

Motivation

Our mission is to design an aircraft interior mockup with a digital skylight to operate a comprehensive psychological study and providing valuable insights into passengers' perceptions and experience of a digital skylight in an aviation setting

Our study will provide an in-depth analysis on whether Rosen Aviation should integrate skylights into future aircraft

Background

Phase 1: Our objective was to construct a true-to-life replica of a Business Jet cabin, integrating a Rosen Aviation 55-inch skylight into the cabin's ceiling

Phase 2: We conceptualized and executed a rigorous psychological study to unravel the nuances of passengers' interactions and impressions of the digital skylight experience

Phase 1: Design Requirements

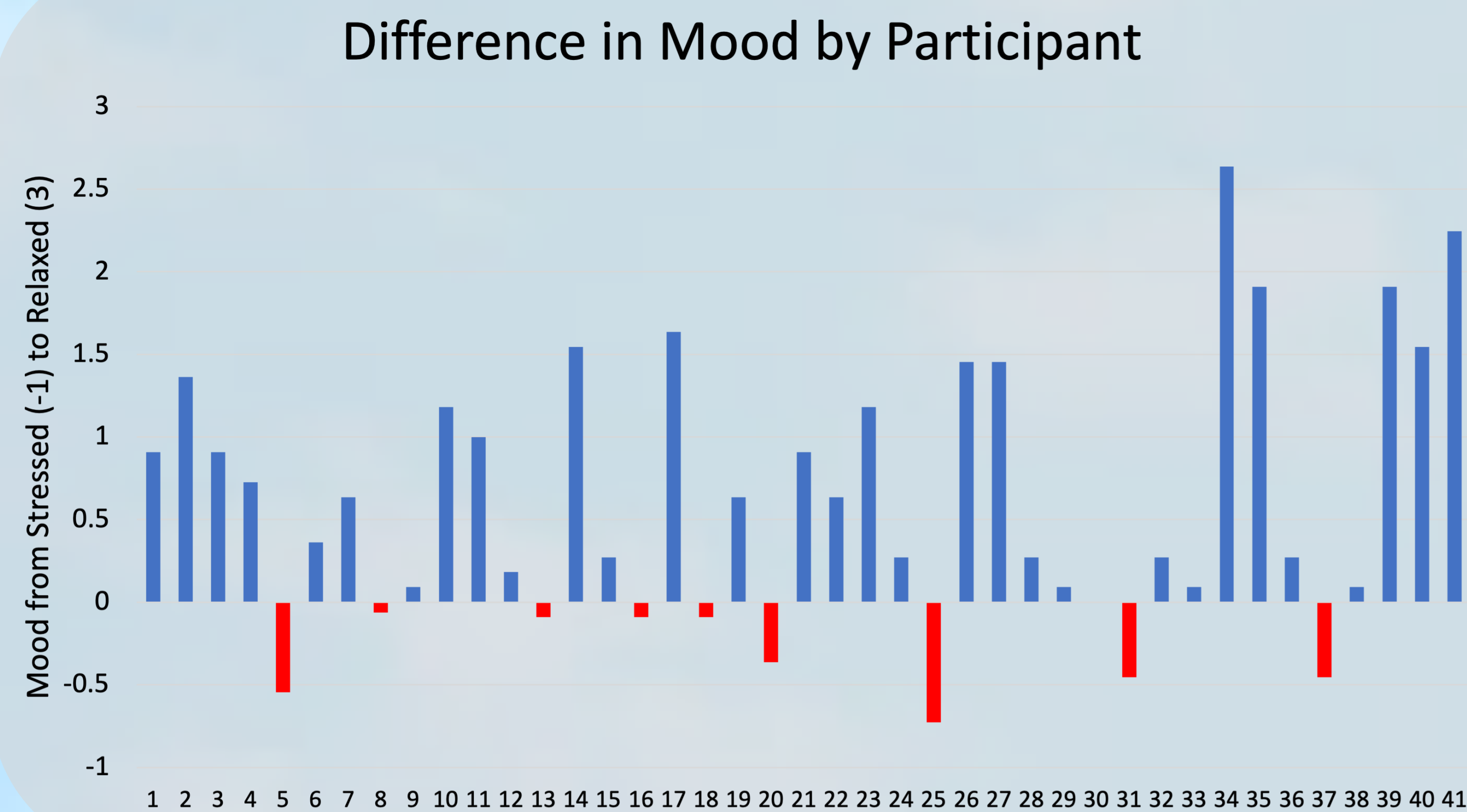
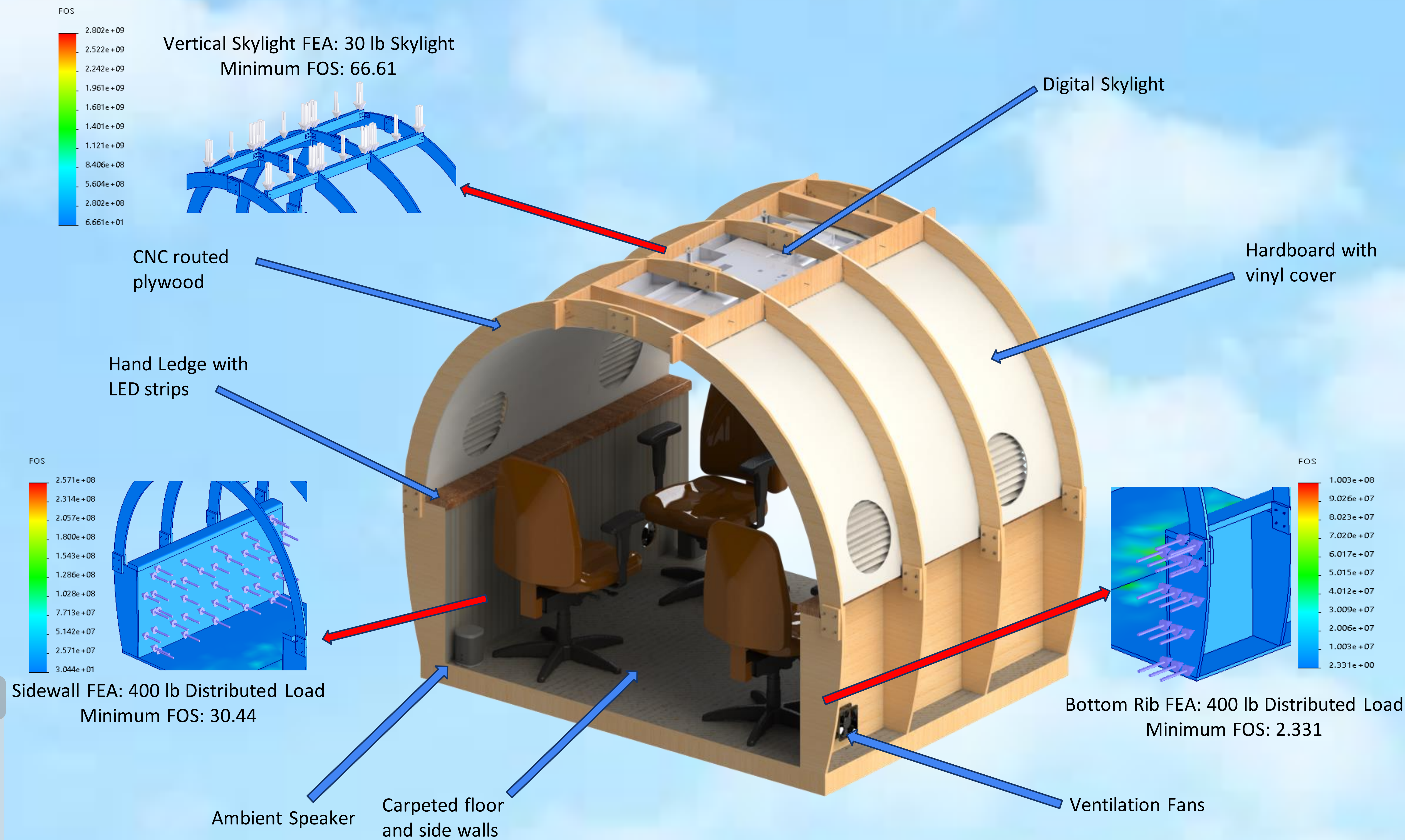
- ✓ Cabin Width: Maximum 72 in (Actual 72 in)
- ✓ Stand-Up Height: Minimum 72 in (Actual 72 in)
- ✓ Aisle Spacing: Between 24 and 32 in (Actual 25 in)
- ✓ Seat Width: Minimum 20 in (Actual 23 in)
- ✓ Comfortable seating for four passengers
- ✓ Safe for multiple people and tests
- ✓ Ability for external analysis of participants
- ✓ Must be able to swap between 4K resolution displays quickly from the outside

Phase 2: Study Requirements

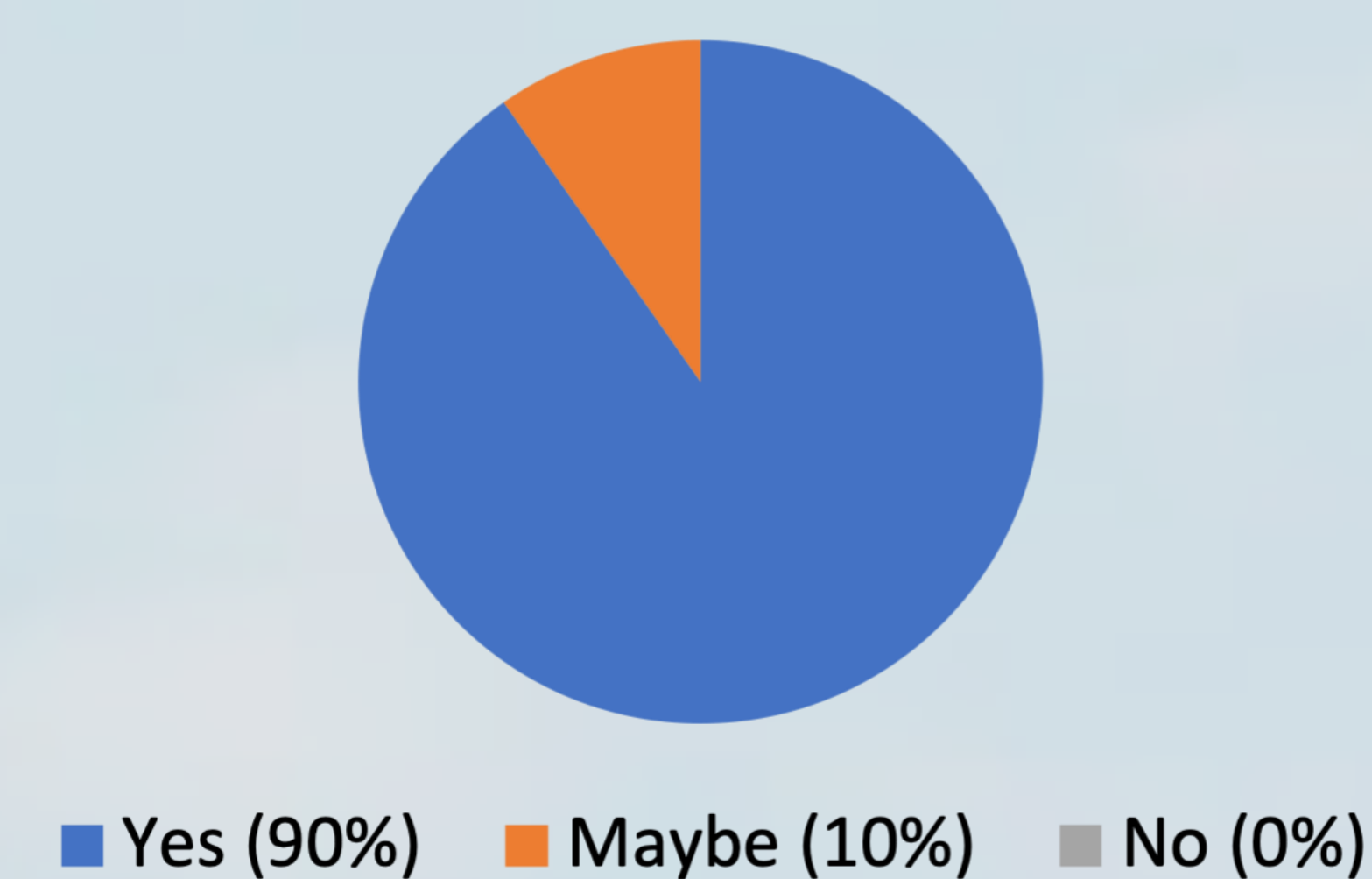
- ✓ Minimum of 50 participants
- ✓ Use of dynamic video of day and night sky
- ✓ Mockup will produce engine sounds at 53 dB
- ☑ Reactions of passengers will be recorded using any kind of camera
- ✓ Flight duration must be between 60 and 120 minutes

Study Limitations/Setbacks

- Lack of a control study utilizing blank skylight
- Location of the study created sound disturbances
- Nonrepresentative sample skews data towards younger male audiences
- Limited incentives lead to higher number of male participants
- Broke initial skylight on installation, delayed study by 2 weeks



If you were offered to take a flight with an OLED skylight screen, would you?



Preliminary Results Summary

- Collected data through pre and post surveys and video observation of participants during the study to test their mood and overall flight experience
- Participant's overall mood was 8% more relaxed after the flight experience, with 77% of participants reported a more relaxed mood after the flight
- Participants commonly said the sounds, lighting, and comfort of seats helped them feel more relaxed during the experience

Preliminary Passenger Demographics

Age v. Gender Distribution	Male	Female	Nonbinary
18-23	22	6	1
24-34	8	1	0
35+	3	0	0

Key Survey Questions

- “What factors contributed to how you felt on the simulated flight experience?”
- “How stressed do you feel during the simulated flight experience?”
- “When you recall your last flight experience, how did the simulated flight experience compare with the OLED skylight?”

What would you change about the OLED if you were to take a flight with one again...

- *I would allow the user the ability to change the image on the screen*
- *Rotate the image or have a video that didn't have a direction. If a video, make sure it's slow and not fast. Maybe try different types of images.*
- *I would dim the brightness to better match the light level of the cabin*

When asked about how the OLED screen impacted participants' flight experience...

- *It made the flight a lot more calming and relaxing.*
- *It's something I have never experienced, and I liked it. It distracted me from the flight.*
- *Made the flight feel less claustrophobic, and gave me something entertaining to look at*

Impact

- Enhances comfort of occupants in small spaces
- Confined spaces can feel less cramped, reducing the feeling of claustrophobia
- Creates a more welcoming atmosphere
- Positively enhances perception of flight duration and comfort

Conclusion

- The integration of the OLED skylight has been shown to transform passenger perception of flight duration, potentially reducing the stress associated with long periods of confinement
- With a marked increase in reported mood scores post-flight, the OLED skylight concept appears to offer a promising avenue for airlines to improve the in-flight experience and passenger satisfaction
- The research illustrates the positive impact of OLED screens on in-flight experiences. This valuable insight will guide Rosen Aviation's future endeavors