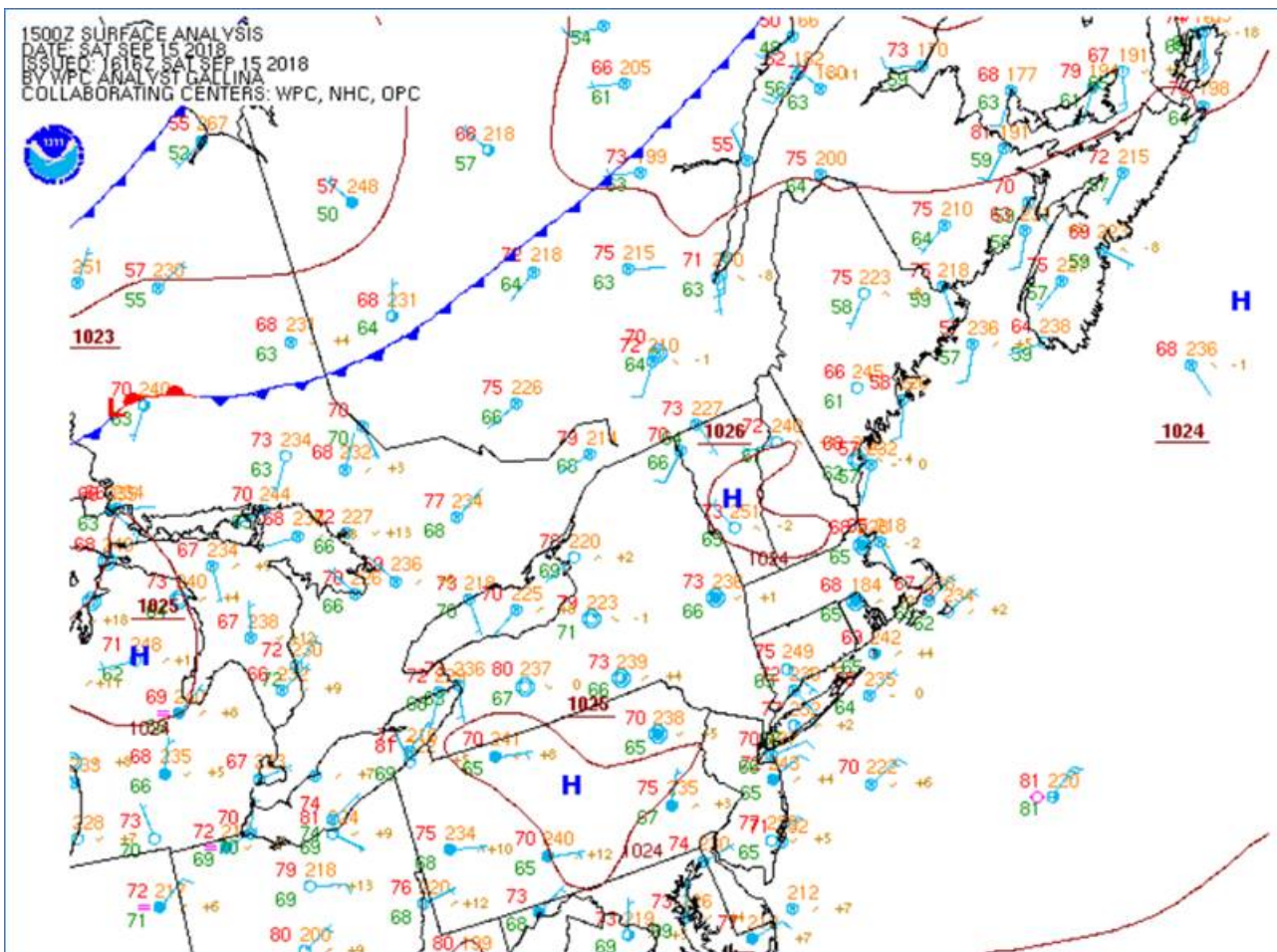


Hicks Ralph

From: Eick Donald
Sent: Saturday, September 15, 2018 8:10 PM
To: Hicks Ralph; Helson David; Olvis Charles
Subject: Cessna 400, N2536T accident - Weather

Weather Conditions in the Bedford, MA area on September 15, 2018

Synoptic conditions – The NWS Surface Analysis Chart for 1500Z (1100 EDT) depicted high pressure systems over Vermont and New Hampshire to the north at 1026-hectopascals (hPa), with another high over Pennsylvania at 1026-hPa. No frontal systems or other boundaries were depicted over the area. The closest station depicted calm wind, overcast clouds, temperature 68° Fahrenheit (F) and dew point 65° F.



Observations – Laurence G. Hanscom Field (KBED), Bedford, Massachusetts, at an elevation of 132 ft, and a magnetic variation of 16° W, had a federal installed and maintained Automated Surface Observation System (ASOS) and was augmented during the period.

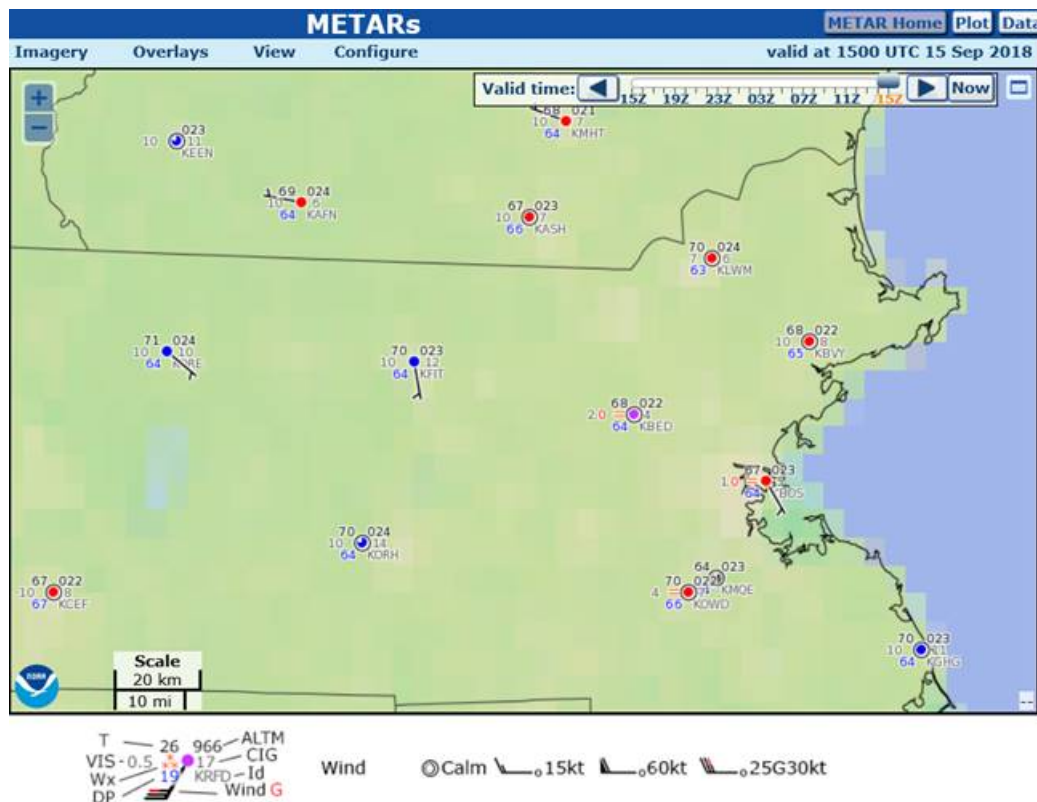
KBED weather observation at 1056 EDT, wind calm, visibility 2 miles in mist, ceiling overcast at 400 ft agl, temperature 20° Celsius (C), dew point temperature 18° C, altimeter 30.22 inches of mercury (Hg). Remarks: automated observation system, sea level pressure 1024.3-hPa, temperature 20.0° C, dew point 17.8° C, 3-hour pressure tendency increased 0.01-hPa.

KBED special observation at 1108 EDT, wind calm, visibility 2 miles in mist, ceiling overcast at 600 ft agl, temperature 19° C, dew point 18° C, altimeter 30.21 inches of Hg. Remarks: automated weather reporting system, temperature 19.4° C, dew point 17.8° C.

The raw observations and general flight categories were as follows:

LIFR SPECI KBED 151203Z 09003KT 3/4SM R11/3000V3500FT BR OVC003 18/17 A3021 RMK AO2 T01780172=
LIFR SPECI KBED 151212Z 08003KT 1SM R11/3000V4500FT BR OVC002 18/17 A3021 RMK AO2 T01830172=
LIFR SPECI KBED 151226Z 00000KT 2 1/2SM R11/6000VP6000FT BR OVC002 18/18 A3021 RMK AO2 T01830178=
LIFR SPECI KBED 151236Z 00000KT 4SM R11/6000VP6000FT BR OVC003 18/18 A3020 RMK AO2 T01830178=
LIFR METAR KBED 151256Z 00000KT 1SM R11/P6000FT BR OVC003 18/18 A3021 RMK AO2 SLP242 T01830178=
LIFR SPECI KBED 151303Z 00000KT 6SM BR OVC003 18/18 A3021 RMK AO2 T01830178=
LIFR SPECI KBED 151310Z 00000KT 1SM R11/P6000FT BR OVC003 18/18 A3021 RMK AO2 T01830178=
LIFR METAR KBED 151356Z 00000KT 1SM R11/P6000FT BR OVC004 19/18 A3022 RMK AO2 SLP244 T01940178=
LIFR METAR KBED 151456Z 00000KT 2SM BR OVC004 20/18 A3022 RMK AO2 SLP243 T02000178 50001=
Accident 1503Z
IFR SPECI KBED 151508Z 00000KT 2SM BR OVC006 19/18 A3021 RMK AO2 T01940178=
IFR SPECI KBED 151510Z 00000KT 2SM BR OVC006 20/18 A3022 RMK AO2 T02000178=
IFR METAR KBED 151556Z 00000KT 2SM BR OVC005 21/18 A3020 RMK AO2 SLP240 T02060178=
MVFR SPECI KBED 151613Z 00000KT 10SM BR OVC010 21/18 A3020 RMK AO2 CIG 007V012 T02060178=
IFR SPECI KBED 151652Z 33004KT 5SM BR OVC009 22/18 A3020 RMK AO2=
IFR METAR KBED 151656Z 33003KT 5SM BR OVC009 22/18 A3020 RMK AO2 SLP239 T02170178=
MVFR SPECI KBED 151703Z 00000KT 10SM BR OVC014 22/18 A3020 RMK AO2 T02170178=
MVFR SPECI KBED 151752Z 00000KT 10SM OVC014 23/18 A3020 RMK AO2=
MVFR METAR KBED 151756Z 00000KT 10SM OVC014 22/18 A3019 RMK AO2 SLP236 T02220178 10228 20178 58003=

The NWS Aviation Weather Center METAR display over the Bedford area at 1500Z is included below with the radar overlaid, which showed no echoes over the area. The METARs depicted an area of LIFR conditions over the area, with IFR conditions northwest, through north, and east of the airport, and MVFR conditions to the west and south of the accident site.



Terminal Aerodrome Forecast (TAF) current during the period from preflight to accident:

KBED 151303Z 1513/1612 00000KT 1SM BR OVC003
FM151400 00000KT P6SM BKN040
FM151800 15003KT P6SM SCT030
FM160600 00000KT 3SM BR SCT015
FM161100 00000KT 3SM BR SCT015=

Forecast expected LIFR conditions until 1000 EDT, with wind calm, visibility better than 6 miles, and ceiling broken at 4,000 ft agl at the estimated time of arrival.

An amended forecast was issued after the accident, to continue the LIFR conditions until 1200 EDT.

KBED 151508Z 1515/1612 00000KT 2SM BR OVC004
FM151600 00000KT P6SM BKN025
FM151800 00000KT P6SM SCT040
FM152100 13004KT P6SM FEW100
FM160500 00000KT 6SM BR FEW020
FM160800 00000KT 3/4SM BR BKN015
FM161100 00000KT 3SM BR SCT015=

Pilot Reports over the area 100 miles from KBED +/- 4 hours surrounding the period:

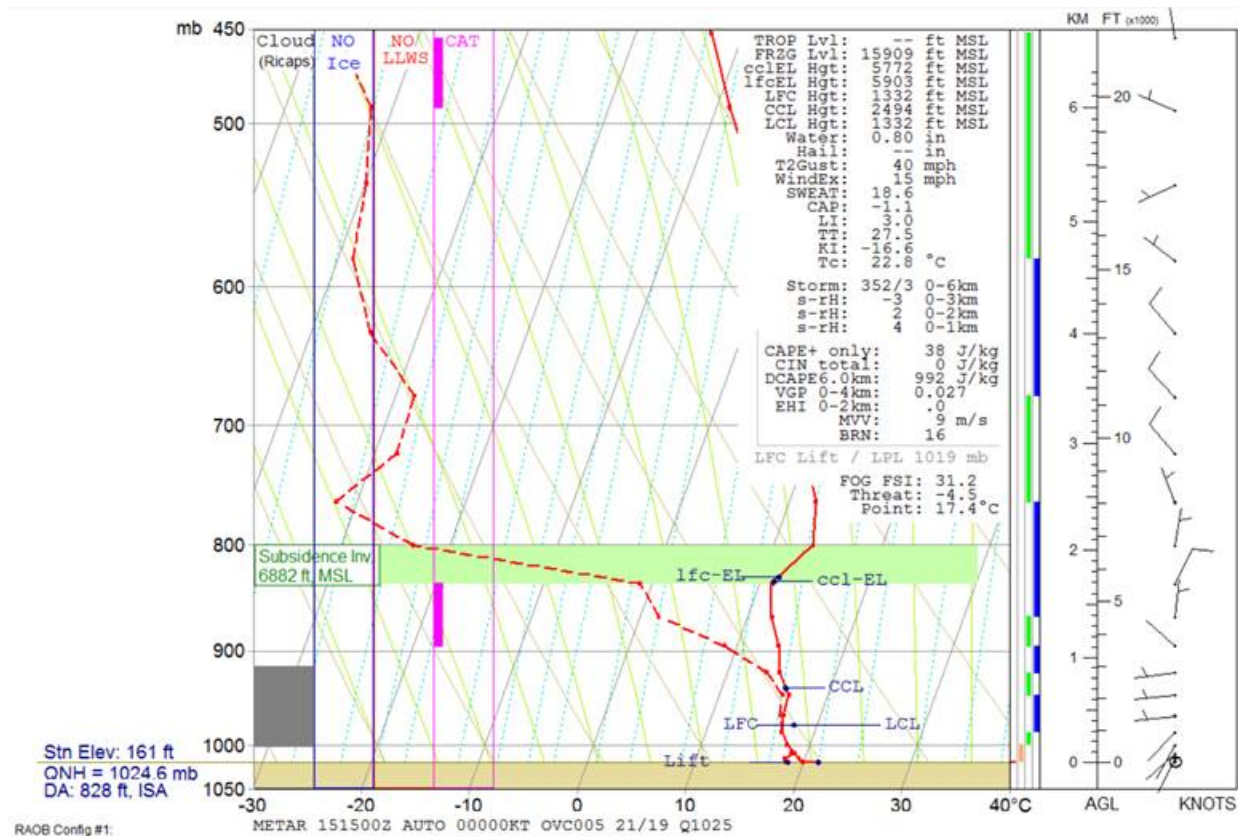
MHT UA /OV MHT/TM 1037/FL1500/TP B767/SK VV02/WX 1/4SM/RM TOPS 015
BOS UA /OV BOS/TM 1130/FL003/TP B739/SK OVC003
MHT UA /OV MHT/TM 1132/FL003/TP B737/SK OVC003/RM TOPS 017
MHT UA /OV MHT/TM 1142/FL002/TP C56X/SK OVC002/RM LANDING RWY 35
BOS UA /OV BOS/TM 1205/FL002/TP E190
OWD UA /OV OWD/TM 1245/FLDRGC/TP BE20/SK 005 OVC
OWD UA /OV OWD/TM 1245/FLDRGC/TP BE20/SK 005 OVC
OWD UA /OV OWD/TM 1333/FLDRGC/TP PC12/SK 004OVC
BOS UA /OV BOS/TM 1350/FL002/TP E190
BOS UA /OV BOS/TM 1404/FL003/TP C402
BED UA /OV BED/TM 1419/FL004/TP M20P/SK OVC004
MHT UA /OV MHT/TM 1434/FL005/TP B737/SK OVC005
LWM UA /OV LWM/TM 1435/FL020/TP C680/SK OVC007/RM TOPS 015 CLR ABV
BED UA /OV BED/TM 1435/FL004/TP SR22/SK OVC004
MHT UA /OV MHT/TM 1503/FL008/TP M20P/SK OVC008/RM TOPS 017

Accident

BOS UA /OV BOS/TM 1545/FL004/TP A320/SK OVC004
MHT UA /OV MHT/TM 1559/FL009/TP CRJ9/SK OVC009/RM TOPS 021
BED UA /OV BED/TM 1605/FL010/TP BE36/SK OVC010
MHT UA /OV MHT/TM 1613/FL050/TP A139/SK OVC-TOP020/RM SCT 15 NORTH MHT
MHT UA /OV MHT/TM 1614/FL010/TP M20P/SK OVC010/RM FINAL APCH RWY 6
BED UA /OV BED/TM 1630/FL009/TP PAY2/SK OVC009
LWM UA /OV 2 NE LWM/TM 1705/FL1200/TP C172/SK OVC012
BED UA /OV BED/TM 1707/FLDURD/TP LJ60/SK OVC014/RM DURD RY 11 BED
MHT UA /OV FINAL RWY 6/TM 1720/FL008/TP B737/SK OVC008
BOS UA /OV BOS/TM 1724/FL015/TP DH8/SK OVC
ASH UA /OV 4 NW ASH/TM 1725/FL022/TP C72R/RM TOPS 022 BASES 1300
BED UA /OV BED/TM 1749/FLDURD/TP SR22/SK 020OVC025-027/RM DURD RY11 BED

Sounding Observation – A High Resolution Rapid Refresh (HRRR) numerical model sounding for 1500Z was run over the KBED airport is included below. The sounding depicted a layer of clouds with bases at 500 ft agl with tops near 3,000 ft. A defined inversion was noted above the clouds at 6,880 ft due to subsidence. The freezing level was identified at

15,900 ft and dis indicate any icing conditions over the area. The wind profile light winds through 9,000 ft and variable in direction. No strong vertical wind shears were noted to indicate any potential turbulence or low-level wind shear.



Height (ft-MSL)	Pres (mb)	T (C)	Td (C)	RH (%)	DD / FF (deg / kts)	CAT (FAA)	LLWS	Icing - Type (AFGWC method)
161	1019	21.4	18.6	84	0 / 0			
189	1018	19.9	18.3	91	0 / 0			
273	1015	19.5	18.2	92	205 / 1			
441	1009	18.9	18.6	98	225 / 1			
722	999	17.9	17.9	100	208 / 1			
1119	985	17.0	17.0	100	222 / 2			
1637	967	16.6	16.3	98	263 / 3			
2282	945	16.4	15.8	96	264 / 4			
2970	922	14.8	13.6	93	262 / 3			
3796	895	13.8	8.8	72	315 / 2	LGT		
4705	866	12.2	1.7	49	6 / 4	LGT		
5705	835	11.1	-1.1	43	23 / 8			
6882	800	13.6	-23.4	6	9 / 7			
8221	762	12.4	-32.0	3	340 / 6			
9694	722	9.8	-28.0	5	321 / 9			
11434	677	6.4	-28.3	6	319 / 10			

Satellite Imagery – the GOES-16 imagery over the area for 1502Z is included below, and depicted low stratiform clouds over eastern Massachusetts into New England and off the coast. The radiative cloud top temperature over KBED was 288° Kelvin or 14.84° C, which corresponded to cloud tops near 3,000 ft.

