AIAA

HIGH-SPEED FLIGHT TASK FORCE

SURVEY RESULTS AND ANALYSIS

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Table of Contents

Table of Figures

Executive Summary

A summary of the results for two surveys (High-Speed Flight Challenges and High-Speed Workforce) that were used to inform the High-Speed Flight Task Force are presented. Responses from a diverse set of aerospace professionals and enthusiasts indicate that economics, environmental (emissions, sonic boom, and community noise), and regulatory concerns are believed to be the largest roadblocks to high-speed civil point-to-point flight. Furthermore, survey results suggest that AIAA should focus its efforts on environmental and policy-related leadership, understanding and developing strategies to address high-speed flight economic challenges, and support for high-speed flight student engagement, education, and international collaboration.

Introduction

To strengthen the foundation of the High-Speed Flight Task Force (HSFTF) recommendations, two surveys were conducted to gather perspectives from the aerospace community. One survey focused on high-speed flight challenges and the other focused on the high-speed flight workforce. Results from both surveys are contained in this report. The surveys asked questions related to high-speed flight challenges in several categories including economic, environmental, policy, regulation, operations, standards, design and technology, and education. The high-speed flight challenges and workforce surveys had a small initial set of responses that informed the draft recommendations. As more responses were logged the results were updated. This report covers the results, as of 17 August 2025, which contained 68 responses for the high-speed flight challenges survey and 23 responses for the workforce survey. The surveys continue to be active and will record responses as time moves forward, allowing the ability to track changes with time. A link to each survey can be found below.

[High Speed Workforce Survey]

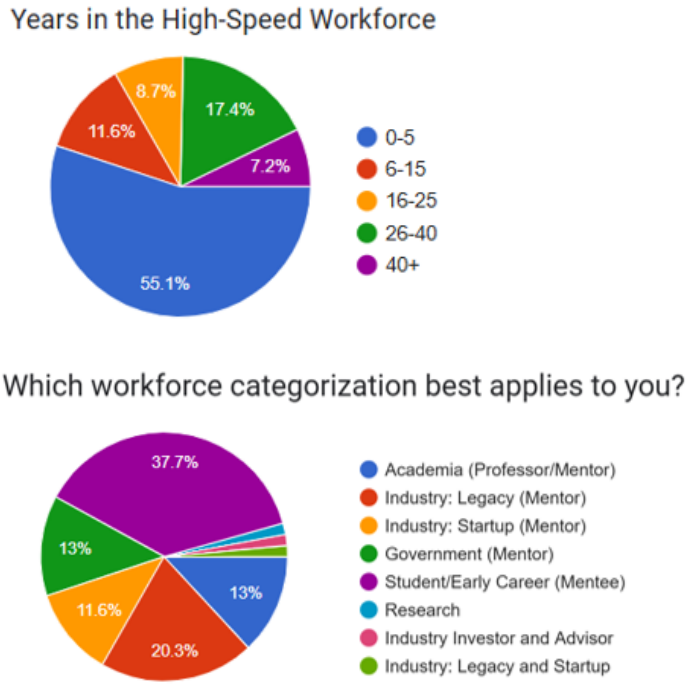
[High Speed Flight Challenges Survey]

Data Collection

The survey on high-speed flight challenges captured insights from professionals across industry, government, academia, and the startup ecosystem—ranging from senior experts to early-career contributors and students. This broader dataset not only confirms earlier findings but also helps refine AIAA's priorities going forward.

Respondent demographics and affiliations spanned a wide range of roles, experience levels, and organizations. As shown in **Figure A1**, participants included both legacy aerospace professionals and individuals from startups, academia, and international institutions—illustrating the diverse base of interest and expertise in high-speed flight. The breadth of organizational representation highlights the cross-sector nature of the field, underscoring the need for collaborative approaches across policy, research, and implementation.

Figure A1. *Survey Demographics and Organizational Participation*



Participating organizations included:

Australian National University, Boeing, Boom Supersonic, CSUN, Cal Poly SLO, Crucial Flow Research, DLR, Duke University, InterFlight Global Corporation, JAXA, NASA, NOAA, New Frontier Aerospace, Politecnico di Torino, Poulos Air & Space, Inc., Pusan National University, RAC Consulting, Radian Aerospace, Reaction Engines, Rolland Vincent Associates LLC, The Drake Group Inc, UC Irvine, UCI AIAA, University of Arizona, University of Arizona AIAA, University of California Irvine, University of South Carolina, University of Southern California, University of Washington, Unmanned Air Technologies, and several independent or retired professionals from organizations such as Lockheed Martin, Boeing, and Northrop Grumman.

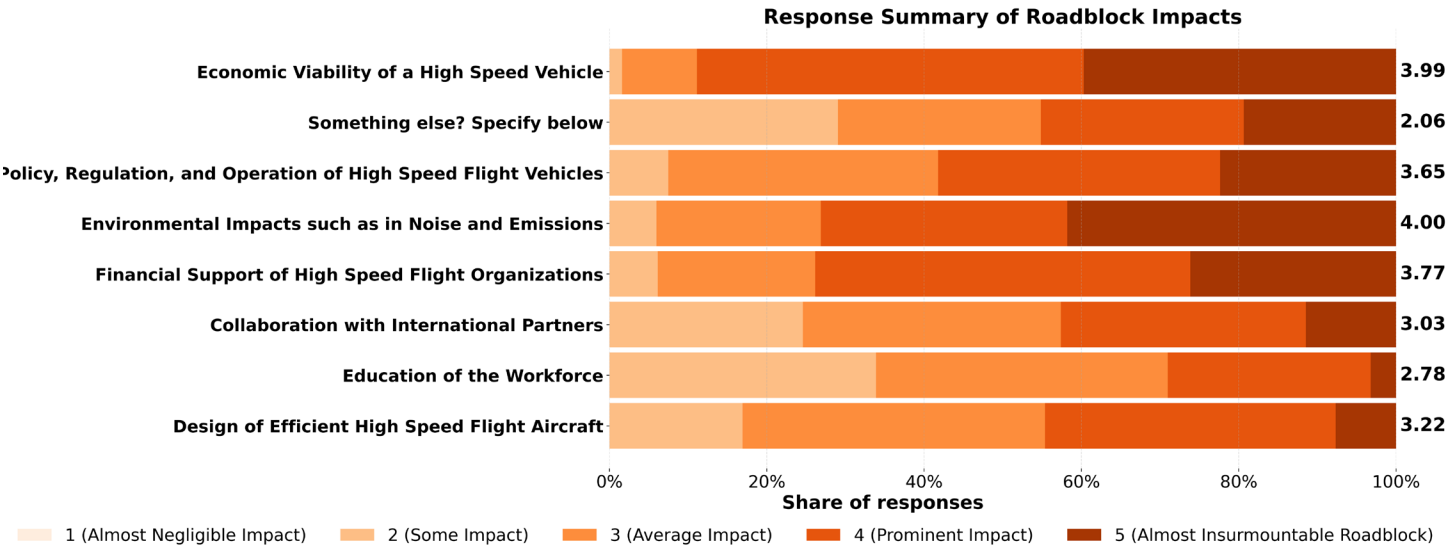
To provide a high-level overview, **Figure A2** summarizes all roadblock and recommendation responses by category. This visualization highlights how respondents rated the severity of each challenge and the urgency of various AIAA support activities. It offers a useful frame of reference for the deeper analysis that follows in the next section.

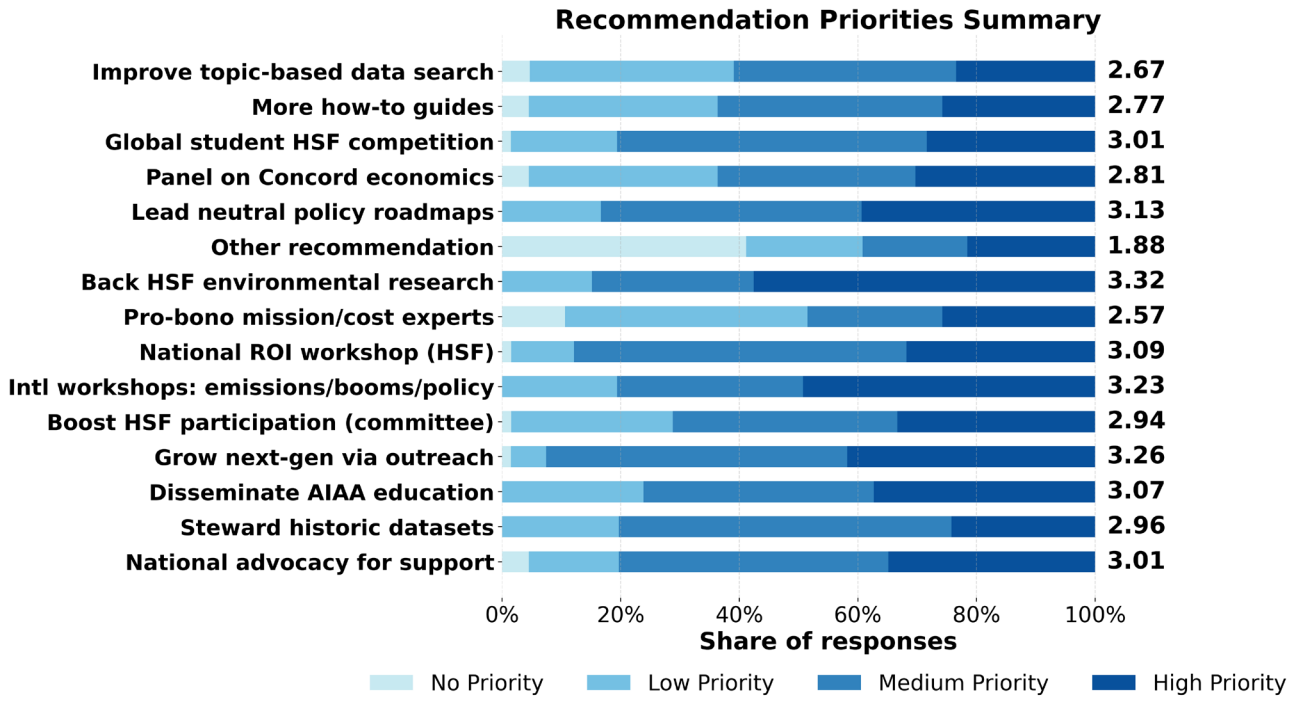
The roadblocks are items believed to prevent high-speed civil point-to-point flight from being realized. Respondents were asked to rate each roadblock from 1 to 5. A score of 1 means the roadblock has a negligible impact and a 5 means it has a critical impact. The scores of all participants were averaged, and the mean score is shown on the right side of the figure. The bar colors represent the percentage of the total survey population that assigned each rating value.

Respondents were also given the opportunity to write in their own challenges and concerns. The mean score for this category is low and may be significant, however this result is not definitive as other respondents did not have the chance to rate these write-in responses.

Recommendations in the survey focused on rating potential actions that should be taken to enable high-speed civil point-to-point flight. These actions were derived from the HSFTF initial recommendations. The recommendation scoring was similar but used a scale from 1 to 4, where 1 indicated “No Priority,” 2 indicated “Low Priority,” 3 indicated “Medium Priority,” and 4 indicated “High Priority.”.

Figure A2. *Summary of Roadblock and Recommendation Responses*





Survey Analysis

A few key results have emerged from the survey data and are broken down into two categories, 1) Roadblocks to High-Speed Civil Point-to-Point Flight and 2) Recommendations for AIAA Action.

Roadblocks to High-Speed Civil Point-to-Point Flight

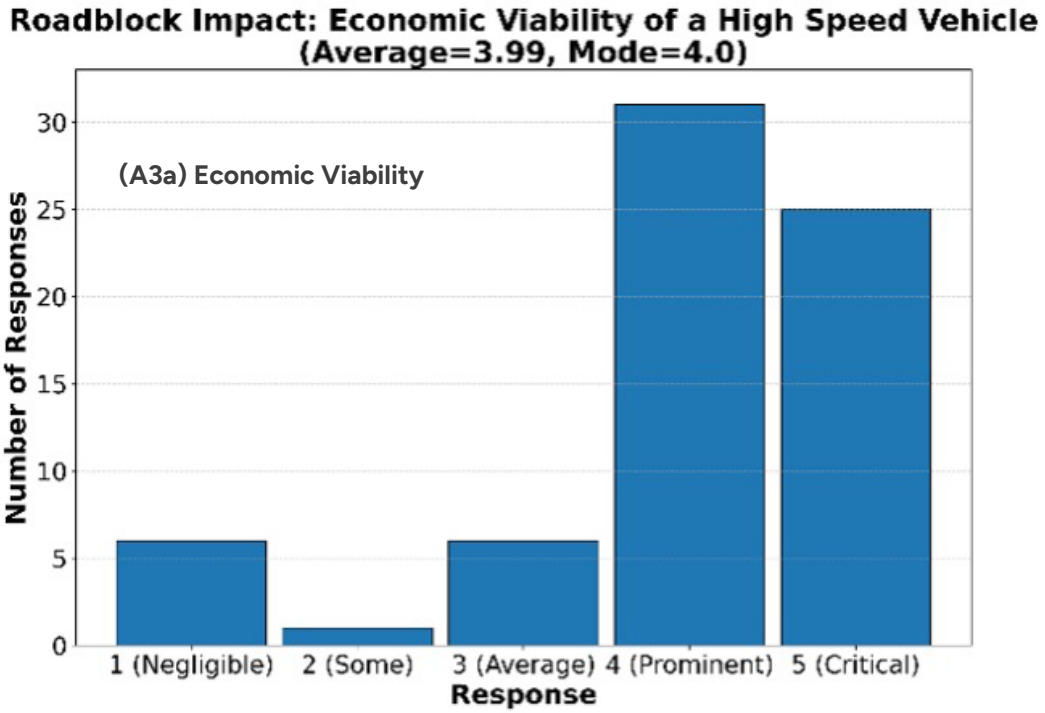
The most prominent concern from survey participants was economic viability. Respondents overwhelmingly identified financial barriers, including long-term return-on-investment (ROI) cycles and limited investor appetite, as the most significant challenges facing high-speed vehicle development. These concerns were consistently reflected in both scaled responses and open-ended (write-in) commentary.

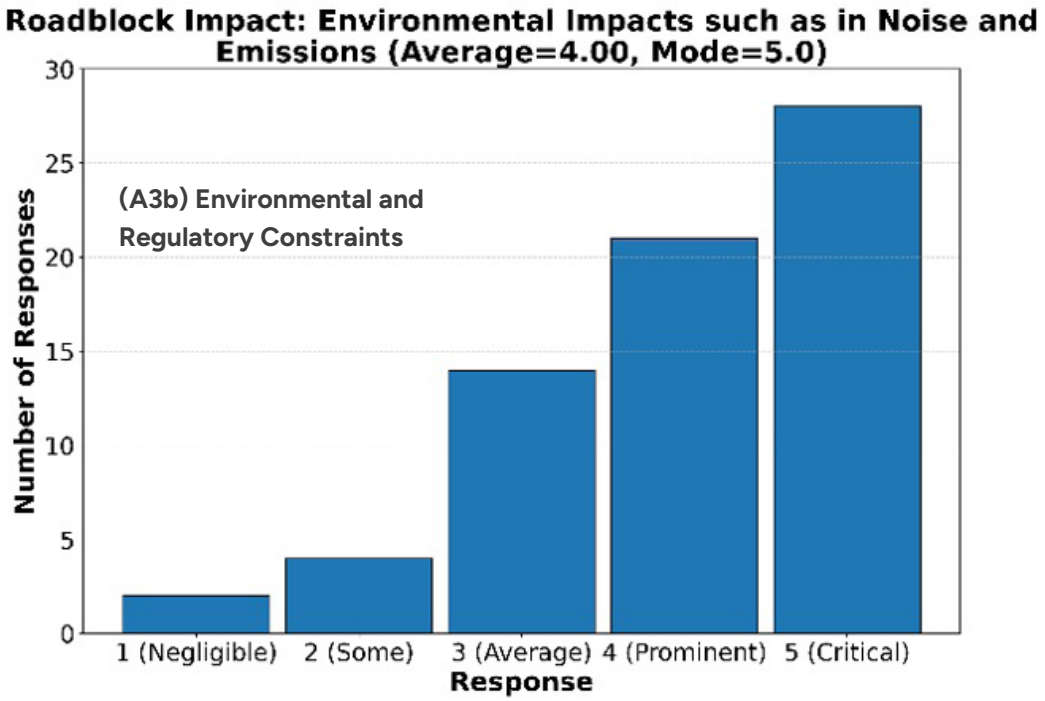
Environmental and regulatory uncertainty followed closely in importance. Sonic boom restrictions, noise standards, and atmospheric emissions were frequently flagged as disruptive or ill-defined. Many respondents emphasized the need for updated international certification frameworks, particularly for overland flight.
Design and integration challenges including propulsion, thermal management, and structural efficiency were seen as important but more solvable. There was confidence that these technical areas are actively being worked on and can be addressed through sustained research and development.

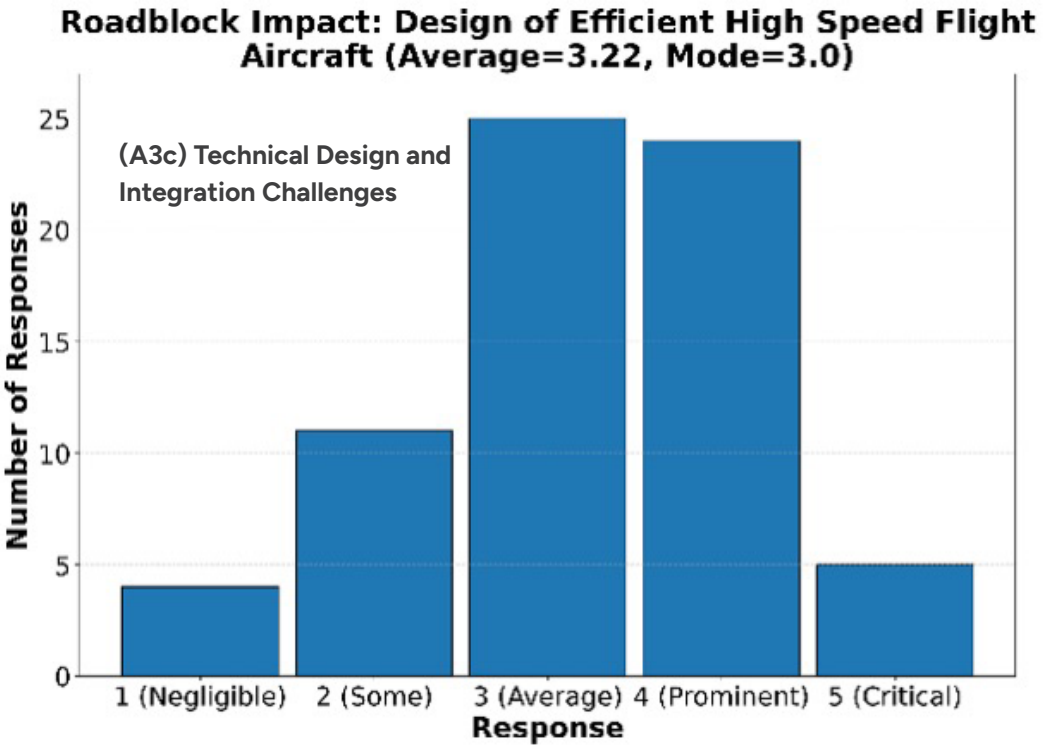
Workforce and talent issues were not top ranked, but several respondents noted that sustaining expertise in high-speed systems is a long-term concern. There was also interest in making the field more attractive and accessible to early-career professionals.

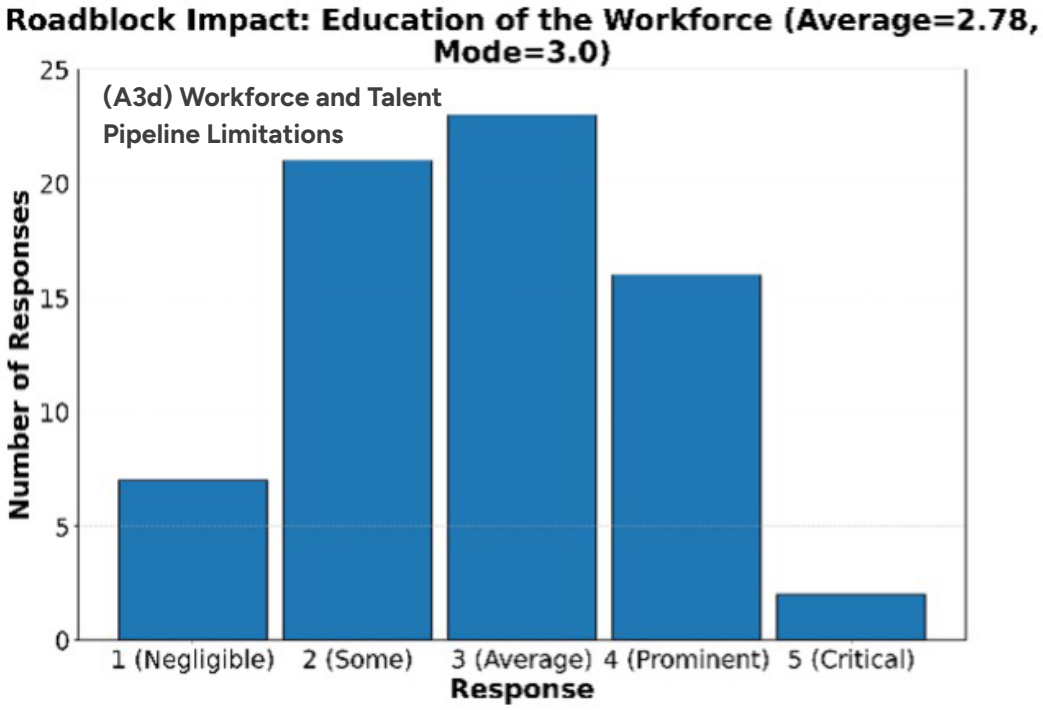
The data for these four themes are plotted in **Figure A3** by number of responses versus perceived impact (1 thru 5). Each of the bar charts in this figure include the average response value and the mode at the top of the chart.

Figure A3. *Perceived Impact of Roadblocks to High-Speed Flight*






Roadblock Impact: Design of Efficient High Speed Flight Aircraft (Average=3.22, Mode=3.0)
(A3c) Technical Design and Integration Challenges
Number of Responses
0
5
10
15
20
25
1 (Negligible)
2 (Some)
3 (Average)
4 (Prominent)
5 (Critical)
Response


Roadblock Impact: Education of the Workforce (Average=2.78, Mode=3.0)
(A3d) Workforce and Talent Pipeline Limitations
Number of Responses
0
5
10
15
20
25
1 (Negligible)
2 (Some)
3 (Average)
4 (Prominent)
5 (Critical)
Response

Recommendations for AIAA Action

When asked where AIAA should focus its efforts, respondents expressed their strongest support for environmental and policy-related leadership. Many emphasized AIAA's role in coordinating cross-sector input to guide regulatory development, especially on sonic boom mitigation and emissions standards.

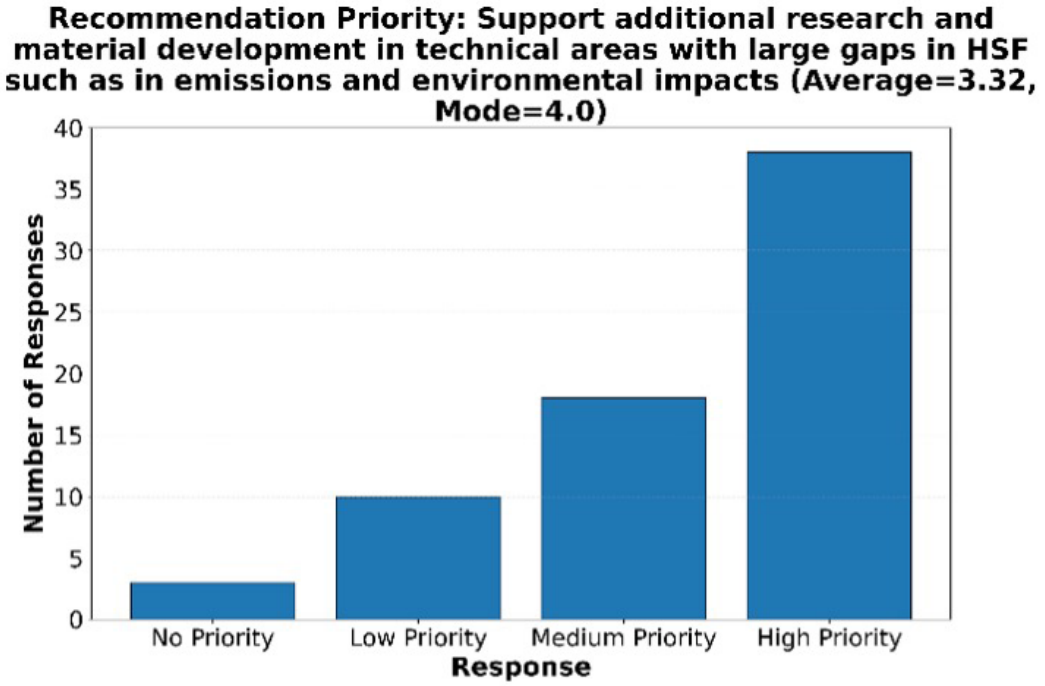
There was also a clear call for AIAA to help the community understand the economic case for high-speed flight. Support for initiatives like ROI modeling workshops or cost-benefit modeling studies was strong, especially as a foundation for both industry planning and regulatory engagement.

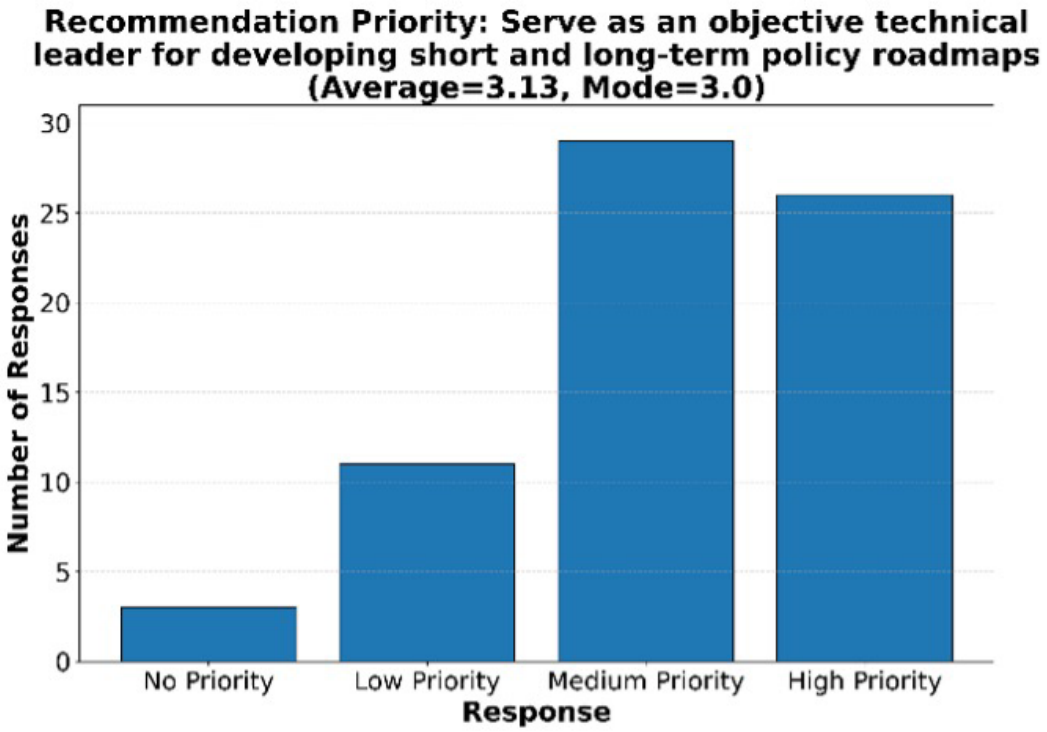
Support for student engagement, education, and international collaboration was also evident, although slightly less urgent compared to regulatory and economic issues. Design competitions, mentorship, and training opportunities were all positively viewed as part of a longer-term strategy to grow the high-speed ecosystem.

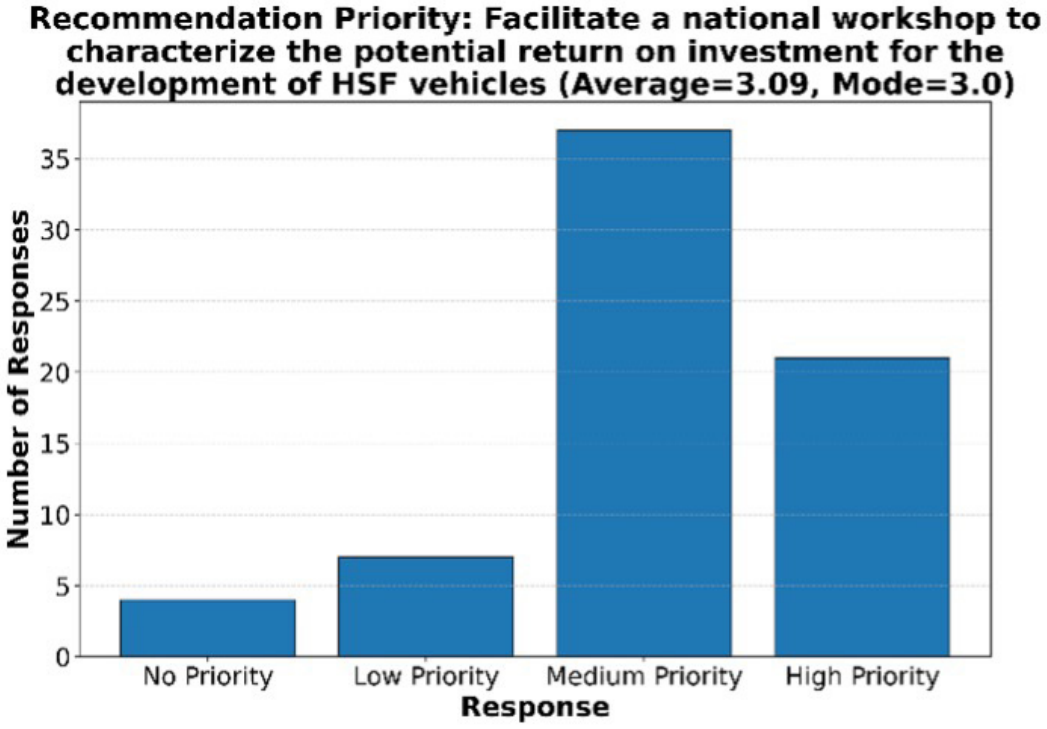
Figure A4 presents recommendation-specific response data grouped by theme. Each plot (theme) shows the number of responses versus priority (1 – no priority, 2 – low priority, 3 – medium priority, and 4 – high priority). The average response and mode values are contained at the top of each bar chart.

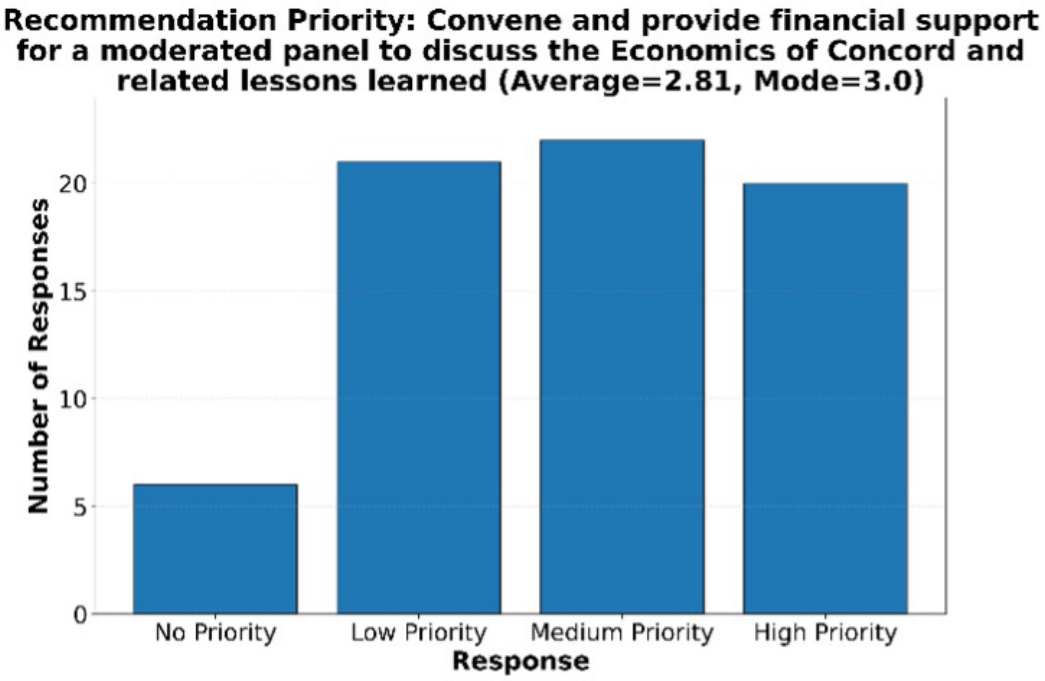
Figure A4. *Recommended AIAA Activities and Support Areas*

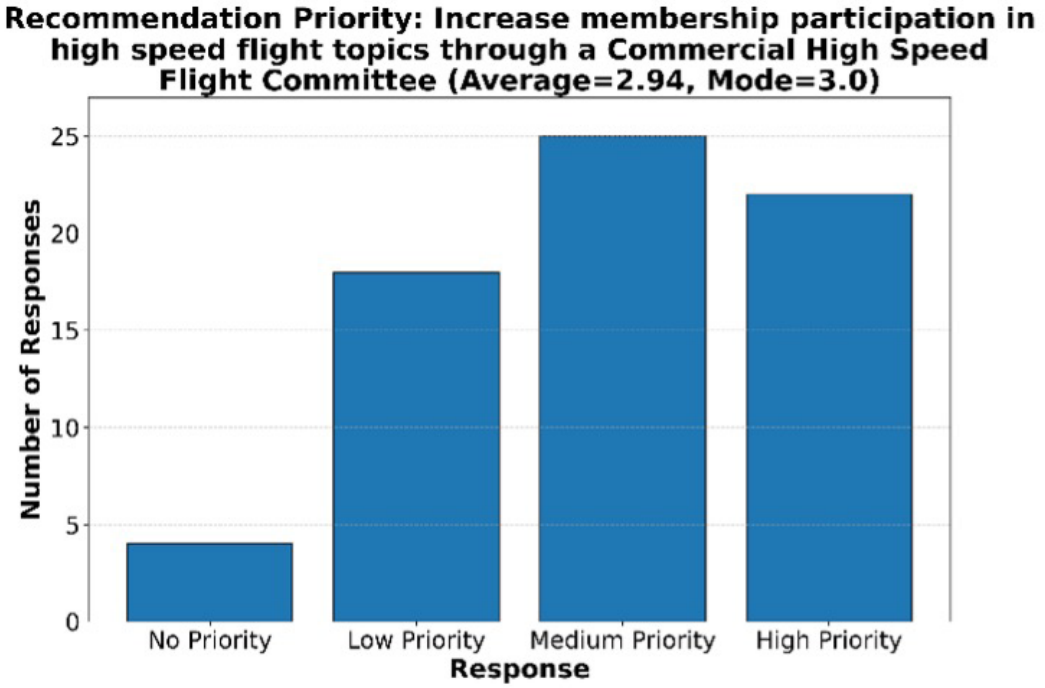
(A4a) Support for Environmental and Emissions Research
(A4b) Development of Policy and Regulatory Roadmaps
(A4c) ROI Modeling and Investment-Focused Workshops
(A4d) Concorde Economics Panel (Retrospective Lessons Learned)
(A4e) Creation of a High-Speed Flight AIAA Committee
(A4f) Student Engagement and Design Competitions

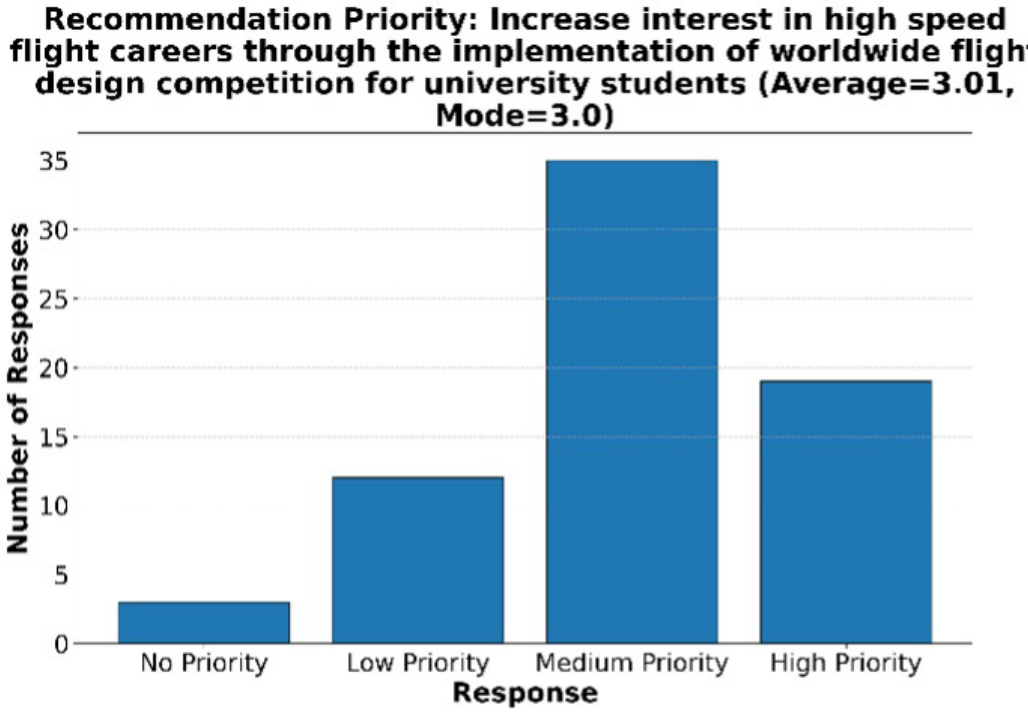



Recommendation Priority: Serve as an objective technical leader for developing short and long-term policy roadmaps (Average=3.13, Mode=3.0)
Number of Responses
0
5
10
15
20
25
30
No Priority
Low Priority
Medium Priority
High Priority
Response


Recommendation Priority: Facilitate a national workshop to characterize the potential return on investment for the development of HSF vehicles (Average=3.09, Mode=3.0)
Number of Responses
0
5
10
15
20
25
30
35
No Priority
Low Priority
Medium Priority
High Priority
Response


Recommendation Priority: Convene and provide financial support for a moderated panel to discuss the Economics of Concord and related lessons learned (Average=2.81, Mode=3.0)
Number of Responses
0
5
10
15
20
No Priority
Low Priority
Medium Priority
High Priority
Response


Recommendation Priority: Increase membership participation in high speed flight topics through a Commercial High Speed Flight Committee (Average=2.94, Mode=3.0)
Number of Responses
0
5
10
15
20
25
No Priority
Low Priority
Medium Priority
High Priority
Response



Survey Conclusions

The updated survey results reinforce many of the original conclusions while offering sharper guidance on where to focus. Most notably, respondents stressed that the greatest hurdles facing high-speed civil point-to-point flight are not technical but economic and regulatory. Without stronger business cases and clearer policy pathways, development is likely to remain fragmented and high risk. AIAA is viewed as uniquely suited to close this gap by leading efforts that translate scientific research into usable standards, fostering regulatory consistency, and informing long-term economic feasibility.

At the same time, technical challenges such as emissions, sonic boom noise, and performance optimization remain important and deserving of support, especially as they relate to enabling future certification. There is also clear interest in continuing educational outreach, mentorship, and student competitions as a way of preserving the high-speed skill base and inspiring the next generation of innovators.

Together, these findings affirm AIAA's dual role as a convener of technical expertise and a strategic advocate for industry progress, one that connects policy, engineering, and future leadership in a rapidly evolving aerospace landscape.