NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, D.C. 20594

January 30, 2009

TECHNICAL ADVISOR'S REPORT
Operations

DCA08RA077

A. ACCIDENT

Operator:	USA Jet Airlines, Inc
Location:	Saltillo, Mexico
Date:	July 6, 2008
Time:	0113 local time (0613Z)
Aircraft:	Douglas DC9-15F, N199US

B. TECHNICAL ADVISOR

Captain Roger Cox
Senior Air Safety Investigator
Operational Factors Division, AS-30
National Transportation Safety Board
Washington, D.C. 20594

C. SUMMARY

On July 6, 2008, about 0113 local time (0613Z), a Douglas DC-9-15F, N199US, registered to and operated by USA Jet Airlines Inc., as a Title 14 CFR Part 121 supplemental on-demand international cargo flight, crashed while attempting to land at Plan de Guadalupe International Airport, in Saltillo, Mexico. Night visual meteorological conditions prevailed in the area at the time of the flight, and an instrument flight rules flight plan was filed. The airline transport rated pilot received fatal injuries and the commercial rated first officer received serious injuries. The airplane was destroyed. The flight originated in Shreveport, Louisiana, the same day, about 0042.

D. DETAILS OF THE INVESTIGATION

The Operations Technical Advisor did not go to the scene of the accident.

On September 24 to 26, 2008, Captain Cox, accompanied by Mr. T.R. Proven of FAA, travelled to Ypsilanti, Michigan and interviewed USA Jet company officials and pilots and the FAA Principal Operations Inspector (POI).

On October 22, 2008, Captain Cox and Dr. William Bramble of NTSB interviewed the surviving First Officer by telephone, and October 24, 2008, Cox and Bramble interviewed the surviving spouse of the Captain by telephone.

Documents and manuals were obtained from USA Jets Inc and FAA.

E. FACTUAL INFORMATION

1.1 Personnel Information

Both flight crew members were certificated pilots under the Federal Aviation Administration (FAA) certification requirements. A review of FAA accident, incident, and enforcement records for the flight crew members indicated that there was no history of any violations or certificate actions taken against either crew member.

1.1.1 The Captain, Lon Eric McIntosh

Year of birth: 1962

Date of Hire at USA Jet Inc: March 2, 1998

Pilot Certificates and Ratings:

Airline Transport Pilot
- Airplane Multiengine Land
- Type Ratings: B-737, DA-20, DC-9
- Commercial Privileges
- Airplane Single Engine Land
- Limitations: "DC-9 Circling VFR only"

Flight Instructor
- Airplane Single Engine Instrument Airplane
- Limitation: Valid only when accompanied by pilot certificate
- Expires 01-31-94

Airman Certificate Date of Original Issue:

AIRMAN CERTIFICATE	**ORIGINAL ISSUE DATE**
Private Pilot – Airplane Single Engine Land	October 31, 1985
Private Pilot – Instrument	October 16, 1988
Commercial Pilot – Airplane Single Engine Land	January 23, 1989
Commercial Pilot – Instrument	January 23, 1989
Commercial Pilot – Airplane Multiengine Land	March 25, 1989

Flight Instructor – Airplane Single Engine	February 12, 1990
Flight Instructor – Instrument Airplane	January 6, 1992
Airline Transport Pilot – Airplane Multiengine Land	March 7, 1992
B-737 Type Rating	June 20, 1995
DA-20 Type Rating	February 22, 1999
DC-9Type Rating	November 6, 2000

A review of FAA records indicated that a Notice of Disapproval was issued on June 13, 1995 for a B-737 type rating flight test. The area of failure was two engine ILS approach and missed approach procedures. He subsequently passed the test and was issued a Temporary Airman Certificate on June 20, 1995.

Medical Certificate:

First Class (issued April 23, 2008)
Limitations: None

Flight Time:

This is based on USA Jet records.

Flight Time	**Hours**
Total	7146
Total PIC (Pilot in Command)	5688
Total time in type (DC-9)	2587
Total PIC time in type (DC-9)	2179
Last 24 Hours	5.4
Last 7 days	8.3
Last 30 days	46.2
Last 90 days	49.7
Last 12 months	304

Training:

USA Jet Inc records provided the following information:

Date of Initial Type Rating on this Airplane	November 6, 2000
Date of Most Recent Recurrent Ground Training	February 8, 2008
Date of Most Recent Proficiency Check	April 13, 2008
Date of Most Recent PIC Line Check	February 16, 2008

Examination of the captain's two most recent proficiency and line checks revealed no discrepancies or unsatisfactory performance items.

Examination of the captain's training records, beginning in 1998 and continuing throughout his career at USA Jet, revealed positive, favorable comments from instructors

and examiners and no negative comments. He was praised repeatedly for good situational awareness, good CRM, positive attitude, and good flying skills. His captain Operating Experience record in the DA-20 in March 1999 included multiple references to Mexico operations, including ATC operations, mountain avoidance, QNE and QNH altitudes, and SID climb gradients. His captain Operating Experience record in the DC-9 In February 2001 included a flight into Saltillo (MMIO) with a visual approach to runway 35.

A First Officer who had flown with the captain into Saltillo recalled that on one occasion while in IFR conditions he had gotten in "tight and high," but he had asked the FO to call out the step-downs and they landed normally. They had been behind but had gotten back on track.

According to USA Jet records, the captain had flown into MMIO twice in the last year. He had never flown with the accident first officer before.

Recent History:

The captain's surviving spouse provided some information about his activities in the 72 hours before the accident. He woke about 0730 EDT on Thursday, July 3, and did some home improvement work at his home. He went to bed around midnight.

The captain's surviving spouse could not recall his time of waking on Friday, July 4, but she thought it might have been between 0700 and 0800 EDT. She stated that he remained at home most of the day, engaging in routine activities. At 2130 EDT, the captain left his home in Middletown, Ohio and drove 3 ½ hours to Ypsilanti, Michigan, where he maintained a rental apartment. Although the captain's surviving spouse was not sure, she thought the captain probably stayed in his apartment Friday night, because he knew he had a trip the next day that would probably begin in the afternoon or evening.

At 0600 EDT on Saturday, July 5th, the captain became available for duty. He reported for work at 1800 EDT at the company's home station, located at Willow Run Airport (KYIP), in Ypsilanti, Michigan. He departed KYIP on his first flight at 1900 EDT and flew to Hamilton Airport (CYHM), Hamilton, Ontario, Canada, arriving at 1945 EDT. He departed CYHM at 2100 EDT and flew to Shreveport, Louisiana (KSHV), arriving at 2319 EDT. He departed KSHV at 0048 EDT (2348 CDT) on a flight to Saltillo, Mexico that was scheduled to last one hour and 25 minutes. The accident occurred at 0113 CDT (0213 EDT) on July 6th.

At the time of the accident, the captain had been available for an assignment for 20 hours, 13 minutes. He had been on duty for 8 hours, 13 minutes. He had flown 5.4 hours in the duty period.

1.1.2 The First Officer, Christopher Martin James

Year of birth: 1963
Date of Hire at USA Jets Inc: February 5, 2008

Pilot Certificates and Ratings:

Commercial Pilot

Airplane Multiengine Land

Instrument Airplane

Private Privileges Airplane Single Engine Land

Flight Engineer

Turbojet Powered

Mechanic

Airframe and Powerplant

Airman Certificate Original Date of Issuance:

AIRMAN CERTIFICATE	ORIGINAL ISSUE DATE
Mechanic	October 4, 1990
Flight Engineer	July 1, 1994
Private Pilot – Airplane Single Engine Land	July 8, 2000
Private Pilot – Airplane Multiengine Land	October 10, 2000
Private Pilot – Airplane Single Engine Instrument	December 5, 2000
Commercial Pilot – Airplane Multiengine Land Instrument Airplane	February 4, 2001

A review of FAA records indicated that a Notice of Disapproval was issued on June 22, 2000 for a Private Pilot Airplane Single Engine Land practical test. A second notice of disapproval for the Private Pilot Airplane Single Engine Land practical test was issued on July 7, 2000. He subsequently passed the test and was issued a Temporary Airman Certificate on July 8, 2000.

Medical Certificate:

First Class (issued April 24, 2007)

Limitations: Holder shall wear corrective lenses

Flight Time:

This is based on USA Jet records.

Flight Time	Hours
Total	6822
Total PIC (Pilot in Command)	188
Total time in type (DC-9)	88
Total Pilot time	822
Total Flight Engineer Time	6000
Last 24 Hours	5.4
Last 7 days	8.3
Last 30 days	78.2
Last 90 days	85.6
Last 12 months	87.6

Training:

USA Jet Inc records provided the following information:

Date of Initial SIC Type Rating on this Airplane	April 6, 2008
Date of Most Recent Recurrent Ground Training	April 4, 2008
Date of Most Recent Proficiency Check	April 23, 2008
Date of Operating Experience Completion	June 21, 2008
Total OE[1] Flight Time	69.7 hours

Examination of USA Jet training records showed that the First Officer completed Initial DC-9 ground school on April 4, 2008. Included were 4.0 hours of instruction in international operations, 2.0 hours in special airport qualification, and 12.0 hours in CRM[2]. On his initial DC-9 simulator instruction he showed generally good progress, and he completed this phase of training on April 23, 2008. His Initial Operating Experience training began June 6, 2008 and was completed June 21, 2008. His accumulated flight time on OE was 69 hours 43 minutes. The minimum flight time required under 14 CFR Part 121.434(c) (3) for initial first officer OE is 25 hours and 4 operating cycles. According to the USA Jet DC-9 Operations Manual, page 18-12, if the OE training hours exceeds 30 hours, the first officer will have failed to satisfactorily complete OE. However, the accident First Officer was allowed to continue until he achieved satisfactory performance.

The Check Airman who signed off the First Officer's OE said he was professional and knowledgeable. He was very oriented to SOP's, did what he was taught, followed procedures exactly and knew procedures verbatim. However, his stick and rudder skills needed to be "cleaned up." He had allowed descent rates greater than 1000 fpm within 1000' of level off, and had to learn that the autopilot was not that good in level offs. He initially had trouble maintaining centerline during landings. The Director of Safety said that the First Officer's Initial OE was extended because he had trouble landing. His academic performance had been okay.

Between the time he completed OE and the beginning of the accident trip, the First Officer had flown 5 flights for a total of 7.2 hours of flight time.

In an interview, the First Officer said he had flown into Mexico before on only one previous occasion. He had flown from Laredo, Texas to Monterey, Mexico (MMMY) He had never flown to Saltillo before. He was not familiar with the Saltillo airport, other than having seen the approach plate. He was not aware of any particular challenges associated with flying into Saltillo, although he understood that there was high terrain in the vicinity. He thought, per company procedures, the captain was required to fly any landings at that airport, but he had not looked at any of the approach plates for Saltillo since the accident. He expected at some point he would look at the plates and try

[1] Operating Experience
[2] Crew resource management

to make some determinations for himself. He had not received any information about the chain of events leading to the accident. He could not remember whether outside visual references were available at the time of the accident. He was asked if he had had a chance to fly any actual low instrument approaches in DC-9's. He had never flown anything "really tight" as far as instrument approaches went. Asked if he recalled having to fly any approaches with full instrument callouts, the First Officer said he could not recall any instrument approaches that had required full callouts. He was asked whether he had ever had any occasion during his training to fly a DME arc in a simulator, or during a past job in an airplane. He stated that he believed he had flown such an approach in a simulator, but he could not recall the details. He had been in an airplane when they had flown an arc, but he could not recall if he had flown an entire arc himself. He had never actually flown a go around in an airplane himself, other than touch and goes during his practice.

The First Officer said the DC-9 was new to him and he could not profess to be an expert on it. It appeared to do the things he wanted it to do, if he did them right. He did not have a whole lot of experience flying different airplane different types with which to compare it. He could compare it to the B-727 a bit, but he had not flown the B-727 recently.

Recent History:

The First Officer provided some information about his activities in the 72 hours before the accident. He woke July 3rd in late morning in Daytona Beach, Florida, where he was on a layover for the airline.

On July 4th, he visited the Daytona Beach Speedway and watched auto races for three or four hours. He returned to his hotel after the races, and then went to the airport to prepare for a flight. The passengers were late arriving at the airport, and the airplane departed Daytona (KDAB) bound for Concord, North Carolina (KJQF) at 2338 EDT.

The flight to KJQF arrived at 0107 EDT on July 5th. Although he was not certain, the first officer thought he went to sleep within a couple hours of his arrival. He stated that he could not recall any subsequent events leading up to the time of the accident, nor could he recall the accident itself.

According to company records, the first officer deadheaded from KJQF to KYIP. The timing of this flight was not recorded. The first officer was assigned the accident trip and was paired with the accident captain. He departed on the first flight of the trip at 1900 EDT on July 5th. His subsequent schedule mirrored the captain's.

1.2 Airplane Information

The airplane was a Douglas DC-9-15F powered by two Pratt and Whitney JT8D-9 engines. The FAA Registry showed that its serial number was 47153 and that it was manufactured in 1967.

1.2.1 Weight and Balance

The airplane weight and balance manifest form for the flight was obtained from USA Jet Inc. It showed the following:

	Weight
Basic Operating Weight	52,799
Baggage/Cargo Weight	7,336
Zero Fuel Weight	60,135
Maximum Zero Fuel Weight*	74,000
Fuel	20,000
Ramp Weight	80,135
Maximum Ramp Weight	91,500
Taxi Fuel Burn	400
Takeoff Weight	79,735
Maximum Allowable Takeoff Weight*	90,700
Fuel Burn	8,400
Estimated Landing Weight	71,335
Maximum Allowable Landing Weight*	81,700

The flight was a cargo flight and no passengers or extra crewmembers were carried. The form completed for the flight showed forward and aft limits for center of gravity (CG) for takeoff were 14 to 39% MAC[3] and the flight departed with a CG of 27.1% MAC.

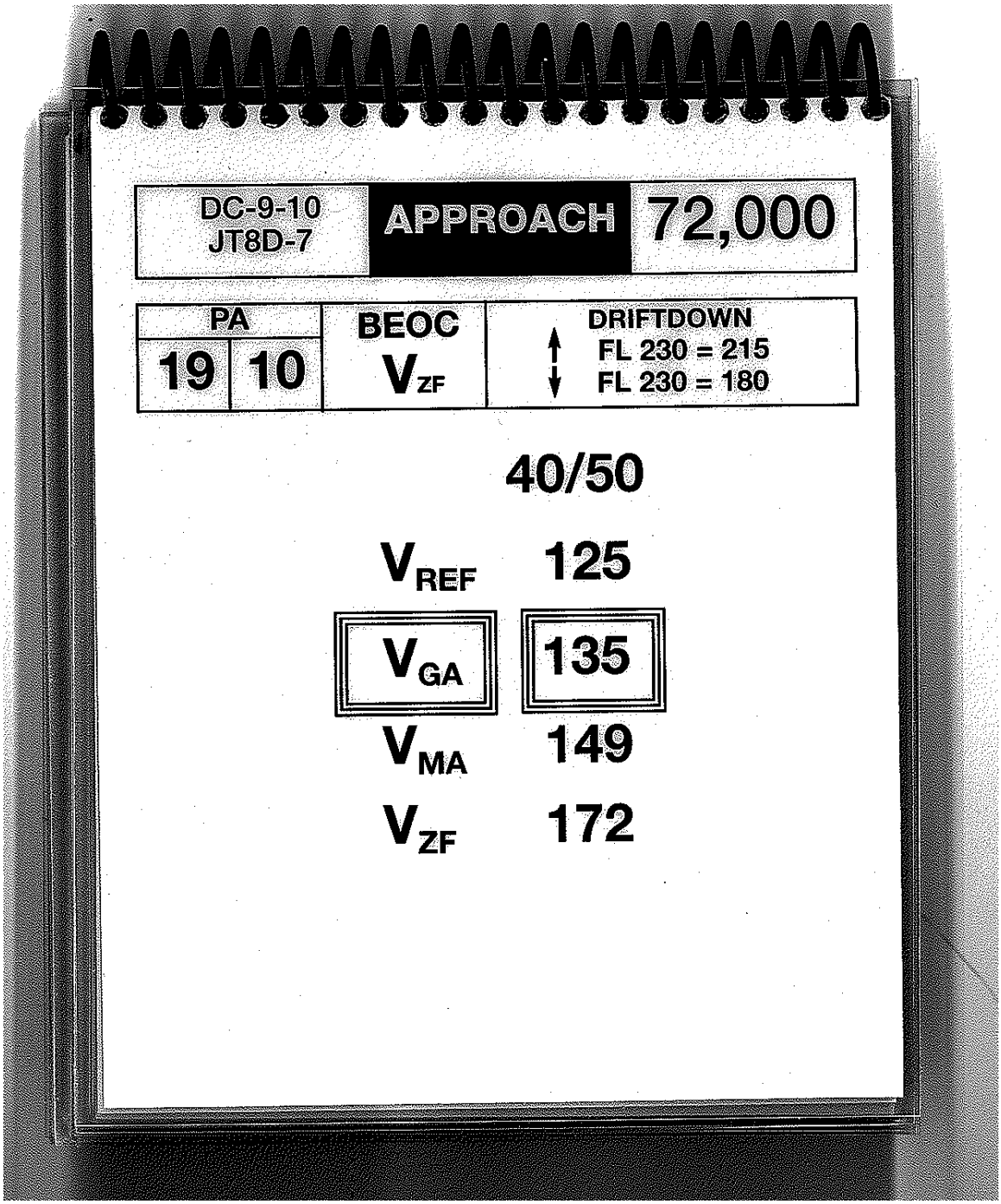
1.2.2 Landing Speed Calculation

Based on the USA Jet landing data card for 72,000 pounds, the planned approach speed (Vga[4]) was 135 KIAS[5] and the planned landing speed (Vref[6]) was 125 KIAS.

According to the USA Jet Chief Pilot, the data card labeled "DC-9-10" "JT8D-7" provides data identical to the DC-9-15F involved in the accident, and is the card the company uses for all DC-9-15's.

Figure 1

[3] Mean Aerodynamic Chord
[4] Target approach speed
[5] Knots indicated airspeed
[6] Target touchdown speed



1.2.3 Flight Release Information

The flight was operated as a 14 CFR Part 121 Supplemental flight. Flight Release documents were obtained from USA Jet. The flight was released by a company Flight

Dispatcher under IFR[7] with a planned departure time of 0430 UTC (0030 EDT). Flight time was estimated at 1 hour 25 minutes and Laredo, Texas (KLRD) was filed as the alternate. Estimated time enroute to the alternate airport was 24 minutes. Planned fuel to destination was 8,402 pounds, to the alternate was 2,439 pounds, holding 2,087 pounds, reserves 709 pounds, and taxi 400 pounds, for a total required fuel of 14,037 pounds. Actual fuel load was 20,000 pounds.

The Flight Release showed an Airport Note overview for Plan de Guadalupe International Airport (MMIO) which stated: "to the east, terrain rises to 9029 feet msl within 7 nm. To the so 10,340 feet msl within 12 nm. To the west-southwest, terrain rises 8 nm. Birds are in the vicinity of the airport. Circling to land runway 17/35."

The Performax Runway Analysis included in the Flight Release was based on a DC-9-10 with JT8D-7 power. It showed that the maximum landing weight for MMIO with winds 000/8, temperature 23°C, dry runway and Flaps 40° was 81,700 pounds.

The Flight Release showed four deferred maintenance items (DMI's), which were allowed under the company's Minimum Equipment List (MEL). They were:

- MEL 52-2. FA airstair controls inop.
- MEL 26-1-1. Left engine fire loop A inop.
- MEL 34-16. Captain command bars inop.
- MEL 34-17. F/O DME inop.

1.3 Meteorological Information

A routine destination weather report (METAR)[8] and forecast (TAF)[9] was provided in the Flight Release. The METAR was reported at 2140 UTC (1740 EDT). It reported wind 360° at 5 knots, 8 statute miles visibility, scattered clouds at 2000 feet AGL[10], broken clouds at 4000 feet AGL, temperature 21°C, dew point 17°C, altimeter setting 30.08 inches of mercury and conditions hazy.

The forecast for the 24 hour period beginning on July 5th at 1800 UTC (1200EDT) was winds 020° at 10 knots, visibility 5 statute miles, broken clouds at 3000 feet and 8000 feet AGL, with temporary conditions from 2000 to 2400 UTC (1600 to 2000 EDT) visibility 3 statute miles, rain, broken clouds at 2000 feet AGL with cumulonimbus clouds in the vicinity. Beginning at 0200 UDT (2200 EDT) the forecast was for calm winds, visibility 2 statute miles, mist and drizzle, broken clouds at 500 feet AGL, overcast clouds at 1000 feet AGL, with temporary conditions from 1100 to 1500 UDT (0700 to 1100 EDT) of visibility 1 statute mile, mist and drizzle and overcast clouds at 300 feet AGL.

[7] Instrument flight rules
[8] Aviation Routine Weather Report
[9] Terminal Aerodrome Forecast
[10] Above ground level

1.4 Aids to Navigation

The Saltillo VOR[11] DME[12] (SLW), frequency 116.1, is located at the field. There is an ILS DME for runway 17. There are three approach plates for the VOR DME approach and three approach plates for the ILS DME approach to runway 17.

According to interviews with USA Jet crews who have flown to MMIO, the most common approaches used to that airport are the VOR DME 2 and the ILS DME 2 to runway 17. Coming from the northeast on airway UJ-11W, as the accident flight did, the Initial Approach Fix (IAF) for both of these approaches is on the airway on the SLW 025° radial at 14 DME.

One experienced captain at USA Jet said that he was given the VOR DME approach 90% of the time at Saltillo. He said they rarely got the ILS and he believed that the glide slope was often inoperative. Another captain who had been to Saltillo about 50 times said they always got the 12 mile arc and usually got the ILS if they asked for it. He had once been cleared for a VOR approach there when the VOR was off the air; it had begun to operate again after he notified the controller. A third captain who had been there many times said he had also been cleared for an approach when the VOR and ILS were off the air. He had mostly received the VOR DME approach, but the ILS had often been available.

1.5 Communications

According to crew interviews, crews destined for Saltillo must get the MMIO weather from Monterey Center because there is no ATIS.

A USA Jet Check Airman discussed the communications with Air Traffic Control for approaches into Saltillo. He had flown into a lot of airports in Mexico, including Toluca, Guadalajara, Chihuahua, and Monterey, as well as Saltillo. He said approaches into Saltillo were "scary," because ATC provided no support, accurate weather information was almost nil and there was no ATIS. The handoff from Center to Saltillo can be distracting because the English used is not always clear. Saltillo Approach and Tower is one person, and whether or not he answers depends on how he feels that day. He had flown into Saltillo 40 to 50 times; the majority of those flights have been at night. In the daytime he said you could see the mountains so you got an idea of the location of the terrain. You almost always flew the arc approach. If you had to miss the approach, you should always stick to the published missed approach. The controllers seemed very inexperienced, so he would not accept a vector or non-published clearance. He had always assumed that the Tower remained open until midnight. On one occasion the runway was closed because an aircraft had a gear collapse, and he was delayed in arriving until 0300. He received a special landing permit set up through the company's handlers, International Customs Clearance Service (ICCS). Sometimes he switched from Center to

[11] Very High Frequency Omni Range
[12] Distance measuring equipment

Saltillo Tower on his own if there was no handoff. The Monterey Center controllers generally had better English skills than the controllers at Saltillo.

Another USA Jet captain said that most controllers in Mexico do a pretty good job, but pilots must be careful to confirm the weather.

1.6 Organizational and Management Information

1.6.1 USA Jet Airlines Inc

At the time of the accident FAA Airline Certificate Information showed that USA Jet had a total fleet size of 31 aircraft. This included 15 DC-9's, 10 Falcon 20's, 2 DHC-6's, 2 Learjet's, 1 Gulfstream G-1159, and one King Air BE-90.

According to an interview with the company Chief Pilot, the company was a part 121 supplemental carrier, but the Ops Specs also allowed operations under part 135. All maintenance and training was conducted to part 121 standards. The company originally started as Active Aero Charter, a part 135 operation, and received their first certificate in December 1984. They had added the airline operation in 1993, originally under the part 125 certificate of Custom Air Transport, and then under part 121 beginning in December 1994. They had had lots of ex-Eastern Air Lines employees to get the airline operation started. Originally they had three DC-9's flying cargo.

The original owner sold the company in October 1994. They had two corporations for business purposes, but FAA required them to be a singe entity, so they had to give up the Active Aero Charter certificate and move all the airplanes to the USA Jet Airlines certificate. The Operations Specifications were merged.

They had an Albuquerque operation under a Department of Energy contract. They had their own dispatch function there.

The company had progressed from flying C-310's, B-18's, Aerostars, Merlins and Lears in the early years to a fleet of 14 Falcons in the late 80's. They had now parked the Falcons and were transitioning the DC-9's to more passenger operations. The hardest part of the company to manage was the on-demand part, and there was little resemblance between the scheduled part and the charter part.

1.6.2 Company Guidance and Training on Mexico Operations

According to crew and management interviews and a review of the General Operations Manual (GOM), there was no section of the GOM devoted to Mexico operations. The Director of Safety said there was no special program for Mexico training, but captains had to be signed off to fly there. Each captain had to know about special airports, obstacles, and high elevations. They had a CRM[13] training module and each

[13] Crew resource management

instructor included CFIT[14] issues as part of that training. There was no formal performance review process for newly hired pilots and the references to flights in Mexico were scattered throughout the manuals rather than being written in one place. There was an unwritten policy that new captains would make at least one flight to Mexico, but he was not sure if it was observed in every case.

At the time of the accident, crews flying in the domestic U.S. had two sets of Jeppesen approach charts, one for each pilot, but crews flying into Mexico had only one set. The company Director of Safety said that they had added an extra set of Mexico Jepp charts since the accident. Saltillo was tricky and was a special airport.

The Director of Safety was asked if approaches to Mexican airports were ever done in simulator training. He said the former Director of DC-9 Standards had designed a simulator training approach to Toluca, Mexico. That airport was at 8,500 feet MSL and the missed approach was tricky due to the presence of mountains. However, the Toluca training was no longer done. According to a Check Airman, simulator training had been moved to Airborne Express facilities in Wilmington, Ohio about three years ago. He said the simulator used by USA Jet was a level B simulator but it did not have Saltillo approaches available and they did not fly arcs in that simulator.

The FAA Principal Operations Inspector (POI) said he had conducted DC-9 simulator checks for USA Jet and had never seen a Mexican airport scenario in the simulator. He had never seen the Toluca scenario in the old simulator. He had arrived on the job just before that simulator was disposed of. He had not seen arc approaches conducted in the simulator and did not think this was within the simulator's capabilities.

1.6.3 Company Standard Operating Procedures (SOP's)

1.6.3.1 Crew Briefing – Arrival

The USA Jet GOM, page 4-191, says: *"Prior to every approach, IFR or VFR, the pilot flying will brief his/her crew. The degree of detail may vary according to the weather conditions, the experience of the non-flying pilot, condition of the aircraft, etc."*

1.6.3.2 Stabilized Approach

The US Jet GOM describes the stabilized approach on pages 4-197 to 4-207. Paragraph L. 1. (f) (3) says *"a stabilized approach must be established before descending below the following minimum approach height: 1000 feet above the airport or touchdown zone elevation during any straight-in instrument approach in instrument conditions."*

Paragraph L.6. (a) says *"For precision approaches, the airplane must be stabilized prior to reaching the published glide slope altitude at the OM[15]. A stabilized approach has the following criteria: (1) the airplane is configured for landing (2) the*

[14] Controlled flight into terrain
[15] Outer marker

airspeed is on the target approach speed, (3) the engines are stabilized at the thrust setting to maintain the desired airspeed and rate of descent, and (4) the sink rate is less than 1000 fpm when the airplane is below 1000 feet above the TDZE[16]"

Paragraph L. 6. (d) (1) says *"for precision approaches, the pilot flying must keep the airplane within ½ dot (1 dot on the expanded scale) of the localizer, and 1 dot on the glideslope."*

Paragraph L. (6) (H) says *"if there is a loss of glideslope while executing an ILS approach, the crew would not revert to localizer minimums but execute the missed approach unless another action has been previously briefed."*

Paragraph P., "Standard Profile for a Stabilized Approach," says: *"the aircraft is on a stabilized standard profile when: (a)the airspeed is within + or – 5 knots of the target airspeed, (b) vertical speed is not in excess of 1,000 feet per minute, (c) on localizer and on glide slope (ILS approach), and, (d) on published approach procedure flight track and published vertical profile (non-precision approaches) and/or aligned with the landing runway and in the final approach slot (visual approaches."*

1.6.3.3 Callouts

The USA Jet GOM, Page 4-208, is entitled "Mandatory Callouts during Approach." It says, in part:

1. During all instrument approaches the PNF will make the following call-outs:
   - (a) "radial or localizer alive"
   - (b) "glide slope alive"
   - (c) "1000' instruments normal
   - (d) "200' above minimums"
   - (e) "100' above minimums"
   - (f) at minimums, will call "runway in sight at ___ o'clock" or "go around."
     - (1) When making the 1000', 200', and 100' calls, if the approach is not stabilized, he/she will add the non-stabilized criteria to the callout.

4. Whenever the pilot flying the aircraft deviates from the normal approach procedures, or whenever the approach is of a non-standard, careless or dangerous manner, the other crewmembers must speak up in a positive voice and demand an oral acknowledgement from the pilot flying the aircraft."

The USA Jet DC-9 Operations Manual, page 18-50, shows precision approach callouts. They are:

At OM/FAF: PNF "[fix name], [altitude]" / PF "Minimums [DA]"

[16] Touchdown zone elevation

At 1000 feet: PNF “1,000 feet, instruments normal”
At 200 to minimums: PNF “200 feet to minimums” / PF “Checks”
At 100 to minimums: PNF “100 to minimums”
At minimums” PNF “minimums” / PF “Landing” or “Go-around thrust, flaps___”

1.6.3.4 Setting of Minimums Bug on Landing Checklist

The Landing Checklist calls for the setting of an altimeter “bug.” It says “set altimeter bug to TDZE on a visual approach or minimums on an instrument approach.”

1.6.3.5 Setting of Radar Altimeter

The USA Jet DC-9 Operations Manual, page 18-54, says “The radio altimeter should not be bugged during an ILS approach. It may be used as a back-up reference only.”

1.6.3.6 Uncontrolled Airports Procedures

The USA Jet GOM, page 213-214, discussed procedures at uncontrolled airports. It says, in part, *“Pilots of inbound traffic should monitor and communicate as appropriate on the designated CTAF from 10 miles out to landing.”*

1.6.3.7 GPWS Policy

The USA Jet GOM, page 4-101, says, in part, *“Any GPWS terrain closure “pull up” alarm… requires an instantaneous response…”*

The USA Jet DC-9 Operations Manual, page 18-81, says *“any GPWS warning (modes 1 thru 4) that occurs during instrument flight conditions, on an instrument approach during actual instrument conditions, on any approach at night or when flying over unlighted terrain, will be treated as a genuine alert and an immediate pull up executed.”*

Modes 1 through 4 include both “sink rate” and “pull up” aural warnings.

1.6.4 Safety Reporting

According to the Director of Safety, USA Jet did not have a formal safety reporting system. He said there was a prevailing attitude among pilots that “you should never rat on a buddy,” so even though they had an open door policy, they had received “zero feedback” from the pilots. The company did not have an ASAP or FOQA program. He said these were designed with larger carriers in mind, and required participation from a union representative. He said union was a very bad word. They participated in IATA to the extent of having an identifier for international cargo purposes, but did not attend meetings or share practices or information. They did not belong to industry groups such as ATA, NATA or NBAA. He said captains could file irregularity reports and that he

maintained a spreadsheet tracking such reports, but he had not identified any trends related to the accident events. Neither of the accident crewmembers had filed any such reports.

1.7 Additional Information

1.7.1 FAA Oversight

The FAA FSDO[17] which provides oversight for USA Jet is located adjacent to the company's offices in Ypsilanti, Michigan. The Principal Operations Inspector (POI) for USA Jet had been assigned to the carrier for five years.

The POI had 15,000 flying hours and a DC-9 type rating, but had only logged .6 hours in a DC-9. He had not done any enroute inspections or flight observations to Mexico. He said this was difficult to do because the trips were ad hoc and he did not have time to get a country clearance. The FSDO also had an 18 hour duty day limit and budgetary restrictions, which added to the obstacles in doing Mexico flight inspections. He had not done any enroute inspection on the airline at all within the past six months, and could not recall when he had last done one. He did not know that USA Jet had been using only one set of Jeppesen charts on flights to Mexico.

The POI had conducted DC-9 simulator checks and had never seen a Mexican airport scenario in the simulator. He had never seen the Toluca scenario in the old simulator. He had arrived on the job just before that simulator was disposed of. He had not seen arc approaches conducted in the simulator and did not think this was within the simulator's capability. He had no knowledge of the accident pilots. He had not been involved in investigation of the company after the accident, and did not know if anyone from FAA was involved.

The POI could not recall the last time he had conducted a simulator check ride, but it had been quite a while. He had never failed anyone on a simulator or flight check, although he had failed someone on an oral exam. He was required to conduct observations of new captains on IOE, but he had not done one recently and had never failed anyone completing IOE.

The most recent FAA national or regional inspection of USA Jet was a regional office inspection conducted within the last two years. There had been no operations findings, and only a few maintenance findings, which were corrected. The company had a self-disclosure program with FAA. They had reported a case of manuals being out of date and a case of a CVR (cockpit voice recorder) not operating after maintenance had been performed. He had had informal discussions with the company regarding the establishment of a FOQA or an ASAP program, but they had stated that other issues were more pressing and declined to participate. The current self-disclosure program did not protect pilots who might be involved.

[17] Flight standards district office