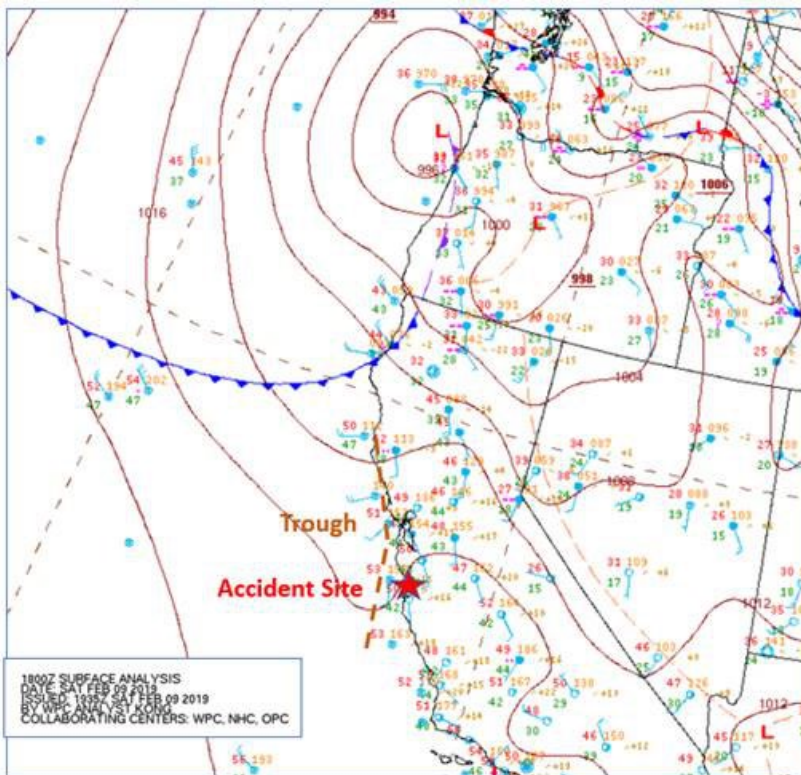


From: [Eick Donald](#)
To: [Nixon Albert](#)
Cc: [Helson David](#)
Subject: WPR19LA100 - Watsonville, CA Weather
Date: Monday, October 28, 2019 7:23:18 AM
Attachments: [image001.png](#)

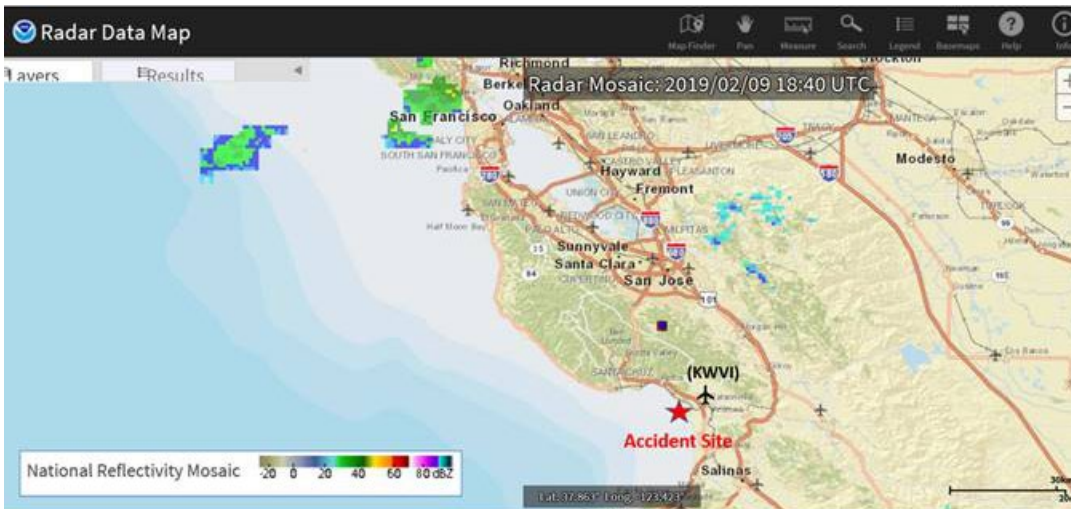
Weather conditions in the vicinity of Watsonville, CA, on February 9, 2019

Synoptic conditions – The western portion of the NWS Surface Analysis Chart for 1000 PST (1800Z) is included below with the approximate accident site marked by the red star. The chart depicted a low-pressure system at 894-hectopascals (hPa) associated with a dissipating occluded front along the Oregon coast, with a cold front from northwest California extending west-southwest into the Pacific. Several stations over northern California and western Oregon reported rain and snow. Although not depicted on the chart, the isobars on the chart supported a trough of low pressure extending along the California coast in the immediate vicinity west of the accident site with a general weak pressure gradient over the Watsonville area.



The station models surrounding the accident site depicted southerly winds of 10 knots or less, scattered to broken sky cover, with temperatures of 50° Fahrenheit (F), and dew point temperature of 43° F.

A review of the NWS National Composite Radar Mosaic for 1040 PST centered over the Watsonville area is included below. The radar mosaic depicted several echoes west of Oakland north of the accident site with no significant weather echoes in the vicinity of the accident site (marked by a red star). Thus no convective outflows, gust fronts, thunderstorm or microburst type wind shear existed over the area during the period.



Observations – the closest weather reporting location to the accident site was from the departure airport of Watsonville Municipal Airport (KWVI), Watsonville, CA, located approximately 3 nautical miles northeast of the accident site at an elevation of 163 ft. The magnetic variation was reported as 14° E, and the airport had Automated Surface Observation System (ASOS), without any human augmentation. The following conditions were reported immediately after the time of the accident:

At 1050 PST (1850Z) KWVI reported calm wind, visibility 10 statute miles or more, a few clouds at 1,500 ft agl, scattered clouds at 2,200 ft, with a ceiling overcast at 4,800 ft, a temperature of 9° Celsius (C), a dew point of 7° C, and an altimeter of 30.03 inches of mercury (Hg).

The general flight categories and raw observations reported surrounding the period were as follows:

MVFR METAR KWVI 091553Z AUTO 34004KT 10SM OVC015 04/04 A2999 RMK AO2 SLP157 T00440044=
VFR SPECI KWVI 091615Z AUTO 34003KT 10SM SCT015 06/06 A3000 RMK AO2 T00610056=
MVFR SPECI KWVI 091637Z AUTO 32003KT 10SM BKN017 BKN033 07/06 A3001 RMK AO2 T00670056=
VFR METAR KWVI 091653Z AUTO 00000KT 10SM SCT017 OVC033 08/07 A3001 RMK AO2 SLP163 T00780067=
VFR METAR KWVI 091753Z AUTO 15004KT 10SM SCT027 SCT047 09/07 A3002 RMK AO2 SLP165 T00890067 10094
20033 51015=
MVFR SPECI KWVI 091806Z AUTO 17005KT 10SM FEW014 BKN028 BKN047 09/07 A3002 RMK AO2 T00890067=
Accident 1839Z
VFR SPECI KWVI 091850Z AUTO 00000KT 10SM FEW015 SCT022 OVC048 09/07 A3003 RMK AO2=
VFR METAR KWVI 091853Z AUTO 00000KT 10SM FEW015 SCT022 OVC048 10/07 A3003 RMK AO2 SLP169 T01000072=
MVFR SPECI KWVI 091901Z AUTO 12003KT 10SM SCT019 BKN027 OVC050 10/07 A3003 RMK AO2 T01000072=
MVFR METAR KWVI 091953Z AUTO VRB04KT 10SM FEW018 BKN030 OVC036 11/07 A3001 RMK AO2 SLP162 T01060072=
MVFR SPECI KWVI 092042Z AUTO 16004KT 8SM -RA FEW017 BKN029 OVC035 09/08 A2999 RMK AO2 RAB1956 P0002
T00940078=
MVFR METAR KWVI 092053Z AUTO 15004KT 10SM -RA FEW017 BKN030 OVC035 10/08 A2998 RMK AO2 RAB1956
SLP154 P0003 60003
T01000083 58015=

A review of the observations indicated MVFR to VFR conditions prevailing during the period with light southerly winds, no significant pressure changes were rapid temperature fluctuations were noted to indicate a shear boundaries. Light rain was reported several hours after the accident.

Terminal Aerodrome Forecast (TAF) – the closest TAF was issued by the NWS San Francisco Bay Area/Monterey (KMTR) Weather Forecast office (WFO) for Salinas Municipal Airport (KSNS), located approximately 19 miles southeast of the accident site. The forecast issued at 0335 PST (1135Z) was available for any preflight briefing, with the 0927 PST (1727Z) forecast being issued within the hour prior to the accident. The forecasts were as follows:

TAF KSNS 091135Z 0912/1012 13010KT P6SM VCSH SCT030 BKN050

FM091900 25012KT P6SM VCSH SCT035 BKN050

FM100300 24016KT P6SM -SHRA SCT025 OVC040

FM100900 25015KT P6SM -RA SCT020 OVC030=

TAF KSNS 091727Z 0918/1018 13010KT P6SM VCSH SCT030 BKN040

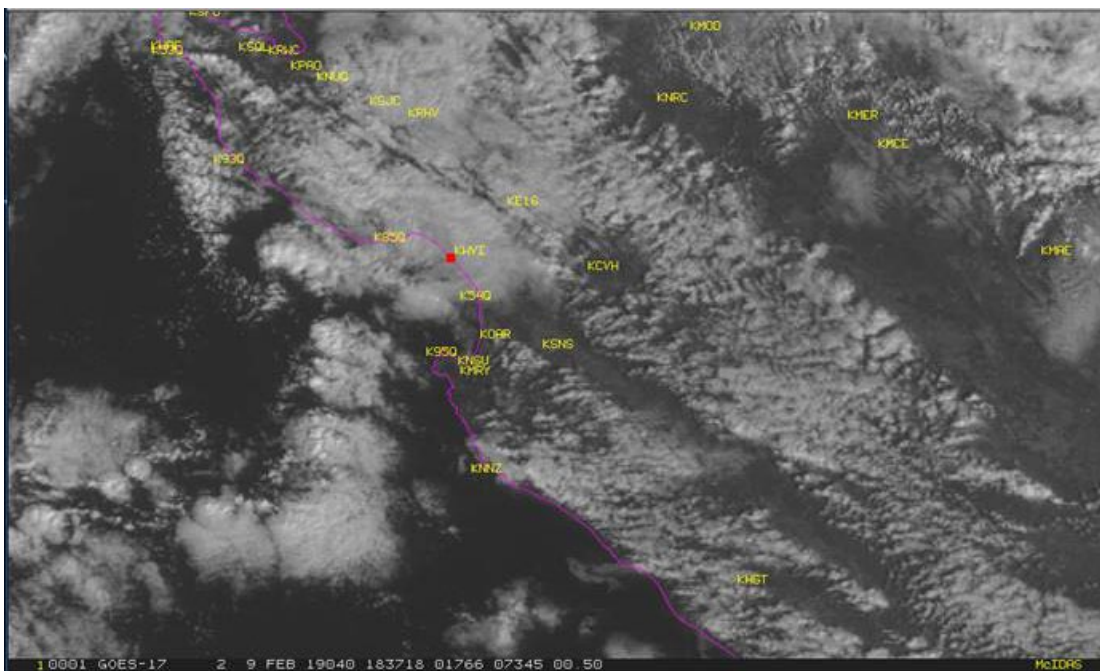
FM092000 24012KT P6SM VCSH SCT035 BKN050

FM100300 23016KT P6SM -SHRA SCT025 OVC040

FM100900 20015KT P6SM -RA SCT020 OVC030

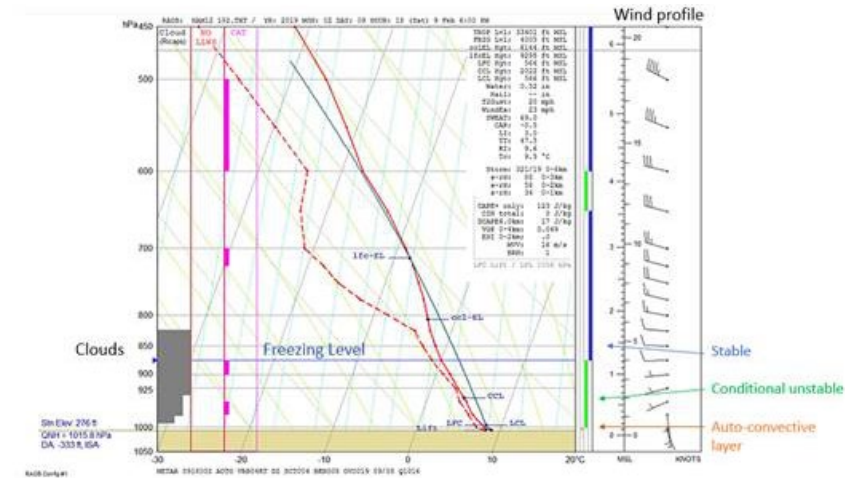
FM101400 24012KT P6SM VCSH FEW020 BKN040=

Satellite Imagery – The GOES-17 infrared, moisture, and visible imagery were reviewed during the period. The visible image at 1037 PST is included below and depicted low stratiform type clouds obscuring the accident site. Some more vertically extensive stratocumulus type clouds were identified west of the area associated with potential light rain showers in the vicinity of the trough, however, no significant convection or turbulence signatures were noted in the immediate vicinity of the accident site, which is marked by the red square. Overcast clouds consist with those over KWVI prevailed over the site.



Sounding – A North American Mesoscale (NAM) numerical model was run from archive data for 1000 PST (1800Z) over the accident site coordinates and is included below. The model depicted a light southerly surface from 160 at 4 knots, with winds veering to the west above 1,800 ft with wind

speeds over 10 knots above 4,000 ft and slowly increasing with altitude. No significant low-level wind shear was observed or turbulence below 1,000 ft. The sounding indicated a lifted condensation level (LCL) and level of free convection (LFC) at 290 ft agl, with the convective condensation level (CCL) at 1,746 ft agl, and indicated multiple layers of low clouds from the LCL to 5,500 ft where the relative humidity exceeded 90%. The freezing level was at 4,000 ft and supported trace of rime icing near the clouds tops. While the entire sounding was characterized as stable by the Lifted Index of +3.0, the lowest 4,000 ft was conditional unstable and supported stratocumulus type clouds or stratus clouds with some vertical development. A very shallow layer closest to the surface was also classified as auto-convective or very unstable due to the rapid change in temperature with height. The lowest 1,500 ft also supported thermals which could imply some potential for light low-level turbulence.



Sounding data below 5,000 ft indicated only the threat of light turbulence in several shallow layers, outside of the thermal potential below 1,500 ft and the auto-convective layer below 50 ft. The model height, pressure, temperature, dew point, relative humidity, wind direction and speed, clear air turbulence (due to vertical wind shears), low-level wind shear (LLWS), and icing potentials.

Height (ft-MSL)	Pres (hPa)	T (C)	Td (C)	RH (%)	DD / FF (deg / kts)	CAT (FAA)	LLWS	Icing - Type (AFGw/C method)
276	1006	9.0	8.3	95	161 / 4			
439	1000	8.0	7.1	94	170 / 3			
1123	975	6.1	5.6	97	174 / 3	LGT		
1821	950	4.8	4.0	95	245 / 4			
2533	925	3.2	2.9	98	255 / 6			
3261	900	1.7	0.9	94	264 / 7	LGT		
4005	875	0.0	-1.1	92	269 / 10			TRC Rime
4766	850	-1.3	-2.8	90	271 / 11			TRC Rime
5546	825	-2.6	-4.4	87	275 / 12			TRC Rime

Inflight Weather Advisories – the NWS Aviation Weather Center issued multiple AIRMETs for IFR and mountain obscuration, low-level turbulence, and wind shear for areas immediately surrounding the accident site. Only AIRMET Zulu for icing conditions above 4,000 ft existed over the accident site. There were no other SIGMETs, Convective SIGMETs issued during the period, and no Center Weather Advisories (CWA) issued from the Oakland Center Weather Service Unit (CWSU) during the period.

The AIRMETS current for the region were as follows:

WAUS46 KPCI 091717 AAA

WA6S

-SFOS WA 091717 AMD

AIRMET SIERRA UPDT 3 FOR IFR AND MTN OBSCN VALID UNTIL 092100

.

AIRMET IFR...WA OR CA ID MT WY NV AND CSTL WTRS

FROM 60N GEG TO 30NW BIL TO 50SSW BIL TO 40NNE TWF TO 20ESE REO
TO 20NNW FMG TO 50WSW BTY TO 20W CZQ TO 30SSE OAK TO 20WSW FOT
TO 60WSW BTG TO TOU TO 60N GEG
CIG BLW 010/VIS BLW 3SM PCPN/BR. CONDS CONTG BYD 21Z THRU 03Z.

.

AIRMET IFR...CA AND CSTL WTRS...UPDT

FROM 20WSW HEC TO 30NW TRM TO 60S LAX TO 40SW LAX TO 20WSW HEC
CIG BLW 010/VIS BLW 3SM PCPN/BR. CONDS ENDG 18-21Z.

.

AIRMET MTN OBSCN...WA OR CA ID MT WY NV UT

FROM 60SSW YXH TO 20ESE SHR TO 80SSE BOY TO 30E ILC TO 30E BTY
TO 50NW HEC TO 60SSE TRM TO 30S MZB TO LAX TO 30WSW RZS TO 20SSW
FOT TO 80SW EUG TO 50SSE HQM TO TOU TO 20ENE HUH TO 60SSW YXH
MTNS OBSC BY CLDS/PCPN/BR. CONDS CONTG BYD 21Z THRU 03Z.

WAUS46 KPCI 091445

WA6T

-SFOT WA 091445

AIRMET TANGO UPDT 2 FOR TURB STG WNDZ AND LLWS VALID UNTIL 092100

.

AIRMET TURB...WA OR CA ID MT AND CSTL WTRS

FROM 50SE YXC TO 70SSE MLP TO 70NE LKV TO 60SE OED TO 40SSW RBL TO 40SW ENI
TO 140WSW ENI TO 140WSW FOT TO 100WNW ONP TO 140W TOU TO 50SE YXC
MOD TURB BLW 150. CONDS CONTG BYD 21Z THRU 03Z.

.

AIRMET STG SFC WNDZ...WA OR CA AND CSTL WTRS

FROM 30NNW TOU TO 20SSW HQM TO 50WSW ONP TO 100SSW ONP TO 160WNW
FOT TO 140W TOU TO 30NNW TOU
SUSTAINED SURFACE WINDS GTR THAN 30KT EXP. CONDS CONTG BYD 21Z ENDG 21-00Z.

.

LLWS POTENTIAL...OR CA

BOUNDED BY 40NE LKV-60WSW REO-20SW FMG-40N SAC-20S RBL-40NNW RBL-
50ESE OED-30NW LKV-40NE LKV
LLWS EXP. CONDS DVLPG 15-18Z. CONDS CONTG BYD 21Z THRU 03Z.

WAUS46 KPCI 091738 AAA

WA6Z

-SFOZ WA 091738 AMD

AIRMET ZULU UPDT 3 FOR ICE AND FRZLVL VALID UNTIL 092100

.

AIRMET ICE...WA OR CA ID MT WY NV UT AZ AND CSTL WTRS...UPDT

FROM 60WSW HLN TO 60NNE JAC TO 40NNE MTU TO 40SW PGS TO BZA TO
20S MZB TO LAX TO 60SW RZS TO 60SW OAK TO 130WSW PYE TO 140WSW
FOT TO 120W ONP TO 60WSW HLN
MOD ICE BLW FL180. CONDS CONTG BYD 21Z THRU 03Z.

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