

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ANC24FA032

METEOROLOGY

Specialist's Factual Report

July 22, 2024

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A. ACCIDENT

Location: Nondalton, Alaska
Date: May 17, 2024
Time: 1145 Alaska daylight time
1945 coordinated universal time (UTC) on September 13
Airplane: Taylorcraft BC12-D; Registration: N95744

B. METEOROLOGY SPECIALIST

Paul Suffern
Senior Meteorologist
National Transportation Safety Board
Washington, DC

C. DETAILS OF THE INVESTIGATION

The NTSB's Senior Meteorologist did not travel for this investigation but gathered all data remotely. Data for this investigation were collected from official National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) sources including the Weather Prediction Center (WPC) and the National Center for Environmental Information (NCEI). This Specialist's Factual Report contains the meteorological factors pertinent to the weather surrounding the accident time. All times are Alaska daylight time (ADKT) and are based upon the 24-hour clock, where local time is -8 hours from UTC. Directions are referenced to true north and distances are in nautical miles. Heights are above mean sea level (msl) unless otherwise noted. Visibility is in statute miles and fractions of statute miles. NWS station identifiers use the standard International Civil Aviation Organization 4-letter station identifiers versus the International Air Transport Association 3-letter identifiers, which deletes the initial country code designator "K" for U.S. airports and "P" for OCONUS¹ airports.

The accident site was located at approximate latitude 59.988° N, longitude 154.80216° W, on a Six Mile Lake, Alaska.

¹ Outside Continental United States (OCONUS) - Overseas, refers to any country or place beyond CONUS. Alaska, Hawaii, and the U.S. territories are considered overseas.

D. FACTUAL INFORMATION

1.0 Synoptic Situation

The synoptic or large-scale migratory weather systems influencing the area were documented using standard NWS charts issued by the National Center for Environmental Prediction and the WPC, located in College Park, Maryland. These are the base products used in describing synoptic weather features and in the creation of forecasts and warnings for the NWS. Reference to these charts can be found in the Federal Aviation Administration (FAA) "Aviation Weather Handbook", FAA-H-8083-28.²

1.1 Surface Analysis Chart

The NWS Surface Analysis Chart centered over Alaska for 1300 ADKT is provided as figure 1 with the location of the accident site within the black circle. The chart depicted a low-pressure system at 1017-hectopascals (hPa) located in the Gulf of Alaska with an occluded front stretching eastward then southeastward into the northeastern Pacific Ocean. The accident site was located northwest of the low-pressure system and no frontal boundaries or troughs³ were located near the accident site at 1300 AKDT. Fronts and troughs can act as lifting mechanisms to help produce clouds and precipitation if sufficient moisture is present.

The station model closest to the accident site depicted an air temperature of 38°F, a dew point temperature of 35°F, cloudy skies, and a southwest wind at 5 knots.

² [FAA-H-8083-28](#)

³ Trough - An elongated area of relatively low atmospheric pressure or heights.

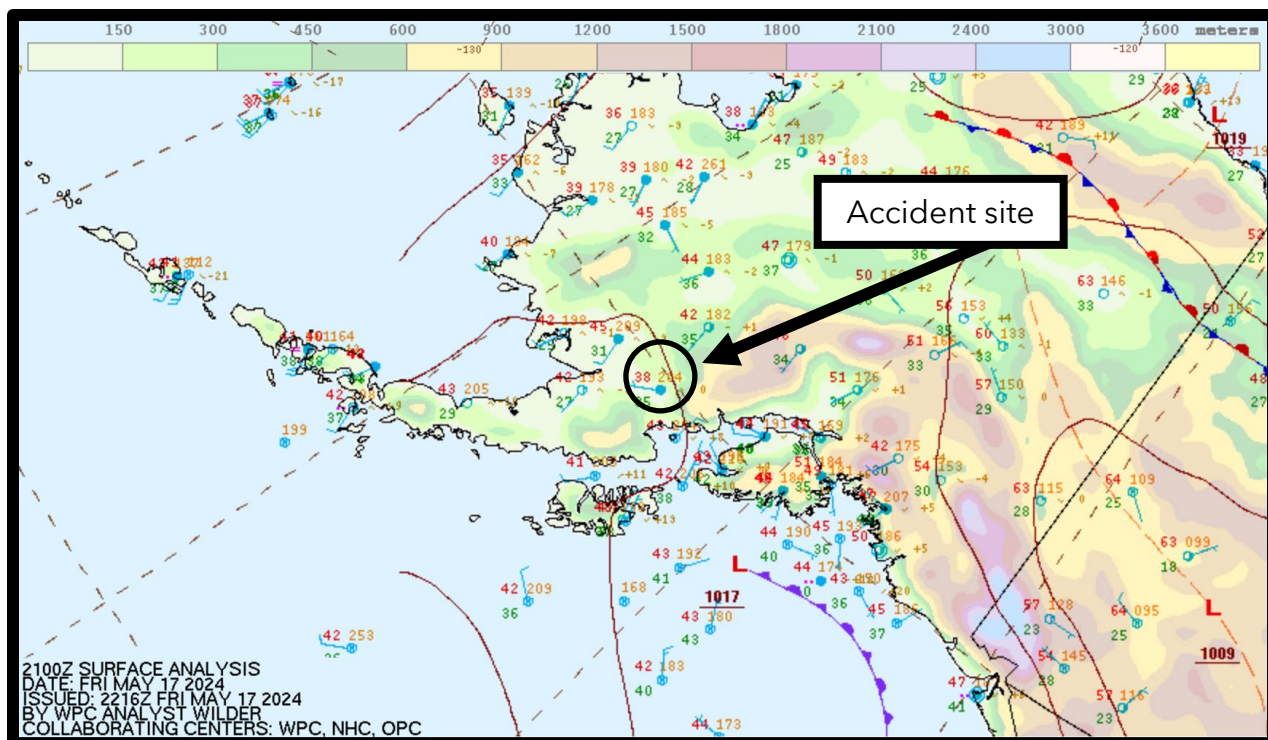


Figure 1. NWS Surface Analysis Chart for 1300 ADKT.

2.0 Surface Observations

The area surrounding the accident site was documented using official Aviation Routine Weather Reports (METARs) and Special Reports (SPECIs)⁴. The following observations were taken from standard code and are provided in plain language. Figure 2 is a local sectional chart with the accident site and the closest weather reporting location marked. A magnetic variation⁵ of 14° east was indicated over the area.

⁴ Latest criteria for SPECIs can be found in the Federal Meteorological Handbook: [Federal Meteorological Handbook Number 1, Surface Weather Observations and Reports \(icams-portal.gov\)](https://www.federalregister.gov/documents/2014/05/14/2014-09841/federal-meteorological-handbook-number-1-surface-weather-observations-and-reports)

⁵ Magnetic variation - The angle (at a particular location) between magnetic north and true north. Latest measurement taken from <https://skyvector.com/>

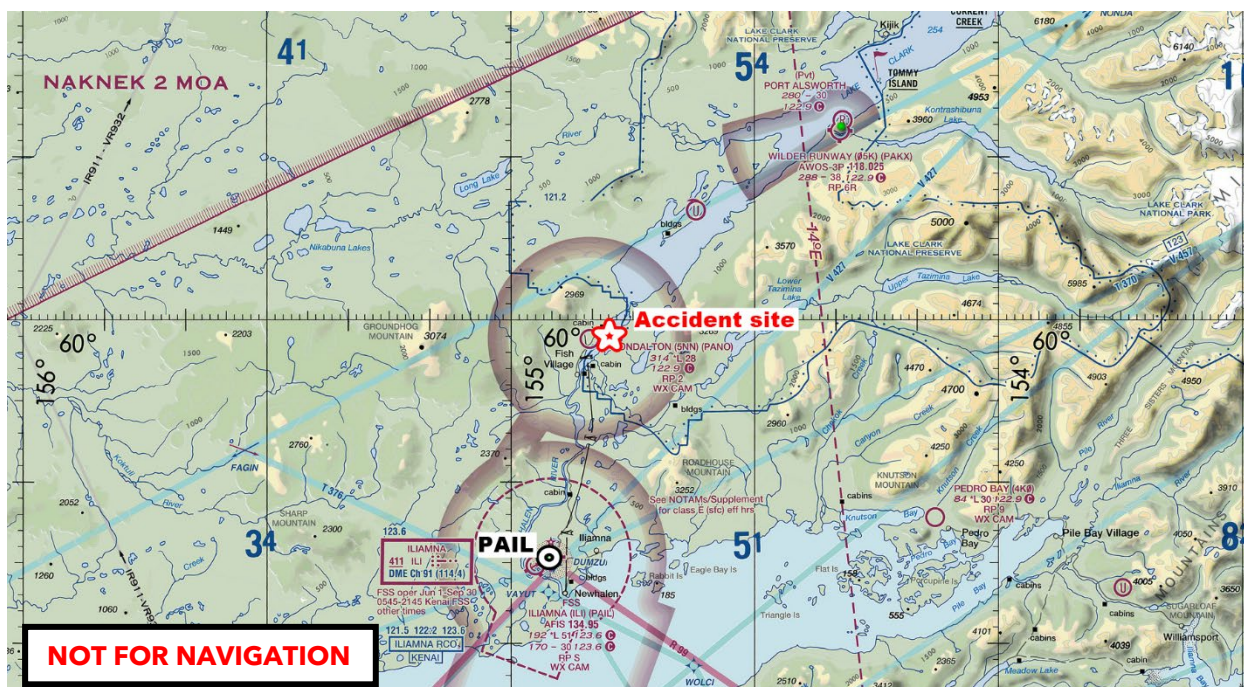


Figure 2. FAA sectional aeronautical chart of the accident area with the location of the accident site and surface observation site noted.

Iliamna Airport (PAIL) had the closest official weather station to the accident site. PAIL had an Automated Surface Observing System (ASOS⁶) and its longline⁷ reports were not augmented. The PAIL ASOS was located 14 miles south-southeast of the accident site (figure 2), at an elevation of 192 ft, and issued the following observations surrounding the period of the accident:⁸

⁶ ASOS - Automated Surface Observing System is equipped with meteorological instruments to observe and report wind, visibility, weather phenomena, ceiling, temperature, dewpoint, altimeter, and barometric pressure. ASOS are maintained by the NWS.

⁷ "Longline" refers to the dissemination of weather observations with the intent that they are available in near-real time to national databases and accessible to the general global public from a large number of vendors. This does not include public accessibility to observations from a reporting station's Very High Frequency (VHF; line-of-site) or telephone broadcast, where applicable. Longline dissemination of weather observations is the primary vehicle through which the weather observations are distributed.

⁸ The bold sections of products in this report are intended to highlight the text that directly reference the weather conditions that affected the accident region around the accident time. The local times in this section next to the METARs are provided for quick reference between UTC and local times.

[0853 ADKT] METAR PAIL 171653Z AUTO 24007KT 4SM HZ OVC006
M01/ A3011 RMK AO2 SLP198 T1011 TSNO \$

[0953 ADKT] METAR PAIL 171753Z AUTO 22004KT OVC009 M01/
A3012 RMK AO2 UPB14E25 SLP202 P0000 60000 T1006 10011 21017
51016 TSNO \$

[1053 ADKT] METAR PAIL 171853Z AUTO 23006KT OVC009 00/ A3012
RMK AO2 CIG 008V012 SLP204 T0000 TSNO \$

**[1104 ADKT] SPECI PAIL 171904Z AUTO 24008KT OVC012 01/01
A3012 RMK AO2 T00060006 TSNO \$**

ACCIDENT TIME 1145 ADKT

**[1148 ADKT] SPECI PAIL 171948Z AUTO 23006KT OVC015 01/01
A3013 RMK AO2 TSNO \$**

[1153 ADKT] METAR PAIL 171953Z AUTO 25006KT OVC015 02/02
A3013 RMK AO2 SLP205 T00170017 TSNO \$

[1233 ADKT] SPECI PAIL 172033Z AUTO 25005KT SCT018 OVC038
03/02 A3013 RMK AO2 T00330022 TSNO \$

The bold type observations decoded in plain language were as follows:

PAIL weather at 1104 ADKT, automated, wind from 240° at 8 knots, overcast ceiling at 1,200 ft above ground level (agl), temperature of 1°C, dew point temperature of 1°C, and an altimeter setting of 30.12 inches of mercury (inHg). Remarks, automated station with a precipitation discriminator, temperature 0.6°C, dew point temperature 0.6°C, thunderstorm information not available, maintenance is needed on the system.

PAIL weather at 1148 ADKT, automated, wind from 230° at 6 knots, overcast ceiling at 1,500 ft agl, temperature of 1°C, dew point temperature of 1°C, and an altimeter setting of 30.13 inHg. Remarks, automated station with a precipitation discriminator, thunderstorm information not available, maintenance is needed on the system.

The observations from the PAIL ASOS around the accident time identified MVFR⁹ conditions with a southwest wind to 8 knots.

⁹ The NWS and the FAA Aeronautical Information Manual (AIM) section 7-1-7 defines the following general flight categories:

- Low Instrument Flight Rules (LIFR*) - ceiling below 500 ft above ground level (agl) and/or visibility

3.0 Upper Air Sounding

A Global Data Assimilation System (GDAS) model sounding was created for near the accident site coordinates for 1300 AKDT with a surface elevation of 1,257 ft.¹⁰ The GDAS sounding was plotted on a standard Skew-T Log P diagram¹¹ from the surface to 600-hPa (approximately 14,000 ft) using the RAOB¹² software package and is included as figure 3. The sounding had a near-surface temperature of 1.9°C, a dew point temperature of 1.1°C, and a relative humidity of 94%. The sounding depicted the lifted condensation level (LCL)¹³ at 331 ft agl, the level of free convection (LFC)¹⁴ at 358 ft agl, and the convective condensation level (CCL)¹⁵ at 1,514 ft agl. The freezing level was located at 659 ft agl (1,916 ft msl). The precipitable water value was 0.39 inches.

less than 1 statute mile.

- Instrument Flight Rules (IFR) - ceiling between 500 to below 1,000 feet agl and/or visibility 1 to less than 3 miles.
- Marginal Visual Flight Rules (MVFR**) - ceiling from 1,000 to 3,000 ft agl and/or visibility 3 to 5 miles.
- Visual Flight Rules (VFR) - ceiling greater 3,000 ft agl and visibility greater than 5 miles.

* By definition, IFR is a ceiling less than 1,000 ft agl and/or visibility less than 3 miles while LIFR is a sub-category of IFR.

**By definition, VFR is a ceiling greater than or equal to 3,000 ft agl and visibility greater than 5 miles while MVFR is a sub-category of VFR.

¹⁰ GDAS sounding was created using NOAA Air Resource Laboratory:

<https://ready.arl.noaa.gov/READYamet.php>

Closest point available was 59.99° N, 154.80° W.

¹¹ Skew T log P diagram - is a standard meteorological plot using temperature and the logarithmic of pressure as coordinates, used to display winds, temperature, dew point, and various indices used to define the vertical structure of the atmosphere.

¹² RAOB - (The complete Rawinsonde Observation program) is an interactive sounding analysis program developed by Esonde Research Services, The Villages, Florida.

¹³ LCL - The height at which a parcel of moist air becomes saturated when it is lifted dry adiabatically.

¹⁴ LFC - The level at which a parcel of saturated air becomes warmer than the surrounding air and begins to rise freely. This occurs most readily in a conditionally unstable atmosphere.

¹⁵ CCL - The level in the atmosphere to which an air parcel, if heated from below, will rise dry adiabatically, without becoming colder than its environment just before the parcel becomes saturated.

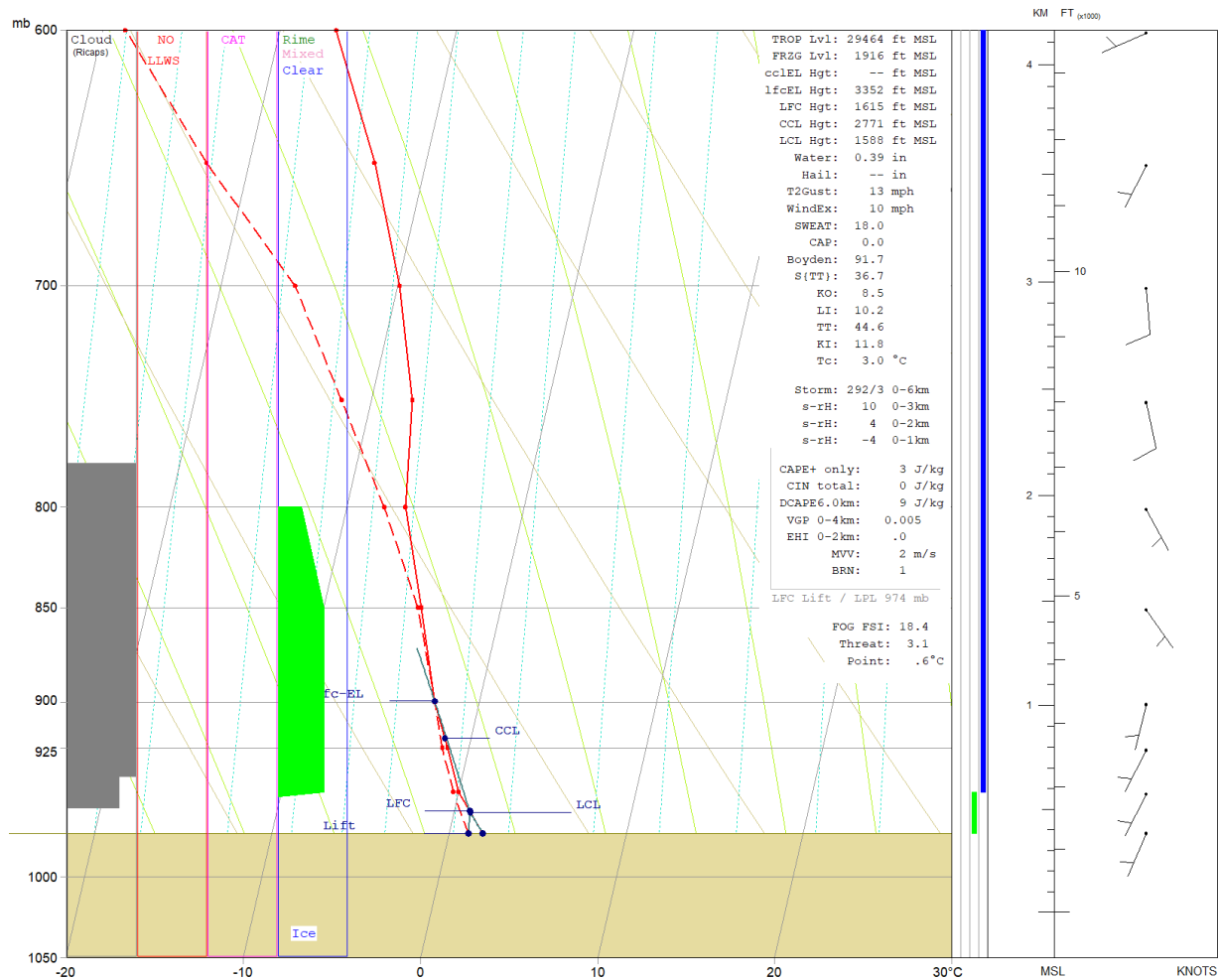


Figure 3. Skew-T Log P diagram of the 1300 ADKT GDAS sounding data.

The 1300 ADKT GDAS sounding indicated a conditionally unstable environment from the surface through ~700 ft agl (~2,000 ft msl) with a stable environment from 2,000 ft msl through 14,000 ft msl. RAOB indicated clouds at ~350 ft agl (~1,600 ft msl) through 7,000 ft. Light to moderate rime icing conditions were indicated by RAOB between 1,900 and 6,500 ft msl.

The 1300 ADKT GDAS sounding wind profile indicated a near surface wind from 200° at 3 knots with the southerly winds through 12,000 ft at or below 10 knots. RAOB did not indicate the possibility of low-level wind shear (LLWS) or clear air turbulence (CAT) below 14,000 ft.

4.0 Satellite Data

Geostationary Operational Environmental Satellite number 18 (GOES-18) visible and infrared data were obtained from an archive at the Space Science Engineering Center at the University of Wisconsin-Madison in Madison, Wisconsin, and processed using the Man-computer Interactive Data Access System software. Visible and infrared imagery (GOES-18 bands 2 and 13) at wavelengths of 0.64 microns (μm) and 10.3 μm , respectively, were retrieved for the period from 0800 AKDT through 1700 AKDT and reviewed. The closest images to the time of the accident were documented.

Figure 4 presents the GOES-18 visible image at 1150 AKDT at 3X magnification with the accident site highlighted with a red square. The visible imagery indicated cloud cover above the accident site at the accident time. Figure 5 presents the GOES-18 infrared image at 1150 AKDT at 8X magnification with the accident site highlighted with a red square. The lower brightness temperatures (green colors; higher cloud tops) were located to the southwest and northwest of the accident site at the accident time. The brightness temperature of 265 Kelvin¹⁶ above the accident site would have been near 8,000 ft based on the vertical temperature profile provided by the 1300 AKDT GDAS sounding. It should be noted these figures have not been corrected for any parallax error.

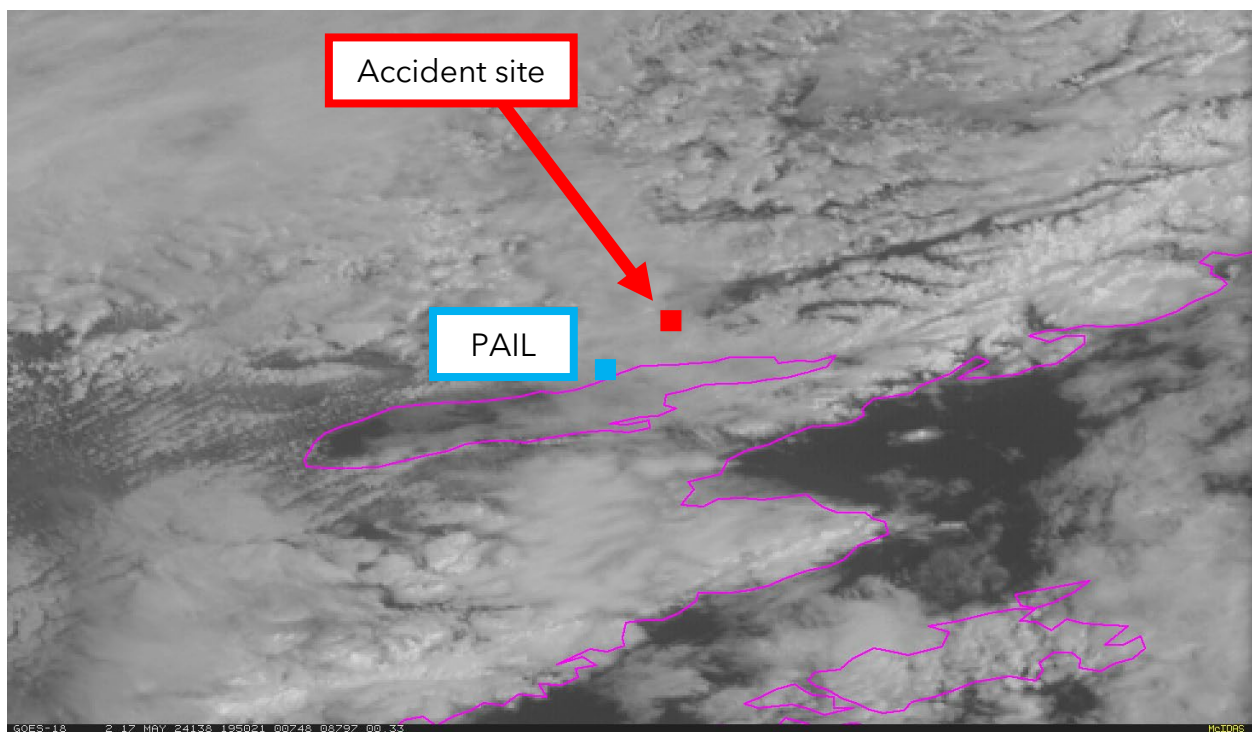


Figure 4. GOES-18 visible image at 1150 ADKT.

¹⁶ Around -8°C.

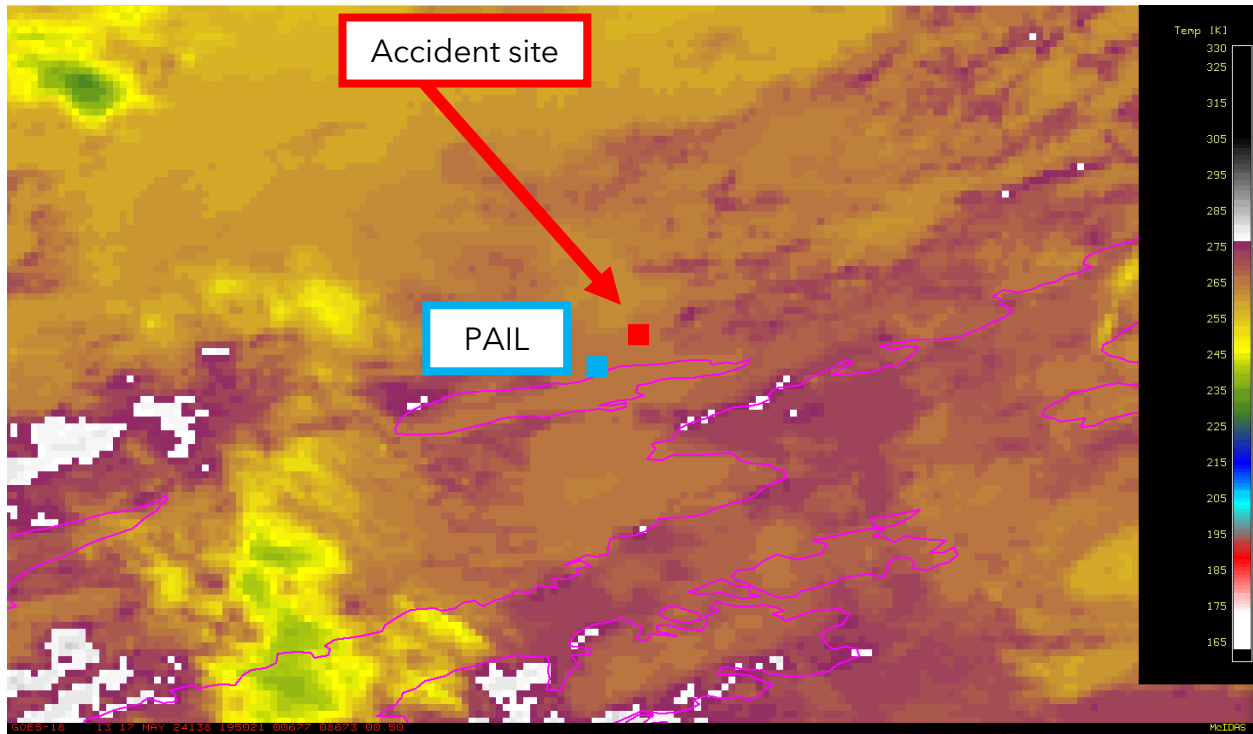


Figure 5. GOES-18 infrared image at 1150 AKDT.

5.0 Radar Imagery

The accident site was located 96 miles northeast of the closest NWS Weather Surveillance Radar-1988, Doppler (WSR-88D)¹⁷ in King Salmon, Alaska, (PAKC). Assuming standard refraction¹⁸ of the PABC WSR-88D radar beam with the antenna elevation at 144 ft, and considering a beamwidth¹⁹ of 0.95°, the lowest elevation scans depicted conditions between 6,500 ft and 16,200 ft over the accident site. A review of weather radar data within an hour before and after the accident time revealed no echoes above the accident site.

¹⁷ The WSR-88D is an S-band 10-centimeter wavelength radar with a power output of 750,000 watts, and with a 28-foot parabolic antenna that concentrates the energy between a 0.87° and 0.96° beam width. The radar produces three basic types of products: base reflectivity, base radial velocity, and base spectral width.

¹⁸ Standard Refraction in the atmosphere is when the temperature and humidity distributions are approximately average, and values set at the standard atmosphere.

¹⁹ Beamwidth - the angular separation between the half power points on the antenna radiation pattern, where the gain is one half the maximum value.

6.0 Pilot Reports

There were no longline-disseminated pilot reports²⁰ (PIREPs) distributed into the national airspace system (NAS) within two hours before and after the accident time and within 75 miles of the accident site at altitudes below 20,000.

7.0 Significant Meteorological Information

There were no convective or non-convective Significant Meteorological Information (SIGMET) advisories valid for the accident site at the accident time.

8.0 Center Weather Service Advisories

The Anchorage (ZAN) Air Route Traffic Control Center (ARTCC) Center Weather Service Unit (CWSU) was responsible for the accident region. There was no Center Weather Advisory (CWA) valid for the accident site at the accident time.

9.0 Alaska Aviation Weather Unit Graphics

The Alaska Aviation Weather Unit (AAWU)²¹ produced graphic forecast information valid for the proposed route of flight and the accident time. The graphical AAWU forecast valid at the accident time indicated MVFR conditions with the potential for rain showers around 1000 AKDT. For more information please see attachment 1.

10.0 Airmen's Meteorological Information

There was an Airmen's Meteorological Information (AIRMET) advisory Sierra for mountain obscuration in clouds issued by the AAWU at 1000 AKDT that was valid for the accident site at the accident time.

WAAK48 PAWU 171800 RRA
WA8O
ANCS WA 171215
AIRMET SIERRA FOR IFR AND MT OBSC VALID UNTIL 172015
.
COOK INLET AND SUSITNA VLY AB
SW PANC MTS OCNL OBSC BY CLDS/PCPN. NC.
.

²⁰ Only PIREPs with the World Meteorological Organization headers UBAK** were considered. These do not include pilot reports only broadcast via radio.

²¹ [Alaska Aviation Weather Unit](#)

CNTRL GLF CST AD
MTS OCNL OBSC BY CLDS/ISOL PCPN. IMPR.

.
KODIAK IS AE
PADQ NE MTS OCNL OBSC BY CLDS/PCPN. IMPR.

.
YKN-KUSKOKWIM DELTA AG
S PABE MTS OCNL OBSC IN CLDS. IMPR.

.
BRISTOL BAY AH
MTS OCNL OBSC IN CLDS. NC.

.
AK PEN AI
BERING SIDE MTS OBSC BY CLDS/PCPN. NC.

.
UNIMAK PASS TO ADAK AJ
W PADU OCNL CIG BLW 010/ISOL VIS BLW 3SM -RA BR. NC.

.
UNIMAK PASS TO ADAK AJ
MTS OCNL OBSC BY CLDS/PCPN. NC.

.
ADAK TO ATTU AK
OCNL CIG BLW 010/VIS BLW 3SM BR/-RA BR. IMPR.

.
ADAK TO ATTU AK
MTS OCNL OBSC BY CLDS/PCPN. NC.

.
=ANCT WA 171215
AIRMET TANGO FOR TURB/STG SFC WINDS VALID UNTIL 172015

.
ADAK TO ATTU AK
TIL 18Z OCNL MOD TURB FL300-FL380. WKN.

.
=ANCZ WA 171215
AIRMET ZULU FOR ICING VALID UNTIL 172015

.
NONE

.
RV MAY 2024 AAWU=

11.0 Area Forecast

The AAWU issued an Area Forecast at 0432 AKDT valid for the accident site at the accident time. The Area Forecast did not forecast any turbulence or icing below 6,000 ft, but did forecast few clouds at 1,500 ft with a broken ceiling at 2,500 ft, overcast skies at 5,000 ft, and cloud tops to 12,000 ft:

FAAK58 PAWU 171232 CCA
FA8W
ANCC FA 171224 COR

AK SRN HLF EXCP SE AK...

.
AIRMETS VALID UNTIL 172015
CB IMPLY POSSIBLE SEV OR GREATER TURB SEV ICE LLWS AND IFR CONDS.
NON MSL HEIGHTS NOTED BY AGL OR CIG.

.
KUSKOKWIM VLY AF...VALID UNTIL 180000
...CLOUDS/WX...
AIRMET IFRSE FARWELL LAKE-PASV LN
OCNL CIG BLW 010/VIS BLW 3SM -RA BR. NC...
SE FARWELL LAKE-PASV LN OVC005 TOP 160. VIS 3-5SM -RA BR.
ELSW SCT025 BKN050 TOP 160. OCNL BKN025/VIS 3-5SM -SHRA.
OTLK VALID 180000-180600...VFR.
...TURB...
NIL SIG.
...ICE AND FZLVL...
TIL 21Z ISOL MOD ICEIC 060-160. FZLVL 030.

.
YKN-KUSKOKWIM DELTA AG...VALID UNTIL 180000
...CLOUDS/WX...
AIRMET MT OBSCS PABE MTS OCNL OBSC IN CLDS. IMPR...
FEW005 BKN025 OVC050 TOP 100. ALG CST ISOL BKN005/VIS BLW 3SM BR/FG.
OTLK VALID 180000-180600...VFR.
CIG. S PASM SHRA.
...TURB...
NIL SIG.
...ICE AND FZLVL...
NIL SIG. FZLVL BLW 010.

.
BRISTOL BAY AH...VALID UNTIL 180000
...CLOUDS/WX...
*****AIRMET MT OBSC***MTS OCNL OBSC IN CLDS. NC...**
FEW015 BKN025 OVC050 TOP 120 WI DCRG LYRS ABV TO FL180.
ALG CST OCNL OVC015/VIS 3-5SM BR.
OTLK VALID 180000-180600...VFR.
...TURB...
NIL SIG.
...ICE AND FZLVL...
TIL 18Z E PAPN-PANW LN ISOL MOD ICEIC 060-120. FZLVL 010.

.
AK PEN AI...VALID UNTIL 180000
...CLOUDS/WX...
AIRMET MT OBSCBERING SIDE MTS OBSC BY CLDS/PCPN. NC...
SCT025 BKN035 OVC050 TOP 140. BERING SIDE OCNL BKN025/ISOL -RA.
OTLK VALID 180000-180600...MVFR CIG.
...TURB...
NIL SIG.
...ICE AND FZLVL...
AFT 21Z ISOL MOD ICEIC 080-130. FZLVL 020.

.
UNIMAK PASS TO ADAK AJ...VALID UNTIL 180000
...CLOUDS/WX...
AIRMET IFRW PADU OCNL CIG BLW 010/ISOL VIS BLW 3SM -RA BR. NC...

AIRMET MT OBSCMTS OCNL OBSC BY CLDS/PCPN. NC...
W PADU SCT007 BKN015 OVC040 TOP 130. OCNL VIS 5SM -RA BR.
ELSW SCT015 BKN025 OVC050 TOP 150. ISOL -RA.
OTLK VALID 180000-180600...W PADU IFR CIG BR. ELSW MVFR CIG.
...TURB...
NIL SIG.
...ICE AND FZLVL...
ISOL MOD ICEIC 080-130. FZLVL 035 EXC 070 SW.
.
TPW MAY 2024 AAWU=

12.0 Terminal Aerodrome Forecast

PAIL was the closest site with an NWS Terminal Aerodrome Forecast²² (TAF). The PAIL TAF valid at the accident time was issued at 0920 AKDT and was valid for a 24-hour period beginning at 1000 AKDT. The 0920 AKDT TAF for PAIL was as follows:

FTAK31 PAFC 171720
TAFAIL
TAF
PAIL 171720Z 1718/1818 22007KT 4SM BR OVC009
FM171900 19007KT P6SM SCT009 OVC020
FM172100 17007KT P6SM BKN050
FM180800 09006KT P6SM SKC
FM181300 10015G25KT P6SM BKN050=

Between 1100 and 1300 AKDT the PAIL forecast expected a wind from 190° at 7 knots, greater than 6 miles visibility, scattered clouds at 900 ft agl, and an overcast ceiling at 2,000 ft agl.

13.0 National Weather Service Area Forecast Discussion

The NWS weather forecast office in Anchorage, Alaska, (WFO AFC) was responsible for the public forecast in the accident region. WFO AFC issued the following Area Forecast Discussion (AFD) at 0448 ADKT:

²² According to NWS Instruction 10-813: "An NWS TAF consists of the expected meteorological conditions significant to aviation at an airport for a specified time period. For the U.S., this is the area within five (5) statute miles (SM) of the center of an airport's runway complex."
www.nws.noaa.gov/directives/sym/pd01008013curr.pdf

FXAK68 PAFC 171248
AFDAFC

Southcentral and Southwest Alaska Forecast Discussion
National Weather Service Anchorage AK
448 AM AKDT Fri May 17 2024

.SHORT TERM FORECAST SOUTHCENTRAL ALASKA (Days 1 through 3)...

A strong shortwave rotating south and east around a strong longwave trough over the Bering Sea will continue to move south and east into the Central Gulf of Alaska today and weaken further as it pushes into the Eastern Gulf of Alaska on Saturday. A weak surface low pressure system associated with the shortwave is currently located 100 nm east of Kodiak Island and will weaken further as it moves over the Gulf of Alaska today and over the southern Panhandle this evening. Rain showers currently noted on Radar over the Northern Gulf of Alaska, Prince William Sound and the Kenai Peninsula will diminish today as weak ridging both aloft and at the surface push into the Gulf of Alaska and merge with High Pressure noted over the Yukon and Eastern Alaska.

The break between storms in the Gulf of Alaska will be short lived as a strong low over Bristol Bay and supported by a deep and unseasonably cold upper level low pressure system over the Bering Sea will strengthen on Saturday as it pushes east over the AK Peninsula on Saturday and over Kodiak Island Sunday morning. Ahead of the low a surface ridge will push north into the northern Gulf of Alaska and will bring some breaks in the clouds as slightly warmer temperatures. Gusty southeasterly winds will pick up again as the coastal ridge develops ahead of the low entering the Gulf.

Through the day on Saturday the strong and unseasonably cold upper level low will slide from the Bering Sea into the western Gulf of Alaska, sending another period of precipitation back into Kodiak Island. As the upper low and accompanying surface low move into the western Gulf, precipitation will also overspread the eastern Kenai Peninsula through Sunday morning. Confidence remains low in regards to the northern extent of precipitation through Sunday as there is still disagreement among model guidance on where the upper low ejects into the Gulf; a moderate, more steady rain may also make it further north into the Prince William Sound and other areas along the coast of Southcentral Alaska. The Eastern Kenai and Prince William sound will see the heaviest precipitation while the Western Kenai, the Anchorage Bowl and the MatSu will see lesser amounts with drying downslope flow and gusty southeasterly gap flows.

-CC

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.SHORT TERM FORECAST SOUTHWEST ALASKA, THE BERING SEA AND THE ALEUTIANS (Days 1 through 3: Today through Sunday)...

The forecast remains largely on track, with only minor updates to wind speed and precipitation type/amounts. The low that brought rain to parts of Southwest Alaska overnight is weakening as it exits into the Gulf. While much of Southwest Alaska remains under overcast skies, radar shows that precipitation has largely tapered off. The only major item of note this early morning for Southwest is a bank of fog and low stratus currently making its way into Kuskokwim Delta.

A different story is unfolding in the Bering Sea and Aleutian Islands, where satellite imagery shows a low in the Northwest Bering, a North Pacific low near Amchitka, and a front extending between these two features. Much of the action this morning is currently over the Central Aleutians, where light rain has just begun to fall. Few impacts are expected for the Central Aleutians; the front will still be fairly weak as it moves across the Central Aleutians through the early afternoon. Instead, the brunt of the stronger winds and heavier precipitation will be felt in the Eastern Aleutians and Southwest Alaska on Saturday as the lows merge and draw in moisture from the North Pacific.

While this storm system doesn't look to be exceptionally impactful, there are a few items of note. One is that gusty southeasterly winds will overspread much of Southwest Alaska through Saturday, with the strongest winds (gusts of up to 50 mph) expected in interior Bristol Bay near Kamishak Gap. Winds will be enhanced by the terrain as well as a tightened pressure gradient between higher pressure in the Gulf and lower pressure near Bristol Bay. Secondly, cold air in place ahead of this approaching front will likely lead to light snow for Nunivak Island and the Kuskokwim Delta coast from tonight into Saturday morning. The current forecast is for about 2 inches of snow, though daytime highs ranging from the mid 30s through low 40s should help to melt the snow before day's end.

Further west, the Central and Western Bering/Aleutians will see active but generally low impact weather as two weak storm systems move through, one on Saturday and one on Sunday. The stronger of these two systems will be Sunday's, which will bring winds at small craft speed (25 kt) and light rain, as opposed to sub-small craft wind speeds and scattered rain showers for Sunday's system.

-KC

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.LONG TERM FORECAST (Days 4 through 7)...

The extended forecast looks to be a brief transitional period as the longwave pattern reloads itself. Currently the pattern is

driven by an anchoring trough over Siberia with a cold pool extending into the Bering Sea and southwest Mainland. Over the weekend, a new stronger shortwave trough propagates within the east Asian jet and into the Bering Sea which will re-orient the longwave trough to look much the same as it currently does despite the first system moving from the Bering Sea into the Gulf of Alaska. For Southcentral Alaska, the northern extent of the Gulf low pressure will potentially bring rain to coastal areas but leave interior areas dry with continued clouds and slightly below normal temperatures over the weekend.

What does this mean for sensible weather? Another slug of tropical moisture will bring rain to the southwest Mainland and Aleutians early next week along with gusty southerly winds. The building ridge ahead of that front will bring at least of day of drier possibly sunny weather, however, with the trough out west positioned over the Bering Sea it is more likely than not that we get another disturbance or moisture plume over Southcentral, but confidence is lower and uncertainty high as the pattern transitions. Stay tuned.

MTL

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.AVIATION...

PANC...VFR conditions are expected to persist on Friday as a weak low over the Gulf of Alaska departs the region to the southeast. Winds should remain light and below 10 knots.

BL

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14.0 Weather Camera Imagery

Images from the FAA's Aviation Weather Cameras²³ were retrieved for the Nondalton and Iliamna weather camera locations around the accident timeframe and are contained in attachment 2. Precipitation or mist can be seen below the cloud deck layer in Nondalton around the accident time. The cloud bases at the accident time are below the clear day visual reference hill tops of 1,600 ft msl with the cloud base appearing near the base of the 1,600 ft hill at the accident time. The site elevation of the Nondalton imagery is 361 ft msl. For more information please see attachment 2.

²³ [FAA WeatherCams](#)

15.0 Pilot Weather Information

Title 14 *CFR* 91.103 states that “Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight.” FAA Advisory Circular (AC) 91-92 “Pilot’s Guide to a Preflight Planning” (dated March 15, 2021) provided pilot guidance on preflight self-briefings, including planning, weather interpretation, and risk identification/mitigation skills. The AC further stated in part:

Pilots adopting these guidelines will be better prepared to interpret and utilize real-time weather information before departure and en route, in the cockpit, via technology like Automatic Dependent Surveillance-Broadcast (ADS-B) and via third-party providers.²⁴

A search of archived information indicated that the accident pilot did not request weather information from Alaskan Flight Services²⁵ (AK FSS). A search of ForeFlight information indicated that the accident pilot did not have a ForeFlight account. It is unknown what weather information, if any, the accident pilot checked or received before or during the accident flight.

16.0 Astronomical Data

The astronomical data obtained for the accident site on May 17, 2024, indicated the following:

SUN

Sunrise	0543 ADKT
Accident time	1145 ADKT²⁶
Sun transit	1416 ADKT
Sunset	2258 ADKT

At the time of the accident the Sun was had an altitude of 41.56° and azimuth of 129.72°.

²⁴ https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_91-92.pdf. The AC also listed multiple online FAA resources for aviation flight planning services for adverse weather.

²⁵

https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/fs/alaskan/aska/

²⁶ Inserted accident time for reference and context.

E. LIST OF ATTACHMENTS

Attachment 1 - AAWU graphical information valid at the accident time

Attachment 2 - FAA Weather Camera imagery around the accident time

Submitted by:

Paul Suffern
Senior Meteorologist