



Aerobatic Maneuver Blamed In Fatal Commuter Crash

A routine proficiency check turned to tragedy when the pilot flying initiated a barrel roll at low altitude during the night flight. The official U.S. accident investigation report said the accident highlighted serious management and training deficiencies.

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The GP Express Airlines Beechcraft C-99 was being used for a six-month pilot competency/proficiency check flight in Nebraska, U.S., when it failed to recover from an aerobatic maneuver at low altitude and crashed at 2350 local time. The two pilots on board were killed.

An accident investigation conducted by the U.S. National Transportation Safety Board (NTSB) determined that the pilots, both check pilots for the airline, were friends.

The pilot to be checked (in the left seat) had only two days left in the grace period that the U.S. Federal Aviation Administration (FAA) allows for compliance with Federal Aviation Regulations (FARs) Part 135.3019(a), the NTSB said.

The NTSB said that a "filled out and graded, but unsigned, airman competency/proficiency check grade sheet (FAA Form 8410-3) for the proficiency check being flown when the accident occurred was found in the check pilot's company mailbox."

Following its investigation, the NTSB concluded that the probable causes of the accident "were the deliberate disregard for Federal Aviation Regulations, GP Express procedures, and prudent concern for safety by the two pilots in their decision to execute an aerobatic maneuver during a scheduled check ride flight, and the failure of GP Express management to establish and maintain a commitment to instill professionalism in their pilots consistent with the highest levels of safety necessary for an airline operating scheduled passenger service."

The flight, which was conducted under Part 91, took off from Grand Island, Nebraska, at about 2343 hours. The aircraft was repositioned for the check flight by another crew. No flight plan was filed for the flight, nor was one required, and visual meteorological conditions existed at the time.

At 2345:02, the left-seat pilot flying (PF) asked Minneapolis Center (air traffic control) to verify that the aircraft transponder was transmitting properly and received confirmation

that the transponder signal was received. The pilot then switched the transponder to code 1200 for operation under visual flight rules and turned his attention to cockpit matters.

The airplane's cockpit voice recorder (CVR) was recovered. The NTSB said that the CVR revealed that the "flying pilot discussed and apparently attempted to demonstrate a prohibited aerobatic maneuver to the checking pilot, who voiced no objections."

Following are statements by the PF and check pilot (pilot not flying [PNF]) in the moments before the accident:

2345:21 (PF): "That's as official as we get tonight."

2345:22 (PNF): "That's right."

2345:51 (PF): "Lazy eights in the ninety nine."

2349:16 (PF): "[It is] our desire to see the world turn upside down and then right itself again."

2349:31 (PNF): "How would this be?"

2349:33 (PF): "By doing what we're just doing but keepin' going."

2349:36 (PNF): "Have you done such a thing?"

2349:37 (PF): "No."

2349:39 (PNF): "I've not either. I've never rolled an airplane."

2349:42 (PF): "You never rolled any airplane?"

2349:43 (PNF): "Zero point zero."

2349:45 (PF): "Well [expletive], never rolled a ninety nine."

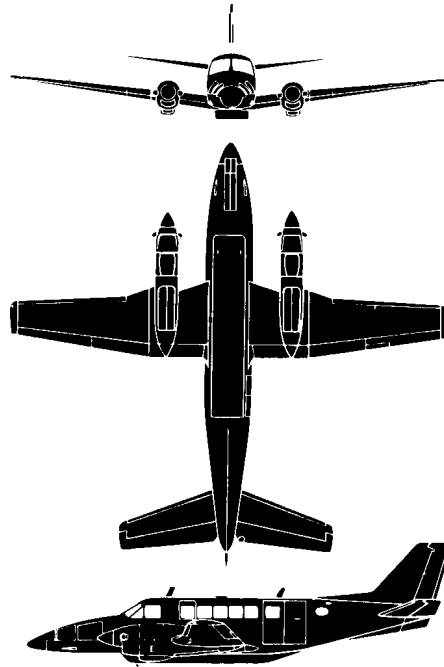
2349:51 (PNF): "Done a four oh two?"

2349:52 (PF): "Nope. One fifty twos, one seventy twos. That's when I knew it was time to get out of instructing. Those slugs, they don't roll very well at all. We were doing aileron rolls where you just sit like this and just crank, and they come around kinda hard. The barrel roll's a lot easier on, uh, they don't have enough poop to barrel roll, one seventy two's not too bad, just where you's kinda nose down I guess we've got enough speed right now and you just kinda start coming in like this, pullin' up."

2350:28 (PF): "And keep positive Gs on it. Take it all the way around, unload."

2350:35 (PF): "And then point straight for the ground."

That was the last statement on the CVR before the crash. Although one witness reported seeing an orange fireball shooting into the air about the time of the accident, authorities did not locate the crash site until the following morning. Just before the crash, another witness along the aircraft's flight path reported



Beechcraft C-99 Airliner

The B-99, the predecessor of the C-99, first flew in 1966 and deliveries began in 1968. A large main cargo door allowed the aircraft to be used for either all-cargo or cargo/passenger operations. The C-99, with increased power and systems refinements, was first delivered in 1981. It has a service ceiling of 28,080 feet (8,560 meters) and a range of 910 nautical miles (1,686 kilometers). The C-99 has a cruising speed of 245 knots at 16,000 feet (4,875 meters). It has a maximum takeoff and landing weight of 11,300 pounds (5,125 kilograms).

The C-99 was certified for operation with one pilot, but U.S. Federal Aviation Regulations require two pilots in commuter air carrier operations. There are about 23 C-99s in operation in the United States and about 52 operating in other countries.

The accident craft was configured to accommodate 15 passengers. It was equipped with two Pratt & Whitney PT6A-36 engines.

Source: *Jane's All the World's Aircraft*
U.S. National Transportation Safety Board

seeing "red and blue lights at a low level, moving in what she classified as an erratic manner. The witness described the airplane lights as going up sharply, and then coming down sharply."

The report said that it was GP Express policy to close "all corporate offices after the last scheduled flight had arrived at [Grand Island] until the first scheduled flight prepared for departure the next morning. As a result, its management was unaware that the airplane was missing when it opened the office at 0400 on April 29. The wife of the flying pilot had become concerned when he failed to return home by 0200, as he had told her he would, and had attempted to

call the company repeatedly, but was not successful until she called at 0430. At 0630, the company contacted the FAA and reported that the airplane was missing.”

Examination of the crash site and wreckage indicated that the airplane had struck the ground in a nose-level attitude with the left wing slightly down. “There was a fan-shaped fire scar extending approximately 400 feet [122 meters] from the point of initial impact,” the report said. “The wreckage path was strewn with airplane parts from the point of initial impact to the main wreckage, which came to rest 1,200 feet [366 meters] from the point of initial impact. The main wreckage was consumed by a postcrash fire.”

The NTSB report said that a “lack of professionalism on the part of the pilots on the accident flight and the prior repositioning flight was indicative that the company safety philosophy was not effectively passed on to check or line pilots. Company management personnel did not adequately supervise the airline’s scheduling, flight and training operations.”

NTSB Chairman Carl W. Vogt and Member John A. Hammerschmidt concurred in part and dissented in part with the conclusions:

“We agree that this accident occurred because the pilots deliberately disregarded the FARs, GP Express’ procedures and aviation safety by attempting an aerobatic maneuver during the scheduled check ride. However, we cannot make the leap that GP Express’ failure to establish and maintain a commitment to instill a higher level of professionalism in their pilots probably caused these well-trained and experienced pilots to fly in such an unprofessional and unsafe manner.”

Vogt and Hammerschmidt concurred with the report and recommendations as adopted by the majority, but in line with NTSB staff recommendations, called the failure of GP Express management a contributing rather than a probable cause.

The NTSB report said that both pilots were highly regarded by their peers and others.

The PF, 29, held an airline transport pilot (ATP) certificate, was type-rated in the Beech 1900 and was a certified flight instructor. According to company records, the PF had logged a total of 5,611 hours of flight time, of which 2,200 hours were in the C-99.

The NTSB said that the PF had received a letter of commendation from the GP Express director of operations for his performance as captain of a flight, based on an

observation of an FAA inspector who had been on board the same flight. The letter, the NTSB said, noted that “[the inspector had] nothing but praise for the conduct of the flight and the performance of [the] Captain ... and [the] First Officer. [The inspector] said the briefing was clear, the flight was smooth and he enjoyed it. In an industry where the negative is usually emphasized, those kinds of comments are good to get. Keep up the good work!”

Numerous pilots who had flown with the PF or who had received flight instruction from him consistently described him as “one of the best pilots with whom they had flown,” the report said. It said that those interviewed described his wealth of knowledge about the systems and engines of the airplanes flown by the airline and characterized him as an excellent instructor “and as one of the best pilots employed by the airline.”

The NTSB report added: “With one exception, no pilot, family member or acquaintance was aware that the flying pilot had ever performed aerobatics. He had not discussed aerobatics with his wife, his former instructor or anyone whom Safety Board investigators interviewed. One GP Express first officer told Safety Board investigators that while he was in training and had not yet been hired by the airline, he had observed the flying pilot [of the accident aircraft] perform two wingovers and an approach to a hammerhead stall in a C-99 on a nonrevenue flight. Both maneuvers are aerobatic maneuvers and, hence, not permitted to be performed on these aircraft. The first officer believed that this was done to scare him, and because he had not yet been hired, he did not believe that he was in a position to complain to company management. As

a result, GP Express did not learn of this report until after this accident.”

The check pilot/PNF, 28, held an ATP certificate and was type-rated in the Beech 1900. He had logged a total of 3,941 hours of flight time, of which 1,760 hours were in the C-99.

“There were no negative items in the company records of the check pilot,” the report said. It said the check pilot had received a letter of commendation from the company director of operations following favorable comments from passengers on two flights.

The check pilot “was characterized by company pilots as a very competent pilot who was quiet and reserved until one got to know him. Like the flying pilot, he was uniformly acknowledged to be an excellent pilot with exceptional knowledge of airplane systems.”

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The NTSB said that in December 1992, the check pilot had submitted a letter to the company to resign his designation as check airman, "citing as reasons the irregular work schedule, additional workload and time demands." Nevertheless, he subsequently agreed to administer check rides on an "as needed" basis. In March 1993, he asked to work as a part-time pilot so that he could pursue outside business interests and this request was granted in May.

The NTSB report noted that "the two pilots were friends who regularly socialized, with their families, outside the work environment. Both family members and friends portrayed the pilots as individuals who enjoyed playing jokes on each other. These jokes, which were considered pranks, included putting petroleum jelly inside the door handles of the other's vehicle."

The report added: "The Safety Board believes that it is consistent with the practical joking side of their character that the intrinsic gratification that would accrue from having performed a challenging maneuver may have provided sufficient reward in itself to justify the maneuver attempt.

The pilots knew that they could not discuss such maneuvers with others without jeopardizing their aviation careers and they knew that no one else would be aware of the roll because no witnesses would be present. Thus, the circumstances of this flight created the conditions under which these pilots could attempt such an unauthorized maneuver as a barrel roll without fear of retribution. The flight took place at night, in uncontrolled airspace, away from populated areas and below the line of sight of the nearest ATC radar facility. Moreover, as captains with the airline, they would have known that they would encounter few opportunities to fly a turbine-powered airplane in ... Part 91 flight together under these circumstances.

"The Safety Board believes, given the sum of the evidence regarding the accident flight, the willingness of both pilots on the CVR to perform the unauthorized maneuver, and the completed Form 8410-3, that the pilots exhibited contempt for adherence to the very FARs and company requirements that they were responsible for instilling in others. Further, even overlooking the violation of the most fundamental rules governing the conduct of flight proficiency checks, the pilots showed a self-destructive disregard for common sense by performing a highly demanding maneuver at night, less than 2,000 feet [610 meters] above the ground."

The NTSB report said that the existence of the completed check ride grade sheet indicated that "neither pilot intended to conduct an airman check on the flight. The recorded cockpit discussion clearly reveals that the flying pilot of

the accident airplane performed a prohibited maneuver (apparently a barrel roll) at night and at an altitude insufficient to reasonably ensure recovery of the airplane. Furthermore, the check pilot exercised no authority to oppose the intentions of the flying pilot while the flying pilot described and performed the maneuver. Other than the very challenge of its performance, the Safety Board could find no readily apparent reason to explain why the pilots attempted to perform this maneuver."

The NTSB investigation also focused on elements of the repositioning flight before the accident and the actions of the crew involved in that flight.

"Throughout the [repositioning] flight, transmissions from a local radio station could be heard on the CVR," the report said. "In addition, the crew engaged in a great deal of conversation not pertinent to the flight, such as singing with the music that was being broadcast. At one point in the flight the captain remarked on the interphone, 'just about five minutes ago I was telling you, I said hey, I ain't going to be doing any more of this aerobatics ...

five minutes later, here we are.' The recording ended with the first officer remarking, 'Oh gee. We laid the seats down pretty.' The captain responded with, 'Just like I wanted them to.' The airplane landed without incident."

The NTSB said that it interviewed these pilots separately after the accident and both denied engaging in aerobatic maneuvers. "The captain said that he had been practicing a high speed descent, a maneuver he had been required to perform twice to successfully complete a C-99 check ride that the chief pilot had administered to him the day before," the report said.

The report concluded: "While the Safety Board was unable to conclusively determine that the pilots of the repositioning flight had performed aerobatic maneuvers, the conversation recorded on the CVR during the flight ... suggested that unauthorized maneuvers were conducted. At the very least, the CVR reveals that the pilots displayed immaturity and a lack of professionalism and responsibility about the aircraft with which the airline had entrusted them.

"The egregious nature of this accident leads the Safety Board to consider the possibility that other pilots operating aircraft certificated for ... Part 135 operations, in circumstances similar to those of this accident, have considered performing aerobatic maneuvers."

The NTSB noted that GP Express had experienced two other fatal accidents. On Dec. 22, 1987, a Cessna 402 crashed on approach in Nebraska. An NTSB investigation

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of that accident determined that the probable cause was the application of “improper instrument flight rules (IFR) procedures and the failure of the pilot-in-command to maintain proper altitude during a nondirectional beacon approach.”

The second accident occurred in June 1992, a day after the company initiated southern operations, when a C-99 crashed on approach to Anniston, Alabama.

In its report of that accident, the NTSB said that the probable accident causes were: “The failure of senior management of GP Express to provide adequate training and operational support for the startup of the southern operation, which resulted in the assignment of an inadequately prepared captain with a relatively inexperienced first officer in revenue passenger service, and the failure of the flight crew to use approved instrument flight procedures, which resulted in the loss of situational awareness and terrain clearance. Contributing to the cause was GP Express’ failure to provide approach charts to each pilot and to establish stabilized approach criteria. Also contributing were the inadequate crew coordination and a role reversal on the part of the captain and the first officer.”

The NTSB found that GP Express “took some actions to enhance safety that were not required by regulations. It regularly contracted with outside experts to perform audits of the company’s maintenance and operations procedures. In addition, the company took specific action to address complaints of its pilots [e.g., reassignment of the company’s director of operations spurred by reports of pilot dissatisfaction].”

But the report added: “Notwithstanding these actions, the Safety Board believes that the circumstances of this accident, as well as the circumstances of the Anniston accident, indicate a problem that goes beyond the performance of individual flight crew members.”

The NTSB said that there was no director of training or a formally established training department in the company. “At the time of this accident, to comply with FAA requirements, the CEO [chief executive officer] was listed as serving as the airline’s director of operations, although he stated that the duties of that position were actually performed, on an acting basis, by the chief pilot,” the NTSB said.

From the time the airline began scheduled passenger service in 1986 until the accident, the company “had 10 different directors of operations, six different directors of maintenance and 12 different chief pilots. The company has hired another director of operations since this accident.”

The NTSB said that as a result of the high rate of management turnover, “the company was unable to develop and maintain consistent interpretation and application of its rules and procedures relevant to the operation and conduct of its flights.”

Management turnover may have accounted for the difficulty in scheduling pilot competency/proficiency checks sufficiently in advance of the grace period allowed, the NTSB said. “The demonstrated inability of the company to abide by FAA requirements governing the scheduling of [the checks] suggests a broader difficulty of GP Express to oversee training and checking programs.”

The NTSB concluded: “The facts of this accident demonstrate that the company was unaware of how these two check airmen, and the pilots of the previous repositioning flight, were adhering to applicable rules and procedures when company management was not in a position to directly oversee the flights. In addition to the flagrant violation of FARs in the accident flight, the failure of the pilots in the repositioning flight to use standard challenge and response checklist callouts indicates that on some routine flights, the necessary appreciation of safety standards was absent.”

Even after the Anniston accident, “there were few substantive changes that would have been apparent to line pilots,” the NTSB said.

The report added: “The Safety Board believes that the evidence indicates that GP Express met the letter but not the spirit of the FARs. This was most evident in the scheduling of pilots for the administration of competency/proficiency checks on the last possible day allowed. The

Safety Board believes that the checks may have been given more to establish records of FAR compliance than for actual proficiency or competency verification. Moreover, the circumstances of this accident illustrate the inherent danger posed when colleagues are assigned to administer training or check flights to each other. It is not reasonable to expect that two friends with nearly equal piloting experience and stature within the company would perform a comprehensive check flight when they know that the flying/check pilot roles may be reversed on another flight.”

The NTSB noted that the company had a third check airman, the chief pilot, on its staff and that “as the immediate superior of the airman needing to be checked, he should have been the individual designated to conduct the check flight.”

The NTSB said that it recognized that the accident flight and repositioning flights were nonrevenue flights that operated under the less restrictive requirements of Part 91.

“The Safety Board believes that the evidence indicates that GP Express met the letter but not the spirit of the FARs.”

“Nevertheless, the Board believes the conduct of the flight crews of both flights, as captured on the CVR, reflected a lack of cockpit discipline and a disregard for safe operating procedures. With regard to the accident flight, both of the pilots appeared to be willing participants in the decision to conduct an unauthorized and hazardous maneuver in violation of FARs, company policy and prudent airmanship. In the case of the repositioning flight, the maneuvers performed by the captain represented a departure from routine flight operations and were conducted without the cooperation or explicit consent of the first officer. No briefings in preparation for the maneuvers were conducted between pilots, nor were the actions of the captain questioned or challenged by the copilot.”

The NTSB said that it could not conclude whether crew resource management (CRM) training, which was not included in the company’s training programs, could have prevented this accident, but noted that the “provision of an effective CRM training program would have communicated to the pilots a message of company commitment to safety and proper flight crew conduct and coordination. More importantly, CRM training places special emphasis on the role of check airmen and instructors to demonstrate and reinforce the concepts of effective CRM to other pilots.

“The Safety Board believes that, rather than promoting a strong safety philosophy, the airline established an environment in which the minimum expenditure necessary to

meet the letter of the applicable FARs was acceptable. Therefore, the Safety Board believes that GP Express’ failure in its obligation to communicate the message of safety and to establish an environment in which dedication to safety overrode all other concerns was a direct cause of this accident.”

As a result of its investigation, the NTSB recommended that the FAA require airlines operating under Part 135 to “place personnel on duty with the ability to rapidly communicate with aircraft that are engaged in company-related flight activities or require that an appropriate flight plan is filed for the type of flight activity performed.”

The NTSB also recommended that the Regional Airline Association inform its members of the circumstances of the GP Express training accident. ♦

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