified and provided FDR parameters.

Parameter Name	Parameter Description
1. Accel Vert (g)	Vertical Acceleration
2. Airspeed Comp (kts)	Computed Airspeed
3. Altitude Press (ft)	Pressure Altitude
4. AP-1 (discrete)	Autopilot 1 Status
5. Speed Brake Lever (deg)	Speed Brake Lever
6. Spoiler 1 Out Left (discrete)	Spoiler Left 1 Out
7. Spoiler 1 Out Right (discrete)	Spoiler Right 1 Out
8. Spoiler-L# (deg)	Spoiler Left #
9. Spoiler-R# (deg)	Spoiler Right #

NOTE: # is a digit from 2 to 5

NOTE: This FDR records pressure altitude, which is based on a standard altimeter setting of 29.92 inches of mercury (in Hg). The pressure altitude information presented in the FDR plots and in the electronic data has not been corrected for the local altimeter setting at the time of the event.

Table A-2. Unit abbreviations.

Unit Abbreviations	Descriptions
deg	degrees
ft	feet
g	g
kts	knots

NOTE: For parameters with a unit description of discrete, a discrete is typically a 1-bit parameter that is either a 0 state or a 1 state where each state is uniquely defined for each parameter.