



AHS Technical Meeting on Aeromechanics Design for Transformative Vertical Flight

Transformative Vertical Flight Workshop #5



SAN FRANCISCO BAY AREA CHAPTER

Wrap Up and What's Next

- 2018-May: Uber Elevate Summit #2
- 2018-May: AHS Forum in Phoenix, AZ
 - 3 eVTOL sessions
- 2018-June: AIAA Aviation in Atlanta, GA
 - 2 UAM sessions, Autonomy, UAS
- 2019-January: eVTOL Symposium in Phoenix, AZ



Observations: Day 1

- Many companies are investing and doing engineering work
 - Dedicated staff assigned to projects
 - Proprietary and publicly disclosed plans
- Many companies are actively recruiting to hire staff
- Working groups
 - All 4 groups want your help participating
 - Roadmap documents will be available
 - Technology: identifying needs, sharing discoveries
 - Work to coordinate standards and policy definition
 - “Recreational” -> Personal/shared ownership
 - Public services may make requests of other sectors



Observations: Day 2, part 1

- Tools for design of transformative aircraft coming together
 - NASA Technical Reports Server
 - Uber is pulling together a tool suite, others can use
- Air Traffic Management has real challenges, progress
 - Voom operations limited by shifting rules
 - Weather is a real limitation for weather
 - Unmanned operators working to take human limitations out of the traffic management
 - Today's VFR operations have lessons for us (M. Scott)
- The design of vertiports is an opportunity to help acceptance of transformative vertical flight



Observations: Day 2, part 2

- AHS starting Tech Committee (Anubhav Datta)
- SAE efforts on electric aircraft standards (monthly)
 - Mar 20-22 AE-7 Aircraft High Voltage Workshop Everett, WA
- AIAA Tech Committees (Forum 360 @ Aviation 2018)
- GAMA: Want eVTOL more on Part 23 of spectrum
 - Will need to have appropriate consensus standards
- Ground Infrastructure
 - Vertiport siting needs to consider existing margins
 - Local storage worth considering to shave off peaks
 - Standard interfaces should be developed soon
 - Consider datacenters, NYC subway for examples



Observations: Day 2, part 3

- Noise is a big deal
 - Perception varies; need to consider background
 - Noise tools exist
 - Need to consider operating states
- Hybrid propulsion
 - SureFly looking for \$200,000 price point
 - ESAero has looked at the installation effects;
 - Heat management is very important for eVTOL
 - Need transient analysis to evaluate electric systems
- Perspectives on potential markets
 - Reliability may be worth a slower trip, green is desirable
 - Focus groups look at this very differently than us
 - Uber modeling 100,000s of passenger flt/day/city; Price/trip low
 - Shaving small % of car trips is huge boost in aviation





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