National Transportation Safety Board
Office of Aviation Safety
Washington, DC 20594

WPR22FA210

METEOROLOGY

Specialist's Factual Report

September 22, 2022

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A. ACCIDENT

Location: Camarillo, California
Date: June 10, 2022
Time: 0803 Pacific daylight time
1503 coordinated universal time (UTC)
Airplane: Mooney M20K; Registration: N305L

B. METEOROLOGY SPECIALIST

Specialist Paul Suffern
National Transportation Safety Board
Washington, DC

C. DETAILS OF THE INVESTIGATION

The National Transportation Safety Board's Senior Meteorologist was not on scene for this investigation and conducted the meteorology phase of the investigation remotely, collecting data 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 Pacific daylight time (PDT) and are based upon the 24-hour clock, where local time is -7 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.

The accident site was located at latitude 34.223557° N, Longitude 119.12531° W, at approximate elevation of 70 feet (ft).

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 joint NWS and Federal Aviation Administration (FAA) Advisory Circular "Aviation Weather Services", AC 00-45H.[1]

1.1 Surface Analysis Chart

The NWS Surface Analysis Chart centered over the southwestern United States for 0800 PDT is provided as figure 1 with the location of the accident site within the black circle. The chart depicted low-pressure systems near the California, Nevada, Arizona border, over central California, and one southwest of the accident site over the Pacific Ocean 1007-, 1012-, and 1011-hectopascals (hPa), respectively. A surface trough[2] was depicted stretching from the low-pressure center in central California from northwest to southeast. Additional surface troughs were noted with the two additional low-pressure centers. Troughs and fronts can act as lifting mechanisms to help produce clouds and precipitation if sufficient moisture is present.

The closest station model depicted near the accident site depicted a light southerly wind, an air temperature of 62° Fahrenheit (°F), with a dew point temperature of 57°F, visibility restricted due to mist, and overcast clouds.

[1] https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1030235

[2] Trough – An elongated area of relatively low atmospheric pressure or heights.

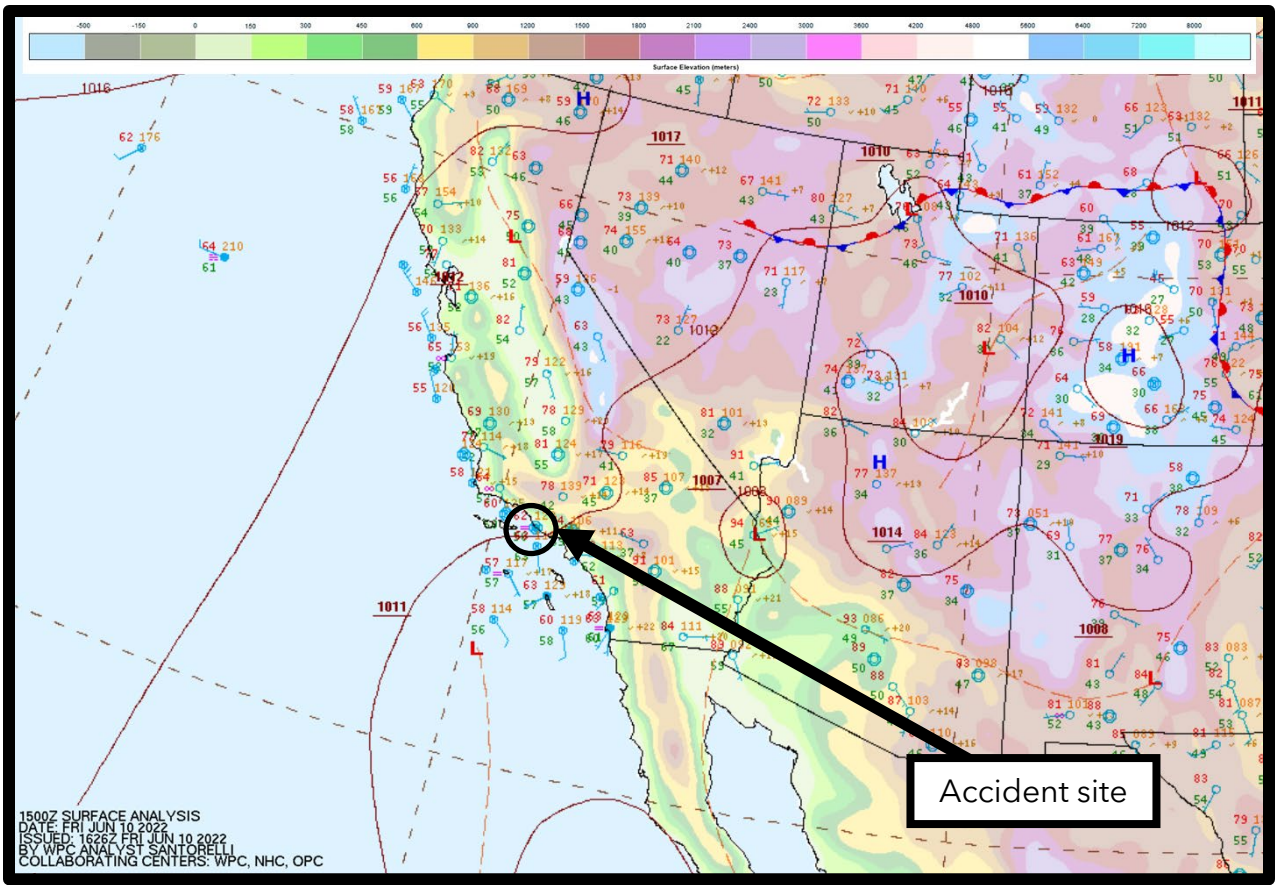

Figure 1. NWS Surface Analysis Chart for 0800 PDT.

2.0 Surface Observations

The area surrounding the accident site was documented using official Aviation Routine Weather Reports (METARs) and Specials Reports (SPECIs). 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. The chart depicted the magnetic variation[3] of 12° east over the area.

[3] Magnetic variation – The angle (at a particular location) between magnetic north and true north. Latest measurement taken from https://skyvector.com/

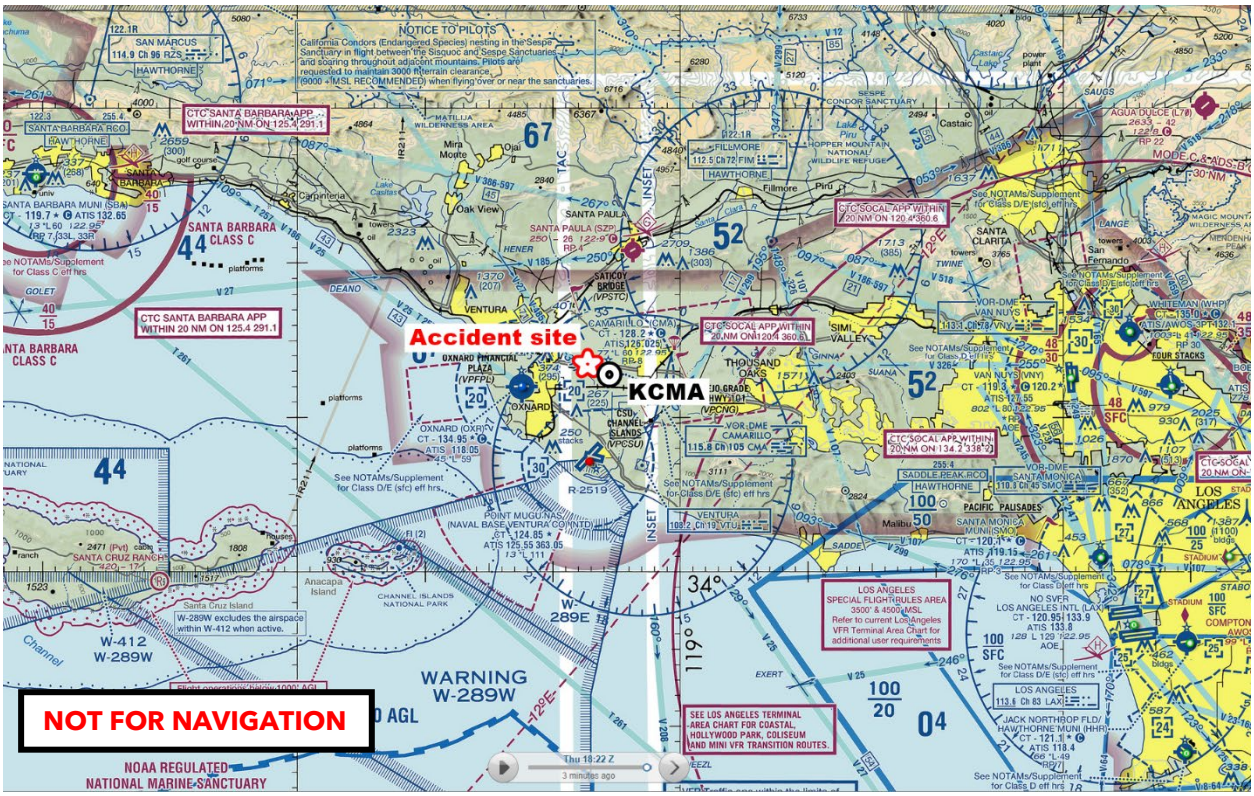

Figure 2. FAA sectional aeronautical chart of the accident area with the location of the accident site and surface observation site.

Camarillo Airport (KCMA) had the closest official weather station to the accident site. KCMA had an Automated Surface Observing System (ASOS[4]) whose longline[5] reports were augmented by air traffic control (ATC) when the tower was in operation[6]. The KCMA ASOS was located 2 miles east-southeast of the accident site, at an elevation of 77 ft, and issued the following observations surrounding the period of the accident:[7]

[4] 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.

[5] "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.

[6] ATC operation hours between 0700 and 2100 local.

[7] The bold sections in this NWS product and the rest of the products in this report are intended to highlight the text that directly reference the weather conditions that affected the accident location around the accident time. The local times in this section next to the METARs are provided for quick reference between UTC and local times around the accident time.

[0655 PDT] METAR KCMA 101355Z 01003KT 1/2SM FG OVC002 16/14 A2987 RMK AO2 SLP122 T01560144=

[0717 PDT] SPECI KCMA 101417Z AUTO 04003KT 1 3/4SM BR OVC002 16/14 A2987 RMK AO2 T01560144=

[0731 PDT] SPECI KCMA 101431Z AUTO 00000KT 2 1/2SM BR OVC003 16/14 A2988 RMK AO2 T01560139=

[0738 PDT] SPECI KCMA 101438Z AUTO 08003KT 3SM BR OVC003 16/14 A2988 RMK AO2 T01560144=

[0755 PDT] METAR KCMA 101455Z AUTO 00000KT 4SM BR OVC003 16/14 A2988 RMK AO2 SLP128 T01560144 53013=

ACCIDENT TIME 0803 PDT

[0855 PDT] METAR KCMA 101555Z VRB03KT 5SM HZ BKN006 18/14 A2990 RMK AO2 SLP132 T01780144=

[0938 PDT] SPECI KCMA 101638Z 19003KT 5SM HZ FEW006 19/15 A2990 RMK AO2 T01940150=

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

KCMA weather at 0755 PDT, automated, wind calm, visibility 4 miles, mist, overcast ceiling at 300 ft above ground level (agl), temperature of 16° Celsius (C), dew point temperature 14°C, and an altimeter setting of 29.88 inches of mercury (inHg). Remarks, automated station with a precipitation discriminator, sea level pressure 1012.8 hPa, temperature 15.6°C, dew point temperature 14.4°C, 3-hourly pressure increase of 1.3 hPa.

KCMA weather at 0855 PDT, variable wind at 3 knots, visibility 5 miles, haze, broken ceiling at 600 ft agl, temperature of 18°C, dew point temperature 14°C, and an altimeter setting of 29.90 inHg. Remarks, automated station with a precipitation discriminator, sea level pressure 1013.2 hPa, temperature 17.8°C, dew point temperature 14.4°C.

The observations from KCMA surrounding the accident time indicated LIFR to IFR[8] conditions due to ceilings.

[8] As defined by 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 less than 1 statute mile.

3.0 Upper Air Sounding

A High-Resolution Rapid Refresh (HRRR)[9] model sounding was created for the approximate accident site coordinates for 0800 PDT.[10] The HRRR sounding was plotted on a standard Skew-T Log P diagram[11] from the surface to 600-hPa (or approximately 14,000 ft) using the RAOB[12] software package and is included as figure 3. The sounding depicted an elevation of 79 ft over the grid point with a near surface temperature of 17.4°C and a dew point temperature of 15.8°C, with a relative humidity of 90%. The sounding depicted the lifted condensation level (LCL)[13] and the level of free convection (LFC)[14] at 673 ft agl, and the convective condensation level (CCL)[15] at 14,476 ft msl. The precipitable water value at 0.87 inches.

- 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.

[9] The HRRR is a NOAA real-time three-kilometer resolution, hourly-updated, cloud-resolving, convection-allowing atmospheric model, initialized by three-kilometer grids with three-kilometer radar assimilation. Radar data is assimilated in the HRRR every 15 minutes over a one-hour period.

[10] HRRR sounding was created using NOAA Air Resource Laboratory: https://ready.arl.noaa.gov/READYamet.php

[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 Eosonde 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.

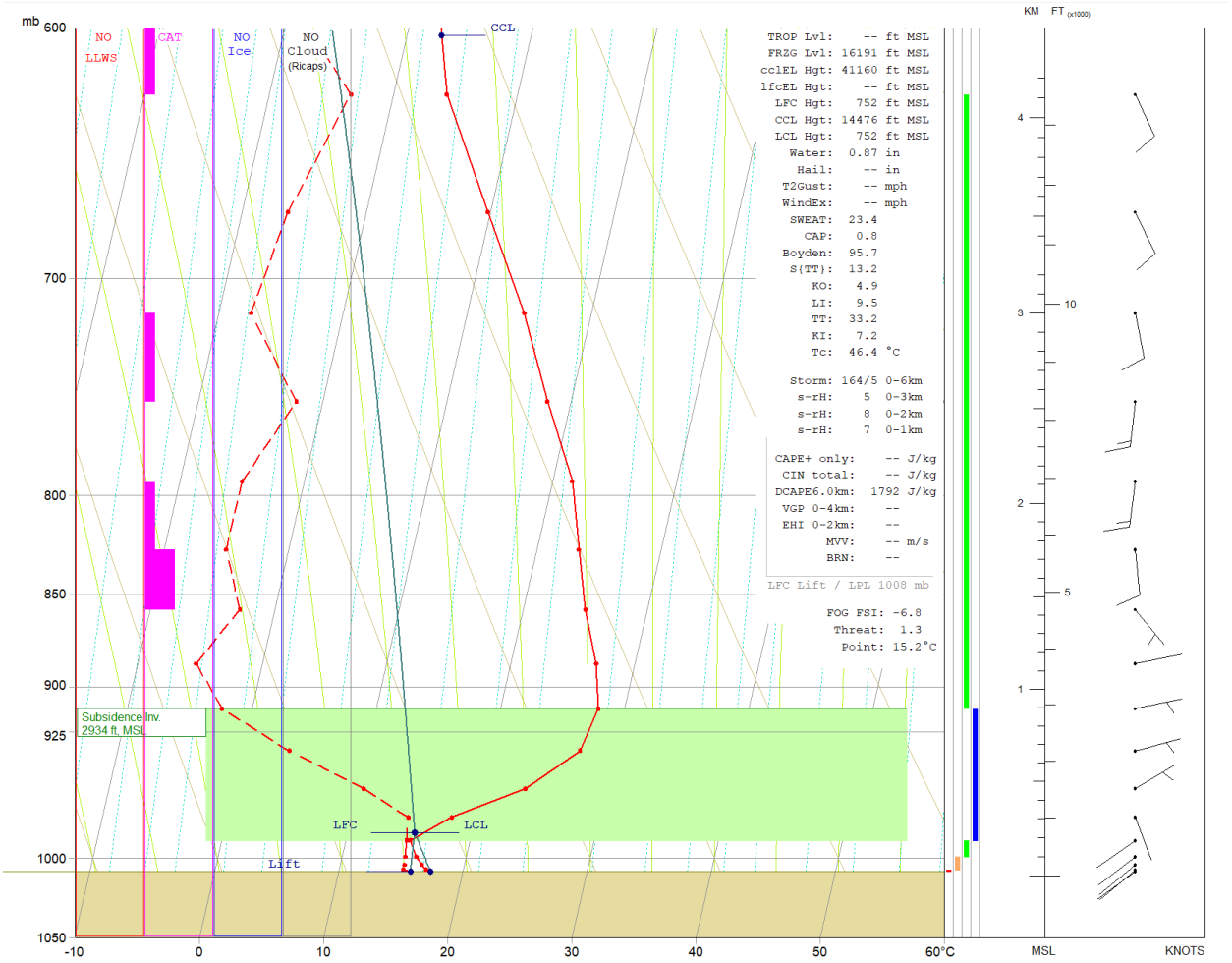

Figure 3. 0800 PDT HRRR sounding.

The 0800 PDT HRRR sounding indicated an unstable to conditionally unstable environment from the surface through 500 ft with a stable layer from 500 ft agl through 2,934 ft, the top of the subsidence inversion[16]. No clouds or icing were indicated by RAOB below 14,000 ft.

The 0800 PDT HRRR sounding wind profile indicated a near surface wind from 232° at 2 knots with the wind remaining variable at or under 5 knots through 5,000 ft. RAOB did not indicate the possibility of low-level wind shear (LLWS) or clear air turbulence (CAT) below 4,000 ft.

[16] Inversion – A departure from the usual decrease of the value of an atmospheric property with increasing altitude; also, the layer through which this departure occurs (the "inversion layer"), or the lowest altitude at which the departure is found (the "base of the inversion").

4.0 Satellite Data

Geostationary Operational Environmental Satellite number 17 (GOES-17) 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-17 bands 2 and 13) at wavelengths of 0.64 microns (μm) and 10.3 μm, respectively, were retrieved for the period from 0600 PDT through 1200 PDT and reviewed, and the closest images to the time of the accident were documented.

Figure 4 presents the GOES-17 visible imagery from 0800 PDT at 2X magnification with the accident site highlighted with a red square and cloud cover indicated above the accident site stratiform in nature. Figure 5 presents the GOES-17 infrared imagery from 0800 PDT at 6X magnification with the accident site highlighted with a red square and cloud cover indicated above the accident site. The cloud cover along the coastal regions and offshore all had a similar radiative cloud top temperature of 288 Kelvin. It should be noted these figures have not been corrected for any parallax error.

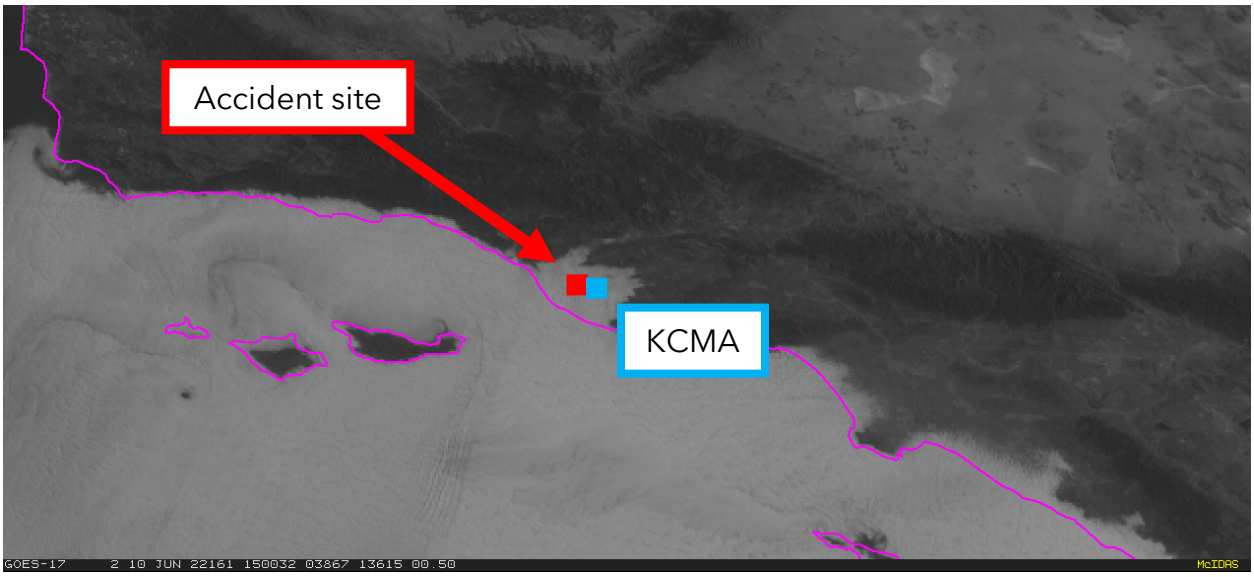

Figure 4. GOES-17 visible image at 0800 PDT.

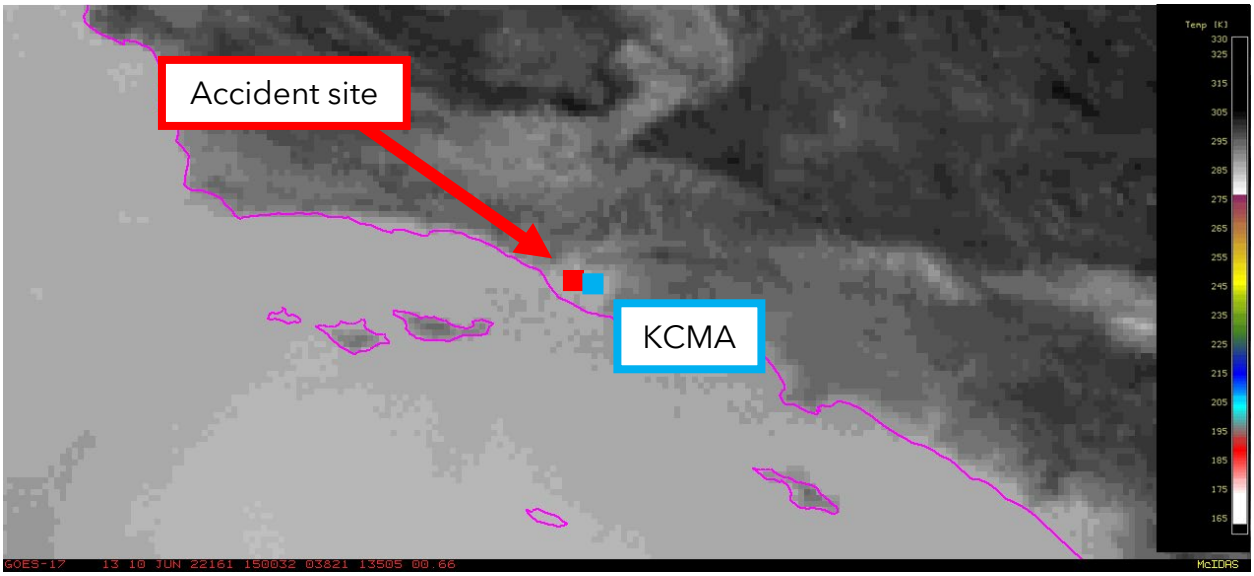

Figure 5. GOES-17 infrared image at 0800 PDT.

5.0 National Radar Imagery

A regional view of the NWS National Reflectivity Mosaic is included as figure 6 for 0800 PDT with the approximate location of the accident site marked by a red circle. The image depicted no echoes above the accident site.

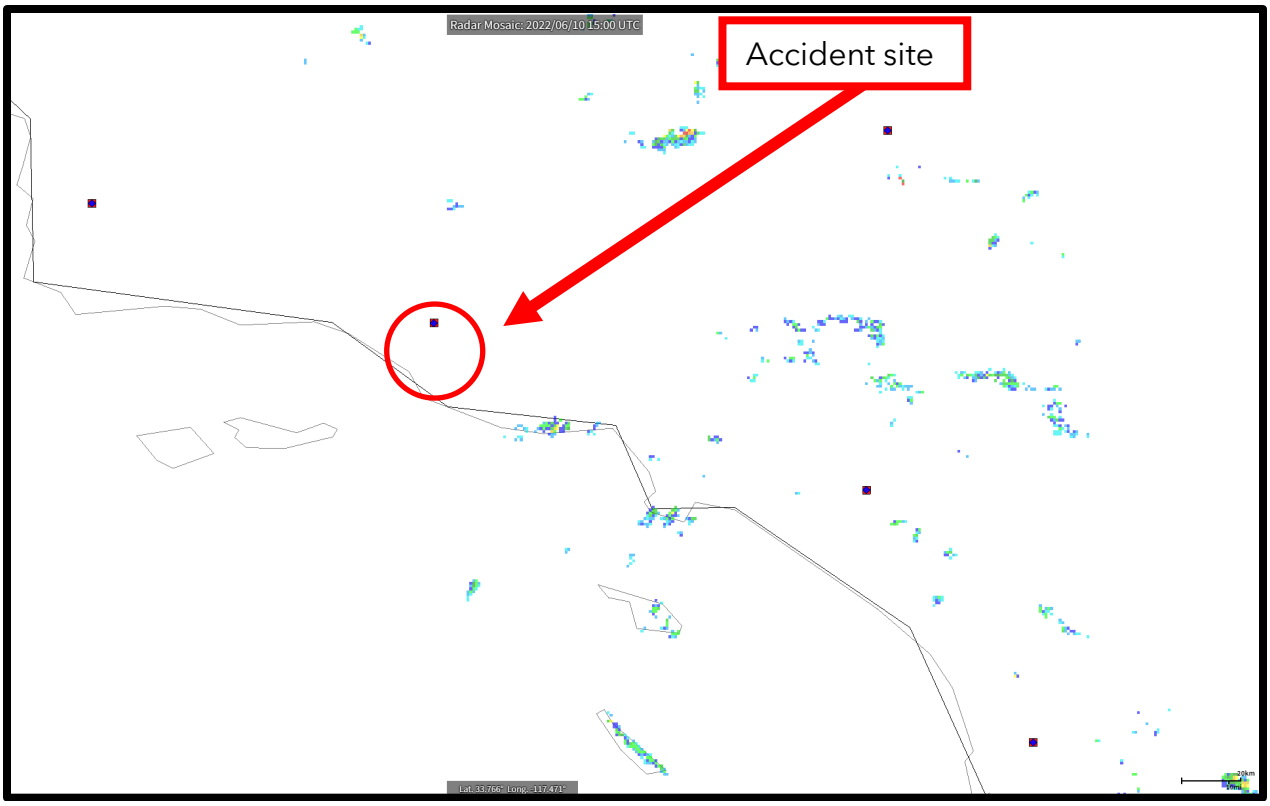

Figure 6. National Reflectivity Mosaic for 0800 PDT.

6.0 Pilot Reports

The longline-disseminated pilot reports[17] (PIREPs) distributed into the national airspace (NAS) were reviewed for about two hours on either side of the accident time and the PIREPs issued into the NAS within 100 miles of the accident site for below 19,000 ft are shown below:

LAX UA /OV KLAX/TM 1305/FL004/TP B737/SK OVC004/RM TOPS 009/ BASES 004

LAX UA /OV KLAX/TM 1336/FL005/TP B752/SK BKN005/RM TOPS 007/ BASES 005

SNA UA /OV SNA/TM 1400/FL010/TP B737/RM DEP RWY 20R/ TOPS 010.

LAX UA /OV KLAX/TM 1436/FL007/TP A20N/WX FV01SM HZ

SNA UA /OV SNA/TM 1436/FL012/TP E55P/RM DEP RWY 20R/ BASES 006/ TOPS 012.

SNA UA /OV SNA/TM 1522/FL007/TP E135/RM 3 MILE FINAL RWY 20R/ BASES 007.

LAX UA /OV KLAX/TM 1524/FL005/TP B737/SK BKN005

LGB UA /OV LGB/TM 1605/FL016/TP H60/SK BASE004TOP016

LAX UA /OV LGB/TM 1610/FL012/TP C441/RM TOPS 1200 ON LGB DEPARTURES

[17] Only pilot reports with the World Meteorological Organization headers UBCA**, UBNV**, and UBAZ** were considered. These do not include pilot reports only broadcast via radio.

LAX UA /OV KLAX/TM 1632/FL006/TP B789/SK OVC006/RM TOPS 016/ BASES 006

LGB UA /OV LGB/TM 1705/FL014/TP B737/SK TOP014

SMO UA /OV SMO030002/TM 1741/FLDURGD/TP SR22/SK OVC007

7.0 Significant Meteorological Information

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

8.0 Center Weather Service Advisories

The Los Angeles (ZLA) 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 from ZLA CWSU at the accident time.

9.0 Airmen's Meteorological Information

There was text Airmen's Meteorological Information (AIRMET) advisory Sierra valid for the accident site at the accident time. The text AIRMET Tango was issued at 0745 PDT and forecast IFR conditions due to mist and fog:

WAUS46 KKCI 101445
WA6S
-SFOS WA 101445
AIRMET SIERRA UPDT 3 FOR IFR AND MTN OBSCN VALID UNTIL 102100
.
AIRMET IFR...WA OR ID MT
FROM 40SW YQL TO 50W GTF TO 50W HLN TO 60NNW LKT TO 50N DNJ TO
70SW PDT TO 20SW GEG TO 80WSW YXC TO 40SW YQL
CIG BLW 010/VIS BLW 3SM PCPN/BR/FG. CONDS CONTG BYD 21Z THRU 03Z.
.
AIRMET IFR...CA AND CSTL WTRS
FROM 60WNW RZS TO 20NNW RZS TO 50W TRM TO 30SE MZB TO 220SW MZB
TO 160SW RZS TO 60WNW RZS
CIG BLW 010/VIS BLW 3SM BR/FG. CONDS CONTG BYD 21Z THRU 03Z.
.
AIRMET IFR...WA OR CA AND CSTL WTRS
FROM 50ESE YDC TO 50W EPH TO 40S YKM TO 40E OED TO 60SW OED TO
40SSE FOT TO 70WNW RZS TO 150SW RZS TO 140WSW FOT TO 100W ONP TO
140W TOU TO TOU TO 20W HUH TO 50ESE YDC
CIG BLW 010/VIS BLW 3SM PCPN/BR/FG. CONDS CONTG BYD 21Z THRU 03Z.
.
AIRMET MTN OBSCN...WA OR CA ID MT
FROM 20NE HUH TO 50SW YQL TO HLN TO 70SSW PDT TO 40WNW LKV TO
FOT TO 70W OED TO HQM TO TOU TO 20NE HUH

MTNS OBSC BY CLDS/PCPN/BR. CONDS CONTG BYD 21Z THRU 03Z.
....

10.0 Graphical Forecasts for Aviation

The Graphical Forecasts for Aviation (GFA) products issued before the accident flight and valid at 0800 PDT are shown in attachment 1. The GFA surface forecast applicable to the accident site that was valid before the accident flight's departure for times surrounding the accident time indicated LIFR to IFR surface visibilities, fog, and a variable surface wind at 5 knots. The GFA cloud forecast applicable to the accident site that was valid before departure for times surrounding the accident time indicated broken cloud coverage with bases at 300 ft and cloud tops at 2,100 ft. The Graphical AIRMETs[18] (G-AIRMET) Sierra valid for the accident site at accident time are shown on the GFA surface forecast figures in attachment 1. The only human-generated information reflected in the two GFA products were the G-AIRMETs. For more information, please see attachment 1.

[18] **Graphical AIRMETs (G-AIRMETs)**, found on the Aviation Weather Center webpage at http://aviationweather.gov, are graphical forecasts of en-route weather hazards valid at discrete times no more than 3 hours apart for a period of up to 12 hours into the future (for example, 00, 03, 06, 09, and 12 hours). Additional forecasts may be inserted during the first 6 hours (for example, 01, 02, 04, and 05). 00 hour represents the initial conditions, and the subsequent graphics depict the area affected by the particular hazard at that valid time. Forecasts valid at 00 through 06 hours correspond to the text AIRMET bulletin. Forecasts valid at 06 through 12 hours correspond to the text bulletin outlook.

G-AIRMETs are snap shots at discrete time intervals as defined above. The text AIRMET is the result of the production of the G-AIRMET but provided in a time smear for a 6hr valid period. G-AIRMETs provide a higher forecast resolution than text AIRMET products. Since G-AIRMETs and text AIRMETs are created from the same forecast "production" process, there exists perfect consistency between the two. Using the two together will provide clarity of the area impacted by the weather hazard and improve situational awareness and decision making. Interpolation of time periods between G-AIRMET valid times: Users must keep in mind when using the G-AIRMET that if a 00 hour forecast shows no significant weather and a 03 hour forecast shows hazardous weather, they must assume a change is occurring during the period between the two forecasts. It should be taken into consideration that the hazardous weather starts immediately after the 00 hour forecast unless there is a defined initiation or ending time for the hazardous weather. The same would apply after the 03 hour forecast. The user should assume the hazardous weather condition is occurring between the snap shots unless informed otherwise. For example, if a 00 hour forecast shows no hazard, a 03 hour forecast shows the presence of hazardous weather, and a 06 hour forecast shows no hazard, the user should assume the hazard exists from the 0001 hour to the 0559 hour time period.

11.0 Terminal Aerodrome Forecast

KCMA was the closest site with an NWS Terminal Aerodrome Forecast[19] (TAF) current at the time of the accident. The KCMA amended TAF was issued 0713 PDT and was valid for a 22-hour period beginning at 0700 PDT. The 0713 PDT TAF for KCMA was as follows:

AMD TAF KCMA 101413Z 1014/1112 **VRB03KT 1/2SM FG OVC002**
FM101600 VRB03KT 4SM BR BKN005
FM101800 23006KT P6SM SKC
FM110330 VRB03KT 6SM BR BKN006
FM110530 VRB03KT 1 1/2SM BR OVC003=

Between 0700 and 0900 PDT the forecast expected a variable wind at 3 knots, 1/2 mile visibility, fog, and an overcast ceiling at 200 ft agl.

The previous KCMA TAF issued at 0506 PDT was as follows:

AMD TAF KCMA 101206Z 1012/1112 19006KT 1 1/2SM BR OVC003
TEMPO 1012/1014 1/4SM FG OVC002
FM101500 VRB03KT 6SM BR BKN006
FM102000 23006KT P6SM SKC
FM110330 VRB03KT 6SM BR BKN006
FM110530 VRB03KT 1 1/2SM BR OVC003=

Between 0800 and 1300 PDT the 0506 PDT KCMA forecast expected a variable wind at 3 knots, 6 miles visibility, mist, and a broken ceiling at 600 ft agl.

12.0 National Weather Service Area Forecast Discussion

The NWS weather forecast office in Los Angeles/Oxnard, California, (WFO LOX) was responsible for the public forecast in the region of the accident site. WFO LOX issued the following Area Forecast Discussion (AFD) at 0401 PDT, the closest AFD to the accident time with an aviation section:

FXUS66 KLOX 101101
AFDLOX

Area Forecast Discussion...UPDATED
National Weather Service Los Angeles/Oxnard CA
401 AM PDT Fri Jun 10 2022

.SYNOPSIS...10/235 AM.

[19] 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

High pressure will bring very warm and dry weather to interior areas, peaking today and Saturday. A few record high temperatures will be possible. Coastal areas will be much cooler with continued night through morning low clouds and fog. A cooling trend will start Sunday but another heat wave is expected by the middle of next week.

&&

.SHORT TERM (TDY-SUN)...10/318 AM.

A much weaker eddy has resulted in a different marine layer stratus pattern than the past few nights. With no eddy to lift the marine layer the 590 dam hgts have squashed it down to about 1000 ft. The eddy has also pulled a little to the west and dragged much of the low clouds away from the LA coast. Low clouds still cover the SBA south coast as well as the VTA county coast and lower vlys. The capping inversion will be very strong today and this along with a near 7 mb onshore push to the east will keep some beaches cloudy from SBA to OXR and perhaps Malibu.

But clouds are just a minor story today - the real issue is the heat. With the marine layer smooshed out of the vlys, 591 dam hgts and near maximum solar angle and duration max temps away from the coasts will soar into the 90s with more than a few triple digit readings as well. Almost all non coastal areas are covered by either a heat warning or heat advisory - please see the product LAXNPWLOX for full details. The near 7 mb of onshore flow will limit the warm up across the coastal areas. Record high temperatures (or at least a tie) look likely for Paso Robles, Palmdale and Lancaster. Max temps today away from the coast will be 10 to 15 degrees above normal.

Onshore flow increases on Saturday. The day will start off with low clouds covering most of the coastal areas. The marine layer will be shallow enough to bring about some patchy dense fog. The onshore flow will bring about three degrees of cooling to the coasts and vlys. Not enough vly cooling, however, to exclude them from the heat advisory. The interior will warm another 1 to 2 degrees and heat warning and advisories will also continue.

An approaching trof will bring lower hgts, a deeper marine layer and stronger onshore flow to Srn Ca on Sunday. At dawn marine layer stratus will cover the coasts and will xtnd into the lower vlys. Max temps away from the coasts will fall 5 to 10 degrees. Despite this cooling max temps will end up 4 to 8 degrees above normal.

.LONG TERM (MON-THU)...10/326 AM.

Model ensemble guidance (GEFS EPS GEPS) are in good agreement, with above normal confidence in the forecast through through the

Wednesday. The ensemble spread begins to increase next Thursday leading to a little less confidence in the forecast - esp the max temps.

A weak trough and increasing onshore flow to the east will continue the cooling trend into Monday with temps getting back to within a few degrees of normal. At the same time northerly gradients will be increasing which will create another round of gusty Sundowner winds to the Santa Ynez Range and surrounding foothills and coastal areas.

Another ridge approaches the area Tuesday and then peaks on Wednesday. Ensembles differ on how the ridge decays on Thursday so that forecast may need some fine turning. But good confidence that there will be another round of very warm max temps equal to or even exceeding todays values. Once again it looks like the coasts will be spared the brunt of heat as onshore flow and a shallow marine layer will temper the warm up.

&&

.AVIATION...10/1059Z.

Around 0745Z, the marine layer depth was near 1200 feet deep at KLAX. The top of the inversion was near 3600 feet with a temperature around 27 degrees Celsius.

Low-to-moderate confidence in the current forecast for the coastal and valley terminals. High confidence in the current for the interior and desert terminals. Higher confidence exists in the forecast flight categories. Less confidence exists in the forecast timing.

For terminals north of Point Conception, there is a low-to-moderate (10-30 percent) chance of LIFR conditions through 16Z, and again after 10Z Saturday.

For terminals south of Point Conception, there is a moderate-to-high (30-70 percent) chance of LIFR to IFR conditions through 20Z. The highest chance of LIFR to IFR conditions is expected for coastal terminals with a lesser chance for valley terminals. There is a moderate (30-40 percent) chance that IFR conditions could remain at immediate coastal terminals such as KOXR and KSBA after 20Z. An early return of low clouds and fog should be expected with IFR conditions spreading in between 01Z and 05Z.

KLAX...There is a 60 percent chance of IFR conditions through at least 17Z, or as late as 20Z. There is a 30 chance that IFR conditions could remain at KLAX after 20Z. IFR conditions could spread in as soon as 01Z, or as late as 04Z.

KBUR...VFR conditions are expected through the period. Through 16Z, there is a a 50 percent chance of MVFR visibilities and a 30

percent chance of LIFR to IFR conditions. There is a 20 percent chance of LIFR to IFR conditions after 07Z Saturday.

&&

.MARINE...10/329 AM.

For the waters northwest of the Channel Islands and beyond 10 NM offshore of the Central Coast, widespread Small Craft Advisory (SCA) conditions will linger through this evening, then SCA level winds will very likely persist through at least Sunday. There is a moderate (30-40 percent) chance of GALES each evening.

For the remaining waters nearshore along the Central Coast, southwest of the Channel Islands and into the southern California night, winds and seas will likely remain largely below SCA levels through Sunday. There is a moderate (40-50 percent) chance of SCA level winds Saturday night and Sunday from northwest of San Nicolas to west of the Channel Islands.

There is a 60-80 percent chance of GALES between late Sunday afternoon and early Tuesday morning for the waters beyond 20 nm offshore along the Central Coast and southwest through northwest of the Channel Islands. Widespread SCA level winds are expected to push into the nearshore and inner waters on Monday and Monday evening.

&&

.LOX WATCHES/WARNINGS/ADVISORIES...
CA...Heat Advisory in effect from 10 AM this morning to 10 PM PDT Saturday for zones 53-54-345-353. (See LAXNPWLOX).
Excessive Heat Warning in effect from 10 AM this morning to 10 PM PDT Saturday for zones 59-343-344. (See LAXNPWLOX).
Heat Advisory in effect from 10 AM this morning to 8 PM PDT Saturday for zones 88-356>359-363-547-548. (See LAXNPWLOX).
PZ...Small Craft Advisory in effect until 3 AM PDT Sunday for zones 670-673. (See LAXMWWLOX).
Gale Watch in effect from Sunday afternoon through late Monday night for zones 670-673-676. (See LAXMWWLOX).

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13.0 Winds and Temperature Aloft Forecast

The NWS 0658 PDT Winds and Temperature Aloft forecast valid for the closest point to the accident site is included below:

FBUS31 KWNO 101358
FD1US1
DATA BASED ON 101200Z
VALID 101800Z FOR USE 1400-2100Z. TEMPS NEG ABV 24000

FT 3000 6000 9000 12000 18000 24000 30000 34000 39000
SBA 9900 9900+22 1710+16 1812+08 0711-06 0618-18 052835 062845 053556

The closest forecast point to the accident site was Santa Barbara, California, (SBA). The 0658 PDT SBA forecast for use between 0700 PDT and 1400 PDT indicated a calm wind at 3,000 ft, a calm wind at 6,000 ft with a temperature of +22°C, and a wind at 9,000 ft from 170° at 10 knots with a temperature of +16°C.

14.0 Pilot Weather Briefing

The accident pilot requested weather information[20] from Leidos Flight Service at 0724 PDT and was provided an abbreviated briefing, containing all the standard weather information (attachments 2 and 3). During discussion with the Leidos briefer, the accident pilot requested cloud top information and the Leidos briefer provided 2 PIREPs with cloud tops at 700 ft and 1,000 ft, respectively. More information can be found in attachments 2 and 3. A search of archived ForeFlight information indicated that the accident pilot did not have a ForeFlight account. It is unknown what, if any, additional weather information the accident pilot viewed before or during the accident flight.

[20] https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_91-92.pdf

15.0 Astronomical Data

The astronomical data obtained for the accident site on June 10, 2022, indicated the following:

SUN	
Begin civil twilight	0515 PDT
Sunrise	0544 PDT
Accident time	**0803 PDT**[21]
Sun transit	1256 PDT
Sunset	2008 PDT
End civil twilight	2037 PDT

At the time of the accident the Sun was located at an altitude of 26.10° and azimuth of 78.80°.

E. LIST OF ATTACHMENTS

Attachment 1 – GFA information valid at the accident time

Attachment 2 – Leidos information

Attachment 3 – Leidos audio with accident pilot from 0724 PDT

Submitted by:

Paul Suffern
Senior Meteorologist

[21] Inserted accident time for reference and context.