Attachment 1

to Operational Factors Group Chairman's Factual Report

DCA04MA068

INTERVIEW SUMMARIES

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Interview: Captain Bruno Pichelli
Place: University of Cincinnati Hospital
Time: 1400
Date August 13, 2004
Present: NTSB: Dave Tew, Sandy Rowlett, FAA: Dirk Visser

During the interview, Captain Pichelli stated the following information:

He had about 1,500 flight hours as first officer (F/O) on the Convair 580. He had recently upgraded to Captain on the Convair 580 at another airline, which was Coastal Air Transport. He had only worked for Air Tahoma for about three weeks.

He had arrived in Memphis, Tennessee from Canada on the Monday before the accident. He had flown the same flights every day during the week before the accident. The flights each day flew from Memphis International Airport (MEM), Memphis, Tennessee to Cincinnati/Northern Kentucky International Airport (CVG), Cincinnati, Ohio and back to MEM. They flew the same airplane during the week. The accident airplane usually only flew the flights from MEM to CVG and back to MEM and nowhere else.

He was asked what did he remember about the accident flight. His said everything in his memory was "patchy or vague." He departed MEM on the first flight of the night. He thought they departed on schedule. He recalled he had been cleared for an approach to runway 36R at CVG. He recalled both engines were running and they had power. The engines felt like they were "running smooth". The landing gear had been extended. He could not recall the flap position they had during the approach.

He thought the F/O was the flying pilot. He thought he was talking on the radio during the accident flight. He thought the F/O said "not getting power". They "floated down" after the F/O said not getting power. He could not remember which engine the F/O was talking about. He thought they had put both power levers full forward when they had a problem. He said he knew they were quite low and short of the airport, but thought they could make the runway. He recalled seeing the approach lights of the runway. They were not in the clouds during the approach.

Below 3,000 feet altitude mean sea level (MSL), he thought they were "on the glideslope", then had a problem and then "went below" the glideslope. He did not recall why they went below the glideslope or how far. He could not recall or identify the problem. He did not recall what his approach speed was or his descent rate. He did not recall performing any emergency or abnormal checklists because they were "in so close" when they crashed. He did not recall performing the prop rpm checklist.

He said "the airplane impacted and then I was standing."

He did not recall any maintenance writeups on the accident airplane.

They usually landed with about 4,000 lbs. of fuel.

During the week prior to the accident, he flew into CVG and made a visual approach into the 36R runway.

He thought his transponder code during the accident flight had been 6666.

Interview: Wife of Captain Bruno Pichelli
Place: University of Cincinnati Hospital
Time: 1200
Date August 14, 2004
Present: NTSB: Dave Tew, Sandy Rowlett, FAA: Dirk Visser

During the interview, Mrs. Pichelli stated the following information:

They lived in Welland, Canada near Niagara Falls. They had been married for about 25 years.

Captain Pichelli departed on the Monday prior to the accident at about 1400 from Buffalo, New York. He stayed at a company provided staff house in Memphis, Tennessee. She said that she was not aware of his activities during the day when he was in Memphis.

He was in good health. He was taking no medications.

She did not recall how long he had been a pilot. He had his own small airplane in the middle 90's and flew it to build flight time. He was a maintenance mechanic first in Thompson, Manitoba for Great Lakes airline. He flew in the Sudan, for WardAir Airlines, and for Northwest Territorial Airways. In the early 90's, he was a flight engineer in Japan for All Nippon Airlines on a four year contract. They lived in Yokohama, Japan when he worked for All Nippon.

He had been with Air Tahoma for only three weeks. He previously flew for Air Transat based in Montreal, Canada. He flew as a flight engineer at Air Transat and "got phased out" when the company decided not to use flight engineers any more. After he was "laid off" by Air Transat, he flew for Coastal Air Transport, which was based in Guatemala. He flew only one flight as a captain for Coastal Air Transport when he ferried an airplane to Guatemala. Coastal Air Transport did not "get going" so her husband went to work for Air Tahoma. His planned schedule with Air Tahoma was to have weekends off. He planned schedule was to fly for three weeks and then have a week off.

He also flew as a F/O in a Convair doing fire fighting in British Columbia with Con Air. Con Air was a Canadian government operated company and he flew for them most of the previous summer.

She was not aware of any previous accidents or incidents.

She said when she first saw him after the accident, he could not recall what had happened during the accident.

Second Interview: Captain Bruno Pichelli
Place: University of Cincinnati Hospital
Time: 1230
Date August 14, 2004
Present: NTSB: Dave Tew, Sandy Rowlett; FAA: Dirk Visser

During the interview, Captain Pichelli stated the following information:

His work schedule at Air Tahoma was working five days a week – Monday through Friday. He went to Memphis, Tennessee on the Monday before the accident as he had on Monday of the week before the accident. He jump seated to Pittsburgh, Pennsylvania then to CVG. He slept for two or three hours in a recliner in the DHL crew rooms in CVG. He then flew a flight from CVG to MEM. He arrived in MEM about 0700 Central Daylight Time (CDT) on Tuesday morning. He was temporarily assigned to the Memphis base and was to be based in Pittsburgh, Pennsylvania soon. In Memphis, he stayed at the company crew house where he had his own room. On Tuesday, he slept until noon – awoke and ate, then went to sleep again from about 1400 to 1600 CDT. He checked in for his flight on Tuesday night at about 2100 CDT. On Wednesday, his routine was the same as Tuesday. On Thursday, the day before the accident, he watched television and read from about 1600 to about 2100 CDT then checked-in for his flight. The week before the accident was "non-eventful".

He was in good health with nothing physically wrong before the accident flight. He had not been taking any medication before the flight.

He had worked two nights of flights before the accident flight with no problems using the same plane as the accident flight. He had flown with the accident F/O for about two weeks. He was a good pilot. They worked well together. There were no maintenance writeups on the airplane on the accident flight.

The accident airplane was in "good shape." The airplane flew "okay" on the flight before the accident occurred. The normal fuel load for the flight from MEM to CVG was 8,000 lbs. of fuel. He did not recall what the actual fuel load was on the accident flight. It was about an hour and a half flight and the fuel burned during the flight from MEM to CVG was normally about 4,200 lbs.

He would normally get the automatic terminal information service (ATIS) information before an approach to get the runway. He would then get his Jeppesen charts out for the landing runway. He would then put the instrument landing system (ILS) frequency in both navigation receivers. He would put the third navigation receiver on the Very-high frequency Omnidirectional Range (VOR) for distance measuring equipment (DME) information for a missed approach.

During a briefing, he would brief the touchdown zone elevation, the ILS minimums, and the missed approach procedure including heading and altitude. He would use the briefing strip on the Jeppesen chart for the briefing. When the briefing was complete, he would say "transition complete" to indicate the descent checklist was complete.

He recalled they were cleared for a visual approach to runway 36R at CVG. He could see a lot of lights in Cincinnati, Ohio. He remembered seeing the lead-in lights and the runway, but parts of the flight he did not remember. The DHL lights were a good visual cue. He had flown the visual approach into runway 36R at CVG on the nights before the accident. 36R was the normal runway used at CVG at night. He thought he briefed the approach before the accident. He did not recall if the F/O was flying. He thought they were below 300 feet altitude when he first noticed a problem. He thought they were on the glideslope at that time and then went below the glideslope. He looked for the glideslope indications during a flight. The glideslope indication was a good backup, it gave a stabilized 500 foot descent.

He did not recall performing any emergency or abnormal checklist on the accident flight. He remembered walking around after the crash.

He did not recall if he was cross-feeding fuel on the accident flight. Fuel loads were normally loaded evenly so that you did not have to crossfeed. The ground turbine compressor (GTC) was used to supply air to start the engines. After the GTC was used, it needed to cool down for about one minute before it was shutdown. The GTC used fuel from the right fuel tank. The GTC could only supply air. The start-up of the GTC was a signal to the ground crew that the door was closed.

He flew as a flight engineer on the Lockheed Electra for Northwest Territorial Airlines based in Yellowknife, Northwest Territories for about two years from 1983-1985. He had previously been a maintenance engineer for Northwest Territorial Airlines in the late 1970's. In 1985, he went to work for Nation Air as a flight engineer on the DC-8. He went to work for Nation Air to fly a better airplane and because they carried passengers. He worked for Nation Air until about 1987.

From 1987 to about 1989, he worked in Bahrain, United Arab Emirates for Gulf Air Airlines as a flight engineer on the Lockheed 1011. He left Gulf Air for a better paying job.

From 1989 to about 1993, he worked for All Nippon Airline. He had signed a five year contract, but actually only worked about four years and four months at All Nippon. They were phasing out the F/E positions.

In April 1993, he went to work for Air Transat in Montreal, Canada. He flew charter flights all over the world on Lockheed 1011's as a flight engineer. Air Transat retired the Lockheed 1011's in May 2004. The Air Transat work had been seasonal flying. While working for Air Transat, he took many leaves to go fly on contract as a first officer on Convairs and build his flight time so he could be hired as a pilot. The contracts that he flew were: (1) Airwave Transport based in Toronto, Canada for about six months in 1998 (2) Nolinger Airline based in Montreal, Canada which was a seasonal hire during hunting season for a couple of months during September to October. He did the Nolinger contract seasonally for three to four years from 1999 to 2003 (3) Con Air flying firefighting duties during the previous summer in 2003 for about a month and a half out of Abbotsford, British Columbia on a Convair 580 with a tank underneath the airplane.

He was then hired by Coastal Air Transport. He flew for Coastal Air Transport, which was based out of Mobile, Alabama, from November 2002 to July 2003. He was hired and trained as a captain at Coastal Air Transport. He had about 100 flight hours as a captain on the Convair 580 at Coastal Air Transport before the company ceased operations. He was never fired or let go by any airline. He had no failed checkrides. He had not had any previous accidents or incidents.

His total flight time as a pilot was about 2,500 hours. He had about 10,000 flight hours as a flight engineer. He had about 1,500 total flight hours on the Convair 580. Most of his pilot flight time was in the Convair 580. He had about 1,500 hours on the Convair 580 as a F/O and about 100 hours as a captain. He had never flown piston powered Convairs.

Paul London of the Federal Aviation Administration had conducted his type rating check ride on the Convair 580 at Coastal Air Transport.

He normally photocopied the maintenance log page and then would later transfer the flight times from the copy to his logbook. His logbook was at home

The 0 flap maneuver speed on the Convair 580 was 150 knots. When you were below 173 knots indicated airspeed (IAS), you could go to the initial flap setting of 17 degrees. At ½ dot above the glideslope, they extended the gear. He would normally go to the final flap setting of 28 degrees when he was at about 1000 feet above the ground and would then concentrate on the "Ref" speed. The Ref speed usually was about 102 knots IAS at 48,000 weight.

To slow from 250 knots IAS, he would reduce the horsepower setting to about 1,500 horsepower – it would give a 1,000 foot descent rate. 1,500 horsepower plus a 1,000 foot descent rate equaled 250 knots IAS. He would always maintain some power on the engines to prevent negative torque sensing (NTS).

The crossfeed panel was located above the captain's head. There were three switches on the crossfeed panel: left fuel tank, right fuel tank, and crossfeed. To balance fuel, you would first open the crossfeed switch. When you turned the crossfeed switch on, you opened both valves in the manifold. There was no light or indicator to show if the crossfeed valves were open. The only indication was the position of the switch. You would then turn off the fuel boost pump in the tank that contained less fuel. There was a low fuel pressure light sensor in the fuel manifold. Two red lights or amber lights would come on if the common fuel manifold did not have fuel pressure from the right or left pump. The pre-descent checklist said to check the fuel crossfeed switch. He did not recall if he did the checklist.

The engines would suction feed fuel. The engines should suction feed at all power settings. A lot of Convair operators turned the fuel pumps off during cruise flight and then turned them back on during the descent checklist. The only limitation in the flight manual on use of the fuel pumps was for an altitude above 22,000 feet. Above 22,000 feet altitude, fuel pumps must be turned on. Air Tahoma's procedure was to leave the fuel pumps on all the time to save wear and tear on the pumps

After the accident, he received a phone call and answered the phone. He thought the call came from Rick Williamson who was the chief pilot. He answered his phone but didn't know where he was or what happened.

He was wearing his glasses during the accident flight. He could not read the charts without them. His glasses were lost in the accident.

He received good training at Air Tahoma. Air Tahoma performed their training in-house. All flight training was performed in the airplane. His flight training was with Rick Williamson who also gave him his checkride.

Interview: Jerry Lee Brown, Checkairman
Place: Air Tahoma Headquarters, Rickenbacker, Ohio
Date: August 16, 2004, 1300
Present: Captain Dave Tew, Sandy Rowlett, Dirk Visser

In response to questions, Mr. Brown provided the following information:

He had been a Line Checkairman at Air Tahoma since February 2004. He had worked for Air Tahoma since April 6, 1999. His total flight time was about 5,600 flight hours. He had about 1,200 flight hours in the Convair580, all as Captain. From 1990 to 1998, he worked as aero applicator [crop duster] for Dyer the Flyer. He worked as a crop duster for about 15 years from 1983 to 1998.

He had no accidents or incidents.

He was not involved with pilot flight training at Air Tahoma.

He had taught parts of the basic ground school. He taught recurrent training occasionally, usually did this when a crew was on standby with little to do.

He performed some initial operating experience (IOE) for the accident F/O Gelwick. Mr. Gelwick had some "heavy " flight experience. He did well during IOE. He started IOE at about the "mid part" of Mr. Gelwick's IOE and conducted either 2 or 4 legs. Mr. Gelwick had a lot of experience as a flight engineer (F/E) on the B-727 for Ryan International.

On an originating trip, the flight crew would receive :

- a weight and balance form
- weather package (from flight-following off of DUATS-this was company ordered and delivered by fax)
- a daily report sheet which the crew used to:
    - attach a fuel ticket
    - list the flights
    - enter the fuel uplift
    - list any reason for delay
    - list time when freight showed up
    - list when the airplane door closed
    - list report time
    - list flight times
    - list engine start time

Crews made sure the paperwork matched the customer's needs. Fuel ticket showed where they purchased the fuel.

The captain usually performed the weight and balance computations and all originating paperwork. The captain determined the load distribution of the freight "cans or cookie sheets." The non flying pilot (NFP) performed the engine trend data usually on the first leg. The F/O checked the freight load and verified the paperwork. A VOR check was made every night and a log was kept.

F/O shut the cargo door from outside. F/O checked the freight loads and might prepare the weight and balance computation if directed by the captain. Air Tahoma had computerized and manual weight and balance systems, but usually used the computerized system.

The F/O would stick the tank after each landing to determine how much was in each tank. By sticking the fuel tank, you had a start point to advise the fueler how much fuel to put in each wing. The F/O supervised the fueling. He stood outside and watched the fueling and ensured the correct fuel amount was loaded. Fuel overwing caps were removed during fueling for venting and to prevent rupturing of the wing. Each wing was fueled separately and each tank has its own underwing fueling port.

The accuracy of a fuel gauge varied with how many pounds of fuel were in the fuel tank. The Convair density fuel gauges could show the fuel off by as much as 1,500 lbs. The accident airplane gauges were "dead on" according to Air Tahoma maintenance personnel. There were no fuel "low lights" in the cockpit. The boost pump lights came on when fuel starvation occurred and " you don't want to be there" especially inside the marker on an approach. When the fuel boost pump light came on, "it was too late".

If you experienced an engine flame-out, the procedure was to push the feather button in until you got an indication of 2,500 revolutions per minute (rpm), then pull the feather button out, then push the primer button on the start panel. 2,500 rpm would get you above the minimum of 2,100 rpm needed for the engine start sequence. Ignition was available after you had a minimum of 2,100 rpm. Ignition switch should already be on.

Dual engine flameout was covered during ground school and flight training. It was not actually performed in the airplane. If there was a dual engine flameout, he personally would start the left engine first if all conditions were alike. He trained that you could start either engine first. The engine would suction feed fuel and you could even start the engine if the fuel boost pump was off. The Air Tahoma company policy was to run all fuel boost pumps all the time. If you lost a fuel boost pump, the engine will still run. "Boost pump on" was not in the check list because it should always be on. Normal fuel procedure was for tank to engine during takeoff and landing with crossfeed valves closed. Left tank to left engine and right tank to right engine. You could not transfer fuel on the Convair 580.

Max fuel imbalance for takeoff was 600 lbs. The max fuel imbalance for in-flight was 2,082lbs. You could not trust the fuel gauges. He generally trusted the trim of the airplane to indicate a fuel imbalance.

They used the GTC to start the airplane. You would normally turn on the GTC after the acceptance checklist. Need to wait one minute before it was usable. You would turn the GTC on about one minute prior to starting the engines. The GTC was normally on to start both engines and it was turned off when performing the taxi checklist however it could be turned off earlier. Usually starting the GTC was a sign you were "buttoning up" the airplane. The GTC was capable of running in the air but it shouldn't be. The GTC did not burn much fuel, but he did not recall how much the burn rate was. If you ran the GTC for a 1.5 hour flight, the fuel burn would be negligible. If the airplane had been fueled properly, he could not see a reason to crossfeed on "these short flights" (1.5 hour flight like MEM-CVG).

Fuel crossfeeding was covered in fuel system instruction during ground school. The fuel crossfeed procedure was in the quick reference manual (QRH) in section 19. You would seldom perform crossfeeding in the Convair 580. He had crossfed fuel maybe once on the Convair 580 aircraft and once on the piston Convair airplane. If crossfeeding, he recommended the use of the QRH. The fuel crossfeed procedure was: (1) both fuel

pumps on (2) both fuel pump pressure lights off (3) crossfeed valve open (4) fuel boost pumps for tank not to be used - off (5) tank shutoff valve for tank not used – off.

The standard procedure for setting up for an approach was to (1) check the Jeppesen plates, (2) check for right city, right approach, (3)check localizer to ensure correct runway.

The in-range checklist was a descent checklist which was normally started about 25 miles from the airport. The FP called for the inrange checklist and the NFP read it. The NFP could respond to his own challenge. Company procedure was to read every item on the checklist "out loud", "no secrets in the cockpit." He personally touched each and every item on the checklist when it was called. F/O Gelwick was excellent in performing checklists. If he didn't call for a checklist, Mr. Gelwick would "call him on it". If something was missed or he responded wrong, Mr. Gelwick would quiz him about it.

The visual approach to runway 36 in CVG should be "set up" prior to the approach. The FP would give the airplane to the NFP so he could brief the approach. He would allow the NFP to set up the radios but then would check all the radios. Runway 36R ILS frequency 110.35 could be set on one or both navigation radios depending on whether you were on a radar vector or on your own navigation. There were normally two navigation radios on the airplane. If possible, you would have your missed approach frequency available. If you had a missed approach, you would usually fly the airplane for at least the first part of a missed approach but you should have briefed the entire missed approach procedure. You would not normally perform a missed approach when performing a visual approach.

Landing lights procedures were to turn them on any time you thought there was a traffic concern below 10,000 feet and he would turn them on at the middle marker to advise ATC that the plane was configured to land. If you were in clouds, you might delay use of the landing lights because of glare. 173 knots IAS was the maximum speed limit to extend landing lights and 200 knots IAS was the maximum speed when the landing lights were extended. He could not recall written company procedure for landing lights. You could turn on the landing lights when they were retracted and he sometimes did this to get the ground crews attention.

The procedure for an engine failure was: (1)verify, (2)identify, (3)both pilots agree, (4)pull E handle (this shuts off fuel and all fluids and feathered the propeller), (5)power, flaps, and gear (as required). After you pulled the E handle, power was increased on good engine. If you did not feather the props, the flat blades would slow you down like a big piece of plywood because of the increased drag. If both engines failed inside the marker, you probably would not have time to recover. You couldn't get the engines restarted in time. You would probably go into the ground before you got to the airport. Dual engine flameout was covered in ground school training and all the memory items associated with a dual engine failure or flameout were covered.

Possible flap settings were infinite as there were no detents settings Air Tahoma only used two flap settings, 17 and 28 degrees.. A flap 17 setting was used during approach and a flap 28 setting was used for landing. You relied on the flap gauges which also had flap symmetry protection.

Company engine flameout procedures were: do memory items, get QRH which the NFP read and performed, then perform any cleanup items.

For a non-emergency / abnormal procedures (1) pilot called for the QRH checklist (2) the NFP read the checklist and completed the items.

Crossfeeding was a non-emergency/ abnormal procedure. Company procedures were: FP called for the QRH checklist and the NFP read the procedure items on the checklist. Fuel crossfeed was covered in ground school in the fuel system instruction. There was a limitations that fuel crossfeed was not to be used during takeoff or landing. He personally put a checklist between the throttles to remind him that he was cross-feeding. He liked the QRHs and thought they were very safe.

If he got a prop rpm droop, he would follow the QRH – there were no memory items associated with prop rpm droop.

Freight forwarders weighed the freight at the airplane at the out stations under DHL supervision. Captain determined how the freight loads were distributed on the airplane. A dated freight load sheet was kept by pilot and one copy of it was given to DHL.

He reviewed the weight and balance forms that were found on the accident airplane. He could not explain the cross-outs and changes that were on the forms. As a check airman, he would not accept either document as it was.

When asked about the CRM Program at Air Tahoma, he replied that "yes Tahoma did have a CRM program".

He had flown with the accident F/O as a crew member for at least a couple of weeks out of Cleveland, Ohio and PIT. F/O Gelwick did a good job and had good CRM He had experience interacting with captain from his time as an FE. He had no problem challenging the captain.

Interview: Captain Richard Jeffrey Williamson
Place: Air Tahoma Headquarters
Time: 1415
Date August 17, 2004
Present: NTSB: Dave Tew, FAA: Dirk Visser

During the interview, Captain Williamson stated the following information:

He was Chief Pilot of Air Tahoma and was a check airman. His date of hire with Air Tahoma was April 1, 1991.

He was hired by the company when the flights were initially operated under the Renown Aviation Charter certificate. Air Tahoma later obtained an operating certificate in September 1995. He was hired as a captain on the Convair 580.

He demonstrated to the operations group how to operate the Air Tahoma weight and balance computer that was found in the wreckage of the accident airplane. The data obtained from the computer when it was turned on was:

	WEIGHT	MOMENT
ACM	0	0
Position A	475 (empty can)	110
Lower compartment	0	0
Compartment B	1088	371
Compartment C	1856	835
Compartment D	2718	1519
Position E	465 (empty can)	365
Aft	0	0
Total load	6602	3152
BOW	34413	12595
ZFW	41015	15747
Fuel	9000	3573
Ramp weight	50015	19320
Taxi fuel	200	79
Takeoff weight	49815	19240
Fuel burn	4200	1667
Landing weight	45615	17573

Center of Gravity Limits

	FWD	AFT	Current
Zero Fuel Weight	15066	15988	15747
Takeoff	18638	19418	19240
Landing	16961	17781	17573

No Log times were entered in the computer.
This was the only computer that had weights for N586P and the weights were entered under airplane N583 in the portable computer because the company was unable to change the N583 title in the computer. The computer was programmed by the former Director of Operations for Air Tahoma. Michael Bennis wrote the weight and balance program for the computer. He currently writes revisions for the program. The current revision level was 2.0. The IT person for Air Tahoma was Matt David Clouse.

Captain Williamson flew all models of Convairs.
He held an FAA Air Transport Pilot (ATP) certificate with type ratings on the CV-240/340/440, L-18, DC-3, A340/A440. He also held a FAA Multi-engine Land Commercial certificate. He was a Certified Flight Instructor-ASEL and an Airframe mechanic.

His total flight time was about 17,000 flight hours with about 12,800 hours on the Convair. He has about 11,200 flight hours as PIC on the Convair. He had about 14,500 hours as PIC on all aircraft.

His employment history was:
6/78 to 5/79 – Hasting Skyways – Hasting, Neb. – was flight instructor, charter pilot
5/79 to 8/80 – Triple Air Enterprises – Omaha, Nebraska – he got married and moved back to Hastings, Nebraska.
9/80 to 8/82 – Hastings Skyways – Hastings, Nebraska – was chief pilot, flight instructor, and charter pilot – he left for better job.
8/82 to 8/83 – Bob Gottsch Enterprises – Hastings, Nebraska – was a pilot – he left company when the flight department was closed.
8/83 to 11/83 – Mid Plains Aviation – Norfolk, Nebraska – was chief pilot, director of operations, and flight instructor – he left for better flying job.
11/83 to 4/ 84 – Combs Freight Air = Denver, Colorado – was first officer on Convair 240, 340, and 440 – he left when company went bankrupt.
4/84 to 4/87 – Providence Airline Corporation, a Part 121 air carrier – Quonset Point, Rhode Island – was a first officer and captain on a Convair 240 – he left when the company went out of business.
4/87 to 12/87 – Atorie Air Inc., a Part 135 air carrier– El Paso , Texas – he was captain on L-18 and DC-3 airplanes,– left when the company went out of business.
12/87 to 1/89 – New England Air Express - Providence, Rhode Island – was a captain on AC-680 - left for better flying job.
1/89 to 4/89 - Pandora Airlines, a Part 121 air carrier – Seymour, Indiana – was captain on Convair-240 – he left for better job.
4/89 to 4/91 – Kitty Hawk Airlines, a Part 121 air carrier – Dallas, Texas – captain on Convair-240/340/440 – he left for better working conditions
4/91 to 11/97 – Renown Aviation – Santa Maria, California - was captain and check airman on Convair 240 – he left when company shut down.
11/97 to present – Air Tahoma – Columbus, Ohio – he was chief pilot, captain on all convairs

He had a FAA 609 ride in Indianapolis, Indiana because he had some tires blow-out while landing while working for Renown Aviation.

He had an incident report because of an engine failure. There had been no suspension of his certificate.

He had no other accidents or incidents.

He had never been terminated by an employer. He did not provide any ground school instruction to either accident pilot. He gave the accident F/O some flight training. The F/O started flying for Air Tahoma in May of 2004. He did well during training. The F/O "had his act together" and knew what he was doing. His CRM was excellent. He would let you know if something was bothering him.

The Air Tahoma CRM course was a tape.

The accident captain, Bruno Pichelli, knew the Convair 580 airplane and had performed fire bombing flights. Captain Williamson said he pulled several V1[1] cuts on him and he responded correctly. There were no noteworthy problems in his training.

When he was asked what kind of training for engine failures was performed at Air Tahoma, he responded that they do V1 cuts, enroute engine failures, single engine approaches. To provide an engine failure for the pilot, he would simulate a loss of oil pressure or set off the engine fire bell. He would then simulate engine failure by setting the engine power to 300 horsepower. He would then expect the pilot to (1)verify which engine failed, (2)identify the failed engine, (3)guard the E-handle, (4) adjust engine power and flaps as necessary. He trained that the pilot should (1) push to the appropriate power on the good engine, flaps- call for and say what position, engine power –call "power" and say the power setting (2) Call for the QRH (3) they would simulate using the QRH sometimes and sometimes use it.

He did not simulate dual engine failures in the airplane. When you reduce the engine power back, the props "go flat and down you go". The propellers would act like a big air brake. You could not actually feather an engine during simulated engine failures because you would lose electrical when the engine dropped below 12,000 rpm. The engine electrical generators were not constant speed drives. The main AC buses are lost if engine RPM drops. There were two electrical generators on the airplane.

He did not recall if the accident pilot had training in engine flameouts during flight training. Flameouts and dual engine failures were covered during ground school and cockpit procedures training (CPT). The QRH stated that 170 knots IAS was the minimum airspeed for airstarting an engine, but his opinion was that the engines would start at a lower airspeed. RPM has to decay below 9,000 RPM before fuel and ignition was available to relight the engines. He had no idea of time delay it would take to restart the engines, but he thought they would relight pretty fast, maybe 30-45 seconds, if that long. He has feathered engines and restarted them. His opinion was that if they had an engine problem at 1000 feet above ground, there would be no time to react.

He knew of no engines failures on the Convair-580s at Air Tahoma, but they have had some engine failures on the Convair-240s.

[1] V1 cuts are simulated engine failures that occur during at a critical point during takeoff during flight training.

He has had a RPM droop. You know it by sound and gauges, but there were no warning lights.

He could not be explain the cross outs and corrections that were on the two weight and balance forms found with the accident airplane wreckage. The yellow copy sheets that were normally left behind were still attached to the weight and balance forms. A check of the Memphis pilot packages showed that no yellow weight and balance forms had been left behind in Memphis all week.

When you received the airplane, the fuel panel did not need to be touched. The crossfeed switch should be closed and the fuel tank shutoff valves should be open. The fuel tank boost pumps would be off. Fuel tank boost pumps were tested during the Receiving Checklist. You turn the pumps on, look for a light and then turn them off. There were no fuel pressure gauges. The airplane fuel boost press light was on the annunciator panel just below the throttle quadrant. He did not know if the fuel boost press light would come on if there was no fuel – he always thought it was a pressure light.

Before starting engines, he would turn on the right fuel boost pump when starting the GTC. When starting the left engine, you turn on the left hand boost pump just before adding fuel on the ignition. The fuel boost pumps were then not normally touched until after landing.

When running the GTC, the fuel used was negligible. Normally they would start the GTC one minute before it was needed for engine start. The GTC was turned off during taxi check. He thought the GTC had about a 25 gallon per hour burn rate. He had flown a flight when he forgot to turn off the GTC and still didn't see much fuel split between the fuel tanks

He thought the fuel gauges were accurate to within 100 lbs. during all fuel loads. 2,080 lbs. was the maximum fuel differential allowed in-flight. 600 lbs. was the maximum fuel differential allowed during ground operations. They did emphasize the 600 lb fuel imbalance limit but he had never had a 600 lb imbalance. It did not usually occur in their operations.

He has never had to crossfeed a Convair-580. Normally he would fix a fuel imbalance on the ground by adding fuel. Both accident pilots were flight engineers and may have been more used to having to crossfeed fuel during flight.

They covered fuel crossfeeding during training only by talking about it. Never actually move the switches in the air or on the ground. There was no company procedure to do so but some pilots would stick a checklist between the throttles as a reminder when crossfeeding fuel.

If you were crossfeeding fuel: (between the left and right fuel tanks), the procedures would be (1) get the QRH checklist, (2) turn both fuel tank boost pumps on (3) move crossfeed valve selector to open position, (4) turn off fuel boost pump in the fuel tank not

used, (5) turn off the associated fuel tank shutoff valve of the fuel tank not used to avoid fuel being transferred to that tank, (6)when crossfeeding complete, reverse the steps

If a fuel tank ran out of fuel, the first warning light you would see would be the aircraft fuel boost pressure light which would illuminate due to loss of fuel pressure at the pump. Engine should quit running almost immediately.

If you were crossfeeding fuel from one tank and it ran out of fuel, you could not get fuel from the other tank if the fuel tank shutoff valve on that tank was closed.

During flight training, he would not cover crossfeeding to the point where a tank would go dry and both engines quit.

He had to lean forward to see the fuel gauges located down below the back of the throttle quadrant.

There were no autopilots on the Air Tahoma airplanes. The autopilots have all been disconnected. The autopilot switch only controls the flight director bars.

He has previously had a 1000 lb. fuel imbalance during flight on a Convair 240 and recalled the control wheel was banked as a result.

The Flight Operations Manual had guidance on how to use the QRH.

He trained that after landing, fuel tanks should be stuck before ordering fuel, and then stuck again after fueling to confirm the fuel load. There were two sticks on each fuel tank. Sticking the fuel tanks was the most accurate method for determining actual fuel. It was the F/Os job to make sure fuel caps off during fueling. Company procedure was that you have to have a pilot there before an airplane can be fueled.

The in-range checklist was read by the NFP. It was the Captain's responsibility to respond to the in-range checklist item "fuel tanks and boost pumps. Most of the F/Os would look up to the fuel panel when this item was called. Both pilots performed the checklist.

During fuel crossfeeding, the QRH checklist was read by the NFP. Both pilots could see the switch guards but the captain made the responses. The Crossfeed valve was normally covered as an item on the Receiving checklist. Fuel total was also an item on the receiving checklist.

The accident captain would initially not annunciate the items on his before start flow. He would just say "its on". Not fuel boost pump on. Captain Williamson said he corrected him to use the appropriate response. He had no further problem after that.

The training program consisted of:

- 40 hours of basic indoctrination

- 63 hours of systems knowledge – this included learning flows and standard operating procedures
- Training in special subject areas
- Observation flights to observe crew coordination and flight conduct.
- Flight training for an F/O could be as little as two days – depending on his depth of experience.
- Captain training was as required
- Flight training curriculum was approved but had no required hours.

The accident pilot received a reduced amount of training based on his prior experience.

The accident captain was average for his experience level. His attitude was above average. He followed limitations very closely.

The flightcrew should write the amount of fuel onboard on the airplane log sheet, also the amount of fuel added, and the amount of fuel they departed with. There should be no notes kept on any fuel discrepancy. If there was a problem caused by a fuel discrepancy, he would write it up in the airplane log book.

The fuel uplift recorded is total uplift and the amount of fuel added to each tank was not identified. There was no way to tell by the paperwork who had flown which leg. Standard company policy was to call-in to operations after the completion of a flight.

A F/O would have hard time reaching the crossfeed panel – so crossfeeding would normally be done by the captain.

Interview: Cecilia Beckman
Date: August 13, 2004
Location: telephone interview
Time: 1400EDT

Operations group members present were David Tew, Malcolm Brenner, NTSB.

During the interview, Mrs. Beckman stated the following information:

She is the aunt, through marriage, of F/O Michael Gelwicks and was acting as a family representative during the investigation.

On Thursday evening, August 12, the F/O signed his older son up for little league football at about 1745. They returned home about 1930 and ate dinner before he left for work. Earlier, he had arrived home from work about 0700. He slept until about 1530 when the boys returned from school.

The Gelwicks had two boys, aged 11 years and 5 years. Mrs. Gelwicks worked for Skywest Airlines in ground handling. The Gelwicks had known each other for six years and been married for eleven months.

On Wednesday, August 11, the first officer awoke in the afternoon and left for work in the evening between 2000 to 2030. That was his normal schedule.

On weekends, when he was not working, the first officer would go to a movie, visit relatives, and watch television. He was very active with the boys, playing basketball and football with them. When he did not have work demands (on Saturday and Sunday), he probably went to bed about 2300 and awoke about 0900 to 1000 to attend church.

On Monday, August 9, the first officer watched the boys in the afternoon. On Tuesday, August 10, he took the younger boy to kindergarten for the first day of class. The boy liked it.

To the best of Mrs. Beckman's knowledge, the first officer had never before been involved in an aviation emergency. He had served as an aviation mechanic in the United States Air Force. According to Mrs. Beckman, there had been no major changes in the past six months in his medical, financial, or personal situations. His health was excellent. He had been furloughed briefly (about one month) from his previous job with Ryan Air but, starting about six months before, started employment with Air Tahoma. He and his wife were married September 27, 2003, and were going to start looking for a new house.

The first officer was a happy person and very caring. Mrs. Beckman last saw him on Sunday, August 8, at a family lunch honoring her 81-year-old father. The first officer seemed very normal. He told jokes and played with the boys. He and his wife were planning a trip for the end of September that would take the place of a postponed honeymoon. They were planning to visit the Dominican Republic, where the first officer was born. His wife obtained free air travel through her work.

The first officer spent four years in the Air Force and became interested in aviation. He was actively interested in aviation during all the time Mrs. Beckman knew him.

The first officer did not use tobacco or alcohol. He did not take prescription medication, although he took multivitamins every day. He and his family lived with Mrs. Beckman when he first accepted employment with Air Tahoma and moved to the area (from Virginia Beach), and Mrs. Beckman never saw him take any medication other than aspirin.

Interview: Eric Jones
Date: August 19, 2004
Location: phone interview
Time: 1530 EDT

Operations group members present were David Tew, Malcolm Brenner, NTSB. Also present on the conference call was Mark Hayes and Attorney John Murray who was representing Mr. Jones.

During the interview, Mr. Jones stated the following information:

He had been fueling airplanes fulltime for about two and a half years. He usually fueled the Air Tahoma airplane every night that it flew. He fueled the accident airplane the night of the accident. He usually was at the airplane about 2030 and the pilots usually came out at about 2100. He did not see the accident pilots that night.

The night of the accident, he talked to the Air Tahoma maintenance man, Luke Malabad, who gave him the fuel load to be put on the airplane. The fuel load that he put on the airplane was 230 gallons in the right wing tank and 240 gallons in the left fuel tank. He put Jet A fuel on the airplane. He fueled the airplane from under the wings. He used the meter on the fuel truck to load the correct amount of fuel. The maintenance man always checked the fuel gauges after fueling. He removed the fuel caps before fueling the airplane by using a ladder to get to the top of the wing. After fueling was complete, he replaced the fuel caps on the airplane while the maintenance man was there.

Interview: Luke Malabad
Date: August 19, 2004
Location: phone interview
Time: 1600 EDT

Operations Group members present were David Tew, Malcolm Brenner, NTSB

During the interview, Mr. Malabad stated the following information:

He was hired by the company on January 5, 2004. His title was aircraft mechanic.

He met the fueler, Eric Jones ("Eric"), on the night of the accident. Mr. Malabad always checked the fuel dip sticks on the bottom of the wing after the airplane was fueled. After fueling, the accident airplane had a total of 1,200 gallons, with 600gallons in each tank. The tanks were evenly balanced.

Mr. Malabad could not confirm whether the fuel caps were closed after fueling. Eric normally went on top of the wing, took off the fuel caps, and attached the grounding wire. Mr. Malabad normally remained on the ground, and, in the case of the accident airplane, saw only that the panel was closed. It was possible to close the panel without the fuel caps being locked. Since the accident occurred, there was a new company policy that required them to lock the fuel caps down every night.

The fuelers normally arrived before the flightcrew so, in almost every case, Mr. Malabad arranged the fueling and the flightcrew later checked the dip sticks to confirm the fuel quantity.

He saw F/O Michael Gelwicks ("Mike") on the night of the accident. He did not think that Mike checked the fuel drip sticks that night. Mike was pretty "fired up" and arrived a little late (although he still had 45 minutes to one hour available for preflight and load issues).

Captain Bruno Pichelli ("Bruno") was "fine" that night, although a little "pressed" the second time he came out to the airplane. Bruno had to get a manual to compute the weight and balance calculations as the weight and balance computer was "acting up". Bruno wanted to depart on time. He would show usually show up early and wait for the cargo load weights. Bruno did not appear tired the night of the accident. He appeared to be in good spirits, although he sometimes got a little bored waiting for weight information and indicated that he hated waiting around.

Asked whether the fuel gauges were reliable, Mr. Malabad said that they could be off by a few hundred pounds and therefore he checked the fuel sticks. The accident airplane had 600 gallons in each wing, which equaled 8,040 pounds in each wing. The flight was weight restricted because it was close to maximum takeoff weight.

On the evening of the accident, Bruno arrived before Mike at around 2045. He was fine, a happy-go-lucky kind of person. He was always smiling, talking to the people in ground handling. They loved him. He was always talking with someone, and was not the type to sit around quietly.

Bruno would leave his flight bag at the fixed-base-operator (FBO) and come out to the airplane for the flight paperwork. He would then wait inside the FBO for the cargo weights. Mr. Malabad usually saw Bruno at the FBO and when he walked out to the airplane. That evening Bruno was his usual happy self, although the weight and balance computer problem did not help and he was rushed. He walked fast and indicated that the "damned computer messed up on me." Once he got back out to the airplane, he was fine. Bruno was a very personable, likable person. He seemed normal and alert that evening and was not dragging. He appeared to have received his normal sleep.

Mike normally arrived at the same time as Bruno, but his son just started football practice that night. He had two boys, 11 and 5 years old, and one had just begun Peewee football. He was the beaming dad that night and arrived about 30 minutes late. Mike never complained and always had a smile on his face.

Both Bruno and Mike had FAA Aircraft and Powerplant maintenance licenses and had worked their way "up the ranks" to become pilots. Mike and Bruno got along great, with mutual respect and common backgrounds. Bruno had only flown with Mike for two weeks. On the first night, there was a small coordination problem. Mike left the Jeppeson charts out after landing. Bruno wanted everything done before he left the

cockpit and said something to Mike about maintaining a neat cockpit. It was the only negative in their relationship.

On the accident night, Mike went through the FBO and came straight out to the airplane. He went inside the airplane to conduct his cockpit pre-flight, then went outside where he conducted his walk around inspection and pulled out the gear pins. Mike then departed for his usual toilet break at the Northwest Airlines office, where the bathrooms were cleaner and closer to the airplane than the FBO. Mike was gone for 10 to 15 minutes, then returned to the FBO, talked with Bruno, and waited. Mike usually helped with the loading, then would get in the cockpit, get the clearance, then come out to the bottom of the steps to watch the loader and close the door.

The crew activities on the accident night were routine, although the cargo load made the airplane look tail heavy that night. Mr. Malabad felt that he had to duck a little lower than usual to get under the fuselage right wing. The airplane was just sitting a little bit low.

Mr. Malabad met Mike at the tail after his walk around. Mike was excited about his son and said he had watched the entire football practice. His son did OK. Mike was wide-awake and alert. Whenever Bruno or Mike were tired, they would be dragging and it would be obvious when they climbed the ladder. That night, neither one was dragging. Both were in a good mood.

Mr. Malabad discussed maintenance issues with both pilots. Bruno was a Convair 580 mechanic and always had a new tidbit of maintenance insight. For example, he said that you should always put the props on the mark and he was right.

The accident flight was scheduled to depart at 2222 and return at 0615 (local time).

On the morning before the accident, the crew had arrived back from their overnight flight and both were fine. Mike lived in town and would go home after finishing with the airplane. He watched his children during the day so his sleeping pattern was irregular. Bruno would head to the crew house where he lived alone so he could sleep any pattern whatsoever. When tired, Bruno would sound a little groggy, not enunciating as well and not as loud in his talking as normal.

Mr. Malabad thought that Mike slept really hard at the hub during the overnight layover since he would come back pretty chipper in the morning. On the morning before the accident, Mike was chipper. The loading crew was late so Mike helped Mr. Malabad and another worker unload and load the whole airplane.

Bruno and Mike had flown together the entire week. Bruno arrived on Saturday, and he and Mike flew each night from Sunday until the night of the accident. There was nothing out of the ordinaryduring the week. It was a pretty routine week, with no problems.

Mr. Malabad had never jumpseated with Bruno, who was a relatively new pilot at Air Tahoma, but he had jumpseated with Mike and another captain. Mike seemed good, and impressed Mr. Malabad by how he performed checklists.

Mr. Malabad had jumpseated on 10 to 15 occasions with company pilots. He never saw any pilots crossfeed fuel. The crossfeed switches were left alone and he had never seen anyone use them. The airplane stayed pretty balanced on fuel, with the exception of the right side being a little lower on fuel because it fueled the GTC which was used for the startup of the engine(s). The startup usually required about 20 to 30 gallons extra fuel. Every night, the right wing would require about 30 gallons additional fuel compared to the left wing.

When Mr. Malabad opened the fuel caps, it was not unusual to find that the caps had not been completely closed at Cincinnati. Fuel was not drawn out of the fuel tank when the caps were not completely secured. Mr. Malabad had actually seen the caps completely off.

Mr. Malabad did not know Bruno's activities during his off-duty time. Whenever Mr. Malabad visited the crew house, Bruno had aviation books out. Bruno did not seem to have visitors.

Interview: Captain Bruno Pichelli
Date: August 20, 2004
Location: telephone interview
Time: 1000 EDT

Operations Group members present were: David Tew, Malcolm Brenner, NTSB

During the interview, Captain Pichelli stated the following information:

The first officer(F/O), Mike, was the flying pilot (FP) for the accident flight.

The day of the accident, he attempted to use the company weight and balance computer to perform the weight and balance computations for the accident flight. The computer, which had been "acting up" for several days, was "dead" and he called the company to arrange for batteries to be supplied at Cincinnati/Northern Kentucky International Airport (CVG), Cincinnati Ohio. He decided that he would have to manually compute the weight and balance for the flight. He thought he was "going over" the weight and balance computations while they were flying from Memphis International Airport (MEM), Memphis, Tennessee to CVG. He normally left a yellow sheet copy of the weight and balance at the departure station but said he did not leave one at MEM.

Captain Pichelli said he was not tired before or during the flight. He was a little "stressed" and a little "preoccupied" doing with the weight and balance computations.

During the accident flight, one pilot was flying while the other was "buried in paperwork".

He recalled that just prior to the accident, they were losing airspeed and descending. He did not recall if their airspeed was "slow". He also recalled that he had his right hand above his head and that "it was flailing around doing something". He thought that he might have been "pulling the feather button or something else". He remembered seeing the runway before impact and thinking they could make it to the runway. He remembered a "senseless, helpless feeling" just prior to the accident.

He did not recall if he tried to balance fuel during the flight. He would balance fuel if the fuel in the tanks differed by more than 2,080 lbs. in-flight or 680 lbs. on the ground. To crossfeed, he would (1) open the crossfeed valves (2) turn off the fuel boost pumps for the tank that was lower in quantity (3) check that the fuel boost low pressure lights on the advisory panel remained out. If the low pressure lights illuminated then you would turn the fuel boost pumps back on. He said that it was not necessary to run the fuel boost pumps since the engines would suction feed. Some operators turned the fuel boost pumps off in-flight but the fuel low pressure lights should still remain off. If he was crossfeeding, he usually put a checklist or a piece of paper between the throttles as a reminder. This was a technique that he learned while flying for other operators. He did not recall if Air Tahoma taught that technique and said he did not recall what procedure Air Tahoma had, "if any", to remind you that you were crossfeeding. He said that "generally crossfeeding was a short time thing". He had rarely performed fuel crossfeeding.

He did not recommend turning off the fuel tank switch when crossfeeding and thought that was not recommended anymore because you might not be able to open the valve again if there was some problem. When asked if fuel would transfer from one tank to the other during crossfeeding if the fuel tank switch was left open, he said he recalled that it would not transfer. He said that "somewhere there is a note" that they were not to transfer fuel from tank to tank in flight.

When he was asked if he could easily see the fuel gauges, he said the V-card[2], gust locks, and checklist could block his view so the gauges were easily obscured. He had to sit up and lean forward to see the fuel gauges clearly. When it was not his leg to fly, he would sit aft and a little lower and would need to lean forward to see the fuel gauges.

He did not recall seeing the turbine inlet temperature (TIT) gauges or what his engine horsepower gauges read just prior to the accident. He did not "see any numbers in his head" concerning the cockpit instruments just prior to the accident.

He usually performed the inrange checklist when they went below 10,000 feet altitude, however he sometimes waited a little longer before starting the checklist. He did not recall all the items on the inrange checklist. He did recall the following items and the

[2] V-card was a takeoff and landing speed information card that crews used.

responses to those items (1) fuel panel – three capped [he said this meant that all the switch guards were closed] (2) pumps - the fuel boost pumps were on.

He thought the airplane was flying "okay" prior to the accident. He did not recall if the flight control wheel was in a normal position just prior to the crash. He did not recall if the F/O said the airplane was not flying right.

He recalled the F/O said "we're losing power" prior to the accident. The F/O said "I got low power". He did not recall performing any emergency or abnormal check list prior to the accident. He recalled seeing the 36R runway and runway lights at CVG at that time. They had previously briefed for an approach to runway 36R.

If an engine flamed out, he would move the throttle back to a position about an inch forward of the flight idle setting. Then the engine flame out procedure was: (1) pull the feather button (2) watch the engine RPM. You would get engine ignition between 2,200 RPM and 3,000 RPM on the start control valve. The engine restart was an automatic procedure from that point and the starter would "cutout" at about 9,000 RPMs. If there was an in-flight flameout, he did not know how long it would take to relight the engine. He had never performed an in-flight relight on a Convair 580 engine. He did not recall if the engines flamed out on the accident flight.

When he was not working, he was usually "early to bed and early to rise". He would normally sleep from 1100 until he arose about 0600 or 0700. On the Tuesday night before the accident, he jumpseated from Buffalo, New York at about 1700 to Pittsburgh, Pennsylvania arriving about 1800. In Pittsburgh, he took a bus to the hotel and stayed in a room with a company captain. He departed Pittsburgh about 2330 and arrived in CVG about 0100 or 0130. He set his alarm for 0430 and slept in a comfortable lounge chair at CVG. He awoke about 0430, got on the crew bus, and went to the airplane. He performed his weight and balance calculations, preflighted the airplane, and then "off we went" – nothing unusual happened during the flight. He arrived in MEM on Wednesday morning and went to sleep at about 0630 at the crew house. He would usually awake about 1300 or 1400. Later in the afternoon, at about 1550 or 1600, he would sleep another "couple of hours".

There was no one else staying at the crew house. All the days of the week had about the same timetable of events. One day, he copied some forms at a store. He would sometimes read. He used the company car to go to work.

He did not recall everything from the day of the accident and felt that was "bizarre".

For the previous six months, his health had been good and there were no changes in his health. He had been seeing the same doctor for the last seven years. His vision was good but he wore glasses for reading. His hearing was good and he did not use a hearing aid. He did not drink any alcohol the week before the accident. He did not use any tobacco. He was not taking any prescription or over-the-counter medications prior to the accident flight. When he worked for Air Transat, he was assigned a company doctor.

He had over 10,000 flight hours. In his previous jobs at other airlines, most procedures were in a quick reference handbook (QRH) or a checklist.

In May 2004, he was "laid off" from his flight engineer position when the company phased out the L-1011s. The six months prior to being employed by Air Tahoma, he had struggled to find a full time job.

He had no previous accidents or incidents.

There had been no recent changes in his personal life. He had been married for 25 years. He had children aged 20,18,11 and all three were girls.

The accident F/O, Mike, was a good pilot. They had similar backgrounds. Captain Pichelli said he had no hesitations about the first officer. They got along very well. They had gone out to dinner together one evening.

Interview: Alexis Marie Tanner
Date: August 31, 2004
Location: phone interview
Time: 1300

Operations Group member present was David Tew.

During the interview, Ms. Tanner stated the following information:

She was an eyewitness of the crash of the Convair 580 near the Cincinnati, Ohio airport.

At the time of the accident, she was standing on the back deck of her house which was located about two miles from the crash site. The night was "not cloudy" and she could make out the shape of the airplane. When she first noticed the airplane, it was about three miles from the Cincinnati airport. From her left, she saw the accident airplane and noticed that it appeared to be "low when it passed by and that seemed "odd" to her. The airplane was in a "slow, downward descent". She thought the airplane was descending at about a 45 degree angle which was a steeper angle than she normally saw. She said it was "obvious" that the descent angle was steeper than normal. The airplane was flying in a "straight line", was not making any turns, and the wings appeared to be "level". There were no abnormal maneuvers by the airplane. The airplane "glided in".

She could see lights on the airplane the entire time and could see a blue light on the tail. She saw a "rotating" light on the left wing and a "stationary" red light on the right wing. She saw the airplane "through some trees at one point. She was able to see the airplane until it disappeared behind an apartment building. She could not see the airplane when it made contact with the ground.

Her husband said that the airplane "probably did not crash" because they did not hear a crash. Her husband did not hear "anything out of the ordinary" concerning the airplane and he thought he heard the engines running initially. They did not hear any "interruption of engine power". When the airplane "disappeared" from her view behind the apartment building, she could not hear the engines running and there was "dead silence". She could not see the propellers.

Her husband worked for the Elsmere Fire Department and he received a pager signal from his workplace concerning the accident. The Elsmere Fire Department responded with an "engine and squad" to the golf course where the crash occurred. Her husband went to the Fire Department and was "standing by" at after the accident.

Interview: Elizabeth Ann Cobb
Date: August 30, 2004
Location: phone interview
Time: 1000

Operations group members present were David Tew, Malcolm Brenner, NTSB..

During the interview, Ms. Cobb stated the following information:

She had been a police officer for the Florence Police Department since November, 2003.

On the night of the accident, she received a call on her radio about the airplane accident. She went to the golf course and was driving a golf cart on the cart track and was "looking everywhere". There had been a report of debris from someone and she went to confirm the debris. She was with Sergeant Bianchi of the Erlanger Police Department when he said he "smelled fuel".

About 15 minutes after she had been called on the radio, she was behind Florence Police Department officer Ken Osborne when they came upon the accident pilot. The accident pilot was sitting on a bench and had a cellphone in his hand. The pilot stood up and started to walk forward toward her. She told him to sit down. The pilot asked where he was at. He then sat down. He was mumbling into the phone. Officer Cobb asked who he was talking to and he said "command center". She talked on the phone and the person on the phone identified himself as "dispatch control".

The pilot was disoriented, had slurred speech and "was out of it". He did not say anything about what happened to the airplane. He asked where his copilot was. He said he had looked all over the airplane and "couldn't find him". He asked if they knew where the copilot was. Officer Cobb asked him for a description of his copilot and put the information "out on the radio". The pilot was "so out of it" that he said nothing about the crash until he asked where his copilot was.

The emergency medical service came quickly and, in minutes took the pilot to the hospital at Florence, Kentucky.

Fourth interview: Captain Bruno Pichelli
Date: September 1, 2004
Location: Telephone interview
Time: 1030 EDT

Operations Group members present were: David Tew, Malcolm Brenner, NTSB; Dirk Visser, FAA

During the interview, Captain Pichelli stated the following information:

The weight and balance computer that was normally used to compute the accident airplane weight and balance computations was "dead" when he tried to use it at Memphis International Airport (MEM), Memphis, Tennessee. He called the company and informed them the computer was not working. He had to perform a manual weight and balance computation. He left a copy of the weight list or load plan at MEM. He did not leave a copy of the weight and balance computation at MEM. He informed the cargo loaders in MEM where to load the cargo on the accident airplane. He said the cargo containers were usually loaded using a "rule of thumb" which was (1) to the load heaviest weight in the third or "C" position (2) load the second heaviest weight in the second or "B" position (3) load the third heaviest weight in the first or "A" position (4) load the fourth heaviest weight in the fourth or "D" position (5) load the fifth heaviest weight in the fifth or "E" position. He thought he used 5 load positions on the night of the accident. He thought that the total cargo weight was not near the maximum allowable although he thought the cargo load was not "really light". "It was an average load." He said he used his "general experience" to determine the airplane was within weight and balance limits. He said, for example, he observed the airplane sat properly on the oleo strut that night. The airplane flew "normal" during the takeoff and enroute portions of the accident flight.

They would normally operate with the fuel boost pumps on. If there was a fuel imbalance, he would (1) open the fuel crossfeed valve (2) look at the fuel flow and check to see there were no fuel low pressure lights illuminated on the caution panel (3) turn the fuel boost pumps off in the tank that had the lower amount of fuel and make sure the fuel low pressure lights did not illuminate (4) when the fuel tanks were equalized, he would turn the fuel boost pumps back on (5) turn the fuel crossfeed valve off. He said that was the way he was trained at Air Tahoma to crossfeed fuel.

There were fuel tank shutoff valves on the airplane and the fuel crossfeeding procedure at Air Tahoma was to turn off the fuel tank shutoff valve associated with the tank with the lower amount of fuel. He said he recalled "from somewhere in his head" that if the fuel tank shutoff valve failed then you would be unable to get to the fuel in that tank. He recalled that "that has happened before" when a tank shutoff valve failed. He did not recall what training concerning the fuel tank shutoff valve he had received in the Air

Tahoma ground school. He was taught by Air Tahoma to use the quick reference handbook (QRH) during crossfeeding. He thought that a previous employer, Air Wave, had a procedure not to turn off the fuel tank shutoff valve during crossfeeding. He thought that another previous employer, Nolinor, also had a procedure not to turn off the fuel tank shutoff valve during crossfeeding – however "that may have just been a recommendation". He said he assumed that the Air Tahoma airplanes had a one-way check valve that would prevent fuel from going from one fuel tank to the other during crossfeeding. He said he assumed that all Convair 580 airplanes had the one-way check valve. He had never heard of fuel going from one tank to the other tank on the Convair 580.

He had previously needed to crossfeed fuel five to ten times in the Convair 580. Crossfeeding was only performed in the air. He did not recall a rate of transfer of the fuel during crossfeeding. Crossfeeding fuel was always due to a fuel imbalance. The fuel imbalance was usually caused by improper fuel loading or burning fuel using the ground turbine compressor (GTC).

He could not recall where they were in relation to the CVG airport at the time the accident occurred. He recalled seeing runway lights and being "cleared to land". He recalled a "sinking" feeling, an impact, and then walking after the impact.

He did not recall if the F/O said the airplane was flying abnormally.

Interview: Paul Ernest Richards
Date: September 23, 2004
Location: phone interview
Time: 1200 EDT

Operations Group members present were David Tew, Malcolm Brenner, NTSB; Dirk Visser, FAA.

During the interview, Mr. Richards stated the following information:

He was a ground school instructor at Air Tahoma Airlines. His date-of-hire at Air Tahoma was October, 2003.

His total flight time was about 14,000 flight hours. He had about 150 flight hours in the Convair 580 airplane, all of which were as pilot-in-command. He had about 2,000 flight hours in the Convair 340 airplane. He had about 3,500 flight hours on the Lockheed 382 Hercules airplane, of which about 750 were as pilot-in-command. He had about 1,700 flight hours on a DC-3 airplane. In all the flying jobs he had, except one, he was always also a part of the maintenance operation. He had previously been a flight instructor for a few years. In 1973, he was the youngest captain at Zoom Zoom Airlines.

He previously was the owner of Coastal Air Transport. Coastal Air Transport was based in Mobile, Alabama and operated Convair 580 and 340 airplanes. While at Coastal Air Transport, the FAA "alleged" that he had violated a flight regulation by flying a flight with a "non-certified pilot" His F/O on the flight was not qualified. Coastal Air Transport had just completed the CSET[3] evaluations and was performing "manual re-writes" when the FAA required them to suspend operations or the certificate would be revoked. He had spent about three months and "a lot of money" trying to get Coastal Air Transport going as a certificated carrier.

He first heard of Bruno Pichelli when he was trying to purchase a Convair 580 airplane for Coastal Air Transport from a Canadian owner. The owner insisted that Mr. Pichelli be hired as a condition of the purchase of the airplane. Captain Pichelli was a good pilot and employee at Coastal and he thought highly of him. Captain Pichelli would help with anything. He examined the checklists and manuals. He was very helpful especially during the "proving runs".

He gave Captain Pichelli ground school training at Coastal, but did not give him flight training. He observed Captain Pichelli during one training flight at Coastal and he "did fine". Captain Pichelli had a little difficulty during training at Coastal during a checkride when he received a "pink slip" when he failed a checkride because an automatic direction finder (ADF) approach was not satisfactory. At Coastal, he flew with Captain Pichelli about two times to Jamaica and back. On one trip, Captain Pichelli was tired and was not as sharp as he should have been during a visual approach to the airport, his altitude was a "little high" and he was not correcting until he was headed directly to the airport. He corrected his altitude but landed a little "long" on the runway. The extra distance used during the landing was "not alarming" because it had been a long day and they were near the maximum for a duty day. He had never observed Captain Pichelli fly with a regular F/O. Captain Pichelli had about a 1,000 flight hours in the Convair 580.

He brought Captain Pichelli, with him when he came to work for Air Tahoma. At Coastal Air Transport, he had two captains to fly the Convair 580 and another captain and himself to fly the Convair 340. Captain Pichelli was the only person he brought to Air Tahoma from Coastal Air Transport.

He gave some ground school training at Air Tahoma to the accident F/O, Gelwick. Another instructor provided the ground school systems training to the accident F/O.

He gave Captain Pichelli some ground school training at Air Tahoma, but no systems training. He taught normal procedures, abnormal procedures, emergency procedures,

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[3] CSET is the Certification, Standardization, and Evaluation Team (FAA)

- CSET was established to create an FAA national certification team to assist local FAA Flight Standards District Offices process new air carrier certificates
- CSET was dedicated to standardizing original certification and follow-up evaluation activities for air carriers operating aircraft with a seating capacity of 10 or more passengers
    - http://cset.faa.gov/about_us.htm

basic indoctrination, special subjects, HAZMAT training, and emergency drills at Air Tahoma. Crew Resource Management training was provided by viewing a tape.

During ground school, he liked to give the students oral "drills" in the mornings to see how well they were progressing.

F/O Gelwicks was a "pretty quiet" person who took the longest to answer the "drill" questions at first, but he got quicker at the drills as training progressed. By the end of training he was as quick responding to the drills as the other students. F/O Gelwicks was not an "assertive person and was "pleasant". He would speak up if he needed to and was not "bashful". F/O Gelwicks had no problems during class.

Captain Pichelli was "easy to get along" with during training. Captain Pichelli had a FAA approved shortened training course because of his prior experience. The outline for the shortened course was in the training manual. Captain Pichelli had no problems during training. He had "high marks" in class. He knew the airplane "backwards and forwards". He was the "top of the class".

The Flameout checklist procedure had "memory items" that were covered at least twice during ground school. The first four or five items on the Flameout checklist were non-memory items then you got to the memory items. The memory items included pushing in the feather button until the engine revolutions per minute (RPM) had reduced to 2,500 rpm, then you were to pull the feather button out. This procedure was not performed during flight training on the airplane. A two engine flameout condition would use the same Flameout checklist.

If you were going to crossfeed fuel, you should use the QRH and follow the steps in the Fuel Crossfeed checklist. He stressed during ground school training that pilots should use the QRH checklist and not rely on their memory for non-memory items on checklists. Captain Pichelli would have received "more of a review" of the fuel crossfeed procedure due to his reduced training requirement. His training instructions were that pilots were to turn off the appropriate fuel tank shutoff valve during fuel crossfeeding. That was also the procedure at Coastal Air Transport. He estimated that if an airplane had a similar fuel load as the accident airplane, it would take about 30 minutes of crossfeeding to run a tank out of fuel. He had performed fuel crossfeeding on the Convair 580 maybe once during cruise flight and there was no problem. He performed fuel crossfeeding on the Convair 340 and 440 "all the time" because he was doing long range flights. He would also crossfeed fuel on the Convair 340 just to "exercise the valves". If the airplane had been fuel on a slanted ramp, the tanks would have different amounts of fuel.

Some Convair 580 airplanes had a one-way check valve in the fuel system, but at Coastal Air Transport, pilots were still instructed to turn off the tank shutoff valve. Captain Pichelli had told him that previous carriers that he worked for did not require that the fuel tank shutoff valve had to be turned off during fuel crossfeeding. Mr. Richards said he had never heard of any airline that did not turn off the fuel tank shutoff valve because "it might fail".

He thought the fuel gauges on the Convair 580 were very accurate to within 20 lbs. normally. The location of the fuel gauges was "bad". You had to "sit-up" with the seat forward to see them. If your seat was "back". The throttle could block the view of the fuel gauges and you would have to move to see them fully.

On the Convair 440 airplane, you could transfer fuel on the ground. A mechanic had to first remove the fuel caps to prevent an over pressurized condition in the fuel tank. Fuel tanks ruptures have occurred on Convairs when the fuel caps had been left on when the airplane was being fueled by the underwing fueling port. The Convair 580 airplane had a fuel transfer rate of about 1,000 gallons per hour. The Convair 580 fuel pump was rated at 1,000 lbs. per hour. Restrictions in the fuel system could reduce the flow rate of the fuel pump. He had never seen any "paperwork" to say how much the flow of the fuel pump might be restricted. Fuel transfer was prohibited during flight.

The Convair 580 would burn about 1,000 lbs. per hour per engine at 20,000 feet altitude.

During descent, a pilot would usually reduce the engine power to about 300 horsepower per engine. This setting would burn about 500 lbs. per hour at 20,000 feet altitude, however the burn rate would increase as the airplane descended.

He estimated that if an emergency handle had been pulled, it would take about a minute and a half before a pilot could get the engine restarted. The Air Tahoma chief inspector had estimated that if an engine flameout occurred, it would take about 30 seconds to restart the engine.

Weight and balance computations were taught during ground school. They used a company computer to perform the calculation usually. He did not teach Captain Pichelli how to perform manual weight and balance calculations at Air Tahoma because he had a reduced training course. Captain Pichelli was taught manual weight and balance calculations at Coastal Air Transport because that was "all they had". F/O Gelwick was taught to perform manual weight and balance computations during ground school although they "did not spend a lot of time" on this training. He had never heard of a "rule of thumb" method for performing weight and balance computations. You "took a stab at" the correct location of the cargo loads on the paperwork and if that did not work then you moved the cargo around. Airplanes at Coastal Air Transport were "tail heavy" because that the auxiliary power unit (APU) was located in the tail of the airplane. Because the airplanes were tail heavy, the heavier cargo loads were moved forward more than at Air Tahoma. He used the shock strut as an "indicator" that the airplane was loaded correctly.

At Air Tahoma, line checks were performed by a check-captain flying in the right seat.

He was "not happy" with Air Tahoma's Differences Manuals. There was a lot of "repeat material" in them. Air Tahoma based the Difference Manual on a standard airplane. It

was difficult to determine what the differences really were. He did not see the "check valve issue" in the Difference Manual.

He did not know what the glide ratio of the Convair 580 was without any engines running.

Captain Pichelli had been "racking his brain" because he could not remember the accident.

Air Tahoma stresses "mission completion" because DHL could "downgrade" the airline if they were not on time. DHL had recently tightened the time constraints on an on-time arrival. Pilots would get "flack from DHL if they were a minute late.

The Convair was had a maximum limit of 600 lbs. difference between the fuel in the tanks for takeoff and landing. You would feel it in the controls if there was a 600 lbs. difference. He had taken off in a Convair 440 when the fuel imbalance was about 1,000lbs. The control wheel was displaced "maybe ¼ of the way over".

Interview: Stanton C. Woodbury, FAA Principal Operations Inspector
Date: November 10, 2004
Location: Phone interview
Time: 0800

Operations Group member present was: David Tew, NTSB. Victoria Anderson of the FAA was also present.

During the interview, Mr. Woodbury stated the following information:

From 1977 to 2001, he worked for Zantop Airlines, a Part 121 air carrier based in Detroit, Michigan. He was the Director of Operations for about 20 years at Zantop Airlines and performed line flying for about 18 years flying the Lockheed Electra. His total flight time was about 23,000 flight hours and he had about 21,000 flight hours as pilot-in-command. He worked as a corporate pilot for a short time flying the Commander 690. He also worked for Executive Air lines, a Part 135 air carrier. At Executive, he flew the Beech 99 for about four years.

He was hired by the Federal Aviation Administration (FAA) on September 16, 2001. After receiving basic indoctrination training, he was assigned as principal operations inspector (POI) on Air Tahoma. He had been the POI since October 22, 2002. On September 24, 2003, he was also assigned as the POI for Contract Air Cargo, a Part 125 air carrier which flew Convair 580s. On August 1, 2004, he was also assigned as POI on Gulf Caribbean Airlines, a Part 121 all cargo air carrier also flying Convair 580's. Contract Air Cargo and Gulf Caribbean Airlines were both owned by the same people and, at the time of the interview, were in the process of merging into one airline.

He was not usually assigned office duties at the flight standards district office (FSDO) and was usually out of the office performing surveillance on his carriers. He felt like he should be "in the loop" with his carriers and performed regular surveillance. He usually performed surveillance on Air Tahoma two or three times a month. Each time he went to Air Tahoma to perform oversight surveillance, the oversight inspections usually took three or four days. He would look at trip records, flight following, sit in during training classes, examine their manuals, etc. He would look at all phases of their operations. He did not recall how many actual inspections he had performed on Air Tahoma during the last couple of years. On his 2004 work program, he was assigned about 12 required inspection items on Air Tahoma. This was under the FAA surveillance and evaluation program (SEP). He did not like the SEP program. He considered it "too confusing" and thought there was too much paperwork associated with it. He preferred being "on the road" inspecting the carriers. He thought oversight was more effective when he was seen often. He said that the labor distribution reporting (LDR) system was very cumbersome since he had to record what he did everyday. The LDR took up to an hour and a half of his time each day.

There was usually someone from the FAA at Air Tahoma at least two to three days every week. He would be conducting oversight at times and other times, the principal maintenance inspector (PMI), or the principal avionics inspector (PAI) would be there.

He liked to get to Air Tahoma outstations as much as possible. He performed at least eight enroute inspections to the outstations each year. He visited every outstation that Air Tahoma had. These inspections allowed him to meet all the pilots working for Air Tahoma. During his enroute inspections, he could often find "some little thing" that needed correcting but usually did not find any "big problems".

The training at Air Tahoma was excellent and the company did not take any shortcuts during their training. They rented a house to provide training for the crews and used in-house instructors. He usually sat in during ground school training "every chance I get" which was about three times a year. During the ground school training, they covered the fuel system "pretty good" including fuel crossfeeding. He also covered the fuel system and fuel crossfeeding in depth when he conducted oral examinations on the pilots. Pilots were fully trained and he felt that there was even a "little overkill" in the amount of training that pilots received.

When he performed type rating checkrides on the Air Tahoma pilots, they were usually "sharp as a tack". He had given about eight or nine type rating checkrides and had no failures.

He did not know the accident captain, Bruno Pichelli, before the accident. He met him for the first time after the accident. He thought that Bruno was "very sharp" and "belonged working at an airline". He had conducted an interview on Captain Pichelli post-accident and found him to have a good knowledge of the fuel system and felt that he knew all the airplane systems very well. He suggested that Captain Pichelli instruct on the airplane systems during ground school training.

When asked about the Chief Pilot Rick Williamson, he said he had observed 5-6 training flights with Chief Pilot Williamson and that rick was "strict" during training on these flights. Mr. Woodbury replied that the flight crewmembers thought Captain Williamson was a "little too tough" on them during training and checkrides. He said that Captain Williamson was "tougher" than he was during checkrides. Chief Pilot Williamson had said that Captain Pichelli was one of the best pilots at Air Tahoma.

The fuel system switches in the airplane were not very well lit and were difficult to see at night. Post-accident, he had asked Air Tahoma to think about putting a break-away wire on the crossfeed switch and maybe requiring pilots to write in the logbook when crossfeeding occurred. He said he had never seen anyone crossfeed during any of the enroute inspection flights that he had conducted on Air Tahoma. The company was now training that when the checklist was read, the pilot had to look up at the fuel panel and manually feel that the switches were in the correct position.

The fuel gauges are located behind the throttle quadrant out of the normal view of the pilot especially when the checklists were placed in front of the gauges. Air Tahoma now required that the checklists not be placed behind the throttle quadrant in front that the fuel gauges.

He said the pilots knew if their airplane had a one-way check valve in the fuel line going into the fuel tank. The pilots were trained on the fuel check valve during ground school training.

There was an office special inspection plan (OSIP) planned for the latter part of 2004 on Air Tahoma. There had been no special focused inspections since 2002 on Air Tahoma.

He said there were a couple of "disgruntled" pilots who had been fired by Air Tahoma and then went to the Occupational Safety and Health Agency (OSHA) with complaints about the company. One former first officer (F/O) complained that a captain was doing things like "ducking below" minimum descent altitudes (MDA) or decision height (DH) altitudes during approaches. The company performed checkrides on both pilots and found the F/O was "lacking" and that the captain was very "sharp". Air Tahoma subsequently fired the F/O and he then went to the FAA to complain. The FAA investigated his allegations , but found no substance to them.

Sometimes there was a "pretty good turnover" of pilots at Air Tahoma because the younger pilots would leave for the major airlines and more money.

The Air Tahoma airplanes looked "terrible", but they ran good and the maintenance was good. The pilots did not "carry" maintenance items because there were mechanics at every station that they flew to and the company also had a Beechcraft Baron airplane that they used to bring needed repair parts to airplanes.

Pilots were required to leave a copy of the weight and balance paperwork at the departure station. Air Tahoma had hand held weight and balance computers that were used to compute the weight and balance computations. The weight and balance computer for the accident flight was not working on the night of the accident and the weight and balance of the accident airplane was computed manually.

He had approved a reduced initial operating experience (IOE) requirement for Bruno Pichelli because of his prior experience on the airplane. The IOE would still have had to be at least 20 flight hours which could be reduced by up to 50% using a reduction of one hour for each landing. Captain Pichelli would have had the entire Basic Indoctrination training.

Interview: Caleb Paul Landry
Date: November 17, 2004
Location: phone interview
Time: 1300 EDT

Operations group member present was David Tew.

During the interview, Mr. Landry stated the following information:

His date of hire with Air Tahoma was May 5, 2004. He had been a first officer on the Convair 580.

His total flight time was about 1,900 flight hours of which, about 800 flight hours were as pilot-in-command. He held Commercial and Multi-Engine ratings from the Federal Aviation Administration.

He previously worked for Sabre Cargo Airlines, a Part 135 air carrier which flew cargo on Cessna 172 airplanes. Sabre Cargo Airlines was bought by a new owner who renamed it First Flight Out. For about 60-70 flight hours, he flew as a first officer on a DC-3 airplane carrying cargo for First Flight Out until the company ceased operation after about four months.

He said the ground school and flight training at Air Tahoma was good. He did not observe any problems with the training. He had no problems during training. He said that Chief Pilot Rick Williamson gave a "thorough" checkride.

He had flown with the accident captain, Bruno Pichelli, about four times. Each time, they had flown two round trip flights or a total of four flights. These flights all occurred prior to the accident and were out of the Pittsburgh, Pennsylvania station. Bruno seemed to be "on top of everything" during the flights. Bruno was new to the route from Pittsburgh but had no problem. He knew the airplane systems well. Bruno performed the weight and balance calculations for the flights using the company hand-held computer.

They did not crossfeed fuel during any of the flights with Bruno.

He had never performed fuel crossfeeding during a flight and had never seen anyone else crossfeed fuel. Fuel crossfeeding was discussed during ground school training. During training, it was stressed that they should use the checklist when crossfeeding. The checklist was normally carried on the glareshield of the airplane or placed behind the throttle quadrant. The checklist used to be smaller than it was now and the smaller checklist did not block a view of the fuel gauges. The newer, wider checklists would block a view of the fuel gauges.

He "vaguely" remembered a mention during training of the one way check valves in the fuel system. Training covered the fact that fuel could go from one fuel tank into the other tank if the fuel tank shutoff was not closed.

He liked working for Air Tahoma, but their schedules kept him away from home a lot. He would generally only get home about six days a month. He went to work for Kalitta Charters flying first officer on Lear Jets so he could have more time at home.

There had been four pilots in his original ground school class and all made it through training, but two had subsequently left to fly for other companies.

Interview: Nicholas Emil Chichester
Date: November 22, 2004
Location: phone interview
Time: 1100

Operations Group member present was David Tew.

During the interview, Mr. Chichester stated the following information:

His date-of-hire with Air Tahoma, Inc. was June 24, 2004. He was hired as a first officer based in Columbus, Ohio. His total flight time was about 1,100 flight hours. He previously was a student at Ohio State University. He had also been a student at Pan Am International Flight Academy at Phoenix, Arizona. He was a flight instructor on single-engine airplanes at Pan Am Academy for about ten months. He had a Multi-Engine rating from the Federal Aviation Administration, but did not have an Air Transport Pilot rating.

He previously worked for Tolar Air Cargo, a Part 121 airline based in San Juan, Puerto Rico, and flew Convair 440 and 240 airplanes. He left Tolar for better pay and to be closer to his home. He had about 120 flight hours on the Convair 580 airplane and about 160 flight hours on the Convair 440 and 240 airplanes.

He rode the jumpseat with the accident captain, Bruno Pichelli, about seven times while observing crew operations. There were no major problems during the flights that he

jumpseated. The crew was "laid-back" and very professional. The crew performed all required checklists. When the checklist was read, he observed Captain Pichelli look at and then touch each switch that was called for on the checklist. He had never seen Captain Pichelli do anything "out of the ordinary". Captain Pichelli operated "by the book".

They had to return for landing during one flight due to illumination of a belly door light. On the ground, it was observed that the handle to the door was unlocked, but the door was closed.

He never observed Captain Pichelli crossfeeding fuel He had never seen any crewmember crossfeed fuel on the Convair 580. Crossfeeding of fuel was covered during ground school instruction for about fifteen minutes or so. This was the only training on crossfeeding fuel that he received. Crossfeeding fuel would normally be performed by the captain since it was "his call" whether to crossfeed. He did not recall any discussion during ground school of the one-way check valve associated with fuel coming from the fuel tanks. He did not recall any information about the one-way check valves.

He thought that the accident first officer, Mike Gelwicks, would have spoken up if he noticed anything wrong in the cockpit. He recalled that Mr. Gelwicks had a disagreement with a captain during his training. The captain was later "let go" from the airline.

The captain always performed the weight and balance calculations on a flight at Air Tahoma. He had previously performed the weight and balance calculations on a Convair 240 flight, but never on the Convair 580 airplane. The captain always left a yellow copy of the weight and balance calculations at the station they departed. He had never seen anyone fail to leave a yellow copy behind.

His initial operating experience (IOE) was performed by the chief pilot, Rick Williamson. The IOE lasted about ten flight hours. He had heard that Rick was fairly difficult to fly with, but he did not have any problem with him.

He said if he needed to crossfeed fuel, he would check to see if there was a fuel crossfeed checklist in the quick reference handbook (QRH). He would turn the crossfeed valves on, turn the fuel boost pumps on, turn on the "middle switch", shut off the fuel tank shutoff valve. Fuel transfer from tank to tank could be done in flight, but it was not allowed – there was a limitation.

He could see the fuel gauges in the cockpit. If his seat was back, he would have to lean forward to see the fuel gauges. Checklists were usually placed in front on the glareshield. Some pilots would place the checklist in front of the fuel gauges during flight. He did not recall where Captain Pichelli placed the checklist during flight. He did not recall any complaints before the accident about checklists making it hard to see the fuel gauges.

Interview: Noel Rude, owner of Air Tahoma

Date: December 28, 2004
Location: phone interview
Time: 1330

Operations Group member present was David Tew, Malcolm Brenner, N.T.S.B..

During the interview, Mr. Rude stated the following information:

The departure time for the accident flight was a scheduled time. The departure time could vary if there were problems with the freight arriving late or problems with the paperwork getting to the crew late.

A late departure within ten minutes of the scheduled departure would not count as a delay. There was no monetary penalty to Air Tahoma if the flight departed late. However a late departure would reflect on the company's overall performance on the DHL contract. If there was a drop in performance, DHL would review the reasons with the company and would want to know what the company was planning to do to improve.

Technically the on-time performance required by the DHL contract was 98% or higher, but DHL was understanding about delays. In the past, a DHL representative would stand beside the airplane and monitor the loading and the departure with a stopwatch. Mr. Rude said that he told DHL that was not a good idea because it made the crews rush and could cause a safety problem. DHL "backed off" and no longer monitored the flights as closely.

Air Tahoma did not normally question crews if they were a few minutes late because of paperwork – however if the flight was a half hour late, they would want to know why. The crews usually have plenty of time to complete their paperwork.

Air Tahoma crews were required to leave a copy of the weight and balance calculations at the departure station. He was not aware of any other instance of a crew failing to leave a copy of the weight and balance. He had no idea why the accident crew failed to leave a copy of the weight and balance. Post-accident, Air Tahoma issued a memo to all flight crews advising them again of the requirement to leave a copy of the weight and balance calculations at the departure station.