

NTSB recommendations — issued after a canyon helicopter crash that killed seven people — aim to discourage ‘aggressive flying.’

an ‘e-ticket’ ride

Disregard of safe flying procedures by a helicopter pilot sometimes called “Kamikaze” and inadequate surveillance of canyon air tour operations by his employer and the U.S. Federal Aviation Administration (FAA) were probable causes of the fatal crash of an Aerospatiale AS 350BA in Arizona’s Descent Canyon, the U.S. National Transportation Safety Board (NTSB) says.

In its final report on the Sept. 20, 2003, accident, which killed the pilot and all six passengers, the NTSB said that the 44-year-old pilot had a “documented history of aggressive flying” that Sundance Helicopters did not have

a proficiency check policy to evaluate pilot performance on the route on which the accident occurred, and that the FAA principal operations inspector assigned to Sundance had never conducted surveillance of flights on that route.

The accident occurred about 1238 local time, as the pilot transported passengers from a helipad at Grand Canyon West Airport (1G4) near the canyon’s upper rim at an elevation of 4,775 ft to another helipad — designated as “the Beach” — on the floor of the Grand Canyon next to the Colorado River at 1,300 ft. Skies were clear at the time, with winds of less than 10 kt and no significant turbulence or wind shear.

The 3.5-minute flight, which involved maneuvering through Descent Canyon, located directly west of the Grand Canyon, was the pilot’s 11th such flight of the day; the flights had been preceded by a short operational check flight at the Sundance base at McCarran International Airport in Las Vegas and a 45-minute flight from the base to 1G4.

The 3.5-minute Descent Canyon flights were included in a tour package that featured a boat ride on the Colorado River, followed by a helicopter flight through another canyon for the return to 1G4.

There were no known witnesses to the crash and no air traffic control radar information on the accident flight’s progress inside Descent Canyon, but a pilot from Papillon Grand Canyon Helicopters saw a fireball on the canyon wall behind his helicopter as he approached the Colorado River helipad. The wreckage was found on a ledge about 400 ft (122 m) beyond a section of canyon wall that bore evidence of a main rotor blade

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strike. The distribution of the wreckage and the location of the rotor blade strike indicated that the helicopter was being flown at a high speed along a near-level flight path.

Flight-School Owner

The accident pilot held an airline transport pilot certificate for helicopters and multi-engine airplanes; a commercial pilot certificate for single-engine airplanes; and a flight instructor certificate for helicopters and single- and multi-engine airplanes. He also was rated to teach instrument flight in airplanes and helicopters. His first-class medical certificate had been issued Sept. 16, 2003.

He had owned and operated a flight school in California for 10 years before he was hired by Sundance in May 2000. At the time of the accident, he had 7,860 flight hours, including 6,775 flight hours in helicopters.

An autopsy found no preexisting medical conditions; tests were negative for use of prescription and over-the-counter medications and illegal drugs.

'Free-Fall'

A passenger who had flown on the 1000 flight said that the accident pilot had hovered the helicopter near the canyon rim before he “banked right and nose-dived into the canyon”; he proceeded through a narrow section of the canyon, “very fast and swerving back and forth.” Other passengers on the same flight described the trip through Descent Canyon as “a scary free-fall” and said that the pilot had “pointed the nose of the helicopter straight down into the canyon.” No one took pictures during the descent, one man said, because “they were all hanging on with both hands”; he said that one passenger screamed throughout the descent.

Two years earlier, in July 2001, a passenger had faxed a complaint to Sundance about the accident pilot’s flying during a Descent Canyon flight.

“Being a heart patient with ... a very dangerous pilot in charge of the helicopter, I thought I was about to die,” the passenger wrote. “He flew so fast and dangerous[ly], I could not believe his behavior.”

In August 2001, Sundance’s chief pilot told the accident pilot that he faced disciplinary action because of a complaint from another customer — the owner of Air Vegas, whose aircraft flew passengers to 1G4 for Sundance tours. The Air Vegas CEO had told the chief pilot that, during a flight from

1G4 to the Beach helipad, the accident pilot asked if he wanted “a helicopter ride or an ‘E-ticket’ ride” — a reference to Disneyland’s designation of its most thrilling amusement park rides.

Later, the CEO told investigators that he was concerned that there would be complaints from passengers about the “hot rod” flying and that, even with his experience in the U.S. Air Force, he had been uncomfortable during the flight, which he believed had not met standards established by the Tour Operators Program of Safety (TOPS), an industry safety group.

In his subsequent memo to the accident pilot, the Sundance chief pilot said, “This type of flying is not tolerated at Sundance Helicopters and is grounds for disciplinary action.” The disciplinary action was to have been a one-week suspension without pay. Sundance records showed that the suspension was not ordered immediately because the operator had a shortage of pilots; later, by the time business slowed, the planned suspension had been forgotten, Sundance’s director of operations told the NTSB.

The report said that, although Sundance prohibited reckless behavior by its pilots, “there was no emphasis on these procedures to ensure that the pilot adhered to them. ... The company’s failure to enforce the [suspension] might have conveyed to the pilot and other Sundance pilots that the completion of tours was more important than safety policies and procedures, or that the company did not consider such flying practices to be serious safety concerns.”

A former Sundance tour coordinator said that when she talked to the accident pilot over the radio during his Descent Canyon flights, she could “hear tourists screaming.”

She gave investigators a videotape that she made when she rode with the pilot in November 2001, when he “flew very close to the canyon wall. [He] banked off one wall and then turned the other way, almost upside down.”

Safety Concerns

Papillon ground employees began calling the accident pilot Kamikaze after



A photograph taken by a passenger on an earlier flight shows the accident helicopter near a canyon wall.

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watching him fly over Papillon helicopters during refueling or passenger-loading operations, “stopping his helicopter in a hover, dipping its nose towards them and then going on,” the report said.

“The Papillon operations manager stated that many pilots talked about the accident pilot’s flying and that Papillon’s chief of safety had discussed these concerns with the accident pilot,” the report said. “He noted that the accident pilot ‘was always very nice but didn’t change.’”

A former Sundance pilot described the accident pilot as “extremely good” and “more qualified in the helicopter than the job demanded.” The accident pilot “pushed the aircraft and pushed the rules of flight in Descent Canyon,” he said; those rules included limits of 30 degrees of bank and 10 degrees to 15 degrees of nose-down pitch.

He conceded that the accident pilot was given his nickname for “flying the [expletive] off the helicopter” but added that he had “never seen him take the helicopter to any point he could not easily bring it back from.”

The Sundance director of operations said that most pilots flew between 100 and 110 kt, with descent rates into the canyon averaging 1,000 fpm but possibly as high as 2,500 fpm. Another Sundance pilot on the Descent Canyon route the day of the crash estimated that the accident pilot was flying 120 to 140 kt, the report said.

The helicopter, manufactured in 1985 as an Aerospatiale AS 350B, was converted in 1996 to an AS 350BA, in accordance with a Eurocopter service bulletin; changes included modifications to the structure, new main rotor blades, a new tail rotor and drive system modifications. Sundance acquired the helicopter in 1999 and in 2002, replaced the original engine with a Honeywell LTS 101-600A-3A engine. When the accident occurred, the helicopter had 10,890 hours total time and 54,976 cycles, and the engine had 9,516 hours total time and 12,465 cycles. Maintenance was current, and all airworthiness directives, service bulletins and required inspections had been accomplished.

Weight and balance for the accident flight were within acceptable limits.



The helicopter had been involved in two incidents: In May 2000, the vertical fin assembly received minor damage when it struck a rock during an attempted landing at a remote helipad, and in July 2000, a main rotor blade struck a tree during a turn. Each time, the helicopter was inspected and repaired in accordance with Eurocopter’s approved procedures.

Ban on Diving

Sundance Helicopters, established in Las Vegas in 1985 as a pilot training operation, began offering air tours in 1987 and, at the time of the accident, operated 14 helicopters. In the year preceding the accident, the helicopters were flown for a total of about 50,000 cycles; from Jan. 1, 2003, until the accident date, they had made about 11,000 flights on the Descent Canyon route.

Company safety standards prohibited diving into Descent Canyon, established a 120-kt maximum speed for Eurocopter operations in the canyon and specified that “safety and good judgment must be the top priority in conducting all operations.”

Passenger photos show the accident helicopter on an earlier flight; graphics depict pitch and bank angles.

As a member of TOPS, Sundance was committed to safety standards that included “avoiding any perception of a thrill ride, aerobatics ... or unnecessary abrupt maneuvers.” TOPS standards also specified maximums of 30 degrees bank and 10 degrees pitch, the report said.

TOPS members underwent annual safety audits, but the last audit before the accident did not include flights along the Descent Canyon route, the report said. In addition, Sundance did not require its check airmen to observe flights on that route, although the Sundance CEO said that pilots were trained and route-checked on operations from a landing location near the Beach helipad.

After the accident pilot’s 2001 reprimand, he was not given a route check, and the Sundance director of operations said that he had never flown with the accident pilot on the Descent Canyon route and had never asked other managers to conduct a route check with the pilot.

A principal operations inspector (POI) at the FAA Flight Standards District Office in Las Vegas said that,

because of his workload and time constraints, he conducted proficiency and line checks only on Sundance routes over Grand Canyon National Park and routes between the Grand Canyon and Las Vegas — not on the Descent Canyon route. Both the POI and the assistant POI assigned to Sundance said that they had never flown into Descent Canyon with the operator and were unfamiliar with the route.

Safety Initiatives

After the accident, Sundance implemented several initiatives to improve safety:

- Video recording equipment was installed on all but one of the company’s helicopters (the exception was a helicopter acquired on a short-term lease) to enable management to monitor pilot performance. The videos also were sold to passengers as souvenirs;
- Survey cards were offered to each passenger to encourage reports of flight safety concerns. The Sundance director of operations said

that all survey cards concerning safety are immediately evaluated and the reporting passengers are contacted; and,

- A Ride-A-Long program was implemented. The program allows passengers with piloting experience to ride free; their experience is not disclosed, and when the flights are over, these passengers complete in-depth surveys about their flight safety observations.

Recommendations

As a result of its accident investigation, the NTSB said that en route surveillance should become routine for commercial sightseeing flights over the Grand Canyon. NTSB safety recommendations said that the FAA should require “periodic en route surveillance of all repetitively flown commercial air tour routes in the Grand Canyon area” and that the TOPS safety audit program should include similar surveillance; guidance material for the TOPS safety audits program should clearly define “air tour flight” to ensure effective en route surveillance, the NTSB said. The FAA also should encourage commercial air tour operators to establish a monitoring program, the NTSB said.

Other recommendations called for the FAA to require all commercial air tour operators to maintain records of safety-related complaints and for the TOPS safety audits to include reviews of such records. In addition, the NTSB recommended that the FAA require operators to maintain names and contact information for all passengers for at least 30 days after their flights. ●

This article is based on NTSB aircraft accident brief LAX03MA292 and related documents, including NTSB safety recommendations A-07-89 through A-07-95.

