

Southwest Airlines Accident DEC15 KBNA - Weather

Eick Donald

Sent: Thursday, December 17, 2015 11:11 AM**To:** English Bill; Lawrence David; Bartlett Daniel; Frantz Marvin; Misencik Paul**Weather Conditions over Nashville, Tennessee on December 15, 2015**

Weather Observations – Nashville International Airport (KBNA), Nashville, Tennessee, had an elevation of 599 feet, a magnetic variation of 3 W, and had an Automated Surface Observation System installed and was augmented by human observer. The following conditions were reported at the approximate time of the accident:

Nashville International Airport weather observation at 1653 CST, wind from 180° at 3 knots, visibility unrestricted at 10 statute miles, sky conditions clear below 12,000 feet, temperature 17° Celsius (C), dew point temperature 7° C, altimeter 29.89 inches of mercury. Remarks; automated observation system, sea level pressure 1012.1-hectopascals, temperature 16.7° C, dew point 7.2° C.

Nashville International Airport weather observation at 1753 CST, wind calm, visibility unrestricted at 10 statute miles, sky conditions clear below 12,000 feet, temperature 14° C, dew point temperature 7° C, altimeter 29.89 inches of mercury. Remarks; automated observation system, sea level pressure 1012.2-hectopascals, , temperature 14.4° C, dew point 6.7° C.

The raw observations surrounding the accident disseminated were as follows:

*METAR KBNA 152153Z 21004KT 10SM CLR 18/07 A2989 RMK AO2 SLP120 T01830067=**METAR KBNA 152253Z 18003KT 10SM CLR 17/07 A2989 RMK AO2 SLP121 T01670072=**Accident 2321Z**METAR KBNA 152353Z 00000KT 10SM CLR 14/07 A2989 RMK AO2 SLP122 T01440067 10200 20144 50002=**METAR KBNA 160053Z 00000KT 10SM CLR 13/07 A2990 RMK AO2 SLP124 T01330072=*

A review of the previous days weather condition indicated that between 0154-0712 CST on December 14, 2015 rain was reported with approximately 0.19" of precipitation recorded. No precipitation was recorded in the past 24-hours of the accident as clear and dry conditions prevailed.

NWS Forecast - Terminal Aerodrome Forecast (TAF) current for KBNA at the time of the accident was as follows:

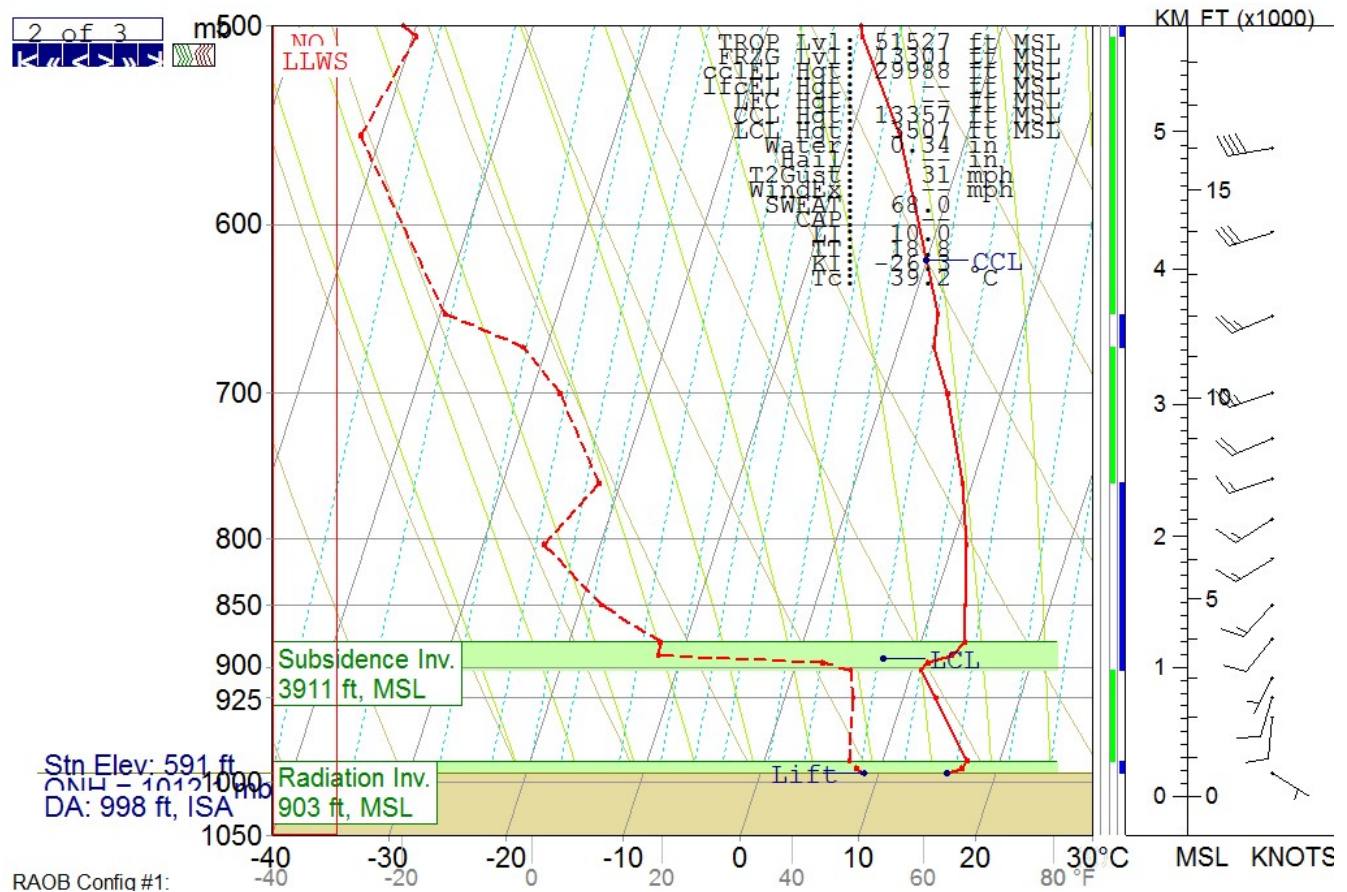
*TAF KBNA 151740Z 1518/1618 17004KT P6SM FEW050**FM152200 00000KT P6SM SKC**FM161400 18007KT P6SM SCT250=*

Astronomical Conditions – Data from the United States Naval Observatory website for Nashville, Davidson County, Tennessee indicated the following for December 15, 2015:

Beginning civil twilight	0622 CST
Sunrise	0651 CST
Moonrise	0958 CST
Sunset	1634 CST
End of civil twilight	1702 CST
Accident	1721 CST
Moonset	2106 CST

At 1720 CST the sun was -9° below the horizon at an azimuth of 248°, and the moon was at 35° above the horizon at an azimuth of 213°, with the phase being a waxing crescent with 22% of moons visible disk illuminated. Official night time conditions existed at the time of the accident.

Sounding – The 1800 CST (0000Z on Dec. 16, 2015) KBNA sounding was examined for any potential signs of any strong low-level winds or low-level wind shear. None were identified over the area at the time. Normal nocturnal temperature inversion was developing at the surface as well as one identified aloft at 3,900 feet associated with subsidence, which resulted in winds less than 10 knots below 3,500 feet.



I have requested the NWS 5-minute data between the observations to provide a better wind estimate, but conditions under 10 knots were likely occurring over the period with no significant weather present. Will advise when available.

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