FAA - COMMERCIAL SPACE TRANSPORTATION

Public Meeting for the Draft Environmental Assessment for the Huntsville International Airport Reentry Site Operator License and Sierra Space Corporation Vehicle Operator License, Madison County, Huntsville, Alabama

Virtual Public Meeting

Thursday, December 9, 2021

6:00 p.m.

Job #42434

Page 1 - 43

Reported by Gary Euell

PANELISTS IN ATTENDANCE VIA ZOOM:

Amy Hanson
Butch Roberts
Christopher Allison
David Alberts
Emily Afifi
Emily Sisneros
Jennifer Fownes
Jennifer Piggott
Lee Jankowski
Lisa Bullard
Mary Swanstrom
Richard Tucker
Robert Greene
Ryan Gardner
Silvia Colla
Stacey Zee

C O N T E N T S

P R O C E E D I N G S

MS. PIGGOTT: Good evening, ladies and gentlemen. The time is 5 p.m. local time and we will now start the Federal Aviation Administration Office of Commercial Space Transportation or AST Virtual Public Meeting for the Environmental Assessment or EA for the Huntsville International Airport Reentry Site Operator License and Sierra Space Corporation Vehicle Operator License in Huntsville, Alabama. Thank you everyone for participating tonight.

My name is Jennifer Piggott, and I will serve as your neutral facilitator this evening. I'm with ICF, who is supporting the FAA as an independent third party contractor. This virtual public meeting is being recorded, transcribed, and translated. I would like to call your attention to the global icon at the bottom right of your Zoom screen. If you click on this icon, you can choose English or Spanish to ensure you are listening to the meeting in your desired language. Once you move to the Spanish room, we recommend

muting the original audio so you only hear the meeting in your desired language. I will now pause for our translator to come out of the Spanish room into the English room to make this announcement.

Thank you. If you need assistance with Zoom during the meeting, you can use the chat feature located at the bottom of your screen to message the meeting host. We appreciate your participation in this virtual public meeting. We would much rather be with you in person, but with the current conditions we want to provide all the information we can while protecting everyone's health. We're going to conduct this as closely as possible to a typical in person public meeting. Please make a note of the phone number for this meeting. The phone number is 833-548-0276, meeting ID 85032175874, password 8695227. If you experience difficulty with your internet connection at any point during this meeting, you can call this number to listen to the meeting. Additionally, individual internet connections and

bandwidth may impact your viewing experience this evening. We recommend closing all apps and programs and limiting other streaming or downloads during this meeting.

Finally, we're running this meeting using Zoom webinar, which mutes all participants and restricts video feeds. Only the meeting host can unmute you.

We will conduct the virtual public meeting in two parts. First AST will provide a presentation in English, which will be translated simultaneously in the Spanish room. A copy of the Spanish presentation can be found on the project websites, and I will put that website right now into the chat feed. So, a copy of that presentation can be found on the project website and that link is now in the chat feed. Then we will conduct a facilitated comment session where interested parties can provide oral comments for the record. We will not host a question and answer session during the meeting. Please submit comments by the close of the comment period, which

is December 22, 2021. We invite you to submit comments orally at tonight's meeting electronically via the project E-mail address, which is Huntsvillereentry@ICF.com. I will also paste that in the chat feed so you have it, or you can mail your comments to Miss Stacey Zee, HSV Draft EA, care of ICF, 9300 Lee Highway, Fairfax, Virginia 22031.

Additionally, tonight's presentation is already available in both English and Spanish on the project website. And again, that link is on your screen and it's also in the chat feed.

I would now like to go over a few ground rules for tonight's meeting. Please remember this meeting is being recorded, so please no inappropriate language or comments. When we get to the comment section of tonight's meeting, I will call on pre-registered commenters first in the order in which they registered, followed by other commenters that indicate they'd like to make a comment this evening. We will receive as many comments as time allows. If you're not called on

to provide an oral comment today, you may provide your comment electronically or in writing. All comments, regardless of how they are received, are weighted equally. Again, we will make every effort to receive as many oral comments as possible during tonight's meeting.

We appreciate the chance to share the proposed project and environmental process with all of you. We wish we could be together in person but we're glad to come together virtually. Again, the purpose of this virtual public meeting is to share information about the Draft Environmental Assessment, provide information on how to provide comments, and to receive oral comments.

I would now like to introduce Miss Stacey Zee with AST, and Stacey will introduce other FAA, Sierra Space, and Huntsville team members with us this evening. Stacey.

MS. ZEE: Thank you, Jennifer. As Jennifer noted, I'm Stacey Zee. I am the stakeholder engagement lead for the FAA office of

Commercial Space Transportation. Thanks all for participating tonight and we are very excited to share the information with you tonight. With us tonight from AST, we have Amy Hanson, Emily Sisneros and Emily Afifi. From Sierra Space, we have Christopher Allison. And then from Huntsville, we have Mary Swanstrom, Butch Roberts, Lee Jankowski, Lisa Bullard, Dave Alberts, and Richard Tucker.

Again, thank you for being with us this evening. And Jennifer, back to you.

MS. PIGGOTT: Thanks, Stacey. Okay, ladies and gentlemen, without further ado, we will go ahead and transition into our presentation. The presentation this evening is about 20 to 25 minutes long.

Hi, my name is Stacy Zee, and I'm an environmental protection specialist and the stakeholder engagement lead with the FAA's office of Commercial Space Transportation. I, along with Emily Afifi, Emily Sisneros, and Amy Hanson, will explain the FAA's licensing process and the Draft

Environmental Assessment referred to as the draft EA for the Proposed Reentry Operations at the Huntsville International Airport in Madison County, Alabama. Huntsville International Airport and Sierra Space will also present materials. After the presentation, you will have the opportunity to provide oral comments on the potential environmental issues outlined in the Draft EA.

Now I'm going to hand over the presentation to Amy Hanson to describe why we are holding the public meeting today.

MS. HANSON: We are holding this public meeting because the Huntsville Madison County Airport Authority, or Authority, and Sierra Space Corporation or Sierra Space, are proposing to conduct Commercial Space Reentry Operations at Huntsville International Airport or HSV.

Huntsville Madison County Airport Authority is applying to the FAA for a Reentry Site Operator License and Sierra Space is applying for a Vehicle Operator License to Reenter to the

airport. The National Environmental Policy Act or NEPA, requires the FAA to analyze the potential environmental impacts of our proposed licensing action. The FAA is the lead Federal Agency for the EA. There are two cooperating agencies who are included due to special expertise and or jurisdictions. NASA has space launch special expertise, and the US Coast Guard provides maritime safety and security expertise during launch operations. As part of the licensing process, the FAA is analyzing the potential environmental impacts under NEPA for this proposed action and is collecting comments on the Draft EA. The environmental process is only one part of the licensing process.

Now, I'm going to hand over the presentation to Emily Afifi to describe the FAA licensing process for Reentry Site Operators and Reentry Vehicle Operators.

MS. AFIFI: This and the next slide show the FAA's process for reviewing a Reentry Site Operator License Application and a Vehicle

Operator License Application. The process can occur over a period of months or years, depending on the applicant's proposed operation and it begins with preapplication consultation.

Preapplication consultation is the part of the process where the FAA starts coordination with the applicant on the proposed operation. Once the FAA has accepted a license application, the formal evaluation period begins. During this part of the process, the FAA conducts reviews on safety, environmental, airspace, and waterway integration, policy, and flight location aspects of the application. The environmental review will be discussed in more detail shortly.

Upon completion of the evaluation, if the FAA makes a positive determination and grants an authorization, the next part of the process is an operational phase, which includes compliance monitoring and safety inspection of the operator's licensed activities. An authorization for a Reentry Site Operator License is valid for five years from the issuance date. A licensee can

renew the license by submitting an application to the FAA.

The authority's application for the proposed operations at Huntsville International Airport is currently in the evaluation phase of the licensing process with the FAA.

The FAA's process for reviewing a Vehicle Operator License Application is very similar to the process for reviewing a Reentry Site Operator License Application. There are a few additional items required during the evaluation period for a Vehicle Operator, including the payload review and financial responsibility. An authorization for a Vehicle Operator License is valid for the length of time of the licensed activity but may not exceed five years from the issuance date. A licensee can renew the license by submitting an application to the FAA.

Sierra Space's application for the proposed operations at Huntsville International Airport is currently in the preapplication phase of the licensing process with FAA.

Now, I'm going to hand over the presentation to Amy Hanson to give the proposed project overview.

MS. HANSON: The Authority is proposing to operate a Commercial Space Reentry Site at the Huntsville International Airport. And Sierra Space is proposing to conduct reentries using its Dream Chaser vehicle at HSV. Sierra Space and the Authority anticipate up to one reentry operation at HSV per year in 2023, 2024, and 2025, up to two reentries in 2026, and up to three reentries in 2027. Reentry of the Dream Chaser would occur during the daytime or nighttime, depending on the mission.

Now, I'm going to hand over the presentation to Mary Swanstrom with Huntsville International Airport Authority to describe their proposed operations.

MS. SWANSTROM: Proposed reentry operations would occur at runway 18036R, circled in blue in the aerial image of HSV. As Reentry Vehicle Operations would be confined to this area,

the blue line also marks the proposed reentry site boundary. During the reentry operation, both runways could be closed for a temporary flight restriction window of forty-five minutes. The vehicle would remain on the runway for up to ten hours while cargo and residual propellants are removed. There is no construction proposed to support the reentry operations and no permanent storage or propellants on site.

Now, I'm going to hand over the presentation to Christopher Allison of Sierra Space to provide information on the Dream Chaser vehicle, NASA Commercial Resupply Services 2 Program, reentry trajectories, and flight path.

MR. ALLISON: Sierra Space is developing the Dream Chaser, a reusable reentry vehicle capable of carrying payloads to and from low earth orbit, including delivering supplies to the International Space Station under the Commercial Resupply Services to CRS2 contract with the National Aeronautics and Space Administration also known as NASA. The Dream Chaser is currently

the only runway landing commercial orbital space vehicle in development. It will use nontoxic propulsion for orbital translations, attitude control, and deorbit. It is designed to launch in a variety of launch vehicles and is on contract for the NASA Cargo Supply Services to CRS2 Program.

The image shows Sierra Space's proposed operations. The Dream Chaser vehicle would be carried as a payload on a vertically launched United Launch Alliance Vulcan rocket from Cape Canaveral in Florida. Note, the launch will not occur in Huntsville and will be licensed separate from the action being proposed in this meeting. Sierra Space proposes that the Dream Chaser vehicle would deliver up to 5,500 kilograms of pressurized and unpressurized cargo to the International Space Station. Sierra Space would dispose of materials from the International Space Station over the broad open ocean via a cargo module that will separate from Dream Chaser and burn up safely in the Earth's atmosphere upon

reentry. Any surviving debris would be intentionally placed in the remote part of the Pacific Ocean. The Dream Chaser portion of the system will return to a runway, where cargo and other items returned will be offloaded.

Some key terms used when describing the reentry of Dream Chaser are defined on this chart. Reentries can either be considered on ascending or descending trajectories as described in the image. Ascending is when the relative motion of the ground track projected by the orbiting vehicle is moving in an upward direction relative to the landing site. Descending is a downward motion relative to the landing site. For the proposed reentry to Huntsville, this action only considers ascending trajectories. Further, the distance between the ground track of the orbiting vehicle and the landing site when perpendicular to the landing site is referred to as cross range. Dream Chaser has a greater than 1,000 nautical mile cross range capability, meaning the vehicle does not have to be perfectly aligned to cross over the

landing site to successfully perform a reentry and landing. This results in an increased number of reentry opportunities on a given mission. The Dream Chaser vehicle's reentry trajectory from orbit would be dependent on the specific mission being flown and would be defined prior to reentry. During the reentry sequence, Dream Chaser would have set reentry windows or timeframes to begin descent into the Earth's atmosphere to meet the designated reentry trajectory. Assuming no-go criteria are met, the Dream Chaser vehicle would remain in orbit until the specific reentry trajectory could be achieved or an alternate trajectory is called upon.

The reentry vehicle would reenter from the south on an ascending trajectory with high atmospheric overflight of the southwestern US or Central American countries before landing at Huntsville. The two trajectories shown on this chart show the bounding cross range trajectories the Dream Chaser can fly to successfully land at Huntsville. Additional trajectories could exist

between the two depicted here given mission specific parameters.

The reentry vehicle would remain above 60,000 feet altitude above mean sea level for the majority of the overflight of Texas, Arkansas, Louisiana, Mississippi, and Alabama. The reentry vehicle would descend below 60,000 feet altitude above mean sea level approximately 10 to 20 miles from Huntsville prior to landing and would operate below 60,000 feet above mean sea level for about three to four minutes.

Now, I'm going to hand over the presentation to Emily Sisneros to describe the airspace closures process.

MS. SISNEROS: Airspace Closures. Sierra Space will coordinate airspace closures for each reentry operation with the FAA Air Traffic Organization, the FAA Office of Airports, Huntsville, any affected military organizations including the United States Coast Guard and impacted foreign air navigation service providers. All notification and coordination procedures will

be outlined in letters of agreement. Operation activities coordination by the same parties would occur on a weekly and daily basis closer to the reentry and landing at the airport. The FAA does not anticipate altering the dimensions of the airspace. The FAA would issue temporary flight restrictions via a notice to air mission, also referred to as a NOTAM for the reentry vehicles operation and the controlled airspace or an altitude reservation from the central altitude reservation function, as described in Sierra Space's letter of agreement with the FAA Air Traffic Organization.

Airspace jurisdiction of the proposed Dream Chaser flight path is controlled by both Memphis and Atlanta Air Route Traffic Control Centers. The extent of the airspace needed for each reentry will depend on the trajectory and associated aircraft hazard area, which will be determined in the flight safety analysis. A nominal reentry to Huntsville is anticipated to require a NOTAM lasting one hour. Aircraft would

be rerouted around the NOTAM airspace closure. Aircraft traveling on existing routes and flight paths that are used daily are often routinely rerouted to account for weather and other temporary restrictions. Also, not all proposed reentry operations would affect the same aircraft routes or the same airports, and rerouting associated with the proposed reentry related closures represents an extremely small fraction of the total amount of rerouting that occurs from all of the reasons in a given year.

This image shows the representative aircraft Hazard Area generated for the plus or minus 570 nautical mile cross range aircraft hazard area and a potential NOTAM. Seasonal considerations such as wind or operational changes, such as changes in the payloads being carried back from orbit, could further result in slight alterations of the nominal deorbit opportunity trajectory to the airport.

Now I'm going to hand over the presentation to Amy Hanson to describe the sonic

boom for reentry operations.

MS. HANSON: During reentry, the Dream Chaser vehicle would generate a sonic boom. This slide shows the area that would be potentially affected by the sonic boom with the blue line circling the area with Sonic Boom overpressure levels of one pound per square foot or PSF. The maximum peak sonic boom overpressure would be 1.25 PSF, a magnitude similar to a clap of thunder. The study area defined by the sonic boom, as shown in this slide, encompasses about 170 square miles and includes portions of Morgan and Coleman counties and the cities or towns of Hartsell, Falkville, and Somerville, Alabama. The red line in the upper right hand corner shows the reentry site boundary at Huntsville International Airport.

Now I'm going to hand over the presentation to Mary Swanstrom with Huntsville International Airport Authority to describe runway closures at the airport.

MS. SWANSTROM: A temporary flight restriction issued by the FAA would temporarily

close both runways at HSV, runway 18L36R and runway 18R36L to aircraft and vehicle ground movements prior to landing. After Dream Chaser's wheel stop, all traffic would be accommodated on the airport's primary runway, runway 18R36L. Runway 18L36R would remain unavailable for use by other correct aircraft for landing and departures until it is removed from the runway. This period of time would vary given the operational characteristics of each individual mission. While Dream Chaser is on runway 18L36R and propellant-saving activities are occurring, aircraft and vehicle movements would be restricted until the vehicle is in a safe condition and removed from the runway.

The Dream Chaser's licensed operation would end when the vehicle is in a safe condition as defined in Sierra Spaces Vehicle Operators License. Runway 18L36R would be returned to service at R plus eight hours. Airport operations would conduct inspections for each runway to ensure they are safe for the resumption of

traffic, including verifying that the runways are free from foreign objects and debris or damage.

Now I'm going to hand over the presentation to Amy Hanson to describe the environmental impacts analyzed in in the Environmental Assessment Process.

MS. HANSON: This slide lists the environmental impact categories that are analyzed in detail in the Draft EA. The following slides present a high-level summary of some of the impact categories. Please refer to the Draft EA for a full discussion of environmental consequences determinations.

Noise impacts include increased sound levels from reentry operations in the form of sonic booms. Predicted overpressure levels for reentry remodeled to be 1.25 pounds per square foot, or PSF. The study area for potential impacts to environmental resources was defined as the area experiencing 1 PSF or greater sonic boom overpressures. Overpressure from each sonic boom resulting from proposed Dream Chaser reentry

operations would be similar to the overpressure from a clap of thunder. Data from the National Oceanic and Atmospheric Administration or NOAA show their residents in Morgan County experience on average, about 8,000 thunder events caused by lightning. So, the sonic booms would not be unusual noise levels. Cumulative noise in the surrounding communities from one to three reentry operations annually is estimated to be below levels associated with adverse noise exposure in the FAA regulations.

The proposed action would not include construction, and therefore no ground disturbing activities that could impact biological resources would occur. Sonic Booms resulting from proposed reentry have the potential to affect species. There are a number of federally and/or state listed threatened and endangered species within the sonic boom study area. But no critical habitat is designated for wildlife species in the study area. Animals generally do not experience lasting adverse effects to sonic booms with low

overpressures such as would occur as a result from the proposed reentry operations. While there is the potential for reentry operations to result in wildlife strikes, the very small number of proposed reentry operations per year would not significantly increase the chance of a wildlife strike at HSV. As a result, the FAA has determined the proposed action may affect, but would not significantly affect, species listed under and critical habitat designated under the Federal Endangered Species Act. The FAA is consulting with the US Fish and Wildlife Service on this finding.

There is the potential for the sonic booms produced during reentry to alter the visual or audible characteristics or settings of historic properties. However, given the low number and low overpressure levels of the sonic booms, reentry operations are not anticipated to alter the characteristics of the historic properties found in the sonic boom study area. Sonic Booms also have the potential to cause structural damage to

historic properties but generally at higher overpressure levels, 2 PSF and above, than those that would result from the proposed reentry operations. Therefore, the proposed action is not expected to have adverse effects on historic properties. The FAA has made a finding of no adverse effect for historic properties and is currently conducting National Historic Preservation Act, Section 106 consultation with the State Historic Preservation Officer and other consulting parties. The FAA is also conducting government to government and Section 106 consultation with Native American tribes.

Section 4(f) of the US DOT Act of 1966 protects significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites. Section 4(f) provides that the Secretary of Transportation may not approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife or waterfowl refuge of national, state,

or local significance, or land of a historic site of national, state, or local significance unless there is no feasible and prudent alternative to the use of that land and the program or project includes all possible planning to minimize harm resulting from the use. Properties potentially eligible for protection under Section 4(f) in the sonic boom study area include the Tennessee Valley Authority Wheeler Reservoir, the Wheeler National Wildlife Refuge, and the federally listed historic properties discussed on the previous slide.

Reentry operations would not result in a permanent incorporation or physical use of any Section 4(f) property. There is the potential for noise impacts of sonic booms to result in the constructive use of Section 4(f) properties in the study area, but only if a property's intended use or attributes are significantly impaired. While some properties in the sonic boom study area could be sensitive to new sources of noise, the low frequency and magnitude of the sonic booms would not significantly impair those resources. As a

result, the FAA has made a preliminary determination that the proposed action would not result in a constructive use of Section 4(f) properties and is currently consulting with the Tennessee Valley Authority, US Fish and Wildlife Service, and the Alabama State Historic Preservation Officer.

Now I'm going to hand over the presentation to Stacey Zee to provide information on the EA and Stakeholder Engagement Schedule and comments on the Draft EA.

MS. ZEE: This slide outlines the EA schedule and how you can remain involved in the NEPA process. The FAA carried out coordination with state and federal agencies throughout preparation of the Draft EA. The FAA also initiated agency consultation with federal and state resource agencies, such as the US Fish and Wildlife Service and Alabama State Historic Preservation Officer. We are currently in step 4 of the EA schedule.

The Draft EA was published on November

12th with a forty-day comment period. Today is the Draft EA public meeting, and the comment period closes on December 22nd.

The next step is for the FAA to publish the final EA, which will incorporate public comments received on the Draft EA. It will also include a finding on the proposed action, either a finding of no significant impact, a mitigated finding of no significant impact, or a notice of intent to prepare an environmental impact statement. Comments on the Draft EA can be submitted either by E-mail or mail to the addresses on the slide. We ask the comments be submitted by Wednesday, December 22nd to ensure that they are considered in the development of the final EA. Before including personal identifying information in your comment, be advised that your entire comment may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

The Draft EAA is available on the FAA's website at the link provided on the slide. The FAA's website also includes a place to sign up for the project mailing list. Members of that mailing list will receive project updates, including notification of the FAA publishing the final EA and the FAA's finding. The remaining portion of tonight's meeting is reserved for providing oral comments. Jennifer will explain the process.

MS. PIGGOTT: Okay. Thank you for that presentation and information.

We've now reached the second part of the virtual public meeting, a facilitated comment session. If you would like to make an oral comment, please send a chat message to the meeting host or raise your hand using the hand raise icon if you're on Zoom or for call-in only users, press *9 to raise your hand and I will add you to the commentor list. I will call on you in the order in which you raise your hand with preregistered speakers being called on first. I will now paste the names of the first three speakers in the chat

box.

Please raise your hand to indicate you're ready to make your comment if your name has been placed in the chat box. The first three speakers are Liz Hurley, Ben Harrison, and Paul Mamakos. I apologize if I mispronounce anyone's name this evening. Each commoner will have three minutes to make their comments. At the start of your comments, please state your full name for the record. Again, we are not hosting a question and answer session this evening.

Again, our first speaker is Liz Hurley, and I am not seeing Liz on the Zoom feed this evening. Liz, if you're a call-in only user, please press *9 to raise your hand.

Our next speaker -- okay. I see your note. He has just let me know that they will not be providing a comment tonight. Our third speaker is Paul Mamakos. Paul, I'm also not seeing you on the Zoom feed this evening. If you're a call-in only user, please press *9 to raise your hand.

Okay with that, I'll post the names of

our next three speakers in the chat feed, which are Mark Spencer, Raymond Wesley, and Rob Martin. If you would please raise your hand to indicate that you're ready to provide your comments. Mark Spencer, Raymond Wesley, and Rob Martin. Mark, I see your hand is raised. I'm going to ask you to unmute.

MR. SPENCER: My name is Mark Spencer. I'm the founder of Evolution.

MS. PIGGOTT: So, Mark, can you hear me? I'm going to pause you there. If you could turn maybe your volume down a little bit. We're getting a lot of echo.

MR. SPENCER: Okay, is that better?

MS. PIGGOTT: Yeah, much better. Go ahead. You have three minutes.

MR. SPENCER: Okay. My name is Mark Spencer. I'm the founder of Evolution, an avionics technology company based at the Huntsville International Airport. I use the airport both in operating my own aircraft as well as flying commercially. I live in Madison, about

a 15 minute drive from the airport. My comments represent my own views and not necessarily those of any company. I wish to speak today in support of the effort to support landing of space vehicles and specifically in support of providing Huntsville International Airport a Reentry Site Operator License and Sierra Space Corporation a Vehicle Operator License in order to allow the Dream Chaser -- Dream Chaser to land at HSV.

The Huntsville community, of course, has a long history of supporting advanced spaceflight and other aerospace technologies and is fortunate to have an airport with two long runways and advanced safety resources, including crash fire response, and all that within a vast physical airfield area. I believe that the unique traits of the Huntsville Airport, which include a balance of fantastic airfield resources, a level of traffic that can accommodate the expected disruption of having a spacecraft landing, plus a population that is disproportionately supportive of space endeavors and tolerant of the occasional

loud noise compared to other cities, makes it especially well-suited to this venture.

With all the support, however, I do request that the FAA use caution when issuing limitations for both Huntsville International Airport and Sierra Space Corporation's respective operator licenses to ensure their operations are only permitted when taxiways Foxtrot and Juliet and both runways are fully operational at HSV. The landing of a spacecraft will shut down a runway for an extended period of time, even in the case of a nominal landing, and potentially can shut it down for much longer in the case of an off nominal landing. And then also some historical NOTAM data shows that the Huntsville International Airport has only had both its runways operational for less than half the days of the last 12 years. Permitting the airport to land the spacecraft when only one runway is operational is likely to change the balance of impact for the airport's other users, including commercial passengers, air ambulance flights, and military and general

aviation aircraft and should not be permitted under the operator licenses.

Thank you for the opportunity to provide comments and I look forward to the opportunity to see Dream Chaser land at Huntsville.

MS. PIGGOTT: Thank you for your comments. Okay, our next speaker is Rob Martin. If you're ready to make your comments, please raise your hand.

Okay, with that I'll post the names of our final two preregistered speakers in the chat feed. Our final two speakers -- hold on one second. Rob, I see your hand is raised. I'm going to ask you to unmute.

MR. MARTIN: Can you hear me okay?

MS. PIGGOTT: Yes, go ahead. You have three minutes.

MR. MARTIN: Very well. I'm Rob Martin. I'm a retired aerospace engineer living in Muscle Shoals, Alabama, have used Huntsville International Airport many times, and it's a terrific facility, and we love going in and out of

the airport on trips or whatever. My concern, not really a concern, but just a question about the propellants that are going to be used on Dream Chaser. Normally those propellants on orbit are highly toxic and need lots of unstowing and safety procedures to safely unload those propellants once the spacecraft has landed. And I noticed in the beginning of the briefing that no facilities are planned to be built, nor is there any safety on offloads of any of these propellants, it's supposedly nontoxic. I was just a little surprised at that and wondered what type of propellant they're going to be using and also if they're bringing spacecraft back from orbit, ensuring that those propellants are nontoxic as well. So that concludes my comments.

MS. PIGGOTT: Thank you for your comments.

Okay, our next two speakers I posted in the chat feed Melba Ochoa and Caroline Klapp. If you would please raise your hand or if you're a call-in only user, press *9 to raise your hand so

I can ask you unmute and you can provide your comment. Melba Ochoa and Caroline Klapp. Okay, I see your note in the chat feed, that you will not be providing a comment this evening.

Okay, ladies and gentlemen, those are all of the folks that preregistered to provide an oral comment this evening. So, I'll now open the floor to anyone who is in attendance tonight who would like to provide an oral comment. Again, you can raise your hand or you can -- if you're a call-in only user, you can press *9 to raise your hand and I'll ask you to unmute. Would anyone like to provide an oral comment this evening? Okay. Robert Kendall, I see your hand is raised. I'm going to ask you to unmute.

MR. KENDALL: Hi. Good evening. My name is Robert Kendall. I'm currently a resident in the Huntsville area. I live right next to the airport. I would like to give my comments not to support the approval of this license. The Huntsville area is growing. The housing is, for lack of conversation, out of control. There does

not seem to be any stopping it. The housing is going to surround this airport over time and is going to open up opportunities for more damage from not only the sonic booms, but from our current air flights to the elderly and our retired military.

The second point is our wildlife. Wildlife studies do not accurately test for proper side effects to sonic booms. But the toxic propellants are an obvious problem. If anything were to go wrong with this vehicle in reentry, it's breaking up or landing in any area would cause irreparable damage to the wildlife.

My third comment is on sonic boom damage. Studies have been conducted on sonic booms, and the damage that they found has limited the use of such aircraft such as the France Airways aircraft, and now the new aircrafts that are being created are being limited to specific cities and runways where their damage can be minimized. Currently, General Electric is working on aircraft that has a lower sonic boom and its sole reason for design is

because of the known damage that sonic booms can cause.

Lastly, in Huntsville we -- we build rockets. We have a NASA engineering type of community, and we love what we do. But we do not launch the rockets from here, nor do we land them here. There's reasons for that. There's reasons why we do this in Texas and in Florida, and most aircraft used to land in the ocean. I implore the employees of the FAA and the companies to look at the many numerous remote areas that are available throughout the United States and its surrounding territories. There's other places that this can be done that are safer to humans, our structure, our wildlife, and our peace of mind. Thank you. That ends my comments.

MS. PIGGOTT: Thank you for your comments.

Again, ladies and gentlemen, we have plenty of time. So, if you'd like to provide an oral comment this evening, please raise your hand by using the raise hand feature in Zoom if you've

not already provided an oral comment and would like to provide one tonight. For our call-in only users, please press *9 if you'd like to provide an oral comment. Would anyone else like to make an oral comment this evening? Again, just use the raise hand feature or you can send a message to me using the chat letting me know that you want to be unmuted, or if you're a call-in only user, you can press *9.

Okay folks, seeing none, thank you for participating in this virtual public meeting. All comments, whether submitted orally, electronically, or in writing through the US Mail will receive equal consideration. Please submit your comments electronically via the project email at huntsvillereentry@icf.com or you can mail comments to Miss Stacy Zee, HSV Draft EA, care of ICF, 9300 Lee Highway, Fairfax, Virginia 22031. I'll put that E-mail address again in the chat feed for everybody so that you have it. Before including your address, phone number, E-mail address, or other personal identifying information

in your comment, please be advised that your entire comment, including your personal identifying information, may be publicly available at any time. To ensure the FAA has sufficient time to consider public input, comments must be submitted by December 22, 2021.

Again, ladies and gentlemen, thank you for your interest and your participation this evening. This meeting is adjourned.

[Whereupon the virtual public meeting was concluded.]

[Off the record at 6:45 p.m.]

CERTIFICATE OF REPORTER

I, GARY EUELL, do hereby certify that the foregoing proceeding was attended by me and thereafter transcribed from my digital audio recording of the proceeding and thereafter was reduced to typewriting by me.

I further certify that I am not related to any of the parties in this matter, and this transcript is a true and accurate record of said audio recording to the best of my ability. The above information has been transcribed by me with a pledge of confidence, and I do hereby certify that I will not discuss or release the content, or any information contained herein.

GARY EUELL, Court Reporter