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National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: December 1, 1995

In reply refer to: A-95-142 and -143

Honorable Tony Knowles
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The National Transportation Safety Board has had a longstanding interest concerning aviation safety in Alaska. One segment of Alaska aviation, the air taxi industry, was the subject of a special study published in September 1980.[1] The Safety Board concluded in the study that three factors contributed most to the high air taxi accident rates in Alaska: (1) the "bush syndrome," defined as an attitude of air taxi operators, pilots, and passengers ranging from their casual acceptance of risks to their willingness to take unwarranted risks; (2) inadequate airfield facilities and inadequate communications of airfield conditions; and (3) inadequate weather observations, inadequate communications of the weather information, and insufficient navigation aids.

As a result of the air taxi study, the Safety Board issued safety recommendations to the Federal Aviation Administration (FAA), the State of Alaska, and the Alaska Air Carriers Association (AACA) concerning the planning and development of Alaska's aviation system and infrastructure; weather observation and dissemination of weather information; and regulatory surveillance and operator safety oversight. Actions taken by the recipients in response to the recommendations combined with other safety developments during the 15 years since the Board's 1980 study have brought many improvements to aviation safety in Alaska. Despite the improvements, however, the Safety Board's investigations of aviation accidents in Alaska indicate that the safety issues identified in the 1980 study remain areas of concern.

Flight operations in Alaska are diverse, and they are responsive to the State's challenging aviation environment and its unique air transportation requirements. Some characteristics of Alaska, such as rough terrain, adverse weather, and extreme isolation, increase the risks to safe flight operations. The risks associated with these characteristics can be managed, to varying

[1] National Transportation Safety Board. 1980. Air taxi safety in Alaska. Special Study NTSB-AAS-80-3. Washington, DC.

degrees, by the operating practices of pilots and companies, and by the infrastructure of airports, navigational aids, air traffic control facilities, and weather facilities. The potential for managing the risks associated with aviation in Alaska is particularly high now, because of developments in navigation and communications technologies. The Safety Board conducted its recent study[2] to examine Alaska's current aviation environment and air transportation activities, to identify the associated risk factors and safety deficiencies, and to recommend practical measures for managing the risks to safe flight operations given the reality of Alaska's aviation environment and the potential of new technologies.

Despite the need to cope with Alaska's difficult operating environment, aviation operations of all types in the State are extremely safe. Overall, commuter airlines, air taxis, and general aviation operations in Alaska operated nearly 13 million flight hours from 1989 through 1994 and experienced 1,566 accidents, 193 of which resulted in fatalities.[3] The Safety Board recognizes the high level of safety achieved by Alaska's operators in recent years; nevertheless, the Board's examination of the accident rates experienced by some types of operators in the State led the Board to consider ways to further improve the safety of their flights.

The Safety Board's review of commuter airline, air taxi, and general aviation accidents in Alaska highlighted two accident types of major consequence: (1) accidents during takeoff and landing, and (2) accidents related to visual flight into instrument meteorological conditions (IMC). Of the 172 commercial and private aviation accidents that occurred in Alaska during 1993, these two types accounted for 131 (76 percent). Of the 21 accidents that resulted in fatalities, the two types accounted for 9 (43 percent). Takeoff and landing accidents are relatively frequent in Alaska, but few of them result in fatalities. Accidents related to visual flight into IMC are less frequent, but they account for a large share of the fatal accidents among commuter airline and air taxi operations in Alaska.

Airport Facilities

The Safety Board evaluated airport facilities in Alaska because of the large number of accidents (mostly nonfatal) that occur during takeoff and landing. The State of Alaska has adopted airport design standards that specify a minimum runway length of 3,000 feet.[4] Of the 424 public use and private use fixed-wing airports within the State, 250 have runway lengths less

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[2] National Transportation Safety Board. 1995. Aviation safety in Alaska. Safety Study NTSB/SS-95/03. Washington, DC.

[3] Accident rates of the air carriers operating under Title 14 Code of Federal Regulations (14 CFR) Part 121 in Alaska have been comparable with those of Part 121 operators in the remainder of the United States, between 1986 and 1994. Consequently, the study focused on operations conducted under Part 135 (commuter airlines and air taxis) and Part 91 (general aviation).

[4] State of Alaska Department of Transportation and Public Facilities. 1986. Alaska aviation system plan [Mimeo]. March (p. 4-5).

than 3,000 feet.[5] Of these 250 airports, 172 are for public use and 77 receive scheduled air service, according to the January 1995 issue of the *Official Airline Guide*. Many of these airports are within the southwest region centered around Bethel, which closely resembles the situation found by the Safety Board in its 1980 air taxi study. Many of these airports are geographically located such that runway extensions to meet State standards would be extremely difficult to engineer without relocating the airport.

In the 5-year period 1989 through 1993, the Safety Board investigated 20 accidents that occurred during takeoff or landing at an airport in which the Board cited airport or runway conditions as a causal or contributing factor. Of these accidents, 13 involved runways less than 3,000 feet in length. Most of the accidents that occurred on these shorter runways (9 of 13) were commuter airline or air taxi flights operating under Title 14 Code of Federal Regulations Part 135. Of the 9 Part 135 accidents, 8 involved a combination of short runway length and contaminated runway surface (the remaining accident occurred when the pilot maintained excessive airspeed and landed long on a 1,700-foot-long airstrip.) Given the prevalence of unpaved runway surfaces and weather-related runway contaminants in Alaska that can reduce airplane braking action, adequate runway length is critical to the safety of takeoffs and landings. The Safety Board acknowledges the difficulties of meeting State standards for runway length at some airports. However, based on the accident records of commercial operations on shorter runways, the Safety Board concurs with the State that 3,000 feet should be the minimum runway length for scheduled air service. Consequently, the Board encourages the State of Alaska to continue its efforts to improve to minimum State standards the airports currently receiving scheduled air service with runways less than than 3,000 feet in length.

Airport Condition Reporting

Many accidents that occurred during landings at small airports may have been averted had pilots been provided timely reports of airport and runway conditions. At most of the State-owned rural village airports in Alaska, the State contracts with private individuals for airport maintenance, who observe runway conditions during the performance of their duties. Observations from these sources could be useful to pilots; however, the representative of the State of Alaska Department of Transportation and Public Facilities at the Safety Board's public forum[6] expressed reluctance to allow maintenance contractors to issue runway condition reports for arriving/departing aircraft because the contractual personnel have limited qualifications and because of potential problems of liability. Further, the State representative expressed concern about the effectiveness of communication by equipment operators (such as a grader or snow plow operator) within the noisy operating environment of the equipment.[7] The State representative

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[5] Federal Aviation Administration Airport Master Record data, maintained by the Airport Safety Data Branch.

[6] As part of its study, the Safety Board held public forums on aviation safety in Alaska in Juneau on May 22, 1995, and in Anchorage on May 24 and 25, 1995.

[7] Transcript of proceedings before the National Transportation Safety Board, in the matter of: Forum on aviation safety in Alaska, May 24, 1995, Anchorage, Alaska, p. 919.

also reflected the positive aspects of direct communications between pilots and airport maintenance personnel, stating, "We feel it is extremely dangerous...when we no longer have any effective communication on a particular airport...when we're in an operation where we're cleaning snow off and...we don't have any means of having some communication to that pilot that we're on the airport."[8]

At most of the village airports in Alaska, the local State airport maintenance contractors are the only persons on site who are capable of providing direct, near real-time ("mike-in-hand") reports of airport conditions to the pilots of aircraft in flight. Such personnel, given appropriate training and procedures to follow, could provide valuable information to arriving pilots. The Safety Board recognizes the concerns of the State and other potential mike-in-hand information providers (such as the National Weather Service) pertaining to liability exposure; however, in the Board's opinion, these concerns can be addressed by the proper training of personnel, particularly training in the skills of observing and reporting factual information straightforwardly. The Safety Board believes that by December 31, 1996, the State of Alaska, with the assistance of the FAA, should develop appropriate procedures and establish a training program to enable mike-in-hand reports of airport conditions by designated State and contractual airport maintenance personnel.

Airport Inspection Programs

The FAA inspects all airports certificated under 14 CFR Part 139 (those airports served by air carrier aircraft larger than 30 passenger seats) to ensure that these facilities meet Part 139 standards. Further, the FAA requires inspection of all public use airports not certificated under Part 139, either by FAA personnel or by designees. These inspections are the FAA's primary means of gathering airport information that is critical to flight safety (such as the functionality of lighting systems and the condition of runway surfaces) and then disseminating that information to pilots through airport information publications.

The 29 fully certificated, civilian airports in Alaska are inspected annually, as required under Part 139, by the FAA Alaskan Region Airports Division, Safety and Standards Branch. Two full-time certification inspectors are assigned responsibility for these airports; in addition, they are responsible for inspecting once every 2 years the seven civilian airports holding limited certification.

The additional 372 public use airports (excluding military airports) in the State fall under the FAA's 5010 program. FAA Order 5010.4 establishes that public use airports shall be inspected by FAA, State, or contractor personnel. Most of these inspections in States other than Alaska are conducted by contract personnel with oversight by the National Association of State Aviation Officials (NASAO) and the FAA. In Alaska, neither the NASAO nor the State supervises or assists in these inspections; consequently, FAA personnel from the Airports Safety and Standards Branch are required to conduct all airport inspections in the State.

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[8] Transcript of proceedings, p. 916.

Historically, the branch was staffed with an individual who was responsible for the 5010 program. As of mid-1995, that position had been unfilled for more than 2 years. During that period, the two airport certification inspectors responsible for inspecting Part 139 airports were assigned the 372 airports in the 5010 program as an ancillary duty. Further, in autumn 1995, the manager of the branch, who also conducted inspections, was reassigned, and one of the two airport certification inspectors retired. Thus, in 1995, staffing of the FAA department responsible for all airport inspections in Alaska was reduced to one person.

The Safety Board is unable to identify a direct connection between previous aviation accidents in Alaska and the frequency or quality of FAA airport inspections. However, during the Board's public forums, operators expressed a concern that the accuracy of airport information publications, including the *Alaska Supplement*, is dependent on these inspections. As a result, the Board is concerned about the recent reductions in airport inspection staffing. The current staffing level combined with the lack of participation by the State of Alaska will adversely affect the 5010 program until corrective measures are taken. To ensure that airport information critical to flying safety can be obtained, the Safety Board believes that by December 31, 1996, the FAA should complete an evaluation of the work program for inspectors responsible for the Part 139 and 5010 airport inspection programs within the Alaskan Region, then develop appropriate staffing standards and personnel work responsibilities based on the evaluation and encourage the State of Alaska to participate in the 5010 program. Further, the Board believes that the State should develop a program to participate in the FAA's 5010 airport inspection program.

Therefore, the National Transportation Safety Board recommends that the State of Alaska:

Develop, by December 31, 1996, with the assistance of the Federal Aviation Administration, appropriate procedures and establish a training program to enable mike-in-hand (near real-time) reports of airport conditions by designated State and contractual airport maintenance personnel. (Class II, Priority Action) (A-95-142)

Develop, by December 31, 1996, a program to participate with the Federal Aviation Administration in its 5010 airport inspection program. (Class II, Priority Action) (A-95-143)

The Safety Board also issued safety recommendations to the Federal Aviation Administration, the United States Postal Service, and the National Weather Service.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "...to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety Recommendations A-95-142 and -143 in your reply.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT and GOGLIA concurred in these recommendations.

By: Jim Hall
Chairman