December 27, 2019

Luke Collison, Principal Operations Inspector
Denver Flight Standards District Office, NM03
26805 E. 68th Avenue, Suite 200
Denver, CO 80249

Re: Wind River Air, LLC
14 CFR Part 91 Operations

Dear Mr. Collison:

Wind River Air, LLC ("WRA") has filed an application with the Jackson Hole Airport Board for a non-tenant agreement authorizing it to use the Jackson Hole Airport as a base of operations for its proposed scenic air tour operations utilizing a Robinson 44 – Raven II aircraft. The Airport is located at 6,451 feet above MSL, and entirely within Grand Teton National Park. Because of exemptions in the National Parks Air Tour Management Act for landings and taking-offs, scenic tour operations may be conducted from the Airport, but must otherwise comply with that Act. Since most of the low-lying areas of the valley are in the National Park, the proposed operations would be over high, mountainous terrain located in national forests and wilderness areas.

By letter of August 29, 2018, the Denver Flight Standards District Office issued WRA a Letter of Authorization enclosing Operations Specifications paragraphs, to conduct scenic tour operations. The Letter of Authorization states that WRA's principal base of operations is located at 690 Cache Creek Drive, Jackson, Wyoming 83001. This is a residential address. We understand that if an agreement is entered into with the Airport Board as WRA requests, its actual flight operations will be conducted on and from the Airport.

The Letter of Authorization provide that any change in the aircraft base of operations will not preclude a new inspection. Moreover, 14 CFR Section 119.51 authorizes FAA to unilaterally amend operations specifications when it determines that safety in air transportation and the public interest necessitates such an amendment.

On or about December 9, 2019, a Teton County resident, Joe Albright, wrote to the FAA Administrator and the Chairman of the National Transportation Safety Board raising issues with operation of the Robinson R44 aircraft at high altitudes, such as those surrounding the Jackson Hole Airport. A copy of Mr. Albright's letter is attached for your information. Mr. Albright raised similar safety concerns when scenic tour operations with helicopters were proposed in 2000, and his letter was forwarded to Flight Standards by FAA's Assistant General Counsel for evaluation. His 2000 request for a safety evaluation was supported by both the Town of Jackson and County of Teton, but to the best of our knowledge no response was ever received by Mr. Albright.

JACKSON HOLE AIRPORT
P.O. Box 159 • Jackson, WY 83001 • 307.733.7695 • Fax: 307.733.9270
James P. Elwood, AAE, Executive Director

As Mr. Albright's current letter points out, the routes proposed by WRA would originate at 6,451 feet above MSL, and overfly mountainous terrain between 8,000 and 9,200 feet MSL. At these altitudes, the R44's normally aspirated engine would develop only between 76.2 and 73.5% of the horsepower it would produce at sea level. According to Robinson Aircraft's online data, the hover ceiling OGE of this aircraft is only 7,500 feet at 2300 LB, and its hover ceiling IGE is only 8,950 feet at 2500 LB. This would appear to give this aircraft very little, if any, margin of safety for commercial scenic tour operations based at the Airport and over the proposed routes.

The Airport Board shares FAA's commitment to ensuring the safety of aircraft operations, particularly when those operations involve the provision of aeronautical activities to the general public. Based on the above and the enclosed the Airport Board therefore respectfully requests that the Denver Flight Standards Office review the Letter of Authorization issued to WRA pursuant to 14 CFR Section 119.51, to take into consideration that such operations will be conducted from the Jackson Hole Airport and are proposed to fly over these high elevations.

Sincerely,

JACKSON HOLE AIRPORT BOARD

By: Rick Braun
Rick Braun, President

cc: Wind River Air, LLC
Joe Albright
Enclosure

JACKSON HOLE AIRPORT
P.O. Box 159 • Jackson, WY 83001 • 307.733.7695 • Fax: 307.733.9270
Jim Elwood, A.A.E., Airport Director

COPY FOR
RICK BRAUN

December 9, 2019

Mr. Steve Dickson
Administrator (AOA)
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Mr. Robert Sumwalt
Chairman
National Transportation Safety Board
490 L'Enfant Plaza, SW
Washington, DC 20594

Re: Application by Wind River Air to start scenic helicopter tours in Jackson Hole, Wyoming

Dear Mr. Administrator and Mr. Chairman:

You are the guardian of our nation's aviation safety. I feel it is my duty to warn you that it could be extraordinarily risky to allow scenic helicopter tours to fly out of Jackson Hole Airport over jagged mountainous terrain on a route that appears to reach an altitude higher than 9000 feet MSL – especially in a Robinson R44 helicopter.

My name is Joe Albright. I am a resident of Jackson Hole, Wyoming and a co-owner of the Flat Creek Ranch, a dude ranch located 12 miles east-southeast of the Jackson Hole Airport. I am also a retired journalist who spent approximately a decade of my career as an investigative reporter based in Washington DC. In the year 2000, I opposed a previous proposal for scenic helicopter tours that were planned to fly over our historic ranch. Now in 2019, I have no NIMBY stake in whether Wind River Air is allowed to fly this potentially hazardous route. The owner of Wind River Air, Mr. Anthony "Tony" Chambers, has assured me that his proposed air tour route would not go over or near our ranch.[1]

Nevertheless, I call on the FAA and NTSB to take an urgent new look at the safety implications of the proposal by Wind River Air. Such an inquiry is necessary to protect the flying public and this community from what could be the 37th fatal U.S. scenic helicopter tour crash in the last three decades. My research in the NTSB database has found that 125 men, women and children have died in the previous 36 scenic helicopter crashes in Hawaii, the Grand Canyon and elsewhere.[2] Please, please don't let it happen again here.

At my suggestion, the applicant Mr. Chambers, has reviewed a draft of this letter and offered the following in response: "As for the Air Tour Industry in general - 36 accidents and 125 fatalities over the past 30 years is in my opinion not a bad accident rate at all. I am

[1] Discussion among Mr. Anthony Chambers (the owner of Wind River Air), Joe Albright and Marcia Kunstel, E'leavan Restaurant, Jackson WY, October 15, 2019.

[2] Between 1991-2000, the NTSB database details 16 fatal helicopter scenic tour crashes with 51 fatalities. From 2001-October 2019, the NTSB database describes another 20 fatal helicopter scenic tour crashes with 74 fatalities. For the 1991-2000 data, see "Safety Risks and Environmental Perils of Scenic Helicopter Tours in Teton County Wyoming (April 2001 – in FAA archives), page 10. For the 2001-2019 data, see Appendix 1 of this document.

researching how many passengers the Air Tour Industry has safely carried over those 30 years - I am guessing it in the millions. I personally feel it is more dangerous to travel I-80 between Rock Springs and Cheyenne in an automobile."[3]

In my view, helicopters are a relatively safe form of travel for many applications. They play a central role in the well-being of our community, from medivac missions to search-and-rescue flights to helicopter skiing in specified areas. I have nothing against helicopters. Before I retired as a journalist, I rode on occasion on US Army Blackhawks and Chinooks and even a couple of aging Russian military helicopters. The truth is I like flying in helicopters.

Yet I am convinced by the facts that Jackson Hole is one of the least appropriate places in our country for high-elevation helicopter scenic tours – especially in a Robinson R44 helicopter. The aviation safety case against helicopter tourism over the forested mountains around Jackson Hole is powerful enough to demand a fresh and thorough inquiry -- without even considering noise, wildlife and the potential for devastating wildfire in case of an accident.

What especially worries me about this new proposal by Wind River Air is that the helicopter to be used in these high elevation scenic tours is a Robinson R44.[4] Let me try to explain why I believe that it would be unsafe to allow this proposal to go forward.

The Robinson R44 is the world's best-selling civilian helicopter. In large part that is +because it costs only about $400,000 to buy a new one, compared to several million dollars for high-end civilian helicopters. The Robinson R44 is widely used by flight schools, low-altitude scenic tour operators and police departments. However, it is not among the helicopter models powered by more powerful turbine engines that are typically used for high elevation search-and-rescue missions, fire-fighting or helicopter skiing.

As the FAA knows, the Robinson R44 is powered by a "normally aspirated engine" called the Lycoming IO-540. A "normally aspirated engine" is defined in Wikipedia as "an internal combustion engine in which oxygen intake depends solely on atmospheric pressure and does not rely on forced induction through a turbocharger or a supercharger."[5] A recent FAA safety publication on the FAA website provides a concise warning to pilots of what happens when an aircraft with this type of engine flies over high elevation terrain: "Normally

---

[3] Email from Mr. Tony Chambers to Joe Albright, December 7, 2019. See Appendix 3 for the full December 6-7 2019 email exchange between Joe Albright and Mr. Chambers.

[4] Mr. Tony Chambers said he planned to use a Robinson R44 in a discussion with my wife and me on October 15, 2019. The Jackson Hole News and Guide also reported that he plans to use a Robinson 44. See also https://www.jhnewsandguide.com/news/environmental/whirlybird-tours-fly-back-onto-jackson-hole-radar/article_49176613-4e31-51fa-b7a1-8480ba58333a.html

[5] https://en.wikipedia.org/wiki/Naturally_aspirated_engine

aspirated engines develop approximately three-percent less power for each thousand feet above sea level."[6]

Flying over the high country surrounding Jackson Hole is challenging for all helicopters, even those with turbocharged or supercharged engines. You know the reason: the air gets thinner as altitude increases. Helicopters get their lift by whirling their rotors through the air. And as the air gets thinner, the rotors get less lift.[7] The FAA, the NTSB and aviation safety experts around the world use a concept called "density altitude" to determine whether a given helicopter can safely fly a given route on a given day. The density altitude is calculated through complex formulas that take into account the weight of the payload, the altitude above mean sea level (MSL), air temperature, humidity and barometric pressure.[8] As the FAA's recent safety publication explained to pilots, "Density altitude is the pressure altitude corrected for temperature. The important take-away for a pilot here is that density altitude is an indicator of aircraft performance. . . . A 'high' density altitude means that air density is reduced, which has an adverse impact on aircraft performance."[9]

The scenic helicopter route outlined in Wind River Air's draft application cannot avoid subjecting the R-44 and its passengers to "high density altitude" conditions on many, if not all, warm summer days. It is clear from a proposed route map shown to me by applicant Chambers that he would like to provide a spectacular view of the Tetons without overflying the prohibited lower-altitude airspace above Grand Teton National Park.[10] To do so, Mr. Chambers has planned out a route of flight that runs approximately 10 miles east from the Jackson Hole Airport across the National Elk Refuge and then turns northeast for approximately 10 miles above the Gros Ventre National Wilderness. He would then fly a U-turn and return to the airport following approximately the same route. (On page 4 of this letter, I have included a version of his route map that was published in the Jackson Hole News and Guide on October 30, 2019.[11])

---

[6] "Fly Safe: Prevent Loss of Control Accidents", February 15, 2019, https://www.faa.gov/news/updates/?newsId=93049

[7] See https://www.grc.nasa.gov/WWW/K-12/airplane/lift1.html

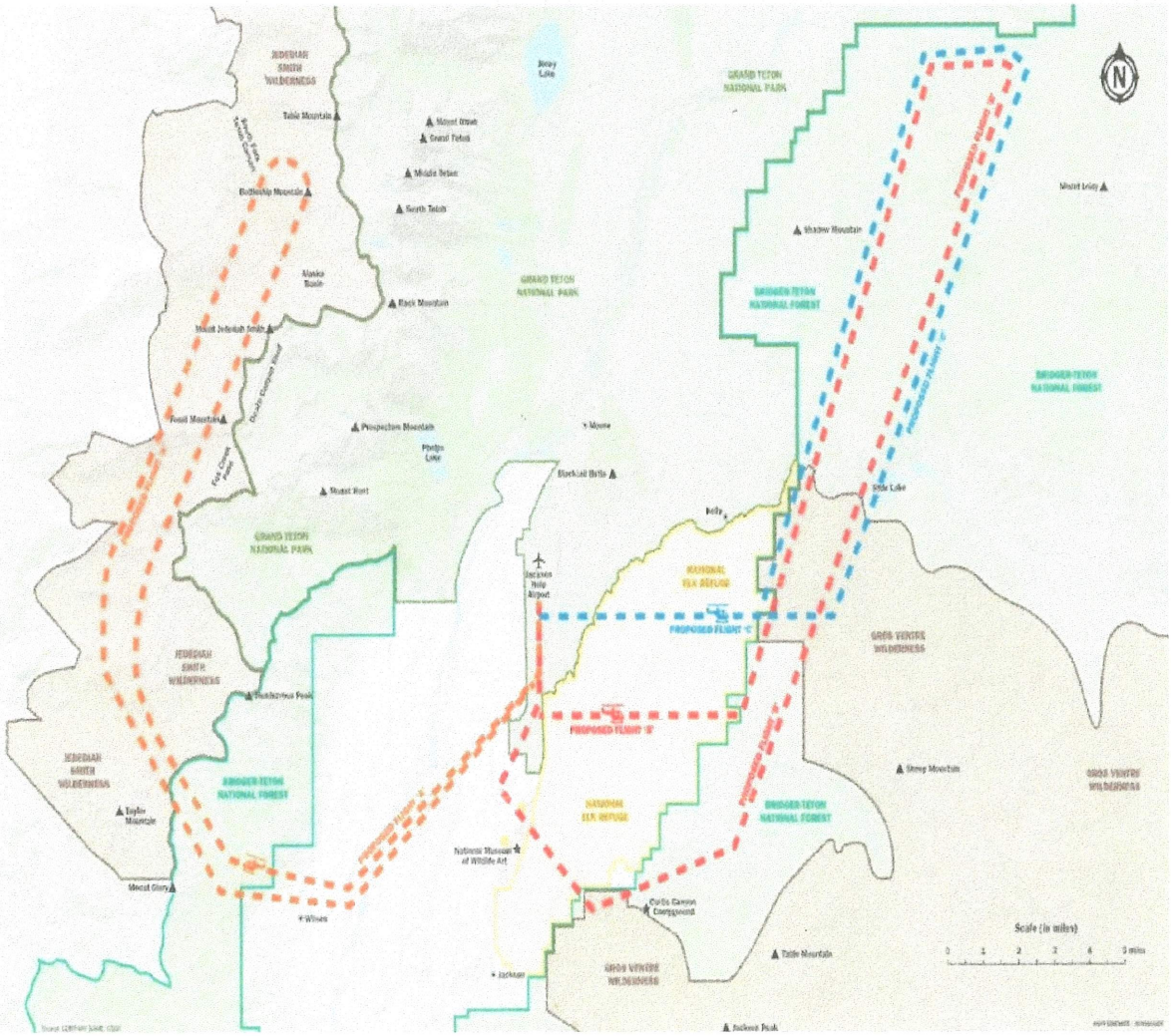
[8] See details in the FAA's helicopter flying manual at https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/helicopter_flying_handbook/media/hfh_ch07.pdf

[9] "Fly Safe: Prevent Loss of Control Accidents", February 15, 2019, https://www.faa.gov/news/updates/?newsId=93049

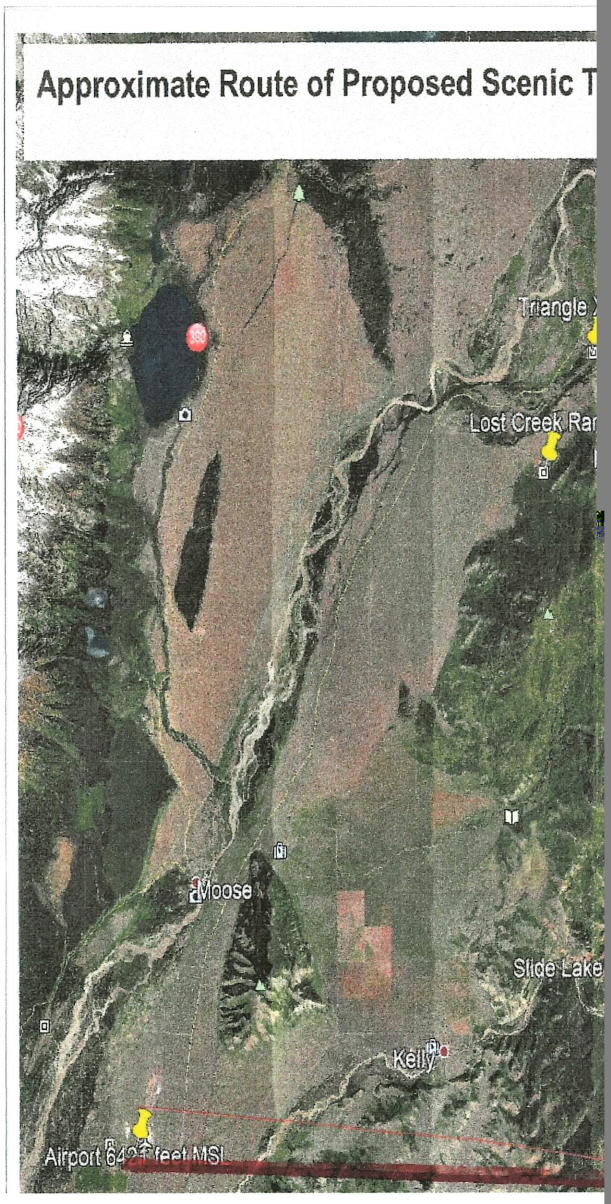
[10] Discussion among Mr. Anthony Chambers (the owner of Wind River Air), Joe Albright and Marcia Kunstel, E'Leavan Restaurant, Jackson WY, October 15, 2019.

[11] Jackson Hole News and Guide, October 30, 2019, https://www.jhnewsandguide.com/news/environmental/whirlybird-tours-fly-back-onto-jackson-hole-radar/article_49176613-4e31-51fa-b7a1-8480ba58333a.html

I have plotted the approximate route shown in the applicant's route map onto Google Earth. The elevation profile feature of Google Earth has made it possible for me to estimate that after taking off at 6,200 feet MSL from the Jackson Hole Airport, Mr. Chambers intends to fly his Robinson R44 over rough mountainous terrain reaching between 8,000 and 9,200 feet MSL. At full throttle at altitudes between 8,000 and 9,000 feet MSL, the R44's "normally aspirated engine" will be developing only between 76.2 and 73.5 5 percent of the horsepower it would produce at sea level, according to the engine's operating manual.[12] (On page 5 of this letter, I have included the approximate route I plotted out on Google Earth.)



[12] https://www.lycoming.com/sites/default/files/O%20%26%20IO-540%20Oper%20Manual%2060297-10.pdf . These Lycoming horsepower figures agree with the estimates in the FAA's online document "Fly Safe: Prevent Loss of Control Accidents", February 16, 2019. https://www.faa.gov/news/updates/?newsId=93049



On December 7, 2019, Mr. Chamber
shown on page 4 and 5 of this letter: "In reg
important to note that is not my map includ
Board. The map published in the paper was
News and Guide must have created. I canno
changes were made." I accept Mr. Chamber
the Jackson Hole News and Guide, even tho
application which Mr. Chambers showed m
also note that the December 7, 2018 email fr
that his route of flight would cover mountai

The proposed route shown on pages 4 and 5 of this letter would reach or exceed density altitude levels at which the Robinson R44 has shown itself vulnerable to accidents. My recent research in the NTSB database found that in at least 16 Robinson R44 crashes over the last 15 years, the pilots were unable to overcome elevated levels of density altitude such as that which all aircraft must regularly encounter over the high country of Teton County. Specifically, I found that in those 16 instances the NTSB determined that high density altitude was a contributing factor in the accident. Four people died and 13 were injured in those 16 crashes in various parts of the country including Douglas WY, Golden CO and Flagstaff AZ.[13]

High density altitude was not just a potential trap for Robinson R44 pilots with little experience. Of these 16 Robinson R44 density altitude-related accidents, seven were flown by pilots with FAA Certified Flight Instructor (Helicopter) certificates, according to the NTSB database.[14] An eighth had a Certified Fight Instructor (Helicopter) in the co-pilot's seat.

The Robinson R44's challenges with high density altitude is acknowledged by some of the helicopter's most enthusiastic pilot-owners. Philip Greenspun has written this caveat in his long, detailed and generally laudatory review of the Robinson R44: "Many R44 accidents have happened at high density altitude. Unlike a turbine ship, the R44's normally aspirated engine loses power as the air gets thinner. Yet the blades actually need more power to generate lift in thin air."[15]

In his December 7, 2019 email to me, Mr. Chambers responded to the above statistics on high density altitude-related Robinson R44 accidents by emphasizing his personal commitment to safety: "On the topic of the R44 I will agree it has been involved in plenty of accidents. This is however in my opinion a direct correlation to the fact that it is the best selling helicopter in the world, so many private owners with little experience purchase the R44 and are involved in accidents. The other large user of the R44 is the training sector which by nature involves low experience pilots trying very difficult maneuvers which often times leads to accidents."

"The important thing here," Mr. Chambers continued, "is I am keenly aware of the R44's limitations (which I will strongly agree it does have, just like all helicopters). Because of these limitations I always operate the R44 with a significant safely margin, and carefully track with each flight weight and balance, how far under max gross weight, density altitude among many other things. Safety is my highest priority."

---

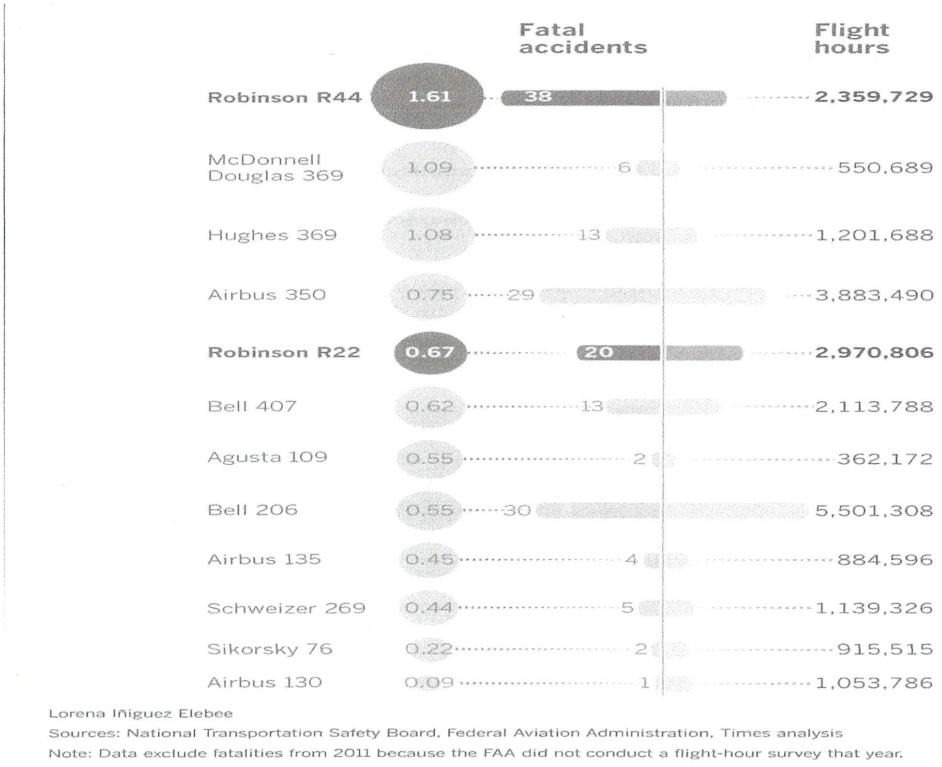
[13] See Appendix 2 for details about the 16 crashes. The number of high density altitude-related accidents could increase as the NTSB completes ongoing accident investigations. The NTSB typically takes several years to reach its final judgment on the causes of aviation accidents.

[14] See Appendix 2.

[15] https://philip.greenspun.com/flying/robinson-r44

The FAA has been aware for a long time that the Robinson R44 presents unusual problems in flying even at low altitudes above MSL. In March 1995, after an FAA investigation of a series of accidents involving student pilots, the FAA took the unusual step of issuing Special Federal Aviation Regulation (SFAR) Number 73. It was a federal order that applied to only one helicopter manufacturer, the maker of the Robinson R44 and its lighter variant known as the Robinson R22. SFAR 73 was a 1,700-word document mandating a specific "awareness" training and experience – not just for student pilots but also for all certified flight instructors and all pilots in command of Robinson R44s and R22s.

This FAA order, which remains in effect a quarter-century later, has significantly reduced the accident rate among student pilots flying the R44 and R22, according to the FAA. But by no means have R44 accidents ended. According to a 2018 Los Angeles Times analysis of data from the NTSB database, "Robinson R44s were involved in 42 fatal crashes in the United States from 2006 to 2016, more than any other civilian helicopter."[16] Here is a chart published by the LA Times indicating that during those years, the Robinson R44 experienced more fatal accidents per 100,000 flight hours than any other civilian helicopter.



Lorena Iñiguez Elebee
Sources: National Transportation Safety Board, Federal Aviation Administration, Times analysis
Note: Data exclude fatalities from 2011 because the FAA did not conduct a flight-hour survey that year.

[16] See https://www.latimes.com/projects/la-me-robinson-helicopters/ The president of the Robinson company, Kurt Robinson, contested the Times' accident-rate ranking. He said the FAA flight-hour totals used to calculate the accident rate are a "guestimate." However, the FAA "rejected that claim," according to the LA Times report.

Density altitude is not the only issue for the Robinson R44. Another pattern that emerges from the NTSB database is that lower-altitude helicopter sightseeing tours using Robinson R44 helicopters are all too frequently involved with fatal crashes – even when density altitude is not a factor. My research found that in the last three decades, eleven people perished in four Robinson R44 sightseeing flights in the United States where density altitude was not found to be a contributing cause.[17] Three of these fatal accidents happened within the last six years.[18]

The country's most recent fatal crash involving any model of scenic tour helicopter happened on April 29, 2019 when a Robinson R44 broke apart in flight and fell into a residential neighborhood in Kailua, Hawaii. The two passengers were killed and so was the pilot.

This is the chilling description the NTSB gave in its preliminary report on the accident:

"Witnesses reported that they heard the helicopter overhead but didn't look until they heard an odd noise followed by a loud metallic bang. They subsequently observed the helicopter in a nose low attitude descending rapidly; none of the rotor blades were moving and the helicopter appeared to be descending vertically with little forward motion. Witnesses reported observing pieces falling from the helicopter which included: a piece of the main rotor blade, plexiglass, pieces of airframe, and a fuel tank. The helicopter impacted the street and a post-crash fire ensued."[19]

The NTSB has not yet reached a conclusion on what caused this troubling Robinson R44 crash in Hawaii. That means that our local and regional aviation safety authorities are somewhat in the dark about the cause of this unexplained event. Naturally they can't be sure whether it might have safety implications for scenic helicopter tours in Jackson Hole using the same make and model of helicopter.

In light of all these findings, I am asking the FAA and NTSB to take a fresh look at the potential hazards of high-elevation helicopter sightseeing tours in Jackson Hole – especially in Robinson R44s.

---

[17] See Appendix 1.

[18] Not included in this list of sightseeing accidents is the October 23, 2019 crash of a Robinson R44 helicopter in which two people died inside the Red Rocks Canyon National Conservation Area near Las Vegas, NV. A preliminary NTSB report listed this as a personal flight. The owner of the company that owned the helicopter was quoted by the Las Vegas Review-Journal as calling it a "leisure flight". https://www.reviewjournal.com/local/local-las-vegas/man-killed-in-helicopter-crash-at-red-rock-was-commercial-pilot-1877352/

[19] See https://app.ntsb.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20190429X61624&AKey=1&RType=Prelim&IType=FA

Mr. Chambers has informed me that the FAA issued him a Letter of Authorization on August 27, 2018 under FAR 92.147 to operate helicopter scenic rides with a R-44 helicopter out of Jackson Hole Airport.[20] Among the questions worth pursuing is whether the FAA's Denver Flight Standards District Office was fully aware that Mr. Chambers plans to fly scenic tours at 8000-9200 feet MSL in a helicopter which even the he agrees "has been involved in plenty of accidents."[21]

I feel that as a proud citizen of this country, I have grounds to appeal to you to reconsider this Letter of Authorization because of the FAA's own mission statement, as published on the FAA website on November 6, 2019:

"Safety: The Foundation of Everything We Do. At FAA, what drives us – through everything we do – is our mission to provide the safest, most efficient aerospace system in the world. We continually strive to improve the safety and efficiency of flight in this country."[22]

I thank you for your consideration.

Sincerely,

Joe Albright
PO Box 9760
Jackson, WY 83002
joe@flatcreekranch.com
Cell: 307-730-0403

Copies to:
Mr. Anthony "Tony" Chambers, owner of Wind River Air
Mr. Ali Bahrami, Associate FAA Administrator for Aviation Safety, Washington DC
Mr. Jay Hiles, Manager, FAA Denver Flight Standards District Office
Members of Jackson Town Council
Members of Teton County Commission
Members of Jackson Hole Airport Board
Mr. Jim Elwood, manager of Jackson Hole Airport
Jackson Hole News and Guide
Jackson Hole Conservation Alliance

---

[20] See Appendix 3 for December 7, 2019 email from Mr. Tony Chambers to Joe Albright.
[21] See Appendix 3 for December 7, 2019 email from Mr. Tony Chambers to Joe Albright.

[22] https://www.faa.gov/about/safety_efficiency/

Appendix 1 - Fatal accidents during Helicopter Sightseeing Flights - 2001-2019

Event Date	Event Place	Make and Model of Helicopter	NTSB case	Fatalities	Probable Cause(s)
4/29/2019	Kailua, HI	ROBINSON R44	WPR19FA123	3	Preliminary report does not say what caused the accident
3/11/2018	Flushing, NY	Airbus Helicopters	ERA18MA099	5	Preliminary report does not say what caused the accident
2/10/2018	Peach Springs, AZ	EUROCOPTER EC130	WPR18FA087	3	No final NTSB report. According to the Kreindler law firm which has followed the case, "the pilot pointed out to the passengers the location of the famous scene from the Thelma and Louise movie in which the characters drive a car off a cliff. He asked the passengers if they wanted to see what it was like to drive a car off a cliff, then flew the helicopter over the ground and rapidly down into the canyon. Ultimately, The NTSB found that the pilot had lost control of the fully loaded helicopter while flying too close to dangerous terrain. Preliminary report does not say what caused the accident."
4/4/2016	Pigeon Forge, TN	BELL 206	ERA16FA144	5	The National Transportation Safety Board determines that the probable cause(s) of this accident as follows: An inflight loss of engine power due to a failure of the engine fuel pump, which resulted in a collision with trees and terrain during the subsequent autorotation. The failure of the engine fuel pump resulted from the absence of adequate grease leading to accelerated spline wear within the fuel pump.
9/27/2013	Bloomsburg, PA	ENSTROM F-28C	ERA13LA433	1	The pilot/owner had just taken control of the helicopter from another pilot. As the relieved pilot was walking away from the helicopter and between the 10- and 11-o'clock position forward of the helicopter, he came into contact with a rotating main rotor blade. The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The relieved pilot's failure to maintain clearance from the rotating main rotor blades after he exited the helicopter.
8/31/2013	Caballo, NM	ROBINSON R44 II	CEN13FA517	3	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to see and avoid power lines while maneuvering near the ground because dust stirred up by the rotor wash obscured his visibility.

Appendix 1 - Fatal accidents during Helicopter Sightseeing Flights - 2001-2019

Event Date	Event Place	Make and Model of Helicopter	NTSB case	Fatalities	Probable Cause(s)
5/24/2013	Cross Timbers, MO	ROBINSON HELICOPTER COMPANY R44 II	CEN13FA295	2	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to see and avoid a power line during the low-altitude flight.
12/7/2011	Las Vegas, NV	EUROCOPTER FRANCE AS350B2	DCA12MA020	5	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: Sundance Helicopters' inadequate maintenance of the helicopter, including (1) the improper reuse of a degraded self-locking nut, (2) the improper or lack of installation of a split pin, and (3) inadequate postmaintenance inspections, which resulted in the in-flight separation of the servo control input rod from the fore/aft servo and rendered the helicopter uncontrollable. Contributing to the improper or lack of installation of the split pin was the mechanic's fatigue and the lack of clearly delineated maintenance task steps to follow. Contributing to the inadequate postmaintenance inspection was the inspector's fatigue and the lack of clearly delineated inspection steps to follow.
11/10/2011	Pukoo, HI	EUROCOPTER EC 130 B4	WPR12MA034	5	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to maintain clearance from mountainous terrain while operating in marginal weather conditions, which resulted in the impact of the horizontal stabilizer and lower forward portion of the fenestron with ground and/or vegetation and led to the separation of the fenestron and the pilot's subsequent inability to maintain control. Contributing to the accident was the pilot's decision to operate into an area surrounded by rising terrain, low and possibly descending cloud bases, rain showers, and high wind.
10/4/2011	New York, NY	BELL 206B	ERA12MA005	2	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to anticipate and correct for conditions (high gross weight, low indicated airspeed, and a right downwind turn) conducive to loss of tail rotor effectiveness (LTE), which resulted in LTE and an uncontrolled spin. Contributing to the accident was the pilot's inadequate preflight planning, which resulted in the helicopter being in excess of its maximum allowable gross weight at takeoff.

Appendix 1 - Fatal accidents during Helicopter Sightseeing Flights - 2001-2019

Event Date	Event Place	Make and Model of Helicopter	NTSB case	Fatalities	Probable Cause(s)
3/11/2007	Haena, HI	McDonnell Douglas 369FF	CHI07MA083	1	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The fatigue failure of the tail rotor blade root fitting due to a manufacturing defect which resulted in the separation of the tail rotor system and loss of tail rotor control. A contributing factor to the accident were the trees that the helicopter struck during the autorotation.
3/8/2007	Princeville, HI	AEROSPATIALE AS350BA	NYC07MA073	4	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The failure of maintenance personnel to properly tighten (torque) the flight control servo lower attachment clevis, and reinstall a functioning lock washer, which resulted in a flight control disconnect and a complete loss of helicopter control. Contributing to the accident was the operator's failure to ensure its maintenance program was being executed in accordance with Federal regulations.
9/24/2005	Drummond, WI	Robinson R44	CHI05FA274	3	The National Transportation Safety Board determines the probable cause(s) of this accident to be: Clearance not obtained/maintained by the pilot during an unknown phase of flight. Contributing factors were the improper use of procedures by the pilot, the inadequate surveillance of the operation by company/management, and the wire. (The helicopter collided with a power line while giving rides during a Fall Festival in Wisconsin.)
9/23/2005	Haena, HI	AEROSPATIALE AS350BA	SEA05MA199	3	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's decision to continue flight into adverse weather conditions, which resulted in a loss of control due to an encounter with a microburst. Contributing to the accident was inadequate Federal Aviation Administration surveillance of Special Federal Aviation Regulation 71 operating restrictions. Contributing to the loss of life in the accident was the lack of helicopter flotation equipment.

Appendix 1 - Fatal accidents during Helicopter Sightseeing Flights - 2001-2019

Event Date	Event Place	Make and Model of Helicopter	NTSB case	Fatalities	Probable Cause(s)
9/24/2004	Kalaheo, HI	Bell 206B	LAX04FA329	5	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's decision to continue flight under visual flight rules into an area of turbulent, reduced visibility weather conditions, which resulted in the pilot's spatial disorientation and loss of control of the helicopter. Contributing to this accident was the pilot's inexperience in assessing local weather conditions, inadequate Federal Aviation Administration surveillance of Special Federal Aviation Regulation 71 operating restrictions, and the operator's pilot-scheduling practices that likely had an adverse impact on pilot decision-making and performance.
6/26/2004	Cushing, OK	Bell 206B	FTW04FA167	2	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: the pilot's inadequate in-flight planning/decision and his failure to maintain obstacle clearance. Contributing factors were low altitude flight, sun glare, and the static wires. (Helicopter hit a power line and crashed into a river.)
9/20/2003	GrandCanyonWest,	Aerospatiale AS350BA	LAX03MA292	7	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's disregard of safe flying procedures and misjudgment of the helicopter's proximity to terrain, which resulted in an in-flight collision with a canyon wall. Contributing to the accident was the failure of Sundance Helicopters and the Federal Aviation Administration to provide adequate surveillance of Sundance's air tour operations in Descent Canyon.
7/23/2003	Waialeale,Kauai, HI	Bell 206B	LAX03FA241	5	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to maintain adequate terrain clearance/altitude while descending over mountainous terrain, and his continued flight into adverse weather. Factors contributing to the accident were clouds and a low ceiling.

Appendix 1 - Fatal accidents during Helicopter Sightseeing Flights - 2001-2019

Event Date	Event Place	Make and Model of Helicopter	NTSB case	Fatalities	Probable Cause(s)
6/15/2003	Volcano, HI	McDonnell Douglas 369D	LAX03FA200	4	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: loss of engine power due to the fatigue fracture and separation of the compressor coupling adapter. The fatigue fracture was initiated by fretting on the pilot diameter due to both the inadequate design of the coupling and the coaxial misalignment of the spur adapter gear, compressor-coupling adapter, and compressor impeller during recent engine maintenance where the gearbox was removed and replaced. A factor in the accident was the unsuitable nature of the terrain to make an emergency landing.
8/10/2001	Meadview, AZ	Eurocopter AS350-B2	LAX01MA272	6	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: a loss of engine power due to the fatigue fracture and separation of the compressor coupling adapter. The fatigue fracture was initiated by fretting on the pilot diameter due to both the inadequate design of the coupling and the coaxial misalignment of the spur adapter gear, compressor-coupling adapter, and compressor impeller during recent engine maintenance where the gearbox was removed and replaced. A factor in the accident was the unsuitable nature of the terrain to make an emergency landing.

Appendix 2 - Robinson R44 accidents where "High Density Altitude" was a factor - 2001-2019

Event Date	Location	Pilot experience	Make/Model	NTSB Accident No.	Fatalities	Seriously Injured	Excerpts from NTSB accident reports
6/9/2017	Douglas, WY	Certified Flight Instructor (Helicopter) and Commercial Helicopter Pilot Certificates. 17457 hours total all aircraft, 4848 hours Robinson R44	ROBINSON HELICOPTER COMPANY R44 II	CEN17LA219		1	The National Transportation Safety Board determines the probable cause(s) of this accident as follows:The pilot's inability to control the helicopter's descent after encountering a sudden wind shift to a tailwind while performing a near maximum gross weight landing at a high density altitude.
12/29/2016	Mt. Baldy, CA	Certified flight instructor (Helicopter) and commercial pilot, 487 hours all aircrft, 300 hours in Robinson R44	ROBINSON HELICOPTER COMPANY R44 II	WPR17LA043		1	The helicopter was operating at the upper limit of its performance capabilities at the reported gross weight and calculated density altitude. Performance charts indicated that the helicopter would not have been able to hover at that altitude, and as such, a successful landing, while not impossible, would have been challenging.
8/28/2015	Cheyenne, WY	Commercial Helicopter Pilot Certificate. 2700 hours all aircraft, 100 hours total in Robinson R44	ROBINSON R44 II	CEN15LA387		3	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's improper preflight performance planning, which resulted in a hard landing due to low rotor rpm while operating near maximum gross weight in high density altitude conditions.
9/25/2013	Flagstaff, AZ	Helicopter Certified Flight Instructor. 1160 hours all aircraft, 607 hours in Robinson R44	ROBINSON R44 - II	WPR13CA424			The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to maintain rotor rpm while landing in a gusty wind at a high density altitude.

Appendix 2 - Robinson R44 accidents where "High Density Altitude" was a factor - 2001-2019

Event Date	Location	Pilot experience	Make/Model	NTSB Accident No.	Fatalities	Seriously Injured	Excerpts from NTSB accident reports
6/27/2013	Fielding, UT	Student pilot with 44 hours of flight time, all in Robinson R44.	ROBINSON HELICOPTER R44	WPR13LA295			The National Transportation Safety Board determines the probable cause(s) of this accident as follows:The pilot's failure to maintain rotor rpm while traversing a canyon in high-density altitude and gusting wind conditions.
6/9/2012	Santa Teresa, NI	Private pilot with 236 hours of flight time, all in Robinson R44. Crewmember in left seat was Certified Flight Instructor.	ROBINSON HELICOPTER COMPANY R44 II	CEN12LA359			The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The sudden decrease in headwind during takeoff in a gusty wind and near a passing train, which resulted in a loss of lift and main rotor rpm. Contributing to the accident was the pilot's decision to operate the helicopter near its maximum performance capability (near gross weight at high density altitude), which resulted in a lack of reserve power available to compensate for the wind change.
5/10/2012	Grants, NM	Pilot was rated as a Certified Flight Instructor and a commercial helicopter pilot.	ROBINSON HELICOPTER COMPANY R44 II	CEN12LA289			The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The loss of engine power due to an excessively rich fuel mixture that occurred during operations at idle power settings at a high density altitude. Contributing to the accident was the flight instructor's poor decision-making in choosing to practice an unnecessary autorotation over mountainous terrain.

Appendix 2 - Robinson R44 accidents where "High Density Altitude" was a factor - 2001-2019

Event Date	Location	Pilot experience	Make/Model	NTSB Accident No.	Fatalities	Seriously Injured	Excerpts from NTSB accident reports
5/8/2011	Golden, CO	Pilot was a Certified Flight Instructor and Commercial pilot. 1771 hours (Total, all aircraft), 1556 hours in Robinson R44.	ROBINSON HELICOPTER COMPANY R44 II	CEN11CA325			The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's decision to operate the helicopter at a high density altitude near terrain, which resulted in a settling with power condition.
9/16/2010	Mammoth, CA	Private pilot with estimated 275 hours in all types of aircraft.	ROBINSON HELICOPTER COMPANY R44 II	WPR10LA458		2	Density Altitude was above 11,000 feet. The NTSB quoted from a safety notice distributed by Robinson Helicopter: "Pilots should be aware of the potential for fuel system vapor in high ambient temperatures. Also, higher altitude increases the likelihood of fuel system vapor. An intermittent or flickering auxiliary fuel pump warning light may be an early indication of vapor formation. If vapor formation is suspected, decrease altitude and/or discontinue operations until cooler conditions exist."
9/27/2009	Mt Charleston, N	Pilot holds Airline Transport certificate with Helicopter rating. . 2578 hours (Total, all aircraft), 359 hours in Robinson R44.	ROBINSON HELICOPTER COMPANY R44 II	WPR09CA470			The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to maintain aircraft control and terrain clearance while maneuvering at a low altitude above high terrain. Contributing to the accident was a downdraft and high density altitude.

Appendix 2 - Robinson R44 accidents where "High Density Altitude" was a factor - 2001-2019

Event Date	Location	Pilot experience	Make/Model	NTSB Accident No.	Fatalities	Seriously Injured	Excerpts from NTSB accident reports
8/21/2009	Tonopah, NV	Private pilot. 4700 hours (Total, all aircraft), 840 hours in Robinson R44	ROBINSON R44	WPR09LA411		3	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's failure to maneuver the helicopter within its performance capabilities while at a low altitude in mountainous terrain and in high density altitude conditions.
2/1/2009	Bountiful, UT	Flight Instructor and Commercial Pilot certificates - 574 hours all aircraft, 101 hours Robinson R44	ROBINSON HELICOPTER COMPANY R44 II	WPR09CA105			The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to fly at low altitude while maneuvering in mountainous terrain in a canyon and inadvertently exceeding the climb capability of the helicopter. Contributing to the accident were a high density altitude, mountainous terrain, and a tailwind encountered during the attempted course reversal.
8/2/2007	Easton, WA	Flight instructor and Commercial Pilot certificates. 2122 hours all aircraft. Hours in this aircraft not listed in NTSB report	Robinson R44 II	SEA07FA223	4		The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The pilot's improper planning/decision in attempting a downwind takeoff under high density altitude conditions that resulted in a loss of control and impact with terrain. Contributing to the accident were the helicopter's gross weight in excess of the maximum hover out of ground effect limit, a high density altitude, and the gusty tailwind.

Appendix 2 - Robinson R44 accidents where "High Density Altitude" was a factor - 2001-2019

Event Date	Location	Pilot experience	Make/Model	NTSB Accident No.	Fatalities	Seriously Injured	Excerpts from NTSB accident reports
6/19/2005	Rayville, LA	Private pilot certificate - 597 hours all aircraft, 111 hours Robinson R44	Robinson R44	DFW05CA169			The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of control following an encounterwith loss of tail rotor effectiveness. A contributing factor was high density altitude.
5/28/2005	Lucerne Valley, (	Private pilot certificate - 1609 hours all aircraft, 50 hours Robinson R44	Robinson R44	LAX05FA189		3	The National Transportation Safety Board determines the probable cause(s) of this accident as follows: the pilot's failure to maintain adequate main rotor rpm and directional control while maneuvering at low altitude. Contributing factors in the accident were the helicopter's gross weight in excess of the maximum hover out of ground effect limit, a high density altitude, and the pilot's lack of overall experience with regard to low rpm and settling-with-power recovery techniques.
5/22/2005	Sedona, AZ	Private pilot certificate - 234 hours all aircraft, 162 hours Robinson R44	Robinson R44	LAX05CA185			The National Transportation Safety Board determines the probable cause(s) of this accident as follows: the pilot's improperly planned approach and misjudged distance/speed. A factor was the high density altitude.

Appendix 3 – Email from Mr. Tony Chambers to Joe Albright, December 7, 2019, in response to email from Joe Albright to Mr. Tony Chambers, December 6. 2019

From: Tony Chambers <email address deleted>
Date: Sat, 7 Dec 2019 07:03:15 -0700
Subject: Re: Draft letter to FAA
To: Joe Albright <email address deleted>

Joe,

Thank you for the neighborly curtesy of letting me see this before you pass it along. I commend your motivation on this issue!

I agree and disagree with many of your viewpoints, and I will briefly summarize them for you.

As for the Air Tour Industry in general - 36 accidents and 125 fatalities over the past 30 years is in my opinion not a bad accident rate at all. I am researching how many passengers the Air Tour Industry has safely carried over those 30 years - I am guessing it in in the millions.
I personally feel it is more dangerous to travel I80 between Rock Springs and Cheyenne in an automobile.
How does the helicopter accident rate per passenger carry compare to the airline industry?

In regards to the map you included in your letter it is important to note that is not my map included with my application to the JH Airport Board. The map published in the paper was a re creation of my map that the Jackson Hole News and Guide must have created. I cannot vouch for its accuracy, and significant changes were made.

On the topic of the R44 I will agree it has been involved in plenty of accidents. This is however in my opinion a direct correlation to the fact that it is the best selling helicopter in the world, so many private owners with little experience purchase the R44 and are involved in accidents. The other large user of the R44 is the training sector which by nature involves low experience pilots trying very difficult maneuvers which often times leads to accidents.
The important thing here is I am keenly aware of the R44's limitations (which I will strongly agree it does have, just like all helicopters). Because of these limitations I always operate the R44 with a significant safely margin, and carefully track with each flight weight and balance, how far under max gross weight, density altitude among many other things. Safety is my highest priority.

Finally and probably most significantly Joe is the fact that I applied to the Federal Aviation Administration for a Letter of Authorization under FAR 91.147 to operated Helicopter Scenic Rides with the R44 Raven II - out of the Jackson Hole Airport (KJAC) and received that approved Letter of Authorization from the FAA on 8/29/2018.
Hence the FAA has reviewed and approved my proposal. The Jackson Hole Airport Staff would have this LOA (Letter of Authorization) on file.

Again thank you for including me in your correspondence. I wish you were on my side!

Appendix 3 – Email from Mr. Tony Chambers to Joe Albright, December 7, 2019, in response to email from Joe Albright to Mr. Tony Chambers, December 6. 2019

On Fri, Dec 6, 2019 at 5:30 PM Joe Albright <email address deleted>

Dear Tony -

As a courtesy to a Jackson neighbor, I am sending you a draft of a letter I'm planning to send to the FAA about your proposed scenic tour route. We obviously disagree about the risks of these proposed flights. I wanted to disagree with you without being disagreeable.

Please feel free to send me your thoughts about any misconceptions or errors in my presentation. I'm planning to send the letter as early as Monday. I'll make any needed corrections if I hear back from you by email before Monday morning.

All best, Joe
