

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



ANC25MA018

OPERATIONAL FACTORS

Group Chair's Factual Report
November 24, 2025

TABLE OF CONTENTS

A	ACCIDENT	4
B	OPERATIONAL FACTORS GROUP	4
C	SUMMARY	4
1.0	OPERATIONAL FACTORS ACTIVITIES	5
2.0	HISTORY OF FLIGHT	6
3.0	PILOT INFORMATION	8
3.1	Pilot Certification Records	8
3.2	Pilot Certificates and Ratings Held at the Time of the Accident	9
3.3	Flight Hours	10
3.4	Pilot 72-Hour History and Trip Pairing.....	10
3.5	Duties and Responsibilities	11
4.0	TRAINING.....	11
4.1	FlightSafety International Training.....	12
4.2	Bering Air Training.....	12
4.3	Caravan TKS Cold Weather Course Training	12
5.0	AIRPLANE INFORMATION.....	13
6.0	WEIGHT AND BALANCE.....	14
7.0	AIRPORTS	17
7.1	Unalakleet Airport.....	17
7.2	Nome Airport	18
8.0	OPERATOR	20
8.1	Bering Air Organizational Structure	20
8.2	Safety Management Systems	20
8.3	Bering Air Flight Risk Assessment Tool.....	21
9.0	STALLS	21
10.0	RELEVANT BERING AIR GUIDANCE AND PROCEDURES.....	22
10.1	De-Icing and Adverse Weather.....	22
10.2	Single Engine Overwater Procedures.....	23
11.0	PILOT OPERATING HANDBOOK GRAND CARAVAN EX	24
11.1	Supplement 1 – TKS Ice Protection System	25

11.1.1	Required Training.....	25
11.1.2	TKS System Description.....	26
11.1.3	Low Airspeed Awareness System.....	28
11.2	Operating Limitations.....	28
11.3	Emergency Procedures.....	30
12.0	FAA OVERSIGHT	32
13.0	POST ACCIDENT CHANGES	34
14.0	PREVIOUS NTSB SAFETY RECOMMENDATIONS.....	35
15.0	NASA ASRS REPORTS.....	35
D	LIST OF ATTACHMENTS	36

A ACCIDENT

Location: Nome, Alaska
Date: February 6, 2025
Time: 1520 Alaska Standard Time (AKST)¹
0020 Universal Time Coordinated (UTC)
Airplane: N321BA, Textron Aviation Inc. C208B, Serial No. 208B5613, Flight No. BRG445

B OPERATIONAL FACTORS GROUP

Group Chairman	Starr Blum Operational Factors - AS30 / NTSB Washington D.C.
Subject Matter Expert	Paul Suffern Meteorology - AS30 / NTSB Washington D.C.
Subject Matter Expert	Sabrina Woods Ph.D. Human Performance - AS60/NTSB Washington D.C.
Group Member	Rob Peck Anchorage FSDO ² / FAA Anchorage, AK
Group Member	Brian Weckwerth Bering Air Inc. / Director of Safety Nome, AK

C SUMMARY

On February 6, 2025, about 1520 Alaska standard time, a Textron Aviation Inc. Cessna 208B, single-engine, turbine-powered airplane, N321BA, was destroyed when it was involved in an accident near Nome, Alaska. The pilot and nine passengers were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations (CFR)* Part 135 scheduled commuter flight. The flight was operated by Bering Air, Inc. and departed Unalakleet Airport (UNK), Unalakleet, Alaska at 1437,

¹ All times in this report will be Alaska standard time unless noted otherwise.

² Flight Standards District Office.

on an instrument flight rules (IFR) flight plan. The accident airplane was destined for Nome Airport (OME), Nome, Alaska.

1.0 OPERATIONAL FACTORS ACTIVITIES

February 6, 2025 - The Operational Factors Group Chairman was notified of the accident and began collecting pilot information from the FAA.

February 12, 2025 - The Operational Factors group chairman and NTSB meteorologist traveled to Anchorage, Alaska and conducted an interview at Alaska Aviation Weather Unit (AAWU) with a weather forecaster.

February 13, 2025 - The Operational Factors group chairman and the Meteorologist conducted an interview for the Science and Operations Officer (SOO) at AAWU and then traveled to Nome, Alaska.

February 14, 2025 - The Director of Safety for Bering Air joined the group. The group convened at Bering Air, Inc. Additional records were collected. The group interviewed a Bering Air pilot who was also the accident pilot's roommate.

February 15, 2025 - The group interviewed 3 pilots. 2 Bering Air pilots; a C208B and a King Air 200 pilot and a pilot for the Alaska School District who were flying near Nome at the time of the accident.

February 16, 2025 - The group interviewed the Chief Pilot, Dispatcher, Director of Operations and President of Bering Air Inc.

February 17, 2025 - The group interviewed a Bering Air Inc. C208B pilot and the Director of Training and finished field notes.

February 18, 2025 - The group interviewed Bering Air's FAA POI³.

February 22, 2025 - The Human Performance subject matter expert was added to the Operational Factors group.

March 18, 2025 - The group interviewed two FlightSafety instructors; one sim instructor and one evaluator.

May 5 and 6, 2025 - The group conducted a second round of interviews at Bering Air in Nome, Alaska.

May 7 - The group conducted interviews with the POI and FLM⁴ in Fairbanks, AK.

³ Principle Operations Inspector.

⁴ Flight Line Manager.

2.0 HISTORY OF FLIGHT

The flight departed from runway 33 at UNK at 1437 AKST. The airplane turned left on course and started tracking west over the water of Norton Sound toward OME. The aircraft climbed to an altitude of 8,000 ft msl (mean sea level). The descent into OME began about 1511. The last ADS-B datapoint was captured at 1517 while the aircraft was descending through 3,500 ft, at about 38 nm from OME. The airplane was found on sea ice about 34 miles southeast of OME.

The following history of flight was constructed using a combination of data from OpsVue, ADS-B, FAA audio and video replay, and audio from Nome Flight Service Station (FSS).⁵

ANCHORAGE CENTER (ZAN):

2335:44	BRG445 contacts Nome FSS to activate their VFR ⁶ flight plan. FSS acknowledges.
2337:46	BRG445 departed UNK.
2347	BRG445 squawks code 5212. Data indicates an altitude of 7050 and a heading of 287.
2349	BRG445 reaches and maintains an altitude of 7725 ft and a speed of ~150kt.
0011	BRG445 begins a slow decent and gradual speed increase.
0011:26	BRG445 checks on with ZAN on descent with ATIS ⁷ K at OME. The ZAN controller acknowledges.
0013	BRG445 reaches a maximum speed of 163 before beginning to slow. Altitude indicates 6575'.
0013:54	ZAN tells BRG445 that Nome FSS advises that RWY 10/28 is closed and will reopen in 10-15 minutes. The controller suggests that the pilot slow down a bit to "not get there too early". BRG445 says that they will slow down. (airplane speed indicating 152kt)
0015	BRG445 indicates a speed of 111kts and altitude of 5725 ft.
0015:45	ZAN instructs BRG445 to descend at pilot's discretion and maintain 4000. Indicating 5700 ft and 113kt. Good readback.
0018	BRG445 begins a shallow left turn, indicating 120kt and 4200 ft.
0019:01	BRG445 descends below 4000 ft indicating 121 kt
0019:47	BRG445 indicates 3500 ft and 101kt, then begins a rapid descent and concurrent loss of speed, followed by a left turn.
0020:17	Last data point - ADS-B 200 ft, H121, 52 kts
0020:20	ZAN - "BRG445 climb and maintain 4000 say altitude."

⁵ The following times are in UTC.

⁶ Visual Flight Rules.

⁷ Automated Terminal Information Service.

0020:30 ZAN - "Low altitude alert BRG445 check your alt immediately altitude mode c indicates 1600 descending."
0020:45 ZAN - "BRG445 ZAN radio check"
0020:58 ZAN requests N6SD (another airplane in the area) broadcast to BRG445, and if successful, advise them radar contact lost and say altitude, "make sure they're ok"
0021:14 N6SD - "BRG445 you up on 33.3?"
0021:28 N6SD - "BRG445 you up on 33.3"

FLIGHT SERVICE STATION:

2335:43 BRG445 Activate VFR flight plan
2340:29 ZAN controller reports estimating Nome at 0035
2345:23 Pilot made a call asking about weather, accident pilot reported drizzle
0020:56 ZAN notified FSS that BRG445 dropped off radar and high rate of descent.
0021:54 Unknown caller....said Bering is trying to get ahold of you. Controller responds he cannot hear him.
0022:29 Controller asked if he was able to get ahold of BRG445, and the response was not me.
0022:40 "459" (maintenance truck) reported that he was able to hear Bering 445. Controller said they were trying to get ahold of them. Center lost them and they wanted to make sure they are ok. But he cannot hear them.
0023:13 ZAN called and asked if there was any luck on raising 445 and said the maintenance truck said they could hear them.... A transmission could be heard in the background sounded like the number 459.
0028:23 Controller said he just talked to someone from Bering, and he was still in the air at 4,000 [ft].

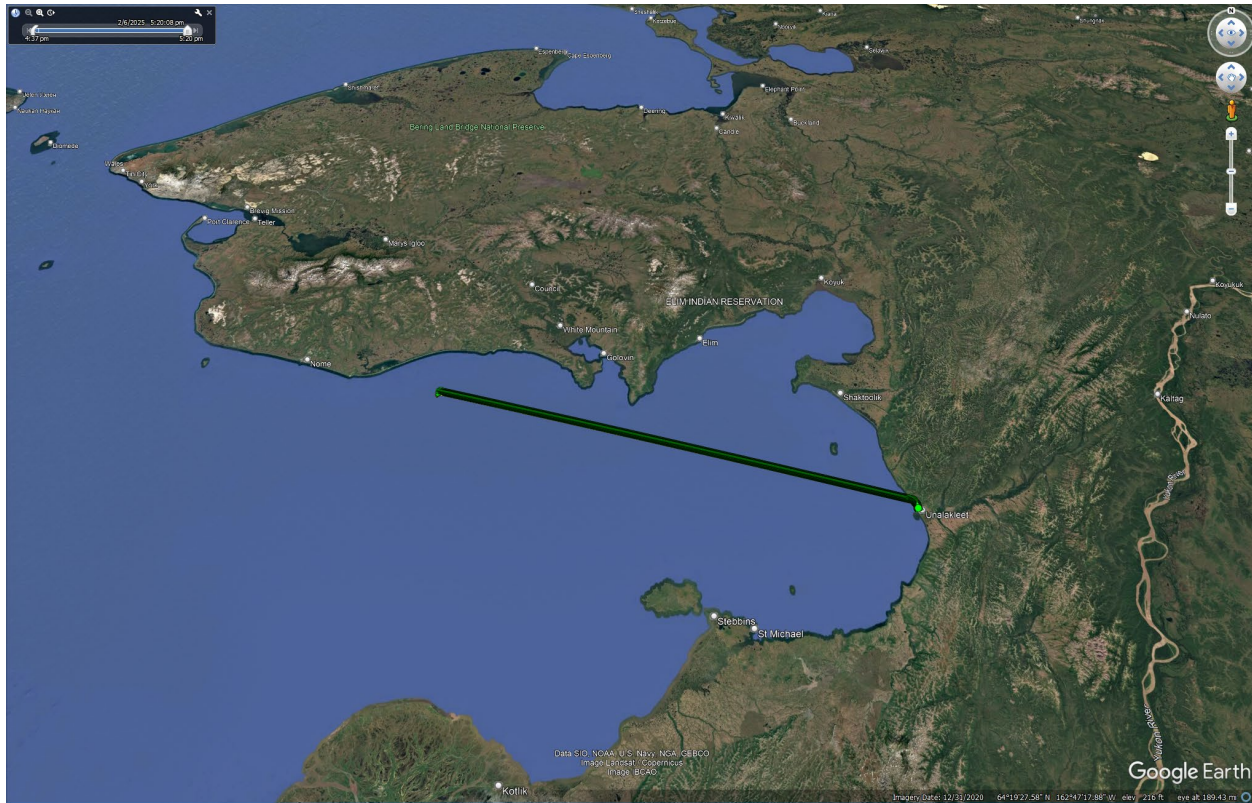


Figure 1. Accident flight track (maximum altitude 7,750 ft msl). (Source: FAA)

3.0 PILOT INFORMATION

The pilot was 34 years old and held a Commercial pilot certificate with a rating for single-engine and multiengine land and Instrument – Airplane, and a type rating on the BE-1900⁸ which included a limitation of SIC⁹ privileges only and English Proficient. He held a mechanic certificate with ratings for airframe and powerplant and a remote pilot certificate with a rating for small, unmanned aircraft system. He held an FAA first-class medical certificate dated December 3, 2024, with no limitations. At the time of the accident, he was based at OME.

3.1 Pilot Certification Records

FAA records of the pilot indicated the following:

Private Pilot – Airplane Single Engine Land certificate was issued July 29, 2013.

⁸ Textron Aviation Inc., 1900, 1900C, 1900D. Source: FAA Order 8900.1, Figure 5-88, dated June 9, 2025.

⁹ Second in Command.

Notice of Disapproval - Private Pilot Instrument Airplane was issued August 19, 2020.
Unsatisfactory items: Area of Operation IV Instrument Approach Procedures.
Comments: Bust the min altitude on non-precision approach.

Remote Pilot - Small Unmanned Aircraft System certificate was issued August 29, 2016.

Private Pilot - Airplane Single Engine Land, Instrument Airplane certificate was issued August 20, 2020.

Commercial Pilot - Instrument Airplane; Airplane Single Engine Land; Limitations: English Proficient was issued January 1, 2021.

Commercial Pilot - Airplane Single Engine Land; Airplane Multiengine Land; Instrument Airplane: Limitations: English Proficient was issued on October 11, 2021.

Mechanic - Airframe and Powerplant certificate was issued February 26, 2022.

Commercial Pilot - Airplane Single Engine Land; Airplane Multiengine Land; BE-1900 Instrument Airplane: Limitations: BE-1900 SIC privileges only and English Proficient was issued on March 19, 2022.

3.2 Pilot Certificates and Ratings Held at the Time of the Accident

COMMERCIAL PILOT (issued March 19, 2022)

Airplane Multiengine Land
Airplane Single Engine Land
Instrument Airplane
Limitations: English Proficient

REMOTE PILOT (issued August 29, 2016)

MECHANIC (issued February 26, 2022)

Airframe and Powerplant

3.3 Flight Hours

The following hours were provided by Bering Air, Inc. and the FAA and was part of the pilot's "annual resume," from 2023. Note: Flight times **do not** include the accident flight.¹⁰

Previous 24 hours ¹¹	4.4
Previous 7 days	4.4
Previous 30 days ¹²	58.4
Previous 90 days ¹³	190.4
Previous 6 months ¹⁴	361.3
Previous 12 Months ¹⁵	771.1
Total Flight Hours Obtained in Training	8.2
Total Hours Turboprop	1937
Total Hours C208B	1060
Total Hours ¹⁶	2500

3.4 Pilot 72-Hour History and Trip Pairing

The pilot would typically work a two-week-on, two-week-off schedule. During his off time, he would reside in North Branch, MN with his domestic partner, and during his time of work, Bering Air provided an apartment in Nome, AK¹⁷. In the 72 hours prior to the accident, the pilot had just returned to work his two-week shift on the morning of February 4, 2025. He had been scheduled to return to work on February 3 on an early morning flight from MN to Nome, however he was delayed due to weather and had to overnight in Anchorage, AK. The pilot's roommate while in Nome was off-shift and away during the time preceding the accident and therefore a more detailed account of the pilot's 72-hour history could not be obtained.

The pilot operated seven flights on February 5, 2025. The total flight time was 4.4 hours. His duty started on February 4, 2025, but he did not fly. A review of the pilot's schedule for the month of January indicated he flew 58.4 hours and was on duty from

¹⁰ The pilot had not yet reported his 2024 annual resume.

¹¹ Flight hours on February 5, 2025.

¹² Flight hours in January 2025.

¹³ Flight hours from November 2024 to January 2025.

¹⁴ Flight hours from August 2024 to January 2025.

¹⁵ Flight hours from February 2024 to January 2025.

¹⁶ Flight hours reported by the accident pilot during his last aviation medical exam on December 3, 2024.

¹⁷ See next of kin interview transcript: Giebel Pg 6, Lines 12-17.

January 4, 2025, through January 20, 2025. The remaining days in January he was off duty, totaling 14 days.¹⁸

3.5 Duties and Responsibilities

According to Bering Air's General Operations Manual and Operations Specification A010, the pilot must obtain preflight weather and Notice's to Airmen (NOTAMS). Pertinent data could be obtained through a combination of the following means: Foreflight on the iPad EFB¹⁹, AeroWeather app, FAA publications, Internet based official sources, Bering Air dispatch, FSS and Pilot Reports (PIREPS) from other pilots. The pilot preflight information responsibility listed under the Environment section the following was listed²⁰:

- Dispatch clipboard
- METAR/TAF²¹ for departure, destination(s) and alternates
- NOTAM/TFR, AIRMETS/SIGMETs and enroute weather reports, forecast, and PIREPS
- Village Agent weather reports, if available
- Area Forecasts
- FAA or GCI²² Webcams, where available
- Hazard Reports/Pilot Notification Reports
- Navigation charts, maps, and company documents current on iPad EFB
- Special Qualification Airport information, if applicable and available

The pilot reviewed the weather with the dispatcher in the dispatch office in Nome and looked at weather online while in Unalakleet.²³

4.0 TRAINING

The following information about the pilot's training was provided by a representative of Bering Air, Inc.:

Pilot Date of Hire ²⁴	March 7, 2022
Basic Indoctrination BE-1900 (SIC)	April 1, 2022
Recurrent Basic Indoctrination 208B (PIC)	December 9, 2024

¹⁸ See Attachment 4 - Flight and Duty Records.

¹⁹ Electronic Flight Bag.

²⁰ See Attachment 9 - Bering Air Operations Manual [Excerpts].

²¹ Meteorological Aerodrome Report and Terminal Area Forecast.

²² GCI Communications Group operates in Alaska.

²³ See Attachment 1 - Bering Air Personnel Interview Transcripts page 259 and 628.

²⁴ The pilot was hired at Bering Air Inc. in 2019 as a mechanics helper.

Initial Operating Experience in the C208B	September 4, 2023
Most Recent Recurrent 135.293 Check ²⁵	December 9, 2024
Most Recent Recurrent 135.297 Check	December 9, 2024
Most Recent Recurrent 135.299 Check	July 28, 2024
Hazardous Materials	November 15, 2023
Cessna Cold Weather Ops	October 29, 2024
Most Recent Hazardous Materials	November 15, 2023
Emergency Training -	December 9, 2024
Aircraft Ground Recurrent	January 17, 2025

4.1 FlightSafety International Training

Bering Air pilots attend FlightSafety for initial, upgrade, and recurrent ground school. The pilot's last training event was a four-day recurrent training which included: four days of ground school for a total of 14 hours 30 minutes, four days in the simulator for a total of 6 hours, and FAA Part 135 checkride which was 1 hour and 54 minutes. The accident pilot had passed the initial and recurrent training with no failures noted.

4.2 Bering Air Training

A new hire pilot at Bering Air would receive basic indoctrination and general emergency training and after every 12 months. This training was to familiarize the pilot with company policies and procedures, meteorology, navigation, air traffic control (ATC) procedures and airspace, navigation charts, instrument approaches, crew resource management (CRM), controlled flight into terrain (CFIT), ground operations, maintenance procedures, and security. The general emergency training included situational and hands-on drills. Hazardous materials training (HAZMAT) was required and trained every 24 months. Recurrent ground school and differences were also taught every year.

The accident pilot had passed all training with Bering Air and had no failures in his training record.

4.3 Caravan TKS²⁶ Cold Weather Course Training

In December 2004 the NTSB issued recommendation A-04-64 to the FAA; "Require all pilots and operators of Cessna 208 series airplanes equipped for flight into known icing conditions to undergo seasonal training for ground deicing and flight into icing conditions on an annual basis. This seasonal training should be timed to precede

²⁵ FAA Part 135.293(a) (2-3), (b) and 135.297 checks were completed at FlightSafety International in Wichita, Kansas.

²⁶ Tecalemit-Kilfrost-Sheepbridge Stokes anti-icing system.

the operator's cold weather operations and should specifically address (1) the limitations of the Cessna 208 in icing situations; (2) the Cessna 208 deice and anti-icing systems and controls and their use; (3) pilot actions during cold weather ground operations, with emphasis on the need for careful visual and tactile examination of wing and horizontal stabilizer upper surfaces during the preflight inspection to ensure that they are free of ice before takeoff; (4) pilot actions during cold weather flight operations, with emphasis on the timely recognition of potentially dangerous accumulations of ice and the importance of having an appropriate strategy for escaping the icing conditions and acting on that strategy promptly; (5) the hazards of performance degradation caused by ice that remains after activation of the deice boots; and (6) Cessna 208 Pilot Operating Handbook icing-related limitations, warnings, and notes."

In response to the recommendation, in 2007 a cold weather training program was released and available for caravan pilots. Bering Air utilized the E-Learning online courseware from Textron; the Boot-Equipped or TKS-Equipped Caravan Cold Weather Course which included icing training for the pilot group. Investigators reviewed the course modules and made suggestions to which Textron accepted concerning updating some slides. The accident pilot had completed the course.

5.0 AIRPLANE INFORMATION



Figure 2. Accident Airplane (Source: Wikipedia)

The airplane was a Textron Aviation Inc. C208B, serial No. 208B5613 and was manufactured in 2020 with a normal category standard airworthiness certificate which

was issued on December 30, 2020 It was powered by a Pratt and Whitney PT6A-140 engine capable of producing 867 shaft horsepower.

6.0 WEIGHT AND BALANCE

The C208B had a maximum gross takeoff weight (MGTOW) of 9,062 lbs. due to the APEIII Supplemental Type Certificate (STC) modification.²⁷ MGTOW in flight into known icing conditions (MGTOW/FIKI) was 8,807 lbs. Investigators obtained weight and balance flight manifest information for flights involving the accident airplane, N321BA, from January 28, 2025, through February 6, 2025. Fuel loading data was available and compared from the Garmin G1000 data files and the Pilot Flight Reports.²⁸ The sample totaled 16 flights, including the accident flight, which consisted of 35 individual flight legs. Of those 16 flights reviewed, seven flight legs were over the MGTOW. These flight legs over MGTOW all departed from main bases (Nome and Unalakleet). Over the seven day period sampled, six days had at least one overweight flight, or in other words 44% of the flights during that seven-day period consisted of at least one overweight flight leg.

The empty weight of N321BA was 5,388 lbs.²⁹ In the Bering Air General Operating Manual (GOM) the operating weight empty (OWE) was the sum of the airplane equipped empty weight plus flight crew.³⁰ Every load manifest investigators looked at reported the OWE for N321BA at 5,500 lbs. This allowed only 112 lbs. for the pilot. The accident pilot reported his weight was 230 lbs. at his last aviation medical exam dated December 3, 2024.

Investigators computed exemplar weight and balance totals for 16 flights (consisting of 35 individual flight legs) as mentioned above.³¹ These computations used the fuel quantities obtained from the Garmin 1000 installed on the accident airplane.³² The following seven flight legs had different fuel quantities from the Pilot Flight Reports Bering Air provided versus the Garmin data.³³

²⁷ [AeroAcoustics Aircraft Systems Aircraft Payload Extender APE STOL for 208B](#)

²⁸ See Operational Factors Attachment 10 – Pilot Flight Reports Fuel Loads

²⁹ See Operational Factors Attachment 13 – N321BA Airplane Weight and Balance.

³⁰ See Operational Factors Attachment 8 – Bering Air General Operations Manual [excerpts].

³¹ All weight is in lbs.

³² See Recorders Attachment 1 – Cockpit Display Recorded Flight Data.

³³ The G1000 reported fuel quantity which was used to determine the fuel weight at takeoff.

Date	Flight Number	G1000 Fuel Weight	Pilot Entered Fuel Weight ³⁴	Weight Over MGTOW ³⁵
January 31, 2025	810	2,040	1,850	424
February 2, 2025	846	1,990	1,900	248
February 3, 2025	4440	1,589	850	1,160
February 3, 2025	8440	1,273	975	448
February 5, 2025	3820	1,487	1,200	349
February 6, 2025	830	1,842	1,200	781
February 6, 2025	445	1,464	1,000	736

On the day of the accident, the pilot operated flight 830 from OME to St. Michaels, Alaska (SMK) and deplaned four passengers. He then operated flight 830 to Unalakleet, Alaska (UNK), arriving at 1032, where he stayed until the afternoon before the accident flight back to OME. According to the Garmin data for flight 830, OME to SMK, was 1,036 lbs. overweight of the MGTOW/FIKI and 781 lbs. overweight of the MGTOW limitations. The pilot entered a fuel load of 1,200 lbs. into the Bering Air Flight Report. The Garmin data recorded a fuel quantity of 1,800 lbs.³⁶

On the accident flight the pilot reported he had 1,000 lbs. onboard before he took off from UNK. The Garmin data recorded the fuel quantity to be 1,464 lbs.³⁷, which was 991 lbs. overweight of the MGTOW/FIKI limitation and 736 lbs. over MGTOW.³⁸

³⁴ These weights were entered by the pilot in the Bering Air Pilot Flight Report application.

³⁵ MGTOW was 9,062 lbs.

³⁶ See Recorders Attachment 1 - Cockpit Display Recorded Flight Data and Operational Factors Attachment 17 - Exemplar Weight and Balance February 6th, 2025, Flight 830.

³⁷ See Recorders Attachment 1 - Cockpit Display Recorded Flight Data.

³⁸ See Operational Factors Attachment 15 - Accident Flight Exemplar Weight and Balance [G1000 Data].

WEIGHT AND BALANCE

FROM/TO	OUT	IN	FLT	LOAD COMPUTATION						FUEL	CG	MG
OME	0855	0953	:58		No	Weight	BAGS	CARGO	MAIL	1200	-2.5	9002
SMK				On	8	1368	368	439	0	6700	8873	O.W. ()
SMK				Off	4	658	135	0	0	2173		LdAv ()
				Bal	4	708	233	439	0	5500	386	CG LIMITS
				On	1	260	70	0	0	814	8487	FWD AFT
				TTLLoad	5	968	303	439	0	6314	-7.4	-6.3 / 0
UNK				Off						1710	8024	O.W. ()
				Bal							213	LdAv ()
				On							7811	CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal								LdAv ()
				On								CG LIMITS
				TTLLoad								FWD AFT
				Off								O.W. ()
				Bal		</						

Figure 3. Pilot Flight Report for Flight 830 (Source: Bering Air)

PILOT FLIGHT REPORT

FROM/TO	OUT	IN	FLT	LOAD COMPUTATION						Fuel	CG	MGTO	O.W.
UNK	1435				No	PSGR Weight	BAGS	CARGO	MAIL	5500	1000	5002	()
OME				On	9	1835	531	178	0	O.W.	6500	-5.3	Ld Av ()
				Off						TTL Load	2544	CG LIMITS	FWD / AFT
				Bal						O.W.E		B.O.	0
				On						Fuel		L.W.	9044
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	
				TTL Load						O.W.		CG	
				Off						TTL Load		T.O.W.	FWD / AFT
				Bal						O.W.E		B.O.	
				On						Fuel		L.W.	

Figure 4. Pilot Flight Report for Flight 445 (Source: Bering Air)

7.0 AIRPORTS

7.1 Unalakleet Airport

Unalakleet Airport is located one mile north of Unalakleet, Alaska. It was owned by the Alaska Department of Transportation (DOT) and Public Facilities (PF) Northern Region. The airport elevation is 27.3 ft msl and has two runways: runway 15/33 and 09/27. Runway 15/33 was 5,900 ft long and 150 ft wide. A 4-light visual slope indicator (VASI) was located on the left side. Runway 9/27 was 1,900 ft long and 75 ft wide. The

airport was not serviced by an ATC tower; however, approach service was provided by the Anchorage Center and the Nome FSS. A FAA weather camera was on the field.³⁹

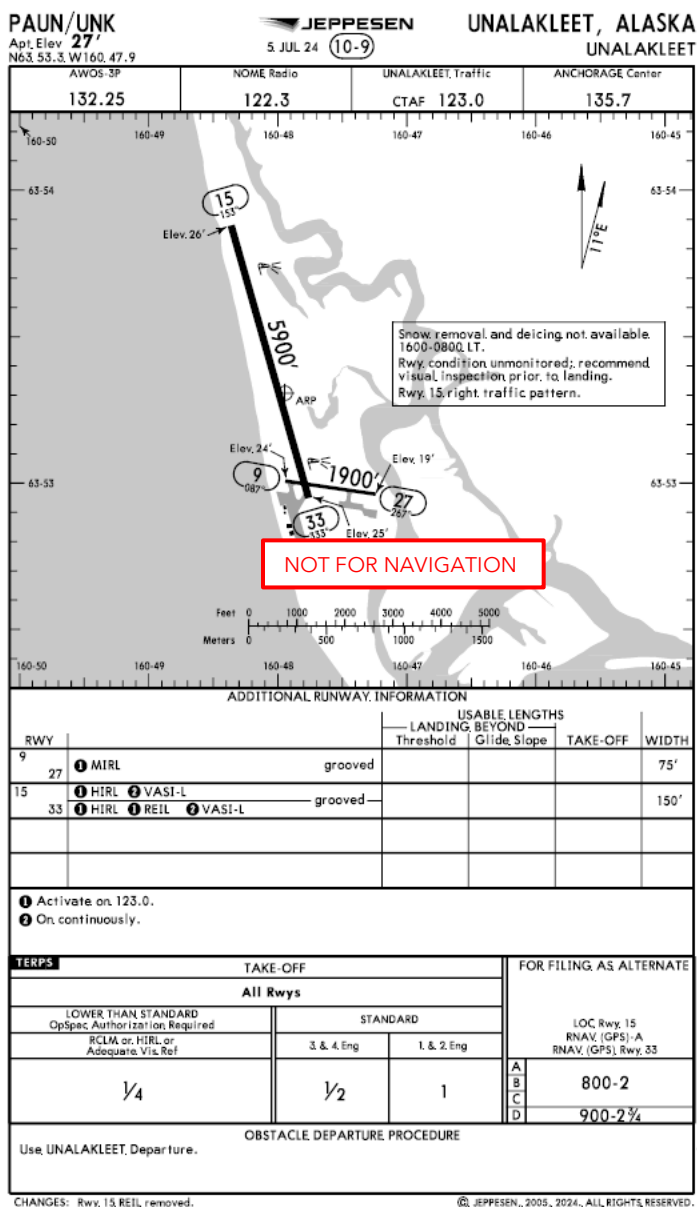


Figure 5. UNK airport diagram (Source: Jeppesen)

7.2 Nome Airport

Nome Airport is located two miles west of Nome, Alaska. It was publicly owned by Alaska DOT and PF Northern Region. The airport elevation is 40.6 ft msl and has two

³⁹ Source: [AirNav: PAUN - Unalakleet Airport](#)

runways: runway 3/21 and 10/28. Runway 3/21 was 6,176 ft long and 150 ft wide. A 4-light visual slope indicator (VASI) was located on the left. Runway 10/28 was 6,009 ft long and 150 ft wide. A 4-light VASI was located on the left; however, on runway 21, the VASI was unusable beyond 2 nm from the threshold due to rapidly rising terrain. Runway 28 had a 1,400 ft medium intensity approach lighting system (MALSR) with runway alignment indicator lights. The airport was not serviced by an ATC tower. Approach service was provided by Anchorage Center and the Nome FSS. A FAA weather camera was located on the field.⁴⁰

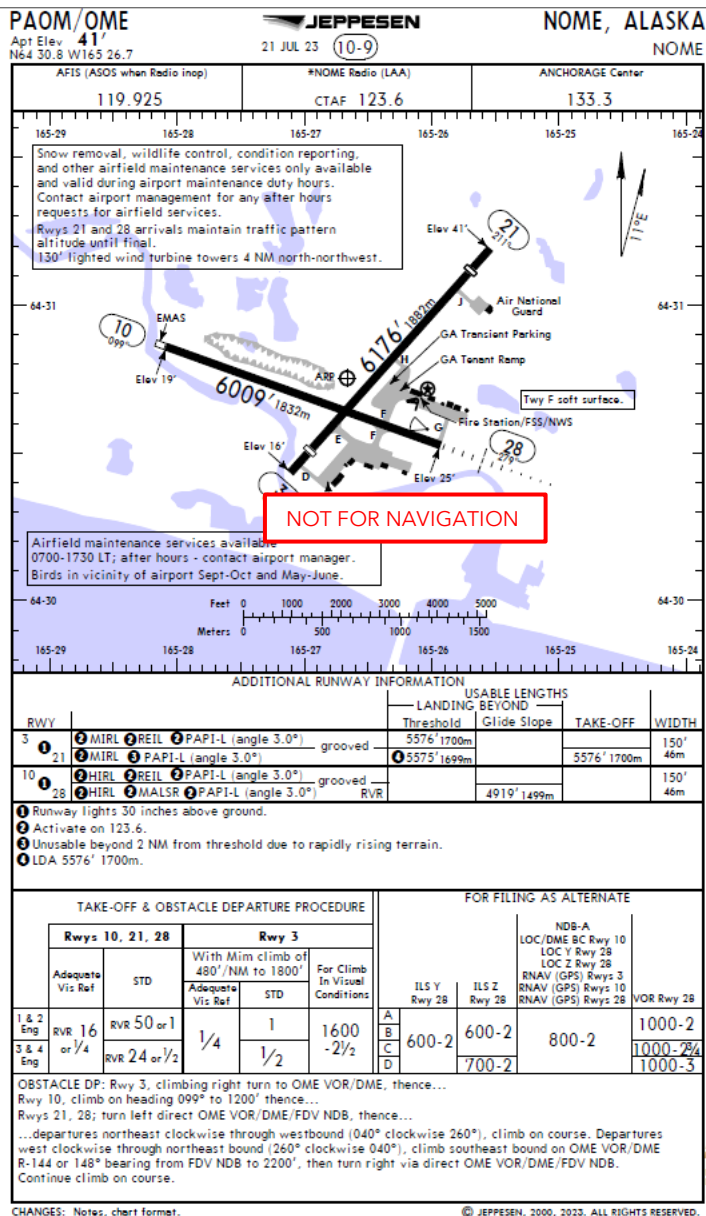


Figure 6. OME airport diagram (Source: Jeppesen)

⁴⁰Source: [AirNav: PAOM - Nome Airport](#)

8.0 OPERATOR

The operator, Bering Air, Inc., was based in Nome, Alaska with hubs in Kotzebue and Unalakleet serving 32 communities along the northwest coast of Alaska. Bering Air, Inc. was established in 1979. They fly scheduled regional flights and passenger and cargo charter flights. The fleet consisted of 4 BE-1900, 4 King Air B200, 17 C208B, 3 C408, 2 Casa 212 aircraft and 2 UH-1H, 5 A-Star, 3 MD500, 3 R44 rotorcraft.⁴¹

8.1 Bering Air Organizational Structure

The General Operations Manual (GOM) provided the following Bering Air Organization Chart:

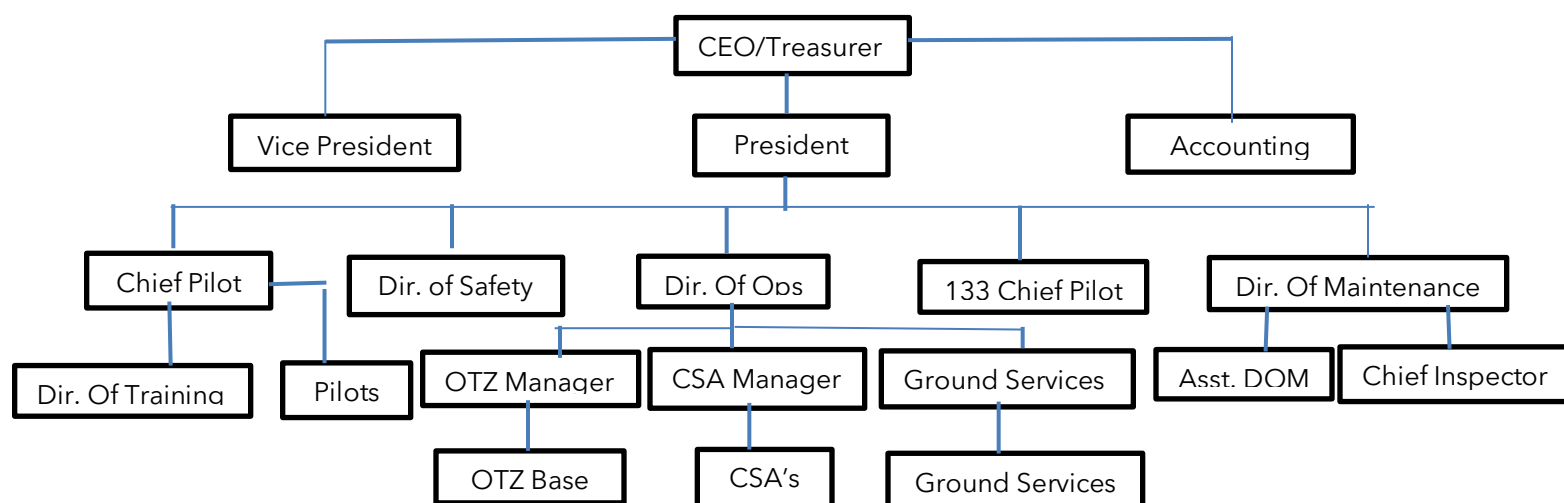


Figure 7. Bering Air Organizational Chart (Source Bering Air GOM)

8.2 Safety Management Systems

Bering Air did not have a voluntary safety management system (SMS) at the time of the accident⁴². When interviewed, the Director of Safety stated he was working to implement a regulatory SMS but gave no specifics as to the company's timeline. When asked if they had a reporting system in place, the Director of Safety said the company was moving from one anonymous system to another⁴³; the latter system having only been in place for three days prior to the accident occurring.

⁴¹ Source: [Bering Air | Alaska Flights, Air Cargo, Charter Flights- Bering Air - Bering Air](#)

⁴² The rule requiring a regulatory safety management system for Part 135 operations was effective May 28, 2024, with an implementation date of May 28, 2027. See https://www.faa.gov/about/initiatives/sms/specifics_by_aviation_industry_type/design_and_manufacturing_organizations.

⁴³ See Attachment 1 - Bering Air Personnel Interview Transcripts pages 403.

The Group interviewed three-line pilots for Bering Air. When asked if they were aware of what Bering Air's safety management program contained, two pilots believed the program to be the company's flight release program⁴⁴. All three pilots stated they would report if there was an issue or concern, they had by either going to their management or by submitting a report through the safety reporting system⁴⁵.

8.3 Bering Air Flight Risk Assessment Tool

Prior to the accident, the operator did not have a formal flight risk assessment or flight release tool. According to the Director of Safety:

"It was more of a face-to-face thing. There was weather, there was a weather sheet that actually written down. It wasn't inside of a computer... . And there was our reservation system had the flights built in there. So we had at least those, the routings and stuff like that. Took our weather into consideration. We had a board downstairs that had the runway conditions written on it... . And we've operated that way, Bering Air I should say would, I mean it was operated like that before when I was here several years, 20 years ago⁴⁶."

According to the Director of Safety, after the accident the company adopted a flight release tool that considered "weather, runway conditions, everything [they] need to have all the information that we need to have for releasing that flight.⁴⁷" The tool would require elevated levels of coordination to release the flight if the parameters were exceeded.

9.0 STALLS

A stall is an aerodynamic condition which occurs when smooth airflow over the airplane's wings is disrupted, resulting in loss of lift. A stall occurs when the angle of attack (AOA) exceeds the wings critical AOA. To recover from a stall; disconnect the autopilot, nose down pitch (reduce the AOA), level the wings, add power as necessary, and return to desired flight path.⁴⁸

⁴⁴ See Attachment 1 - Bering Air Personnel Interview Transcripts pages 48-49, 184, 202.

⁴⁵ See Attachment 1 - Bering Air Personnel Interview Transcripts pages 65; 206-207; 289.

⁴⁶ See Attachment 1 - Bering Air Interview Transcripts pages 460-451.

⁴⁷ See Attachment 1 - Bering Air Interview Transcripts pages 449-450.

⁴⁸ Source: [Airplane Flying Handbook \(3C\) Chapter 5](#) page 5-12.

10.0 RELEVANT BERING AIR GUIDANCE AND PROCEDURES

10.1 De-Icing and Adverse Weather

The following information was included in the General Operations Manual (GOM) in Chapter 7 - De Icing and Adverse Weather:

Inflight Icing

Inflight ice accumulation can occur anytime the temperature is at or below +5 °C and visible moisture is present. It typically becomes less of a factor the colder and drier the air becomes.

Avoidance

Check weather and PIREPs before flight. Leave a PIREP for the next pilot.

Policy

Pilots must evaluate all sources of weather reports and PIREP's prior to flight and throughout the duty period as weather conditions change. Pilots shall make every reasonable effort to reduce exposure time in icing and exit those conditions if required due to aircraft performance. C208 pilots will ensure an adequate supply of TKS fluid is onboard prior to departure.

Procedure

Icing PIREP's shall include Flight# / Intensity / Type / Altitude(s) / Location / Temperature. The person recording the PIREP will include the time of the report and the type of aircraft.

Intensity

TRACE:

Ice becomes perceptible. Deicing/anti-icing equipment use not required unless remaining in the trace icing for an extended period of time, over an hour.

LIGHT:

The rate of accumulation may create a problem if the aircraft remains in light icing for over an hour. Occasional use of deicing/anti-icing equipment may be required to remove or prevent the accumulation, and the aircraft systems are capable of handling it.

MODERATE:

The rate of accumulation is such that even short encounters become potentially hazardous. Deicing/anti-icing equipment must be used frequently or exit the icing immediately.

SEVERE:

The rate of accumulation is such that ice protection systems fail to remove the accumulation of ice, or the ice is on surfaces where it normally does not accumulate, such as aft of the protected surfaces (ie. de-ice boots or spinner). Immediately exit the conditions.

NOTE:

Icing intensity is aircraft dependent. Severe icing may occur at any accumulation rate.

Icing Types

CLEAR:

RIME:

Small water drops contact the aircraft and freeze rapidly in a thick, milky white appearance.

MIXED:

Combination of Clear and Rime Ice.

FROST:

Ice crystals formed by sublimation when the temperature and dew point are below freezing.

Sample Icing PIREP:

Kotzebue base, 661, Moderate Rime Ice, 8000ft over Kivalina, temperature -5 °C

10.2 Single Engine Overwater Procedures

The accident pilot did not maintain the required altitude and distance from the shoreline allowing a glide to the shoreline in the event of an engine failure. Investigators looked at 17 FAA Automatic Dependent Surveillance – Broadcast (ADS-B) tracks on similar routes in January 2025. Of these flights, all were in compliance for single engine overwater operations.

The following information was included in the General Operations Manual (GOM) in Chapter 6 – Enroute concerning overwater operations:

Single Engine Overwater

Single engine aircraft shall always be operated at an altitude and distance allowing a glide or autorotation to shore should an engine failure occur, except when necessary for takeoff and landing due to airport location.

Life vests and life rafts are not required to be carried.

The Glide Advisor in ForeFlight is a useful tool to visually display predicted glide distance. The C208 average glide is 12:1 but varies with weight and environmental conditions. Approximately 2 miles horizontally can be achieved for each 1000' vertically. A water crossing at 10,000' therefore must remain within 20nm of shore, or 40nm total span. Verify performance data, weight, and wind direction as part of preflight duties.

Sea ice is classified as water, but in an actual emergency, if strength of the ice can reasonably be assumed, an emergency landing on ice is often a better choice.

Extended Overwater

Extended Overwater operations are defined as any operation that takes place more than 50nm direct line to any piece of land. Single engine aircraft are not authorized for extended overwater operations.

Life vests and life raft are required to be carried.

Flights can avoid Extended Overwater operations by flying a flight plan that remains within 50nm of shore.

11.0 PILOT OPERATING HANDBOOK GRAND CARAVAN EX

A review of the airplane's pilot operating handbook (POH) and applicable supplements revealed that flight in freezing rain, freezing drizzle, mixed conditions, or conditions defined as severe were prohibited. In Supplement 1, the minimum speed for flight in icing conditions with the flaps up was 95 knots Indicated airspeed (KIAS) with a fully functional TKS system and 120 (KIAS) with a failed TKS system. Both conditions the maximum weight was 8,550 lbs. The POH further stated that autopilot operation is prohibited when operating in icing conditions which were outside of the 14 CFR Part 25 Appendix C⁴⁹.

The POH environmental conditions operating limitations state that icing conditions outside of 14 CFR Part 25 Appendix C could exceed the capabilities of the airplane's ice protection equipment and/or create unacceptable airplane performance or stall speed. The visual cues in icing conditions the airplane is not certified for are the following conditions. Unusual ice accumulation on the airframe in areas not normally observed to collect ice, ice accumulation on lower surface on the wing aft of the protected area, heavy accumulation on the windshield or when ice forms aft of the curved sections of the windshield, and if ice forms aft of the protected areas on the wing struts. If one or more conditions are encountered, the pilot must immediately exit icing conditions.⁵⁰

One Bering Air Caravan pilot who was flying from Kotzebue to Nome spoke briefly with the accident pilot during the accident flight. She stated, "He asked where I was coming from, I told him Kotzebue, asked where he was coming from, and he told me that he was coming back from Unalakleet and said yeah, once you get over this was, just a heads up, it's icy over here". She also reported that she started picking up ice about 40 nm northwest of Nome and was operating the TKS system in normal mode. Around 20 nm from Nome she began operating the TKS system on high and occasionally used max airframe mode and defrost windshield heat to attempt to clear the ice. Upon landing she stated, "I had in incredibly spiky accumulations aft of my

⁴⁹ Source: [eCFR :: Appendix C to Part 25, Title 14 -- Appendix C to Part 25 \(Appendix C to Part 25, FAR\)](#)

⁵⁰ See Operational Factors Attachment 7 - Pilot Operating Handbook and Aircraft Flying Handbook [excerpts].

protected surfaces.” She also added the ice was an inch to an inch and a half thick and that she had never seen worse icing conditions.⁵¹

Another Bering Air Caravan departed Nome under VFR at an altitude of 1000 ft eastbound and started to accumulate icing around the time the accident pilot went missing. The pilot stated “I had heard the company calling people back in because they – I don’t think they were reporting it, but they were aware that it seemed like freezing drizzle or freezing rain here in Nome. And so I – I’ve never flown in that before, but I was starting to think that’s what I was experiencing out there as it was getting worse.”⁵²

11.1 Supplement 1 - TKS Ice Protection System

11.1.1 Required Training

The following information was included in the POH/AFM Supplement 1 - TKS Ice Protection System for Cargo Pod Equipped Airplanes:

⁵¹ See Attachment 1 - Bering Air Personnel Interview Transcripts page 10.

⁵² See Attachment 1 - Bering Air Personnel Interview Transcripts page 155.

REQUIRED TRAINING

Specific training for flight into known or forecast icing conditions provided by Cessna Aircraft Company is required to be successfully completed by the pilot in command within the preceding 12 calendar months for any flight into known or forecast icing conditions.

Operators conducting operations under 14 CFR 121 and 14 CFR 135 may apply the grace provisions of 121.401(b) or 135.323(b) to the crew member's base month, as appropriate.

Completion of either of the following courses will meet this training requirement:

TKS-Equipped Caravan Cold Weather Ops Course (C14697, Onsite)

TKS-Equipped Caravan Cold Weather Ops Course (C14698, Online)

NOTE

Pilots that have completed the Caravan Cold Wx Ops and Cold Wx Ops TKS training under any of the previous course numbers will still be shown in compliance for up to 12 calendar months from the last training completion date.

Figure 8. POH excerpt for required training (Source: POH/AFM)

11.1.2 TKS System Description

The TKS Ice Protection System included porous panels for the leading edges of the wings, horizontal and vertical stabilizers, lift struts, propellor fluid slinger ring and windshield fluid spray bar to clear ice accumulation on the protected surfaces of the airplane. Fluid was supplied to the panels and propellor by two metering pumps. Fluid for the windshield spray bar system was provided by an on-demand gear pump to clear forward vision through the windshield.

The TKS fluid tank was in the left side of the cargo pod. The tank has a maximum capacity of 20.8 US gallons. A minimum of 11.7 gallons was required for dispatch into known icing conditions. Primary control of the system was accomplished by three switches labeled PRIMARY/NORMAL, MAX FLOW/WINDSHIELD, AND BACKUP.

NORMAL - Two pumps will run for 20 seconds, then deactivate. After 100 seconds of inactivity the pumps then again activate for another 20 seconds.

HIGH - One pump runs consistently.

MAX FLOW - Is for heavy or extreme icing conditions. Will run both pumps continuously for two minutes after release of the spring-loaded switch.

WINDSHIELD - The windshield pump will run for approximately 4 seconds after release of the spring-loaded switch.

BACKUP - Runs a second metering pump consistently and is independent of the other modes. It's redundant system in case the other modes are inoperable.

Maximum Fluid Endurance

PRIMARY NORM selected	3 hours 25 minutes
PRIMARY HIGH selected	1 hour 20 minutes
BACKUP selected	1 hour 20 minutes
MAX FLOW AIRFRAME selected	40 minutes

Each two minute use of MAX FLOW AIRFRAME mode consumes approximately one gallon of ice protection fluid, representing 5% of the total fluid capacity of the ice protection system. Use MAX FLOW AIRFRAME mode only when in heavy or extreme icing conditions. If conditions require MAX FLOW AIRFRAME use, exit the icing conditions immediately. One Caravan pilot stated she was occasionally using MAX FLOW AIRFRAME mode in close vicinity to Nome airport during the time period of the accident.

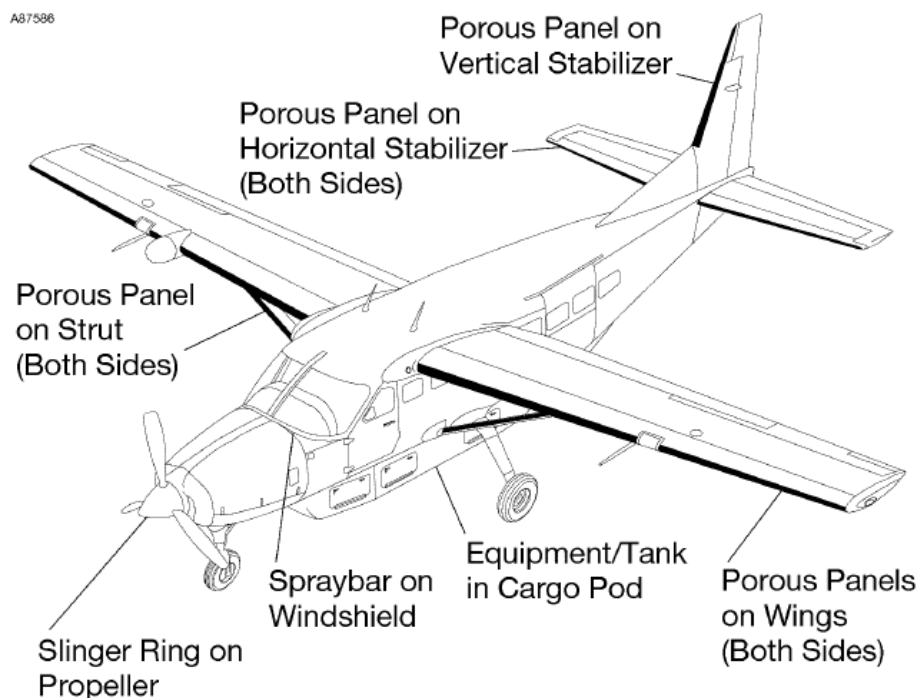


Figure S1-5

Figure 9. TKS system protected surfaces (Source: POH/AFM)

11.1.3 Low Airspeed Awareness System

The Low Airspeed Awareness (LAA) system warns a pilot when airspeed falls below 97.5 +/- 2.2 knots while active. The system was powered when left and right pitot heat switches were on.

The LAA had a "BELOW ICING MIN SPD" annunciator light that flashes white and/or amber. If on before takeoff, the annunciator will be illuminated white indicating the airspeed was below 97 knots +/- 2.2 knots. Once this speed was exceeded the white annunciator will extinguish. If the airspeed falls below the threshold the annunciator will flash between amber and white, the autopilot will disconnect, and the stall warning horn will sound intermittently until the airspeed increased.

11.2 Operating Limitations

The following information was included in the POH and FAA Approved Airplane Flying Handbook (AFM) for the Grand Caravan EX in Section 2 - Operating Limitations:

FLIGHT IN KNOWN ICING VISUAL CUES

As Required by AD 96-09-15, Paragraph (a) (1)

WARNING

Severe icing may result from environmental conditions outside of those for which the airplane is certificated. Flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled liquid water and ice crystals) may result in ice build-up on protected surfaces exceeding the capability of the ice protection system, or may result in ice forming aft of the protected surfaces. This ice may not be shed using the ice protection systems, and may seriously degrade the performance and controllability of the airplane.

During flight, severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues. If one or more of these visual cues exists, immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions.

1. Unusually extensive ice is accreted on the airframe in areas not normally observed to collect ice.
2. Accumulation of ice on the lower surface of the wing aft of the protected area.
3. Heavy ice accumulations on the windshield, or when ice forms aft of the curved sections on the windshield.
4. Ice forms aft of the protected surfaces of the wing struts.

Since the autopilot may mask tactile cues that indicate adverse changes in handling characteristics, use of the autopilot is prohibited when any of the visual cues specified above exist, or when unusual lateral trim requirements or autopilot trim warnings are encountered while the airplane is in icing conditions.

Figure 10. Flight In Known Icing Visual Cues (Source: POH/AFM)

11.3 Emergency Procedures

The following information was included in the POH/AFM⁵³ in Chapter 3 - Emergency Procedures:

ICE AND RAIN PROTECTION

THE FOLLOWING WEATHER CONDITIONS CAN BE CONDUCTIVE TO SEVERE IN-FLIGHT ICING - As Required by AD 96-09-15, Paragraph (a) (2):

1. Visible rain at temperatures below 0°C (32°F) ambient air temperature.
2. Droplets that splash or splatter on impact at temperatures below 0°C (32°F) ambient air temperature.

PROCEDURES FOR EXITING THE SEVERE ICING ENVIRONMENT - As Required by AD 96-09-15, Paragraph (a) (2):

These procedures are applicable to all flight phases from takeoff to landing. Monitor the ambient air temperature. While severe icing can form at temperatures as cold as -18°C (0°F), increased vigilance is warranted at temperatures around freezing with visible moisture present. If the visual cues specified in Section 2, Limitations for identifying severe icing conditions are observed, accomplish the following:

1. Immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the severe icing conditions in order to avoid extended exposure to flight conditions more severe than those for which the airplane has been certificated.
2. Avoid abrupt and excessive maneuvering that can exacerbate control difficulties.
3. Do not engage the autopilot.
4. If the autopilot is engaged, hold the control wheel firmly and disengage the autopilot.
5. If an unusual roll response or uncommanded roll control movement is observed, reduce the angle-of-attack.
6. If the flaps are extended, do not retract them until the airframe is clear of ice.
7. Report these weather conditions to Air Traffic Control.

Figure 11. Severe Icing Guidance (Source: POH/AFM)

⁵³ Pilot's Operating Handbook and Airplane Flight Manual.

EMERGENCY PROCEDURES (Continued)

INADVERTENT ENCOUNTER WITH FREEZING RAIN, FREEZING DRIZZLE, OR OTHER PERFORMANCE CRITICAL ICING SITUATION

NOTE

Refer to Environmental Conditions, Limitations, contained in this supplement for visual cues to identify severe icing conditions (freezing rain or freezing drizzle).

ENROUTE

1. POWER Lever. **INCREASE TO MAXIMUM TAKEOFF**
(do not exceed 850° ITT or 103.7% Ng)
2. Minimum Airspeed. **120 KIAS**
(110 KIAS if climbing to exit icing condition)
3. TKS Ice Protection System **ON**
 - a. PRIMARY Switch **HIGH**
 - b. MAX FLOW Switch. **AIRFRAME then WINDSHIELD**
(press momentarily)
 - c. P/S HEAT/LOW A/S AWARE Switch **ON**
 - d. STALL HEAT Switch **ON**
 - e. LED PANELS/ANNUN Rheostat. **ADJUST**
(for ambient lighting conditions)
 - f. IGNITION Switch **ON**
 - g. INERTIAL SEPARATOR. **BYPASS**
(rotate counterclockwise and PULL out)

CAUTION

If the INERTIAL SEPARATOR is set to BYPASS at any point due to suspected or actual icing conditions, do not return it to NORMAL until the inertial separator door has been visually inspected and verified free of ice and ice protection fluid.

4. ATC **NOTIFY**
(declare an emergency to exit icing conditions)
5. Icing Conditions. **EXIT IMMEDIATELY**

(Continued Next Page)

Figure 12. Inadvertent Icing Encounter Guidance (Source: POH/AFM)

EMERGENCY PROCEDURES (Continued)

INADVERTENT ENCOUNTER WITH FREEZING RAIN, FREEZING DRIZZLE, OR OTHER PERFORMANCE CRITICAL ICING SITUATION (Continued)

APPROACH

1. POWER Lever **INCREASE**
(as required to maintain airspeed and glidepath)
Do not exceed 850° ITT or 103.7% Ng.
2. Recommended Airspeed **120 KIAS**
3. WING FLAPS Selector **TO/APR**
4. FLAP OVR (if installed) **ENABLE**
5. TKS Ice Protection System **ON**
 - a. PRIMARY Switch **HIGH**
 - b. MAX FLOW Switch **AIRFRAME then WINDSHIELD**
(press momentarily)
 - c. P/S HEAT/LOW A/S AWARE Switch **ON**
 - d. STALL HEAT Switch **ON**
 - e. LED PANELS/ANNUN Rheostat **ADJUST**
(for ambient lighting conditions)
 - f. IGNITION Switch **ON**
 - g. INERTIAL SEPARATOR **BYPASS**
(rotate counterclockwise and PULL out)

CAUTION

If the INERTIAL SEPARATOR is set to BYPASS at any point due to suspected or actual icing conditions, do not return it to NORMAL until the inertial separator door has been visually inspected and verified free of ice and ice protection fluid.

6. ATC **NOTIFY**
(declare an emergency and request straight-in approach)
7. Minimum Airspeed **110 KIAS**

Figure 13. Inadvertent Icing Encounter Guidance cont. (Source POH/AFM)

12.0 FAA OVERSIGHT

The FAA responsibility for Bering Air's Part 135 Operating Certificate was maintained at the Fairbanks Flight Standard District Office (FSDO). Bering Air

employed 54 pilots with 30 airplanes and 10 helicopters according to the POI at the time of the accident.⁵⁴

The POI stated that he had worked for the FAA since October 2016. He took a permanent assignment as the POI for Bering Air in the spring of 2022. Prior to that he had a temporary assignment as POI that lasted less than 6 months. When asked about how many certificates he oversees, he stated "Currently I'm the POI for about half a dozen operators and air carriers and I also oversee the Designated Pilot Examiner group for the Northern District. When asked why the lower number of certificates he responded "I too have had 30 to 40, but when we see the 20 to 30 operators, they're typically less complex, small operations as opposed to Bering Air. Bering Air is one of the largest airlines in the State of Alaska. And given its complexity, my workload is limited. When I - initially Bering Air was my only operator. That did not last long due office work demand."⁵⁵

The POI has been scheduling himself to be at Bering Air for one week per month since he had been assigned the certificate. He has spent a significant amount of time on manual edits, manual reviews, manual approvals, training program review, training program approval, training surveillance from ground school to flight training, to include check airmen surveillance.⁵⁶ His general daily duties were ongoing surveillance, manual review, manual acceptance, manual approval, training programs, check airman approval, route checks and inspections, safety assurance system, and the database.

Investigators reviewed FSDO oversight information from the Safety Assurance System (SAS) databases. The Data Collection Tool (DCT) and the Certificate Holder Assessment Tool (CHAT) data did not identify any increased surveillance leading up to the accident. Review of the SAS Data Collection Tools performed over the previous 24 months did not indicate findings that would have an impact on this investigation. The data retrieved showed the DCTs that were assigned and completed within the previous 24 months. This was used to display the workplans of the POI.

There were no enforcement actions against Bering Air the previous 24 months.

The POI stated that he had "30 to 50" specific DCT inspections per quarter annually and that it was a manageable workload. Inspectors have flexibility because they can do advance inspections or move an inspection to another quarter.⁵⁷ When the POI was asked if surprise route checks were different than an operator knowing the FAA was coming, he responded "Unannounced route checks, or even sleeper inspectors on board planes, are always going to be an increased surveillance. No

⁵⁴ Source: [Bering Air | Alaska Flights, Air Cargo, Charter Flights- Bering Air - Bering Air](#)

⁵⁵ See Attachment FAA Personnel Transcripts First Interview Page 9.

⁵⁶ See Attachment FAA Personnel Transcripts First Interview Page 10.

⁵⁷ See Attachment FAA Personnel Transcripts Second Interview Page 58.

doubt about it”⁵⁸ He stated that before the accident he had no risk indicators to do unannounced route checks. The level of inspection and the time focused on an element is risk-based decision-making and prior to the accident there were no risk indications.

In Alaska, Frontier Flying Service ceased operations in 2014. Penn Air, Ravn Alaska, and Hageland Aviation Services (Ravn Connect) went into bankruptcy in 2020. When asked if the rapid growth and expansion increased the risk factor, the POI stated “creating a void in several markets, which other carriers raced to fill. Bering Air did not. Bering Air did not race to fill voids in Barrow, Bethel, Aniak. They stayed right there. Their route structure stayed the same. So, what it was, was the fortification of their existing route structure. Just to make the distinction, when you say rapid growth, it was a – it was a solidification of their existing structure. Not to be confused with route expansion” He continued to say “Whereas their market share will have increased in those – in their existing markets, with the exit of another airline, they will have to bring on more aircraft, because of the market portion. More people more men. That is true. And in that sense, they were solidifying their existing structure. And they did it, once again, I think very responsibly, by not racing out into new markets they’re unfamiliar with that they did not have expertise in.”⁵⁹

According to the front-line manager (FLM) of the Fairbanks FSDO, the certificate management team (CMT) that oversees Bering Air consisted of a POI, Principal Avionics Inspector (PIA), and a Principal Maintenance Inspector (PMI). The FSDO had about 40 certificates being managed by 12-14 CMT’s. Three of those are FAA part 135 commuters including Bering Air, Wright Air Services, and Warbelow’s Air Ventures Inc. All the other FAA part 135 operating certificates were basic or single pilot.⁶⁰

13.0 POST ACCIDENT CHANGES BY BERING AIR

- Flight training – New training flight prior to the annual recurrent checkride including a scenario like the accident flight
- Flight Release Tool – creates more accountability for Operational Control
- Flight Brief Bulletin – Pilot Reports
- General Operations Manual – Cargo Loading, Non-Certified Weather, Flight Release, Weight and Balance

⁵⁸ See Attachment 3 - FAA Personnel Transcripts Second Interview Page 61.

⁵⁹ See Attachment 3 -FAA Personnel Transcripts Second Interview Page 64.

⁶⁰ See Attachment 3 - FAA Personnel Transcripts Page 133.

14.0 PREVIOUS NTSB SAFETY RECOMMENDATIONS

- A-98-097 Closed - Unacceptable Action

Require all operators of turbopropeller-driven air carrier airplanes to require pilots to disengage the autopilot and fly the airplane manually when they activate the anti-ice systems.⁶¹

- A-06-001 Closed - Acceptable Action

Require all operators of Cessna 208 series airplanes to maintain a minimum operating airspeed of 120 knots during flight in icing conditions, even if a descent is required to do so.⁶²

- A-06-002 Closed - Acceptable Action

Prohibit all operators of Cessna 208 series airplanes from conducting into any icing conditions determined more than light icing.⁶³

- A-06-03 Closed - Acceptable Action

Require all operators of Cessna 208 series airplanes to disengage the autopilot and fly the airplane manually when operating in icing conditions.⁶⁴

15.0 NASA ASRS REPORTS

A review of the voluntary Aviation Safety Reporting System's database provided 15 reports in the last 15 years pertaining to the Cessna 208B in icing conditions. Included in those reports were: four reports of fumes in the cockpit from the TKS system, two reports of being unable to maintain altitude in icing conditions in order to maintain 120 knots, one report of an airplane with restricted visibility through the windscreen due to ice accumulation upon landing, one report in widespread freezing rain conditions, one report of an airplane mistakenly serviced with glycol instead of the authorized fluid, one report of an altitude deviation due to abnormal airspeed indications while in icing conditions, and one report of an unreliable TKS fluid system quantity gauge.

⁶¹ Source: data.nts.gov/carol-main-public/sr-details/A-98-097

⁶² Source: data.nts.gov/carol-main-public/sr-details/A-06-001

⁶³ Source: data.nts.gov/carol-main-public/sr-details/A-06-002

⁶⁴ Source: data.nts.gov/carol-main-public/sr-details/A-06-003

D LIST OF ATTACHMENTS

Attachment 1 - Bering Air Personnel Interview Transcripts
Attachment 2 - FlightSafety International Personnel Transcripts
Attachment 3 - FAA Personnel Interview Transcripts
Attachment 4 - Flight and Duty Records
Attachment 5 - Bering Air Training Records
Attachment 6 - FlightSafety Training Records
Attachment 7 - Passenger Memorandum of Record Bering Air Flight 445
Attachment 8 - Bering Air General Operational Manual [Excerpts]
Attachment 9 - Bering Air GOM Postaccident Changes
Attachment 10 - Pilot Flight Report Fuel Loads
Attachment 11 - January 2025 ADS-B Overwater Flights
Attachment 12 - Aviation Safety Reporting System Data
Attachment 13 - N321BA Airplane Weight and Balance
Attachment 14 - Pilot Flight Reports for February 6, 2025
Attachment 15 - Accident Flight Exemplar Weight and Balance [G1000 Data]
Attachment 16 - N321BA Exemplar Weight and Balance January 28, 2025, to February 5, 2025
Attachment 17 - Exemplar Weight and Balance February 6, 2025, OME - SMK

Submitted by:

Starr Blum
AS-30 NTSB