

National Transportation Safety Board

Office of the Chair

Washington, DC 20594



September 1, 2023

US Department of Transportation
Docket Operations, M-30
1200 New Jersey Avenue SE
Room W12-140
West Building Ground Floor
Washington, DC 20590-0001

Attention: Lawrence Fields, Acting Executive Director, Flight Standards Service

Dear Sir:

On August 4, 2023, the Federal Aviation Administration (FAA) announced the publication of draft Advisory Circular (AC) 136-B048, Supplemental Information for the Creation of Operating Procedures and Pilot Training Subjects Related to OpSpec [operations specification]/LOA [letter of authorization] B048, and invited public comment on the document. The NTSB has a longstanding interest in air tour safety in the state of Hawaii, having investigated numerous Hawaii air tour accidents and issued many related safety recommendations and we offer our comments below.

We note that, based on the contents of the draft AC, it appears that the FAA's intent is that it will replace FAA document AWP13-136, the Hawaii Air Tour Common Procedures Manual (HATCPM), which the FAA issued in 2008 for use by operators that obtained authorization (through OpSpec B048 or LOA B548) to deviate from the minimum altitude specified in 14 *Code of Federal Regulations (CFR)* Part 136, Appendix A. For those operators that obtained authorization through OpSpec B048/LOA B548, compliance with the provisions of the HATCPM was mandatory. In our 2022 report on our investigation of the December 26, 2019, fatal air tour helicopter accident in Kekaha, Hawaii, we noted that the HATCPM had not been revised since it was issued and that the FAA informed us that it had been working on a replacement for about 7 years.¹

During our investigation, an air tour subject matter expert from the FAA's Air Transportation Division, [14 *CFR*] Part 135 Air Carrier Operations Branch, informed us that the FAA's vision for the new document was for it to be up to date; incorporate NTSB safety recommendations, congressional input, and National Park Service input; and be simpler, safer, and easier to manage. They also said that the document would

¹ See our report, *Collision into Terrain, Safari Aviation Inc., Airbus AS350 B2, N985SA, Kekaha, Hawaii*, December 26, 2019. [AIR-22-05](#). Washington, DC: NTSB, 2022.

likely address the use of Hawaii weather camera systems and operator implementation of safety management systems (SMSs).

We have examined the draft AC and are providing comments related to these issues and open NTSB recommendations related to air tour safety in Hawaii. We note that, although ACs, generally, are not regulatory documents, we presume that operators that obtain authorization through OpSpec/LOA B048 will be required to comply with the AC's provisions (similar to the mandatory compliance with the HATCPM for those operators that held deviation authority).

Cue-Based Training

As a result of our investigation of the September 24, 2004, fatal air tour helicopter accident in Kalaheo, Hawaii, and the relevance of cue-based training research to our findings, we issued Safety Recommendations A-07-18 and -19 on February 27, 2007.² These recommendations urged the FAA to collaborate with Hawaii commercial air tour operators, aviation psychologists, and meteorologists to develop and require a cue-based training program for commercial air tour pilots in Hawaii that specifically addresses hazardous aspects of local weather phenomena and in-flight decision-making.

As recently as last year, we identified (during our investigation of the Kekaha accident) that the Honolulu Flight Standards District Office had imposed a cue-based training requirement on Hawaii air tour operators (via the provisions of the HATCPM) without the FAA having first developed any such training or information about what cue-based training should include or how it should be delivered. Safety Recommendations A-07-18 and -19, which are now more than 16 years old, are classified Open–Unacceptable Response.

We note that the draft AC both defines cue-based training and states that operators should include information about island-specific weather patterns in the “operating procedures” section of their application for OpSpec/LOA B048 to the FAA. However, the draft AC does not reference any course material developed through a collaborative FAA-industry effort that benefits from the expertise of air tour operators, aviation psychologists, and meteorologists. Without such course material, operators and the FAA inspectors who oversee them have no way to ensure that the training is consistent with the approach described in FAA research on cue-based training and meets the needs for pilots who fly in Hawaii. Therefore, the draft AC is not fully responsive to Safety Recommendations A-07-18 and -19.

² See our report, *Weather Encounter and Subsequent Collision into Terrain, Bali Hai Helicopter Tours, Inc., Bell 206B, N16849, Kalaheo, Hawaii, September 24, 2004*. [AAR-07/03](#). Washington, DC: NTSB, 2007.

Automatic Dependent Surveillance-Broadcast Equipment Applications

During our investigation of a 2019 fatal midair collision involving two air tour airplanes in Ketchikan, Alaska, we observed that high-traffic air tour areas have a higher midair collision risk than the general National Airspace System.³ As a result, in 2021, we issued Safety Recommendation A-21-15, which urged the FAA to do the following:

Identify high-traffic air tour areas and require, through a special federal aviation regulation (SFAR) or other means, that 14 *CFR* Parts 91 and 135 air tour operators that operate within those areas be equipped with an automatic dependent surveillance-broadcast (ADS-B) Out- and In-supported traffic advisory system that 1) includes both visual and aural alerts, 2) is driven by an algorithm designed to minimize nuisance alerts, and 3) is operational during all flight operations.

Due to the presence of similar risks in high-traffic air tour areas in Hawaii, as well as the usefulness of ADS-B broadcast data for monitoring air tour flights and potentially detecting deviations from safe operating practices (discussed further below), we reiterated Safety Recommendation A-21-15 in our 2022 report on the Kekaha accident. However, the FAA recently informed us that it determined that current ADS-B requirements adequately address the needs of aviation safety and that it did not plan to pursue any additional ADS-B requirements at this time.

In 2022, we issued Safety Recommendation A-22-13 (also from our report on the Kekaha accident), which urged the FAA to require, as an interim measure until the completion of action to satisfy Safety Recommendation A-21-15, that Hawaii air tour operators install ADS-B Out equipment in their aircraft to enable real-time flight position tracking. In August 2022, the FAA informed us that it was revising OpSpec B048/LOA B548 and that it was continuing to evaluate requirements for the use of ADS-B Out equipment in air tour operators' aircraft as a requirement to obtain the revised OpSpec B048/LOA B548. Pending review of the revised OpSpec and LOA and completion of the recommended action, Safety Recommendation A-22-13 is classified Open–Acceptable Response.

We note that, although the draft AC recommends that Hawaii air tour operators install ADS-B equipment with In and Out capability and inform the FAA about its use, the AC does not state that such equipment will be required. Therefore, after the AC is issued, the FAA will still need to complete the revisions to OpSpec B048/LOA B548 to satisfy Safety Recommendation A-22-13.

³ See our report, *Midair Collision over George Inlet, de Havilland DHC-2, N952DB, and de Havilland DHC-3, N959PA, Ketchikan, Alaska, May 13, 2019*. [AAR-21/04](#). Washington, DC: NTSB, 2021.

Safety Management Systems and Other Safety Assurance Processes

In 2016, we issued Safety Recommendation A-16-36, which urged the FAA to require all Part 135 operators to establish SMS.⁴ We were pleased to learn that on January 11, 2023, the FAA published a notice of proposed rulemaking (NPRM) announcing its intent to require such systems for Part 135 operators and air tour operators operating under 14 *CFR* 91.147. We strongly support the FAA's proposed expansion of SMS requirements, which would include all Hawaii air tour operators.

We note that the draft AC states that a certificate holder "should present to the Administrator the method they will utilize to analyze, mitigate, and manage risks while conducting commercial air tour operations under the authorization" and that the FAA will review each certificate holder's application as a whole and may recommend changes before approval. This appears to lay the groundwork for FAA verification of future SMS requirements. Therefore, although the draft AC is not directly responsive to Safety Recommendation A-16-36, its reporting provision would allow the FAA to evaluate operators' risk management strategies, including the applicable components of SMS, once the proposed new rule is implemented.

Our 2022 investigation report on the Kekaha accident also highlighted the importance of the safety assurance aspect of SMS for preventing a drift toward risky weather-related operating practices among Hawaii air tour pilots. In that report, we issued Safety Recommendation A-22-16, which urged the FAA to issue a safety alert for operators (SAFO) to encourage air tour operators to establish safety assurance processes to routinely review recorded onboard videos and ADS-B flight tracking data, ideally as part of an SMS with an integrated flight data monitoring program, for the purpose of identifying and addressing risky trends in weather-related operating practices, such as encounters or near encounters with instrument meteorological conditions (IMC)-related hazards.

In August 2022, the FAA replied that it disagreed that issuing a SAFO to establish a safety assurance process is in the best interest of promoting aviation safety. The FAA pointed out that a formal safety assurance procedure currently exists in OpSpec B048, which requires that certificate holders conduct one formal commercial air tour safety meeting each year to discuss safety trends and Part 136, Appendix A issues. However, we do not believe that OpSpec B048 is responsive to this recommendation, as the intent of this recommendation is to encourage air tour operators to review recorded ADS-B data to identify and track occurrences, such as a flight's descent below a required minimum altitude, and review the circumstances of the event with the pilot in a nonpunitive fashion to explore what happened and learn

⁴ See our report, *Crash During Nonprecision Instrument Approach to Landing Execuflight Flight 1526 British Aerospace HS 125-700A, N237WR, Akron, Ohio*. [AAR-16/03](#), Washington, DC: NTSB, 2016.

about the integrity and effectiveness of existing risk controls. This recommendation is currently classified Open–Unacceptable Response.

We note that the draft AC lists FAA AC 120-92, Safety Management Systems for Aviation Service Providers, under a section titled “Related Reading Material” and that AC 120-92 includes information on all the major components of SMS. We also note that the draft AC encourages Hawaii air tour operators to engage in risk management. The draft AC states that the FAA may recommend that operators include additional safety risk analysis (a component of SMS), but it does not contain specific provisions that address the development of safety assurance processes like those described in Safety Recommendation A-22-16. Therefore, the draft AC is not responsive to Safety Recommendation A-22-16.

Safety Recommendation A-22-15, which was also issued as a result of the Kekaha investigation, urged the FAA to develop guidance for small operators for scaling an SMS that includes methods and techniques for implementation and specific examples applicable to several operational sectors, including air tours. Although the draft AC does not specifically discuss scaling an SMS for Hawaii air tour operators, we noted that the FAA has informed us that its ongoing SMS rulemaking effort will address this recommendation. Thus, Safety Recommendation A-22-15 is classified Open–Acceptable Response.

Safety Recommendation A-22-18 (also from our report on the Kekaha accident) urged the FAA to issue and periodically update a special airworthiness information bulletin (SAIB) that lists newly manufactured helicopters that are equipped with features likely to reduce accidents resulting from inadvertent encounters with IMC, describes retrofit options for helicopters that do not have such equipment, and encourages the voluntary integration of these safety features. This recommendation is classified Open–Await Response. Although this recommendation specifically called for the publication of an SAIB, we note that the draft AC does not encourage voluntary integration of such safety features. It does, however, state that an operator should include in its application a description of any supplemental type certificates related to aircraft instrumentation and equipment. Therefore, although the draft AC is not responsive to Safety Recommendation A-22-18, we are pleased that it may increase the FAA’s awareness of any such equipment that may be installed.

Additional Recommendations Not Addressed in the AC

In addition to the recommendations discussed above, we have identified the following NTSB safety recommendations to the FAA that are relevant to Hawaii air tour safety but whose subject matter is not discussed in the draft AC:

- Safety Recommendation A-13-13: Require all existing turbine-powered, nonexperimental, nonrestricted-category aircraft that are not equipped with a flight data recorder or cockpit voice recorder and are operating under

Parts 91, 121, or 135 to be retrofitted with a crash-resistant flight recorder system. The crash-resistant flight recorder system should record cockpit audio and images with a view of the cockpit environment to include as much of the outside view as possible, and parametric data per aircraft and system installation, all as specified in Technical Standard Order C197, "Information Collection and Monitoring Systems." (Open–Unacceptable Response)⁵

- Safety Recommendation A-16-34: Require all Part 135 operators to install flight data recording devices capable of supporting a flight data monitoring program. (Open–Unacceptable Response)
- Safety Recommendation A-16-35: After the action in Safety Recommendation A-16-34 is completed, require all Part 135 operators to establish a structured flight data monitoring program that reviews all available data sources to identify deviations from established norms and procedures and other potential safety issues. (Open–Unacceptable Response)⁶
- Safety Recommendation A-21-5: Require the use of appropriate simulation devices during initial and recurrent pilot training for Part 135 helicopter operations to provide scenario-based training that addresses the decision-making, skills, and procedures needed to recognize and respond to changing weather conditions in flight, identify and apply mitigation strategies for avoiding adverse weather, practice the transition to the use of flight instruments to reduce the risk of spatial disorientation, and maintain awareness of a variety of influences that can adversely affect pilot decision-making. (Open–Acceptable Response)⁷
- Safety Recommendation A-22-11: Install the necessary infrastructure in Hawaii to enable continuous radio communication between the pilots of low-flying tour flights and ground support personnel, such as flight service station specialists and company flight support personnel, along the most heavily trafficked air tour routes. (Open–Acceptable Response)
- Safety Recommendation A-22-14: Require air tour operators to have flight support personnel who are trained to exercise operational control authority, participate in preflight risk analysis, provide pilots with weather briefings,

⁵ See our report, *Crash Following Loss of Engine Power Due to Fuel Exhaustion, Air Methods Corporation, Eurocopter AS350 B2, N352LN, Near Mosby, Missouri, August 26, 2011*. [AAR-13/02](#). Washington, DC: NTSB, 2013.

⁶ Both Safety Recommendation A-16-34 and -35 were issued in our 2016 report on the Akron accident.

⁷ See our report, *Rapid Descent into Terrain, Island Express Helicopters Inc., Sikorsky S-76B, N72EX, Calabasas, California, January 26, 2020*. [AAR-21/01](#). Washington, DC: NTSB, 2021.

monitor the progress of the flights, and participate in two-way communications with pilots to alert them of any weather hazards. (Open-Unacceptable Response)⁸

We encourage the FAA to consider including the subjects addressed in these recommendations in the AC.

HATCPM Provisions Not Included in the AC

We would like to express concern about some provisions of the HATCPM that are not included in the draft AC. The HATCPM included a standoff distance of 300 ft from raw terrain, which the draft AC does not address. We believe that the inclusion of a standoff distance in the new AC would be appropriate to discourage pilots from flying too close to steep terrain, which is prevalent in Hawaii. Maintaining a minimum distance from terrain reduces the risk of an inadvertent collision with terrain due to adverse wind conditions or other factors and provides a safety margin for helicopters to transition to an autorotative maneuver in the event of unexpected power loss.

The HATCPM also required operators to identify site-specific emergency landing areas for locations where they are permitted to fly at or below 1,000 ft above ground level (agl) and train their pilots on the location of these landing areas. We are concerned that the omission of this requirement from the draft AC will reduce forethought and planning among operators and pilots about where flights may be able to land in the event of unforeseen power loss when operating at lower altitudes. When such events occur, the time available to identify a suitable landing area may be minimal; therefore, such advance planning can contribute to risk management, thereby adding a layer of safety.

In addition, the HATCPM specified certain minimum visibilities. For air tour flights below 1,500 ft agl, it required pilots to maintain 3-statute-miles visibility over land and 1 statute mile over offshore transition routes. This was substantially more conservative than the requirement under Part 135, which specifies, in part, that daytime, visual flight rules (VFR) helicopter flights conducted in class G airspace at an altitude of 1,200 ft agl or less must be flown in visibility of at least 0.5 miles (14 *CFR* 135.205[b][1]) and with visual surface reference sufficient to safely control the helicopter (14 *CFR* 135.207). The draft AC does not include a minimum visibility provision for Hawaii air tour operators that is more conservative than the requirements under Part 135. This could reduce operational safety margins.

We believe that the elimination of a conservative visibility requirement for Hawaii air tour operators is of particular concern given that the FAA has indicated that the purpose of the draft AC is to “provide a consistent process where air tour

⁸ Both Safety Recommendation A-22-11 and -14 were issued in our 2022 report on the Kekaha accident.

operators can receive authorization to safely descend below specific altitudes to avoid flying in bad weather” and that the process outlined in the AC would “help prevent situations where pilots encounter poor visibility and become disoriented.”⁹ Further, we note that the FAA’s explanation of the purpose of the draft AC as a means to allow operators to deviate below altitude restrictions to avoid weather-related accidents appears to conflict with information the FAA previously provided when it informed us (discussed below) that altitude restrictions do not contribute to weather-related air tour accidents in Hawaii.

As noted in the draft AC, Part 136, Appendix A, Section 6 states:

Except when necessary for takeoff and landing, or operating in compliance with an air traffic control clearance, or as otherwise authorized by the Administrator, no person may conduct an air tour in Hawaii: (a) Below an altitude of 1,500 ft above the surface over all areas of the State of Hawaii, and, (b) Closer than 1,500 ft to any person or property; or, (c) Below any altitude prescribed by federal statute or regulation.¹⁰

The FAA imposed this minimum altitude requirement on October 26, 1994, as part of an emergency rule, SFAR 71. In support of the rule, the FAA said that imposing the minimum altitude was necessary to allow pilots “sufficient time to react in an emergency, to notify and instruct passengers, and to prepare for a forced landing.” The FAA also stated that the minimum altitude would, in practice, increase weather minimums for air tour operators in the state, thereby reducing the recurrence of “numerous accidents that have occurred when the aircraft flew into terrain because of low visibility.”¹¹

At a 1994 NTSB public hearing examining air tour safety, Hawaii air tour operators expressed concern about possible unintended consequences of this rule, such as the potential for air tour flights to be forced to fly at higher altitudes with reduced cloud clearances, thereby increasing the risk of inadvertent flight into IMC and the concentration of air tour traffic at the same altitude, increasing the risk midair collisions. As a result, we issued Safety Recommendation A-95-64 to recommend that

⁹ See <https://www.faa.gov/newsroom/statements/faa-outlines-hawaii-air-tour-safety-improvements>, accessed August 15, 2023.

¹⁰ See National Air Tour Safety Standards, a rule by the FAA, 72 *Federal Register (FR)* 6883, published February 13, 2007.

¹¹ See Air Tour Operators in the State of Hawaii, 49138 *FR*, Vol. 59, No. 185, published Monday, September 26, 1994.

the FAA “conduct meetings with interested parties in Hawaii to resolve the issues of optimum flight altitudes and stand-off distances.”¹²

In 1996, the FAA informed us that it had met with Hawaii air tour operators and had decided to authorize them to deviate from the 1,500-ft minimum altitude requirement.¹³ The process for obtaining a deviation authorization was subsequently documented in the HATCPM. The HATCPM defined “site-specific weather enhanced safety areas” and transition areas where tour operators could fly as low as 500 or 1,000 ft agl, respectively. This guidance also stated that operators were permitted to cross “razorback ridges” as low as 200 ft agl and that tour flights over land had to maintain a minimum visibility of 3 miles.

In our 2007 report on our investigation of a fatal 2004 air tour accident near Kalaheo, Hawaii, we considered the impact of the air tour rules imposed by SFAR 71 and noted that 36 percent of Hawaii air tour accidents (8 of 22) in the last decade involved adverse weather and that these accidents had accounted for 72 percent (31 of 43) of Hawaii air tour fatalities. The report contained numerous safety recommendations, including Safety Recommendation A-07-23, which urged the FAA to reevaluate the minimum altitude restrictions it had imposed to determine if they had resulted in an unintended degradation of safety with regard to weather-related accidents and fatalities.

In a 2008 response letter, the FAA stated that, in the 13 years before the implementation of SFAR 71 (1982-1994), the air tour and sightseeing industry in Hawaii experienced five weather-related accidents, with eight weather-related accidents in the 13 years following the SFAR (1995-2007).¹⁴ The FAA performed a case-by-case evaluation of the eight weather-related accidents that occurred after the implementation of SFAR 71 and concluded that minimum altitude requirements played no role in them and that the involved pilots had flown into areas of deteriorating weather for other reasons.

We note that the FAA’s review also found no evidence that minimum altitude requirements prevented such weather-related accidents. Instead, the FAA’s analysis seemed to suggest that minimum altitude requirements reduced other types of accidents—those involving such problems as loss of engine power, ingestion of volcanic gases, inadequate climb performance, loss of tail rotor effectiveness, settling with power, and collision with powerlines. In our view, this emphasizes the importance of other strategies for preventing weather-related air tour accidents in Hawaii, such as

¹² See our special investigation report, *Safety of the Air Tour Industry in the United States*, [SIR-95/01](#). Washington, DC: NTSB, 1995.

¹³ See [letter](#) from the FAA administrator to the chair of the NTSB, July 8, 1996, in response to Safety Recommendation A-95-64.

¹⁴ See [letter](#) from the FAA acting administrator to the chair of the NTSB, December 2, 2008, in response to Safety Recommendation A-07-63.

the recommendations we offered in our 2007 and 2022 accident reports, none of which are directly addressed by the draft AC.

Positive Aspects of the AC

The NTSB's concerns notwithstanding, there are several inclusions in the draft AC that were not present in the HATCPM that we believe will raise the bar for the safety of air tours in Hawaii. These include:

- A provision stating that operators should present to the FAA copies of certain pilot training courseware.
- A provision stating that, in the event a pilot has to deviate from an operator's accepted operating procedures or regulatory requirements, the pilot should report the deviation event to the chief pilot or designated supervisor within 24 hours.
- A statement indicating that, before departure on each individual commercial air tour flight, and in addition to any other regulatory requirement, when weather conditions are marginal or available weather information is minimal prior to departure, pilots should obtain updated weather information while en route.
- A recommendation that operators equip their aircraft with instrumentation as required by 14 *CFR* 91.205(d), instruments and equipment capable of conducting at least one instrument approach procedure, and an operable ADS-B In and Out system.
- A provision stating that operators should include in their procedures and training the procedures to be followed when unforecasted weather below the allowable minimums is encountered.
- A provision stating that operators should establish communication procedures and actions to be taken by the pilot that explain the manner in which the flight may be continued in the event that there is a need to operate at an altitude below 1,500 ft above the surface to avoid entering IMC. The AC states that the communication procedures should include area of flight, call sign, position (using cardinal directions), altitude, and intentions.
- Provisions stating that pilot training for autorotation, hover autorotation, and inadvertent IMC encounters should be conducted in the specific aircraft that is to be used during tours.
- A recommendation that operators have established position reports, as outlined in each of their specific island and operator-designed known

site-specific areas (KSSAs), including procedures for entering, transiting, or exiting a KSSA.

- A reminder that when potentially hazardous meteorological conditions are encountered, reporting those conditions in accordance with 14 *CFR* 135.67 is mandatory.
- A provision stating that an operator's new hire, initial, and recurrent pilot training should include training on ditching procedures appropriate to equipment being operated.

The NTSB thanks the FAA for the opportunity to comment on draft AC 136-B048. We commend the FAA for the improvements recognized in this letter, and we look forward to seeing additional improvements in the future, including responsive action to our safety recommendations pertaining to the safety of air tours in Hawaii.

Sincerely,

[original signed]

Jennifer Homendy
Chair