



**MEMORANDUM FOR RECORD**

**Stephen Stein**  
**Air Safety Investigator**  
**National Transportation Safety Board**  
**Office of Aviation Safety - Eastern Region**

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**Weather Report – Twin County Airport (HLX), Galax Hillsville, Virginia; Mount Airy/Surry County Airport (MWK), Mount Airy, North Carolina**  
**Date & Time: September 10, 2014, 0912 EDT**  
**NTSB Accident Number: ERA14LA433**

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HLX is a nearby weather observation facility located at 9 nm north of the accident site.

		<b>METAR/SPECI from KHLX, Hillsville (United States).</b>					
SA	10/09/2014 18:55- >	METAR KHLX	101855Z	AUTO	18005KT	10SM OVC009 20/18 A3017 RMK AO2 T01970175=	
SA	10/09/2014 18:35- >	METAR KHLX	101835Z	AUTO	18006KT	10SM BKN009 OVC016 21/18 A3018 RMK AO2 T02050184=	
SA	10/09/2014 18:15- >	METAR KHLX	101815Z	AUTO	20010KT	150V210 10SM BKN011 OVC016 21/18 A3018 RMK AO2 T02050180=	
SA	10/09/2014 17:55- >	METAR KHLX	101755Z	AUTO	17005KT	10SM BKN011 OVC016 20/18 A3019 RMK AO2 T01980176 10200 20171=	
SA	10/09/2014 17:35- >	METAR KHLX	101735Z	AUTO	18006KT	10SM OVC009 20/18 A3020 RMK AO2 T01970178=	
SA	10/09/2014 17:15- >	METAR KHLX	101715Z	AUTO	18005KT	10SM OVC007 19/17 A3021 RMK AO2 T01890173=	
SA	10/09/2014 16:55- >	METAR KHLX	101655Z	AUTO	00000KT	10SM OVC009 19/17 A3021 RMK AO2 T01850174=	
SA	10/09/2014 16:35- >	METAR KHLX	101635Z	AUTO	17005KT	10SM OVC009 19/17 A3021 RMK AO2 T01870173=	
SA	10/09/2014 16:15- >	METAR KHLX	101615Z	AUTO	17006KT	10SM OVC007 19/18 A3021 RMK AO2 T01880176=	
SA	10/09/2014 15:55- >	METAR KHLX	101555Z	AUTO	14003KT	4SM -RA OVC005 18/18 A3021 RMK AO2 T01820175=	
SA	10/09/2014 15:35- >	METAR KHLX	101535Z	AUTO	18005KT	5SM BR OVC007 19/18 A3021 RMK AO2 T01860175=	
SA	10/09/2014 15:15-	METAR KHLX	101515Z	AUTO	18004KT	10SM BKN005 OVC014 19/18	

	>		A3022 RMK AO2 T01850175=
SA	10/09/2014 14:55->	METAR KHLX	101455Z AUTO 18004KT 7SM OVC005 18/18 A3022 RMK AO2 T01840180=
SA	10/09/2014 14:35->	METAR KHLX	101435Z AUTO 18005KT 5SM BR OVC007 18/17 A3022 RMK AO2 T01790174=
SA	10/09/2014 14:15->	METAR KHLX	101415Z AUTO 18004KT 4SM RA BKN007 OVC011 18/17 A3022 RMK AO2 T01800172=
SA	10/09/2014 13:55->	METAR KHLX	101355Z AUTO 17005KT 10SM BKN007 BKN012 OVC021 18/17 A3021 RMK AO2 T01830172=
SA	10/09/2014 13:35->	METAR KHLX	101335Z AUTO 17004KT 10SM BKN007 OVC023 18/17 A3019 RMK AO2 T01840173=
SA	10/09/2014 13:15->	METAR KHLX	101315Z AUTO 16003KT 10SM BKN005 OVC023 18/17 A3018 RMK AO2 T01820173=
SA	10/09/2014 12:55->	METAR KHLX	101255Z AUTO 15004KT 10SM BKN005 OVC021 18/17 A3018 RMK AO2 T01780173=
SA	10/09/2014 12:35->	METAR KHLX	101235Z AUTO 15005KT 7SM BKN005 OVC021 18/17 A3018 RMK AO2 T01750171=
SA	10/09/2014 12:15->	METAR KHLX	101215Z AUTO 16004KT 5SM BR BKN005 OVC021 17/17 A3018 RMK AO2 T01720170=
SA	10/09/2014 11:55->	METAR KHLX	101155Z AUTO 18004KT 5SM BR SCT005 OVC021 17/17 A3018 RMK AO2 T01710170 10171 20158=
SA	10/09/2014 11:35->	METAR KHLX	101135Z AUTO 15003KT 5SM BR SCT005 OVC021 17/17 A3018 RMK AO2 T01700167=
SA	10/09/2014 11:15->	METAR KHLX	101115Z AUTO 17003KT 7SM OVC021 17/17 A3018 RMK AO2 T01680166=
SA	10/09/2014 10:55->	METAR KHLX	101055Z AUTO 00000KT 10SM OVC021 17/17 A3017 RMK AO2 T01670165=
SA	10/09/2014 10:35->	METAR KHLX	101035Z AUTO 00000KT 7SM OVC019 17/17 A3017 RMK AO2 T01650165=
SA	10/09/2014 10:15->	METAR KHLX	101015Z AUTO 00000KT 7SM OVC019 17/16 A3017 RMK AO2 T01650164=
SA	10/09/2014 09:55->	METAR KHLX	100955Z AUTO 00000KT 10SM OVC017 17/16 A3017 RMK AO2 T01650163=
SA	10/09/2014 09:35->	METAR KHLX	100935Z AUTO 00000KT 10SM OVC017 16/16 A3016 RMK AO2 T01630162=
SA	10/09/2014 09:15->	METAR KHLX	100915Z AUTO 00000KT 10SM OVC021 16/16 A3016 RMK AO2 T01630161=
SA	10/09/2014 08:55->	METAR KHLX	100855Z AUTO 19003KT 7SM OVC021 16/16 A3016 RMK AO2 T01600160=
SA	10/09/2014 08:35->	METAR KHLX	100835Z AUTO 00000KT 7SM OVC021 16/16 A3016 RMK AO2 T01600160=
SA	10/09/2014 08:15->	METAR KHLX	100815Z AUTO 17003KT 10SM SCT002 OVC021 16/16 A3016 RMK AO2 T01610160=
SA	10/09/2014 07:55->	METAR KHLX	100755Z AUTO 19004KT 7SM BKN002 OVC021 16/16 A3016 RMK AO2 T01620161=
SA	10/09/2014 07:35->	METAR KHLX	100735Z AUTO 19005KT 10SM SCT002 BKN021 16/16 A3016 RMK AO2 T01610160=

SA	10/09/2014 07:15->	METAR KHLX 100715Z AUTO 17003KT 7SM CLR 16/16 A3016 RMK AO2 T01600159=
SA	10/09/2014 06:55->	METAR KHLX 100655Z AUTO 00000KT 10SM SCT022 16/16 A3016 RMK AO2 T01610159=
SA	10/09/2014 06:35->	METAR KHLX 100635Z AUTO 17003KT 10SM SCT020 16/16 A3018 RMK AO2 T01620161=
SA	10/09/2014 06:15->	METAR KHLX 100615Z AUTO 15003KT 10SM OVC020 17/16 A3018 RMK AO2 T01650163=

MWK is a nearby weather observation facility located at 13 nm south of the accident site.

<b>METAR/SPECI from KMWK, Mount Airy, Mount Airy/Surry County Airport (United States).</b>		
SA	10/09/2014 19:55->	METAR KMWK 101955Z AUTO 20003KT 10SM SCT020 SCT026 OVC038 24/20 A3012 RMK AO2 T02420201=
SA	10/09/2014 19:35->	METAR KMWK 101935Z AUTO 21003KT 10SM SCT018 BKN038 OVC050 24/20 A3012 RMK AO2 T02400204=
SA	10/09/2014 19:15->	METAR KMWK 101915Z AUTO 00000KT 10SM BKN036 OVC050 24/20 A3013 RMK AO2 T02390201=
SA	10/09/2014 18:55->	METAR KMWK 101855Z AUTO 00000KT 10SM SCT023 BKN034 OVC040 23/20 A3014 RMK AO2 T02300200=
SA	10/09/2014 18:35->	METAR KMWK 101835Z AUTO 23003KT 7SM -DZ SCT021 BKN029 OVC035 23/20 A3015 RMK AO2 T02270199=
SA	10/09/2014 18:15->	METAR KMWK 101815Z AUTO 00000KT 10SM BKN031 OVC037 23/20 A3016 RMK AO2 T02320200=
SA	10/09/2014 17:55->	METAR KMWK 101755Z AUTO 22003KT 10SM SCT016 OVC029 23/20 A3016 RMK AO2 T02300198 10232 20195=
SA	10/09/2014 17:35->	METAR KMWK 101735Z AUTO 21003KT 10SM SCT016 OVC029 23/20 A3017 RMK AO2 T02320200=
SA	10/09/2014 17:15->	METAR KMWK 101715Z AUTO 17004KT 10SM SCT014 BKN037 OVC044 23/20 A3017 RMK AO2 T02310199=
SA	10/09/2014 16:55->	METAR KMWK 101655Z AUTO 00000KT 10SM SCT015 SCT027 OVC035 23/20 A3018 RMK AO2 T02300199=
SA	10/09/2014 16:35->	METAR KMWK 101635Z AUTO 23003KT 10SM BKN015 BKN025 OVC039 23/20 A3018 RMK AO2 T02300200=
SA	10/09/2014 16:15->	METAR KMWK 101615Z AUTO 18003KT 10SM SCT014 SCT027 OVC040 23/20 A3018 RMK AO2 T02270196=
SA	10/09/2014 15:55->	METAR KMWK 101555Z AUTO 17004KT 10SM SCT010 BKN033 OVC040 23/20 A3018 RMK AO2 T02250200=
SA	10/09/2014 15:35->	METAR KMWK 101535Z AUTO 16003KT 10SM SCT008 SCT014 OVC032 22/20 A3019 RMK AO2 T02210198=
SA	10/09/2014 15:15->	METAR KMWK 101515Z AUTO 00000KT 10SM SCT007 SCT012 OVC032 22/20 A3019 RMK AO2 T02170195=
SA	10/09/2014 14:55->	METAR KMWK 101455Z AUTO 00000KT 10SM SCT007 BKN012 OVC032 21/20 A3019 RMK AO2 T02140195=
SA	10/09/2014 14:35->	METAR KMWK 101435Z AUTO 00000KT 10SM SCT007 OVC012 22/20 A3019 RMK AO2 T02150195=
SA	10/09/2014 14:15->	METAR KMWK 101415Z AUTO 00000KT 10SM OVC007 21/19 A3019 RMK AO2 T02100192=

SA 10/09/2014 13:55->	METAR KMWK 101355Z AUTO 0000KT 10SM OVC007 21/19 A3018 RMK AO2 T02090193=
SA 10/09/2014 13:35->	METAR KMWK 101335Z AUTO 0000KT 10SM OVC007 20/19 A3017 RMK AO2 T02030188=
SA 10/09/2014 13:15->	METAR KMWK 101315Z AUTO 0000KT 10SM BKN007 OVC032 21/19 A3017 RMK AO2 T02050188=
SA 10/09/2014 12:55->	METAR KMWK 101255Z AUTO 0000KT 10SM SCT005 OVC032 20/19 A3017 RMK AO2 T02030187=
SA 10/09/2014 12:35->	METAR KMWK 101235Z AUTO 12003KT 10SM SCT006 OVC032 20/19 A3016 RMK AO2 T02030187=
SA 10/09/2014 12:15->	METAR KMWK 101215Z AUTO 11003KT 10SM SCT006 OVC034 20/19 A3017 RMK AO2 T02030188=
SA 10/09/2014 11:55->	METAR KMWK 101155Z AUTO 0000KT 10SM OVC034 20/18 A3016 RMK AO2 T01960180 10201 20177=
SA 10/09/2014 11:35->	METAR KMWK 101135Z AUTO 0000KT 10SM OVC034 20/19 A3016 RMK AO2 T01980185=
SA 10/09/2014 11:15->	METAR KMWK 101115Z AUTO 0000KT 10SM OVC034 19/18 A3016 RMK AO2 T01920179=
SA 10/09/2014 10:55->	METAR KMWK 101055Z AUTO 0000KT 10SM OVC036 19/18 A3015 RMK AO2 T01880175=
SA 10/09/2014 10:35->	METAR KMWK 101035Z AUTO 0000KT 10SM OVC036 19/17 A3015 RMK AO2 T01860173=
SA 10/09/2014 10:15->	METAR KMWK 101015Z AUTO 0000KT 10SM OVC036 19/18 A3014 RMK AO2 T01860175=
SA 10/09/2014 09:55->	METAR KMWK 100955Z AUTO 0000KT 10SM OVC034 18/17 A3014 RMK AO2 T01820170=
SA 10/09/2014 09:35->	METAR KMWK 100935Z AUTO 0000KT 10SM OVC032 19/17 A3014 RMK AO2 T01850172=
SA 10/09/2014 09:15->	METAR KMWK 100915Z AUTO 0000KT 10SM BKN030 18/17 A3014 RMK AO2 T01820170=
SA 10/09/2014 08:55->	METAR KMWK 100855Z AUTO 0000KT 7SM CLR 18/17 A3014 RMK AO2 T01800168=
SA 10/09/2014 08:35->	METAR KMWK 100835Z AUTO 0000KT 10SM SCT029 18/17 A3013 RMK AO2 T01780166=
SA 10/09/2014 08:15->	METAR KMWK 100815Z AUTO 0000KT 10SM SCT022 BKN029 18/17 A3012 RMK AO2 T01820170=
SA 10/09/2014 07:55->	METAR KMWK 100755Z AUTO 0000KT 10SM SCT022 18/17 A3013 RMK AO2 T01810170=
SA 10/09/2014 07:35->	METAR KMWK 100735Z AUTO 0000KT 7SM BKN022 18/17 A3013 RMK AO2 T01820170=
SA 10/09/2014 07:15->	METAR KMWK 100715Z AUTO 0000KT 10SM SCT022 18/17 A3014 RMK AO2 T01830170=
SA 10/09/2014 06:55->	METAR KMWK 100655Z AUTO 0000KT 10SM BKN022 19/18 A3014 RMK AO2 T01870175=
SA 10/09/2014 06:35->	METAR KMWK 100635Z AUTO 0000KT 10SM BKN020 OVC024 19/18 A3015 RMK AO2 T01900177=
SA 10/09/2014 06:15->	METAR KMWK 100615Z AUTO 0000KT 10SM BKN018 19/17 A3015 RMK AO2 T01850172=

## Stein Stephen

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**From:** Suffern Paul  
**Sent:** Monday, December 01, 2014 10:13 AM  
**To:** Stein Stephen  
**Subject:** RE: Wx Question  
**Attachments:** 1715utcVISforstephen.jpg; Visiblesatelliteoopfrom1115edt\_to\_1315edt.gif

Hi Stephen,

Hope you had a great Thanksgiving and were able to relax some! Got lots of data for you here for ERA14LA433. First of all, the visible satellite images. First attachment is from 1315 EDT with accident location marked and takeoff/destination spots...next attachment is the loop from 1115 EDT to 1315 EDT showing that conditions didn't change much east of the mountains...definitely a much better day to be flying in West Virginia as things would go downhill ceiling/visibility wise once a person goes east of the mountains.

The latest Area Forecast before the pilot took off around 1145 EDT (and was also valid at accident time) was from 0915 EDT with the accident site in the SW corner of the VA area forecast:

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FAUS41 KPCI 101315 CCB
FA1W
_BOSC FA 101315 COR
SYNOPSIS AND VFR CLDS/WX
SYNOPSIS VALID UNTIL 110300
CLDS/WX VALID UNTIL 102100...OTLK VALID 102100-110300
ME NH VT MA RI CT NY LO NJ PA OH LE WV MD DC DE VA AND CSTL WTRS
.
SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.
NON MSL HGTS DENOTED BY AGL OR CIG.
.
SYNOPSIS...09Z LOW 140E ORF WITH STNR FNT EXTDG E FM THE LOW.
WRMFNT EXTDG NW FM NR CVG. 03Z CDFNT ALG AN ECK-BVT LN. WRMFNT
ALG A YYZ-JST LN. WK LOW 200S ACK.
.
WV
NW HLF...SCT050. 13Z BKN040 TOPS 050. 16Z SCT050. OTLK...VFR.
SE HLF...BKN035 TOPS 070. OCNL VIS 3-5SM BR. BECMG 1316 SCT050
SCT-BKN070 TOPS 080. OTLK...VFR.
.
MD DC DE VA
N HLF...SCT020 BKN035 TOPS 070. BECMG 1720 SCT090 SCT130.
OTLK...VFR.
SW QTR...OVC025 TOPS 070. VIS 3-5SM BR. BECMG 1417 SCT025 BKN045.
OTLK...VFR.
SE QTR...OVC015 TOPS 060. VIS 4SM BR. 14Z BKN025. BECMG 1718
BKN040. OTLK...VFR.
.
```

The Area Forecast forecasted ceilings at 2,500 feet msl with tops at 7,000 feet msl and visibilities between 3 and 5 miles and mist... The forecast expected the 2,500 feet msl ceiling to scattered out between 1000 and 1300 EDT... That would be something I would want to make sure and check back on before taking off if I were

a VFR pilot. In addition and always hard to remember is that the "Area Forecast" ceilings are in MSL... so with all the terrain in SW 2,500 feet is close to IFR ceilings in most spots. The TAF forecast are always in AGL. I know that has caused confusion in pilots before.

There was an AIRMET valid before takeoff at 1045 EDT and at accident time for mountain obscuration due to clouds and mist:

WAUS41 KPCI 101445

WA1S

\_BOSS WA 101445

AIRMET SIERRA UPDT 2 FOR IFR AND MTN OBSCN VALID UNTIL 102100

.  
AIRMET IFR...ME NH VT MA RI CT AND CSTL WTRS  
FROM 50SE YSC TO 50SW BGR TO 30S ENE TO 30SSE BOS TO 20S BDL TO  
40E ALB TO 50SE YSC  
CIG BLW 010/VIS BLW 3SM BR. CONDS ENDG 15-18Z.

.  
AIRMET IFR...OH LE  
FROM 60WSW YYZ TO 50S CLE TO 40WSW ROD TO FWA TO 30SE ECK TO  
60WSW YYZ  
CIG BLW 010/VIS BLW 3SM PCPN/BR. CONDS DVLPG 18-21Z. CONDS CONTG  
BYD 21Z THRU 03Z.

.  
AIRMET IFR...ME NH MA AND CSTL WTRS  
FROM 50ESE BGR TO 150ENE ACK TO 140E ACK TO 50SSE ACK TO 30NNE  
ACK TO 30S ENE TO 50SW BGR TO 50ESE BGR  
CIG BLW 010/VIS BLW 3SM BR. CONDS CONTG BYD 21Z THRU 03Z.

.  
AIRMET MTN OBSCN...NY PA WV MD VA NC SC GA  
FROM 20NNW SYR TO HNK TO 30NNE GSO TO 20NE CLT TO ATL TO GQO TO  
HMV TO JHW TO 20NNW SYR  
MTNS OBSC BY CLDS/BR. CONDS ENDG 15-18Z.

.  
OTLK VALID 2100-0300Z  
AREA 1...IFR ME NH VT MA RI CT AND CSTL WTRS  
BOUNDED BY 20S MLT-50ESE BGR-80ENE ACK-30ENE ACK-20SSE PVD-50WSW  
CON-50SE YSC-20S MLT  
CIG BLW 010/VIS BLW 3SM BR. CONDS CONTG THRU 03Z.

.  
AREA 2...IFR NY LO PA OH LE  
BOUNDED BY 80NE YYZ-20ENE JHW-40SW APE-50SW ROD-FWA-30SE ECK-  
80NE YYZ  
CIG BLW 010/VIS BLW 3SM PCPN/BR. CONDS CONTG THRU 03Z.

....

Finally as another forecast tool is the Meteorological Impact Statements (MIS) and while it says for ATC planning purposes only it can have very good information lots of the time. The MIS from ZDC, right along the line of the accident site talked about MVFR and IFR ceilings too... while the coverage wasn't enough to warrant a bigger product, they did mention it and talked about most areas would improve by 1100 EDT:

FAUS20 KZDC 101129

ZDC MIS 01 VALID 101129-102000

...FOR ATC PLANNING PURPOSES ONLY...

LGT-MOD CHOP ABV FL200 ACRS ZDC. LCL SEV TURB ABV FL300 POSSIBLE FAR  
E ZDC THRU 15Z. AREA MVFR CIGS PATCHY BR ACRS ZDC...LCL (L) IFR CIGS

/ VIS FG. MOST AREAS IMPRVG THRU 15Z.

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All this to say there were forecast out for IFR, patchy IFR, mountain obscuration conditions. Due to that, it would have been wise to make sure that all the airports along my planned route were VFR before taking off. Between KBKW and KINT, the weather observations at KHLX never were VFR, but always IFR even had a little bit of mist and rain around 1155 and 1135 EDT:

17:15-> METAR KHLX 101715Z AUTO 18005KT 10SM OVC007 19/17 A3021 RMK  
AO2 T01890173=

16:55-> METAR KHLX 101655Z AUTO 00000KT 10SM OVC009 19/17 A3021 RMK  
AO2 T01850174=

16:35-> METAR KHLX 101635Z AUTO 17005KT 10SM OVC009 19/17 A3021 RMK  
AO2 T01870173=

16:15-> METAR KHLX 101615Z AUTO 17006KT 10SM OVC007 19/18 A3021 RMK  
AO2 T01880176=

15:55-> METAR KHLX 101555Z AUTO 14003KT 4SM -RA OVC005 18/18 A3021  
RMK AO2 T01820175=

15:35-> METAR KHLX 101535Z AUTO 18005KT 5SM BR OVC007 19/18 A3021  
RMK AO2 T01860175=

15:15-> METAR KHLX 101515Z AUTO 18004KT 10SM BKN005 OVC014 19/18  
A3022 RMK AO2 T01850175=

14:55-> METAR KHLX 101455Z AUTO 18004KT 7SM OVC005 18/18 A3022 RMK  
AO2 T01840180=

14:35-> METAR KHLX 101435Z AUTO 18005KT 5SM BR OVC007 18/17 A3022  
RMK AO2 T01790174=

14:15-> METAR KHLX 101415Z AUTO 18004KT 4SM RA BKN007 OVC011 18/17  
A3022 RMK AO2 T01800172=

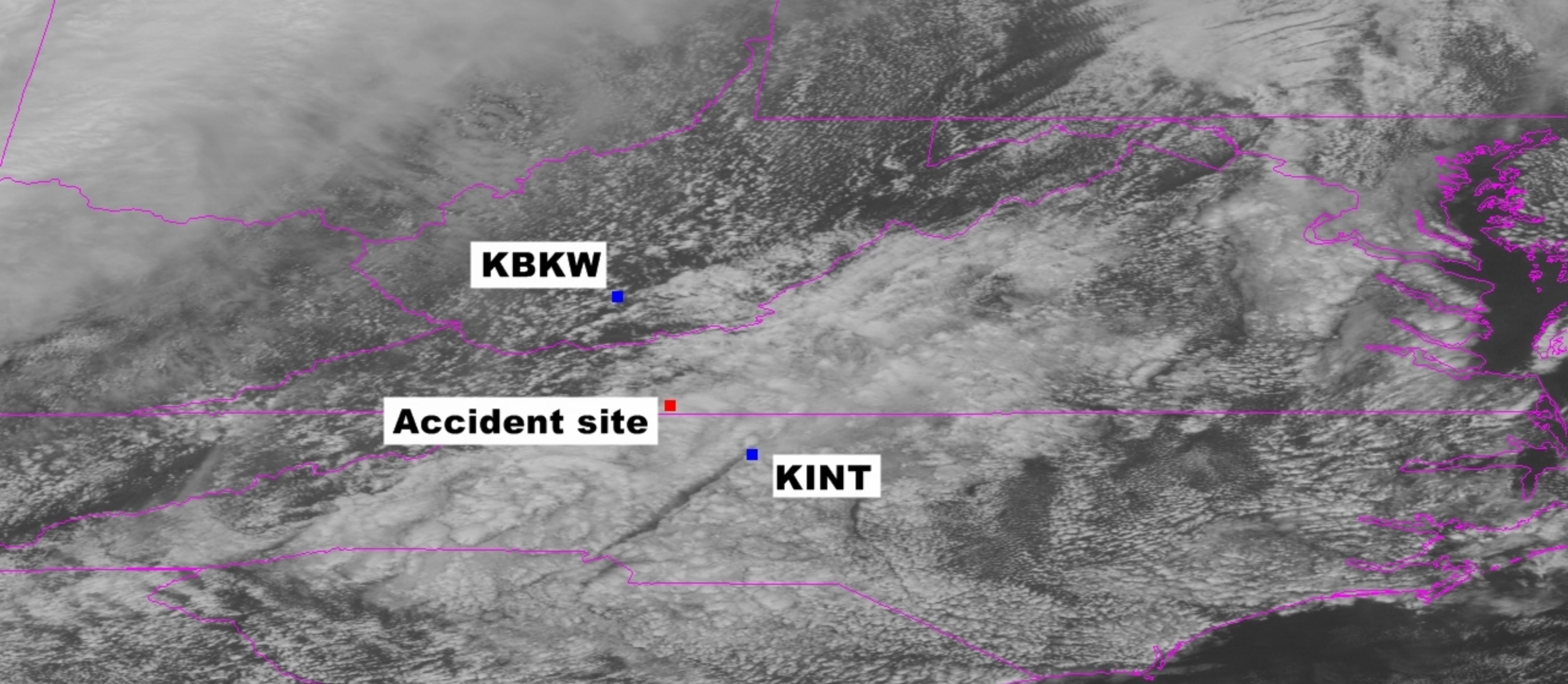
I know the KINT TAF showed improving conditions with time and VFR conditions by the time the flight would have landed, but still between KBKW and KINT there is weather too... always good to check the in between spots!

The hardest thing for even me to remember though is that the Area Forecast are in **MSL** for ceiling heights... so the 2,500 foot forecast...was for very low ceilings along the route of flight from KBKW to KINT in SW Virginia.

Is all this information what you were looking for? These are all the "official weather forecast". I saw the ADMS where it looks like the pilot did check some internet weather before taking off. Did they check the official forecast products or other thing or a combo of both? Please let me know if I can help anymore!!

Paul2





**KBKW**

**Accident site**

**KINT**



