

ROBERT JOHN HANSMAN JR.

Department of Aeronautics and Astronautics
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Room 33-303, 77 Massachusetts Ave.
Cambridge, MA 02139-4307 USA

Voice (617) 253-2271
rjhans@mit.edu

<http://web.mit.edu/aeroastro/www/people/rjhans/bio.html>

Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY - Cambridge, MA

- Ph.D. in Physics, June 1982.

Thesis under Professor Walter Hollister, "The Interaction of Radio Frequency Electromagnetic Waves with Atmospheric Water Droplets and Applications to Aircraft Ice Prevention."

- M.S. in Physics, May 1980.

Thesis under Professor George Bekefi, "Reflexing in a Relativistic e-Beam Diode."

CORNELL UNIVERSITY - Ithaca, NY

- A.B. Magna Cum Laude in Physics & Distinction in all Subjects, June 1976.

Member

National Academy of Engineering (NAE), FAA Research and Development Advisory Committee (Chair), NRC Aeronautics & Space Engineering Board, NASA Aeronautics Advisory Council, Soaring Society of America (Director), Soaring Safety Foundation (Director), American Institute of Aeronautics & Astronautics (Fellow), Royal Aeronautical Society (Fellow), Atmospheric Environment Technical Committee, American Meteorological Society, Society of Automotive Engineers, Human Factors Society, Aeronautical Flight Measurements and Techniques Working Group, Editorial Board *Air Traffic Control Quarterly* and *Journal of Aircraft*, Phi Beta Kappa, Sigma Xi.

Experience

MIT DEPARTMENT OF AERONAUTICS AND ASTRONAUTICS - Cambridge, MA

1982 - present

Faculty member in the fields of Flight Safety, Flight Information Systems, Instrumentation, Aviation Meteorology, Human Factors, Air Transportation

Head of Systems Sector; Director of the International Center for Air Transportation.

2006 T. Wilson Professor of Aeronautics and Astronautics

1995 Professor.

1987 Associate Professor.

1985 Esther and Harold E. Edgerton Assistant Professor.

1984 Boeing Assistant Professor of Aeronautics and Astronautics.
1983 Assistant Professor.
1982 Lecturer.

PRIVATE CONSULTANT - Cambridge, MA
1982 - present
Consultant for numerous firms on aerospace related topics.

MIT FLIGHT TRANSPORTATION LABORATORY - Cambridge, MA
1980 - 1982
Graduate Research Assistant working on the physics of advanced aircraft ice prevention concepts.

MIT RESEARCH LABORATORY OF ELECTRONICS - Cambridge, MA
1976 - 1980
Graduate Research Assistant working on high power relativistic electron beam magnetrons and high current density diodes.

FRANCIS & JACKSON ASSOCIATES - Marion, MA
1976 - 1977
Consultant working on total-energy wind shear detection and autothrottle control.

CORNELL UNIVERSITY DEPARTMENT OF PHYSICS - Ithaca, NY
1975 - 1976
Recitation Instructor involved in teaching basic courses in Mechanics and Modern Physics (Optics and Quantum Mechanics).

SCHWEIZER AIRCRAFT CORPORATION - Elmira, NY (also Sugarbush, VT, Franconia, NH, North Conway, NH, and Plymouth, MA)
Summers 1971-1977
Glider and airplane flight instructor, glider and banner tow pilot, ferry pilot and test pilot for several companies.

FLIGHT EXPERIENCE - 6000+ hours: Commercial, Single & Multi-Engine Airplane, Single Engine Seaplane, Helicopter, Glider, Instrument, Remote Pilot and Flight Instructor Ratings. Type rated in Lear Jet 24, 35 and 55 series. Wright Brothers Master Pilot Award. Graduate of the Union Alpen Seelflugschule (Neideroblarn, Austria). Extensive mountain and instrument flight experience. Engineering, Production, and Meteorological Flight Test Experience.

Awards

2020 Wright Brothers Master Pilot Award
2019 AIAA Aircraft Operations Best Paper Award
2015 Best Article in Journal of Cognitive Engineering and Decision Making
2013 Elected to the National Academy of Engineering
2012 CNA Award for Operational Analysis
2012 Kevin Corker Award for the Best Paper at 10th USA/Europe ATM, R&D Seminar
2007 Plenary Lecture at American Control Conference
2006 T. Wilson Chair of Aeronautics & Astronautics
2005 Best Paper in 6th USA/Europe ATM, R&D Seminar
2005 AIAA Dryden Lecture in Aviation Research
2005 Kriske Career Award from Air Traffic Control Association
2004 Laurel from Aviation Week and Space Technology
2002 Fellow of the American Institute of Aeronautics & Astronautics.
2001 NASA Turning Goals into Reality Award
1998 Bose Award for Excellence in Teaching
1998 FAA/Eurocontrol Best Paper in Air Traffic Management
1997 FAA Excellence in Aviation Award.
1994 AIAA Losey Atmospheric Sciences Award.
1990 OSTIV Diploma for Technical Contribution.
Federation Aeronautique Internationale Gold C Award with 3 Diamonds.
1986 Presidential Young Investigator Award.
1985 Esther & Harold E. Edgerton Professorship.
1984 Boeing Professorship in Aeronautics & Astronautics.
1986 AIAA Award for the Best Paper in Thermophysics.
1989 Soaring Society of America, Exceptional Service Award.
1980 and 1990 Region 1 Soaring Champion.
1984 NASA Astronaut Selection Finalist.

Patents

Microwave Ice Prevention System, U.S. Patent #4365131 issued December 21, 1982.

Method and Apparatus for Measurement of Ice Thickness Employing Ultrasonic Pulse-Echo Technique, U.S. Patent #4628736 issued December 16, 1986.

Method and Apparatus for Monitoring Liquid Volume/Mass in Tanks, U.S. Patent #4729245 issued March 8, 1988.

Optically Indicating Surface De-Icing Fluids, U.S. Patent #5039439 issued August 13, 1991.

Method and Apparatus for Detection of Ice Accretion - Remote IR Techniques, U.S. Patent #5313202 issued May 17, 1994.

Integrated Flight Information and Control System, U.S. Patent #6,389,333, issued May 14, 2002.

System and Method for Measuring the Workload of a Driver. U.S. Patent #7428449, issued September 23, 2008.

Aircraft Fuel Efficiency Tunnel Display for Pilots and Dispatchers. U.S. Patent Application #20190317489, allowed January 2020.

Video Production

“MIT Video Series on Measurement” (author, co-producer, and presenter), 1995:

- “Introduction to Measurement”
- “Calibration, Accuracy and Error”
- “Measuring Dynamic Variables”
- “Contact Temperature Measurement”
- “Infrared Temperature Measurement”
- “Distance, Velocity and Acceleration”
- “Mass, Force, Strain, Torque, and Pressure”
- “Measurement”
- “Fluid Quantity and Flow”

Congressional Testimony

“The Dynamics of the Emerging Capacity Crisis in the U.S. Air Traffic Control System” House Appropriations Committee – Subcommittee on Transportation, 3/15/01.

“Developing the Next Generation Air Traffic Management System” House Science Committee – Subcommittee on Space and Aeronautics”, 7/19/01.

“A Review of Aeronautics R&D at FAA and NASA” House Science Committee – Subcommittee on Space and Aeronautics”, 3/6/03.

“The Future of Aeronautics at NASA” House Science Committee – Subcommittee on Space and Aeronautics”, 3/16/05.

“Financing the Next Generation Air Transportation System” House Transportation and Infrastructure Committee – Aviation Subcommittee, 9/27/05.

“The Federal Aviation Administration’s Research and Development Capability” House Science Committee – Subcommittee on Space and Aeronautics”, 3/22/07.

“A Review of the Federal Aviation Administration’s Research and Development Program” House Science Committee – Subcommittee on Space and Aeronautics”, 2/16/11.

“Unmanned Aircraft Systems (UAS) Research and Development” House Committee on Science, Space and Technology”, 1/21/15.

“Transforming America’s Air Travel” House Committee on Science, Space and Technology”, 6/11/15.

Books

(with Belobaba, P., Barnhart, C., Odoni, A., Hansman, R.J., Swelbar, W., Waitz, I., Reynolds, T., Midkiff, A., Marias, K., Barnett, A., Kochan, T., Hoffer-Gittel, J, Merkersi, R.) , “The Global Airline Industry” (Wiley Publishing and AIAA). (updated and second printing 2014).

“Characteristics of Instrumentation,” Chapter 1, pp. 3-10 in The Measurement, Instrumentation and Sensors Handbook, Webster, J., Editor, CRC Press LLC, Boca Raton, FL, January 1999 (reprinted and updated 2013).

(with Feron, E. (Editor), Balakrishnan, H., Clarke, J.P., and, Jimenez, H.), “Challenges in Aerospace Decision and Control: Air Transportation Systems” pp. 109-136 in Advances in Control System Technology for Aerospace Operations Springer Link, SBN: 978-3-662-47693-2 (Print) 978-3-662-47694-9 (Online)

“Droplet Size Distribution Effects on Aircraft Ice Accretion,” *Journal of Aircraft*, Vol. 22, No. 6, June 1985.

(with M. Kirby), “Measurement of Ice Accretion Using Ultrasonic Pulse-Echo Techniques,” *Journal of Aircraft*, Vol. 22, No. 6, June 1985.

Journal Articles

“Measurement of Individual Hydrometeor Absorption Cross Sections Utilizing Microwave Cavity Perturbation Techniques,” *Journal of Atmospheric and Oceanic Technology*, Vol. 1, No. 4, December 1984.

“Droplet Size Distribution Effects on Aircraft Ice Accretion,” *Journal of Aircraft*, Vol. 22, No. 6, June 1985.

(with M. Kirby), “Measurement of Ice Accretion Using Ultrasonic Pulse-Echo Techniques,” *Journal of Aircraft*, Vol. 22, No. 6, June 1985.

“Performance Degradation of Natural Laminar Flow Airfoils Due to Contamination by Rain or Insects,” *Technical Soaring*, Vol. 9, No. 3, September 1985.

(with M. Barsotti), “Surface Wetting Effects on a Laminar Airfoil in Simulated Heavy Rain,” *Journal of Aircraft*, Vol. 22, No. 12, December 1985.

(with M. Kirby), “Measurement of Ice Growth During Simulated and Natural Icing Conditions Using Ultrasonic Pulse-Echo Techniques,” *Journal of Aircraft*, Vol. 23, No. 6, June 1986.

“Microwave Absorption Measurements of Melting Spherical and Non-Spherical Hydrometeors,” *Journal of the Atmospheric Sciences*, Vol. 43, 1643-1649, August 1986.

Journal Articles (cont.)

(with M. Kirby), "Comparison of Wet and Dry Growth in Artificial and Flight Icing Conditions," *Journal of Thermophysics and Heat Transfer*, Vol. 1, No. 3, 215-221, July 1987.

(with A. Craig), "Low Reynolds Number Tests of NACA 64-210, NACA 0012, and Wortmann FX67-K170 Airfoils in Rain," *Journal of Aircraft*, Vol. 24, No. 8, 559-566, August 1987.

(with M. Kirby, R. McKnight, and R. Humes), "In-Flight Measurement of Airfoil Icing Using an Array of Ultrasonic Transducers," *Journal of Aircraft*, Vol. 25, No. 6, June 1988.

(with L. Peterson and E. Crawley), "Nonlinear Fluid Slosh Coupled to the Dynamics of a Spacecraft," *AIAA Journal*, Vol. 27, No. 9, September 1989.

(with S. Turnock), "Investigation of Surface Water Behavior During Glaze Ice Accretion," *Journal of Aircraft*, Vol. 26, No. 2, February 1989.

(with J. Sturdy), "Dynamic Response of Aircraft-Autopilot Systems to Atmospheric Disturbances," *Journal of Aircraft*, Vol. 26, No. 2, February 1989.

(with E. Crawley), "Improving the Crashworthiness of Your Sailplane," *Soaring*, June 1989.

(with K. Kampf and E. Crawley), "Experimental Investigations of the Crashworthiness of Scaled Composite Sailplane Fuselages," *Journal of Aircraft*, Vol. 26, No. 7, July 1989.

"Measuring Airframe Ice Ultrasonically," *Avionics*, September 1989.

(with K. Yamaguchi, B. Berkowitz, and M. Potapczuk), "Modeling Surface Roughness Effects On Glaze Ice Accretion," *Journal of Thermophysics and Heat Transfer*, Vol. 5, No. 1, January 1991.

(with V. Lupi), "Development and Testing of the MIT Acoustic Levitation Testing Facilities," *Journal of Atmospheric and Oceanic Technology*, Vol. 8, No. 4, 541-552, August 1991.

(with M. Adams), "Last Hurdle for Autonomous Air Vehicles," *Aerospace America*, October 1991.

(with D. Ávila de Melo), "Analysis of Aircraft Performance During Lateral Maneuvering for Microburst Avoidance," *Journal of Aircraft*, Vol. 28, No. 12, 837-843, December 1991.

(with K. Yamaguchi), "Heat Transfer on Accreting Ice Surfaces," *Journal of Aircraft*, Vol. 29, No. 1, 108-113, January 1992.

Journal Articles (cont.)

(with C. Wanke), "Hazard Evaluation and Operational Cockpit Display of Hazardous Windshear Information," *Journal of Aircraft*, Vol. 29, No. 3, 319-325, May 1992.

(with J. Kuchar), "An Exploratory Study of Plan View Terrain Displays for Air Carrier Operations," *The International Journal of Aviation Psychology*, Vol. 3, No. 1, 34-54, March 1993.

(with A. Midkiff), "Identification of Important 'Party Line' Information Elements and Implications for Situational Awareness in the Datalink Environment," *Air Traffic Control Quarterly*, Vol. 1 (1), 5-30, 1993.

(with E. Hahn), "Experimental Studies on the Effect of Automation on Pilot Situational Awareness in the Datalink ATC Environment," *1992 SAE Transactions Journal of Aerospace*, Vol. 101, Sec. 1, 922292, 1957-1968, 1993.

(with E. Greitzer, E. Crawley, S. Widnall, S. Hall, H. McManus, J. Shea, and M. Landahl), "Reform of the Aeronautics and Astronautics Curriculum at MIT," *Journal of Engineering Education*, Vol. 83, No. 1, 47-56, January 1994.

(with M. Mykityshyn, and J. Kuchar), "Experimental Study of Advanced Electronic Cockpit Displays for Instrument Approach Information," *The International Journal of Aviation Psychology*, Vol. 4, No. 2, 141-166, July 1994.

(with R. Henry and K. Breuer), "Measurement of Heat Transfer Variation on Surface Roughness Elements Using Infrared Techniques," *Journal of Thermophysics and Heat Transfer*, Vol. 9, No. 1, 175-180, January 1995.

(with R. Henry), "Mesure des Variations du Coefficient de Transfert sur Rugosités de Surface par Thermographie Infrarouge," *Revue Scientifique et Technique de la Défense*, 1995 No. 4, 71-78, October 1995.

(with A. Pritchett), "Variations Among Pilots from Different Flight Operations in Party Line Information Requirements for Situation Awareness," *Air Traffic Control Quarterly*, Vol. 4 (1), 29-50, January 1997.

(with R. Kornfeld and J. Deyst), "Single-Antenna GPS-Based Aircraft Attitude Determination," *Navigation : Journal of the Institute of Navigation*, Vol. 45 (1), 51-60, Spring 1998.

(with H. Idris, I. Anagnostakis, B. Delcaire, J.-P. Clarke, E. Feron, and A. Odoni), "Observations of Departure Processes at Logan Airport to Support the Development of Departure Planning Tools," *Air Traffic Control Quarterly*, Vol. 7, No. 4, 229-257, July 1999.

(with R. Barhydt), "Experimental Studies of Intent Information on Cockpit Traffic Displays," *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 22, No. 4, 520-527, July-August 1999.

Journal Articles (cont.)

(with M. Endsley, and T. Farley), "Shared Situation Awareness in the Flight Deck-ATC System," *IEEE AES Systems Magazine*, Vol. 14, No. 8, 25-30, August 1999.

(with T. Farley, K. Amonlirdviman, and M. Endsley), "Shared Information Between Pilots and Controllers in Tactical Air Traffic Control," *AIAA Journal of Guidance, Control, and Dynamics*, **23**, No. 5, 826-836, September-October 2000.

(with L. Vigeant-Langlois), "Influence of Icing Information on Pilot Strategies for Operating in Icing Conditions," *Journal of Aircraft*, **37**, No. 6, 108-113, November-December 2000.

"Complexity in Aircraft Automation: A Precursor for Concern in Human-Automation Systems," *National Forum: The Phi Kappa Phi Journal: When Technology Fails*, **81**, No. 1, 30-32, February 2001.

(with R. Kornfeld, J. Deyst, K. Amonlirdviman, and E. Walker), "Applications of GPS Velocity Based Attitude Information," *AIAA Journal of Guidance, Control, and Dynamics*, **24**, No. 5, 998-1008, September-October 2001.

(with S. Vakil), "Approaches to Mitigating Complexity-Driven Issues in Commercial Autoflight Systems," *Reliability Engineering and System Safety*, Elsevier Science, **75** (2002), 133-145, January 2002.

(with J. Histon, G. Aigon, D. Delahaye, and S. Puechmorel), "Introducing Structural Considerations into Complexity Metrics," *Air Traffic Control Quarterly*, **10(2)** 115-130, 2002.

(with T. Downen), "Identification and Analysis of Key Barriers to the Utility of General Aviation," *Journal of Aircraft*, 232-238, March-April 2003.

(with T. Reynolds), "Investigating Conformance Monitoring Issues in Air Traffic Control Using Fault Detection Techniques," *Journal of Aircraft*, 42, No.5, 1307-1317, 2005.

(with A. Mozdzanowska), "Growth and Operating Patterns of Regional Jets in the United States," *Journal of Aircraft*, **42**, No.4, 00.1307-1317, 2005

(with D. Delahaye, S. Puechmorel and J. Histon), "Air Traffic Complexity Map based on Non Linear Dynamical Systems," *Air Traffic Control Quarterly*, **12**, No. 4, 367-388, 2004.

(with Laura Major-Forest), "The Future Oceanic ATC Environment: Analysis of Mixed Communication, Navigation, and Surveillance Equipage" *Air Traffic Control Quarterly*, **12**, No.4 (2006).

Journal Articles (cont.)

(with Christopher Magee, Richard de Neufville, Renee Robins Daniel Roos), “Research agenda for an integrated approach to infrastructure planning, design and management”, *Int. J. Critical Infrastructures*, Volume 2, pp. 146 – 159, Number 2-3, 2006.

(with Hayley Davison Reynolds, Tom Reynolds), "Human Factors Implications of Continuous Descent Approach Procedures for Noise Abatement in Air Traffic Control" , *Air Traffic Control Quarterly*, **14(1)**, pp. 25-45, 2006.

(with Philippe Bonnefoy) “Investigation of the Potential Impact of the Entry of Very Lights in the National Airspace System”, *Journal of Aircraft*, **44**, No 4, pp. 1318-1326, July-August 2007.

(with Aleksandra L. Mozdzanowska and Roland E. Weibel) “Feedback Model of Air Transportation System Change: Implementation Challenges for Aviation Information Systems”, *IEEE Journal*, **96**, Issue 12, pp. 1976-1991, 2009.

(with Philippe Bonnefoy and Richard de Neufville) ”Effective Development of Multi-Airport Systems; A Worldwide Perspective”, *Journal of Transportation Engineering*, **136**, Issue 11 2010.

(with Sgouris Sgourdis and Philippe Bonnefoy) “Air Transportation in a Carbon Constrained World: Long-term Dynamics of Policies and Strategies for Mitigating the Carbon Footprint of Commercial Aviation”, *Transportation Research - Part A Policy and Practice*, 45, Issue 10, 2011.

(with Morrison, J. and Sgourdis, S.) “Game Theory Analysis of the Impact of Single Isle Aircraft Competition on Fleet Emissions”, *Journal of Aircraft*, **49**, No.2 pp. 483-494, March-April 2012.

(with Churchill, A, Ball, M. and Donaldson, A.) “Integrating Best-Equipped Best-Served Principles in Ground Delay Programs,” *Air Traffic Control Quarterly*, **20**, No 1, 2012.

(with Simaiakis, I, Khadilkar, H., Balakrishnan, H., Reynolds, T. G., Reilly, B., and Urlass, S.) “Demonstration of Reduced Airport Congestion through Pushback Rate Control”, *Transportation Research Part A: Policy and Practice* (in review).

(with Marias, K., Reynolds, T., Uday, P, Muller, D, Lovegren, J. and Dumont, J.) Evaluation of Potential Near Term Operational Changes to Mitigate Environmental Impacts of Aviation” *Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering*, DOI: 10.177/0954419112454095, 1-23, July 2012.

(with Morrison, J. and Yutko, B.) “Transitioning the U.S Air Transportation System to Higher Fuel Costs” *Transportation Research Record: Journal of the Transportation Research Board*, **2266**, July 2012.

(with Palacios, R.) “Short-Term Consequences of Radio Communications Blackout on the U.S. National Airspace System” *Aerospace Sciences and Technology*, August 2013, **29** Issue 1 pp. 426-433.

Journal Articles (cont.)

(with Sandberg, M., Simaiakis, I., Balakrishnan, H. and Reynolds, T. G.) “A Decision Support Tool for Pushback Rate Control of Airport Departures” *IEEE Transactions on Systems, Man and Cybernetics Part C* (accepted for publication).

(with Palacios, R.) “Filtering Enhanced Traffic Management System (ETMS) Altitude Data” *Metrology and Measurement Systems* **20**, no. 3, <http://dx.doi.org/10.2478/mms-2013-0039>.

(with Lim, D., Kirby, M., Nam, T, Burdette,G., Yutko,B., Mozdzanowska, A., and Bonnefoy, P.) "Assessment of Carbon Dioxide Emission Metric Systems for an Aircraft Certification Standard". *Journal of Aircraft*, (2014). doi: 10.2514/1.C032279

(with Silva, S., and Jensen, L.) “Evaluation of Safety Benefit of ADS-B Traffic and Weather Uplink Services”, *Journal of Aerospace Information*, Vol. 12, No. 8, pp. 579-586, doi:10.2514/1.I010364

(with Li, L., Das, S., Palacios, R., and Srivastava, A.) “Analysis of Flight Data Using Clustering Techniques for Detecting Abnormal Operations”, *Journal of Aerospace Information*, Vol. 12, No. 9 (2015), pp. 587-598. <http://dx.doi.org/10.2514/1.I010329>.

(with Li, L., Palacios, R., and Welch, R.) “Anomaly Detection via a Gaussian Mixture Model for Flight Operation and Safety Monitoring”, *Transportation Research, Part C*, Vol., March 2016, pp. 45–57, [doi:10.1016/j.trc.2016.01.007](https://doi.org/10.1016/j.trc.2016.01.007).

(with Silva, S.) “Divergence Between Flight Crew Mental Model and Aircraft System State in Auto-Throttle Mode Confusion Accident and Incident Cases” *Journal of Cognitive Engineering and Decision Making*, December 2015, doi.org/10.1177/1555343415597344

(with Murca, M.) “Identification, Characterization and Prediction of Traffic Flow Patterns in Multi-Airport Systems”, *IEEE Transactions on Intelligent Transportation Systems*, June 2018, doi: [10.1109/TITS.2018.2833452](https://doi.org/10.1109/TITS.2018.2833452).

(with Mura, M.) “Predicting and Planning Airport Acceptance Rates in Metroplex Systems for Improved Traffic Flow Management Decision Support, *Transportation Research Part C*, Vol. 97, 301-323, December 2018, doi.org/10.1016/j.trc.2018.10.020

(with Mura, M., Li, L. and Ren, P.) “Flight Trajectory Data Analytics for Characterization of Air Traffic Flows: A Comparative Analysis of Terminal Area Operations Between New York, Hong Kong and Sao Paulo”, *Transportation Research Part C*, Vol. 97, 324-347, December 2018, doi.org/10.1016/j.trc.2018.10.021.

(with Thomas, J.) “Framework for Analyzing Aircraft Community Noise Impacts of Advanced Operational Flight Procedures”, *Journal of Aircraft*, Col 56 No.4, July 2019, <https://doi.org/10.2514/1.C035100>.

(with Vascik, P. and Dunn, N.) "Analysis of Urban Air Mobility Operational Constraints"
Journal of Air Transportation [23809450] 26.4 (2018): 133-146, Sept 2019,
<https://doi.org/10.2514/1.D0120>.

Additional Publications

(with A. Palevesky and G. Bekefi), "Frequency Characteristics of the Relativistic Electron Beam Magnetron," Bulletin of the American Physical Society, April 1977.

(with R. Shefer and G. Bekefi), "Self-Pinching in a Laser Irradiated Relativistic e-Beam Diode," Bulletin of the American Physical Society, April 1978.

(with G. Bekefi), "The Reflex Diode Under Short Pulse Conditions," Proceedings of the IEEE International Conference on Plasma Physics, June 1979.

"Microwave Ice Prevention," Proceedings of the Joint University Program for Air Transportation Research, NASA Conference Publication 2224, 1981.

"The Interaction of Radio Frequency Electromagnetic Fields with Atmospheric Water Droplets and Applications to Aircraft Ice Prevention," MIT Flight Transportation Laboratory Report R82-5, 1982.

"The Effect of the Atmospheric Droplet Size Distribution on Aircraft Ice Accretion," AIAA-84-0108, AIAA 22nd Aerospace Sciences Meeting, January 1984.

"Studies of the Insect Collection Efficiency of Airfoils," Proceedings of the 4th International Symposium on the Science and Technology of Low Speed and Motorless Flight," February 1984.

(editor) "Proceedings of the 4th International Symposium on the Science and Technology of Low Speed and Motorless Flight," Soaring Society of America, February 1984.

(with R. Ausrotas), "Aviation Safety Analysis," MIT Flight Transportation Laboratory Report R84-1, April 1984.

(with M. Kirby), "Measurement of Ice Accretion Using Ultrasonic Pulse-Echo Techniques," AIAA-85-0471, AIAA 23rd Aerospace Sciences Meeting, January 1985.

(with M. Barsotti), "The Aerodynamic Effect of Surface Wetting Characteristics on a Laminar Flow Airfoil in Simulated Heavy Rain," AIAA-85-0260, AIAA 23rd Aerospace Sciences Meeting, January 1985.

(with M. Kirby), "Measurement of Ice Accretion Using Ultrasonic Pulse Echo Techniques," Proceedings of the Joint University Program for Air Transportation Research - 1984, NASA CP-2452, January 1985.

"Performance Degradation of Natural Laminar Flow Airfoils Due to Contamination by Rain or Insects," Proceedings of the Soaring Society of America Meeting, March 1985.

Additional Publications (cont.)

“Low Gravity Fluid Measurement & Fluid Structure Interactions,” Proceedings of the In-Space Research, Technology & Engineering Workshop, October 1985.

(with M. Kirby), “Experimental Methodologies to Support Aircraft Icing Analysis,” Proceedings of the Joint University Program for Air Transportation Research - 1985, NASA CP-2453, January 1986.

(with M. Kirby), “Real-Time Measurement of Ice Growth During Simulated and Natural Icing Conditions Using Ultrasonic Pulse-Echo Techniques,” AIAA-86-0410, AIAA 24th Aerospace Sciences Meeting, January 1986.

(with M. Kirby), “Experimental Measurements of Heat Transfer From an Iced Surface During Artificial and Natural Cloud Icing Conditions,” AIAA-86-1352, AIAA/ASME 4th Joint Thermophysics and Heat Transfer Conference, June 1986, (selected as the Best AIAA Paper in Thermophysics for 1986).

(with L. Peterson and E. Crawley), “Nonlinear Coupled Dynamics of Fluids and Spacecraft in Low Gravity,” Tenth U.S. Congress of Applied Mechanics, June 1986.

(with L. Peterson and E. Crawley), “The Coupled Dynamics of Fluids and Spacecraft in Low Gravity and Low Gravity Fluid Measurement,” Proceedings of the NASA/OAST Microgravity Fluid Management Symposium, September 1986.

(with L. Peterson and E. Crawley), “Experimental Measurements of the Nonlinear Coupled Dynamics of Fluids and Spacecraft in Low Gravity,” Proceedings of the 37th Congress of the International Astronomical Federation, Innsbruck, October 1986.

(with M. Kirby), “Ultrasonic Ice Measurement Techniques for Aircraft Applications,” Proceedings of the 2nd International Symposium on Aviation Safety, Toulouse, November 1986.

(with A. Craig), “Comparative Low Reynolds Number Tests of NACA 64-210, NACA 0012, and Wortmann FX67-K170 Airfoils in Heavy Rain,” AIAA-87-0259, AIAA 25th Aerospace Sciences Meeting, January 1987.

(with M. Kirby, R. McNight, and R. Humes), “In-Flight Measurement of Ice Growth on an Airfoil Using an Array of Ultrasonic Transducers,” AIAA-87-0178, AIAA 25th Aerospace Sciences Meeting, January 1987.

(with J. Sturdy), “Assigned Altitude Deviation Caused by Dynamic Response of Aircraft-Autopilot Systems to Atmospheric Perturbations,” ICAO# RGCS-P-WG/B-WP/40, ICAO Review of the General Concept of Separation Panel, Montreal, January 1987.

Additional Publications (cont.)

(with S. Turnock), "Investigation of Surface Water Behavior During Glaze Ice Accretion," AIAA-88-0015, AIAA 26th Aerospace Sciences Meeting, January 1988.

(with J. Sturdy), "Dynamic Response of Aircraft-Autopilot Systems to Atmospheric Disturbances," AIAA-88-0578, AIAA-88-0692, AIAA 26th Aerospace Sciences Meeting, January 1988.

(with L. Peterson and E. Crawley), "The Nonlinear Dynamics of a Spacecraft Coupled to the Vibration of a Contained Fluid," AIAA-88-2470, AIAA /ASME/ASCE/AHS 29th Structures Dynamics & Materials Conference, April 1988.

(with M. Kirby), "An Experimental and Theoretical Study of the Ice Accretion Process During Artificial and Natural Icing Conditions," Joint NASA/FAA Contractor Report, NASA CR-182119, DOT/FAA/CT-87/17, April 1988.

(with J. Meserole), "Fundamental Limitations on Low Gravity Fluid Gauging Technologies Imposed by Orbital Mission Requirements," AIAA-88-3402, AIAA/ASME/SAE/ASEE 24th Joint Propulsion Conference, July 1988.

(with S. Turnock), "Investigation of Microphysical Factors which Influence Surface Roughness During Glaze Ice Accretion," Paper A5-2, Proceedings of the Fourth International Workshop on Atmospheric Icing of Structures, Paris, September 1988.

(with F. Lichtenfeltz and M. Kirby), "Ultrasonic Techniques for Aircraft Ice Accretion Measurement," AIAA-88-4656-CP, AIAA/NASA/AFWAL Conference on Sensors and Measurement, September 1988.

(with B. Kang), "Preliminary Definition of Pressure Sensing Requirements for Hypersonic Vehicles," AIAA-88-4652-CP, AIAA/NASA/AFWAL Conference on Sensors and Measurement, September 1988.

"Ice Detection Technology," SAE Aircraft Ground Deicing Conference Proceedings, P-217, September 1988.

"The Influence of Ice Accretion Physics on the Forecasting of Aircraft Icing Conditions," AMS/WMO Third International Conference on the Aviation Weather System, Paper 5.1, January 1989.

(with J. Riley, M. Potapczuk, B. Berkowitz and K. Yamaguchi), "Modeling Surface Roughness Effects on Glaze Ice Accretion," AIAA-89-0734, AIAA 27th Aerospace Sciences Meeting, January 1989.

Additional Publications (cont.)

(with C. Wanke), "Cockpit Display of Hazardous Weather Information," AIAA-89-0808, AIAA 27th Aerospace Sciences Meeting, January 1989.

(with D. Chandra and S. Bussolari), "A Comparison of Communication Modes for Delivery of Air Traffic Control Clearance Amendments in Transport Category Aircraft," Fifth International Symposium on Aviation Psychology, April 1989.

(with V. Lupi), "Preliminary Results From the MIT Acoustic Levitation Test Facility," Midwest Association for Cloud and Aerosol Physics, May 1989.

(with D. Ávila de Melo), "Analysis of Aircraft Performance During Lateral Maneuvering for Microburst Avoidance," AIAA-90-0568, AIAA 28th Aerospace Sciences Meeting, January 1990.

(with C. Wanke), "Hazard Evaluation and Operational Cockpit Display of Ground Measured Windshear Data," AIAA-90-0566, AIAA 28th Aerospace Sciences Meeting, January 1990.

(with K. Yamaguchi), "Heat Transfer on Accreting Ice Surfaces," AIAA-90-0200, AIAA 28th Aerospace Sciences Meeting, January 1990.

(with A. Dershowitz), "Passive Infrared Ice Detection for Helicopter Applications," AHS 46th Annual Forum, May 1990.

(with V. Lupi), "Development and Testing of the MIT Acoustic Levitation Test Facility," American Meteorological Society Conference on Cloud Physics, July 1990.

(with A. Barrows), "Design of an Inexpensive Test System for Inflight Evaluation of Automated Planning Algorithms," Association of Unmanned Vehicle Systems Symposium, July 1990.

(with S. Bussolari, C. Wanke and D. Chandra), "A Comparison of Voice and Datalink for ATC Amendments and Hazardous Wind Shear Alerts," 4th International Symposium on Aviation and Space Safety, November 1990.

(with C. Wanke), "Alert Generation and Cockpit Presentation for an Integrated Microburst Alerting System," AIAA-91-0260, AIAA 29th Aerospace Sciences Meeting, January 1991.

(with K. Yamaguchi and M. Kazmierczak), "Deterministic Multi-Zone Ice Accretion Modeling," AIAA-91-0265, AIAA 29th Aerospace Sciences Meeting, January 1991.

(with A. Dershowitz), "Experimental Evaluation of Passive Infrared Ice Detection for Helicopter Applications," AIAA-91-0667, AIAA 29th Aerospace Sciences Meeting, January 1991.

(with C. Wanke), "Microburst Avoidance Simulation Tests," Airborne Wind Shear Detection and Warning Systems, NASA CP-10060, Part 2, DOT/FAA/RD-91/2-I, 1991.

Additional Publications (cont.)

(with M. Mykityshyn and J. Kuchar) “Electronic Presentation of Instrument Approach Information,” Sixth International Symposium on Aviation Psychology, April 1991.

(with E. Murman, P. Lagace, E. Crawley, A. Epstein, D. Hastings, S. Widnall and L. Young), “A Strategic Plan for the Department of Aeronautics and Astronautics 1991,” Department of Aeronautics and Astronautics, MIT, May 1991.

(with C. Wanke), “Hazard Assessment and Cockpit Presentation Issues for Microburst Alerting Systems,” AMS/WMO Fourth International Conference on the Aviation Weather System, Paper 3.2, June 1991.

(with C. Wanke), “Experimental Evaluation of Candidate Graphical Microburst Alert Displays,” AIAA-92-0292, AIAA 30th Aerospace Sciences Meeting, January 1992.

(with A. Reehorst and J. Sims), “Analysis and Surface Roughness Generation in Aircraft Ice Accretion,” AIAA-92-0298, AIAA 30th Aerospace Sciences Meeting, January 1992.

(with C. Wanke), “A Data Fusion Algorithm for Multi-Sensor Microburst Hazard Assessment,” AIAA-92-4339, AIAA Atmospheric Flight Mechanics Conference, August 1992.

(with C. Wanke, M. Mykityshyn, J. Kuchar, E. Hahn, and A. Midkiff), “Hazard Alerting and Situational Awareness in Advanced Air Transport Cockpits,” 1992 ICAS Congress, Beijing, China, September 1992.

(with C. Wanke), “Experimental Evaluation of Candidate Graphical Microburst Alert Displays,” Airborne Windshear Detection and Warning Systems, Vol. II, NASA CP-10105, Part 2, DOT/FAA/RD-92/19-II, September 1992.

(with C. Wanke, J. Kuchar, E. Hahn and A. Pritchett), “A Graphical Workstation Based Part-Task Flight Simulator for Preliminary Rapid Evaluation of Advanced Displays,” SAE-92-95TI, SAE Aerotech ‘92, October 1992.

(with E. Hahn), “Experimental Studies on the Effect of Automation on Pilot Situational Awareness in the Datalink ATC Environment,” SAE-922022, SAE Aerotech ‘92 (Note: also published in special publication SAE-SP-933, *Enhanced Situational Awareness Technology for Retrofit and Advanced Cockpit Design*), October 1992.

(with A. Midkiff), “Identification of ‘Party Line’ Information Elements and the Implications for Situational Awareness in the Datalink Environment,” SAE-92203, SAE Aerotech ‘92, October 1992.

(with K. Breuer, D. Hazan, A. Reehorst, and M. Vargas), “Close-up Analysis of Aircraft Ice Accretion,” AIAA-93-0029, AIAA 31st Aerospace Sciences Meeting, January 1993.

Additional Publications (cont.)

(with A. Bilanin, R. Adams and E. Schlatter), “Technical Issues Pertaining to Ground De-Icing Hold Over Times,” AIAA-93-0750, AIAA 31st Aerospace Sciences Meeting, January 1993.

(with E. Crawley, E. Greitzer, S. Widnall, S. Hall, H. McManus, J. Shea and M. Landahl), “Reform of the Aeronautics and Astronautics Curriculum at MIT,” AIAA-93-0325, AIAA 31st Aerospace Sciences Meeting, January 1993.

(with C. Wanke), “A Model-Based Algorithm for Multi-Sensor Estimation of Microburst Hazard Characteristics,” AMS 8th Symposium on Meteorological Observations and Instrumentation, January 1993.

(with M. Mykityshyn), “Electronic Instrument Approach Plates: The Effect of Selective Decluttering on Flight Crew Performance,” Seventh International Symposium on Aviation Psychology, April 1993.

(with A. Pritchett), “Preliminary Analysis of Pilot Rankings of ‘Party Line’ Information Importance,” Seventh International Symposium on Aviation Psychology, April 1993.

(with J. Kuchar), “Part-Task Simulator Evaluations of Advanced Terrain Displays,” SAE 9932570, Aerotech ‘93, September 1993.

(with R.C. Henry and K.S. Breuer), “Measurement of Heat Transfer Variation on Surface Roughness Elements Using Infrared Techniques,” AIAA-94-0801, AIAA 32nd Aerospace Sciences Meeting, January 1994.

(with L. Yang), “A Human Performance Evaluation of Enhanced Vision Systems for Approach and Landing,” Paper No. 2220-27, Proceeding of the SPIE Technical Conference: Sensing, Imaging, and Vision for Control and Guidance of Aerospace Vehicles, April 1994.

(with M.T. Velazquez), “Implementation of Combined Feather and Surface Normal Ice Growth Models in LEWICE/X,” AIAA-95-0753, AIAA 33rd Aerospace Sciences Meeting, January 1995.

(with I. Anagnostakis and V. Khayms), “Microphysical Observations of Precipitation Impact and Melting on Non-Newtonian De-Icing Fluids,” AIAA-95-0657, AIAA 33rd Aerospace Sciences Meeting, January 1995.

(with A. Bilanin, A. Boschitsch, and I. Anagnostakis), “Predictions of the Dilution and Runoff of Type I and Type II De-Icing Fluids,” AIAA-95-0661, AIAA 33rd Aerospace Sciences Meeting, January 1995.

Additional Publications (cont.)

(with D.J. Orr and K. Breuer), “Quantitative Analysis of Ice Accretion Roughness Using Spectral and Stochastic Techniques,” AIAA-95-0888, AIAA 33rd Aerospace Sciences Meeting, January 1995.

(with J.-P. Clarke), “Parametric Study of the Noise Impact of Approach and Departure Procedures Using Advanced Flight Guidance Techniques,” AIAA-95-0835, AIAA 33rd Aerospace Sciences Meeting, January 1995.

(with M. Amar, T. Vaneck, A. Chaudhry, and D. Hannon), “A Preliminary Evaluation of Electronic Taxi Charts with GPS Derived Position for Airport Surface Situational Awareness,” Eighth International Symposium on Aviation Psychology, April 1995.

(with A. Pritchett), “Variations on ‘Party Line’ Information Importance between Pilots of Different Characteristics,” Eighth International Symposium on Aviation Psychology, April 1995.

(with S. Vakil and A. Midkiff), “Feedback Mechanisms to Improve Mode Awareness in Advanced Autoflight Systems,” Eighth International Symposium on Aviation Psychology, April 1995.

(with J.-P. Clarke and J. Fricke), “Determining Aircraft Exclusion Zones for Noise Sensitive Areas Using Acoustic Reciprocity and Linear Superposition,” CEAS/AIAA First Joint Aeroacoustics Conference, June 1995.

(with L. Yang), “Application of the Analytic Hierarchy Process for Making Subjective Comparisons Between Multiple Automation/Display Options,” Sixth IFAC/IFIP/IFORS/IEA Symposium, June 1995.

(with J. Kuchar), “A Probabilistic Methodology for the Evaluation of Alerting System Performance,” Sixth IFAC/IFIP/IFORS/IEA Symposium, June 1995.

(with S. Vakil, A. Midkiff and T. Vaneck), “Mode Awareness in Advanced Autoflight Systems,” Sixth IFAC/IFIP/IFORS/IEA Symposium, June 1995.

(with P. Salamitou), “An Algorithm for CW Doppler Lidar Wake Vortex Remote Sensing,” Paper #PDP 3, OSA Coherent Laser Radar Conference, July 1995.

(with A. Pritchett and A. Midkiff), “‘Party Line’ Information Use Studies and Implications for ATC Datalink Communications,” Fifth International Conference on Human-Machine Interaction and Artificial Intelligence in Aerospace, Toulouse, France, September 1995.

(with J. Kuchar and E. Johnson), “Human Centered Development of Information Systems and Decision Aids in Advanced Air Traffic Management Systems,” Advanced Workshop on Air Traffic Management (ATM 95), Capri, Italy, October 1995.

Additional Publications (cont.)

(with A. Pritchett and E. Johnson), “Use of Testable Responses for Performance-Based Measurement of Situation Awareness,” International Conference on Experimental Analysis and Measurement of Situation Awareness, November 1995.

(with A. Pritchett and A. Midkiff), “‘Party Line’ Information Use Studies and Implications for ATC Datalink Communications,” (Selected as Best Paper), 14th IEEE/AIAA Digital Avionics Systems Conference, November 1995.

(with A. Pritchett, B. Carpenter, K. Asari and J. Kuchar), “Issues in Airborne Systems for Closely Spaced Parallel Runway Operations,” 14th IEEE/AIAA Digital Avionics Systems Conference, November 1995.

(with S. Vakil and A. Midkiff), “Impact of Vertical Situation Information on Vertical Mode Awareness in Advanced Autoflight Systems,” 14th IEEE/AIAA Digital Avionics Systems Conference, November 1995.

(with S. Schroll), “Experimental Investigation of Contamination and Adhesion Failure of Type 2 Ground De-Icing Fluids,” AIAA-96-0392, AIAA 34th Aerospace Sciences Meeting, January 1996.

(with D.J. Orr), “Spectral Analysis and Experimental Simulation of Ice Accretion Roughness,” AIAA-96-0865, AIAA 34th Aerospace Sciences Meeting, January 1996.

(with S. Vakil and A. Midkiff), “Preliminary Results of the Experimental Evaluation of a Prototype Electronic Vertical Situation Display,” 8th European Aviation Safety Seminar, Amsterdam, The Netherlands, February 1996.

(with E. Bachelder), “Issues in Simultaneous HMD Display of Multi-Reference Frames for Helicopter Applications,” Paper 2736-23, SPIE Conference 2736: Enhanced and Synthetic Vision, April 1996.

(with E. Johnson), “Multi-Agent Flight Simulation with Robust Situation Generation,” AIAA-96-3553, AIAA Flight Simulation Technologies Conference, July 1996.

(with A. Pritchett, R. Barhydt, and E. Johnson), “Flight Simulator Testing of Cockpit Traffic Displays Using Robust Situation Generation,” AIAA-96-3554, AIAA Flight Simulation Technologies Conference, July 1996.

(with A. Pritchett), “Experimental Study of Collision Detection Schema Used by Pilots During Closely Spaced Parallel Approaches,” AIAA-96-3762, AIAA Guidance, Navigation and Control Conference, July 1996.

(with T. Pierce), “Pedagogical Development of the MIT Video Series on Measurement: A Model for University Interaction with Industry,” 1996 ABET Annual Meeting, October 1996.

Additional Publications (cont.)

(with J.-P. Clarke), “Systems Analysis of Noise Abatement Approach Procedures Enabled by Advanced Flight Guidance Technology,” AIAA-97-0490, AIAA 35th Aerospace Sciences Meeting, January 1997.

(with K. Breuer, B. Torres, and D.J. Orr), “Heat Transfer Measurements on Surfaces with Natural Ice Castings and Modeled Roughness,” AIAA-97-1018, AIAA 35th Aerospace Sciences Meeting, January 1997.

(with National Research Council), Aviation Safety and Pilot Control: Understanding and Preventing Unfavorable Pilot-Vehicle Interactions, McRuer, D., Committee Chair, Committee on the Effects of Aircraft-Pilot Coupling on Flight Safety, Aeronautics and Space Engineering Board, Commission on Engineering and Technical Systems, National Academy Press, Washington, D.C., 1997.

(with J. Kuchar and E. Johnson), “Human Centered Development of Information Systems and Decision Aids in Advanced Air Traffic Management Systems,” Modelling and Simulation in Air Traffic Management, Bianco, L, Dell’Olmo, P., and Odoni, A., Eds., Springer-Verlag, Berlin/Heidelberg, Germany, 169-184, 1997.

(with E. Bachelder), “Enhanced Spatial State Feedback for Night Vision Goggle Displays,” Paper 3058-23, SPIE Aerosense 1997, Conference 3058: Head Mounted Displays II, April 1997.

(with R. Barhydt), “Experimental Studies of Intent Information on Cockpit Traffic Displays,” Ninth International Symposium on Aviation Psychology, Columbus, OH, April 1997.

(with A. Dershowitz), “An Exploration of Options in Value Based Aeronautical Decision Making,” Ninth International Symposium on Aviation Psychology, Columbus, OH, April 1997.

(with A. Pritchett), “Pilot Non-Conformance to Alerting System Commands,” Ninth International Symposium on Aviation Psychology, Columbus, OH, April 1997.

(with A. Pritchett), “Experimental Studies of Pilot Performance at Collision Avoidance During Closely Spaced Parallel Approaches,” Ninth International Symposium on Aviation Psychology, Columbus, OH, April 1997.

(with J. Kuchar, A. Pritchett, J.-P. Clarke, S. Vakil, and R. Barhydt), “Integrated Human Centered Systems Approach to the Development of Advanced Air Traffic Management Systems,” FAA/Eurocontrol 1st International Air Traffic Management R&D Seminar (ATM-97), Saclay, France, June 1997.

Additional Publications (cont.)

(with S. Vakil), "Human Centered Development of Information Systems and Decision Aids in Advanced Air Traffic Management and Flight Management Systems," Paper No. 844, International Ergonomics Association 13th Triennial Congress (IEA '97), Tampere, Finland, June/July 1997.

(with S. Vakil), "Predictability as a Metric of Automation Complexity," Human Factors & Ergonomics Society 41st Annual Meeting, September 1997.

(with E. Bachelder), "A Methodology for State Feedback Perception Measurement Applied to Rotorcraft Night Vision Goggle Displays," 16th IEEE/AIAA Digital Avionics Systems Conference, October 1997.

(with J. Kuchar, J.-P. Clarke, S. Vakil, R. Barhydt and A. Pritchett), "Integrated Human Centered Systems Approach to the Development of Advanced Cockpit and Air Traffic Management Systems," 16th IEEE/AIAA Digital Avionics Systems Conference, October 1997.

(with A. Pritchett), "Pilot Non-Conformance to Alerting System Commands During Closely Spaced Parallel Approaches," 16th IEEE/AIAA Digital Avionics Systems Conference, October 1997.

(with S. Vakil), "Functional Models of Flight Automation Systems to Support Design, Certification, and Operation," AIAA-98-1035, AIAA 36th Aerospace Sciences Meeting, January 1998.

(with J. Deyst and R. Kornfeld), "Single Antenna GPS Based Aircraft Attitude Determination," Institute of Navigation National Technical Meeting: Navigation 2000, Long Beach, CA, January 1998.

(with O. De Weck and D. Miller), "Adaptive Technique for Radiation Pattern Shaping of Parabolic Mesh Antennas: A Low Cost Application of SMA Actuators in Spacecraft," ACTUATOR 98, Bremen, Germany, June 1998.

(with H. Idris, B. Delcaire, I. Anagnostakis, W. Hall, N. Pujet, E. Feron, J.-P. Clarke and A. Odoni), "Identification of Flow Constraint and Control Points in Departure Operations at Airport Systems," AIAA-98-4291, AIAA Guidance, Navigation, and Control Conference, Boston, MA, August 1998.

(with K. Amonlirdviman, T. Farley, J. Ladik, and D. Sherer), "A Distributed Simulation Facility to Support Human Factors Research in Advanced Air Transportation Technology," 1998 Fall Simulation Interoperability Workshop, Orlando, FL, September 1998.

(with M. Endsley and T. Farley), "Shared Situation Awareness in the Flight Deck - ATC System," 17th IEEE/AIAA Digital Avionics Systems Conference, Seattle, WA, October-November 1998.

Additional Publications (cont.)

(with R. Kornfeld and J. Deyst), “Preliminary Flight Test of Pseudo-Attitude Control Using Single Antenna GPS Sensing,” 17th IEEE/AIAA Digital Avionics Systems Conference, Seattle, WA, October-November 1998.

(with S. Vakil), “Analyzing Mode Transition Matrices,” 17th IEEE/AIAA Digital Avionics Systems Conference, Seattle, WA, October-November 1998.

(with S. Vakil), “Operator Directed Common Conceptual Models for Advanced Aircraft Automation,” 17th IEEE/AIAA Digital Avionics Systems Conference, Seattle, WA, October–November 1998.

(with National Research Council), Maintaining U.S. Leadership in Aeronautics: Breakthrough Technologies to Meet Future Air and Space Transportation Needs, Pipes, R. Byron, Committee Chair, Committee to Identify Potential Breakthrough Technologies and Assess Long-Term R&D Goals in Aeronautics and Space Transportation Technology, Aeronautics and Space Engineering Board, Commission on Engineering and Technical Systems, National Academy Press, Washington, D.C., 1998.

(with H. Idris, B Delcaire, W. Hall, I. Anagnostakis, E. Feron, and A. Odoni), “Observations of Departure Planning Processes at Logan Airport to Support the Development of Departure Planning Tools,” FAA/Eurocontrol 2nd International Air Traffic Management R&D Seminar (ATM-98), Orlando, FL, December 1998.

“Characteristics of Instrumentation,” Chapter 1 in The Measurement, Instrumentation and Sensors Handbook, Webster, J., Editor, CRC Press LLC, Boca Raton, FL, January 1999.

(with M. Endsley, T. Farley, L. Vigeant-Langlois, and K. Amonlirdviman), “The Effect of Shared Information on Pilot/Controller Situation Awareness and Re-Route Negotiation,” FAA/Eurocontrol 2nd International Air Traffic Management R&D Seminar (ATM 98), Orlando, FL, December 1998. Also presented at FAA/Europe Workshop on Human Machine Interaction, Toulouse, France, April 1999.

(with L. Vigeant-Langlois), “Pilot Information Needs and Strategies for Operations in Icing Conditions,” Tenth International Symposium on Aviation Psychology, Columbus, OH, May 1999.

(with T. Farley, M. Endsley, and K. Amonlirdviman), “The Effects of Shared Information on Pilot-Controller Situation Awareness and Re-Route Negotiation,” Tenth International Symposium on Aviation Psychology, Columbus, OH, May 1999.

(with J. Deyst and R. Kornfeld), “Single Antenna GPS Information Based Aircraft Attitude Redundancy,” 1999 American Control Conference, San Diego, CA, June 1999.

Additional Publications (cont.)

(with L. Vigeant-Langlois), “Human-Centered Design Considerations for In-Flight Remote Sensing Icing Avoidance,” Fourth International Airborne Remote Sensing Conference and Exhibition, Ottawa, Ontario, Canada, June 1999.

(with S. Vakil), “Approaches to Mitigating Complexity-Driven Issues in Commercial Autoflight Systems,” 3rd Workshop on Human Error, Safety, and System Development (HESSD’99), Liège, Belgium, June 1999.

(with S. Atkins), “Calculating Dependent Surveillance Update Rates by Modeling the Time-Dependence of Information Value,” AIAA-99-4145, AIAA Guidance, Navigation, and Control Conference, Portland, OR, August 1999.

“The Effect of Shared Information on Pilot/Controller and Controller/Controller Interactions,” Workshop on Advanced Technologies and their Impact on Air Traffic Management in the 21st Century (ATM '99), Capri, Italy, September 1999.

(with L. Vigeant-Langlois), “The Influence of Icing Information on Pilot Strategies for Operating in Icing Conditions,” AIAA-2000-0365, AIAA 38th Aerospace Sciences Meeting, January 2000.

(with T. Reynolds), “Analysis of Separation Minima Using a Surveillance State Vector Approach,” FAA/Eurocontrol 3rd International Air Traffic Management R&D Seminar (ATM-2000), Napoli, Italy, June 2000.

(with H. Davison), “The Effect of Shared Information on Pilot/Controller and Controller/Controller Interactions,” FAA/Eurocontrol 3rd International Air Traffic Management R&D Seminar (ATM-2000), Napoli, Italy, June 2000.

(with I. Anagnostakis, H. Idris, J.-P. Clarke, E. Feron, A. Odoni, and W. Hall), “A Conceptual Design of a Departure Planner Decision Aid,” FAA/Eurocontrol 3rd International Air Traffic Management R&D Seminar (ATM-2000), Napoli, Italy, June 2000.

(with L. Vigeant-Langlois), “Pilot Information Requirements for Improved In-Flight Icing Decisions,” 9th AMS Conference on Aviation, Range, and Aerospace Meteorology, Orlando, FL, September 2000.

(with E. Murman and J.-P. Clarke), “Aircraft System and Product Development: Teaching the Conceptual Phase,” AIAA-2001-0866, AIAA 39th Aerospace Sciences Meeting, Reno, NV, January 2001.

(with A. Pritchett), “Performance Based Measurement of Situation Awareness,” Chapter 11 in Situation Awareness Analysis and Measurement, Garland, D., and Endsley, M., Eds., Lawrence Erlbaum Associates, Inc., Mahwah, NJ, January 2001.

Additional Publications (cont.)

(with National Science and Technology Council (NSTC)), VISION 2050: An Integrated National Transportation System, R.E. Spitzer, Committee Chair, Federal Transportation Advisory Group (FTAG), under the auspices of the Federal Aviation Administration (FAA) Research, Engineering and Development Advisory Committee (REDAC) and the National Aeronautics and Space Administration (NASA) AeroSpace Technology Advisory Committee (ASTAC), Washington, DC, February 2001.

(with L. Vigeant-Langlois), "A Hazardous Weather Risk Characterization Model Based on Icing Information Requirements Studies," Eleventh Biennial International Symposium on Aviation Psychology, Columbus, OH, March 2001.

(with J. Saleh, W. Kaliardos, D. Hastings, and D. Newman), "On Flexibility in System Design," 11th Annual INCOSE International Systems Engineering Symposium (INCOSE 2001), Melbourne, Australia, July 2001.

"The Effect of Shared Information on Pilot/Controller and Controller/Controller Interactions," in New Concepts and Methods in Air Traffic Management, Bianco, L, Dell'Olmo, P., and Odoni, A., Eds., Springer-Verlag, Berlin/Heidelberg, Germany, 143-159, 2001.

(with H. Davison), "The Effect of Shared Information on Pilot/Controller and Controller/Controller Interactions," Chapter 14 in Air Transportation Systems Engineering, Donohue, G., Zellweger, A., Rediess, H., and Pusch, C., Eds., Vol. 193 of Progress in Astronautics and Aeronautics, AIAA, Reston, VA, 205-225, 2001.

(with I. Anagnostakis, H. Idris, J.-P. Clarke, E. Feron, A. Odoni, and W. Hall), "A Conceptual Design of a Departure Planner Decision Aid," Chapter 21 in Air Transportation Systems Engineering, Donohue, G., Zellweger, A., Rediess, H., and Pusch, C., Eds., Vol. 193 of Progress in Astronautics and Aeronautics, AIAA, Reston, VA, 343-365, 2001.

(with T. Reynolds), "Analysis of Separation Minima Using a Surveillance State Vector Approach," Chapter 34 in Air Transportation Systems Engineering, Donohue, G., Zellweger, A., Rediess, H., and Pusch, C., Eds., Vol. 193 of Progress in Astronautics and Aeronautics, AIAA, Reston, VA, 563-582, 2001.

(with J. Histon, G. Aigoïn, D. Delahaye, and S. Puechmorel), "Introducing Structural Considerations Into Complexity Metrics," (selected as best paper in track) FAA/Eurocontrol 4th International Air Traffic Management R&D Seminar (ATM-2001), Santa Fe, NM, December 2001.

(with L. Vigeant-Langlois), "Trajectory-Based Performance Assessment of Aviation Weather Information," 10th AMS Conference on Aviation, Range, and Aerospace Meteorology, Portland, OR, May 2002.

Additional Publications (cont.)

(with E. Bachelder and D. McRuer), "Experimental Study of 3-D Synthetic Cues on Rotorcraft Hover Performance," AIAA Atmospheric Flight Mechanics Conference, Monterey, CA, August 2002.

(with Reynolds, T.G, Histon, J.M. and Davison, H), "Structure, Intent & Conformance Monitoring in ATC," Workshop on Advanced Technologies and their Impact on Air Traffic Management in the 21st Century (ATM 2002), Capri, Italy, September 2002.

(with Reynolds, T.G.) "Conformance Monitoring Approaches in Current and Future Control Environments," 19th IEEE/AIAA Digital Avionics Systems Conference, Irvine, CA, October 2002.

(with Doble, N.), "Preliminary Design and Evaluation of Portable Electronic Flight Progress Strips," 19th IEEE/AIAA Digital Avionics Systems Conference, Irvine, CA, October 2002.

(with Histon, J.), "Structural Considerations and Cognitive Complexity in Air Traffic Control," 19th IEEE/AIAA Digital Avionics Systems Conference, Irvine, CA, October 2002.

(with Tam, R.), "Impact of Air Transportation on Regional Economic and Social Connectivity in the United States", AIAA Aircraft Technology, Integration, and Operations Forum, Los Angeles, CA, October 2002.

(with Davison, H. J.), "Use of Structure as a Basis for Abstraction in Air Traffic Control", Proceedings of the International Symposium on Aviation Psychology, Wright-Patterson Air Force Base, March, 2003.

(with L. Vigeant-Langlois) "Implications of Contingency Planning Support for Weather and Icing Information". Proceedings of the FAA/SAE In-Flight Icing / Ground De-Icing International Conference, Chicago, IL, June 15-20, 2003

(with A. Mozdzanowska, J. Histon, D. Delehay) "Emergence of Regional Jets and the Implications on Air Traffic Management," FAA/Eurocontrol 5th International Air Traffic Management R&D Seminar (ATM-2001), Budapest , June 2003.

(with T. Reynolds) "Investigating Fundamental Issues In Lateral Conformance Monitoring Using A Fault Detection Approach," FAA/Eurocontrol 5th International Air Traffic Management R&D Seminar (ATM-2001), Budapest, June 2003.

(with H. Davison, M.D. Ringsdoitter, J. Histon), " Impact of Operating Context on the Use of Structure in Air Traffic Control Cognitive Processes," FAA/Eurocontrol 5th International Air Traffic Management R&D Seminar (ATM-2001), Budapest , June 2003.

Additional Publications (cont.)

(with Mozdzanowska, A.), “Observations and Potential Impacts of Regional Jet Operating Trends”, Aviation Management Education and Research Conference (AMERC), Montreal, July 2003.

(with Tam, R.), “Air Transportation And Socioeconomic Connectivity In The United States Since Deregulation”, Aviation Management Education and Research Conference (AMERC), Montreal, July 2003.

(with T. G. Reynolds) “Analyzing Conformance Monitoring in Air Traffic Control Using Fault Detection Approaches & Operational Data”, AIAA Guidance, Navigation & Control Conference, Austin, TX, 11-14 August 2003.

(with H. Jiang, L. Ren) “Market And Infrastructure Analysis of Future Air Cargo Demand in China”, AIAA Aviation Technology, Integration, and Operations (ATIO) Technical Forum, Nov. 17-19, 2003, Denver, Colorado. (to be presented).

(with E. Murman, J-P Clarke) “Aircraft and Air Transportation Systems Curriculum at MIT”, ICAS 2004-7.8.1, ICAS 2004 Congress of the International Council of the Aeronautical Sciences, Yokohama, Japan, Sept 1, 2004

(with T. Reynolds, R. Bolszak, R. Tarakan), “Improving Surveillance of Clearances in Future Air Traffic Control Systems,” AIAA Aviation Technology, Integration, and Operations (ATIO) Technical Forum, Chicago, Sept 2004

(with P. Bonnefoy), “Emergence and Impact of Secondary Airports in the United States,” AIAA Aviation Technology, Integration, and Operations (ATIO) Technical Forum, Chicago, Sept 2004

(with R. Weibel), “Safety Considerations for Operation of Different Classes of UAVs in the NAS,” AIAA Aviation Technology, Integration, and Operations (ATIO) Technical Forum, Chicago, Sept 2004

(with M. C. Lohrenz), “Investigating Issues of Display Content Vs. Clutter During Air-To-Ground Targeting Missions.” Proceedings of the Human Factors and Ergonomics Society (HFES) 48th Annual Meeting, New Orleans, LA, September 20-24, 2004.

(with L. Major, H. Johannsson, H. Davison, E. Hvannberg), “Key Human-Centered Transition Issues for Future Oceanic Air Traffic Control Systems,” HCI-Aero, Toulouse, Sept 2004

(with H. Jiang), “Parametric Analysis of Cyclicity in the Airline Industry,” International Conference on Research in Air Transportation (ICRAT 2004), November 22-24 2004, Zilina, Slovakia.

Additional Publications (cont.)

“The Impact of Information Technologies on Air Transportation” AIAA-2005-0001, AIAA 44th Aerospace Sciences Meeting, Reno, NV, January 2005. (presented as the Dryden Lecture)

(with L. Major-Forrest) “Experimental Analysis of the Integration of Mixed Surveillance Frequency Into Oceanic ATC Operations”, *Aviation Psychology*, April 2005.

(with Davison-Reynolds, H., Reynolds, T. G.), "Human Factors Implications of Continuous Descent Approach Procedures for Noise Abatement in Air Traffic Control", Proceedings of the 6th USA/Europe Air Traffic Management R & D Seminar, Baltimore. June 23, 2005.

(with R. Weibel) “An Integrated Approach to Evaluating Risk Mitigation Measures for UAV Operational Concepts in the NAS”, Infotech Aerospace, Washington DC, September 2005.

(with Jaing, H.) “An Analysis of Profit Cycles in the Airline Industry”, AIAA-2006-7732, 6th AIAA Aviation Technology, Integration and Operations Conference, Wichita, September 2006.

(with Mozdzanowska, A., Weibel, R., Lester, E.), “The Dynamics of Air Transportation System Transition”, In Proceedings of the 7th Air Traffic Management Conference. Barcelona Spain. July 2007.

(with Mozdzanowska, A.), “Crisis Events as a Catalyst for Change in the US Air Transportation System - Implications for Capacity”. In Proceedings of the 10th International Conference on Technology Policy and Innovation. Stavanger, Norway. June 2007, Awarded Best Paper.

(with Mozdzanowska, A.), “The US Air Transportation System”, Handbook of Transportation Policy and Administration, pp. (9-27), CRC Press, 2007.

(with Bonnefoy, P.), “Scalability and Evolutionary Dynamics of Air Transportation Networks in the United States”, AIAA-2007-7773^[L]_[SEP], 7th AIAA Air Transportation Integration and Operations Conference, Dublin, September 2007.

(with Mozdzanowska, A., Weibel, R., Lester, E. Weigel, A., and Marais, K), “Dynamics of Air Transportation System Transition and Implications for ADS-B Equipage” AIAA-2007-7776, 7th AIAA Air Transportation Integration and Operations Conference, Dublin, September 2007.

(with Ishutkina, M.) “Analysis of the Interaction between Air Transportation and Economic Activity” ICAS-2008-10-4-2, ^[L]_[SEP]AIAA-2008-8888^[L]_[SEP], 26th Congress of the International Council of the Aeronautical Sciences, Anchorage Alaska, September 15-18, 2008.

(with Campos, N.V. and Weigel, A.L) “Preliminary Analysis of Strategies to Encourage Data Link Adoption Over the North Atlantic Airspace ” ICAS-2008-8-8-3, ^[L]_[SEP]AIAA-2008-8953, 26th Congress of the International Council of the Aeronautical Sciences, Anchorage Alaska, September 15-18, 2008.

Additional Publications (cont.)

(with Brown, S., Barimo, B., et al) “Report from the ADS-B Aeronautical Rulemaking Committee to the Federal Aviation Administration” September 26, 2008.

(with Alan Melrose, Ted Elliff et al) “The 2008/9 Independent Expert Group’s First Report for Operational Environmental Goals”, ICAO Committee on Aviation Environmental Protection (CAEP) WG2 Operations, (TG2) ATM. Florence, Italy April 2009.

(with Kar, R., Bonnefoy, P., Sgouridis, S.) “Dynamics of Implementation of Mitigating Measures to Reduce Commercial Aviation’s Environmental Impacts” 9th AIAA Aviation Technology, Integration, and Operations Conference, Hilton Head, AIAA-2009-6935. September 2009.

(with Abrahamson, N. et al) Advancing Aeronautical Safety, National Academy Press, Washington, D.C., September 2010

(with Morrison, J. and Bonnefoy, P.) “Investigation of the Impact of Effective Fuel Cost Increase on the US Air Transportation Network and Fleet”, 10th AIAA Aviation Technology, Integration, and Operations Conference, Fort Worth, Oct 2010.

(with Donaldson, A.) “Capacity Improvement Potential for the New York Metroplex Region”, 10th AIAA Aviation Technology, Integration, and Operations Conference, Fort Worth, Oct 2010.

(with Azzam, M. and Bonnefoy, P.) “Investigation of the Fuel Economy of the US Air Transportation Network Structure”, 10th AIAA Aviation Technology, Integration, and Operations Conference, Fort Worth, Oct 2010.

(with Li, L., Cho, H. and Palacios, R.) “Aircraft-Based Complexity Assessment for Radar Controllers in the Multi-Sector Planner Experiment”, 10th AIAA Aviation Technology, Integration, and Operations Conference, Fort Worth, Oct 2010.

(with Butchibabu, A., Midkiff, A., Kendra, A. and Chandra, D.) “Analysis of Safety Reports Involving Area Navigation and Required Navigation Performance Procedures” International Conference on Human-Computer Interaction in Aerospace, Cape Canaveral, 2010.

(with Lim, D., Nam, T., Burdette, G., Kirby, M.R., Bonnefoy, P., Hileman, J., Waitz, I., Yutko, B.) “An investigation of the potential implications of a CO2 Emission Metric on Future Aircraft Designs,” 27th Congress of International Council of the Aeronautical Sciences, 19 - 24 September 2010, Paper ICAS 2010-5.9.2.

(with Alcabain, M, Ball, M et. Al.) Air Traffic Controller Staffing in the En Route Domain, TRB Special Report 301, National Academy Press, Washington, D.C., November 2010.

Additional Publications (cont.)

(with Kar, R., Bonnefoy, P., Sgouridis, S.) “Assessment of the Fleet-wide Effects of the Dynamics of Diffusion of New Fuel Efficient Aircraft; Implications for Aircraft Manufacturers’ Strategies and Public Policies” Transportation Research Board (TRB) 2011 Annual Meeting, January 2011.

(with Simaiakis, I., Khadilkar, H., Balakrishnan, H., Reynolds, T.G. , Reilly, B. and Urlass, S.) “Demonstration of Reduced Airport Congestion through Pushback Rate Control,” USA/Europe ATM R&D Seminar, Berlin, June 2011. (best paper)

(with Churchill, A, Ball, M. and Donaldson, A.) “Integrating Best-Equipped Best-Served Principles in Ground Delay Programs,” USA/Europe ATM R&D Seminar, June 2011.

(with Histon, J) “The Structure Hierarchy: A Framework for Understanding Air Traffic Controller Complexity”, Naturalistic Decision Making 2011, June 2011.

(with Dumont, J. and Reynolds, T.) “Fuel Burn and Emissions Reduction Potential of Low Power / Low Drag Approaches”, 11th AIAA Aviation Technology, Integration and Operations (ATIO) Conference, Virginia Beach, September 2011.

(with Gariel, M. and Frazzoli, E) “Impact of GPS and ADS-B Accuracy on Conflict Detection Performance in Dense Traffic”, 11th AIAA Aviation Technology, Integration and Operations (ATIO) Conference, Virginia Beach, September 2011.

(with Kunzi, F) “Mid-Air Collision Risk and Areas of High-Benefit for Traffic Alerting Systems”, 11th AIAA Aviation Technology, Integration and Operations (ATIO) Conference, Virginia Beach, September 2011.

(with Kunzi, F) “Survey of Potential ADS-B Benefits for the Soaring Community”, 11th AIAA Aviation Technology, Integration and Operations (ATIO) Conference, Virginia Beach, September 2011.

(with Morrison, J. and Sgouridis, S.) “Game Theory Analysis of the Impact of Single Isle Aircraft Competition on Fleet Emissions ”, 11th AIAA Aviation Technology, Integration and Operations (ATIO) Conference, Virginia Beach, September 2011.

(with Li, L. and Gariel, M.) “Detection of Anomalous Flights Using Cluster Analysis of Digital Flight Data Recorder (DFDR) Data”, 30th Digital Avionics Systems Conference, Seattle, October 2011.

(with Gariel, M. and Kunzi F.) “An Algorithm for Conflict Detection in Dense Traffic using ADS-B”, 30th Digital Avionics Systems Conference, Seattle, October 2011.

(with Histon, J.) “Air Traffic Controller Operating Modes and Cognitive Complexity Regulation”, Human Factors & Ergonomics Society Annual Meeting, October 2011.

Additional Publications (cont.)

(with Dumont, J. and Reynolds, T.) “Analyzing Opportunities and Barriers of Delayed Deceleration Approach Procedures to Reduce Fuel Burn”, 12th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference and 14th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Indianapolis, September 2012.

(with Das, S., Li, L. and Srivastava, A.) “Comparison of Algorithms for Anomaly Detection in Flight Data Recorder Data of Airline Operations”, 12th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference and 14th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Indianapolis, September 2012.

(with O’Neill, G. and Dumont, J.) “Use of Hyperspace Trade Analyses to Evaluate Environmental and Performance Tradeoffs for Cruise and Approach Operations”, 12th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference and 14th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Indianapolis, September 2012.

(with Butchibabu, A, Grayhem R. and Chandra, D.) “NextGen RNAV and RNP Charts: Evaluating a De-Cluttering Technique”, 31st Digital Avionics Systems Conference, Williamsburg VA, Oct. 2012.

(with Cho, H. and Azzam, M.) “Noise Analysis and Negotiation Tool for Terminal RNP Procedure Design “, 2013 Aviation Technology, Integration and Operations (ATIO) Conference, Los Angeles, August 2013.

(with Sandberg, M, Reynolds, T, and Jensen, L.) “Fuel Burn Reduction Using Cruise Altitude Optimization “, 2013 Aviation Technology, Integration and Operations (ATIO) Conference, Los Angeles, August 2013.

(with Yutko, B., Azzam, M. and Mozdznowska, A.) “Exploring the Relationship Between Aircraft Design Reference Mission and Fuel Efficiency in the Air Transportation System “, 2013 Aviation Technology, Integration and Operations (ATIO) Conference, Los Angeles, (August 2013.

(with McConnachie, D and Wollersheim C.) “The Impact of Fuel Price on Airline Fuel Efficiency and Operations“, 2013 Aviation Technology, Integration and Operations (ATIO) Conference, Los Angeles, August 2013.

(with Jensen, L., Venuti, J. Reynolds, T. and Sandberg, M.) “Commercial Airline Speed Optimization Strategies for Reduced Cruise Fuel Consumption“, 2013 Aviation Technology, Integration and Operations (ATIO) Conference, Los Angeles, August 2013.

(with Sridhar, B., Hok, K. N., Chen,N., Gao, H., Azzam) “Energy Efficient Trajectory Design For Minimizing Climate Impact of Aircraft on Various Timescales”, 2013 Aviation Technology, Integration and Operations (ATIO) Conference, Los Angeles, August 2013.

Additional Publications (cont.)

“Analysis of Impact of Aircraft Age on Safety for Air Transport Jet Airplanes”, ICAO Air Navigation Commission, Montreal, January 2014.

(with Jensen, L. and Tran, H.) “Cruise Fuel Reduction Potential From Altitude and Speed Optimization in Global Airline Operations”, USA/Europe ATM R&D Seminar, Lisbon, June 2015.

(with Silva, S. and Jensen, L.) “Pilot Perception and Use of ADS-B In Traffic and Weather Services (TIS-B and FIS-B)”, 15th AIAA Aviation Technology, Integration and Operations Conference, Dallas, June 2015, <http://arc.aiaa.org/doi/abs/10.2514/6.2015-2849>.

(with Reynolds, T. Rodrigues, Y., McPartland, M., Sandberg, M., and Dumont, J.M.) “Analyzing Delayed Deceleration Approaches”, 15th AIAA Aviation Technology, Integration and Operations Conference, Dallas, June 2015.

(with National Research Council), A Review of the Next Generation Air Transportation System – Implications and Importance of System Architecture, Computer Science and Telecommunications Board, National Academy Press, Washington, D.C., 2015.

(with Tao, T) “Design and Performance of an Adaptable Aircraft Manufacturing Concept” AIAA Aerospace Sciences Meeting, January 2016, AIAA-2016-1526.

(with Tao, T) "Development of an In-Flight-Deployable Micro-UAV" AIAA Aerospace Sciences Meeting, January 2016, AIAA-2016-1742.

(with Murca, M.C.R, Balakrishnan, H., De.Laura, R., Jordan, R., and Reynolds, T.) “Trajectory Clustering and Classification for Characterization of Air Traffic Flows” 16th AIAA Aviation Technology, Integration, and Operations Conference, Washington, June 2016, AIAA 2016-3670.

(with Sanberg, M., Thomas J., and Reynolds, T.) “Delayed Deceleration Approach Noise Assessment” 16th AIAA Aviation Technology, Integration, and Operations Conference, Washington, June 2016.

(with Tran, H., Folse, S. and Jensen, L.) “Cruise Altitude and Speed Optimization Implemented in a Pilot Decision Support Tool” 16th AIAA Aviation Technology, Integration, and Operations Conference, Washington, June 2016.

(with P. D. Vascik) "Evaluation of Key Operational Constraints Affecting On-Demand Mobility for Aviation in the Los Angeles Basin: Ground Infrastructure, Air Traffic Control and Noise" AIAA Aviation Technology, Integration, and Operations Conference, Denver, June 2017.

(with P. D. Vascik) "Constraint Identification in On-Demand Mobility for Aviation through an Exploratory Case Study of Los Angeles" AIAA Aviation Technology, Integration, and Operations Conference, Denver, June 2017.

Additional Publications (cont.)

(with L. Jensen, J. Thomas, C. Brooks, M. Brenner) "Development of Rapid Fleet-Wide Environmental Assessment Capability" AIAA Modeling and Simulation Technologies Conference, Denver, June 2017.

(with J. Thomas, L. Jensen, C. Brooks, M. Brenner, S. Salgueiro) "Investigation of Aircraft Approach and Departure Velocity Profiles on Community Noise" AIAA/CEAS Aeroacoustics Conference, Denver, June 2017.

(with S. Salgueiro) "Potential Safety Benefits of RNP Approach Procedures" AIAA Aviation Technology, Integration, and Operations Conference, Denver, June 2017.

(with P. D. Vascik) "Constraint Identification in On-Demand Mobility for Aviation through an Exploratory Case Study of Los Angeles" AIAA Aviation Technology, Integration, and Operations Conference, Denver, June 2017.

(with P. D. Vascik) "Evaluation of Key Operational Constraints Affecting On-Demand Mobility for Aviation in the Los Angeles Basin: Ground Infrastructure, Air Traffic Control and Noise" AIAA Aviation Technology, Integration, and Operations Conference, Denver, June 2017.

(with Ozturk, B., Burton, M., Zarse, O., Hoburg, W., Drela, M.) "Design of an Unmanned Aerial Vehicle for Long-Endurance Communication Support" AIAA Multidisciplinary Analysis and Optimization Conference, Denver, June 2017.

(with Hylander, K. J. et al) In-Time Aviation Safety Management, National Academy Press, Washington, D.C., January 2018.

(with Courtin, C) "Safety Considerations in Emerging Electric Aircraft Architectures", AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, June 2018.

(with Courtin, C, Burton, M., Butler, P., Yu, A., and Vascik, P.) "Feasibility Study of Short Takeoff and Landing Urban Air Mobility Vehicles using Geometric Programming", AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, June 2018.

(with Chapelle, C., Li., C., and Vascik, P.) "Opportunities to Enhance Air Emergency Medical Service through New Vehicles and Operations", AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, June 2018.

(with Li., C) "Preliminary Development of a Cruise Altitude and Speed Optimization Decision Support Tool", AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, June 2018.

Additional Publications (cont.)

(with Vascik, P.) "Scaling Constraints for Urban Air Mobility Operations: Air Traffic Control, Ground Infrastructure, and Noise," AIAA Aviation Technology, Integration, and Operations Conference, Atlanta, June 2018.

(with Vascik, P., and Balakrishnan, H.) "Assessment of Air Traffic Control for Urban Air Mobility and Unmanned Systems", 8th International Conference on Research in Air Transportation, Barcelona, June 2018.

(with Vascik, P.) "Development of Vertiport Capacity Envelopes and Analysis of Their Sensitivity to Topological and Operational Factors", AIAA SciTech Forum, San Diego, January 2019.

(with Meijers, N.) "A Data-Driven Approach to Understanding Runway Occupancy Time" AIAA Aviation Forum, 2019.

(with Yu, A.) "Approach for Representing the Aircraft Noise Impacts of Concentrated Flight Tracks" AIAA Aviation Forum, 2019.

(with Vascik, P.) "Assessing Integration Between Emerging and Conventional Operations in Urban Airspace" AIAA Aviation Forum, 2019.

(with Agrawal, D., Asad, F., Berk, B., Long, T., Lubin, J., Courtin, C., Thomas, J. and Drela, M.) "Wind Tunnel Testing of a Blown Flap Wing" AIAA Aviation Forum, 2019.

(with Courtin, C.) "Model Development for a Comparison of VTOL and STOL Electric Aircraft Using Geometric Programming" AIAA Aviation Forum, 2019.

(with Thomas, J., Yu, A., Li, C., Maddens Toscano, P.) "Advanced Operational Procedure Design Concepts for Noise Abatement", USA/Europe ATM R&D Seminar, Vienna, June 2019.

(with Courtin, C., and Drela, M.) "Flight Test Results of a Subscale STOL Aircraft" AIAA SciTech Forum, January 2020.

(with Thomas, J.) "Modeling Assessment and Flight Demonstration of Delayed Deceleration Approaches for Community Noise Reduction" AIAA Aviation Forum, June 2020.
<https://doi.org/10.2514/6.2020-2874>.

(with Thomas, J.) "Community Noise Reduction Assessment of Using Windmilling Drag on Approach by Hybrid Electric Aircraft" AIAA Aviation Forum, June 2020.
June 15-19, 2020 AIAA AVIATION 2020 FORUM
<https://doi.org/10.2514/6.2020-2877>

Additional Publications (cont.)

(with Vasick, P.) “Allocation of Airspace Cutouts to Enable Procedurally Separated Small Aircraft Operations in Terminal Areas” AIAA Aviation Forum, June 2020.

<https://doi.org/10.2514/6.2020-2905>