

## The Sky is Falling... Or is it?

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# The Sky is Falling... Or is it?

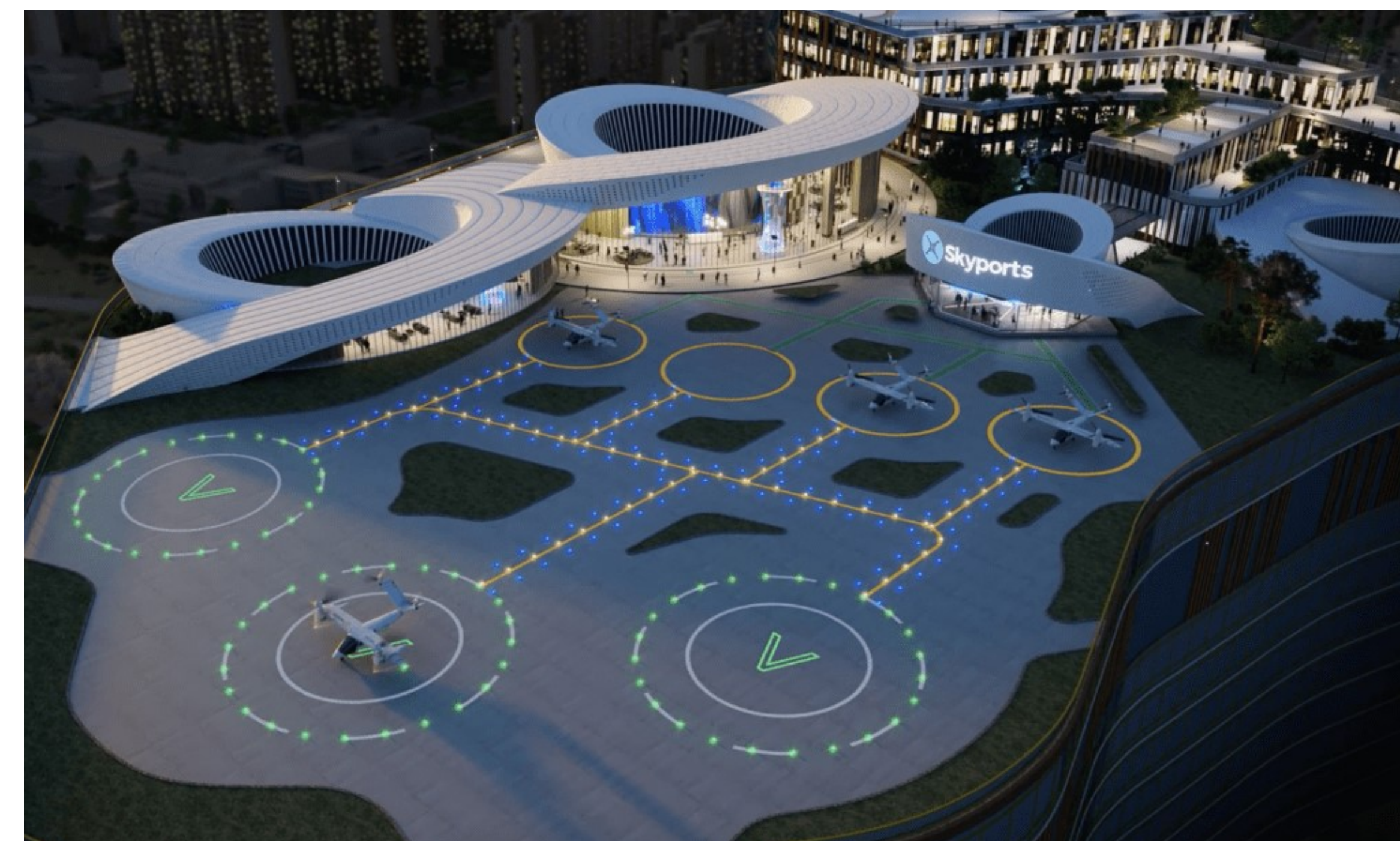
## Advanced Aerial Mobility (AAM) Societal Acceptance

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Dr. Kenneth "Mike" Canada

College of Aviation, Embry-Riddle Aeronautical University, Prescott, AZ



ERAU PC COA Students' perception of AAM



Retrieved Feb 12, 2024 from <https://skyports.net/>

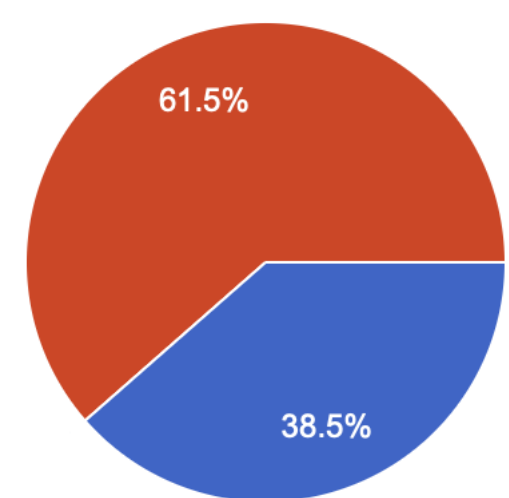
### ABSTRACT

There are two sides to the issue of societal acceptance of advanced/urban air mobility when it comes to mental health. One is that of the pilots' mental health, and a topic for another day. The other is that of society's mental health, the topic of this paper. More specifically, this research seeks to uncover what causes society the most angst when it comes to these operations. Literature review shows that stress increases with noise levels of aircraft flying overhead, as well as vehicle safety. Furthermore, for passengers, the stress caused by fear of flying may be compounded when a pilot is not onboard, as will be the case with these autonomous vehicles. Thus, is it the noise, the safety, or other concerns? The researchers have attempted a qualitative review by surveying a random section of the population of College of Aviation students at the Prescott Campus of ERAU to uncover what causes people stress with advanced/urban air mobility. The findings show that vehicle safety is the main concern, cited by almost ninety percent of respondents.

### PROBLEM

The research was done to help inform and guide the AAM industry. Much needs to be done in the way of dissemination of information to the public, and additionally demonstrations of these vehicles, if the AAM industry is to gain the public's acceptance and hence use of such vehicles.

1. This vehicle is fully automated, meaning no pilot on board. Would you ride in one?



NO  
YES

Regulations

Could passengers intervene in an emergency?

Battery life  
Time to recharge

Collision with above ground power lines and other aircraft

Vandalism of aircraft  
Personal safety of passengers

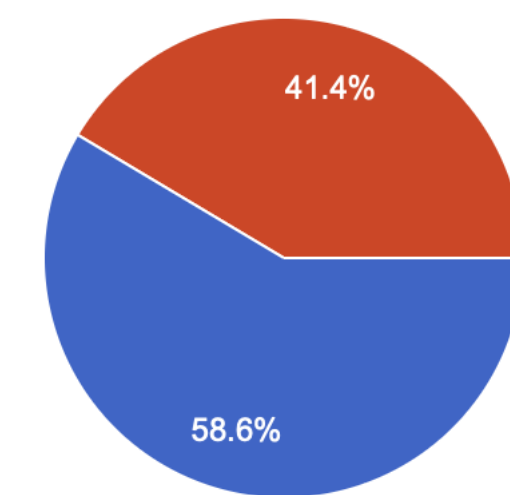
Cost of tickets!  
Social inequity if cost is too high for average person

Must have pilot on board if souls on board

2. Would you be comfortable if one flew over your residence?

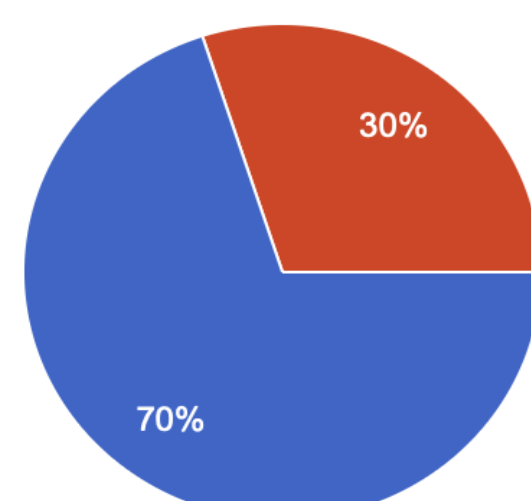
Job security for pilots

Graphene Super Capacitors



NO  
YES

3. If they produced little to no noise (because they are electric) would you be more comfortable with them flying overhead?



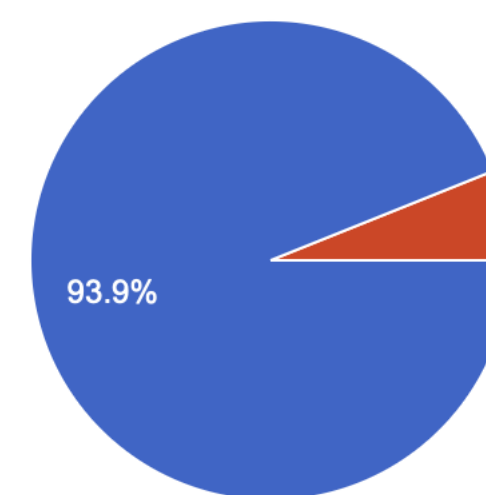
NO  
YES

Source of energy in power grid  
Clean energy to start with!

Bird strikes

4. Do you think the aircraft pose any safety concerns?

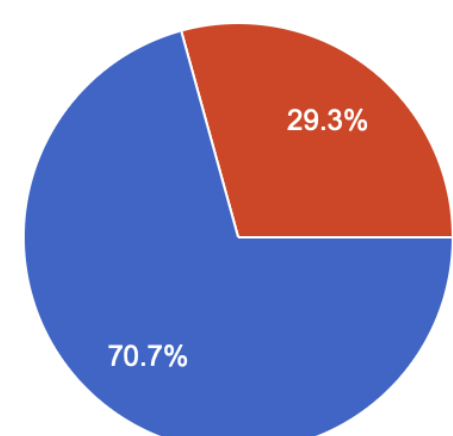
Communication of AAM with crewed aircraft



NO  
YES

Logistics  
Ground Infrastructure for moving people to vertiport

5. Do you think this technology would be better for the environment?



NO  
YES

### RECOMMENDATIONS

Education is needed so the public is aware of all aspects of these new aircraft and the operations around them. Demonstrations of these vehicles at key locations so the public can feel safe and get excited about this new mode of transportation. Cost must be kept to a "everyday person" price.

### ACKNOWLEDGEMENTS

Dr. Nilsson would like to sincerely thank her students at ERAU, especially those in the 2023 fall semester and 2024 spring semester, for not only taking the survey but also engaging in difficult conversations around the operational safety.

Both Dr. Canada and Dr. Nilsson would like to thank Dr. Anne Boettcher for her assistance in preparing this material for presentation.

### REFERENCES

- European Union Aviation Safety Agency. *Study on the societal acceptance of Urban Air Mobility in Europe*. <https://www.easa.europa.eu/en/full-report-study-societal-acceptance-urban-air-mobility-europe>; Accessed December 15, 2023.
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If you would like to participate in this AAM Survey please scan the code to your right.

We are interested in your perception of AAM.

IRB exempt process—Approval document #24-061



Safety pilot on board to back up automation failures and make critical decisions

Airspace congestion  
Integration of AAM into current system

Cybersecurity  
Computers prone to errors  
Corrupted by hackers, jammers  
Society not trusting of automation and AI  
National Security threats  
How will automation address inflight emergencies, equipment malfunctions, flight safety in general?  
Ability to see and avoid —artificial vision  
EMP shielding

Batteries  
Damage to environment  
Raw materials mining  
Recycling  
Labor costs

Air Traffic  
More employees  
More training

Sharing safety data with the public will increase acceptance