



Figure 1. --AVA052 flight reconstruction based on CVR, ATC radar data, and ATC communications.

Time (H,M,S)**Selected Dialogue**

- 1) 20,43,59 AVA052 - Thank you sir you have any estimates for us
- 2) 20,44,09 R67 - Avianca 052 heavy we just got off the line its indefinite hold at this time . . . hold at CAMRN .
- 3) 20,44,23 AVA052 - OK Avianca 052 heavy . . .
- 4) 20,44,43 R67 - Avianca 052 heavy expect further clearance time . . .
- 5) 20,44,50 AVA052 - Zero five two well I think we need priority we're passing (unintelligible)
- 6) 20,44,58 R67 - Avianca 052 heavy Roger how long can you hold and what is your alternate
- 7) 20,45,03 AVA052 - OK stand by on that
- 8) 20,46,03 AVA052 - Yes sir we'll be able to hold about five minutes thats all we can do
- 9) 20,46,08 R67 - Avianca 052 heavy Roger what is your alternate
- 10) 20,46,24 Note - Now the handoff controller stops monitoring the frequency in order to phone approach control and get a clearance for AVA052
- 11) 20,46,24 AVA052 - It is Boston but we can't do it now we we will run out of fuel now.
- 12) 20,46,47 R67 - Avianca 052 heavy cleared to the Kennedy Airport via . . .
- 13) 20,46,57 AVA052 - Cleared to the Kennedy . . . Thank you
- 14) 20,47,04 R67 - Avianca 052 heavy contact New York approach . . .
- 14.1) 20,54,40 CAMRN - Avianca 052 turn right . . . I'm gonna have to spin you sir
- 14.2) 20,54,45 RD02 - Okay heading two two zero Avianca zero five two
- 15) 21,03,46 CAM 3- When we have - with with thousand pounds or less in any tank it is necessary to do --
- 16) 21,03,56 CAM3 - Then the go-around procedure is stating that the power be applied slowly and to avoid rapid accelerations and to have a minimum of nose-up attitude
- 17) 21,09,29 CAM3 - They already know that we are in bad condition
- 18) 21,09,38 CAM2 - They are giving us priority
- 19) 21,11,07 APPR - Avianca 052 heavy you are one five miles from outer marker maintain two thousand . . . cleared ILS 22 left
- 20,21,15,08 APPR - Avianca 052 heavy contact Kennedy tower . . .
- 21,21,15,23 TWR - Avianca 052 heavy Kennedy tower two two left you're number three following seven two seven traffic . . .
- 22) 21,19,58 TWR - Avianca 052 . . . cleared to land
- 23) 21,21,59 CAM2 - Slightly below glide slope
- 24) 21,22,44 CAM2 - Below glide slope
- 25) 21,22,52 CAM2 - Glide slope
- 26) 21,22,57 CAM2 - This is the wind shear
- 27) 21,23,08 CAM3 - Glide slope
- 28) 21,23,08 GPWS - Whoop whoop pull up
- 29) 21,23,09 CAM2 - Sink rate
- 30) 21,23,10 CAM2 - Five hundred feet
- 31) 21,23,11 GPWS - Whoop whoop pull up (repeated 3 times)
- 32) 21,23,13 CAM1 - Lights
- 33) 21,23,14 GPWS - Whoop whoop pull up (repeated 4 times)
- 34) 21,23,20 CAM1 - Where is the runway
- 35) 21,23,21 GPWS - Whoop whoop pull up (repeated 3 times)
- 36) 21,23,23., CAM1 - The runway where is it
- 37) 21,23,25., GPWS - Glide slope (repeated 2 times)
- 38) 21,23,27 CAM2 - I don't see it I don't see it
- 39) 21,23,28 CAM1 - Give me the landing gear up . . . ,
- 40) 21,23,29 GPWS - Glide slope (repeated 2 times)
- 41) 21,23,33 CAM1 - Request another traffic pattern
- 42) 21,23,34 RD02 - Executing a missed approach . . .

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Time (H,M,S)	Selected Dialogue
43) 21,23,37	CAM3 - Smooth with the nose . . .
44) 21,23,39	TWR - Avianca 052 heavy Roger climb and maintain two thousand turn left heading one eight zero
45) 21,23,43	CAM1 - We don't have fuel -
46) 21,24,06	CAM1 - Tell them we are in emergency
47) 21,24,08	RD02 - That's right to one eight zero on the heading and we'll try once again we're running out of fuel
48) 21,24,15	TWR - Okay
49) 21,24,15	Note - Avianca 052's engines began flaming out from fuel starvation less than 9 minutes after this point.
50) 21,24,17	CAM1 - What did he say
51) 21,24,22	CAM1 - Advise him we are emergency
52) 21,24,26	CAM1 - Did you tell him
53) 21,24,28	CAM2 - Yes sir I already advised him
54) 21,24,39	TWR - Avianca 052 heavy contact approach on . . .
55) 21,24,55	RD02 - Approach Avianca 025 heavy we just missed a missed approach and we're maintaining two thousand . . .
56) 21,25,03	APPR - Avianca 052 heavy. . . Climb and maintain three thousand
57) 21,25,08	CAM1 - Advise him we don't have fuel
58) 21,25,10	RD02 - . . . Maintain three thousand and we're running out of fuel sir
59) 21,25,12	APPR - Okay fly heading zero eight zero
60) 21,25,15	RD02 - Flying heading zero eight zero climb to three thousand
61) 21,25,28	CAM1 - Did you already advise that we don't have fuel
62) 21,25,29	CAM2 - Yes sir I already advise him . . .
63) 21,25,29	CAM1 -OKAY
64) 21,26,35	APPR - And Avianca 052 heavy I'm gonna bring you about fifteen miles north east and then turn you back onto the approach is that fine with you and your fuel
65) 21,26,43	RD02 - I guess so thank you very much
66) 21,26,46	CAM1 - What did he say
67) 21,26,47	CAM2 - He said that 15 miles in order to get back to the localizer
68) 21,29,11	RD02 - Can you give us a final now Avianca 052 heavy
89) 21,29,20	APPR - Avianca 052 affirmative sir turn left heading . . .
70) 21,30,32	APPR - Avianca 052 climb and maintain three thousand
71) 21,30,36	RD02 - Negative sir we just running out of fuel we okay three thousand now okay
72) 21,30,44	APPR - Okay turn left heading three one zero sir
73) 21,32,39	CAM3 - Flame out flame out on engine number four
74) 21,32,43	CAM3 - Flame out engine number three essential on number two
75) 21,32,49	CAM1 - Show me the runway
76) 21,32,49	RD02 - Avianca 052 we just lost two engines and we need priority please
77) 21,32,54	APPR - Avianca 052 turn left heading two five zero . . .
78) 21,33,04	APPR - Avianca 052 heavy you're one five miles from outer marker maintain two thousand until established on the localizer cleared for ILS two two left
79) 21,33,12	RDO - Roger Avianca
80) 21,33,24	**** End of flight 052 CVR and tower communications ****