



Barbara Holder Ph.D.
August 18-19, 2020

REDAC HUMAN FACTORS SUBCOMMITTEE 2020 SUMMER/FALL MEETING

Honeywell
THE POWER OF **CONNECTED**

Update from Full REDAC Meeting

- Welcome Address and Opening Remarks, John Hansman Shelley Yak
- FAA Address/NextGen Perspectives, Pam Whitley
- Human Factors and Automation Interaction, Kathy Abbott
- NASA Update, Ed Waggoner
- Panel discussion on COVID-19 Impact on Research Programs
- Subcommittee F&R presentations
- HF F&Rs:
 1. Urban/Advanced Air Mobility (AAM) Research and Definition
 2. Access to FAA Research Artifacts
 3. The Proposed Prioritization Process

Human Factors and Automation Interaction

Kathy Abbott, PhD, FRAeS

Chief Scientific and Technical Advisor, Flight Deck
Human Factors

Federal Aviation Administration

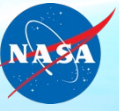


Federal Aviation
Administration



Takeaways

- **Resurgence of interest in Human Factors and automated systems/autonomy**
- **We need a more nuanced view of “automation”**
- **Complexity is a factor, too**
- **Need to address challenges and emerging issues**
- **Broad, integrated perspective needed – design, training, operations, maintenance, regulatory, etc.**



EXPLORE FLIGHT

WE'RE WITH YOU WHEN YOU FLY

NASA Aeronautics FY 2021 Congressional Budget Briefing

Robert Pearce, Associate Administrator
Aeronautics Research Mission Directorate



NASA Aeronautics Priorities FY20/21

FY20 / FY21 Priorities

- Successfully complete the ATM Technology Demonstration Project, Advanced Composites Project, UAS Traffic Management Project, and the UAS Integration into the NAS Project and communicate the benefits to our stakeholders and the American public.
- Successfully transition from traditional air traffic management to a UTM-inspired, increasingly autonomous and collaborative air traffic management future.
- Drive U.S. leadership in Advanced Air Mobility through establishment of a community vision, development of the AAM National Campaign series and investment in priority research areas.
- Execute the LBFD Mission with rigor and discipline, including X-59 aircraft production and preparation for community response testing and flight operations.
- Establish and promote a vision for U.S. leadership in the next generation of commercial aircraft, working closely with the community to identify the highest priority technologies including appropriate applications of electrified aircraft propulsion, and fostering partnerships with industry to drive technology investment and advancement.
- Continue to integrate transdisciplinary research and fresh ideas into the ARMD portfolio through reimagining of CAS, better integrating fundamental research, and enhancing university engagements.
- Evolve NASA Aeronautics capabilities and our management policies to better integrate requirements and capability assessments into our management processes.
- Foster open communication among staff and management and enhanced engagement in ARMD day-to-day operations with an emphasis on building trust and encouraging all to assume positive intent from others.
- Evolve ARMD management structures (programmatic and mission support) to support ARMD transformation and agility.

NASA Aeronautics Strategies for Research



Safe, Efficient Growth in Global Operations

- Achieve safe, scalable, routine, high-tempo airspace access for all users

★ Captures requirements to enable diverse new aviation business models



Innovation in Commercial Supersonic Aircraft

- Achieve practical, affordable commercial supersonic air transport



Ultra-Efficient Subsonic Transports

- Realize revolutionary improvements in economics and environmental performance for subsonic transports with opportunities to transition to alternative propulsion and energy.

★ Consolidates Alternative Propulsion with Subsonic Vehicles to reflect integration focus



Safe, Quiet, and Affordable Vertical Lift Air Vehicles

- Realize extensive use of vertical lift vehicles for transportation and services including new missions and markets

★ Captures eVTOL community opportunities and requirements in new thrust



In-Time System-Wide Safety Assurance

- Predict, detect and mitigate emerging safety risks throughout aviation systems and operations



Assured Autonomy for Aviation Transformation

- Safely implement autonomy in aviation applications



Operation of the REDAC committees

- Formed by FAA to assist REDAC
 - Provide advice to REDAC on specific areas of research
 - Assist in identifying overarching issues that could affect R&D portfolio
 - Help the FAA establish the best possible R&D portfolio within the constraints of FAA's available resources
- Two Full committee meetings, annually
- Two Subcommittee meetings, annually
 - Winter/Spring Timeframe
 - Purpose is to review the R&D portfolio developed based on their strategic guidance from fall meeting
 - Summer/Fall Timeframe
 - Purpose is to provide strategic guidance to the FAA to develop the upcoming FY+3 research portfolio

Summer/Fall 2020 Meeting Objectives

- Provide strategic guidance to the FAA to develop the upcoming FY+3 research portfolio
- FAA informs the subcommittee so they can provide the strategic guidance
 - Review of past year activities and accomplishments
 - Proposed FY+3 focal areas
- Review FAA response to F&Rs and Actions
- Develop F&Rs to provide strategic guidance
- Review and update Human Factors emerging issues and trends to assist in identifying research gaps

Findings and Recommendation

- Finding sets the stage for the recommendation
- Recommendation tells the FAA what the subcommittee would like the FAA to do, to consider, to present, etc.
- FAA only responds to what is written in the recommendation



Good Recommendations

- Be straightforward and concise
 - Remember the audience is more than the researchers in the technical divisions
 - Write clearly and concisely
- Be clear about what you want the FAA to do
 - Use action oriented language
 - Avoid fulsome or extraneous adjectives and passive voice

