



# National Transportation Safety Board Aviation Accident Factual Report

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<b>Location:</b>	NOME, AK	<b>Accident Number:</b>	ANC93FA050
<b>Date &amp; Time:</b>	04/03/1993, 1011 AST	<b>Registration:</b>	N6467H
<b>Aircraft:</b>	CESSNA 207	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 135: Air Taxi & Commuter - Scheduled		

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## HISTORY OF FLIGHT

Note: All times indicated in Alaska standard time except transcripts of air traffic control communications found in "meteorological information" and attached FSS transcripts.

On April 3, 1993, at approximately 1011 Alaska standard time, a wheel-equipped Cessna 207 airplane, N6467H, operating as Ryan Air Services flight 403 under 14 CFR Part 135 as a scheduled air carrier, collided with the ground one mile east of the Nome, Alaska, VOR station. The airplane departed Nome airport at 1006 on a VFR flight plan filed by the pilot in command. The Nome Control Zone was visual meteorological conditions (VMC) at the time of departure. At 1009 a special weather report was issued indicating the Nome Control Zone was instrument meteorological conditions (IMC) and this information was transmitted to Ryan 403. The airline transport certificated pilot and a passenger received fatal injuries. The airplane was destroyed.

Pilot weather reports (PIREPS) provided to the accident pilot by the Flight Service Station (FSS) prior to takeoff indicated visual meteorological conditions prevailed at the flight's destination, but that fog and low visibility had been encountered on the route to the east, forcing airplanes to return to Nome. Additionally, the FSS cautioned prior to takeoff, that VFR was "not recommended, but then said, ". . . you already have em [sic] pilot reports to the east but appreciate some new ones it looks like it is improving a little bit." The pilot acknowledged the transmission, and took off on runway 9 and was seen to depart "straight out to the east."

The impact marks indicated that the red colored Cessna was in a left steep turn from east to north at the time of impact with the snow covered tundra.

The visual flight path of the accident airplane took it along the beach line of the Bering Sea which was frozen with white ice. A treeless, snow covered flat coastal plane bordered the sea. A beach road leading to Council (Nome-Council Road) was also snow covered and only usable by snow machines. One mile west of the crash site, a line of approximately 18 cabins formed a string of visible objects on the beach. Beyond those cabins, a single cabin with a sled and a

string of sled dogs were the only dark colored objects seen by investigators in the afternoon on the day following the accident.

This camp is known locally as "Farley's Camp." The crash site was located approximately 1500 yards beyond Farley's Camp. (See photograph attachment 4.)

ATC specialists at the Nome FSS told investigators that shortly after the 1006 takeoff of Ryan flight 403, a weather report from the National Weather Service was issued in the form of an electronic print-out at the Nome FSS. This report (see attachment) indicated that the Nome Control Zone was below visual meteorological conditions. At 1009, the FSS advised the Ryan Air pilot that the control zone was IFR conditions. The pilot acknowledged the weather advisory and reported "clear to the east." (Indicating to the Nome flight service specialist that his aircraft was beyond the boundary of the Nome Control Zone in his direction of flight). See transcript of communications with Ryan flight 403.

Evidence found at the scene indicated the airplane to have impacted on flat snow covered terrain in a steep left wing down attitude on a heading approximately 010 degrees magnetic. The cockpit instruments were substantially damaged, and will be described in the "wreckage and impact information." The pilot's attitude indicator was found to be at approximately left wing-down at 90 degrees angle of bank.

The crash location was within the control zone. The Nome Control Zone extends approximately seven miles beyond the VOR station to the east and the accident location was approximately 6 miles inside the control zone, an approximately 4 miles east of the departure end of the runway.

## INJURIES TO PERSONS

The pilot-in-command and a revenue passenger were the sole occupants and both received fatal injuries.

## DAMAGE TO AIRCRAFT

The aircraft was destroyed by impact forces. There was no evidence of inflight separation or fire, either inflight or post- impact in nature.

## PERSONNEL INFORMATION

Captain Andrew Kenneth Jukkala, Box 1866, Nome, Alaska Age 27, FAA Airline Transport Pilot (ATP) number 551551649

The pilot in command, Andrew Kenneth Jukkala, held an ATP in land multiengine airplanes, and a FAA Commercial Pilot's certificate (same number) rated in airplane single engine land. The rating includes an airplane instrument rating. The pilot had a FAA first class medical

certificate, dated August 26, 1992, with no limitations or waivers indicated in record.

Records provided by the company indicated that the pilot had 3212.6 total flight hours as pilot and 1762.5 hours as pilot in the Cessna 207. Records also indicated that he had flown 134.8 hours in the past 90 days, 11.5 hours in the past 30 days and 7.4 hours in the past 24 hours. The investigation revealed that the pilot had approximately 13 hours off duty time since flight duty on the previous day. On the day of the accident he flew a one hour round trip from Nome to Teller and return, a distance of approximately 60 miles, arriving at 0932. (See attached aircraft flight log)

Records indicated that of the 134.8 hours flown in 90 days, all but approximately 16 were flown in the multiengine, IFR-approved airplane. The 11.5 hours of single engine flight time was accrued since returning to work, two days previously. Records indicate that the pilot flew 5.3 hours the previous day.

On an application for renewal of a 1992 FAA medical certificate, the pilot stated that he had 2900 hours of pilot flight time and had flown 500 hours in the previous 6 month period as a pilot for Ryan Air. The pilot's medical history, including those observations taken following the Cessna 402 accident in February 1993, did not indicate use of drugs or other than routine physician's visits.

The pilot was certificated by the Office of Aviation Services (OAS), U. S. Department of Agriculture, as a pilot qualified in the Cessna 207 for VFR single engine operations.

#### Passenger

Frederick C. Bradley, Box 39005, Elim, Alaska Age 42, store operator at Elim

The passenger was a ticketed revenue passenger originating in Nome with a destination of Elim, Alaska.

#### AIRCRAFT INFORMATION

N6467H was a 1979 Cessna 207A, serial number 207-00531, a high wing single engine, fixed tricycle wheeled airplane with a normal airworthiness certificate. It was powered by a Continental IO- 520F, 300 horsepower, fuel injected engine, serial number 280017- R. The airplane was equipped for instrument flight. Company records indicated that the airplane (airframe) had 11,854 hours on it at the time of the accident, and the last inspection was performed on March 31, 1993 under an Approved Aircraft Inspection Program (AAIP). Records indicated that it had flown 9.4 hours since the inspection.

Aircraft flight log records for the flight previously as well on 13 flights of the airplane on the previous day The Continental engine had 3100 hours on it since new, and 1411 hours since major overhaul. Like the airframe, records provided by the company indicated that the engine

had been inspected 9.4 hours of flight time prior to the accident.

## METEOROLOGICAL INFORMATION

The pilot in command filed a VFR flight plan with Nome FSS at 0953 and received the following Nome weather sequence observation: 600 foot scattered, 1500 foot broken, 20000 overcast and 4 miles visibility with light snow. The FSS specialist also advised the pilot that a (Cessna) "206 return around Came Nome because of fog, that was at um [sic] 8:45 and then Golovin at about 9:10 2000 (foot) scattered to broken, unrestricted (visibility).

Refer to FSS transcript attached 1852:48 to 1854:19 UTC (GMT) Alaska standard time of 1000 is equivalent to 1900 UTC

Cape Nome is east of Nome on the route of flight to Elim, Golovin and White Mountain.

When the flight taxied for takeoff, the pilot was told, (at 1903:45) ". . . VFR is not recommended to the east we have had some I think your already have em pilot reports to the east but appreciate ah some new ones it looks like it is improving a little bit."

The pilot replied (at 1903:56) "OK we'll keep you updated thanks."

At 1904:46 FSS broadcast the Nome weather to another aircraft, stating, "Nome is 500 scattered, measured ceiling 1500 broken, 20 thousand overcast visibility seven in light snow."

The pilot of Ryan 403 transmitted that he was beginning his takeoff at 1906:19. FSS acknowledged the transmission.

At 1909:21 (1009:21 ADT) FSS broadcast, "Nome Radio aviation broadcast special weather Nome, Nome 09 observation measured ceiling 500 broken, 1500 overcast, visibility 7 (miles) light snow.

The FSS specialist asked Ryan 403 if he had copied the Nome special weather report at 1909:51. The pilot of Ryan 403 replied "yeah Ryan 403 copied and ah we're clear to the east."

The FSS specialist then transmitted, "Ryan 403 roger thanks and also we did just talk to ah an Olson Air pilot who just came in from the east and said he also would not recommend VFR said there was ah low ceilings visibilities and some freezing drizzle, he didn't say, give me a particular numbers though but he did say it was low.

Ryan Air 403 last transmitted (at 1910:15) "OK ah standby."

Interviews were conducted by Alaska State Troopers, NTSB and FAA investigators with witnesses near the crash scene on the morning of the accident.

In an interview taken by AST Trooper R. L. Maynard of Sam Kakik, who was "hunting out on the sea ice and it had been white out conditions and was snowing a little, for quite a while when he heard the plane coming from east to west. It sounded like the plane was turning left and the engine sounded normal. A little while after that, he saw a white plane flying around too."

In interviews conducted by FAA inspectors with George Parkhurst, it was learned that the visibility in the area of the crash site, varied from 50 feet horizontal visibility to 1/4 of a mile in snow and white out. Parkhurst said that he was traveling to Nome on snowmobile and was near Cape Nome at 10:15, the approximate time of the crash, and had approximately 1/2 inch of ice build up on his snow machine in the last 15 miles before reaching the crash site.

## COMMUNICATIONS

Refer to communications regarding meteorological information above and to the FSS transcripts attached.

## WRECKAGE AND IMPACT INFORMATION

The red and black aircraft impacted in level terrain on approximately a northerly heading. The location is approximately one mile east of the Nome VOR station and 600 yards from the Bering Sea coast line. The tundra at the location appeared to have a uniform covering of approximately 24 inches of packed snow. Debris, wreckage, aircraft parts and fluid stain on the terrain has a central axis of approximately 350 degrees magnetic and is contained within a distance of approximately 275 feet from the initial wing strike impact to the last piece of debris. The distance from the wing strike to the main wreckage is 165 feet.

The fiberglass left wing tip was imbedded in the snow at the beginning of a 1 foot by 18 foot cut in the snow. Evidence contained in the snow cut included the landing light (tungsten wires elongated and unbroken - see photograph #6 attached), the left upper lift strut fairing and a left wing lift strut. Following the path, evidence showed the aircraft's left wing was destroyed, with evidence at the site showing that following that the nose, cockpit, cabin, right wing and fuselage aft of the cockpit impacted at various points. The empennage received substantial damage and was separated from the fuselage with twisting and tearing. There was neither evidence of a fire before or after impact nor separation of aircraft components prior to impact. In addition to the occupants of the aircraft, a general cargo of mailed groceries and package mail was found. The operator reported the weight of the cargo to be 631 pounds. No hazardous material were seen at the crash site by investigators.

An initial impact point appeared to be a cut in the snow on a heading of 020 for 18 feet and arcing slightly left for approximately 30 feet and widening to 18 inches to a crater which reached the depth of the snow and tore the tundra. In the narrow portion of the impact mark, the plastic left wing tip, the left landing light (unbroken), left upper lift strut fairing and the left lift strut was found. The nose gear was found in the first large crater.

The first crater ended and the snow was undisturbed for a distance of 32 feet except for small bits of debris on the surface. A second crater was deeper than the first, in the same northerly axis and was approximately 3 feet wide by 16 feet long.

The snow beyond this crater was stained with oil and aviation (light blue color) fuel.

Evidence showed that the aircraft had twisted or rolled as the empennage had narrowed and twisted nearly off at its resting place with the rear fuselage. The engine with all three blades showing twisting and rearward bending was aligned toward an easterly direction. The fuselage was lying on an axis of more or less 80 degrees magnetic.

The left wing was totally crushed and broken (see photographs) and the right wing was lying just at the nose of the wreckage with its leading edge down, its tip toward the north and top toward the west and a broken lift strut and bottom toward the east. The flap on the left wing was retracted.

The cockpit was open and the instrument panel was crushed. Both yokes were snapped off toward the left. The microphone wire was stretched to the left.

The attitude indicator showed a left bank of 90 degrees.

Communications transceivers were set at 123.6 and (number 1) and 130.4. Navigation receivers were set both at 115.0.

The throttle quadrant was detached from the instrument skirt and all knobs were full forward.

A General cargo of groceries and paper products were spread around the wreckage. The left main landing wheel was 42 feet beyond the fuselage to the north.

#### ADDITIONAL INFORMATION

Interviews were conducted with Ryan Air Service personnel on April 4 and 5, 1993.

The NTSB learned that the pilot had returned to work on April 1, 1993 after a 30 day company suspension following a February 20, 1993, takeoff accident at Nome in a Cessna 402, in which he was the pilot in command. That accident was investigated as ANC93FA034.

Company management told the NTSB that following his return to duty, Jukkala was on "probation" and was assigned only to the single engine Cessna 207 airplanes. The FAA approved Operations Specifications (effective 10/4/91) for Ryan Air Service, limits the Cessna 207 to "VFR Only." In an interview with the Ryan Chief pilot, investigators learned that those restrictions limited Captain Jukkala to flight in visual meteorological conditions. NTSB and FAA investigators were told that the company "did not do a (recheck) flight when Andy came

back to work, because the FAA didn't require one." The chief pilot stated that he did not require Jukkala to have a recheck flight or instruction following his layoff, because "the problems (of preflight deicing) had been taken care of." No other recheck or retraining of Jukkala was deemed necessary.

The accident pilot flew April 1 and 2, in weather described by FSS specialists as "two days of clear weather and unlimited visibility." National Weather Service personnel at Nome told investigators that "a low pressure system moved in on April 3rd and by mid morning we went to IFR conditions." (Nome control zone was declared to be below VFR conditions at approximately 1007).

In an interview on April 4, 1993, with Michael Brown, the Ryan Air Service chief pilot, investigators were told that the accident pilot "had been given a 30 day suspension, and had just returned (to resume work) in a probationary status." Captain Brown recalled that he had a discussion on March 31, 1993, with the accident pilot, one day before Jukkala resumed work on April 1, 1993. Brown told investigators that Jukkala had said that he "would work very hard and not let the company down." Brown also said that Jukkala had complained that he had "tried hard to get the flights out," and said that "other pilots (from competing 14 Part 135 operators) were taking 'specials' (Special VFR Clearance out of the Nome control zone) and going in worse weather than I did." The chief pilot was asked if he noted, in Jukkala's attitude when he returned, any human factors which would have alerted him to judgmental or decision-making problems. He said that he did not see problems with Jukkala and that he noted "Andy had no problems flying airplanes."

Captain Brown said that he had counselled the accident pilot "about icing," and that he informed him about changes in the Ryan Air Service procedures regarding deicing." Captain Brown acknowledged that the previous accident involving Jukkala in the Cessna 402 indicated judgmental problems may have played a part in that accident. Investigators asked if a consideration of judgment or decision making was included in his operation following the previous accident. He indicated that it was not, at present.

Investigators asked if Jukkala had "gone to any judgment training, or been briefed on his judgment in the last accident." Captain Brown said that they had not discussed it.

Captain Brown was asked if he had spoken with the FAA Principal Operations Inspector (POI) recently or had the POI visited Ryan Air Service's Nome operations. He said that "she came up about a month after the 402 accident, in March I think." Investigators asked Captain Brown if the POI had discussed the icing accident or retraining of Captain Jukkala. Brown said, "not much was discussed. Investigators asked if "judgmental training was part of the discussion with the POI." He said that it was not. Captain Brown was asked if the "POI thought Andy ought to have a 609 ride." (Recheck of proficiency) Captain Brown answered, "No, she didn't mention it."

Captain Brown recalled that the POI "had come up to do some check rides for a new check airman, from (Ryan Air Service) Kotzebue." He said that he believed that it was the only time

the POI had been here for about 6 months, since she took over. (The NTSB learned that the Principal Operations Inspector was assigned the certificate responsibility since approximately October of 1992, from the Anchorage FSDO-03). The corporate offices of Ryan Air Services are in Anchorage, however flight operations are centered in Nome and are provided surveillance from FSDO-01 at Fairbanks.

The NTSB examined the Ryan Air Service, Inc., FAA Approved Training Manual, as revised and approved by the previous POI on July 8, 1992. The manual indicated that initial, transition and recurrent training concentrated on aircraft-specific information, IFR procedures, emergency procedures, hazardous material (HAZMAT) and other subjects. Information regarding "emergency operation in clouds" for the Cessna 207A was a reprint from the Cessna pilot's operating manual referring to operation in the event of vacuum system failure.

An interview of the FAA Principal Operations Inspector (POI) for Ryan Air Services was conducted on April 14, 1993 by the NTSB IICs who were involved in the accident investigations involving the subject Cessna 207, as well as the Cessna 402 accident which had occurred on February 20, 1993.

The POI stated that she had been "working for the FAA about a year, and that she had experience in Part 135 operations." She told investigators that she was currently part owner a Part 135 business, "but was not involved in running the business." Investigators asked the POI the number of air carrier operator certificates she was responsible for surveilling. She said that she was responsible for two, Yute Air in Dillingham and Ryan Air Service in Nome. She told investigators that she had been assigned to surveillance of the Ryan certificate "since about October 1992."

The POI said that "most of her time was tied up in Yute Air, they had plenty of problems." She said that she had not had the opportunity to visit Ryan Air for about six months after assignment to that certificate. She said that she recalled visiting Ryan in Nome "around March," explaining that she had "to do some check rides for a new check airman" (for Ryan Air Services) who was stationed in Kotzebue, but would be available to examine in Nome at the time. Investigators asked the POI if she could recall discussing the previous accident or the pilot involved with the Ryan operations management. She replied that "there wasn't much you could do about that, what do you do about mistakes like that?" She was asked if she had recommended a recheck ride for the pilot, and she replied, "no, if anything comes out of that, (the Cessna 402 - Jukkala accident) it will come from Fairbanks, (FSDO-01 Fairbanks) they (were) are writing EIR's (Enforcement Investigative Reports) on Jukkala.

Investigators discussed judgmental training with the POI. Her view of that training was that pilot's either had a foundation in good judgment or they didn't, but that it was a difficult area to teach or examine on check rides.

Investigators asked the POI to describe the flights with Ryan pilots during her visit to Nome in March. She said that on one occasion she observed (from the back seat of a Ryan airplane), two Ryan pilots discussing the pros and cons of departing the Nome control zone on a special

VFR clearance with one mile visibility (flight outside of the zone required two miles). She said "after 15 minutes, they decided to taxi back to the hangar, and I know if I hadn't been there, they would have gone' (make the decision to take off). She was asked if that was, in her estimation, an example of problems in judgment. She said, "definitely." Investigators asked her if she had discussed the incident with the Ryan chief pilot. She replied that she had not.

Another check flight was described wherein the candidate check airman and the POI encountered mountain top obscuration on a VFR flight from Nome to Golovin. The POI said that the pilot being checked approached the obscuration and she "had to point out that there were openings in the undercast below and that it looked better (the route in visual conditions) below and to the right." The pilot chose to descend and continue in the clear over the ocean and around the shoreline. She told investigators that had she not been there, in her estimation, that pilot would have continued over the mountains in the obscuration." The POI was asked if she had discussed this matter with the Ryan Air management. She said that she had not.

## MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy performed on the pilot in command indicated that the cause of death was as a result of the trauma of the airplane crash. A routine toxicological examination revealed no alcohol or drugs present.

### Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	27, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	08/26/1992
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	3213 hours (Total, all aircraft), 1763 hours (Total, this make and model), 3102 hours (Pilot In Command, all aircraft), 135 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	CESSNA	<b>Registration:</b>	N6467H
<b>Model/Series:</b>	207 207	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	20700531
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	03/31/1993, AAIP	<b>Certified Max Gross Wt.:</b>	3800 lbs
<b>Time Since Last Inspection:</b>	9 Hours	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	11854 Hours	<b>Engine Manufacturer:</b>	CONTINENTAL
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	IO-520-F
<b>Registered Owner:</b>	RYAN AIR SERVICE	<b>Rated Power:</b>	300 hp
<b>Operator:</b>	RYAN AIR SERVICE	<b>Operating Certificate(s) Held:</b>	Commuter Air Carrier (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	UATA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument Conditions	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	OME, 0 ft msl	<b>Distance from Accident Site:</b>	5 Nautical Miles
<b>Observation Time:</b>	1007 AST	<b>Direction from Accident Site:</b>	90°
<b>Lowest Cloud Condition:</b>	Partial Obscuration / 0 ft agl	<b>Visibility</b>	0.25 Miles
<b>Lowest Ceiling:</b>	Broken / 500 ft agl	<b>Visibility (RVR):</b>	0 ft
<b>Wind Speed/Gusts:</b>	13 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	70°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	-2° C / -3° C
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	(OME)	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>	ELIM, AK (ELI)	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	0000	<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	1 Fatal	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 Fatal	<b>Latitude, Longitude:</b>	

## Administrative Information

<b>Investigator In Charge (IIC):</b>	DOUGLAS R HERLIHY
<b>Additional Participating Persons:</b>	DENNIS DELO; FAIRBANKS, AK JEFFRY F WHEELER; NOME, AK PARRY BARR; NOME, AK ROGER L MAYNARD; NOME, AK
<b>Investigation Docket:</b>	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .