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

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[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

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[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])

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[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

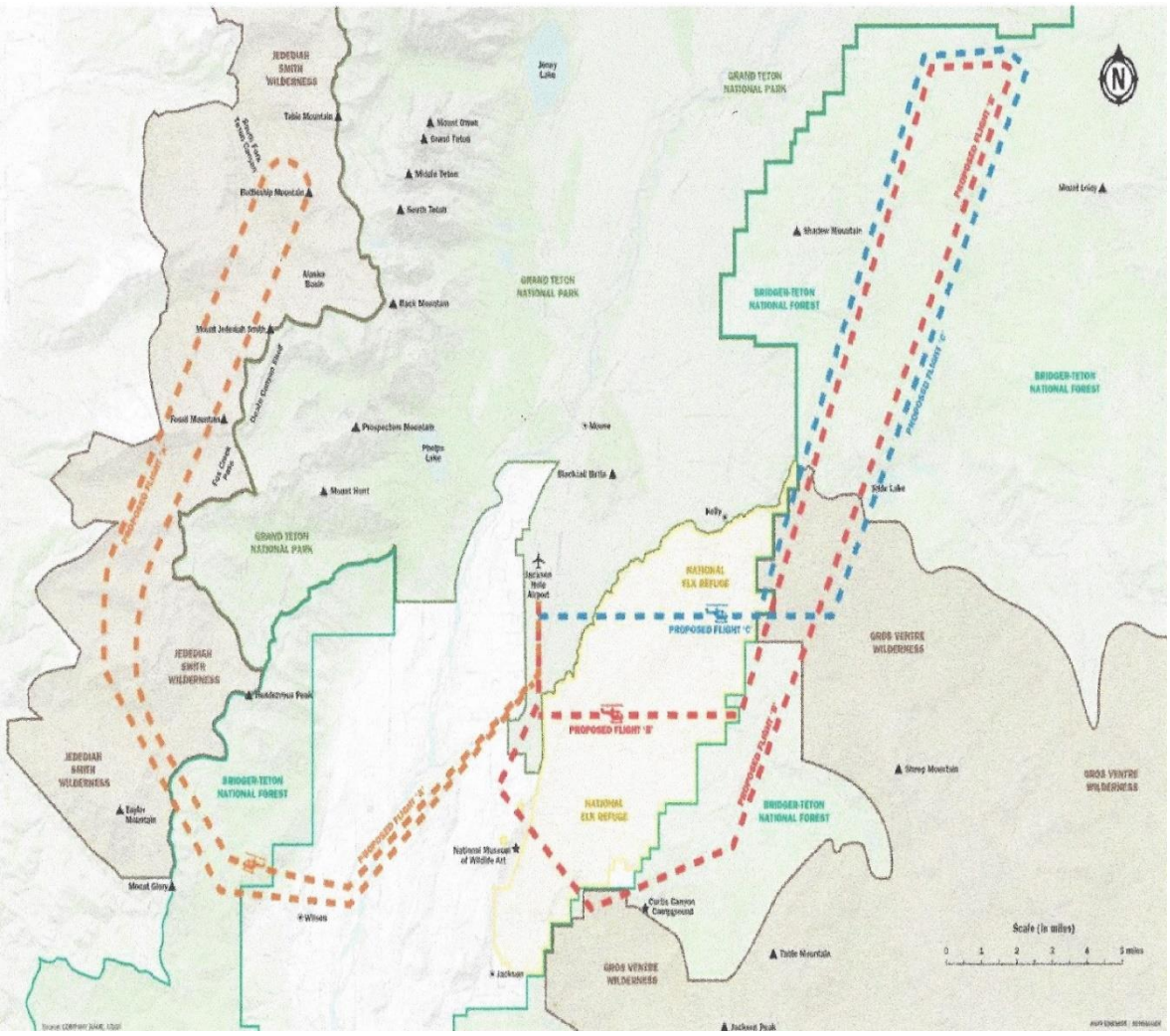
[8] See details in the FAA's helicopter flying manual at https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/helicopter_flying_handbook/media/hfh_ch07.pdf

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

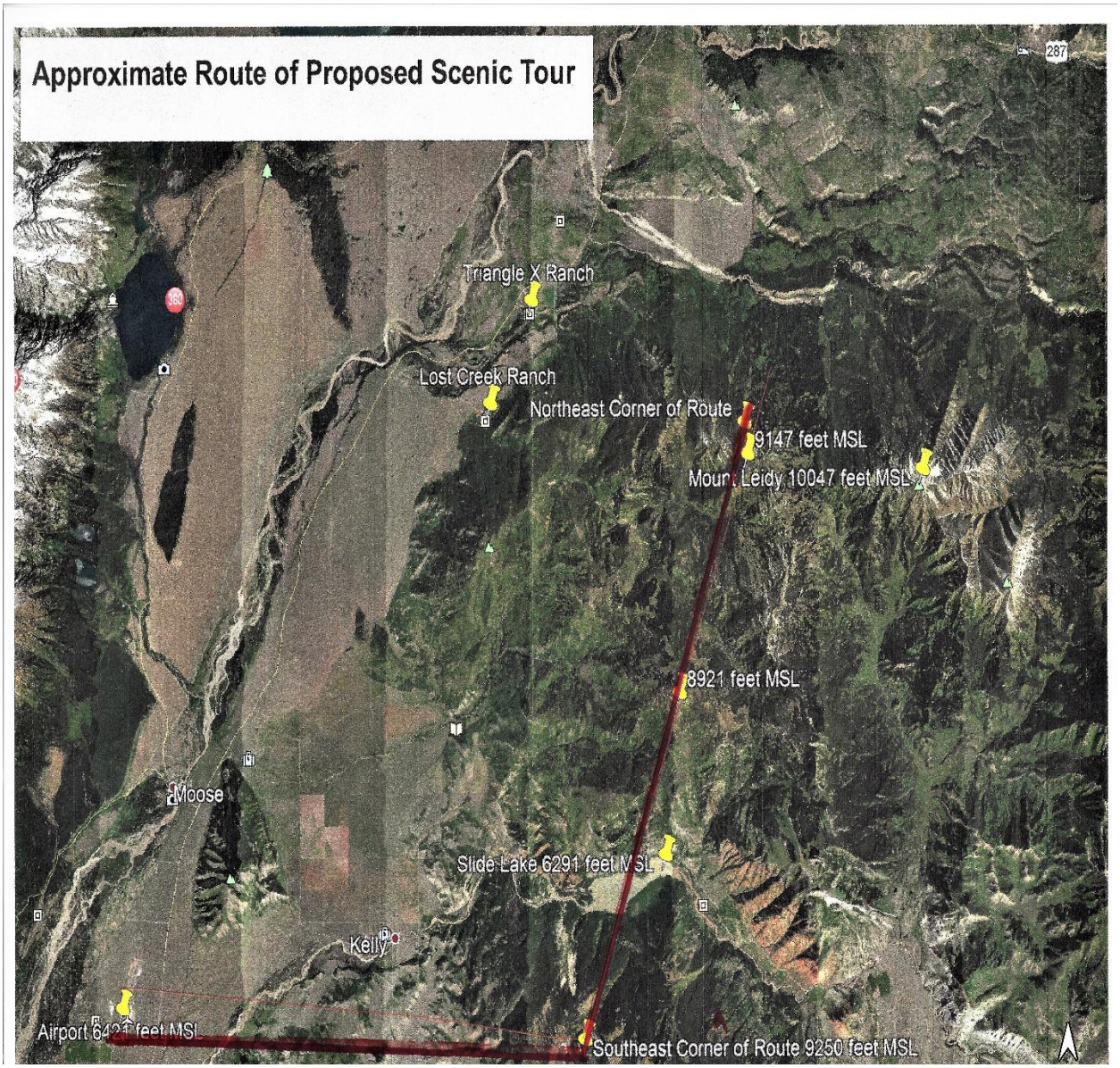
[10] Discussion among Mr. Anthony Chambers (the owner of Wind River Air), Joe Albright and Marcia Kunstel, E'Leavan Restaurant, Jackson WY, October 15, 2019.

[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. Chambers emailed me his response to the maps I've shown on page 4 and 5 of this letter: "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." I accept Mr. Chambers' disavowal of the map version published in the Jackson Hole News and Guide, even though it looks similar to the map in the draft application which Mr. Chambers showed me in our meeting on October 15, 2019. I would also note that the December 7, 2018 email from Mr. Chambers did not dispute my estimate that his route of flight would cover mountainous terrain between 8000 and 9200 feet MSL.

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."

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[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.

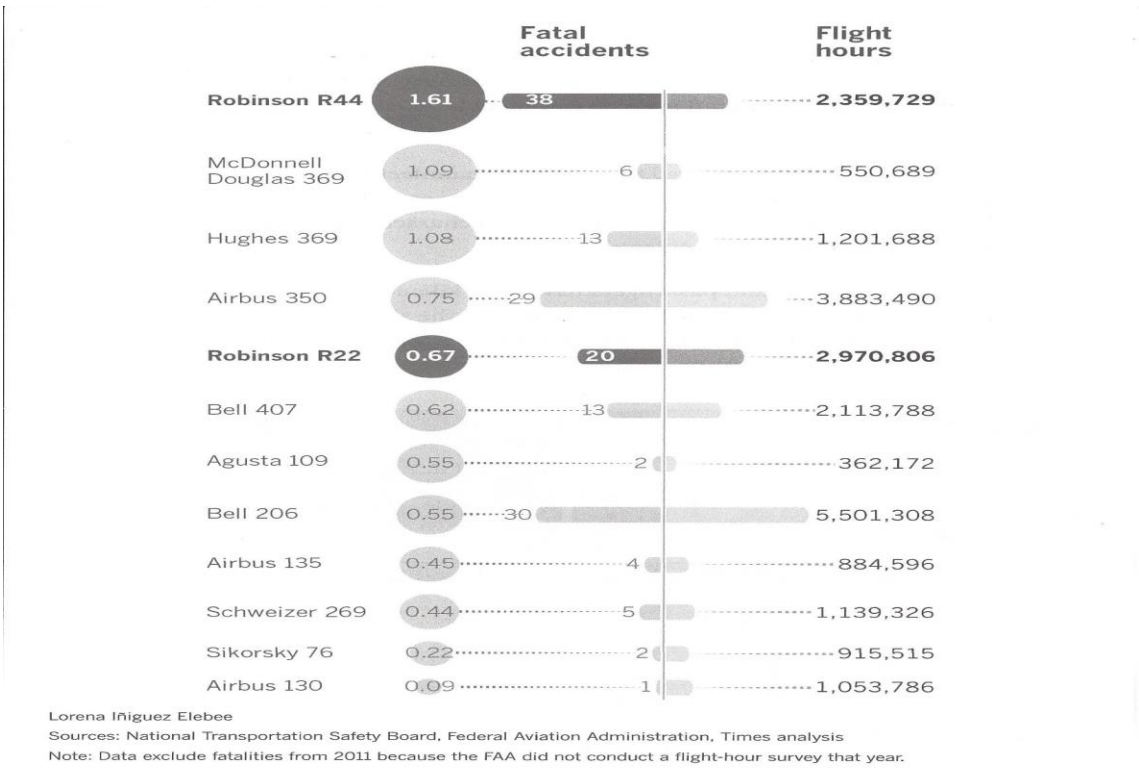
[14] See Appendix 2.

[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.



[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.

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[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,

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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

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[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/